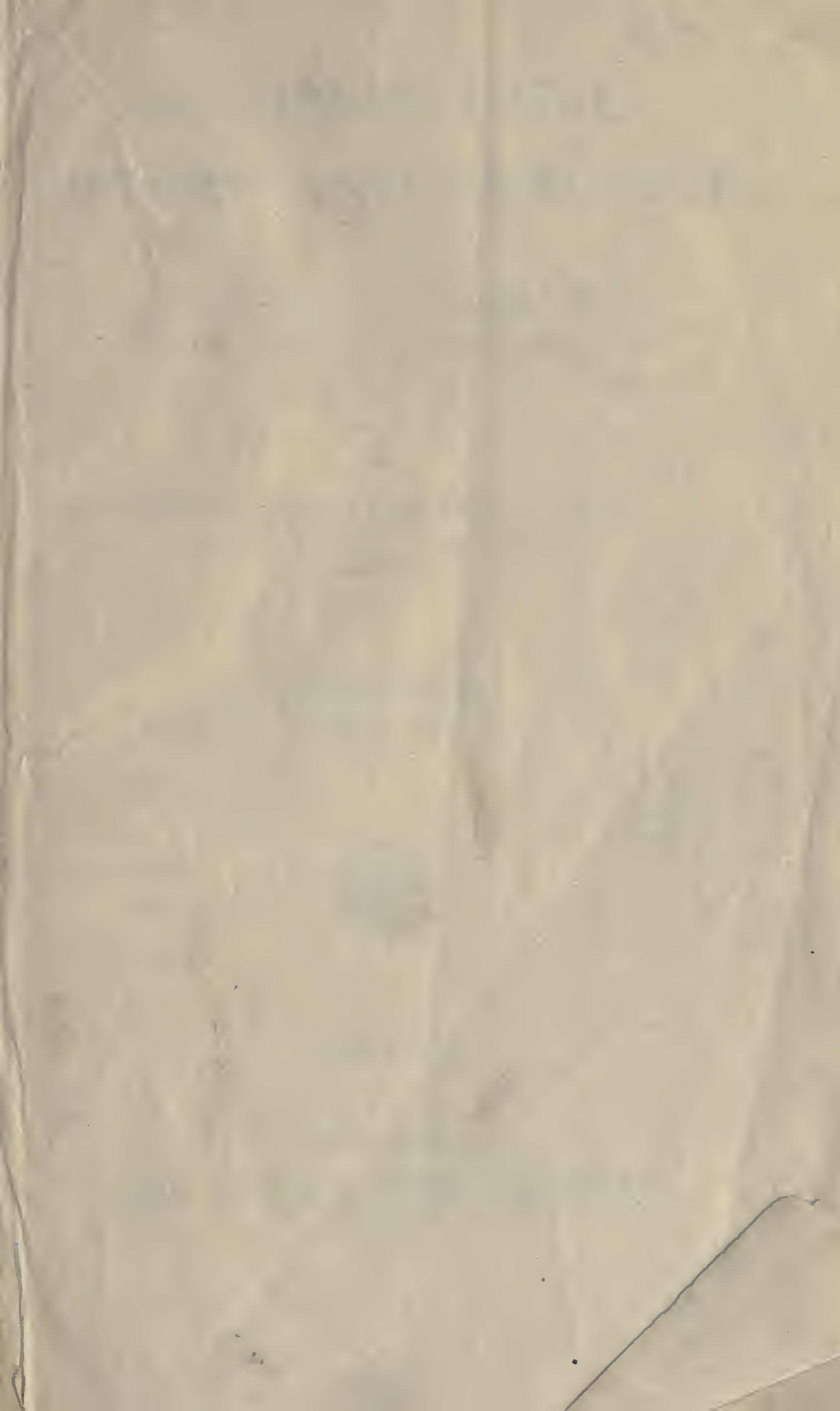

ACCOUNTING THEORY AND PRACTICE

A TEXT-BOOK FOR COLLEGES AND SCHOOLS OF BUSINESS ADMINISTRATION

BY

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To Nancy

As a Tribute of Love and Tender
Memory to Her Mother

PREFACE

A knowledge of the subject matter of Volume I is a prerequisite to the profitable study of the present work. Therefore, it may be well to review briefly the contents of the latter as an introduction to this book. In Volume I the attempt was made to formulate and illustrate the basic principles upon which the practice of accounting is founded. The principles of debit and credit were developed and their application explained—as related ultimately to the balance sheet and statement of profit and loss. The chief books of original entry (the voucher register excepted) and the various ledgers were described and illustrated. Columnar books, controlling accounts, methods and devices for preventing and detecting errors, methods for the proper handling of purchases, sales, cash, and trade discounts, and some phases of proportion and interest were discussed in detail.

Some special applications of accounting principles, as viewed in relation to the accounting problems involved therein, were also explained and illustrated under such heads as: notes receivable discounted and dishonored; consignments and approval sales; single and joint venture accounts; accounts current, their reconciliation and adjustment; instalment sales; sales for future delivery; single entry, its methods and the results attainable under it; etc.

From the standpoint of business organization, the accounting problems peculiar to the single proprietorship and the partnership were given full treatment. The advantages and disadvantages of the various types of organization, the rights and duties of owners among themselves and to out-

siders, the accounting procedure necessary under different conditions for changing from one form of organization to another, and other like items were set forth. Underlying the entire treatment of the subject was the guiding principle that accounting is never an end in itself, that its right to existence depends solely on the service it can render from the standpoint of administrative and financial management.

In content, the present volume is primarily a study of the corporation, its accounting and financial problems, although most of the material, in so far as it consists of a statement of general principles, is equally applicable to other types of organization. The emphasis of the volume is laid upon the problem of valuation as met in the commercial balance sheet. Chapters IV to XXVII inclusive comprise this portion of the subject matter. The other chapters treat miscellaneous matters, a knowledge of which is essential to the student of accounting. These latter form parts of the work of the second year as mapped out in the author's scheme of instruction, whereby the whole field of accounting is covered by a well-graded three-year course of study. In this scheme cost accounting should be studied concurrently and as a parallel course with the work of this second volume. Only a bare outline of some of the problems and methods of cost accounting is presented in this volume.

As to the division of the text and its use in the general scheme, it is suggested that the first twenty-seven chapters should comprise the text material for the first semester, leaving the remainder for the second semester in which the chief emphasis should be placed on the solution of problems rather than on the formal classroom lecture. Hence the text material is lessened for this semester's work, and the student's main effort is directed towards the application to the problems of business of the principles already established.

Instead of following the plan of the first volume in

placing the practice work for the student at the end of each chapter of text, this material is presented separately in three appendices. It is believed that this will be found a more convenient arrangement..

The author desires to emphasize the need of ample practice work and at the same time to take a stand against the method of teaching accounting exclusively by the so-called laboratory or case method. A happy combination of text containing a statement of principles and showing methods of application, together with practice material intelligently made up so as to require a knowledge of principles before solution, is the desideratum in any course of instruction. Principles, theory, without application are barren and soon slip away, even if seemingly understood at the time. Practice without a thorough grounding in fundamental theory can never be sure of itself. An equitable division of the student's time between theory and practice portions should be aimed at. In the present volume, while the time required for the practice assignments may at times seem heavy, an attempt has been made to keep it to the minimum deemed essential for adequate training either for general or professional use. It cannot be too emphatically stated that accounting as a profession ranks as to subject matter and the need for its services with the other professions. If it is to enjoy equal honor, dignity, and professional standing, teachers and practitioners must condemn without qualification the idea prevalent among many that a few months' training suffices to turn out a finished product. Too often has such a course given point to the witticism that an accountant is a bookkeeper without a job. As stated in the preface of Volume I, a course of at least three years' *professional* study is now quite generally recognized as essential. Accounting is so broad in its many ramifications that less than that gives inadequate training.

The reception accorded the first volume and the report of results achieved in the classroom through its use leads the author to hope that this second volume may have a courteous hearing and trial. Criticisms and suggestions will be much appreciated. The author hopes to be able to offer in the not too remote future the third and concluding volume in this series on general accounting.

The author is indebted for much assistance and counsel. Acknowledgment is due Miss Nina Miller of the Columbia staff and Eric Bodine for help in gathering and preparing much of the material for Chapters XXVIII to XXXIII; to H. A. Inghram of the University of Georgia, for preparation of a large part of Appendix D; to Leo Greendlinger and David E. Boyce for the use of problems prepared by them; and to his good friend, Joseph Gill, for help in reading the proof. To S. B. Koopman and James F. Hughes of the Columbia staff in second year accounting, the author is under special obligation for many suggestions. Mr. Koopman has furnished most of the problems for Appendix B, and has collected those for Appendix C.

As with Volume I, so in shaping the content of the present volume the author has had the good counsel and ever ready help of his chief, Robert H. Montgomery, and desires again to offer goodly acknowledgment, for his debt is large.

R. B. Kester.

Columbia University,
New York City, August 5, 1918.

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The Corporation

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In Volume I, Chapters XLVIII and XLIX, the fundamental characteristics of the corporation were explained and discussed briefly and some of its peculiar accounting features were set forth. Here these matters will be gone into more fully and additional aspects of this type of organization will be treated. In Volume I were explained the advantages and disadvantages of the corporate form, the procedure incident to the formation of a corporation, its charter, officers, working organization and management, the records peculiar to a corporation, the showing of proprietorship, opening the corporation's books, booking premium and discount on stock, change from partnership to corporation, the distribution of profits, dividends, etc. Only so much of the information already presented will now be repeated as may be necessary to make the treatment here complete.

Classification and Definitions

As instruments for the transaction of business, corporations may be classified in a number of ways. First, all corporations are either public or private. Public corporations are the governmental organizations set up to transact the

collective business of a city, a county, a township, or school district.

Private corporations are divided into two subclasses, stock and non-stock. Under stock corporations are included all those organized to carry on business for a profit. Under non-stock corporations are included all those organized to carry on non-profit-making enterprises, such as libraries, hospitals, religious organizations, eleemosynary undertakings, etc.

Under the head of stock corporations we may have the following subclasses: (a) industrial or manufacturing, (b) commercial or trading, (c) public utility or quasi-public, and (d) financial, i.e., banks, trust companies, insurance companies, etc.

From the standpoint of the sovereignty to which allegiance is due, corporations are either domestic or foreign. A corporation is domestic in the state in which it is organized; foreign in any other state or country. Thus corporations chartered in New York are domestic in New York and foreign in New Jersey and Canada. A foreign corporation may be at a distinct disadvantage with a domestic corporation. To obviate this, one occasionally sees a separate incorporation in every state in which a concern intends to do business. Very infrequently is a domestic corporation subject to more stringent supervision and regulation than a foreign.

From the standpoint of the fact of incorporation, corporations may be classed as (1) de jure and (2) de facto, the former comprising those which have met fully all legal requirements for incorporation, the latter comprising those which have not met fully all legal requirements but are to all intents and purposes corporations in fact.

Method of Ownership

Business corporations are sometimes spoken of as "open" or "close." An open corporation is one in which ownership

of the stock is not held closely but is being passed about, traded in, or transferred from one owner to a new. A close corporation is one in which the stock is held very closely in order to retain control and keep profits and trade secrets within a small compass of ownership. Thus some corporations are strictly family affairs; others are held by a few families or a small group.

What is known as a corporation "sole," while little known now, virtually exists in some close corporations, as where one man holds all but two shares of stock. The incorporation of a single individual is not legally possible in this country.

The corporation, because of its peculiar advantages over other forms of business organization, has become the accepted form for most large enterprises. The gathering together of large capital funds, the ease and efficiency of management and control, continuous life, the facility of transfer of ownership, and the limited liability of the stockholders, make the corporate form attractive to the investor and absolutely necessary to the large businesses carried on today. In some states encouragement is given the small business to incorporate; in the State of New York, for example, the minimum limit of capitalization is only $500. In a few other states the old-time fear of the corporate form is still expressed in their general corporation laws in which the minimum limit for corporate capitalization is set as high as $10,000.

Working Organization

The peculiar features of the stock corporation are the method of ownership and working organization. This latter is effected through a board of directors who are responsible directly to the owners at periodic intervals. Within the board are its officers and committees to whom duties are assigned by by-laws, custom, common consent or action of the board. Under these official heads are the rank and file

of the organization—department heads, clerks, employees, etc. It is not necessary to treat here this phase of the organization further.

Different Classes of Stock

The collective capital of a corporation is divided into shares of equal value. Ownership of a share or shares in a corporation is evidenced by formal certificates of stock. Each share carries with it the same privileges, powers, and duties of ownership as every other share of the same class. It represents a pro rata share of the total interest of its class. There may be several different kinds or classes of ownership within the corporation, these classes will have different privileges, and there may be other points of differentiation. The reason for setting up these different classes is almost always to secure additional capital from outside sources by making the investment as attractive as possible. Upon a reorganization, an adjustment of the various interests concerned may require a grading of ownership, a differentiation by classes in order equitably to satisfy the claims of all interested parties. These various classes of stock ownership will be discussed under the following heads:

1. Common
2. Preferred
3. Guaranteed
4. Founders'
5. Debenture

Common Stock

Common or ordinary stock is that which is evidence of ordinary ownership in the corporation. The share of ownership of the original organizers of the corporation is usually in the common stock. The common stockholder is a sort of remainderman, a residuary legatee. Upon dissolution, after the special claims and privileges of the other classes of owners

have been satisfied, the common stockholders come in for their share. After the satisfaction of the claims of preferred owners, the common stockholders have a right to all that is left, their rights being simply residuary. They are subsequent to those of the other classes and to that extent inferior to them, though they may be more valuable.

Preferred Stock

Preferred stock has some kind of preference over the common. Such stocks differ among themselves, there being no standardized features applicable in every way to all kinds of preferred stocks. The basic purpose of the various preferences is to make the stock attractive from an investment standpoint. Common to all preferred stocks, however, is a preference as to dividends. Whenever profits have been made and have been set aside for dividend purposes, the preferred stockholders receive their dividends ahead of the common stockholders. If only sufficient profits are available to meet the requirements of the preferred stockholders and are appropriated for that purpose, the common owners receive nothing. Stock may be preferred as to assets as well as to profits. By this is meant that in case of dissolution the net assets remaining after payment of all outside claims are applied first to satisfy the interests of the owners of preferred stock and any remainder then goes to the common stockholders.

Cumulative and Non-Cumulative. Preferred stock carries with it a definitely stated minimum rate of dividend. The preferred claim to the profits may be cumulative or non-cumulative. In the one case, if profits are insufficient at any time to meet the preferred dividend requirements or are not appropriated for that purpose, the claims of the preferred owners *accumulate* from period to period until satisfied in full. This satisfaction must take place before the ordinary owners can have any share in the profits. The rate of accumulation

is the specified minimum and usually interest on unpaid dividends is allowed when the company finally settles these preferred claims. Of course, since dividends can be declared only out of profits, no claim for preferred dividends or any other kind can exist unless sufficient profits have been made. Non-cumulative stock is stock on which the dividend claim does not, if unsatisfied at any time, accumulate from period to period. Preferred stock is cumulative unless otherwise specified.

Dividends on cumulative stock do not have to be paid just because sufficient profits have been made. Declaration of dividends rests entirely with the board of directors who may see fit to appropriate profits to other purposes. A holder of non-cumulative stock may be very unjustly discriminated against in favor of the common stockholder by the withholding of all profits for a number of periods until a large amount has been accumulated. This is then disbursed as a dividend to the common owners after the deduction of as much as may be necessary to satisfy the preferred owner for the *current period*. On this account a non-cumulative stock is not attractive to investors.

Participating and Non-Participating. Preferred stock may be participating or non-participating. It is said to be participating when the terms under which it is issued provide that it shall share in any dividend in excess of its own specified minimum. Thus, if it is 6% preferred, after the preferred receives its 6% the common stock receives a like dividend, and then the preferred and common may share alike or in any agreed ratio in any further dividends declared in that year. Both participating and non-participating stock is either cumulative or non-cumulative. Preferred stock is non-participating when it is limited to the rate of dividend specified in the terms of its issue.

Redeemable and Convertible. Other features met in some preferred stocks are redeemability and convertibility. Pre-

ferred stock may be issued under a contract to redeem it, after a certain length of time, at a named figure—frequently par plus one year's dividend. Redemption may be either at the option of the holder or the company. Redemption may be serial, i.e., a certain amount called at stated intervals for redemption. Preferred stock is convertible when under the contract in the terms of its issue it may be converted into some other form of ownership or obligation. Thus, provision may be made that after a certain time has elapsed, preferred shares may be converted into common according to specified rates of conversion; or conversion into bonds of the company is sometimes provided for. Many nice adjustments may become necessary from an accounting viewpoint, when redemption or conversion take place at any ratio other than book values.

Guaranteed Stock

Stock which is issued under a guarantee to pay a specified dividend is said to be guaranteed stock. Inasmuch as dividends can be declared only out of profits, a company cannot guarantee its own stock—or rather a guarantee on the company's own issue must always be dependent or contingent upon the earning of profits sufficient for that purpose. Stock issued by one company and guaranteed by another may with strict propriety be called guaranteed stock. Thus, a large company may enter into a contract of lease with a smaller concern whereby the compensation shall be, let us say, an 8% dividend guaranteed to all holders of the stock of the smaller concern. Such a guarantee is not contingent but becomes a lien or claim on the guarantor company, regardless of the amount of its earnings.

Founders' Stock

In England there is issued what is known as "founders'" stock, a stock preferred as to its *share* of dividends. Thus, a

comparatively small portion of the common stock authorized might be set aside as founders' or promoters' shares with the stipulation that these founders' shares shall receive a dividend out of proportion to the ratio which they bear to the total common stock. The provision might be that these shares shall receive one-half or one-third—or any other specified share—more dividends than shall be given to the common owners. Instead of being preferred stock with specified dividend rate, it is preferred over the rest of the shares of the group from which it was originally set aside but its share of dividends is dependent upon the dividends given the rest of the shares. The par value of the founders' shares might represent only one-twentieth of the value of the rest of the group, while their share of the dividends would be, say, one-fourth as much as that of the other shares. This preference as to amount of dividends may give founders' shares a much higher market value than the other shares. Provision is sometimes made for their redemption, as usually there is such a marked difference between their amount ratio and their dividend ratio as compared with the other shares, that dissatisfaction among the owners results. Outstanding founders' shares may then interfere seriously with the marketability of the other shares.

Debenture Stock

The term debenture stock is applied to a class of liabilities rather than to proprietorship items. In England debentures of various kinds are frequently used. A recent book* thus describes them: "In Great Britain the term 'debenture stock' is used to designate an unsecured loan issued in *irregular* amounts. If the amounts were fixed and equal, the issue would be called 'debenture bonds' or simply 'debentures.' Debenture stock is a debt of the corporation and does not resemble stock as used in this country." Debenture stock

* "Business Finance" by Lough.

has not proven popular in this country, although used to some extent in Canada. The Public Service Commission of the State of New York defines debenture stocks as "those issued under contract to pay absolutely thereon at specified intervals a specified return." These stocks, while usually of limited life like bonds, are sometimes "perpetual and give the holders no right to demand the repayment of their capital, and the company no right to repay it."* When issued as perpetual, they somewhat resemble capital stock, as the term stock is used in this country. Because of the fixed and absolute charge for interest—or dividends as it is sometimes called—which these stocks carry, they are much more of the nature of bonds than of a stock indicating *proprietorship*. Debenture stocks are therefore to be classed as liabilities.

Stock of No Par Value

A characteristic of most stock is that it bears a specified par value which must be uniform for all the shares within a class. The par value of the different classes may differ, however. In most states no regulation is made of the amount of par value. A par value of $100 is customary for industrial and commercial concerns, and of $1 for mining companies. Between those limits, and even beyond them, one finds stocks of almost any par value.

In the State of New York the issuance of stock of no par value is allowed. Both preferred and common classes may be issued without par value, but if the preferred shares have preference as to assets, the certificates for preferred shares shall state "the amount which the holders of each of such preferred shares shall be entitled to receive on account of principal from the surplus assets of the corporation in preference to the holders of other shares." With this exception, none of the certificates may express any nominal or par value and this statement of the amount of preference is regarded as

* "Stocks and Shares" by Hartley Withers.

an expression of par value for this purpose. Each share is equal to every other share within its class.

Every certificate of such stock must bear plainly on its face the number of shares which it represents and the number of shares the corporation is authorized to issue. Regardless of the price paid for a share of such stock, all shares issued by the corporation shall be "deemed fully paid and non-assessable and the holder of such shares shall not be liable to the corporation or its creditors in respect thereof."

To the heedless a named value on a certificate of stock is sometimes misleading as to the real value of the stock. The no-par-value stock overcomes this in that a prospective purchaser is at once put on his guard to find out the worth of the stock. Another advantageous feature is that the questionable practices sometimes indulged in of booking stocks sold at a discount have no place here because the stocks, having no par value, cannot be sold at a discount and the record of their sale will carry therefore the price at which they were sold. Some points in connection with booking this stock will be discussed later.

Watered Stock

So-called watered stock is stock which has a higher nominal value than the true value of the properties for which it has been issued. Thus, if $1,000,000 worth—par value—of stock is issued for the purchase of property which has a marketable value of only $750,000, the stock is said to be watered to the extent of $250,000. The bookkeeping equation requires that an equality be shown between the properties purchased and the par value of the stock, and this is usually done by inflating the value of the properties when they are brought onto the books.

Treasury Stock

Treasury stock, when the term is used properly, is stock which has been once issued as fully paid and which through

purchase or gift comes back into possession of the issuing company. Stock which has never been issued should not be called treasury stock. The distinction between the two lies in the liability (or freedom from it) to further contribution, in case of need to meet the claims of creditors, on the part of stockholders who have bought their shares at less than par value.

In some states the sale of stock at less than par is forbidden. In those states where the practice is allowed, the purchaser of a previously unissued share at less than par is liable to the creditors (if the assets are insufficient to satisfy their claims) for a further contribution equal to the difference between par value and the price paid for the stock. If, though he pays less than par, the stock is issued to him by the corporation as fully paid and non-assessable, he is not liable to the corporation for any further payment to entitle him to all the rights and privileges of a shareholder; but he may be liable in case of need to outside creditors who have a right tc expect always that assets of equal value to the stock issued therefor have come into possession of the corporation. As mentioned above, this trouble is obviated in the case of no-par-value stock. However, after stock has once been paid for in full, all future purchasers may hold it without liability for further contribution regardless of the price they pay for it. Because of its freedom from this liability, treasury stock has a readier marketability than unissued stock.

In some enterprises, particularly those of a speculative character where it is extremely difficult if not impossible to place a true valuation on the property to be used or exploited, the practice is very prevalent of issuing the entire authorized capital stock in payment for the properties to be acquired. The stock so issued thus becomes fully paid and its owners liable to no further contribution. To provide working capital, some portion of the stock is usually donated to the company for resale. This is sometimes called donated stock

and is, of course, true treasury stock. In states where a corporation is permitted to buy its own stock, treasury stock may be acquired by purchase. Theoretically, stock which has been issued under a contract providing for redemption becomes treasury stock when redeemed and may be reissued until it has been canceled through charter provision to reduce the capital authorized. (See also pages 15, 16.)

Forfeited Stock

Stock is said to be forfeited through failure to make the agreed purchase payments on it. The laws of the different states vary with regard to the conditions under which stock may be declared forfeited. In some states the instalments paid on the stock—or all but a small amount to cover the cost of handling the transaction, or a specified portion of the amount paid in—must be returned to the purchaser. In others, the entire amount paid in may be declared forfeited. In the State of New York the provision in the law is as follows: "If default shall be made in the payment of any instalment . . . the board may declare the stock and all previous payments thereon forfeited for the use of the corporation, after the expiration of sixty days from the service on the defaulting stockholder, personally or by mail directed to him at his last-known post-office address, of a written notice requiring him to make payment within sixty days from the service of the notice at a place specified therein, and stating that, in case of failure to do so, his stock and all previous payments thereon will be forfeited for the use of the corporation. Such stock, if forfeited, may be reissued or subscriptions therefor may be received as in the case of stock not issued or subscribed for. If not sold for its par value or subscribed for within six months after such forfeiture, it shall be canceled and deducted from the amount of the capital stock." The provisions are very specific and must be carefully followed. The method of accounting is given on page 19.

Bonus Stocks or Bonds

Bonus stocks or bonds are stocks or bonds given as a bonus upon the purchase of other stocks or bonds. Thus, upon the purchase of a share of preferred stock, one share of common may be given as a bonus.

Accounting for Stocks

Accounting for the original issue of stock has been treated in Volume I. There several different methods of opening the records of the corporation were given and the manner of treating premiums and discount and instalment subscriptions was shown. Here some additional problems peculiar to corporation accounting will be discussed.

Discount on Stock

In the State of New York the stock of a corporation cannot be sold below par. Where sale below par is allowed, the proper booking of the discount requires consideration. The Interstate Commerce Commission requires that discounts or premiums be shown on the books under those titles, i.e., Discount on Capital Stock and Premium on Capital Stock. This method is to be commended as being true to fact and presenting a full and sufficient record of the facts. In the case of other concerns over whose accounting practices there is no regulation, that method is honored more in the breach than in the observance. A prevalent feeling is that the appearance on a balance sheet of such an item as discount on stock is a serious reflection on the standing of the corporation and is to be avoided in any way possible. Discount on stock is not an attractive item on a balance sheet, but there is little justification for such sentiment in those states where the sale of stock at a discount is a perfectly legitimate transaction. The balance sheet ought to represent facts as they are until they change; then the new conditions should be shown. So long as the discount on stock remains a fact it should be so

shown. When the discount has ceased to exist through its absorption against premium on stock or the general surplus, it should no longer be reported because it is then a matter of ancient history with which the present is not concerned.

A favorite method of charging the discount on stock to organization expense is not approved, not because it is a misnomer, for discount may well be looked upon as one of the expenses of organization, but because it is an item of sufficient importance and interest to require separate record. Charging the discount to some asset account, when payment of stock is made by property instead of by cash, is to be severely condemned. Inflation of asset values to cover up such an item cannot be justified.

Premium on Stock

The premium on stock sold above par is best recorded in a premium account which should remain on the books as a part of the permanent capital and not therefore be transferred to surplus and returned as a dividend to the shareholder. It may be legitimately used to cancel any discounts.

In the State of New York a corporation cannot issue its stock "except for money, labor done, or property actually received for the use and lawful purposes of such corporation." A broad interpretation has been given the word labor so that under the law it may comprise both manual and mental labor and services of almost any kind legitimately received at the time of organization of the corporation or at any subsequent time. Stock may thus be used to pay for organization expense, promoters' fees, etc.

Property Exchanged for Stock

Where stock is issued for property, no more is supposed to be issued than has a par value equal to a fair market value of the property received therefor. In valuing the property the judgment of the directors is conclusive, unless fraud can be

shown. Any stock issued for property becomes full-paid and the owner is neither subject to further call by the corporation nor liable to contribution for the benefit of creditors. In all statements and reports required by law to be published, stock issued for property purchased must be so reported.

Treasury Stock Donated

When treasury stock comes into the possession of the company by donation, the entries needed to show the transactions are somewhat as indicated below, some variations from the form shown being sometimes met with. Practice varies as to the value at which treasury stock shall be brought onto the books, some concerns booking it at an arbitrary value based on an estimate as to what it will probably bring when sold; others booking it always at par. Practice varies also as to the manner of showing treasury stock on the balance sheet, some listing it among the assets at the value at which it was brought on the books; others treating it as a deduction from authorized capital, a sort of valuation account for the capital stock. These points are discussed in Chapter XXI and will not be treated here except to state a conclusion on which the booking of the transactions depends. Manifestly, if treasury stock is to be treated as a deduction from capital stock, it will have to be brought onto the books at par. Such treatment usually results in an inflated showing of the surplus arising from the donation until that has been adjusted to the values realized from its sale—an adjustment which cannot be completed with accuracy until all treasury stock has been disposed of. If treasury stock is to be shown among the assets on the balance sheet, it is perhaps best booked at an estimated realizable price, a method which will show the donated surplus also at an estimated realizable figure. While authorities differ on these points, the weight of opinion seems to favor booking treasury stock at par and showing it as a valuation account on the balance sheet.

For the sake of illustration assume that the stockholders donated $100,000 par value of common stock to the corporation and that $50,000 of it is sold at 60 cents on the dollar. The entries to record the transactions would be:

		Dr.	Cr.
(1)	Treasury Stock, Common	$100,000.00	
	Donated Surplus		$100,000.00
	(With suitable explanation.)		
(2)	Cash	30,000.00	
	Discount on Treasury Stock, Common	20,000.00	
	Treasury Stock, Common		50,000.00

Other titles for Donated Surplus are "Donated Working Capital," "Donation Account," etc. The account "Discount on Treasury Stock, Common" will ultimately be closed against Donated Surplus, and there is no objection to making the charge for discount directly to Donated Surplus instead of as shown above, although the method shown perhaps makes more easily available the information as to the discounts allowed on sales of various portions of the treasury stock. If it is sold at one price, the charge for the discount should be direct to Donated Surplus. A balance sheet drawn up at an intermediate period, i.e., before Discount on Treasury Stock is closed, should show Donated Surplus at its adjusted figure, viz., book value less discount. After all treasury stock has been sold, the Donated Surplus account, as adjusted, will show the true surplus arising out of the donation transactions. The proper disposition of this—as to whether it should be maintained as a permanent increase in capital, be transferred to general surplus and so be made available for dividends, or be treated as a deduction from plant values on the theory that they have been overstated as originally booked—is discussed in detail in Chapter XXI.

Bonus Stock

Bonus stock is usually treasury stock for the very good reason that, if it carried a liability for contribution in amount

up to its par value, recipients of such stock might not be overly appreciative of the gift. Instead of being an incentive to purchase the securities which it accompanies as a bonus, it might act as a deterrent. Bonus stock is a gift on the part of the corporation and is therefore an expense. While custom favors recording the expense under the title "Bonus"—or even including it with organization expenses—and treating it as a deferred expense for a number of periods, a correct analysis of a bonus stock transaction may dictate other method of record. If the bonus stock is given with an issue of bonds which could by themselves be disposed of only at a discount, the difference between the market value of the bonds alone and their par value should be charged to Bond Discount, and the rest of the loss on the transaction may be charged either to Bonus account or Discount on Treasury Stock. This distinction is important, as will be seen in Chapter XX where the true nature of bond discount is discussed. When data are available for making the separation it should always be done. Thus, if a $1,000 par bond has a market price of $950 but when sold with one share ($100) of treasury stock as a bonus brings $1,000, the record should be:

(3)	Cash	$1,000.00	
	Bond Discount	50.00	
	Bonus (or Discount on Treasury Stock)	50.00	
	Bonds Payable		$1,000.00
	Treasury Stock		100.00

The customary method of showing, as in entry (4) below, is theoretically incorrect, though it may be necessary to use it when the data needed for the other entry, i.e., (3) above, are not available.

(4)	Cash	$1,000.00	
	Bonus	100.00	
	Bonds Payable		$1,000.00
	Treasury Stock		100.00

If a bonus of treasury stock is given with the sale of preferred stock, similar treatment would make possible a showing of the portion which is really discount on stock and the portion, if any, which is true bonus. Inasmuch as discount on stock and bonus are very similar in kind and in manner of treatment on the books, nothing of real value is perhaps gained in making the separation. The ultimate disposition of the Bonus account is, as indicated above, to treat it as a deferred expense, charging it against profits as rapidly as conditions warrant. It is an undesirable item on the balance sheet or ledger and should be expunged as soon as possible.

Treasury Stock Purchased

Treasury stock which is created by purchase by the issuing company requires consideration. If the price paid is less than par, carrying the treasury stock on the books at par requires an offsetting credit account similar to the Donated Surplus account used above when the stock is created by donation. This credit account simply represents a book surplus and should not usually be made the basis for a dividend. This account may be called "Treasury Stock Surplus," "Contingent Profit on Treasury Stock Bought," or other title indicating the true nature of the item. When the treasury stock is resold and the discount or premium on it is charged against this surplus or credited to it, as the case may be, the balance of the Treasury Stock Surplus account will then show the realized profit or loss on the completed treasury stock transactions and may be disposed of as indicated above for Donated Surplus.

On the other hand, if the price paid by the company in the purchase of its own stock is more than par, the premium paid must be charged against general surplus because there is usually no other place for the charge unless there is still open on the books a Premium on Stock account arising out of a previous sale of stock at a premium. Purchase of stock

at a premium may represent simply the payment to the owner of the stock of his share in the general surplus of the company, in which case the premium paid must be shown as a reduction of that surplus.

Redemption of Preferred Stock

Handling redemption of a preferred stock issue is exactly the same as handling treasury stock by purchase. If by contract agreement at the time the preferred stock was issued it can only be redeemed at a premium, the premium must be charged, as indicated above, to an open premium account or to general surplus. The effect is similar to the payment of a special or extra dividend at the time redemption is made.

Forfeited Stock

Payments made on stock which is declared forfeited constitute an item of surplus but of a permanent nature, i.e., not a surplus applicable to the declaration of dividends, though there may be no legal inhibition to that use. If the stock is resold any discount on the resale is properly charged against the surplus arising from the forfeiture. By way of illustration, assume that $1,000 worth of stock has been subscribed for and payments amounting to $400 have been made when the stock is forfeited for failure to pay further instalments. The stock is offered again for subscription and is sold for $900 and payment has been received in full. The entries necessary to show the above are:

(5)	Subscribers	$1,000.00	
	Capital Stock Subscriptions		$1,000.00
(6)	Cash	400.00	
	Subscribers		400.00
(7)	Subscribers	400.00	
	Surplus from Forfeited Stock. To transfer the forfeited payments to Surplus.		400.00

(8)	Capital Stock Subscriptions........	$1,000.00	
	Subscribers................		$1,000.00
	To reverse.		
(9)	Subscribers......................	900.00	
	Surplus from Forfeited Stock.......	100.00	
	Capital Stock Subscriptions.		1,000.00
(10)	Cash..........................	900.00	
	Subscribers................		900.00
(11)	Capital Stock Subscriptions........	1,000.00	
	Capital Stock..............		1,000.00

Stock of No Par Value

Booking capital stock of no par value presents no new principles. Inasmuch as the stock has no fixed par value, its sale is recorded for what it fetches. There can be neither discount nor premium. Payment of the subscription may be made, just as in any other case, by means of cash, property, or services, and the same care must be exercised in placing proper valuations on the property taken over. Here there is not the danger of inflating property values to show them equivalent to the par value of the stock issued therefor. Rather, subscription for the stock is made at the figure of the fair value of the property to be turned over in payment of the subscription. In the case of no-par-value stock even greater care must be exercised to see that the contributed capital shall never be encroached upon in the declaration of dividends, and careful supervision is somewhat more difficult because the *number* of shares issued bears no relation to the *amount* of the capital stock.

Distinctive Records

The accounting and other records peculiar to a corporation are explained in Volume I, Chapter XLVIII. These records are the subscription book and subscription ledger or instalment book, the stock certificate book and stock ledger, the stock transfer book, the minute book, sometimes a dividend book, in large companies a register of transfers

(which classifies the information as to transfers given in the stock transfer book, and so may serve as a convenient posting medium for the stock ledger), and a stock register (a record kept by the officially appointed registrar of the corporation, whose duty it is to see that there are no irregularities in the issue of stock and that there is no overissue). The stock register should show the amount of stock authorized and the amount issued at any given time, the balance being the stock not yet issued. A form for the stock transfer book and several forms for stock ledgers as prescribed by the Comptroller of the State of New York are shown below.* The two latter forms of the stock ledger are applicable only to the State of New York.

Ledger Folio 27 Transfer No. 556

ALLIANCE AUTOMOBILE COMPANY

For value Received, I hereby sell, assign and transfer unto John H. Lansing, of Newark, New Jersey, Seventy-six Shares of the Capital Stock of the above-mentioned Company, now standing in my name on the Company books and represented by surrendered Certificates Nos. 32, 37, and 44.

Witness my hand and seal this 28th day of September, 1918.

GEORGE B. GOLDMAN [L. S.]
By GEORGE GALE, *Attorney.*

New Certificate No. 224
Issued to John H. Lansing
Ledger Folio 84

Stock Transfer Book

Stock Ledger

The stock ledger is a subsidiary ledger controlled by the Capital Stock account or accounts on the general ledger. It may, of course, be made self-balancing just as any other subsidiary ledger. There has been some controversy as to whether the stock ledger is normally a credit or a debit balance ledger. In some concerns the stockholder is debited

* From "Corporate Organization and Management," by Thomas Conyngton.

John H. Kircher, 230 Broadway, New York

Date of Transfer	To Whom Shares are Transferred	Certificate Numbers: Surrendered	Certificate Numbers: Reissued	Number of Shares	Date of Transfer	From Whom Shares were Transferred	Amount Paid on Shares	Certificate Numbers	Number of Shares
1917					1917				
March 13	W. K. Howard	15	70	10	January 10	Original Issue	Full-Paid	15	90
July 15	Robert Moyer	70	145	40	March 25	George Holmes	"	85	75
July 31	Harold McKain	145	...	40	August 1	Harvey Cornell	"	150	35
December 3	James McNeil	85	175	20	August 15	Howard Gaines	"	160	50
December 16	James Archer	175, 165	231	105	September 2	John Woodwell	"	165	100
December 31	Balance	...	...	180	October 5	Henry Simpson	"	42	45
				395					395
					1918				
					January 3 ...	....	....	....	180

Stock Book or Stock Ledger

(NAME OF FIRM OR INDIVIDUAL USING THIS RECORD)

No. of Bill or Memo. of Sale	Date	Name of Stock	Number of Shares	Face Value	Name of Purchaser or Transferee	Number and Face Value of Stamps									
						2c	4c	10c	20c	50c	$1	$2	$10	$20	Value
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Stock Book to be Kept by Brokers (New York Form Prescribed by Comptroller)

HILL RIVER COPPER COMPANY

Date	Serial Number of Canceled Certificate	Number of Shares	By Whom Surrendered	To Whom Issued	Serial Number of New Certificate	Number of Shares
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....
....	....	....	....	....	....	....

Stock Book to be Kept by Corporations and Transfer Agents (New York Form Prescribed by Comptroller)

with the shares owned, and in others he is credited. Theoretically, in accordance with the principle of all other controlling accounts, the subsidiary ledger—in this case, the stock ledger—merely carries the detail of the controlling account. If, then, the controlling account is a credit balance account, the accounts on the subsidiary ledger must similarly have credit balances. Accordingly, the stockholder should be credited with his net holdings. Practically it makes little or no difference because the subsidiary ledger is no integral part of the debit and credit scheme of the general ledger. Of course, unless practical difficulties prevent, practice should always follow the theoretically correct method. No difficulty need be experienced, however, in accommodating oneself to either method of record on a subsidiary ledger. In the stock ledger the record of holdings is kept in terms of the number of shares owned rather than by the par value of the holdings.

Minute Book

Before leaving the subject of the records peculiar to a corporation, it is desired again to call attention to the keeping of a careful record in the minute book. This book should contain first a copy or duplicate of the corporation's charter. Following this should be the by-laws of the corporation. Sufficient blank space should be left at the end of each of these documents to make record of any amendments to charter or by-laws. There should follow a complete record of the deliberations and authorizations of the board of directors as affecting the management and control of the corporation's policy. The minute book is often the source of authority for many of the most important entries made on the books of account, and great care must be used to make the record full, complete, and accurate. Such matters as leases, purchase and sale of properties, bond issues, dividends, and other similar items should have very careful record.

Conclusion

Other features of the corporation from the accounting point of view are treated under their respective heads in later chapters. These include such items as bond issues, sinking and other funds, reserves and surplus, scrip and stock dividends and other dividend considerations.

It is proposed in the next two chapters to discuss the corporation from the manufacturing viewpoint, types of accounting records sometimes used therefor, and the elements of manufacturing costs. After that the problem of the balance sheet and the principles of valuation applicable to it will claim attention.

CHAPTER II

THE VOUCHER SYSTEM

Purchasing for the Manufacturing Business

Accounting for the business which manufactures its own product is a much larger problem than that for the concern which limits its activity to purchase and sale of a stock-in-trade. To the activities of a trading concern the manufacturing business adds those of the factory. Not only must more property, and a larger variety, be kept account of and handled so as to get the most efficient return therefrom, but also in the handling and operation of this property a somewhat distinct type of expenses is incurred. The problems of financial and factory management and control are different and more complicated than those of the trading business. The period between the expenditure of funds for the purchase of materials and the payment of expenses and the receipt of money from the sale of the finished product is much longer. More working capital must therefore be provided and its rate of turnover is less. A larger element of risk enters in. Raw materials must be worked and fashioned, machinery must be employed, a different class of labor must usually be handled, perhaps will have to be trained—these are problems calling for a special type of management for the manufacturing end of the business.

The accounting department must be organized to serve these additional demands and complexities of management and to give the needed information. The amount and cost of the materials consumed in making the product, the labor cost expended on it, and the various items of factory expense incurred, during one period as compared with the same items

for previous periods—all must be kept under constant review if successful operation is to be secured.

Expansion of the Purchase Journal

To make this information available as soon as the transactions giving rise to it are entered into, a different method of gathering the information becomes necessary. Because of the fact that the purchase journal is limited to the record of purchases of stock-in-trade, and that information in regard to expenses incurred is not usually brought on the books until payment of them is made, not only do the books fail to give the service which a management has a right to expect of them but they fail to reflect many liabilities at the time they are assumed. Thus a new type of record is needed.

This has led to an extension or expansion of the purchase journal. The way in which this journal can be used so as to analyze purchases of stock-in-trade on a departmental basis has been explained and illustrated in Volume I. This new use of the purchase journal is merely an extension of the principle of analysis there developed. Instead of limiting it to a record of transactions involving purchases of stock-in-trade, every purchase transaction, whether of assets, supplies, or of service of any kind, finds this its place of first record. By introducing sufficient columns, as detailed an analysis of all the purchasing activities of the business can be secured as may be desirable. Furthermore, entry here being made at the time of the purchase rather than at the time of payment for the purchase, the books make available a mass of valuable data needed for purposes of management much sooner than it becomes available under the former restricted use of the purchase journal.

Development of Voucher System

Had the evolution of this record stopped here, the resulting gain would have been secured at high cost. The entry

of all expense purchases in the purchase journal creates the necessity of opening accounts on the ledger with numerous creditors for small purchases, as well as the more important items, both to show the liability incurred and to provide a means of canceling it when payment is made. In large corporations, where oftentimes the policy of securing bids on all purchases is followed, resulting in a constant changing of firms from whom purchases are made and no regularly established trade with any of them, the burden of handling the creditors ledger becomes an increasingly heavy one with little or no gain in desirable information furnished by it. Accordingly, a further development took place which eliminated the necessity of opening regular accounts with every creditor, but instead made every transaction, whether one or many were entered into with the same individual, independent of all others. This makes possible the showing of the settlement of that transaction in the place where its original record was made, without opening up a ledger account for it. This use of the purchase journal with some slight additions has given rise to the so-called "voucher system" of handling purchases.

Definition and Description of Voucher

In a broad sense, a voucher is a statement which certifies, i.e., vouches for, the correctness of a transaction. As used in the restricted sense to which it is limited under the voucher system, it is a more or less formal document which shows a receipt for a particular bill of items. As distinguished from a receipt in general, this latter term is applied to all acknowledgments of money paid whether or not for a particular bill; whereas the essence of voucher accounting requires receipts for particular bills. At law a voucher has no more weight than an ordinary receipt, and a signed receipt is only prima facie evidence, capable of refutation, though the burden of proof of non-payment is placed on the complainant.

A formal voucher must therefore provide for a statement of the bill of which payment is being made and a place for acknowledgment of receipt of payment by the payee. Usually provision is made also for: (1) certification of the correctness of the bill by properly authorized house employee and its approval for payment; and (2) a proper distribution on the accounting records of the payments authorized, i.e., an official determination of the debit and credit entries to be made on the books.

A form of voucher is shown on pages 30, 31. On the face of the form provision is made for (1) detailed statement of bill; (2) house approval of same; and (3) receipt form to be signed by payee. On the reverse side of the voucher the distribution of the charges is provided for. This is the bookkeeper's authorization for making the indicated entries on his books. The form is so devised that, when doubled, it is of a convenient size for filing in a vertical file.

Operation of Voucher System

When the invoice covering any purchase is received, it is held till the commodities bought arrive. After inspection and acceptance of the goods, a voucher is made out in duplicate on which is written a copy of the invoice, with the cash discount, if any, shown deducted. Vouchers are given consecutive numbering just like checks. If immediate payment is to be made, the voucher will be "approved" and check drawn for the amount. The voucher with check attached is sent to the creditor with a request that he receipt the voucher and return it. A creditor is not usually particularly interested in helping another concern keep its books and the result is that a large number of vouchers find their way into the creditor's waste basket. It is here that the duplicate copy retained in the files serves to keep the file of vouchers complete, though it does not, of course, constitute a receipt for the payment.

Sometimes before sending the original voucher, the distribution of the charges is made on it, and it is used as the

Voucher No.________
Check No.________

THE GOOD STYLE MANUFACTURING CO.

To ____(Name of Creditor____ Dr.
____(Address)____

Terms

(Details of items covered by voucher)

APPROVED
____(Purchasing Dept.)____

Passed for Payment
____(General Manager)____

APPROVED
____(Auditor)____

____(Place and Date)____ 19____

RECEIVED ________ Dollars $____

In full settlement of above items

SIGNED ____(Creditor)____

PLEASE RECEIPT AND RETURN

Voucher (face)

basis of the bookkeeper's entries. An objection to this method is frequently made that the creditor is thus given some insight into the business and perhaps a more intimate

view of it than may be desirable. Where such is the case, only the office copy of the voucher shows the distribution

CHARGE TO		
Total forward		
Office Salaries		
Office Supplies		
Office Expenses		
Tel. & Tel.		
Rent		
Insurance		
Interest		
Machinery		
Furniture & Fixtures		
TOTAL		

No.________

(Name of Creditor)

(Address)

GOOD STYLE MANUFACTURING CO.
YONKERS. N.Y

VOUCHER

PAID BY CHECK No.______ $______

DATE __________

CHARGE TO		
In-Freight & Cartage		
Direct Labor		
Indirect Labor, Factory		
Light, Heat & Power		
Factory Supplies		
Raw Materials		
Salesmen Salaries		
Sales Travelling Expense		
Advertising		
Out-Freight		
Delivery Expense		
TOTAL		

Voucher (reverse)

and the book entries are made from it. Both may be filed together when the original is returned, or the one may be filed numerically according to voucher numbers, the other

alphabetically according to creditors' names and so serve as an index to the numerical file.

In some concerns the canceled checks when returned by the bank are filed with their respective vouchers; in others, they are filed separately in their own sequence. Inasmuch as each voucher also carries its check number, cross reference is easy.

Voucher Check

The difficulty referred to above in securing prompt return of receipted vouchers has led to the introduction of a combined voucher and check called a "voucher check." The indorsement on the check, which is necessary for its collection, serves at the same time as a receipt of the bill. All vouchers thus ultimately find their way back through the bank. The legality of the indorsement serving also as an acceptance of the check in payment of the stated invoice has been thoroughly established, particularly when on the blank space for indorsement attention is drawn to the fact that such indorsement will constitute a receipt for the bill; or where the face of the check states that it is full payment for the invoices covered by it.

Two forms of voucher check are in use, the folded check and the single. Below are given illustrations of both. If such checks are not unduly large, banks do not object to handling them.

Because of lack of room on the voucher check, provision is not always made for showing the distribution of the charges. The single form of check can be used when a detailed statement of invoices is not desirable or when invoices carry but few items. Such a voucher check, but differing somewhat from the one shown, is frequently used for the payment of dividends to stockholders and does away with the need of a formal receipt or of signature in the dividend book.

MAKE ALL INDORSEMENTS HERE

Voucher Check No.______

THE WARRANT WEAR HOSE CO.

NEW YORK CITY ______

Pay to the order of ______ $______

______ Dollars

in full settlement of the within accounts

To

MECHANICS AND METALS NATIONAL BANK

NEW YORK CITY

WARRANT WEAR HOSE Co.

BY ______ Treas.

Voucher Check—Double (face)

Voucher Check No.______

THE WARRANT WEAR HOSE CO.

To ___(Name of Creditor)___ DR.

___(Address)___

TERMS ______

Charge to					(Details of items covered by Voucher)		

Approved
______ Auditor.

Approved
___(Purchasing Dep't.)___

Passed for Payment
______ Gen'l Manager.

If incorrect, Return; Indorsement is sufficient Receipt.

Voucher Check—Double (reverse)

	No.______
HARRIMAN NATIONAL BANK	
	New York City________
Pay to the order of ______________________	$______
______________________________	Dollars.
	THE ROCKTON REALTY CO.
Approved	By______________Treas.
____________ (Auditor)	
If incorrect, return	

Voucher Check—Single

Form of Voucher Register

The "Voucher Register," or the "Accounts Payable Register," as it is sometimes called, is the book of original entry in which the voucher and its distribution are recorded. This register is a journal so far as its scheme of debit and credit is concerned, but its record is not usually supplemented by a formal subsidiary ledger—though it may be—posting of it being limited to the general ledger. The register must provide columns for date, voucher number, name of creditor, explanation, amount, distribution, and payment. There are many different forms and rulings, the information desired never being quite the same in any two businesses, but a typical form of voucher register is shown on page 35.

Distribution of Vouchers

As soon as a purchase invoice has been approved, a voucher—sometimes called a voucher jacket where the original invoice itself is attached to it—is made for it, the distribution of the charges is authorized, and entry is made in the voucher register. All vouchers are numbered consecutively and entered in numerical sequence, which is usually also chronological sequence. The amount of the

VOUCHER REGISTER											
Date 1918		Voucher No.	Creditor	Explanation Terms, etc	Vouchers Payable.	Purchase Discount	Raw Materials	In-Freight Cartage	Direct Labor	Indirect Labor
Apr.	1	986	Jackson & Son.	n/20	12,000 50		10,000 00	500 50		
	2	987	Smythe Cooperage Co.	2/10, 1/30, n/60	2,250 10	45 00				
	3	988	B & M. Furniture Co.	n/30	1,500 00			30 00		
		989	Gavell Iron Works	1/10, n/30	5,125 60	51 26	5,000 00	90 30		
	4	990	Hardware Specialties Co.	Net	3,750 00			100 00		
	5	991	Payroll		2,100 00				1,200 00	250 00
					L.52 125,769 40	L.79 11,890 30	L.58 32,760 50	L.59 7,260 20	L.63 45,870 00	L.64 5,690 00

Voucher Register (left-hand page)

VOUCHER REGISTER										
Factory Expense	Sales Salaries	Selling Expense	Office Salaries	Office Expense	Sundry Charges	L F	Account to be Charged	Payment		Unpaid Vouchers
								Date	Manner	
					1,500 00	25	Machinery & Tools	4/21	C 41	
2,000 00		250 10						4/12	C 33	
					1,500 00	31	Furniture & Fixtures			1,500 00
				35 30				4/13	NJ 6	
		3,500 00		150 00						3,750 00
	300 00		350 00					4/5	C 29	
L.65 4,129 80	L.70 15,760 20	L.72 3,345 60	L.73 4,500 00	L.80 2,915 75	3,537 35					26,760 25

Voucher Register (right-hand page)

voucher is entered in the total column, Vouchers Payable or Accounts Payable, whatever the account title is on the general ledger. The next column, Purchase Discount, may or may not be merely a memorandum column, depending on the use made of it, as will be explained later.

From the Vouchers Payable column, distribution on the same line is made into the columns for the various accounts to be charged. To secure a complete distribution without waste of space, a Sundry Charges column is provided for entry in detail of all items of infrequent occurrence, each account to be charged being named in the explanation space to the right of this column. Following this comes the record of date and manner of payment, with a final column in which to extend at the end of the month all unpaid vouchers and so indicate the detail of the total outstanding liability. The voucher record is capable of almost indefinite expansion through the use of short-margin insert sheets. Provision can in this way be made for a large number of columns for analysis.

Posting of Summary Totals

At the end of the month, or oftener if desired, the voucher register is summarized and posted. Inasmuch as usually no subsidiary ledger is kept when the voucher system is in use, there is no day-to-day record on the ledger of the purchasing activities of the business. Accordingly, a complete double entry must be made by way of periodic summary. It was at one time thought desirable to make this summary entry through the general journal or, at any rate, by setting up a formal journal entry on the face of the voucher register. As the degree of analysis increased, the futility of such a procedure became apparent and now posting to the ledger accounts is made directly from column totals as shown in the illustration. The Sundry Charges column is posted in detail to the named accounts as indicated.

Proof of distribution should always be secured by checking the total of the distributive column totals against the total of the Vouchers Payable column. In posting, the total of the Voucher Payable column is credited to its account, while the totals of the distributive columns are debited to their respective accounts.

Effect on Cash Book and Bank Account

The advantage of this periodic posting of expense column totals as compared with the detailed posting of such items from the cash book as required under the old method is apparent. The cash book is in this way relieved of all need of naming the account to be charged for each detailed entry, the proper charge having been made from the voucher register. If every transaction which will ultimately give rise to a disbursement of cash is vouchered and therefore recorded through the voucher register, there is really no need of a detailed entry of the checks on the cash book, for only their total is posted. It is perhaps more usual, however, to enter them in detail on the cash book. Entry here is, as always, chronologic, by date of payment.

Sometimes, to facilitate reconciliation with the bank account, the voucher checks are given a new series of numbers known as treasurer's numbers when issued in payment of invoices. Where this is done, the cash book shows entry of all checks in the numerical sequence of treasurer's numbers, just as entry in the voucher record is in the sequence of voucher numbers. Some checks are held before issue longer than others, due to different lengths of credit term, etc.; hence the need for this new series of numbers.

Payment of Vouchers

After a voucher has been made up and entered in the register, if payment is to be made immediately, it is passed for payment by the treasurer or other fiscal officer and the

check is drawn and issued. Any cash discount offered is shown deducted on the face of the invoice and the check carries the net amount. Where payment is not immediate, but observance of the terms of credit is necessary to secure the discount, the voucher should be filed away in a tickler file which will automatically bring it up for attention at the proper time. The original invoice is placed in a temporary file, arranged alphabetically, until paid, when it may be removed and filed permanently with the paid voucher. Upon payment of the voucher, the check is entered among the cash disbursements and a notation is made in the payment column of the voucher register as to the date and manner of payment.

Voucher Index of Creditors

It has been stated that one of the essential features of the voucher system, as it is usually operated, is the dispensing with the formal creditors ledger. This is accomplished by treating every transaction as an independent unit, numbering it, and providing a place in the voucher register to indicate its payment, so that there is no need of a separate ledger to keep track of the cancellation of the liability. The voucher system fails, however, to give a record of volume of business done with each creditor. Furthermore, it is often desirable to make reference to past transactions with creditors. This would be very difficult without a definite knowledge of the voucher numbers under which account has been kept of the transactions with a particular creditor.

Accordingly, for the proper operation of the system an alphabetic index of creditors must be made up on which should be shown the voucher numbers relating to transactions with each creditor. This is usually of the card index type, each creditor being provided with a card on which is noted a list of the vouchers recording the business done with him. This voucher index, while not a ledger in the accepted sense, yet when operated in connection with the Payment

column in the voucher register serves all the essential purposes of a creditors ledger, and the use of the "Unpaid Vouchers" column, as explained above, secures at the end of the month the detail of the summary account, Vouchers Payable, carried on the general ledger.

Control of Vouchers Payable

With the elimination of the detailed ledger record which served as a check on its controlling account on the general ledger, particular care must be exercised to see that the control account, Vouchers Payable, reflects the correct summary of all detailed liabilities. This is readily accomplished when every item that leads to a disbursement of cash is vouchered. Then the only postings to "Vouchers Payable" come, for their credits, from the total of Vouchers Payable column of the voucher register, and for their debits, from the total of Vouchers Payable column in the cash book.

Introduction of System

Some of the problems encountered in the operation of a voucher system will now be discussed, the first of which is the introduction of the system in a business where the old method of handling purchases is in use. The requirement here is the closing of the open accounts on the purchase ledger and their transfer to the voucher register. This may be accomplished in two ways—one of which requires a change in the controlling account, and the other of which does not. Under the first plan without formality, the accounts in the purchase ledger are balanced and closed by indicating in their explanation columns the transfer of the balance to the voucher register. As these accounts are entered on the voucher register, each of the *items* comprising the balance of an account should be given separate vouchers rather than entered under one voucher for the whole amount. This is particularly true where the different items are subject

to different discount and credit terms, rendering it undesirable to pay them all at the same time. After entry on the voucher register, the amounts may be distributed to the Sundry column and charged to the controlling account, Accounts or Vouchers Payable, as the case may be. The register should now be totaled, i.e., the Vouchers Payable and Sundry columns should be added and the register ruled off. These totals, being to the credit and debit of the same account, may or may not be posted, as the balance of the controlling account is not affected. Under the second plan the register is left open, i.e., not totaled. In this way the credit to the Vouchers Payable account is included with the total to be posted at the end of the current month when the register is first summarized. This, of course, necessitates posting the corresponding debit of the amounts distributed to the Sundry column as explained above.

The new voucher system is now ready for use and current entries will be made as previously explained.

Purchase Returns and Allowances

The handling of purchase returns and allowances is awkward under the voucher system. If the goods can be inspected and accepted or adjustment secured when necessary, before the voucher for the transaction is made up, then the amount to be paid is always the amount of the voucher and no change need be made in the amounts entered and distributed on the register. Where this is done a Purchase Returns and Allowances Account is not required. This procedure, however, is not always possible, for a first inspection does not always show the true condition of goods. Adjustment of the general ledger accounts could be made by entry of the return or allowance through the general journal. That would not, however, leave any indication in the voucher register record of the fact that cancellation of the liability there shown was made by payment of a lesser amount than

the one entered, and it is desirable that these two amounts be the same.

To accomplish this, entry of the allowance should be made, in small red ink figures on the upper part of the line just below the vouchers affected, entering in red the voucher number—the same as the voucher to which it applies—and the amount of the allowance, both in the Vouchers Payable column and the distributive columns affected by the allowance. These red ink items are, of course, deductions, the summary amounts of the various columns being net totals, i.e., the totals of regular items less the red figures; or two totals may be shown, one above the other, the regular and the red. Where both black and red totals are shown, both must be posted, the red as contras or offsets to their corresponding black postings. If desired, separate Purchase Returns and Allowances accounts may be opened.

An alternative method, requiring more work but handling the difficulty somewhat more neatly, cancels the original voucher by marking it paid and its check void, and issues in its stead a new one for the correct amount. The new voucher is handled regularly in the cash book, but in the register distribution is made to the Sundry column and charged to Vouchers Payable, as the purchase has already been charged from the original voucher. This charge to Vouchers Payable cancels the credit from the journal and allows the liability for the new amount to be shown in the total of the Vouchers Payable column of the register. The cancellation is best evidenced by entry in the general journal somewhat as follows:

Vouchers Payable	$2,150.40	
Vouchers Payable		$2,101.59
Purchase Returns and Allowances		48.81
To cancel Vo. #2158 and authorize its reissue in Vo. #3245, account of return of defective goods.		

Under this method postings to the Vouchers Payable account, instead of being limited in their origin to voucher register and cash book, will be made also from the general journal.

Partial Payments

A similarly awkward situation is met when it becomes necessary to make partial payments on a voucher. The whole system is built on the idea that each voucher is the unit according to which the record is kept. It, therefore, presupposes settlement in full of each voucher; otherwise, the efficient operation of the system is interfered with. Settlement in full is not always possible, however. Since provision is made in the register for but one line on which to show payment of the voucher, it is not possible to indicate partial payments in the allotted space, nor would such practice be desirable.

Hence, where partial payments are to be made, the original voucher must be canceled in full and two new vouchers issued in place of it—the one for the amount of the partial payment, which will thus cancel it, and the other for the unpaid balance, which will remain open until paid in full or till other partial payment is made. In the latter case the same procedure of cancellation and issuance in its stead of two vouchers must be repeated. This process of cancellation by the reissue of two new vouchers may be effected directly on the face of the voucher register by a full cross-reference between the old and the new, usually shown in the Manner of Payment column; or it may be done by formal entry on the general journal, which will then constitute the authority for the transaction. At the best, it is an awkward situation and where financial arrangements cannot be made so as to make partial payments unnecessary in large measure, the voucher system itself should be discarded as not adapted to the conditions of the business.

Handling of Notes Payable

Practice differs, under the voucher system, in the handling of notes payable. If a note is given or a draft accepted upon the purchase of goods, the liability for it will appear on the books only as a note liability, provided the purchase is recorded through some other medium than the voucher register. This medium might be the general journal or the notes payable journal. If, however, original entry of the purchase is made in the voucher register, liability for it is thereby created under the account title, Vouchers Payable. This must be shown canceled by the creation of a note liability in its place, by entry in general or notes payable journals. If the voucher check system is used, the check on the original voucher must be canceled by marking it "Void" or by running it through the bank with the day's deposits. In either case for the sake of a complete record of check numbers, it should be entered among the cash disbursements. From all this it is evident that less work is entailed and just as complete a record made by entering the purchase originally in general or notes payable journal as suggested above.

In order to maintain proper control over the cash, when the note becomes due a check should be drawn for it rather than allow its payment to rest merely on the bank's memo of charge against the account, where the note is made payable at the bank. If a voucher check system is in use, payment by check results in a momentary transfer of the liability from its status as a note liability to a vouchers payable—an open account—liability. Cancellation of the note is made by distribution of the voucher to the Sundry column of the register as a charge to Notes Payable; the voucher not being made or entered until the note falls due. Simultaneous entry of the check in the cash book cancels the voucher payable liability and completes the transaction.

If the note is given in cancellation of the open account which had been set up by previous entry in the voucher regis-

ter, then the same procedure must be gone through, as was explained above in connection with the practice of invariably entering every purchase on the voucher register. If the note transactions are many, it would prove much less laborious to accept the bank's memo of charge as adequate evidence of payment, this memo being given a treasurer's number in proper sequence, where treasurer's numbers are given to establish order of entry on the cash book. Cancellation of the notes payable liability is then posted from the cash book entry.

Cash Discount on Purchases

A final problem in connection with the voucher system concerns the treatment of cash discount on purchases. As discussed in Volume I, Chapter XXXVI, a cash discount is usually treated as a financial management item, though it is sometimes looked upon as a purchase department item. The handling of the voucher register so as to record properly the purchase discount will depend somewhat upon which theory of cash discount is adhered to. It is customary to carry a Purchase Discount column in the voucher register, although this is unnecessary if one is carried in the cash book. Where both cash book and voucher register are provided with discount columns, one is usually merely a memorandum carried for the sake of easy reference.

As regards the amount at which the liability under Vouchers Payable is carried on the books, we find two methods of making up the voucher and entering it on the register. This is in turn closely related to the financial policy as to the taking of discount. If it is an invariable rule of policy always to maintain a sufficient cash balance to take advantage of all discount offerings, there is nothing seriously wrong with the practice of making up the voucher and entering it for the net amount in the Vouchers Payable column; for if the policy is adhered to, no understatement of

liabilities will result. If the policy is not strictly adhered to, constant adjustment will be necessary to make the books reflect the true liability.

A voucher entered net should have the discount shown in the Discount column and the gross amount in the distributive columns. Mathematical proof of the voucher register is secured by checking the sum of Vouchers Payable and Discount columns against the sum of the distributive columns. Here it is best to treat the Purchase Discount column total as an item to be posted, and the Discount column in the cash book as a memo. As regards the income from purchase discount, the effect of entering the voucher net is to bring onto the books the purchase discount income as soon as the voucher is entered. Purchase discount is not usually looked upon as earned until payment of the bill is made and thus the right to the discount established. This method then necessitates at the close of the fiscal period an adjustment of the difference between the Discount columns in voucher register and cash book, in order to defer to the next period the discount not yet earned on all vouchers unpaid at the close of the period. This may be accomplished by the usual method of deferring income, or by the following entry, on the theory that it is better for Vouchers Payable to carry the gross amount of liability, at the *end* of the period, at all events.

Purchase Discount....................	$.......	
Vouchers Payable..............		$.........

The entry must, of course, be reversed immediately at the opening of the new period—a procedure which makes this method of adjustment of doubtful value.

If there is any failure to take the discount, after the voucher has been entered net, it becomes necessary to make up and enter a supplementary voucher for the discount, with cross-reference between the original and the supplementary

vouchers. The new voucher must be distributed to Sundry column as a charge to Purchase Discount. One of the few advantages of this method is that it makes possible reconciliation with the bank account by checking the canceled checks against the voucher register, which thus carries in its Vouchers Payable column the exact amount of the check and its entries are in the sequence of voucher numbers; whereas on the cash book voucher number sequence cannot be followed. Accordingly it is unnecessary to use treasurer's numbers on the checks in order to secure sequence of numbers in the cash book.

The customary method, and one which usually proves most satisfactory, is to make up and enter the voucher for the gross amount, using the Discount column in the voucher register merely as a memo or not at all, posting the discounts, as earned, from the cash book and using a separate series of treasurer's numbers when the checks are entered on the cash book.

Strict adherence to the theory of cash discount as a purchase department item would require making and entering the voucher net and distributing it net. The Discount column in the register might well be changed to a "Neglected Purchase Discounts" column into which would be distributed the supplementary voucher required when discounts are not taken. Under this theory, also, the voucher may be made up and entered gross, with the discount handled as a regular purchase discount item, and the net amount distributed to the other columns. The student should work out the manner of handling all the discount contingencies under this method.

Modifications of System

A regular purchase ledger is sometimes used with the voucher system. In such cases the voucher register becomes merely an analytic purchase journal and much of the advan-

tage of numbering every transaction is lost. Accounts may also be set up merely as memos to indicate volume of business. The voucher index, as explained above, accomplishes this in a limited way.

A hybrid voucher system is sometimes met, a sort of half-hearted affair, which gives good results but does away with the essential idea of the voucher as being a receipted bill. Under it, a house voucher—so called because it never leaves the house—is made up and used as the basis of entry. The bill is paid by independent check, which when canceled is filed with the voucher. In all respects, except that the voucher is not sent with the check to be receipted, the system is operated as a regular voucher system. An advantage claimed is that in this way all information as to distribution of the charge or use of the purchased materials or services is kept strictly within the business itself. This is done at the sacrifice of securing a receipted bill.

Summary of Operation and Advantages

By way of summary, it may be stated that a fully efficient operation of the voucher system is comprised under the following routine:

1. A verification of invoices.
2. Making up and entering the vouchers.
3. Filing vouchers previous to payment.
4. Paying vouchers.
5. Filing paid vouchers.
6. Indexing vouchers.

Some of the advantages claimed for the voucher system are:

1. It gives a detailed analysis of all purchases.
2. It saves labor by doing away with the purchase ledger.
3. It secures an up-to-date entry of all liabilities.

4. It localizes responsibility by showing authority for the auditing, payment, and entry of the items.
5. It secures a receipted bill for all disbursements of cash.

The chief disadvantages are:

1. Clumsy provision for returns and allowances, partial payments on bills, and notes payable.
2. Inadequate showing of volume of business with each creditor.
3. The giving out of information about the business which should be kept private.

It should always be borne in mind that any satisfactory method of account-keeping must be adapted to individual conditions. If efficient results are expected, a business man should beware of ready-to-wear accounting systems. There are conditions in which the voucher system gives excellent results. There are also conditions to which it is entirely unadaptable and inadequate.

CHAPTER III

FACTORY COSTS

Difference between Factory and Financial Accounting

As was stated in Chapter II, the accounting records of a concern making its own product are much more complex than those of a concern which limits its activities to the buying and selling of stock-in-trade. A much larger mass of detailed information is needed for the proper conduct of the business. In this chapter it is purposed to study in a broad way the fundamental principles involved in factory accounting and to examine some of its distinctive problems. Factory accounting does not differ in the real fundamentals of account-keeping from any other kind of accounting. Its principles of debit and credit are the same; it employs the same or similar kinds of accounting records; and the same general use is made of the records, viz., to serve as a guide in the proper management and control of the business. Its distinctive features are seen in the application of certain principles to secure special information. To understand the problems peculiar to factory accounting, it will be necessary to consider the nature of this information.

Definitions of Terms

Three elements enter into the manufacture of a product. These are material, labor, and expense. The problems of factory accounting are therefore those connected with the accounting for the costs of material, labor, and expense. Some terms used in this connection will need explanation. A standard terminology for cost-keeping is becoming fairly well established. Direct and indirect costs, prime cost,

factory burden, or overhead expenses, factory cost, full cost or cost to make and sell—these are some of the terms needing definition. Direct costs are those which can be allocated directly to a specific product. They are items which can be separated from all other cost items and applied solely to a particular product. Indirect costs are those which are shared in common by the various products and so must be distributed over them on some equitable basis. Direct costs are sometimes called prime costs. The cost elements which can almost invariably be applied directly to the product are material and labor. The sum of these two items constitute, therefore, the prime or first cost of the product. The other items of cost which are incurred *in the factory* or with which the factory is chargeable are variously called factory expense, overhead, or burden. These indirect costs cannot be charged directly to any specific product, and so they are shared by the entire factory output.

The sum of prime cost plus factory expense constitutes factory cost, i.e., the entire cost of manufacture up to the point at which the product is turned over to the selling department for sale. This is sometimes called total manufacturing cost.

Full cost is the price at which the manufactured article can be made and sold. In other words, to the factory cost of the article must be added its equitable share of all the other costs of conducting the business and also a margin of profit in order to arrive at a selling price. These definitions indicate some of the purposes of cost-keeping. Other purposes are given below.

Special Purposes of Cost Records

To maintain adequate control over production, careful records as to consumption of material and labor must be kept, so that the cause of any marked fluctuations of the costs of the current period from those of former periods can

be investigated. The determination of factory cost makes possible a comparison of the policy of manufacturing with that of buying the manufactured article on the open market. This sometimes shows that manufacture is being carried at a loss. Again, the fixing of a sale price on the article, which while covering all expenses, shall at the same time leave a margin of profit, is a prime essential in every business. To be of the greatest advantage and usefulness, cost records should not only determine factory cost but they should accumulate the data needed to *predetermine* the selling price with accuracy.

Nature of Raw Materials and Supplies

Materials or raw materials constitute the crude commodities or semi-manufactured articles which are to be worked upon and fashioned into a new product. It is seldom that any factory takes its material in the raw form in which it comes from nature. The product of the mines goes through many degrees and stages of refinement and at each stage of the process some of it becomes the "raw material" for another class of industry. The term is therefore relative; that which is the finished output of one factory becomes the raw material of another factory, to be worked upon and given new forms.

Auxiliary material and supplies are also made use of. Thus, certain parts such as screws, bolts, hinges, casters, fastenings, trimmings, and the like, are incorporated into the finished product without change of form or the application of any labor thereto. These also constitute a part of the raw material of the factory, their value as finished product being due to place utility rather than form utility.

Supplies are to be distinguished from raw materials. This also is a relative term. In general, material which does not directly form a part of the finished product is carried under the head of supplies. Materials used in getting ready

or seasoning the raw material, i.e., auxiliary material, such as paint, putty, etc., the quantity of which used on each piece of product cannot be measured with exactitude and must therefore be spread over the entire product—these and similar items constitute manufacturing supplies. They are usually treated as a part of factory expense rather than as belonging to prime cost.

There are also factory operating supplies. These comprise the materials used in the operation of the factory. Repairs material, brooms, oil, waste, packing, nails, fuel, etc., are examples of this kind of supplies. These, of course, are classed with factory expense, also.

The raw material which enters into *prime* cost is thus seen to be only that which can be charged directly to the particular product. All other material is overhead or expense.

Accounting for Material Cost

The problem of applying the cost of the material directly to the job is largely a problem of systematizing which requires the careful oversight and accounting for all materials bought and used in manufacture. Two general methods are employed. Under the one, the old method of keeping record of all purchases and taking the inventory periodically to determine how much material must have been used in the processes of manufacture, is deemed sufficient. In a small factory making just one product—or a few simple products—where the conditions are such that the manager has an intimate knowledge of all processes and can exercise personal control over them, fairly satisfactory results may accrue under this method, though the amount and therefore the cost of the material consumed in the product can never be known accurately until the inventory has been taken.

The other method requires almost as accurate accounting for material as for cash. A stores room or department must

be established and a stores ledger installed. As materials are purchased and come into stores, they are classified in whatever detail is desirable and charged to their respective class accounts kept in the stores ledger. As material is needed for manufacture it is drawn by properly authorized order on the stores-keeper. These orders are called "requisitions" and indicate the material needed and the job or product to which it is to be charged. The requisitions constitute the source of the credit entries to the various stores ledger accounts as well as the charges to the job or product. The balances on the stores ledger accounts thus show the amount of each class of material which should be on hand in the stores room.

This method of keeping track of materials is known as the perpetual inventory system. By its use, it is possible to know without the taking of a physical inventory how much material is being used in manufacture and the cost of it. In this way much better control is secured over materials than under the physical inventory method. In keeping track of material values, of course, inward freight, cartage, handling and stores room cost must be loaded onto the invoice cost of the materials to arrive at the full cost at which they are issued for manufacture.

Direct and Indirect Labor

The second element of prime cost is labor. In factory accounting, labor is divided into two classes, direct and indirect. These are sometimes called productive and non-productive, terms doubtless carried over from the old economics which looked upon some labor as productive and some non-productive—necessary, it is true, but rather of the nature of a necessary evil. Direct labor is a direct cost as explained above. That is, it is the labor of the workmen who apply themselves directly to the manufactured product as distinguished from the labor of those employees who plan.

lay out, and supervise the work of others. Direct labor can be definitely allocated to specific product or jobs, because it is applied directly to them. Indirect labor cannot usually be allocated to a definite product because it is applied to all the product, not being employed long enough or definitely enough on any specific product to justify keeping track of the time and charging it to specific product. Direct labor is a prime cost; indirect a factory expense. It is with direct labor that our present discussion is concerned.

The problem to be solved in accounting for labor is not the determination of the total cost of labor used, as is part of the problem of accounting for materials, but the distribution of that cost over the product. Determination of labor cost, except that accrued at any time, is a comparatively simple matter because the workmen have to be paid at regular intervals. Distribution of the labor cost over the product is more difficult. This necessitates keeping a record of the amount of time spent by each workman on specific product. In that way the labor costs can be figured quickly and distributed to the various products worked upon.

Time-Keeping Records

To keep track of the workman's time spent on each unit of product, record must be kept by means of time cards, timekeepers, time clocks, or other similar device which will show the time at which work was commenced and the time at which it was finished or when the working force is transferred to other work. The time card is arranged with space for number or name of the jobs or products worked on and the time spent on each. Use of the hour or day rate of wages paid the workman gives the labor charge to each particular product worked upon. This time card, or its equivalent, may be kept by department foreman, a special timekeeper, or by the workman himself. At the end of the week or other period, these time cards are turned into the office and they

serve as the basis for making up the past week's pay-roll or as a check against the pay-roll where some other source for the make-up of the pay-roll is used.

Pay-Roll

The pay-roll is merely a list of the names or numbers, or both, of the workmen, showing the time employed during the past period, and the rate of wages. A column to carry total amount due each workman is provided, as well as in some cases a place for the signature of the workman's name to acknowledge receipt of payment. Provision may be made for other information, also, such as distribution of the labor cost to the specific product, but this is not usual. When the time cards of the workmen are turned in, they are checked against foremen's reports or sick notices. The total time spent by each workman multiplied by the rate of wages gives the amount earned by each man. From this may be deducted any claims, such as insurance, rent, store charges, hospital and sick benefit, giving the net amount due the workman.

Safeguarding the Pay-Roll

Since the pay-roll is such a frequent source of error and fraud, all possible safeguards, chiefly of an internal sort, should be made use of. Where possible, workmen should be employed through an employment department to which requests for men needed should be sent. Some form of card record should be kept for office files of all men taken on—and perhaps of all men interviewed. Additions of names to the pay-roll should not be allowed without authorization, and the payment of the men should not be made by the same clerks who make up the pay-roll. The pay-roll should be checked as to mathematical correctness and, where possible, as to the content of the roster, both before and after making

payment. Too often has the total of the pay-roll been changed after its correctness has been proven but before it has been presented to the treasurer to provide the funds needed, the thief pocketing the difference between the amount needed for payment of labor and the raised amount of the pay-roll. Checking before and after payment will prevent this.

If payment is by check, the total amount of the pay-roll should be transferred by check to a special bank account on which the individual checks are drawn. If payment is in currency, this will be secured by check on the bank and the pay envelopes made up from it. Before drawing the currency, the individual amounts should be analyzed to determine the denominations of the coins and currency needed for filling each envelope.

Methods of Pay-Roll Payment. On each pay envelope should be marked the name and the amount. One pay-roll clerk should count out the amounts, the other clerk verifying them and filling the envelopes. A very ingenious pay-roll machine can be used for filling envelopes with the proper amount. The total amount of the pay-roll is placed in a coin rack operated by a keyboard. As the amounts of the individual envelopes are set up on the keyboard, the coin rack delivers the correct amount into a chute which carries it to the envelope. At the same time the amount delivered is listed, making it easy, in case of error, to locate the envelope containing the wrong amount. When the envelopes are delivered to the workmen, each man should identify himself in the presence of his foreman and give receipt for his pay. This is usually done by signing the pay-roll. The clerks making payment and the witnessing foremen should sign the pay-roll. Any unclaimed envelopes are returned to the treasurer to be held a certain length of time for claiming, after which time they may be diverted to other uses, though the liability for them must still be shown.

Distribution of Labor Charges

Distribution of the labor charges may be made in several ways. The precise method must depend largely on local conditions. In a small factory making only a few products, or where cost by departments is the desideratum, the voucher register may be provided with sufficient distributive columns to meet the requirements. At the time the pay-roll check is entered, it is distributed according to the labor cost in the various departments or on the various batches of product. This dispenses with a general pay-roll or labor account on the ledger. In a larger concern or one in which a more detailed distribution is desirable in order to secure definite and accurate costs on a diversified product, distribution on the face of the voucher register might not be feasible. Here, the pay-roll check will be run through the register as a charge to pay-roll. When the desired analysis is made in accordance with workmen's time cards or other sources of information, a general or cost journal entry is made, charging the proper accounts and crediting Pay-Roll. Or, and usually better, a "Pay-Roll Distribution Book" may be used. This book is a recapitulation of the time cards distribution sheets. Each time card must be analyzed according to jobs, product, or departments, and these distributions as summarized should as a matter of permanent record be entered in a recapitulation book. This, by being made a posting medium, becomes the pay-roll distribution book. Charges to the proper accounts are made from this book, offset by a credit of the total of the book to Pay-Roll account. Sometimes the pay-roll book itself carries distributive columns and can therefore be made to serve as a pay-roll distribution record.

Accrued Wages. Distribution of wages accrued at the end of the fiscal period is perhaps best made through the general journal, although it can without much difficulty be run through the distribution book by making two recapitulations of the last week or pay-roll period at the end of the fiscal

period, the portion of the week belonging to the last fiscal period being summarized separately from the portion belonging to the next period. Both summaries, however, should be run through on the regular pay-roll voucher for that week's wages.

Expense

The third item or element which goes into the cost of manufacture is factory expense. Under this head are included all the costs of manufacture excepting the prime cost elements of materials and direct labor. Indirect labor, factory supplies, light, heat, power, repairs and maintenance to factory buildings and equipment, depreciation on factory buildings and equipment, rent, insurance, etc., constitute the main items under this category. These are the indirect costs of manufacture because, while just as necessary as the prime cost elements, it is impossible to allocate them directly to the product. How much of the cost of light, how much of repairs cost, how much of the cost of factory supplies, etc., shall be charged to each unit of several different kinds of product constitute a problem on the solution of which depends the whole structure of accurate costing. Accurate distribution of materials and labor costs may be complex, but presents no real difficulties. It requires little more than careful and painstaking work. On the other hand, to secure an equitable basis for the distribution of factory expenses, and one which is at the same time a workable basis, is in some cases well nigh impossible.

One common basis of distribution for all the factory expenses will not usually give satisfactory results. Each item of overhead must be considered separately and will often require a distinct basis of distribution. Thus, indirect labor is sometimes distributed over product on the basis of the cost of the direct labor item in the product, on the theory that the cost of supervision is a cost of supervising the direct labor

and so closely related and dependent on that cost. Under some conditions, the number of direct labor hours is used instead of the *cost* of direct labor. Again, the time the product is worked on in a given *department* is taken as the most equitable basis for distributing indirect labor costs. Power, where metered to a machine, may be charged to the product on the meter basis. Where not metered, it may be charged on the basis of the time the machine is operated. So, every item of expense must be analyzed and effort made to secure an equitable basis of distribution.

Summary of Manufacturing Cost

Each unit of product, therefore, as it comes from the factory must carry its burden of cost composed of materials, labor, and factory expense costs. The sum total of all of these costs for all products—the entire output of the factory—will be the record of manufacture on the general books, the detailed record being carried in subsidiary books. At the close of the fiscal period when the temporary proprietorship activities of the business must be summarized, an entirely distinct group or section will be devoted to the activities of the factory because these costs must be shown separately from the others. For this purpose, the first section of the profit and loss statement and account is treated as the "Manufacturing" section, and under it are summarized in two groups the prime cost elements of materials and direct labor and the factory expenses. The total of this manufacturing section gives the cost at which the manufactured product is charged to the sales department of the business, and there this item takes the place of the cost of purchases in a business which buys its stock-in-trade. A detailed explanation of the manufacturing section as a part of the profit and loss summary is given in Chapter XXVII. The principles of cost accounting cannot here be developed further than this mere statement of the ends sought.

CHAPTER IV

THE BALANCE SHEET

Business Methods under the Microscope

The balance sheet is occupying an increasingly large place in all affairs of business and even of state, because the state is taking cognizance of business as never before. All phases of commercial activity are under the microscope. In these war times the government is tapping every available source of revenue. Kinds of property, property values, profits, rates of profit on capital invested—all are under investigation and the publicity resulting therefrom should make for a better conduct of future business. All this is forcing home to the manufacturer and trader some very obvious but long disregarded principles of business conduct necessary to secure health and long life. And these timely lessons will be of even greater use in the struggle for world markets that is imminent. As an interested party to any condition of business, labor also is claiming the right to be heard. The public in its direct dependence on certain classes of corporations for many of its necessities and most of its conveniences is also interested in the proper conduct of those businesses. As a factor in this increasing interest and scrutiny over business enterprises, exercised both from the inside and from external sources, banks are exerting a large and beneficent influence. The extension of credit, both bank and commercial, is no longer done by haphazard rule-of-the-thumb methods as in days gone by. Every applicant for credit must prove his right to it, must show cause why he deserves it, must present evidence of financial condition and standing on the basis of which the banker, the money lender, or

the seller will be justified in extending all or some portion of the credit asked.

The Reading of the Balance Sheet

Because, in these and many other ways, the balance sheet offers the readiest means of securing the necessary information, it becomes an increasingly prominent statement. Before a proper understanding of the balance sheet can be had, and therefore before it can serve the various purposes to which it can be adapted, certain principles governing its make-up, both as to form and content, should be established. A proper reading of the balance sheet cannot be made without a thorough grasp of these principles.

The knowledge necessary for this is broadly of two kinds, viz.: (1) a knowledge of accounts, their technique, construction, and meaning; and (2) a knowledge of the principles of valuation as applied to business enterprises. The latter is not a domain of knowledge pre-empted by the accountant nor limited exclusively to his use. It touches more or less intimately all related fields of business endeavor. That is why the modern accountant needs a broad training and something more than a cursory knowledge of business practices and conditions. He should have a close acquaintance with the fundamental currents of business life, its organization and finance, and its basis in law, if he hopes to measure up to present-day requirements.

Thus not only is the accountant interested in the form and content of the balance sheet, but a proper understanding of it is valuable and increasingly necessary to all business men. In this chapter and those which follow, it is purposed to study these two problems of form and content, first establishing the broad basic principles and then showing in detail how these apply to various conditions and particular data. This chapter will concern itself with the problem of the make-up of the balance sheet so far as it relates to form.

Definition

George Lisle* defines a balance sheet as "a concise statement compiled from the books of a concern which have been kept by double entry, showing on the one side all the liabilities and on the other side all the assets of the concern at a particular moment of time." Another writer says, "It is a cross-section of the business at a given instant"; and another, it is a "screen picture of the financial position of a going business at a certain moment." As indicated by the first definition, an attempt is sometimes made to limit the term balance sheet to a statement made up from a double-entry set of books. With equal propriety it may be applied to any statement, whether made up from single- or double-entry books, or from any formal records, or from no records at all, which shows the assets and liabilities of a concern and the difference between them, i.e., the balance, as the item of net worth.

To distinguish this latter statement from the balance sheet when used in the restricted sense above referred to, the title, "statement of assets and liabilities" is sometimes used but there seems little reason for the distinction. Here the terms will be used as synonyms. The balance sheet then is a statement of financial condition as distinguished from a statement showing the operations of the business, and it is true only for a given moment of time. Theoretically the wheels of business are stopped momentarily, all operations cease, and a summary of the assets and liabilities then existing with their balance shown as net worth constitutes at that moment the balance sheet—the financial statement.

Relation between Balance Sheet and Trial Balance

A balance sheet when made up from a double-entry set of books bears a close resemblance to the trial balance. The trial balance is simply a list of ledger balances. Due to prac-

* In "Accounting in Theory and Practice."

tical considerations in making the record from day to day, the ledger seldom reflects the true condition of the business, as there is no distinct separation of assets, liabilities, expenses, and income. Some accounts take on a mixed character, making necessary the periodic separation of their elements. This separation is effected by the adjusting entries explained in Volume I. A trial balance of the ledger after the adjusting entries are made contains the data for both the financial statement and the operating statement. After the operating data, i.e., the income and expenses, have been summarized through the Profit and Loss account and its balance has been transferred to some vested proprietorship account, the records left on the books relate only to assets, liabilities, and vested proprietorship. A trial balance now taken—a post-closing trial balance—contains only balance sheet items and to all intents and purposes is a balance sheet. While, as we shall see, the form in which the data of the balance sheet are presented is a matter of serious importance, any showing of assets, liabilities, and net worth constitutes a balance sheet.

Form of Balance Sheet

A balance sheet is not an account, nor is it the statement of an account. It is simply a statement of assets, liabilities, and proprietorship, arranged in whatever form best suits the purpose. Where set up in parallel columns, it is frequently called the account form; when shown vertically on the page, assets followed by liabilities and the difference indicated as net worth, it is called the report form. A balance sheet therefore being only a statement cannot properly be said to have either a debit or a credit side. It is not a complete system for the record of the transactions of a business set up in debit and credit form for the sake of proof, although on its statement of fundamental equality may rest the whole scheme of debit and credit. While usually made up from a system of double-entry books and so often spoken of as the

goal of record-keeping, it may be made up from sources entirely extraneous to the books.

Purpose and Uses

The purpose of the balance sheet is, as indicated, to show financial condition. It may be made also to show the amount of profit for the period by elaborating the information given in the net worth section. If there has been during the period neither a withdrawal of any funds nor an additional investment, a comparison of net worths as at the beginning and at the end of the period will bring out the increase or decrease in net worth and therefore establish the *amount* of profit or loss, though telling little or nothing as to its source. If there has been withdrawal or investment or both during the period, adjustment must be made on account of these before the amount of profit or loss for the period can be determined from the balance sheet. The balance sheet may thus be made to show profit, though that is an incidental rather than an essential purpose of the statement.

As a statement of financial condition the balance sheet should make possible the determination of several facts. It may be used as the basis for short-time credit. If so, its purpose then is to show facts as to solvency. It may be used as the basis for floating a bond issue. If so, other groups of data in addition to the solvency facts must be held under view. It may be used for determining the advisability of an investment in the business. If so, its data must be examined from still another angle. In all of these cases the balance sheet must set forth clearly the relationship of the interests of the various parties in the business. The assets of a corporation are listed usually so as to show the total properties to which all the parties may look for the satisfaction of their claims. Of the claimants there are first, then, those whose claims are redeemable within a short time. Failure to meet these claims may mean insolvency. There

are those also whose claims are not necessarily of immediate urgency, though they may be. Inability to meet these claims may mean bankruptcy and dissolution. Finally, the owners themselves have a proprietor's right only to any residue of assets left after the claims of all outsiders have been satisfied or are capable of being satisfied. Thus the balance sheet may serve many purposes.

Types of Balance Sheet

As the balance sheet must serve, or can be made to serve, several definite purposes, the best way to accomplish the end in view must receive careful consideration. It is here that the question of form enters. The various problems in connection therewith will next be discussed.

As to types of form there are in the main two, the English and the Continental or American, both of them well standardized, although many variations from the types are found. The chief difference between the two types lies in the showing of assets on the right side and liabilities and capital on the left under the English form, and a reversal of the sides under the Continental form. So much useless controversy has been carried on with such a waste of effort and words over the relative merits of the two types, that a writer now scarcely dares venture into the subject. As a matter of historical interest and information to the student, an effort will be made to summarize briefly the two positions.

Origin of English Form of Balance Sheet

In the development of record-keeping a stage was passed through in which every account on the ledger was closed. Not only were the temporary proprietorship accounts cleared through the Profit and Loss account, but all the remaining asset, liability, and vested proprietorship accounts were in like manner closed into a Balance account opened on the ledger for this purpose. The Balance account, after transfer

of the various accounts into it, became virtually a balance sheet and so was itself in balance. In this way the whole ledger was closed. The Balance account at this stage, so the controversialists maintain, represents, and was later adopted as, the Continental form of balance sheet. The ledger could not, of course, remain closed; it had to be reopened for the record-keeping of the next fiscal period. This was accomplished by credit entries to transfer the assets, and by debit entries to take out the liabilities and vested proprietorship. These reopening entries as appearing in the Balance account represent the English form of balance sheet.

This explanation of the origin of the two forms is ingenious and even plausible, although not synchronizing historically with the lapse of use of the Balance account. Others have attempted an explanation on purely logical grounds. These hold to the theory of the personality of accounts, which looks upon the business always as an entity distinct from its owners. Here, the English form of balance sheet is said to be the statement of account rendered by the business to its owners, whereas the Continental is the account given by the owners to the business. A. Lowes Dickinson,* in discussing the two forms, says: "The balance of argument would seem to favor the latter (English) on the theory that a balance sheet is intended to set forth the position of the owner of the property, who should therefore be credited with what he possesses and charged with what he owes."

Quite opposed to this view is the position taken by an English authority, George Lisle.† He says: "Why . . . . the assets which are on the debit side (of the ledger)‡ and the liabilities which are on the credit side, as according to the principles of accounting they ought to be, should change places (in the balance sheet),‡ it is impossible to

* In "Accounting Practice and Procedure."
† In "Accounting in Theory and Practice."
‡ Material in parentheses is author's.

justify. The custom seems to have arisen through the influence of the forms given in Acts of Parliament, chiefly The Companies Act, 1862, which must have been prepared by those unacquainted with the theory of accounts. The Profit and Loss account is taken from the ledger, and the sides are not transposed, and there is no logical reason why the sides in the balance sheet should be reversed. . . . . The form of balance sheet in which the assets appear upon the left side is both theoretically the correct form and in practice is the most convenient form to use. . . . . Prior to about the passing of The Companies Act, 1862, it was the form chiefly adopted in England, but is so no longer."

R. H. Montgomery* proposes a psychological explanation. He says: "The only sound reason the author can think of for the custom is that a conservative Englishman looks for his liabilities first and then looks to see if he has enough assets to discharge them. . . . . that the average American looks for his assets first and subsequently glances at his liabilities in order to assure himself that his excess of assets is as much as he believes it to be." Regardless of the origin of the two types and their respective merits, a balance sheet is everywhere used to show assets, liabilities, and net worth, and less and less regard is being paid to debit and credit or left and right sides, technical form giving place to an elasticity in the method of showing adapted to accomplish definite purposes.

Variation of English Form

A variation of the English form of balance sheet is seen in the make-up of the balance sheet for British public service companies. These companies are authorized by special act of Parliament to raise money for designated purposes. The act, therefore, requires as a part of the statement of financial condition the rendering of an accounting of the re-

* In "Auditing, Theory and Practice."

ceipts from sale of stock and bonds. Accompanying the financial statement, or rather as a part of it, is the statement, "Receipts and Expenditures on Capital Account," comprising the fixed asset and liability sections of the ordinary balance sheet. Illogical as it may appear in view of the usual English practice, this account is *credited* with the capital stock and bonds issued to establish the undertaking, and is *debited* with the fixed assets in which the capital funds have been invested, the intent of the law being that the capital funds raised should be applied to purchase of fixed equipment with which to earn revenue and that all other expenditures should be made from revenue. If the fixed assets exceed at any time the fixed liabilities and capital, it means that the excess has been supplied out of revenue. If the reverse is true, it means that capital receipts are being used as working capital. Any balance is carried down to the second part of the financial statement known as "General Balance Sheet," in which arrangement of the two sides is made according to English custom. The act authorizing this double-account form of balance sheet allows the valuation of the fixed assets always at cost, on the theory that their maintenance in a state of constant good repair and efficient working condition constitutes a charge against revenue and hence that depreciation need not be considered.

It has been suggested that the double-account form of balance sheet, or rather the law on which it rests, has been responsible for the decisions in the cases of Lee v. Neuchatel Asphalte Co. and Verner v. The General and Commercial Investment Trust, Ltd., reference to which is made later in Chapter XXII, "Profits," and Chapter XXIV, "Dividends." Here the decisions rested on the distinction between fixed and circulating assets and declared in favor of the maintenance of the capital funds invested in circulating assets but not necessarily of those invested in fixed assets. The following illustrates the double-account form:

The East and West Railway Company
Receipts and Expenditures on Capital Account

Railroads, Franchises and Other Properties	$410,000.00	Capital Stock:	
		Common	$200,000.00
		Preferred	75,000.00
		Debenture	50,000.00
Current Expenditures for Construction and Equipment	65,000.00	Funded Debt:	
		General Mortgage Bonds	150,000.00
Investments in Other Companies	50,000.00	Equipment Trust Bonds	100,000.00
Securities in Hands of Trustee	15,000.00		
Balance carried to General Balance Sheet	35,000.00		
	$575,000.00		$575,000.00

General Balance Sheet, December 31, 1918

Capital Account, credit balance	$35,000.00	Securities	$50,000.00
Special Betterment Fund	15,000.00	Prepaid Expenses	750.00
		Accrued Income	1,250.00
Accrued Expenses	1,500.00	Accounts Receivable	25,000.00
Dividends Payable	17,500.00	Materials and Supplies	10,000.00
Accounts Payable	25,000.00	Cash	7,000.00
	$94,000.00		$94,000.00

It will be noted that the sides of the capital account follow the debit and credit order of the ledger, whereas the general balance sheet reverses that order—an inconsistency for which even the English do not attempt explanation.

Balance Sheet Titles

The title of the balance sheet is fairly well standardized. Other titles are sometimes met, such as Financial Statement; Statement of Assets and Liabilities; Statement of Resources and Liabilities; Statement of Assets, Liabilities, and Capital; Statement of Financial Condition; etc. The title "Balance Sheet" seems best. Though not so fully descriptive as some of the other titles, it is generally understood and has not the objection of inadequate descriptiveness and unwieldiness often raised against the other titles. There is a similar variation in the titles used for the three main groups of items shown in the balance sheet, viz., assets, liabilities, and net worth. Obviously, portions of some of the general titles cited apply here with equal appropriateness. In addition, we find in use or suggested as appropriate, Property and Assets, Active and Passive, Debit and Credit, Positive and Negative, Proprietorship, Capital and Surplus, Capital, etc. None of these suggested titles have met with favor in practice, but they have served the worthy purpose, perhaps, of providing fuel for academic controversy. The titles, Assets or Resources, Liabilities, and Net Worth or Capital, seem thoroughly established and seem to cover the need.

Grouping and Classification

In the matter of classification and arrangement of the items under these main groups there is room for greater diversity both in practice and in theory. The need and purpose of classification and arrangement is obvious. While any statement, list, or schedule which shows assets, liabilities, and net worth may properly be called a balance sheet, only by a careful grouping and formulation of the items can their mutual interrelations and proper dependence be shown. Not only does the bringing of similar items into groups put them in proper perspective, but the arrangement of the groups to show their relations to one another makes for a

more intelligent interpretation of the balance sheet. The controlling principle underlying classification of the items into groups is, in the main, their relative degrees of liquidity. Sometimes other factors, such as emphasis, perspicacity, publicity, and so on, bring about groupings which differ somewhat from those based solely on degree of liquidity. Thus it may be desirable to call particular attention to, say, the permanent investments of a concern, to the condition of its sinking and other funds, to the amount of new construction and betterments for the current period, or to the values tied up in intangible assets. No hard and fast rule can therefore be followed; elasticity, flexibility to the desired purpose are working rules which must underlie any scheme of classification.

As to titles for the various groups, one finds many. The current assets are variously styled Quick, Floating, Liquid, Circulating. As a sub-group under Current or as a separate group we find Working and Trading assets. Other groups are Fixed or Capital, Investments, Sinking and Reserve Fund Assets, Deferred Charges to Operation, Deferred Assets, Deferred Debits, Suspense Debits, with similar titles for corresponding credit items, Contingent Liabilities—in short almost any title which seems best to fit the needs of the particular case. Some of these may need some explanation.

The distinction between current and working assets is a somewhat fine-drawn one, although well taken under certain circumstances. Where the two groups are used, current assets include the cash, receivables, and temporary investments, and the working assets group (or working and trading assets as it is sometimes captioned) includes the stock-in-trade (finished goods, goods in process, and raw materials), supplies of all sorts used in preparing the goods for sale or in making the sale, office supplies, working funds in the hands of branches and agents, and the like. The line of demarcation between the two groups is not always clearly drawn,

some placing the stock-in-trade among the current assets, others putting finished stocks in the current group and process materials in the working group. There is apt to be an overlapping also between the working and the deferred charges groups, supplies of various sorts often being treated as deferred charges to operation. Capital assets are fixed assets—the plant and those assets in which the capital must first be invested before revenue can accrue. When the group of capital liabilities is shown it usually includes both the long-term obligations incurred for raising capital as well as the capital stock. This unfortunately does not recognize a distinct section for the net worth items.

Arrangement of Groups

The arrangement of the groups among themselves, while showing variations, offers few important matters for consideration. Here, also, the principle of degree of liquidity controls. The arrangement is sometimes from fixed to liquid but rather more frequently from liquid to fixed. If the chief interest in the balance sheet is as to the amounts of capital invested in properties and the growth of such investments, it is claimed that the fixed asset group should be shown first. This might be the case with railways, steel corporations, and other large concerns wherein the ratio of the fixed assets to the current is large. In other concerns—and these constitute the larger number—chief interest centers in the current group. Here, the ability to pay dividends, to extend a sales market through carrying larger stocks of merchandise, to secure credit, are the items of chief moment. It is contended that in these cases, the order of the groups should be from current to fixed.

Whatever grouping is made for the assets, a similar arrangement of groups must be insisted upon for the liabilities; it is the placing in juxtaposition or the same relative positions of similar groups among the assets and liabilities which makes

for an easily intelligent reading of the statement. After all, the order of the groups, as from fixed to current or vice versa, is of small importance in comparison with the similar arrangement of both assets and liabilities and with the surety of the proper content of each group. The thing to be sought is the arrangement which will facilitate comparison of similar groups. A rather serious objection to the "fixed to current" arrangement is that it almost invariably necessitates the separation of the net worth elements. Thus, capital stock and long-term bonds are grouped together at the top for comparison with the fixed assets; the remainder of the net worth—surplus and reserved profits—must be shown at the end. The group of all net worth items together compels a general scheme of logical grouping from current to fixed.

A difference as to order is also found in the placing of deferred charges to operation. Regardless of the scheme of general grouping, one frequently finds the deferred charges placed as the last group. This also seems illogical. Only items of prepaid operating expenses should be included in that group. Such prepayments, while made in the one period, are properly chargeable to the next. Their effect, therefore, is to bring about a saving of the cash and other current assets for other uses during the next period. They are thus nearly related to the current group and could without any serious violation of principle be included thereunder. For the sake of emphasis and a more open showing, they are best shown in a group by themselves immediately following the current assets.

The intangible assets, good-will, franchises, patents, etc., are usually included among the fixed assets. Where so shown they should be given unmistakable titles and are best set up at the end of the group so as not to be covered and lost among the other items. A suggested scheme of grouping which will make an intelligent showing for most purposes follows:

Assets:	*Liabilities:*
1. Current Assets	1. Current Liabilities
2. Deferred Charges to Operation	2. Deferred Income
3. Investment of Reserves	3. Fixed Liabilities
4. Permanent Investments	*Net Worth:*
5. Fixed Assets	1. Capital Stock
	2. Reserves of Profits
	3. Surplus

The content of these groups and any further explanations necessary are treated in the chapters which follow, where the detailed application of principles is discussed.

As stated above, the important desideratum is a like arrangement of groups to facilitate comparison and care to secure the proper content of each group. Within the group itself, while the arrangement of the items is not so important, the principle of degree of liquidity should govern here too. Whatever the order of general arrangement of the groups, the same order may well be observed for the items within the group.

Report and Account Forms

Something should be said with regard to the merits of the two methods of arranging the three main classes of items, i.e., assets, liabilities, and net worth, on the balance sheet. As previously stated, the method known as the report form makes a vertical showing of the classes, while the account form shows the items in parallel columns. The one lists the assets and from their total shows the subtraction of the total liabilities which are in a subjoined list. This difference, representing net worth, is explained in detail as to the portion represented by capital stock, surplus, etc. The account form method lists the assets in one column and

the liabilities and net worth in a parallel column, bringing about a balancing of the two columns.

For the report form, it may be said that this method follows the reasoning of the average business man, particularly the man unacquainted with accounts, who subtracts his liabilities from his assets to find how much his present net worth is. The account form rests on the fundamental desire, deep-rooted in the system of double-entry bookkeeping, to show the two sides in balance. It may be looked upon as the technical form and therefore well adapted for publication purposes. It secures also a convenient juxtaposition of groups for purposes of comparison. The one may be regarded as non-technical, easily within the intelligent grasp of the layman; the other as technical and addressed to those trained to read that form of statement. As previously stated, any method of showing which fails to list separately the three distinct classes of assets, liabilities, and net worth is not usually to be justified; a mixture of net worth and liabilities is bad. Omitting detail, the two following type forms meet the conditions laid down above:

Report Form of Balance Sheet

Assets

Current Assets:		
Cash	$.......	
Receivables	....	
Stock-in-Trade	....	$.......
Deferred Charges to Operation:		
(See Schedules)		....
Investment of Reserves:		
Sinking and Other Funds	....	....
Permanent Investments:		
(Held for purposes of control)		....
Fixed Assets:		
Plant	$.......	
Equipment	....	
Good-Will, etc.	....	....
Total Assets		$.......

Report Form of Balance Sheet—*Continued*

Liabilities

Current Liabilities:			
Notes Payable................	$........		
Trade Creditors...............	....		
Accrued Expenses............	....	$.......	
Deferred Income:			
(See Schedules).........................		....	
Fixed Liabilities:			
Bonds........................	$........		
Long-Term Notes...........	....	....	
Total Liabilities..........................			.. ....
Net Worth			$. ....
Represented by:			
Capital Stock..		$.......	
Reserves of Profits.......................		....	
Surplus................................		....	
Total Net Worth.........................			$.......

Account Form of Balance Sheet

Assets			*Liabilities and Capital*		
Current Assets:			Current Liabilities:		
Cash............	$....		Notes Payable...	$....	
Receivables......	....		Trade Creditors...	....	
Stock-in-Trade...	....	$....	Accrued Expenses	....	$....
Deferred Charges to Operation:			Deferred Income:		
(See Schedules)........		....	(See Schedules)........		....
Investment of Reserves:			Fixed Liabilities:		
Sinking and Other Funds................		....	Bonds...........	$....	
Permanent Investments.		....	Long-Term Notes	....	....
Fixed Assets:			Total Liabilities.....		$....
Plant...........	$....		Net Worth represented by:		
Equipment......	....		Capital Stock....	$....	
Good-Will, etc. ..	....	....	Reserves of Profits.....		
			Surplus..........	....	....
Total Assets......		$....	Total Liabilities and Capital.......		$...

Valuation Accounts

Nothing has been said thus far concerning the showing of valuation accounts on the balance sheet. Two different practices are met with. Sometimes such accounts are listed with the liabilities, and there is a sense in which they may be regarded as liabilities. Rather, however, they should be looked upon as credits to asset accounts, held temporarily in suspense until they can be definitely allocated to their assets. They are offsets to show the *appraised* values of the various properties. As such, therefore, they are best shown as deductions from their corresponding assets with the appraised value full-extended. This applies to both the debit and the credit valuation accounts. A full discussion of these and other reserves is given in Chapter XXIII.

Statutory Requirements as to Frequency of Balance Sheets

Excepting in the case of corporations, there are few, if any, compulsory regulations governing the frequency of balance sheets. Some of our tax laws have brought about an increasing regularity with regard to the issuance of formal statements, both balance sheet and profit and loss. England, France, and Germany require a formal statement from corporations once a year. In this country, most states require some form of statement but oftentimes the requirement is so indefinite or so inadequately or half-heartedly enforced that the statement submitted is of little value. On the other hand, some classes of financial and public service corporations are required to present full and adequate reports periodically, at least once a year. In the case of national banks five reports are asked for; in the case of savings banks in some states two reports are required.

Condensation of Information in the Balance Sheet

The relation of the formal balance sheet to the post-closing trial balance needs further consideration. It has

been stated that a post-closing trial balance is essentially a balance sheet. As the purpose of the latter is to present a bird's-eye view of financial conditions, much of the detailed information shown in the post-closing trial balance must be condensed and consolidated with similar items, so that only totals are shown on the balance sheet. Just as the purpose of the ledger is by a process of analysis to secure detailed information for use in the current control of the business, so the balance sheet by losing sight of the detail and by setting forth the fundamental currents of business life and health, provides the data for the larger aspects of control. How far this process of condensation should be carried depends largely upon the use to which the balance sheet is to be put. A statement of financial condition to be issued to the public—stockholders and outsiders—can well omit data which would be required for internal use. Care must always be taken in condensed statements to avoid consolidation of detail in such a way as to render the statement misleading. The English Companies Act of 1862 provided that the "auditors' report should state whether in their opinion the balance sheet was a 'full and fair balance sheet' containing the particulars required by the company's Articles and 'properly drawn up so as to exhibit a true and correct view of the company's affairs.'" This represents the proper attitude for every accountant to assume in the making of statements. This is not meant to require the publication of information which is the private property of the business. The phrase, "full and fair," must be interpreted to mean sufficiently full, and only so much so that it will be fair to both parties. The company is entitled to withhold legitimate information the publication of which would be detrimental to it, and not to do so would be unfaithful to the proper guardianship and protection of its interests, and this in turn would bring about dissatisfaction with the management and oftentimes ill-feeling among the owners.

Use of Supporting Schedules

By means of supporting schedules, as illustrated and discussed briefly on pages 411 and 412 of Volume I, it is possible to carry condensation to almost any desired degree and still have available all necessary detail in the accompanying schedules. What items in the balance sheet should be supported by schedules and what should not, must be determined by the conditions peculiar to each case. Here again, the determination rests largely upon the use the statement is to serve. The informational content is therefore largely dependent upon the purpose for which the statement is drawn.

Balance sheets may serve any one of the following purposes:

1. Internal use by proprietor or manager.
2. Formal report to stockholders.
3. As a basis for application for credit.
4. For publication or report to regulating or supervising commissions.
5. For annual report to the state.
6. For advertising purposes to float new issues of bonds, preferred stock, etc.

When used for some of these purposes, oftentimes condensation is made a convenient method of bringing about a misrepresentation of true condition. Of course, no justification can be found for this.

Emphasis has already been placed on the necessity of choosing titles and captions which shall indicate clearly the nature and content of the transactions or data recorded thereunder. Statements of condition which are misleading, whether with intent or by chance, are to be condemned. As H. R. Hatfield* so well summarizes, the lack of clearness and consequent misunderstanding of the balance sheet are due in the main to three causes: (1) vagueness of terminology;

* In "Modern Accounting."

(2) purposeful misrepresentation; and (3) the very nature of accounting itself which so largely rests on estimates rather than on facts of definite determination. Some of these troubles have their origin in the form of the balance sheet, the manner of showing the items; while the others inhere in its content. It is to a study of the content of the balance sheet from the standpoint of the statement of values, with the emphasis on quantitative analysis, that we now turn.

CHAPTER V

GENERAL PRINCIPLES OF VALUATION

Content of the Balance Sheet

The problems of content and valuation strike at the very heart of the balance sheet. Form, framework, and method of presentation are important and their usefulness should not be discounted. Particularly is this seen to be true from the standpoint of availability of the information presented and facility in its interpretation; but the meat of the balance sheet is its content. In connection with this, two points demand consideration, viz.: (1) what items shall be admitted to a place in the balance sheet; and (2) on what basis shall they be admitted, this latter being the problem of valuation.

The first question can be answered without much trouble. All properties owned and all liabilities incurred must find a place in the balance sheet. The properties belonging to a business include both the tangibles and intangibles, rights and claims. Most of these have cost value, some may have been gifts. All the assets must, therefore, be listed. Similarly, the liabilities, all those things which represent debts owed by the business or established claims against it, must be given place in the balance sheet. Neither from the assets nor the liabilities must there be allowed omission. As stated in Chapter IV, as to content, the balance sheet must be "full and fair." Some classes of items, known as *contingent* assets and *contingent* liabilities, will be discussed and their place determined as they are met. The net worth items, in whatever detail desirable, must also be included.

Valuations for Rate Regulation

The second problem as to the basis on which items shall be valued for the balance sheet is our chief problem. The general question of valuation may be viewed from so many points that definition of its meaning here is necessary. Principles that are applicable to valuations for one purpose frequently cannot be made to serve another purpose. Because of the agitation in recent years relative thereto, when the problem of valuation is mentioned it is associated almost invariably with public service corporations. Most of the so-called valuation work has been done in connection with railroads, water companies, gas and light companies, etc. Here the issue of regulation is involved. Regulation of rates is price regulation and therefore regulation of profits. The purpose of valuation in connection with public utilities is the determination of the amount of investment on which rates must be so regulated as to secure a return based on fairness and equity to all parties.

Where such valuations have been made they have not proven entirely satisfactory and it is placing too great faith in human kind to expect the satisfaction of all parties with the results of any valuation. Where the properties involved have not been exceedingly complex and have been fairly well localized, results have seemed to justify the effort; but in the case of a large and complex plant covering widely separated areas and serving many and different communities, as is the situation with railroads, in the minds of many the results obtained in such instances are of doubtful value when compared with the effort and cost expended. Though much can be learned from such valuations, the principles underlying them differ at many points from those which must control in valuations as applied to commercial balance sheets. It is in connection with public service valuations that very valuable studies of the depreciation problem have been made.

Valuation for Sale and Purchase

Again, valuations and appraisals are often made in cases of prospective sale and purchase negotiations. While most of the determining principles are the same, not all apply to our problem of going concern valuation. Thus, the plant to be purchased may not be continued in its present use but must be adapted to other uses. Results secured towards controlling the market by means of this purchase may make the plant much more valuable than its physical worth. Elements of "going concern" and good-will call for valuation in the case of a purchase and sale transaction and are frequently not present in commercial balance sheet valuations. These last questions touch closely our problem and will receive careful consideration in their proper places.

Other Kinds of Valuations

There are several other kinds of valuations, all more or less closely related to commercial balance sheet valuations but differing from them in some respects because of their differing purposes and ends sought. The chief of these are: (1) valuations for purposes of fire loss adjustments; (2) valuations for purposes of liquidation to satisfy creditors and determine the owners' equities, as in bankruptcy and voluntary dissolutions; and (3) valuations for purposes of taxation. In all of these cases, many points of similarity to, and of some differences from, our present problem are found. In the first and third kinds enumerated, there is marked similarity, but the problem in the case of the income tax is not so broad. In the second kind, the problem is entirely different, as values have to be determined on the basis of forced sale.

Going Concern Valuation

The kind of valuation to be treated here may be called "going concern" valuation. By that will be meant the values at which the various items shall appear in the balance

sheet when viewed from the standpoint of a concern which expects to continue operations—a going concern as contrasted with one which is facing dissolution, reorganization, sale, or other eventuality. As stated above, the principles of going concern valuation are not distinct and separate, except in a few instances, from those governing the other types of valuation referred to. Oftentimes they are the same principles applied in the same way because the purpose is practically the same; again they are the same principles but applied differently in order to serve different purposes; and finally they are sometimes entirely distinct principles because the purpose to be served is entirely different.

It is not purposed in this treatment of valuation to set forth the points of variance and sameness with the other types; that is beyond the scope of the present volume. Endeavor will be made to set forth clearly underlying principles and their detailed application to the chief items met in the average balance sheet as viewed from the standpoint of a going concern. Elsewhere, notably in Chapter XXXV, some principles of another type of valuation will be discussed.

In any consideration of valuation, it is necessary to seek out the sources and kinds of value to determine in the one case its basis, and in the other to establish the type of value applicable to the given conditions. Value is not of spontaneous origin; it cannot be created out of nothing. Here it is not intended to search for causes of value or to inquire into the forces back of them. The author is content to leave that to the economist.

Kinds of Value

Various kinds of value are established facts of the world of business and by their sources, as the term is used here, is meant the information which vouches for or establishes the fact of value, rather than a search for the cause of it. Thus we find, among others, the following kinds of value:

1. Cost value
2. Market value
3. Sales price value
4. Reproduction cost value
5. Scrap, salvage, junk, or break-up value
6. Service value
7. Present or depreciated value
8. Tangible or physical value
9. Intangible value
10. Taxable value
11. Earning value or earnings-capitalized value
12. Liquidation or forced-sale value, etc.

It is to be understood that these various kinds are in no sense mutually exclusive and separate; they are met in the common vocabulary of men of affairs, are construed loosely in most cases, but have quite technical connotations in some places. Any of the terms employed here will, whenever necessary, be defined. Thus, in accounting, by cost value is usually meant full cost of a product or other asset in position ready for its intended use.

Source of Data as to Values

The sources of data as to values are several. Where double-entry books are kept, the original cost of the various assets can usually be secured from the books of account, barring errors of principle and omission in making the record. If not found there (as is often the case where single-entry books are kept), the original purchase invoice gives the chief item of cost, but does not usually show any inward-carrying or placement costs. Where there is a formally established market, this may give the information as to value when no book entries are available. Quoted prices in trade catalogues or lists as of the date of purchase, offer another means of procuring the information. Sometimes, even the memory must be relied upon.

Present values of properties purchased formerly may be determined on the basis of original cost adjusted to take cognizance of depreciation and, sometimes, of appreciation. This adjustment is made in the light of the best available experience. The amount of the adjustment is sometimes called an "experience figure." Stated otherwise it is an *estimate* made on the basis of past experience with some regard to future contingencies. This estimate may be made by some one within the organization—manager, owner, etc.—or by regular appraisal companies who specialize on this kind of work. Usually, however, the appraisal company bases its value on present cost less depreciation—a reproduction cost value.

Again, for some purposes the statement of earnings as giving the amount to be capitalized becomes the source of values. As has been seen, however, earnings themselves contain many elements which rest on estimated values. In almost all instances there is an element of speculation—an estimate—in the determination of values.

Cost Value the Usual Basis

The values which are, for the most part, shown in the commercial balance sheet are cost value or adjusted cost value. Occasionally, values which bear only an indirect relation to cost must be taken into account. The determination of cost value is sometimes a comparatively simple matter, as where the source is a purchase invoice, but more often it involves numerous other costs in addition to those shown by the purchase invoice, both definite and indefinite, i.e., estimates. It is in connection with the determination of cost that the proper segregation of the so-called capital and revenue charges is of vital importance. An effort will be made to formulate the distinction between them so as to give a working rule for their determination under most circumstances.

Definition of Capital and Revenue Expenditures

Capital expenditures may be defined as expenditures of funds or other assets on capital account. In accounting language, they may be said to be those expenditures which result in charges to some asset account. They may sometimes ultimately result in a charge to a liability account by the conversion of the asset to the decrease of the liability. Expenditures of capital may be made on account of expenses. This can occur only when revenues are insufficient to meet all expenses. Such expenditures of capital bring about an impairment of capital. As the term is generally used, however, capital expenditures have the meaning first given.

Revenue expenditures may be defined similarly as expenditures of funds or other assets on revenue account. That is, such expenditures must be booked as charges to expense accounts. They represent the expenses incurred in the earning of the revenue, and measure its cost. Just as the original capital fund, through its expenditure, must provide the plant and equipment with which to work, so the other expenditures necessary to prepare and market the product must provide the revenue out of which to meet these expenditures and secure a margin of profit; else there is encroachment upon the original capital funds.

A few other terms need definition by way of differentiation from these. The term "capital receipts" is used to differentiate receipts of funds from the sale of capital stock or the sale of capital or fixed assets, from funds or other assets received from revenue or profits sources. Thus, upon the sale of any asset which was originally purchased out of capital, the receipts therefor must first be applied to take the place of the capital expended for the asset, and any balance not used for the first purpose is then a receipt of revenue.

The term "capital expense" is sometimes used to indicate the group of expenses incurred in providing the capital needs of the business. They are the financial management ex-

penses as the term is used in Volume I. Opposed to capital expenses are the capital income or revenue items. These are the receipts or income from portions of the capital employed otherwise than in the purchase and sale of commodities; or the income which represents savings effected through the handling of the funds of the business as distinguished from income derived from the handling of stock-in-trade. They are *deductions* from the financial management expenses.

Capital and revenue expenditures are thus easily differentiated on paper. It is in the application of the definition to situations as they develop in practice that difficulty is encountered. Some of these situations will be examined with the purpose of determining the application to them of the distinction between revenue and capital expenditure.

Organization Expenses

Upon the organization of a new enterprise the distinction between capital and revenue expenditures can usually be made without much difficulty. All costs incurred to put the concern in a position to earn revenue are properly treated as capital expenditures. Sufficient capital must be provided to put the undertaking on an earning basis, as otherwise it fails. These costs will include many items which upon their *second* incurrence must be treated as expense charges because the revenue must provide for keeping the plant in a state of efficient repair. One group of capital expenditures, usually carried on the books under the title "Organization Expense," is often treated as a revenue expenditure as soon as sufficient revenues have accumulated to care for them conveniently. This is discussed in detail in Chapter XVIII on intangible assets. It is sufficient to say here that upon their incurrence organization expenses constitute capital expenditures, for no other funds are available for the purpose.

Definition of Replacements, Renewals, Maintenance, etc.

Only after the concern becomes a revenue-producer is the chief difficulty encountered in determining the proper record as between capital and revenue. In all cases of new construction and additions to the existing plant or equipment, no question arises as to the legitimacy of such capital charges. But when replacement, renewal, or betterment of existing properties take place, difficulty is met in determining the portion chargeable to the asset and the portion to be charged against revenue. The dividing line between renewals and repairs, maintenance, and up-keep is a closely drawn one, and usually an arbitrary working rule suitable to conditions must be adopted by each concern. R. P. Bolton* gives for some of these terms very suggestive definitions which the author quotes in full:

"Maintenance is a process of continuous attention to, and supply of, operating necessaries, including solicitous observation of the condition of the object cared for, corresponding to the protecting shelter, clothing and food supplies to living beings, in order to maintain their functions in operating condition. It includes supplies which form part of the food of the appliance. Part of the labor in attendance on machinery is involved in this element of its care.

"Up-keep is a course of partial recreation, involving the expenditure of time and money in anticipating causes of decay, of failure, or of possible injury to the object under care, corresponding to hygienic and recreative methods, often involving considerable expenditures without apparent direct results, which are or should be followed in safeguarding the general health and strength of human beings. Thus, welfare and recreation of employees is a justifiable expense of an industry. It is part of the cost of the human machine.

"Repair is the course of partial reconstruction, replacement, or renewal of worn or of injured portions, after the

* In "Power for Profit."

necessity therefor becomes apparent, and, unless brought about by accident, the need for the process is brought about by the failure or inability of maintenance, and also of up-keep, wholly to arrest the progress of decay by age or continued use. Provisions to preclude accident or to cover the cost of its results are part of the cost of repair. Health insurance of employees is a repair cost paid in advance."

While these definitions were not intended for accounting purposes and are not fully applicable thereto, they call attention to the basic ideas of the terms. The distinctions are in some cases too finely drawn. For accounting purposes the title "maintenance and repairs" usually gives sufficiently detailed information. Repairs is a part of the process of maintenance, as is also renewals. Maintenance, from an accounting standpoint, may be defined as "the act of keeping a property in condition to perform adequately and efficiently the service for which it is used." A. Lowes Dickinson* defines repairs and renewals as follows:

"Repairs. This should include all current expenditures recurring from day to day and from month to month on the general up-keep of the existing property without the renewal of any substantial part thereof, and generally all periodic repairs which are necessarily undertaken within, say, one year.

"(This caption will, of course, include certain renewals of small parts, etc., such as would be necessary to continue the useful life of any unit of building, plant, or machinery over the estimated period of its life.)

"Renewals. This should include all expenditures incurred in renewing, in whole or in part, any unit of building, plant or machinery, which tend to extend its useful life beyond the average term. These expenditures would in general be those which would only occur at long intervals of two or

* In "Accounting Practice and Procedure."

three years, and whose effect would last for a number of years afterwards."

As distinguished from renewals, a replacement may be defined as "the act of replacing a plant unit which is going out of service, with a *substitute* which may be either identical with the unit replaced or different from it." In accounting terminology the terms "renewals" and "replacements" are for the most part used synonymously and will be so used here.

Treatment of Renewal of Parts

In the maintenance of a property in efficient condition, repairs and renewals are constantly taking place. When for an old part or plant unit a new one is substituted, the question of betterment immediately arises. If an old machine with book value of $500 is replaced by one costing $750, the excess of $250 is classed as a betterment and is properly a charge to capital. A renewal of machine *parts* cannot be handled so easily. The parts of a machine are subject to diminution in value due to wear, tear, and obsolescence, along with the machine as a whole. The machine was purchased for a lump sum. What portion of the cost is applicable to each individual part is difficult to determine and must usually rest on estimate or guess. Similarly, the book value, i.e., the present depreciated value of a part, is not accurately known. Accordingly, the amount of betterment, if any, in the replacing of an old part by a new part is difficult to determine. It is here that working rules must be adopted for each concern.

Thus, it has been suggested that only when the renewal involves an expenditure of $5 or more should there be any attempt to determine the amount of betterment, every expenditure under $5 to be charged to expense. In an establishment of any size this is altogether too small an amount. The Chicago Traction System through its board of supervising engineers has established $200 as the minimum charge

to capital or renewals. All transactions involving even a true betterment, if the amount is less than $200, are to be recorded as maintenance charges. As a means of simplifying the accounting, a working rule, with a minimum capital charge adapted to the conditions of each concern, serves a practical and useful purpose.

Treatment of Cost-Cutting Changes

Other kinds of expenditures which cause trouble as to their proper place of record are those incurred for the purpose of facilitating the handling of the work. They may result in an increase of capacity to earn revenue through a speeding up of production, or the result may be simply a lessening of the expense of turning out the various units of product. A test frequently applied in such cases is that of increased earning capacity. It is argued that even though nothing tangible which did not exist before has been added to the plant, there has been a rearrangement of the factors of production with a resulting co-ordination of effort, and this has increased the capacity of the plant, thus making it more valuable. Inasmuch as this value is measured by earnings, the cost incurred in securing the increase is a very proper and legitimate charge to capital. Against this argument, it may be said that plant or structural changes are always made to improve operation. To make increased earning capacity the sole test is virtually to capitalize all expenditures of this kind—a policy which would soon lead to an unconscionable inflation of assets. Only by a policy of very liberal depreciation can such values if capitalized be kept within reasonable bounds. The impropriety of charging such expenditures to the current profit and loss account is generally acknowledged.

The best practice is to handle items of this kind as deferred charges under suitable descriptive caption, instead of as charges direct to the asset account where the nature of the items is soon lost from view and the need of a high deprecia-

tion rate to write them off is soon forgotten. Thus, a rearrangement of the machinery in a plant may bring about a more economical routing of the product, or the introduction of a new machine may entail an entirely changed disposition of existing machines—all for the purpose of, and actually accomplishing, a saving in costs. Rather than a charge of the costs incurred to the asset account Machinery, a setting of them up under the title "Rearrangement Costs of Machinery," or other similar title, shows their exact status and makes possible an intelligent writing down of them periodically in accordance with the estimated life or continuance of the savings effected. Practically this amounts to treating the costs as capital expenditures if the saving effected is judged applicable to more than the current period. The chief difference is that booking such items as deferred charges calls for specific attention to the need of a speedy writing off.

Asset Subject to Depreciation a Deferred Charge to Operations

In this connection it may be pointed out that the cost of all assets subject to depreciation may well be looked upon as deferred charges to operation, some portion of that cost being charged off at the close of each fiscal period. "So we see that capital expenditures, as distinguished from expenses, are at last an arbitrary conception. It begins with the idea that certain expenditures have an efficiency which reaches over many earning periods extending indefinitely into the future. But nothing physical would last so long, and its earning power might have even less permanence. To meet this condition we arbitrarily designate certain expenditures whose effect indefinitely outlasts the immediate earning period as 'capital,' and then in the same arbitrary way, through all subsequent vicissitudes, we hold them to their first value by maintenance, renewal, and depreciation charges which are borne by other expenses."*

* "Handbook of Railroad Expenses," by J. S. Eaton.

Authorization for Booking Capital Expenditures

As regards a suitable method for handling transactions which involve a separation into capital and revenue charges or a determination of the status of the transaction as between capital and revenue, proper authority should be secured for making the expenditure. Where possible, before its incurrence, authorization as to its proper booking should be given, even to the amounts where feasible, and this order becomes thus the voucher supporting the entries on the books.

Repairs on Second-Hand Plant

In one situation repair charges which are ordinarily an expense must be capitalized. Where a company takes over a plant which is badly run down and out of repair, the expenditures necessary to bring it to a state of efficient operation are capital expenditures. Such a plant resembles a partially completed plant, and the purchase price is supposed to take that fact into consideration. It is expected that additional capital will have to be sunk to rehabilitate the property and put it in a condition of repair necessary to earn revenue. Accordingly the expenditures necessary to do this are rightly treated as capital charges.

Construction Costs

A final consideration in the distinction between capital and revenue expenditures has to do with certain costs incurred during the period of original construction. We may cover the situation by a general statement to the effect that all costs necessary to produce a complete plant in condition ready to earn revenue are proper charges against capital. Thus, interest on moneys borrowed for construction purposes is a proper charge to capital, and in England it has been held that dividends in the form of interest are allowable to *shareholders* during the construction period. Also, such items as engineering and superintendence, law expenditures, injuries,

taxes, etc., both preliminary to the construction period and during it, are to be capitalized. On the other hand, profits on own construction work are never to be counted as costs. To do so reveals a misunderstanding of the difference between a profit and a saving. The matter is discussed more at length elsewhere.

As to whether any portion of the overhead expenses has a rightful place among the assets must be determined by the conditions in each case. In original construction work, before operations begin, all overhead charges constitute a part of the cost of the assets. For betterment work and additions carried on concurrently with operation, the case is not so clear. A safe principle is to treat as capital charges all increases in overhead above what would normally have been incurred for operation only. To free operation of any portion of the *regular* overhead just because betterments are in progress is not recognized as a sound or conservative policy.

Distinction between Capital and Revenue Expenditures often Based on Opinion

Thus it is seen that many phases of the problem of capital and revenue expenditures are extremely difficult of determination and in their final analysis rest on estimates and opinions rather than definitely established facts. Too often it is feared that decision in matters of this kind is "influenced by unsuspected individual caprice and by considerations of the financial convenience of the moment"; for the allocation of such items may sometimes represent the margin between a profit or a loss for the current period. As is said to be true of geometry, so here there is no royal highway to the solution of these problems.

Main Groups of Asset Items

If, therefore, it can be determined what items are to be included in the balance sheet and the proper basis for their

valuation can be established, the problem as to its content is well on the way to solution. Having discussed the elements and factors entering into a determination of cost value, we are in a position to state the principles of valuation applicable to the main groups of items as set up in the balance sheet. These may be listed, for the purpose of this generalization, under three heads, viz.: (1) current assets, (2) deferred charges to operation, and (3) fixed assets.

1. For the current assets, the principle of valuation may be stated as valuation on the basis of cost or market, whichever is the lower. Since speedy realization of the current assets by conversion into cash or its equivalent is the aim and expectation of every business—for on such conversion depends the ability to meet the current liabilities and so have working capital available for another cycle of purchase and sale (another turnover)—it would seem that the realization price as given by the market should govern. In the interest of conservatism and as producing certain other desirable results which will be brought out as each asset is examined in detail, cost price, if lower than market, is deemed the desirable basis for the valuation of this group. By way of explanation, it should be said that working capital as used here is the difference between current assets and current liabilities and so represents the portion free to be put to the further pursuit of business.

2. The principle of valuation involved in deferred charges to operation is simply the principle of equitable prorating between periods on the basis of a going concern. Here, not sale value, cash surrender value, or forced sale value govern, but their value to a concern which expects to continue operations.

3. For the fixed assets, the principle of valuation generally applicable may be stated as valuation on the basis of cost less depreciation. This group of assets represents the properties held for operating and without which operation

could not continue. They are the very essence of the enterprise. Disposal of them would mean abandonment of the undertaking. Hence they are not held for realization and conversion into cash, and in a going concern market value has no effect on them. To a going concern they are worth at any time what they cost less the portion used up in operations to date. Therefore valuation at cost less depreciation is the proper basis for showing the fixed assets in the balance sheet.

Valuation of Liability Items

To the liability items of the balance sheet, principles of valuation are not directly applicable as such, except so far as content or inclusion and measure of quantity or amount may be said to embody considerations of valuation.

Over- and Under-Valuation

The need for correct valuations requires no comment and can best be appreciated as compared with the effects of over- and under-valuations. Particularly bad and harmful is overvaluation of the assets and undervaluation of the liabilities. The use of the balance sheet as an index of financial condition makes apparent the harm of wrongful content or valuation of the items entering into it.

The Balance Sheet an Expression of Opinion

It is thus seen that the main problem in connection with the presentation of a true balance sheet is a problem in valuation and content rather than form. From what has been said it will be evident that valuation in the vast majority of cases is not an exact science—a process of definite determination. Rather, from the nature of the data to be handled and the principles of valuation given as applicable to the various groups of data, valuation must almost always be an estimate. The determination of the value of the elements of cost, the proper differentiation between capital and

revenue charges, and finally the calculation of the amount of depreciation necessary to the valuation of fixed assets—all are estimates. It is true, they are estimates based on experience, but, from their nature and the influence of local conditions in a given case, no universally applicable law of experience can be formulated. It is safe to say that two men would seldom, if ever, arrive at the same estimate of the values of given assets. Accordingly the conclusion is reached that a balance sheet is not a statement of fact but always an expression of opinion. If estimates are carefully made in the light of all available facts applicable thereto, the expression of opinion in the balance sheet will approximate as nearly as may be to a statement of fact.

Because depreciation plays so important a part in making these estimates, it seems necessary, before setting forth the detailed application of the principles of valuation to the various assets, to devote several chapters to a full discussion of the subject, chiefly as it is related to the problem of valuation but also in some of its correlated aspects.

CHAPTER VI

DEPRECIATION—ASPECTS AND DEFINITIONS OF TERMS

Aspects of Depreciation

Depreciation is intimately related to practically all problems of valuation. The engineering profession has made many valuable investigations and contributions to the literature of the subject and constant reference to them and use of some of their findings will here be made. Most of their studies relate to the vexed and still unsettled question of the valuation of public utility properties for the sake of its bearing on the problem of fair and equitable rates to the user or consumer. Accordingly much of this material is not applicable to the accounting phases of the subject. It is purposed here to treat the question from the standpoint of accounting rather than that of engineering.

Depreciation may be considered from many viewpoints. It is involved in the problem of rate-making referred to above; it must be considered in the valuation of fire insurance adjustments; it is bound up with most questions of taxation, with all transactions involving the purchase and sale of enterprises, with negotiations for the procuring of loans, for the determination of the limitation of capitalization; and in all studies of commercial balance sheets depreciation is found to affect the value of going concerns. As stated in Chapter V, these are not always separate and distinct problems of valuation; they may and often do overlap, one basis for valuation sometimes serving several of the purposes or classes named above. The treatment of the subject will be limited in this book to the latter phase of the subject, i.e., going

concern valuation, with the object of establishing certain norms and differentiating this phase of depreciation clearly from its other relations.

Definitions

A clear-cut definition of depreciation is desirable. The word in a general sense means a lessening, a decrease in value; decretion; deterioration. Various specific definitions are given, among them being: "the loss, arising from years of service, in the value of the investment in perishable property"; "expired capital outlay." These and many other similar definitions are met with.

The term "depreciation" is frequently used when the term "amortization" would be more appropriate. R. P. Bolton* says: "The subject of depreciation has been greatly misrepresented, because depreciation, which is a financial result, has been confused with obsolescence, which is an economic process, and with deterioration, which is a physical condition. Either of the latter brings about depreciation, and the physical process rarely happens to be more rapid than the economic.

"An illustration of the processes involved is that of the physical deterioration and obsolescence of a work horse, the capacity of which is definitely connected with its condition, and the value of the labor of which is discounted by its upkeep and the cost of its supplies and feed. Its age is productive of reduction of capacity, but this process may be, and often is, anticipated for commercial reasons by its supersession by some other form of apparatus. The horse may be in ever so good a condition at the time when the motor displaces it, but its financial depreciation then is complete, for it could be maintained only at a loss. All the elements which come into consideration in connection with machinery will be

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* In "Power for Profit."

better understood if considered in relation to such an animal, the life of which may readily extend beyond the point at which its commercial value has terminated."

Authoritative Opinions

The special committee appointed by the American Society of Civil Engineers for the purpose of formulating principles and methods for the valuation of railroad property and other public utilities, after a study of the question covering a five-year period, presented its report at the annual meeting of the society, January 17, 1917. The question of depreciation receives full and serious consideration in this report, which although treated mainly from the rate-making standpoint offers many suggestions for the valuation of commercial balance sheets. Their statement reads:

"Perhaps there is no single subject in connection with valuation that has caused more trouble than depreciation. This has been due to various causes, perhaps not the least of which has been confusion in the use of the term. Depreciation is sometimes used to mean decretion, which is loss of service life; sometimes to mean the money allowance made in the bookkeeping to offset accruing loss of service life; and sometimes the loss of value existing at any time due to the loss of service life or any other cause. The committee will use it only as meaning the loss of value or worth of property units which are parts of going concerns. Although this may be due to many causes, the general discussion will include consideration only of those effects which, like wear and tear, age, use, and obsolescence or inadequacy, bring a physical property unit gradually to the end of its service life."

Earl A. Saliers* says: "This loss of value, whether tangible or intangible in form, resulting from physical decay, or from obsolescence or inadequacy, which indicate functional decay, is known as depreciation. It necessitates repairs,

* In "Principles of Depreciation."

renewals, and replacements. Did it not occur, every outlay on plant would add to the investment. It does not result from one cause but from many causes, and this sometimes leads to the belief that it cannot be scientifically handled. But some adequate method of handling it is not merely desirable, but necessary, to a solution of the problems arising in the valuation of public utility properties, and in the management of industrial enterprises generally."

Henry Floy* says: "It (depreciation) is used broadly to mean a reduction in utility value, expressed as a percentage but more usually in dollars, due to any deterioration in physical plant by reason of: (a) normal wear and tear, (b) age or physical decay, (c) inadequacy, (d) obsolescence, (e) deferred maintenance. The term depreciation, always used in connection with a reduction in value, has, however, four distinct and separate shades of meaning, so that the term must be qualified when used in order to distinguish which one of the following meanings is intended:

"First. The annual amount, expressed as a percentage or in dollars, that should be laid aside to renew or replace the article in question at the time of its abandonment.

"Second. The annual amount, expressed as a percentage or in dollars, that should be laid aside to renew or replace the article in question at the time of its abandonment, plus the annual expense of maintenance and repair expended in removing such part of depreciation as is practicable and good economy.

"Third. The total amount—usually that estimated as necessary to be expended to put the physical property in perfect operating condition—determined by the inspection and observation of an experienced engineer, expressed in a percentage or in dollars, which must be deducted from the 'original cost' or the 'cost to reproduce new,' in order to determine the absolute, actual, present value.

* In "Value for Rate-Making."

"Fourth. The total amount—it may be the sum of several years of depreciation—computed from 'expectancy of life' tables, more or less authoritative, expressed in a percentage or in dollars, that must be deducted from the 'original cost' or the 'cost to reproduce new,' in order to obtain the theoretical, present, depreciated value. This value may be increased or reduced by the condition of the property, as determined from inspection."

The foregoing quotations from authoritative sources not only show the efforts made to define the term accurately, but also indicate the various elements included by different writers under the term, and suggest the need of further effort toward the standardization of its meaning.

Why the Depreciation Factor Arises

The distinction made in Chapter V between capital and revenue charges draws attention to the fact that the depreciation factor arises only because the fiscal or other period when information concerning values and costs, i.e., financial condition, is desired, does not coincide with the expiration of service life of the properties used in production. If the information just referred to were not desired at intermediate periods between the date of acquisition of the asset and the date of its discard or obsolescence, its cost should be treated solely as an expense of operation to be charged to the whole period in the same way that the fuel consumed, the raw materials used, etc., are regarded as revenue charges, or costs of manufacture. Practically, therefore, depreciation must be considered because a statement of financial condition is needed at regular stages of the life of the enterprise; and furthermore because the life of the various assets used in an undertaking is not uniform in length and their life histories in consequence overlap. Some assets wear out and have to be replaced, while others have still many years of useful service in them.

Actual or Absolute Depreciation

Before considering the various elements of depreciation, an explanation of some related terms will be given. A distinction is sometimes made between "absolute or actual" and "theoretical" depreciation. Absolute depreciation is the decrease in value of an asset from its state when new, to its present condition *as viewed either from the standpoint of the amount it could be sold for* or from the standpoint of its serviceability. In the first place, therefore, absolute depreciation is not applicable to going concern valuations. A machine after only a short term of service becomes, from the standpoint of its salability, a second-hand article and suffers a large decrease in *market* value. A water-pipe or an underground telephone cable immediately after its installation and even before it is brought into service depreciates materially from the standpoint of its salability as a disconnected unit. But from the standpoint of service and operations, i.e., adaptability to its intended use, such an asset may really be more valuable than before or immediately after installation. Again, an asset because of the excellent state of repair in which it is maintained may, so far as the serviceability required of it is concerned, be practically as good as new from the date of its installation until well along towards the end of its life-term. Its actual or absolute decrease in value is very slight during the early years of its life but increases rapidly just before it is discarded. This fact is illustrated by the example of the water-pipe. Slight repairs, the replacement of parts and small units, keep it for a long period 100% efficient, but the time comes when it is completely worn out and repairs are no longer economically advisable. These two examples illustrate absolute or actual depreciation.

Theoretical Depreciation

Theoretical depreciation is based upon, and has reference to, *all* the factors which must be considered in taking account

of depreciation. As so considered the subject is viewed from the standpoint of financing the item of depreciation (sometimes called "accounting depreciation") rather than from that of its serviceability. The engineer attempts to determine the actual, present serviceability of the asset in comparison with its serviceability when new, and so he leaves out of account its expectancy of life due to whatever causes.

Comparison of Actual and Theoretical Depreciation

The following chart adapted from Henry Floy's "Value for Rate-Making" admirably illustrates the difference between actual and theoretical depreciation.

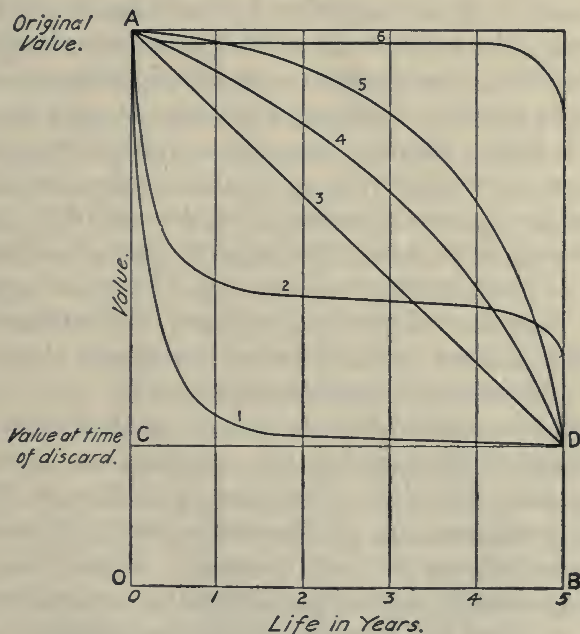


Chart Showing Actual and Theoretical Depreciation

Curves 1, 2, and 6 representing actual depreciation have been sufficiently exemplified in the foregoing explanation of actual depreciation. Curves 1 and 2 may well represent the

actual depreciation of two assets as viewed from the standpoint of salability; whereas curve 6 represents the actual depreciation of an asset viewed from the standpoint of serviceability, assuming that maintenance has kept the asset practically 100% efficient during most of its life-term. Curves 3, 4, and 5 are illustrations of *theoretical* depreciation, the different curves representing different bases for calculating the annual amount of the decrease in value, as will be explained in Chapter IX, "Depreciation—Methods of Calculating." To quote from Mr. Floy's work at length:

"The curves 3, 4, and 5 indicate several classes of 'theoretical' depreciation which have been quite widely used in some cases for estimating present values, but more often for determining the yearly theoretical deterioration for purposes of establishing depreciation funds, which, however, is quite a different subject. Making a theoretical estimate of the probable, future, average, annually accruing deterioration of certain property to provide an item in bookkeeping accounts of operating expense has nothing whatever to do, in making an appraisal, with fixing the definite amount of absolute, actual, or accrued depreciation which depends upon the present condition of physical property, determinable from inspection and not upon historical documents, depreciation funds, or disputed theoretical conclusions."

In an opinion filed March 8, 1916, by the Public Service Commission of Maryland in the matter of the Chesapeake and Potomac Telephone Company of Baltimore City, an interesting commentary on the relative merits of actual versus theoretical depreciation is made. While the opinion concerns primarily depreciation from the rate-making point of view, it shows well the interrelation between the two kinds and answers so conclusively the objection often raised to accounting depreciation that it is here quoted. The statement is:

"Any theory for ascertaining existing depreciation in

the plant of a public utility which confines such depreciation solely to the actual, visible, physical, demonstrable deterioration which can be seen by the human eye and measured by the human hand, must of necessity ignore that other species of deterioration which the experience of the past has demonstrated beyond peradventure exists in the property of every telephone company, although it cannot always be seen by the human eye or measured by the human hand. We refer to that tendency upon the part of all such property to become inadequate or obsolete with the lapse of time."

"Accounting" and "Fair" Depreciation

Another distinction is sometimes made between "accounting" depreciation, previously mentioned, and "fair" depreciation or depreciation of valuation. Accounting depreciation signifies the depreciation, determined by whatever method, which has been taken into the accounts, i.e., the depreciation as shown on the books. This is approximately the same as theoretical depreciation defined above. Its point of view is that of financing the loss of value caused by depreciation so as to cover the entire loss by the time the asset is retired from active service rather than that of establishing a true actual value of the asset at intermediate periods. On the other hand, fair depreciation or depreciation of valuation is the "sum that should be deducted from original cost to date (or from estimated cost of reproduction new)* as a step in finding that which the courts have called 'fair value.'" Here the point of view is essentially that of showing the true value of the asset at a given date. Determination of this is fundamentally an engineering problem in the solution of which cognizance must be taken of:

1. Accounting depreciation.
2. The managerial policy as to repairs, maintenance, and renewals.

* Material in parentheses is the author's.

3. The past performance and expected future performance of the asset.
4. All other factors locally present which may affect the determination of the *present*, existing values in the asset.

Under certain conditions fair depreciation corresponds roughly with actual or absolute depreciation as defined above.

Complete and Incomplete Depreciation

Depreciation is sometimes classed as "complete" and "incomplete." Complete depreciation refers to those assets or properties which have been discarded because no longer capable of economical service. When their cycle comes to an end, depreciation is complete. Incomplete depreciation refers to the amount of the decrement in value of assets which are still in service. The accounting for complete depreciation requires little consideration except so far as *rates* of depreciation are concerned. This class of depreciation represents the accomplished fact and therefore furnishes data and statistics by which the *expected* depreciation of similar new assets can be calculated. The accountant, therefore, is concerned with it purely as an experimental means of forecasting the future.

Individual and Composite Depreciation

Again, depreciation is classed as "individual or unit" and "composite." Unit depreciation is the amount of the decrease in value of the individual parts which compose the whole of a property; composite depreciation is the amount of the decrease in value of the plant or property as a whole. Its amount in dollars is the sum of all unit depreciations similarly expressed. Expressed as a percentage it represents the effect of all unit depreciations weighted by the ratio of the value of each to the whole. Thus a plant as a whole may be

depreciated 20%, but the numerous units of that plant may have a range of depreciation of from 0% to 100%. Some items may be ready to be discarded and others will probably have just been newly installed.

In connection with composite depreciation the term "normal" or "average" value is used. The normal value of a plant is the average value at which it must be maintained to give efficient service. Any drop below that point results in increased cost per unit of service rendered, and is consequently evidence of poor management. Normal value may sometimes be expressed in percentage as the difference between 100%, original cost, and composite depreciation. In the case cited above, where composite depreciation is 20% the normal value would be 80%, under a proper policy of management.

Physical and Functional Depreciation

Finally depreciation is classed as "physical" and "functional," definition of which are deferred for treatment in Chapter VII, "Depreciation—Its Causes."

Deferred Maintenance and Accrued Depreciation

Other terms needing definition are: "deferred maintenance" and "accrued depreciation." The former refers to repairs which at any given time are needed for the proper up-keep but which for one reason or another have not yet been made. So long as an asset is giving reasonably satisfactory service, repairs are usually deferred to a convenient time—such as when work is slack, or until similar repairs may have accrued elsewhere, or until weather conditions have changed, or in general until the repairs can be most economically done. Similarly, accrued depreciation refers to the depreciation which has taken place between the last time an item was brought on the books and the present time. The inevitable forces causing depreciation are constantly at

work bringing about the decretion of the asset day by day, but it is impracticable to reflect such condition daily. Only at the close of each fiscal period is it deemed necessary to adjust the books so that they reflect the depreciation which has taken place during the period just closed.

Attitude of the Law

Before studying the factors of depreciation it is interesting to note the attitude of the courts towards depreciation. Accountants and engineers recognized the necessity of taking account of depreciation considerably in advance of its recognition by the courts of this country. H. R. Hatfield* says: "France, Belgium, Switzerland, Germany, Austria all prescribe in their statutes that depreciation must be reckoned before showing profits." The French Joint-Stock Company Law specifically requires the reservation of some portion of the company's surplus for taking care of the depreciation of the assets. While the method may not be scientific, the principle involved is recognized as correct. But in an early English case, Lee v. Neuchatel Company, it was held, in the case of a company operating inherently wasting assets "that even depreciation by waste is not necessarily a revenue charge."

Early decisions in this country likewise fail to sustain the propriety of depreciation charges. The cases usually cited are The Union Pacific R. R. Co. v. United States, 99 U. S. 402, and United States v. Kansas Pacific Ry. Co., 99 U. S. 455 (1878), the first not passing specifically on the question of depreciation but showing a lack of appreciation of the distinction between capital and revenue charges, and the latter stating that "only such expenditures as are actually made can with any propriety be claimed as a deduction from earnings." The Supreme Court of California in San Diego Water Co. v. San Diego, 118 Cal. 556 (1897), and in Red-

* In "Modern Accounting."

lands, etc., Water Co. v. Redlands, 212 Cal. 312 (1898), refused all allowances for depreciation except necessary amounts for "maintenance and repairs during the year." However, in Pioneer Tele. and Tele. Co. v. Westenhaver, 118 Pac. 354, the language of the court is not uncertain: "A sufficient sum should be allowed from the earnings of a utility to make good the depreciation of the plant and replace the deteriorated portions thereof, when they become so impaired that they can no longer be made useful by repair."

Decision of Supreme Court

The United States Supreme Court recognizes the necessity for an allowance for depreciation in Mayor and Aldermen of the City of Knoxville, Appt., v. Knoxville Water Co., 212 U. S. 14 (1909), which forms the basis of judicial attitude towards the question at the present time. The decision of the court which has been supported and reaffirmed in all subsequent decisions, reads, in excerpts:

"A water plant with all its additions begins to depreciate in value from the moment of its use. Before coming to the question of profits at all the company is entitled to earn a sufficient sum annually to provide not only for current repairs, but for making good the depreciation and replacing the parts of the property when they come to the end of their life. The company is not bound to see its property gradually waste, without making provision out of earnings for its replacement. It is entitled to see that from *earnings* the value of the property invested is kept unimpaired, so that, at the end of any given term of years, the original investment remains as it was at the beginning. It is not only the right of the company to make such a provision, but it is its duty to its bond- and stock-holders, and in the case of a public service corporation, at least its plain duty to the public. If a different course were pursued, the only method of providing for replacement of property which has ceased to be useful would be the invest-

ment of new capital and the issue of new bonds and stock. This course would lead to a constantly increasing variance between present value and bond and stock capitalization—a tendency which would inevitably lead to disaster either to the stockholders or the public, or both."

Recognition of the Depreciation Factor

Following this decision the rules and regulations of the public service commissions of practically all the states now require that provision for depreciation be made. In the case of some of the smaller public service companies the failure to make this provision is overlooked but the practice is generally recognized as absolutely necessary. The Interstate Commerce Commission has led in this respect, although its early rulings relative thereto were strenuously objected to in some quarters. Private concerns in their contact with the government now almost invariably see the value, or at any rate the self-interest, of a deduction for depreciation. In the case of the Special Excise Tax, a Treasury decision on account of Internal Revenue provides that "deduction on account of depreciation of property must be based on lifetime of property, its cost, value, and use, and *must be evidenced by* a *ledger entry* and a like reduction in the plant and property account with respect to which depreciation is claimed."

Similarly, the present Federal Income Tax Law recognizes allowances for depreciation, but perhaps errs in placing too stringent safeguards on the amounts to be deducted therefor, whereas the Federal Trade Commission realizes the need of liberal provision. The law reads: "That in computing net income in the case of a citizen or resident of the United States, for the purpose of the tax there shall be allowed as deduction a reasonable allowance for the exhaustion, wear and tear of property arising out of its use or employment in the business or trade. No deduction shall be allowed for any amount paid out for new buildings, perma-

nent improvements, or betterments, made to increase the value of any property or estate, and no deduction shall be made for any amount of expense of restoring property or making good the exhaustion thereof for which an allowance is or has been made." The depreciation allowed as a deduction from income must have actually been charged off the books. Many interesting rulings—some almost absurd if carried to their logical conclusions—have been made by inspectors and the Treasury Department on points raised as to the application of the above law to particular cases. A perusal of these decisions will well repay the student who is interested in the subject.

Distinction between Repairs and Renewals

At this point attention is called again to the need of a careful distinction between repairs (up-keep and maintenance charges) and renewals (replacements and betterments). Only a clear definition of the terms and a strict adherence to an adopted policy can prevent endless confusion and absolutely misleading results. Such a policy is necessary because in the practical handling of such items on the books the theoretical aspect of the distinction between repairs and renewals must always be modified by reason. The student is referred to the preceding chapter where more detailed treatment of this point is given.

Depreciation and Plant Efficiency

The relation of depreciation to the efficiency of a plant or an asset will now be considered. The amount of depreciation is not based on the degree of efficiency of the service rendered by the asset. In other words, a depreciation reserve is not in any sense an inverse measure of the productive efficiency of the asset to which it relates, nor does the sum of all depreciation reserves either indicate or measure the degree of efficiency of the whole plant. A comparison of present with

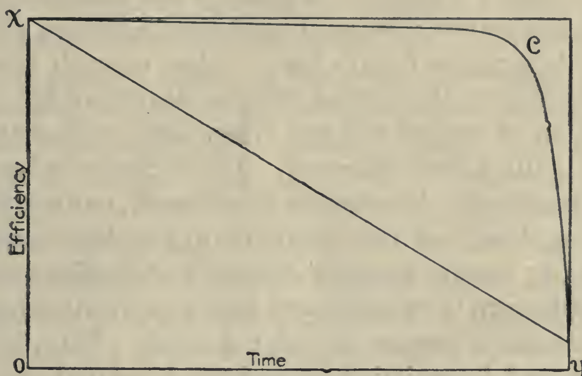
normal value (as defined above) affords some index of productive efficiency, but there is no direct ratio between the two. In any well-maintained plant, however, the normal value is the value below which the plant cannot be allowed to fall if the standard of efficiency is to be maintained; and good management requires nothing less than this. It has been variously estimated that normal value ranges from 75% to 90% of the original cost, and in some instances runs as low as 50%. The composite depreciation of from 10% to 50% represents the limit beyond which the decrease in value cannot pass if efficient service is to be given by the plant. Usually the sum of the depreciation reserves for all the assets of the plant remains fairly constant because the large reserves against assets that are almost ready to be scrapped are offset by the smaller reserves of the assets just replaced.

Unit Efficiency

The efficiency of the *unit*, however, has a somewhat different relation to depreciation. Units, i.e., individual assets comprising the plant, are constantly wearing out and being replaced. The plant, aside from exceptional cases, never reaches the point where it must be discarded in its entirety and replaced as a whole. The depreciation of each unit continues until the point of inefficiency is reached, when it is scrapped and replaced. The unit frequently is allowed to drop below its margin of efficient service before being scrapped, and it may be made to render service much longer than is customary, by means of heavy repairs and a relatively high up-keep expense. When to scrap a particular unit involves a nice calculation. The heavy cost of repairs necessary to secure good service from the old unit and the possible loss through failure to accumulate a sufficient reserve must be weighed against the cost of a new unit and its up-keep and running expense. Usually the efficiency of the individual unit is very like the parson's one-hoss shay which "ran a

hundred years to a day and then of a sudden it went to pieces all at once."

The following chart illustrates accurately the relation of efficiency to uniform depreciation, the XCY line being the efficiency curve and XY the depreciation curve. Also curve 6 of the chart on page 105 gives a good illustration of the



From "Principles of Depreciation," by Earl A. Saliers.

Chart Showing Progress of Uniform Depreciation and of Diminishing Efficiency

same point. Inasmuch as the depreciation reserve must provide for the loss of the entire asset by the time it goes out of service, it is readily seen that in judging an asset from its bookkeeping record of cost and reserve there is no measure of efficiency shown therein, since a normal efficiency must be maintained by repairs at all times. The record is, however, a good index of the *time* when the point of inefficiency will be reached.

Engineers hold the opinion that machinery as a rule cannot suffer more than 25% to 50% *actual* depreciation and give efficient service. A depreciation reserve of anything more than that does not mean that the point of inefficiency has been reached, for the reserve is usually estimated and applied on the basis of *theoretical* depreciation and so takes cognizance of all its factors. It has sometimes been stated that

inefficiency is a factor of depreciation distinct from wear and tear, obsolescence, and supersession. It seems a better statement of the relation to say that the point of inefficient service is the limit beyond which the three factors named cannot be allowed to operate or have effect. The need of judging the efficiency of some kinds of assets is not so apparent as of others. Thus in the case of poles, wires, conduits, and the like, efficient service is secured until they are worn out, with very little expense for up-keep. That is, such assets are normally efficient throughout their whole term of life, and the application of repairs will not appreciably extend their life nor will it affect their efficiency. In the case of other assets, such as machinery, telephone switchboards, motors, etc., the item of up-keep is a very vital one in the determination of the point or margin between efficient and inefficient service, and that in turn is an important factor in the determination of the length of service life of the asset. Thus, although efficiency and depreciation are intimately related, the degree of depreciation at a given time is not by any means an inverse measure of the efficiency of the service being rendered by an asset.

Depreciation and Fluctuations in Market Value

The relation of depreciation to fluctuation in value, due to whatever causes affect the market, also deserves consideration. Depreciation primarily refers to a decrease in value from a definite cost figure, such decrease being due to certain well-recognized causes, of which change in market value is not one. Thus, while it may be correct, through a loose use of the term, to use the expressions, "depreciation of securities," "depreciation of real estate," and similar phrases, and there may be no likelihood of any misunderstanding, that is not the sense in which the term depreciation is used here. Unfortunately, market fluctuations are sometimes allowed to influence depreciation charges.

Such influence may come about in three ways: (1) In valuation proceedings for the determination of rates for a public utility company, a basis frequently used is that of the cost of reproduction or renewal less depreciation. The theory is that under existing views of private property such a company has the right to the enjoyment of all increments in its own properties and therefore has a right to such rates as will earn a fair income on the present value of those properties. Depreciation based on the present reproduction cost is in this way influenced by fluctuations in market value, and the oftener a physical appraisal is made and its determined values brought upon the books, the greater will be the disturbance of the basis for the depreciation charge. (2) Occasionally the practice is met with of basing the present depreciation charge upon the estimated cost to replace the old asset. This is discussed later and is mentioned here merely to show a possible relationship between fluctuations and depreciation. (3) Finally, in the *periodic adjustment* of depreciation rates and charges, the estimated scrap value of the asset does affect the amount of the periodic charge. Changes in market value of scrap, which may be considered as due to causes which will continue in force rather than to the ups and downs of the market, may *legitimately* be reflected in the depreciation charge for the remaining life-term of the asset and must be so reflected in the interests of accuracy in any statement of true values.

Distinction between Depreciation and Depletion

Inasmuch as depreciation is not here used to apply to current assets (with one exception noted below), and fluctuations in the market value of any asset subject to depreciation need not be considered, it may be well to state the class of assets to which it does apply. In general the value of all fixed or capital assets is affected by depreciation. The term frequently used in this connection is "wasting" assets.

Under this nomenclature is included any asset which wastes away or is used up. For the sake of clarity the author desires to limit the term depreciation to those assets which are clearly affected by any of the causes of depreciation as discussed in the following chapter. For those assets which are used up without any possibility of their being replaced, and the life of which cannot be prolonged by repairs and renewals, the term depletion will be used. Accordingly the term "depreciation" will be applied to mine buildings and machinery; "depletion," to the mine. Both are wasting assets, but their waste is due to somewhat different, although vitally related, causes. No better definition of wasting assets has been formulated than that by P. D. Leake* who says that they "consist of all forms of exchangeable value which inevitably diminish while applied to the purpose of seeking profits, increase, or advantage otherwise than by purchase and sale."

Effect on Different Kinds of Business

Some types of undertakings are more subject to the effects of wasting assets than others. Concerns dealing in investments, insurance of all kinds, brokerage and commission, manufacturers' agents, banking and financial houses, professional firms, and the like, only a small portion of whose capital is tied up in fixed assets, are comparatively unaffected by the charge for depreciation. Practically all other concerns are subject to it in marked degree—manufacturers, mines, transportation companies, light, heat, and power concerns, the telephone, telegraph, and cable, construction companies, agricultural, etc. Those engaged in extracting raw materials from the ground are, with few exceptions, subject to a charge for depletion. Those with an investment in any kind of terminating rights, such as leases, patents, copyrights, non-renewable franchises for a fixed term of years,

* In "Depreciation and Wasting Assets."

and so on, are also subject to it. Opinions differ as to whether good-will and trade-marks may properly be considered as subject to depreciation. They will not be so considered here for reasons which will be stated when the principles of their valuation are discussed.

It will be noted that thus far all examples given have been those of fixed assets. The exception already referred to is made in the case of the current asset, merchandise or stock-in-trade. The term depreciation can perhaps correctly be used in connection with merchandise, which, however, is not to be classed as a wasting asset. Due to some of the causes discussed in the next chapter, the stock-in-trade of an undertaking does truly depreciate in value. The method of accounting for such depreciation differs entirely from that used for wasting assets. Hence, the treatment of depreciation of merchandise will be considered at the same time that its valuation is discussed (see Chapter XIII.)

Having cleared the ground with this definition of terms and the general statement of what the depreciation problem is, attention will now be directed to a consideration of the causes of depreciation, to be followed by the method of accounting for depreciation and a treatment of some points growing out of the general discussion.

CHAPTER VII

DEPRECIATION—ITS CAUSES

Analysis of Causes

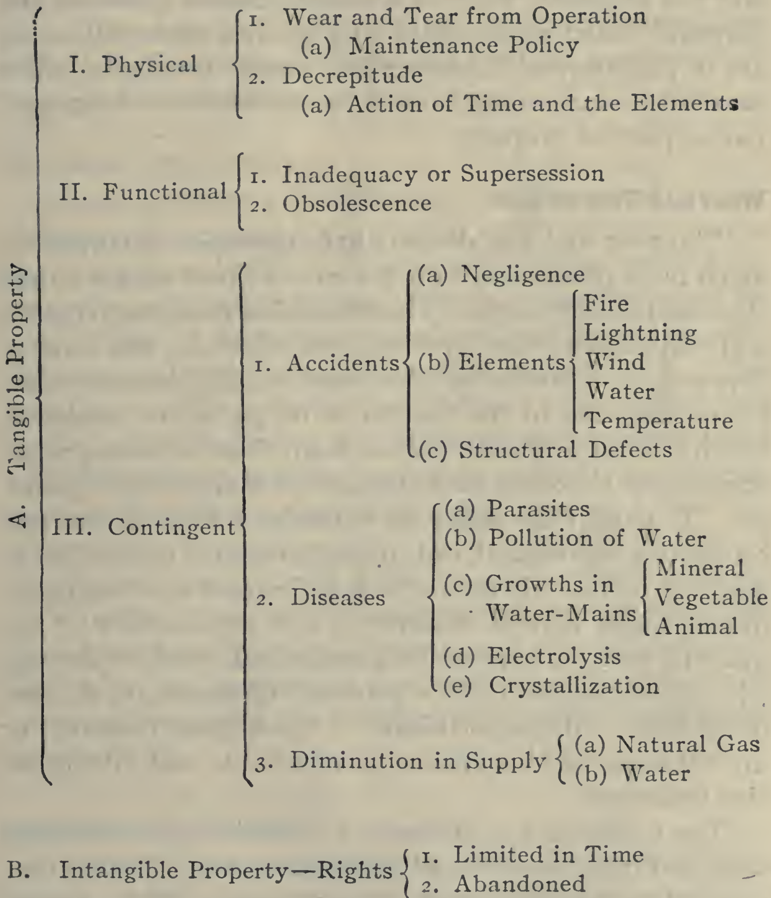
Most definitions of the term depreciation set the boundaries or limits of its meaning by naming the causes. These are normally: (1) wear and tear, or physical factors; (2) inadequacy and obsolescence, or functional factors; and (3) accidents or contingent causes. This statement of causes applies specifically only to physical or tangible properties. In the case of intangible property, consisting for the most part of rights of various sorts, the controlling cause is usually merely lapse of time. The chart on the following page analyzes the various causes and shows their detailed ramifications.

Age as a Cause of Depreciation

The physical depreciation of tangible properties arises from two main causes, viz., the wear and tear from operation and the use of the asset and the wear and tear of age, known as decrepitude. Immediately upon the installation of an asset the forces of time and the elements begin their ravages even before operations begin. As H. R. Hatfield* trenchantly puts it, "all machinery is on an irresistible march to the junk heap," and the statement is equally applicable to all other forms of wasting assets. The ties placed on the roadbed of a railway, conduits put in place for carrying water, gas, steam, electric current, or oil, rolling stock, poles for telephone and telegraph lines, buildings, even interior

* In "Modern Accounting."

Causes of Depreciation*



B. Intangible Property—Rights { 1. Limited in Time; 2. Abandoned }

installations of various types—all are subject to the normal ravages of time and the elements, and nothing which man has been able to devise can do more than retard the inevit-

* Chart adapted from "Regulation, Valuation and Depreciation," by S. S. Wyer.

able. Thus, all assets decrease in value through the inevitable lapse of time. Attention should be here directed to the fact that decrepitude depends on the *normal* action of time and the elements, whereas accidents due to action of the elements (listed in the chart on page 121, under III, 1, b) are of an *abnormal* character and cannot usually be taken into full account at the time of the installation of any particular piece of property.

Wear and Tear of Use

The wear and tear due to use or operation usually has a much more potent effect on the service life of an asset than that due to decrepitude. The established policy as to repairs and maintenance has an important effect on this kind of depreciation. Sooner or later every machine becomes unfit for service, due to the friction of its parts, the strains to which it is subject under normal load, those of much greater effect under abnormal load, the method of applying its power, etc. It must then either be withdrawn from service and completely depreciated, or it must be repaired in an effort to lengthen its life. It should be kept in mind that the determining factor here is efficiency. The serviceability of the machine must be kept up to a recognized standard through adequate expenditures for repairs and up-keep until the cost of up-keep is disproportionate to the service rendered, or until the machine becomes so decrepid as to make its operation hazardous.

The application of theoretical depreciation to operating wear and tear must proceed with great care. This is so because of the varying factor of maintenance. If the cost of maintenance could be standardized, experience under such standard would give a reliable basis for the calculation of the depreciation charge. Since adherence to such a standard is difficult or impossible under the conditions that are constantly arising in a given establishment, the depreciation

policy must of necessity be based on actual observation and inspection by experts. The expenditure necessary to restore an asset to a state of operating efficiency is called "deferred" or "accrued" maintenance, and it is the amount of this at a given time, estimated by expert inspection, which compared with normal maintenance forms the basis for an estimate of the depreciation charge.

Functional Depreciation

Tangible property is subject also to "functional" depreciation. This means a lessening in worth or service value due to causes, other than those already treated, which interfere with and operate against the proper functioning of the asset, making it impossible to render effectively and economically the *full* requirements of service expected of it. This inability to fulfil its proper function may result either from inadequacy or obsolescence. "Thus the structure may suffer total depreciation and be thrown out of service, not only because through wear and tear it has reached a condition where further expenditures for repairs or attempts to make it suitable for the required service would not be economical or expedient, but also because recent improvements, or new inventions, new developments and radical changes in service, or the demands of one kind or another involving sweeping changes in the existing plant, make abandonment necessary." *

Inadequacy as a Factor

Inadequacy is a condition in which the asset is found unable to meet the demands made upon it, due usually to growth of business or to some rearrangement made necessary by changed policy before the asset has reached the end of its service life. This condition is also called "supersession."

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* Leonard Metcalf paper on "Water-works Valuation and Fair Rates" before the American Society of Civil Engineers, Vol. LXIV, 1909, page 16.

For economical operation the asset must be discarded and superseded by a larger unit. As an example, dynamos and motors of a capacity sufficient to meet all demands on them at the date of their installation may, through growth of business, prove entirely inadequate after a few years to meet the service expected of them. Inadequacy as a factor of depreciation will have no appreciable effect in cases where the demand is fairly constant and the market does not permit of much expansion. Where there is a growing community and (or) a growing appreciation of the commodity manufactured, demand may increase to a point where original judgment and expectation will be shown to have been in error and the equipment will have to be superseded if advantage is to be taken of the expanding market.

Two main factors or compelling forces may bring about inadequacy, viz., those of internal origin and those of external origin. Those of internal origin may become effective because of: (1) abandonment of original financial policy, (2) considerations of engineering economy, and (3) unforeseen development.

Inadequacy through Change of Policy

Perhaps the best illustration of the first type is that of a plant built to supply a certain commodity to the local community. A change in ownership brings about an abandonment of the original policy and a determination to provide neighboring communities with the commodity also. This change in policy frequently comes about when several smaller plants are merged under one control and the original units are found to be entirely inadequate to meet the demand. Again, when through a change in financial policy it is decided to lower the rates of a public service commodity, the original equipment may prove inadequate to meet the increased demand. It is not contended here that this type of inadequacy is to be taken into account in estimating the depre-

ciation charge. Usually it cannot be foreseen and should therefore be provided against under the head of a general contingent reserve or appropriation of profit. If it can be foreseen intelligently, it should be taken into account in the estimate of depreciation.

Inadequacy through Motives of Economy

The second type of inadequacy may be a foreseen and calculated inadequacy. In a new community or in the case of a new commodity whose virtues are little known, it may be the part of economy and business sagacity to install originally only such equipment as will be adequate to meet the requirements during the development stage and then when the commodity is introduced and established to discard the old and install larger and more adequate structures. Although it may be foreseen with reasonable certitude that a power plant generating a thousand horse-power will be entirely inadequate in ten years, yet it may be the better business economy to scrap it at the end of ten years rather than incur the up-keep and depreciation charges on a larger plant which would give longer service. Whichever policy, according to best engineering economy, results in the lowest unit cost of product is usually the determining factor. If with all the facts and reasonable expectations under view the smaller plant is decided upon, then assuredly the depreciation due to inadequacy must be taken into consideration.

Inadequacy Due to Unforeseen Development

The third type of inadequacy, unforeseen development, has been shown to be due to an *unexpected* expansion of the market. This may be brought about by growth in population of the present market, growth in appreciation of the commodity manufactured, or sometimes by a lowering of transportation rates whereby new markets are opened. The very fact that this kind of inadequacy is *unexpected* and

unforeseen makes impossible its inclusion in the current depreciation charge. This kind of inadequacy is revealed by a post-mortem determination of causes of which there were no symptoms leading to a correct diagnosis during life. The loss to be incurred through the scrapping of the property before its expected termination of service is a loss which must be borne by the future and not by the past. It is in the nature of a development cost which must be incurred if the opportunities of the new market are to be seized, and which must enter into a consideration of the advisability of making a bid for the new business.

Business policy might or might not dictate that these costs be charged against reserves of profits from the past. Theoretically they should be spread somewhat evenly over the future but in neither case can they have any place in present depreciation charges. It should be thoroughly understood that depreciation is a charge which relates always to the past, never to the future. There is no contradiction here in that a consideration of the future must help to determine the amount of waste which has taken place in the past. P. D. Leake* says: "It is a misconception to describe the annual provision for depreciation as a provision for future renewals, as though it has reference to the future. The annual provision for depreciation has nothing to do with the future but relates solely to the past. It is a replacement of capital in respect to past capital outlay expired in the process of carrying on the business."

Inadequacy Imposed from Without

Inadequacy may be imposed by external forces or authority. In public service utilities this has often proved a source of expense. In the interests of a supposedly enlightened opinion—oftentimes a badly mistaken opinion—present equipment is found inadequate to meet the new demands.

* In "Depreciation and Wasting Assets."

This type of inadequacy merges imperceptibly into obsolescence. Again, a municipality at the time of repaving the streets may require that the utility company discard present equipment and install a larger and heavier type; it may require that overhead wires be carried in underground conduits; and prudence on the part of the company may lead to the installation of larger carriers than the old. These losses —and there is almost invariably a loss to the utility company —must be charged against the future. So also, the passage of laws and ordinances in the interests of sanitation and fire protection frequently compels the private owner to discard equipment and devices before their service life has passed and install more adequate equipment.

Obsolescence as a Cause

The second factor of functional depreciation is obsolescence. By this we mean that lessening in worth which is brought about by the development of something new whereby production becomes more economical or is changed to meet new ideas, fads, or fancies of the consumer. Obsolescence may be imposed by outside forces through the exercise of the police power under circumstances analogous to those mentioned under the discussion of inadequacy brought about by external means. Municipalities and regulating commissions have speeded up the "irresistible march to the junk heap" in numberless instances. Cotton-spinning and shoe machinery, lasts and patterns of all sorts, electrical devices in particular—all have been subject to obsolescence charges. The horse car gave place to the cable car, which in its turn was displaced by steam locomotion, and today this has given way to electrically propelled street cars. The old wooden rail gave way to the rail of wood capped with a strip of steel, the light "T" steel rail, and the present heavy steel rails—changes all necessitated by changes and developments in the art and a demand for better service by

the public. The stick used by the Indian to turn the ground and plant his corn has been displaced successively by hand tools of iron and steel, horse-driven plows, and the big steam and gas tractors of the present day. No industry has escaped the seemingly inevitable trend towards the displacement of the old and antiquated but not worn-out equipment, by newer, more up-to-date, and more economical equipment. Obviously the last word has not yet been spoken or the last refinement been made in the development or application of art and science to any industrial enterprise. Life means development; dry rot and retrogression are the fate of any art, any industry, any people which has reached the limit of its development.

Since, therefore, obsolescence is so common an occurrence, so absolutely a fact of general experience, it would be folly to ignore it. Many writers and some authorities have said that while obsolescence is as certain and ever present as the forces of nature, it seldom is more possible of measurement than are they. However, engineers tell us that in most cases it is possible for qualified experts to foretell with *reasonable* certainty the effect of obsolescence. "Those most familiar with the art know the units which will be able to serve their entire physical life, and what classes are so uneconomical or otherwise defective that some improvement must be expected."

Treatment of Obsolescence

As to the effect of obsolescence, attention should be called to the fact that it is seldom operative to its full extent. The decision as to the exact time of discarding the old and installing the new rests on a nice balancing of many factors. Thus, the safety devices operated by hand on railroads are not displaced in a wholesale manner by those which operate automatically. In a large telephone company old switchboards are not discarded for new over the entire system at the same time. Much of the old is oftentimes allowed to

serve out its life-term, and obsolescence has no effect. Under the circumstances stated above, and many similar and more complicated conditions, it requires a nice calculation to determine the actual effect of the factor of obsolescence in depreciation. Many inaccuracies, even many ridiculous conclusions, in estimates made by experts are met with, times without number. The novice thus fears even to guess as to the amount of the depreciation due to this factor. That is perhaps as it should be; there is no place here for the novice. Inasmuch, however, as the trend is to estimate the depreciation due to obsolescence, and such practice has the unqualified approval of many public service boards and at least the silent approval of our courts, it would seem that an attempt should be made to include it in the depreciation charge. As to its sufficiency or insufficiency, an amount can be estimated with as much accuracy under the head of depreciation as under that of a contingent reserve, and the former course is to be preferred in that an inevitable fact of experience in almost every industry is thereby recognized. The past, and not the future, is thus burdened with the accomplished waste. There doubtless will be instances where depreciation due to obsolescence palpably cannot be foreseen. For such there is but one of two courses, viz.: either to charge it against profits reserved out of the past, or burden the future with its cost.

Relative to the inclusion of obsolescence in the depreciation charge, the Illinois Public Service Commission says in the case of the City of Springfield v. Springfield Gas and Electric Company, March, 1916: "In view of all the facts in this case, the Commission finds that it is but reasonable, proper, and equitable to make deductions from cost new to cover accrued depreciation, both physical and functional . . . ." The statement of the Maryland Public Service Commission in the case of the Chesapeake and Potomac Telephone Company of Baltimore City has already been cited on page 106. Quoting from the report of the Valuation

Committee of the American Society of Civil Engineers: "A limited search . . . . indicated that inadequacy and obsolescence were included either in ascertaining the amount of depreciation to be included in cost, or to be deducted from earnings . . . . by the commissions of the following states: Arizona, California, Colorado, Illinois, Maryland, Massachusetts, New York, Oregon, South Dakota, Wisconsin."

Covering this feature, i.e., the depreciation feature, in making returns to the government under the Federal Income Tax of 1916, the Commissioner ruled as follows: "The deduction for depreciation should be the estimated amount of the loss, accrued during the year to which the return relates, in the value of the property in respect of which such deduction is claimed, that arises from exhaustion, wear and tear, or obsolescence out of the uses to which the property is put . . . . The depreciation allowance, to be deductible, must be, as nearly as possible, the measure of the loss due to wear and tear, exhaustion, and obsolescence."

Although not specifically mentioned, functional depreciation may be said to have the sanction of the United States Supreme Court in its decisions covering the Knoxville and Minnesota rate cases. In the case of the Des Moines Water Company v. City of Des Moines, 192 Fed. 193, September 16, 1911, the court allows both "functional and physical depreciation."

It would seem, then, that the legality of the practice is pretty well established and the ability to compute the amount has been recognized. It is not often the case in matters of business policy and prudence such as this that the courts lead where business men and some professional men are reluctant to follow.

Contingent Depreciation

A third factor in depreciation is given in the chart on page 121 as contingent. The term would seem to indicate

on the face of things that it is not a factor of sufficient definiteness and certainty to make possible its prevision and therefore the calculation of its effect. Hence it might seem that provision could be made for it only by means of a general reserve. In many individual cases and as to its application as a universally operative factor in the same sense that are use and wear and tear, the position is undoubtedly well taken. The term contingent, as here used, is meant to cover not only things which have happened and *may* happen again, but also things which in given localities and under known or knowable conditions are more or less inevitable. Hence while not found present in all cases, where conditions are favorable to the happening of any of the contingencies, from the standpoint of prudence and an equitable distribution of the burden of costs, provision should be made for them as one of the items comprising depreciation. Contingent depreciation may comprise three classes of contingencies, viz., (1) accidents, (2) diseases, and (3) diminution in supply.

Accidents. With regard to the first class, M. E. Cooley, in the Milwaukee Three-cent Fare Case, says: "An engine or a boiler may be wrecked and with it other machinery. This might, and probably would, involve a considerable expense for repairs or replacement, besides possibly crippling the plant in part. Cars may collide or a car may drop through a bridge. A bridge itself may fall or be carried away by floods. A storm, as a cyclone, may work havoc, entailing costs in excess of those proper to be charged to ordinary maintenance of property." Accidents may happen either as a result of negligence or as a so-called "act of God," i.e., the elements, or a hidden defect in the structure. With regard to depreciation from accidents it may be quoted, "There is always a certain amount of loss by accident which seems to be inseparable from the business. Usually it can be counted on in advance, and no amount of care and pre-

caution will entirely eliminate it."* The Railway Library for 1910 says that of 899 railroad accidents the various causes were:

Malicious acts....................	30	accidents
Elements........................	104	"
Structural defects................	117	"
Various forms of negligence.......	648	"

In a large concern where past experience may serve as a guide to the future, depreciation of this sort can be rather accurately estimated. In the case of the rolling stock of a railroad, statistics make available the yearly loss due to accidents from whatever cause. It is argued that such losses are fairly uniform from year to year in a large system of that sort, and each year's operation carries the burden simply by charging all repairs incident thereto against the revenues of that period. This is, of course, true in the main and may give sufficiently accurate results. The same treatment may also be applied to replacements, and if the units are sufficiently small in value in comparison with their number, practically no inequity as between periods will result. However, the Interstate Commerce Commission has ordered that depreciation reserves shall be set up for the proper handling of such accidents and this seems the better method. Statistics are available as to how frequently explosions in powder factories are apt to occur and the losses due to them, so that a manager can calculate the provision to be made on that account. Those are simply the risks of the particular business, and wherever it is known that they are applicable to any kind or group of equipment or other assets, certainly the current operations should bear their share.

After all, depreciation charges due to any causes are much of the nature of insurance which has to be carried

* Spring Valley Water Co. v. San Francisco, 165 Fed. Rep. 703.

by the enterprise itself because the risks have not yet been reduced to an insurable basis. Much as a proprietor may dislike to carry his own depreciation insurance, he is compelled to. In connection with accidents as a part of the depreciation charge, it should be noted that the product should not be charged twice for this item. If regular insurance is carried for fire, flood, tornado, earthquake, and the like, certainly those elements should be omitted from the insurance risk carried as depreciation by the concern itself.

Disease. Under certain conditions as to climate and local environment, the ravages of disease must be reckoned with. Diseases are caused by:

1. Parasites
2. Water pollution
3. Growths in water mains
4. Electrolysis
5. Crystallization*

Losses and deterioration from these causes are quite appreciable in some enterprises. Telephone poles are subject to attack by borers and woodpeckers. "More than 50% of the weight of the wood may be removed . . . . without being greatly manifested upon the surface." "At least 10% of the chestnut poles reset or replaced are injured by insects." Railroad trestles, bridges, docks, piers, wooden shipping, and structures of all sorts are more or less subject to this kind of depreciation. Minute vegetable growths known as algae may cause a marked depreciation in a water utility. Other forms of vegetable and animal organisms sometimes cause growths in water-pipes, resulting in a partial shutting off of

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* A. S. C. E., Vol. 31, page 220, article by R. Montfort.
" " " 40, " 178, " " C. H. Snow.
Association Engineering Societies, Vol. 31, page 49, by F. W. Hodgson.
U. S. Gov't, Bureau of Entomology Bulletin #94, Pt. 1, by T. E. Snyder.
" " " " " Plant Industry Bulletin #64, by G. T. More and K. F. Kellerman.
" " " " " " " " #76, by G. T. More and K. F. Kellerman.
U. S. Gov't., Dep't of Agriculture, Forest Service, Circular #128 by C. S. Smith.

the capacity. Similarly, mineral growths may produce like effects. Iron oxide (common rust) and lime deposits or scale are frequent causes.

Electrolysis. Depreciation caused by electrolysis is a highly technical subject, discussion of which will not be attempted here. "Electrolysis is a chemical decomposition produced by an electric current. As applied to utilities, electrolysis is the disintegration of metal structure caused by the electrolytic action produced by stray electric currents, generally from the return circuits of single trolley electric railways." The damage, both direct as above stated, and indirect as in the leaking of water, gas, etc., or in the flooding of adjacent premises or injury through gas explosions, is recognized by the courts, but the satisfaction granted is limited to enjoining a continuance of the injury.

Molecular Change. In some kinds of machinery subject to heavy strain and shock when in use, a disintegration of the structure itself takes place whereby its resisting power and therefore its efficiency are greatly impaired. This condition is known as a crystallization of the molecules.

Depletion. Finally depreciation due to contingent causes may be brought about by a diminution in the supply. This is more in the nature of a depletion charge and will be fully considered in connection with that subject treated on page 117.

Terminable Rights

The intangible property subject to depreciation consists of terminable or limited rights. Rights given or held for a definite period of time expire or waste away through the lapse of time. Decrepitude is the controlling factor here, and because of the definiteness of the length of time, the depreciation charge is easily calculated. Therefore provision must be made for it. Various methods, resulting in quite different charges to each period, are sometimes employed.

These methods will be discussed in Chapters IX and X. Rights which are not terminable or limited—and even limited rights—may, however, be given up or abandoned. This is a situation which cannot usually be foreseen and therefore cannot be provided against except by means of a general reserve.

Effective Depreciation

One final point in connection with the causes of depreciation needs consideration. Though *all* of these various causes or kinds of depreciation are seldom found operative on a given asset, frequently several of them are so operative. Where this is the case their effect is not cumulative. One or the other will prove a controlling factor in determining the service life of the asset and thus the amount of its periodic depreciation. There is a close relation between the operation of the chief factors in depreciation and the scrap value of the asset. Thus, if it is estimated that physical depreciation will be complete in 8 years, obsolescence in 10 years, and inadequacy in 12 years, scrap value would be slight. If, however, inadequacy is the controlling factor, becoming operative in 8 years, with obsolescence in 10 years, and physical depreciation in 12 years, clearly scrap value might be quite appreciable. Whichever factor is the controlling one, that factor is said in a given case to constitute the *effective* depreciation for that asset. Thus, in the first case mentioned, physical depreciation constitutes effective depreciation and would form the basis for the estimated charge, while in the second case inadequacy is the effective factor.

CHAPTER VIII

DEPRECIATION—FACTORS OF RATE DETERMINATION

Fundamental Purpose of Depreciation

Under the head of accounting for depreciation, which forms the subject of this and following chapters, will be considered:

1. The purpose of the depreciation charge.
2. Rates of depreciation and their relation to repairs, renewals, and replacements.
3. Methods of reckoning depreciation and their effects.
4. Handling depreciation on the books.
5. Financing depreciation and some related problems.

Though much has been written about the causes and kinds of depreciation, the necessity of considering it, and methods of calculating its amount, so far as the author knows there has been no adequate presentation of the fundamental purpose of the depreciation charge viewed *both* from the valuation or balance sheet point of view and the operation or profit and loss standpoint. The statement is frequently made that the purpose of depreciation and the necessity for considering it is to maintain intact the value of the original capital invested. In so far, therefore, as this necessitates a periodic charge against revenue, resulting in a retention in the business, either in a specific or floating form, of some of the revenue-producing assets, the operating or profit and loss phase of the business is affected. This secures the integrity of the original fund of capital by mak-

ing the revenue receipts unavailable for distribution among the stockholders until the portion of the assets wasted away has been made good. This view of depreciation has as its actuating purpose a showing of correct values in the balance sheet, with little regard to the purposes to be served by the depreciation charge against operations. This emphasis of the problem of valuation is usually looked upon as primarily the engineering viewpoint.

Depreciation a Cost of Operation

On the other hand, many students of the problem view the depreciation charge as incurred for the sole purpose of determining the correct costs of doing business. Unquestionably, depreciation is a cost of production. A portion of the service life of equipment goes into each unit of the product, and depreciation constitutes a cost which must be borne by the product with as much reason as the labor power that fashions and forms it and the raw material out of which it is made. To determine a cost of production and a profit without the inclusion of the depreciation charge would be, as R. H. Montgomery* says, just as logical as "to state that a candy manufacturer had earned a net profit of $100,000 and that out of said $100,000 there had been set aside $20,000 to pay for the sugar consumed in the manufacture of the product. The use of that which is consumed is a loss or expense. Machinery is consumed; sugar is consumed. You cannot say that one is an operating expense and the other is an item which need not be ascertained nor taken into account until the net profit is shown. . . . If the provision for depreciation is an item which cannot be included among the costs of operation, there is something wrong."

This view of depreciation attempts to show the correct costs in the profit and loss statement of operations, without

* In "Income Tax Procedure, 1918."

much regard to its effect on the balance sheet except that, in so far as every charge against operations is reflected among the assets, the fact of its inclusion as an operating cost automatically works also as a means of declaring correct values. Under this view—which may, without any misstatement perhaps, be called the accountant's viewpoint—the emphasis is placed on the effort to show true costs of the product, and only incidentally a true valuation of the assets.

Complication of Short Fiscal Periods

Theoretically there is no conflict of views here—only a difference in emphasis. It is purposed, however, to show some of the practical difficulties encountered in the full application of either view. As has been stated in an earlier chapter, the ideal time in so far as depreciation is involved for the determination of financial results would be the time when all the elements of production entering into the product have been completely used up—if this were possible. There would then be no troublesome problems as to inventories, accruals, or deferred charges. The fiscal period would coincide with the natural service-life periods of all the producing elements. The problem of depreciation would then be a simple one, and the entire value of the equipment would be a charge to the product turned out during its life-period. Such a method of determining the financial results of an enterprise is, of course, merely fanciful. There is always, and will be always, an overlapping of the life-periods of the various units of a plant. Furthermore the practical necessities of modern business and competition require a much shorter fiscal period with a more frequent figuring of results and showing of condition. It is due to this shortening of the fiscal period to one month, six months, or a year that the difficulties of the depreciation problem arise and inaccuracies of statement are consciously or unconsciously made.

The handling of the problem hinges on the answer to the question as to the correct basis for the distribution of the depreciation charge. Shall a fiscal period of arbitrary length be used as the basis for determination of the service life of the operating equipment? Or shall the life of inanimate equipment be measured in terms of units produced, service rendered, results achieved, just as human life and age may be measured in terms of intensity of thought and action? It is unfortunately true that once the depreciation charge is settled, this same charge is constantly applied with little adjustment to changing conditions. Thus, varying intensity of service is not reflected in the periodic charge.

The Factor of Idle Time

Were it possible to foretell length of service life in terms of units of product instead of units of time, a much better approximation to actual results would be secured. And this very thing is *attempted* under almost all methods of estimating depreciation. The life-period of the equipment is estimated on an assumption of *average*, *normal* use of the equipment—an assumption which will give good practical results when and so long as operations are normal or average. When, however, a period of depression comes and much of the equipment is idle, it is clear that that period would be burdened unduly with a depreciation charge based on *years* or *months* of service life. On the other hand, a period of feverish activity would not bear its just share of the burden of wasting assets. The period which is really overburdened must necessarily reflect it as an undervaluation of the assets—more has been charged off than has been used up; while the opposite is true of an underburdened period. Of course, on the theory of averages, by the end of the life-period of an asset all inequalities would be ironed out. Some methods of cost-keeping take this factor of intensity into account and spread the depreciation charge on a man-

hour or machine-hour basis, which proportions it somewhat equitably to the product turned out by the use made of the machine and not to its elapsed life in days or months. The best that can be hoped for is as near an approximation to the truth as possible.

Depreciation a Means of Financing

Another view of the purpose of the depreciation charge is that it is a method or means of *financing* depreciation as it is sometimes termed. Under this view the effect of the depreciation charge on intermediate periods is lost sight of and it is used solely as a means of securing a sufficient contribution in hand *at the end* of the service life of the asset to finance its replacement. In other words, no attempt is made through the periodic depreciation charge to secure an accurate or necessarily true statement of the values of the assets, nor to see that the product of a given period is burdened with its just share of *all* costs, though this may be an incidental purpose. H. V. Hayes* in discussing this phase of depreciation says:

"It is argued that the plant unit 'deteriorates' year by year and that this 'deterioration' is the true measure of the 'depreciation' in the value of the unit during the intermediate years of its life, and, being a physical condition of the plant, can in no way be measured by the purely financial considerations upon which the reserves for depreciation necessarily must be based. Such a line of reasoning is absolutely faulty. Any attempt to reconcile 'deterioration' with 'depreciation' at any intermediate period in the life of the plant of an undertaking, is not only unnecessary but futile. The error in such an attempt arises from a failure . . . . to recognize the fact that . . . . if definite agreement has been reached as to the serviceable life (of the asset), the physical 'deterioration' of the unit, at any time

* In "Public Utilities, Their Cost New and Depreciation."

during its life, can be a matter affecting its intrinsic value in no way whatever."

Danger of the Financing Viewpoint

The above statement is a fair presentation of the case for depreciation as a financing device. It would seem, however, that the exponents of this view lose sight of the inevitable fact that the depreciation charge is *pro tanto* an evaluator of the wasting asset during the intermediate period of its life. Therefore a logical conclusion to be drawn from the view as expressed in the quotation above, would be the countenancing of any method by means of which provision could be made to replace the asset by *the end* of its life, no matter whether the charge was spread evenly over its life, was made all in one year, or was made to depend on the amount of the net profits at the end of a given year. This latter alternative is a dangerous policy, always to be deprecated, for depreciation is a cost of production to be taken account of *before* profits can be determined.

After all, it may be said without fear of serious contradiction that all three views, i.e., the engineering, the accounting, and the financing viewpoints, must be held in mind in any adequate treatment of the depreciation charge. The important point from the commercial and accounting standpoint is to secure a fair and equitable charge to each unit of product, regardless of whether or not the burdens of each fiscal period are equal. This is particularly evident when wear and tear from use is the *effective* factor in depreciation—and it is also contended that the factors of obsolescence and inadequacy may be as successfully and relevantly estimated in terms of business output as in years. If this results in an accurate valuation of the asset—and it is conceded that from the engineering viewpoint it may sometimes so result—the inaccuracy is of minor importance. According to the general law for the valuation of fixed assets,

changes in the market need not and should not, as a general thing, affect the values at which the assets are carried on the books *of a going concern.* It is, of course, a corollary to the main proposition that this treatment also makes adequate provision for financing the fact of depreciation. Various methods and means for the accomplishment of these purposes are given in Chapter IX.

The Standardization of Depreciation Rates

The determination of the rate of depreciation of a given asset is essentially an engineering problem. But as the accounting for depreciation is dependent on the rate, and the records of the accounting department must furnish much of the information for estimating the rate, the whole problem of fixing depreciation rates will be considered under the one head. Much study and effort to reduce all the conditions under which assets depreciate to a common basis and so to a definitely stated rate for each set of conditions, have, so far, come to naught and all qualified experts say without reserve that the rate of depreciation is an individual problem. It is to be hoped that a further gathering of statistics as to expectations of life of different assets under varying conditions will ultimately furnish tabulations, corresponding to insurance tables, according to which under known and expected conditions a fairly accurate rate of depreciation for a particular asset may be made. Unlike insurance rates, however, the depreciation rate once established will not necessarily remain constant, but must be subject to a periodic revision in the light of new data and conditions.

Effect of Local Conditions

Many factors enter into the rate of depreciation. They may be classed roughly as "stable or normal" factors and "contingent" factors. It should be constantly borne in

mind that in the present state of the actuarial development of the subject, general rates, i.e., rates which will apply without readjustment, cannot be determined. For the determination of individual rates local conditions are always the controlling factor. An illustration in point is given by Henry Floy,* showing the varying rates used by thirty-one different concerns for the depreciation of their rolling stock equipment. The methods vary in almost every case, comprising annual charges of an arbitrary amount, per cent of the original cost, cents per car mile, arbitrary deductions from income irregularly applied, per cent of gross earnings, per cent of present estimated values. Reduced to a common basis, the per cent methods show a range of expected life varying between ten and one hundred years. While it is improbable that had the determination of the depreciation rate for the different concerns been in the hands of the same expert, there would have resulted these bewildering variations in method, still it does bring out in strong relief the fact, well recognized by experts but so often lost sight of by those unacquainted with the technical phases of the problem, that local conditions are a *controlling factor;* and that until local conditions can be somewhat standardized there is no hope of establishing rates of depreciation which will be of general application.

Factors in Determining Depreciation Rate

In the determination of rates the factors to be taken into account are:

1. Normal operating conditions.
2. Normal load or normal *intensity* of operation.
3. Normal repairs policy.
4. Normal climatic conditions.

These constitute the most important stable or normal

* In "Value for Rate-Making," pp. 255–256.

factors. Among the contingent elements, the most important are:

5. Probable misuse and neglect brought about by the demands of the trade, resulting in a change in the factor of normal intensity.
6. Probable change in ownership and consequent change in policy.
7. Probable change in the requirements of the market, necessitating an adaptation of the equipment to uses for which it was not originally intended.

At the time of installation the rate of depreciation must be based only on the normal factors—things which can with reasonable certainty be counted on. At intermediate periods in the life of the asset, a physical inspection should be made to compare the actual depreciation of the property with the estimated. If, then, it is found that any contingent factors have become real or reached the point of reasonable expectancy, these provide the basis for an adjustment of the rate for the remaining life-term of the asset.

Basis of Normal Rate

With regard to the normal rate, the following items demand first consideration:

"1. Exterior or movable apparatus
   (a) Abuse
   (b) Neglect
   (c) Temperatures
   (d) Oxidation
   (e) Irregular shocks in use, such as starting or braking, also road or rail defects
2. Installed operating and generating machinery
   (a) Reversals, increased by rapidity and aggravated by shock

(b) Irregular loads or service, aggravated by speed and sudden character

(c) Excessive usage, resulting in increase of temperature of parts

3. Fixed equipment including boilers and piping

(a) Excessive and irregular strains

(b) Interior causes of decay

(c) Chemical action

—all these being of greater or less effect, according to the time of daily usage and lack of periods of rest."*

Policies as to Repairs

Without doubt the most important single factor in the determination of the depreciation rate is the normal policy as to repairs and maintenance. Physical deterioration is constantly at work. If this is counteracted by a liberal maintenance policy, not only is more efficient service secured but a longer service life is thereby insured. As soon as repairs are needed, although the efficiency of the asset may not be immediately impaired, the *rate* of deterioration is much accelerated unless the condition is corrected. Deterioration takes place day by day, but repairs obviously cannot be made at such short intervals—both because of the difficulty of detection and also because such a policy would not be economically practical. Every concern must consider its own peculiar problems and determine from these what shall constitute its normal repairs policy, and so far as possible this should be adhered to. The charges for repairs are bound to be of a more or less irregular character. Their handling is discussed on page 147.

Regardless of what the established policy as to repairs may be, conditions are sure to arise which make strict adherence to it impossible. There may occasionally be lack

* R. P. Bolton in "Power for Profit."

of funds at the time repairs are customarily attended to; it may be impossible to get the expert labor needed or the parts to replace worn-out units; or, and of oftenest occurrence, the need of repairs may coincide with a period of intense activity when the plant is being worked to its limit and in consequence there is no opportunity for making repairs. It is clear that rates based on one shift and the normal use of equipment during eight hours would be inadequate for three shifts and twenty-four hours of use; for in addition to a threefold intensity of operation this makes impossible adherence to the normal repairs policy based on an eight-hour schedule.

Depreciation Rate an Engineering Problem

From the above discussion it is apparent that the determination of rates is essentially an engineering problem. The accountant, however, needs a knowledge of the fundamental considerations and requirements of fixing depreciation rates and an appreciation of the difficulties of the problem. As Henry Floy* says: "What engineer is able to foretell the misuse and neglect or care and high degree of maintenance that any given apparatus or . . . . property as a whole will receive, even during the next five or ten years, with vicissitudes of climate, load conditions, changes of management, and requirements of the public?" On the other hand, in the opinion of another prominent engineer, "Consideration of these matters (misuse, neglect, etc.) may eventually form the basis for a systematic appraisal of the probabilities of life, or average of the risks, which would provide a method for the insurance of the life of machinery."

The author does not attempt to discuss the relative merits of the two contentions other than to point out the fact that engineers are not discouraged in spite of the many

* In "Value for Rate-Making."

contingencies and uncertainties inherent in the problem. They are constantly gathering data from which conclusions as to rates are being formed, the use of which is being compelled by regulating bodies. It is possible that the problem will ultimately be worked out on some kind of an insurance basis.

Attitude of Regulatory Bodies

At the present time the attitude of most regulatory bodies—public service boards, federal commissions, and tax officials—is well expressed by a regulation of the Public Utility Commission of New Jersey which says that, "Until otherwise prescribed, the amount estimated to be necessary to cover such wear and tear and obsolescence and inadequacy as have accrued during any month shall be based on a rule to be determined by the accounting corporation; such rule may be derived from a consideration of the said corporation's history and experience. A general statement of the rule in use by each company, together with the general information upon which it is based, is to be filed with the Board of Public Utility Commissioners." The trend at the present time is towards a more thorough supervision of depreciation rates on the part of many public service boards, and the future will undoubtedly see interesting developments.

Methods of Handling Repairs

Three distinct practices are met with in handling repairs and renewals on the books. The most general method is dictated by ease of application and rests on the theory of averages, viz.: that the amount of repairs annually recurring for depreciating equipment in all degrees of deterioration and all stages of decay and age is a fairly constant figure which secures an equitable distribution over the product of the different years. The larger the plant and the greater the variety of the equipment used, the more nearly does this work out as expected.

Further consideration will be given to this point in the discussion in Chapter X of the effect of the various methods used for calculating depreciation on the equality of the distribution of the charge.

Another method, used in plants where a very accurate determination of the costs of production is desired, has as an outstanding feature a preliminary estimate, made at the time of installation, of the expected amount of repairs needed during the entire life of the asset. Periodically this estimate, or proportional share thereof, is brought on the books as a charge to Repairs and credit to Reserve for Repairs and so is spread evenly over the service life of the asset. As repairs are actually made, the cost of these is not charged against operation but against the reserve created for that very purpose. At a given time, the status of the reserve account shows: (1) if the equipment has just been placed in a normal state of repair, the under- or over-estimate of the amount of actual repairs needed, or (2) if the equipment is not in repair, the reserve account gives an index of the probable amount of deferred maintenance. Both items of information are of value in the proper management of properties. It is to be expected, of course, that during the early years of the life of an asset there will be a fairly large credit balance in the reserve because repair charges are light. The credit balance so accumulated will be needed during the later years when the costs of maintenance become heavier.

The third method, which is a variation of the second, has as its characteristic feature the inclusion of the repairs cost with the depreciation charge. This likewise necessitates a preliminary estimate of the amount of expected repairs during the life of the asset. Instead of being handled separately, it is added to the depreciation rate and in this way charged against the product. This method has been prescribed in the case of some utilities in England but is

not much used here. Under this method two depreciation estimates of probable life are necessary, viz.: (1) maximum life brought about by an inclusion of repairs, renewals, etc., and (2) minimum life without such repairs. By this it is not meant that other methods of calculating the depreciation rates fail to take cognizance of the repairs factor, but that this method specifically calls attention to it and includes it in the charge made. It seems best for regulatory boards to make a separate book record of repairs and depreciation, thus insuring against any oversight of the factors of depreciation and also insuring the correctness of a statement of condition.

CHAPTER IX

DEPRECIATION—METHODS OF CALCULATING

Methods of Calculation

Many methods of reckoning depreciation have been devised; some good, some bad, and some too theoretical and involved ever to serve the practical needs of business. It is proposed here to explain those methods which have found most favor and, in Chapter X, to discuss their effects from the standpoint of the true purpose of any scheme of depreciation.

There are several ways in which the depreciation calculation can be made, and the methods may be classified broadly, though with some overlapping, under four heads. These classes are:

1. Proportional Methods
2. Variable Percentage Methods
3. Compound Interest Methods
4. Miscellaneous Methods

Factors of Calculation

The factors which must be known under most methods of calculation are:

1. Original cost of the asset
2. Scrap or residual value
3. Estimated service life
4. Under some methods, an arbitrary interest rate

By original cost is meant full cost of the asset in position ready for use. By scrap value is meant the estimated value of the asset at the time of its discard, when removed from

position and ready for sale or other mode of disposal. This is sometimes called its salvage value as distinguished from its value while still in position to render service but awaiting discard or break-up. By estimated service life is meant the time during which the asset will be used for service. This may be expressed in ordinary units of calendar time, such as the year; or in units of service time, such as working hours; or finally in units of output, such as tons, cubic feet, kilowatt hours, etc.

Symbols to be Used

For purposes of notation and reference the following symbols will be used:

V = original cost
V_1 = depreciated value at end of first period
V_2 = " " " " " second period
V_n = " " " " " last period, i.e., scrap value
n = length of service life
d = rate of depreciation per period
D = total amount of depreciation, i.e., $V - V_n$
D_1 = amount of depreciation during first period
D_n = " " " " last "
r = rate of interest
R = $1 + r$, i.e., 100% plus the rate
$1 - r$ = 100% minus the rate
A = annual amount to be paid under the compound interest methods

It should be noted that the foregoing factors are all estimates, with the exception of original cost, and that when making these estimates the principles of depreciation as discussed in preceding chapters must be taken into consideration. Thus, a decision must be made as to whether physical or functional depreciation is the controlling factor in determining service life. In the determination of service life, the policy as to repairs, renewals, and maintenance has a very important bearing. In fixing the scrap value, the relation

of inadequacy, obsolescence, wear and tear, and age to the values remaining in the asset must be considered.

1. Proportional Methods

Proportional methods include all those in which the periodic depreciation is calculated as a proportional part of some fixed basic value. These may be grouped under the following subclass titles, each of which will be separately considered:

(a) Straight Line
(b) Working Hours
(c) Composite Life
(d) Service Output

(a) Straight Line Method

The "Straight Line" method, so called because its graphical representation is a straight line, is perhaps the simplest of all methods for calculating the periodic depreciation charge and is therefore the most widely used. Under it the loss of value for each period is proportioned to the length of service life. Thus, an asset whose service life is reckoned as 10 years will have depreciated one-tenth by the end of the first year, two-tenths by the end of the second year, and so on. The depreciation for each year is the same. Shown by formula, using the notation above, this will be:

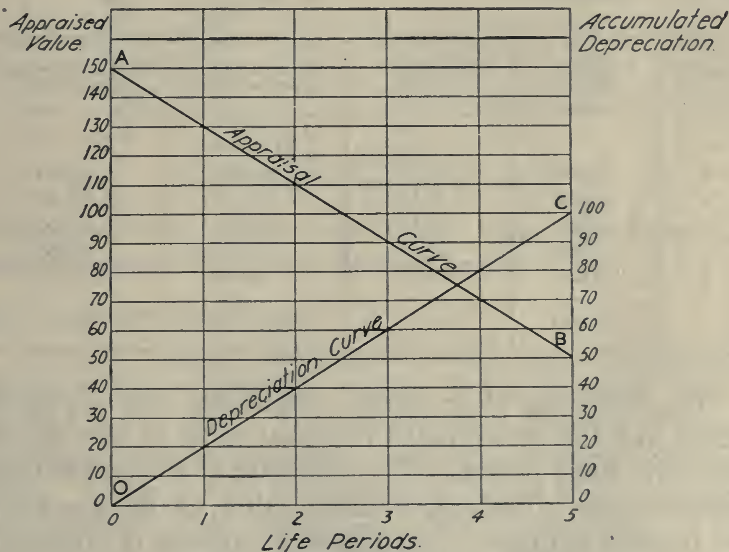
(1) $$D_1 = \frac{V - V_n}{n} \text{ or } \frac{D}{n} \text{ and, evidently,}$$

$$V_1 = V - D_1;\ V_2 = V_1 - D_2;\ \text{etc.}$$

From these formulas a schedule of appraisal for a given asset may be made up showing its values as at the end of each year of its estimated life. For an asset costing $150, of which the service life is 5 periods and the scrap value, due to inadequacy, is $50, such an appraisal schedule would work out as follows:

Age in Periods	Periodic Depreciation	Depreciated or Appraised Value	Total Accumulated Depreciation
0	$.....	$150.00	$......
1	20.00	130.00	20.00
2	20.00	110.00	40.00
3	20.00	90.00	60.00
4	20.00	70.00	80.00
5	20.00	50.00	100.00

Here, the fixed depreciation base, i.e., the amount to be written off over the 5 periods, is $100 ($150 – $50). Graphically presented below, we have the straight line AB representing the periodic appraised values, and the line OC, the accumulating depreciation.



Graphic Chart—Straight Line Method

(b) Working Hours Method

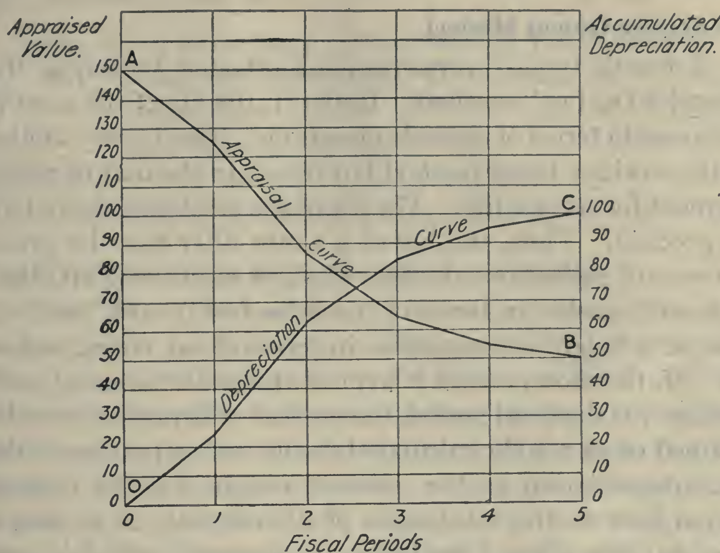
Where the "Working Hours" method is used, the life of the asset, instead of being estimated in calendar units of time, is given in service units as so many working hours.

Thus, if it is estimated that a machine will stand 12,000 hours of operation, its service life is stated as 12,000 working hours. Record is kept of the number of hours the machine is operated during each fiscal period and compared with the estimated length of service life (also in working hours) to give the proportion of the total depreciation which must be charged to a given period. Using the same example—an asset costing $150, with scrap value of $50, and service life of 12,000 working hours—the appraisal schedule will be as shown below, assuming that during the first fiscal period the asset was used 3,000 hours, during the second 4,500 hours, the third 2,700, the fourth 1,200, and that it was scrapped some time during the fifth fiscal period after another 600 hours of operation.

Age in Periods	Service Hours	Depreciation Rate %	Depreciated or Appraised Value	Total Accumulated Depreciation
0	......	.....	$150.00	$.....
1	3,000	25	125.00	25.00
2	4,500	37½	87.50	62.50
3	2,700	22½	65.00	85.00
4	1,200	10	55.00	95.00
5	600	5	50.00	100.00
	12,000	100		

The following chart shows graphically the appraised values and the accumulated depreciation as at the end of successive fiscal periods. The character of the curves here has no relation to the lapse of calendar time, i.e., fiscal periods, but depends entirely on the degree of intensity of operation of the asset, i.e., its service life in working hours. The above curves are true, therefore, only for the particular data assumed and do not, in any way, indicate a characteristic tendency of this method. Were the bottom line of the chart, the abscissa, laid off proportionately on the basis of working

hours instead of fiscal periods, both graphs would, of course, become straight lines. It is only because information as to



Graphic Chart—Working Hours Method

values is desired at the close of each fiscal period that the curves representing values become broken lines.

(c) Composite Life Method

Another proportional method, which in its operation is similar to the straight line method, is known as the "Composite Life" method. Its feature is the calculation of depreciation on the plant as a whole, rather than on each individual asset. Under it what is known as the *mean* life of the plant is calculated. Depreciation may then be estimated, on the straight line or other basis, for the entire plant. To determine mean life it is necessary to "weight" the life of each individual asset with its value and so get a common basis, the dollar-year, for all assets. The process of calculating mean life will be explained in Chapter XI where also its use and adaptability are discussed. Aside from the determina-

tion of mean life, the method does not differ from others which have been or will be discussed.

(d) Service Output Method

A fourth type of proportional method is known as the "Service Output" method. Under it, the life of the asset is reckoned in terms of *quantity* of output. This is very similar to the working hours method but differs in the unit of measurement for service life. The life of the asset is measured by its product. Thus, the life of a water filter may be given in terms of gallons or cubic feet of water run through it; that of a rock crusher in terms of the cubic feet of rock handled; that of a freight car or engine in terms of car miles; and so on. If, therefore, record is kept of the performance of such an asset for the fiscal period, the amount of depreciation to be charged off is readily calculated, being such a portion of the total depreciation as the units of output for the current period bear to the total units of life output. It is thus a straight proportional method. Its appraisal schedule and graphical representation are exactly similar to those of the working hours method. It should be said, however, that sometimes the service output method is operated on a sinking fund basis instead of on a total depreciation basis. When the sinking fund basis is used, the total payments into the fund, excluding all interest accretions, constitute the total amount of depreciation to be distributed over the service output.

2. Variable Percentage Methods

The second main classification of methods, called for want of a better title, "Variable Percentage" methods, differs from the proportional methods in that either the base or the percentage rate varies for each estimate of depreciation. The various proportional methods can all be expressed as percentages but their base remains fixed and is always the total amount of depreciation to be charged off. Under the

variable percentage methods, if the percentage is fixed, the base varies; and if the base is fixed, the percentage varies. The subclasses here are:

(a) Fixed Percentage of Diminishing Value Method
(b) "Changing Percentage of Cost Less Scrap" Method (sometimes known as the "Sum of Expected Life-Periods" Method)
(c) Arbitrary with Increasing Amounts
(d) Arbitrary with Decreasing Amounts

(a) Fixed Percentage of Diminishing Value Method

The "Fixed Percentage of Diminishing Value" method estimates the periodic depreciation as a fixed percentage of the appraised or book value of the asset as at the time of the last appraisal. Thus, if the asset cost $1,000 and the fixed rate is 10%, the first depreciation estimate is $100 (10% of $1,000) giving an appraised value of $900; the second depreciation estimate is $90 (10% of $900), with a new appraised value of $810; the third estimate is $81 (10% of $810), with an appraisal of $729 for the asset; and so on. It is evident that a final zero valuation can never be reached (although it may be approximated) as the series becomes an indefinite or indeterminate series. If there is any scrap value, and there usually is, the series becomes determinate. From the standpoint of calculation the problem here is the determination of the fixed rate necessary to reduce the asset value to residual or scrap value in the given life-term. Using the standard notation, we may formulate the following equations:

$V_1 = V(1-d)$; $V_2 = V_1(1-d) = V(1-d)(1-d)$;
$V_3 = V_2(1-d) = V(1-d)(1-d)(1-d)$; whence
$V_n = V(1-d)^n$, which solved for $1-d$ gives

$1-d = \sqrt[n]{\frac{V_n}{V}}$ and, solving for d, we get

$$d = 1 - \sqrt[n]{\frac{V_n}{V}} \qquad (2)$$

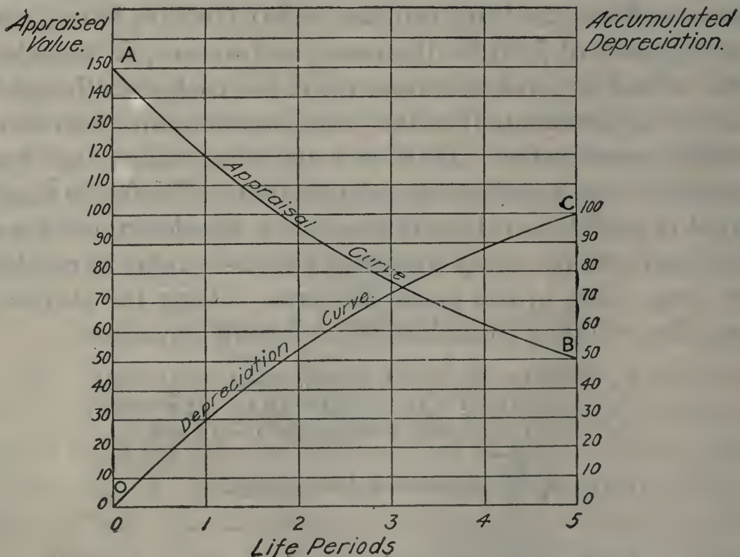
While complex, the formula is readily solvable by means of logarithms. For an asset costing $150 with a service life of 5 years and a scrap value of $50, the rate is found by the above formula to be approximately 19.726%.

$$d = 1 - \sqrt[5]{\frac{50}{150}} = .19726$$

The appraisal schedule is, therefore, as follows:

Age in Periods	Fixed Depreciation Rate %	Periodic Depreciation	Depreciated or Appraised Value	Total Accumulated Depreciation
0	.....	$......	$150.00	$......
1	19.726	29.59	120.41	29.59
2	19.726	23.75	96.66	53.34
3	19.726	19.07	77.59	72.41
4	19.726	15.32	62.27	87.73
5	19.726	12.27	50.00	100.00
		100.00		

The following chart shows graphically the appraised values and the accumulated depreciation:



Graphic Chart—Fixed Percentage of Diminishing Value Method

(b) Changing Percentage of Cost Less Scrap Method

Similar in effect to the method just explained is the "Changing Percentage of Cost Less Scrap" or the "Sum of Expected Life-Periods" method. Here, the base remains fixed, but the periodic depreciation rates change. Each depreciation rate is a fraction the common denominator of which is the sum of the expected life-periods as viewed from the beginning of each successive period, and the numerator of which is the expected life for the period in question. For example, an asset of which the expected life is 5 periods has at the beginning of each successive period expected life-terms of 4, 3, 2, and 1 periods respectively, making a total of 15 which becomes the common denominator of the fractions whose numerators are 5, 4, 3, 2, and 1 respectively; i.e., the changing depreciation rates are 5/15, 4/15, 3/15, 2/15, and 1/15. For an asset costing $150 with expected life of 5 periods and scrap value of $50, the appraisal schedule would be as follows:

Age in Periods	Changing Depreciation Rate %	Periodic Depreciation	Depreciated or Appraised Value	Total Accumulated Depreciation
0	....	$......	$150.00	$.....
1	33⅓	33.33	116.67	33.33
2	26⅔	26.67	90.00	60.00
3	20	20.00	70.00	80.00
4	13⅓	13.33	56.67	93.33
5	6⅔	6.67	50.00	100.00

A comparison of this appraisal schedule with that of the fixed percentage of diminishing value method shows that this method charges more depreciation during the early life-periods and less during the later periods. The general effect of this method and its significance are discussed in Chapter X where the relative merits of the various methods are considered. The graph for the sum of expected life-periods method is not shown as it differs little

from that of the fixed percentage of diminishing value method on page 158.

(c, d) Arbitrary Methods

The two other arbitrary types of this variable percentage method are hardly to be classed as methods as they do not rest on any law according to which they may be operated. Under them arbitrary amounts are charged to depreciation each period, the only controlling principle being that in the one case these periodic amounts increase from period to period, while in the other case they decrease. In the one case, therefore, the appraisal schedule would be similar as to its "Periodic Depreciation" column to those of the two methods just explained, excepting that the column must be reversed, i.e., read from the bottom upward. In the other case, the appraisal schedule would be exactly similar to those just shown. Within the restriction that they must be increasing or decreasing amounts for succeeding periods and that the total depreciation must be charged off within the estimated life period of the asset, the periodic depreciation charges are, under these methods, purely arbitrary, neither based on fact nor logic.

3. Compound Interest Methods

The third general type of methods for making the depreciation estimate may be called the "Compound Interest" type. This differs radically from any of the others in that it uses the compound interest principle to determine the amount of periodic depreciation. In the practical application of some of these methods, not only is depreciation estimated on this basis but an actual fund of cash or other assets is set aside for accumulation on the compound interest principle so as to provide ready funds for financing the replacement when the old asset is discarded. The setting aside of the fund is not an essential part of the method, and its dis-

cussion is therefore deferred to Chapter XXV where the subject of funds and their treatment is fully considered. Under this type there are three methods:

(a) Sinking Fund
(b) Annuity
(c) Unit Cost

(a) Sinking Fund Method

The problem under the "Sinking Fund" method is the calculation of the amount of a sum of money which placed at compound interest at the end of successive periods will accumulate to the amount of the total depreciation of the asset during its life-term. At the end of each period, this amount plus any accumulated interest on the amounts previously set aside becomes the depreciation estimate for this period. Unless a fund is actually established, there can, of course, be no accumulation of interest. Under this method the amount of such theoretically accumulated interest is, nevertheless, made a part of the periodic depreciation charge.

The method thus becomes simply a mathematical device for making the estimate. The calculation of the fixed periodic amount is in accordance with the following mathematical formula, using the notation given on page 151. The development of this formula is given in full in Chapter XXV, "The Sinking Fund":

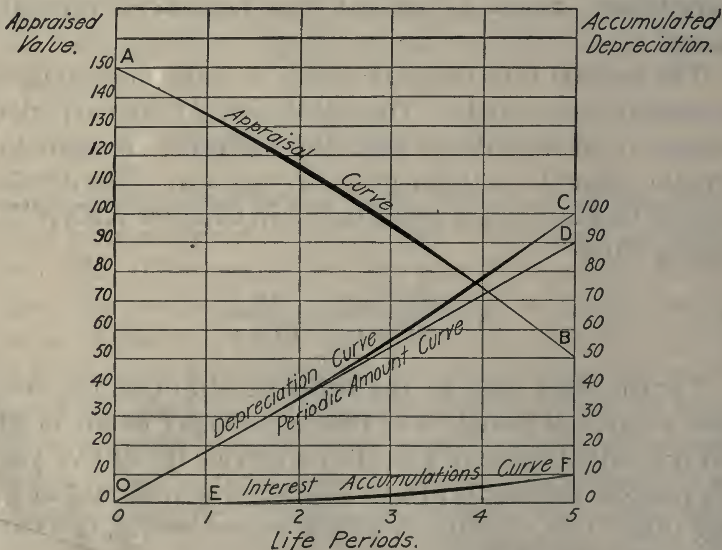
$$A = \frac{(V - V_n)r}{R^n - 1} = \frac{Dr}{R^n - 1} \qquad (3)$$

For the asset used in the other illustrations, i.e., for an asset with a full valuation at the beginning of its life of $150 and a residual value of $50 after a service life of five years, this periodic amount is $18.10, if interest is reckoned at 5%. Any other rate of interest within reason would, of course, be equally appropriate.

The following appraisal schedule may be set up:

Age in Periods	Periodic Depreciation Composed of:			Depreciated or Appraised Value	Total Accumulated Depreciation
	Periodic Amount	Interest	Total		
0	$.....	$....	$......	$150.00	$......
1	18.10	....	18.10	131.90	18.10
2	18.10	.90	19.00	112.90	37.10
3	18.10	1.85	19.95	92.95	57.05
4	18.10	2.85	20.95	72.00	78.00
5	18.10	3.90	22.00	50.00	100.00
			$100.00		

The following chart shows graphically the appraised values, the accumulating depreciation and the elements which compose it, the curve OD representing the fixed periodic amounts, and EF the theoretical interest accumulations. The curve OD is a straight line inasmuch as it repre-



Graphic Chart—Sinking Fund Method

sents fixed periodic amounts. The depreciation and interest curves, OC and EF, representing gradually increasing amounts, are both slightly concave and would become increasingly so the longer the period covered. The appraisal curve AB is slightly convex and its convexity is accelerated by lapse of time.

(b) Annuity Method

The "Annuity" method also makes use of the compound interest principle, but in addition to the method of the sinking fund it adds to the periodic depreciation charge as determined thereunder interest on the successive appraised values of the asset. The effect of this is to charge to the product, by way of Profit and Loss, interest on the capital invested in each asset used in manufacture. The appraised values of the asset are exactly the same as under the sinking fund method, but the expense charge to depreciation is larger under the annuity method by the interest on the appraised value of the asset. This charging of interest to the product under the title "depreciation" makes it necessary to capitalize the interest charge by adding it to the value of the asset. If the amount to be charged off, i.e., $V-V_n$, is the same under both methods, for both to arrive at the same scrap value, V_n, the interest under the annuity method must be added to the value of the asset each time before deducting the depreciation charge, a part of which is this same interest. The annuity method thus makes a larger periodic charge than the sinking fund method.

The problem involved in the calculation of the periodic depreciation charge by the annuity method is sometimes stated as the method of finding a fixed or constantly equal periodic charge sufficient to charge off not only depreciation as such but also the interest which has been added to the value of the asset. The mathematical formula may be derived as follows, using the standard notation:

$VR \quad = V(1 + r)$, or the asset with interest added to it
$VR - D_1 \quad = V_1$, appraised value at end of first period
$V_1R - D_1{}^* = VR^2 - D_1R - D_1 = V_2$, appraised value at end of second period
$V_2R - D_1{}^* = VR^3 - D_1R^2 - D_1R - D_1 = VR^3 - D_1(R^2 + R + 1)$
$= V_3$, appraised value at end of third period, etc.

Generalizing, we have:

$V_{n-1}R - D_1 = VR^n - D_1 (R^{n-1} + R^{n-2} \ldots\ldots + R^2 + R + 1) = V_n$, scrap value. Whence

$VR^n - V_n \quad = D_1 \frac{R^n - 1}{R - 1}$. Solving for D_1, we have:

(4) $$D_1 = \frac{(VR^n - V_n)(R - 1)}{R^n - 1} = \frac{(VR^n - V_n)r}{R^n - 1},$$ periodic depreciation charge

That this is the same as the amount of the periodic depreciation charge by the sinking fund method plus interest on the investment, is seen by comparing formula (4) with formula (3). Formula (4) may be written as $\frac{(VR^n - V_n)r + Vr - Vr}{R^n - 1}$, i.e., the quantity $Vr - Vr = O$ is put into the numerator. Adding zero $(Vr - Vr = O)$ cannot change its value. Performing the multiplication indicated by the parentheses, we have $\frac{VR^n r - V_n r + Vr - Vr}{R^n - 1}$. Rearranging the terms, we have $\frac{(Vr - V_n r) + (VR^n r - Vr)}{R^n - 1}$, which factored in each group becomes $\frac{(V - V_n)r}{R^n - 1} + \frac{Vr(R^n - 1)}{R^n - 1}$. By reducing the second fraction, this may be written as:

(5) $$\frac{(V - V_n)r}{R^n - 1} + Vr$$

which is seen to be identical with formula (3) for the sinking fund except for the addition of Vr, which represents interest

* Inasmuch as by hypothesis the periodic depreciation charges are the same $D_1 = D_2 = D_3$ etc., hence, D_1 is used to represent the fixed depreciation charge per period.

at r% on the investment V. The identity of the annuity formula (4) with the sinking fund formula (3) plus interest on investment can be established similarly for any of the periods.

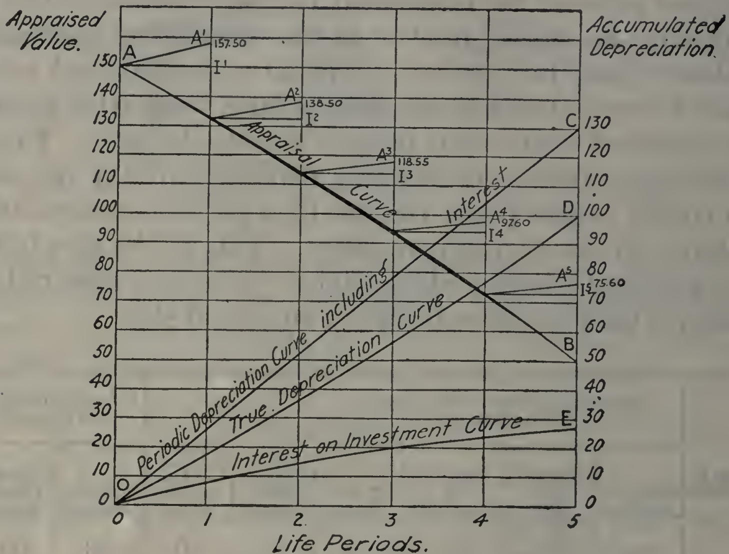
It will be noted that by the annuity method the whole original value of the investment is always earning interest either in the sinking fund or in the diminishing appraised value. Thus, the portion of original value deducted each period earns interest in the sinking fund, while what is left as appraised value earns interest outside the fund. Thus, the annuity method of charging depreciation may be said to consist of two parts, viz., the fixed periodic amount and interest on the original investment. This will be seen from the appraisal schedule which follows. The same illustrative data are used as before, including interest at 5%.

Age in Periods	Periodic Depreciation Charge Composed of:				Appraised Value Plus Interest	Depreciated or Appraised Value	Accumulated Depreciation	
	Fixed Amount (a)	Interest on Fixed Amount (b)	Interest on Investment (c)	Total Charge (d)	(e)	(f)	Including Interest (g)	True Depreciation (h)
0	$.....	$.....	$.....	$.....	$.....	$150.00	$.....	$.....
1	18.10	.....	7.50	25.60	157.50	131.90	25.60	18.10
2	18.10	.90	6.60	25.60	138.50	112.90	51.20	37.10
3	18.10	1.85	5.65	25.60	118.55	92.95	76.80	57.05
4	18.10	2.85	4.65	25.60	97.60	72.00	102.40	78.00
5	18.10	3.90	3.60	25.60	75.60	50.00	128.00	100.00
	$90.50	$9.50	$28.00	$128.00				

It will be noted, as stated above, that the sum of the two interest items in columns (b) and (c) is the same for each period, viz., $7.50, interest on the *original* investment. The total of column (d), total charge for periodic depreciation, minus the total of column (c), interest on the diminishing appraised values, gives $100, the true depreciation as shown

by column (h). *True* depreciation under the annuity method is the same as under the sinking fund method. The periodic depreciation charge differs, however.

A graphical illustration of the main items of the appraisal schedule is shown below:



Graphic Chart—Annuity Method

In the above chart the points A^1, A^2, etc., represent the appraised values plus interest, the segments, A^1I^1, A^2I^2, etc., representing interest on each period's investment. It is to write down these increases in value that the additional $28 of periodic depreciation charges is needed. The curve OC is a straight line since each period's depreciation charge is the same. Curves AB and OD are identical with those of the sinking fund method. Curve OE represents the accumulating interest on investment as shown by the segments A^1I^1, A^2I^2, etc. Curve OC is the sum or resultant of curves OD and OE.

The annuity method is termed the "Equal Annual Pay-

ment" method in a preliminary report of the Valuation Committee of the American Society of Civil Engineers. As here illustrated it does bring about an equal periodic charge but only because the assumed rate of interest for the sinking fund accumulations is taken also as the rate for interest on the investment. If these two rates differ, the periodic charges will also differ. For example, if the sinking fund rate is taken as 5% and the rate applicable to the appraised values is 8%, the sum of these two interest amounts will not be constant because the bases on which they are calculated are changing each period. Because of this fact the Committee above referred to called this the "Compound Interest" method in its final report. To distinguish this from the sinking fund method which also uses the compound interest principle, the title here adopted, i.e., the "Annuity" method seems to accomplish that purpose.

(c) Unit Cost Method

A third method which uses the compound interest principle is called the "Unit Cost" method. Because of the involved mathematical processes required for the calculation of the amount of its periodic charge, and the doubtful practical value of the method, only a description of its main features will be given here.* The aim of this method is to equalize over each unit of product three costs, viz.: the cost of interest on investment, the cost of operation and repairs, and the true depreciation cost, all of these to be included in a periodic charge under the title of "depreciation."

The calculation of the true depreciation cost by the sinking fund principle is the reason for including this method in the compound interest type. The problem to be solved is the determination of the price to be paid for an asset at a

*The interested student is referred to Proceedings—American Society of Civil Engineers—December, 1916, in which will be found the Valuation Committee's report, and to Saliers's "Principles of Depreciation," in both of which the formula is developed.

given time so that the cost of each unit of product turned out during its remaining service life shall be the same as the cost of each unit of product turned out during the spent portion of its service life. The difference between the original cost of the asset and the price determined as above will be the depreciation of the asset for the elapsed period. A symbolic showing of the problem will make the matter clear. The following notation will be used:

V = original cost of the asset installed ready for use
V_1 = price that could be paid for it at the end of the period as above explained
O = estimated average operating costs per period, including repairs, for V
o = estimated average operating costs per period, including repairs, for V_1
D* = true depreciation rate or multiplier under the sinking fund method, for V
d* = true depreciation rate or multiplier under the sinking fund method, for V_1
U = units of output for V during one period
u = " " " " V_1 " " "
r = rate of interest on the investment

Then: $\frac{O+DV+Vr}{U}$ = the cost per unit of output for V, and

$\frac{o+dV_1+V_1r}{u}$ = " " " " " " " V_1.

Since, by hypothesis, these two costs are to be equal, we may form the equation $\frac{O+DV+Vr}{U}=\frac{o+dV_1+V_1r}{u}$, which solved for V_1, the price to be paid, gives $V_1=\frac{\frac{u}{U}(O+DV+Vr)-o}{d+r}$. Evidently, $V-V_1$ is the amount

* D and d may be expressed as the respective periodic amount-multipliers necessary to create sinking funds of one dollar each under the conditions as to time and rate for V and V_1. VD and V_1d become, therefore, the periodic amounts of true depreciation, i.e., decrement in value.

of the depreciation charge. The values for D and d, as indicated in the footnote, may be substituted and the amount of V_1 determined. The process is somewhat complicated in its practical application and will not be carried further here.

4. Miscellaneous Methods

Other methods of calculating the depreciation charge are used, but they cannot be classified under any of the three groups discussed so far. They are a miscellaneous, mongrel breed, scarcely to be dignified in some instances as methods. Among these may be mentioned the following:

(a) Maintenance Method
(b) Replacement Method
(c) Fifty Per Cent Method
(d) Appraisal Method
(e) Insurance Method
(f) Gross Earnings Method

(a) Maintenance Method

In this case a periodic charge for depreciation is made, equal in amount to the cost of maintenance of the asset for the period. It is thus a definite but variable amount, depending upon the maintenance policy.

(b) Replacement Method

This is hardly a method of *calculating* the depreciation charge, but rather of recognizing the fact of depreciation by charging all renewals and replacements to revenue. It is argued that in a large, widely extended plant after depreciation has reached the point where renewals are necessary, the charging of all renewals and replacements as expenses will take care of all accruing depreciation and secure a fairly uniform charge to product from period to period. Under this plan depreciation as such does not appear on the books but is taken care of under other titles.

(c) The Fifty Per Cent Method

This is somewhat similar to the replacement method in that it is applicable only after depreciation has reached the renewals stage. It is claimed for it that, in a property or class of asset consisting of many similar parts, as railroad ties, for example, after the stage of normal repairs has been reached so that the parts are in all degrees of repair from 0% to 100%, the normal maintenance and renewals policy will maintain the property or asset always in about 50% condition. Therefore the total depreciation for the asset or class is the other 50%, which never reaches a larger amount because of a constant renewal of parts. This 50% depreciation may or may not be carried on the books but it exists nevertheless. For the conditions under which it is applicable as above, the law of averages doubtless applies and makes the estimate a fairly good one.

(d) Appraisal Method

Here a physical appraisal of the asset or property is taken at the close of every fiscal period. The difference in value between the two appraisals for successive fiscal periods represents the depreciation for the period and would be brought on the books as such.

(e) Insurance Method

This is applicable only to large properties with assets widely distributed. Its operation "involves the actuarial principles of ordinary insurance. This means that the fund accumulated by depreciation charges should not be reserved as an accumulation until it can be spent for the purpose of replacing the identical property upon which the fund accumulated when such property is abandoned; and furthermore, that this fund should be expended, in whole or in part, during the year in which it is created, in the replacement of equipment."

(f) Gross Earnings Method

Here the depreciation estimate is based on the gross earnings for the period. This does not necessarily mean that the depreciation estimate will be large when profits are large, and small or nothing when profits are small, although it may be made to apply in that way in individual cases. The policy of making ample reserves for depreciation in good years and scant reserves in poor years is not to be wholly condemned. Depreciation, however, has no relation to, or dependence upon, profits. Rather, profits depend on depreciation in the sense that they cannot exist until after charges for depreciation have been taken care of. Depreciation considered as a fixed per cent of gross earnings is almost the same in effect as the service output method, and has much to commend it.

Condition Per Cent

Before leaving the topic of method, it may be well to explain a term used in connection with the depreciation estimate, viz., condition per cent. The condition per cent of an asset is found by subtracting from 100%, the fraction which represents the ratio of the present accumulated depreciation to the total estimated depreciation. Thus, if an asset has depreciated in value one-quarter, its condition per cent is said to be 75 (100%—25%). Hence, condition per cent is easily calculated if depreciation has been estimated by any of the proportional methods. If, in addition to the standard notation used, we assume that:

D_m = total amount of depreciation for m periods
V_m = value of the asset at end of m'th period

then, in general, condition per cent may be expressed by the formula:

$$100\% - \frac{D_m}{D} \tag{6}$$

Evidently, therefore, $V_m = V\left(100\% - \frac{D_m}{D}\right)$. Under the proportional methods $\frac{D_m}{D} = nd$. Therefore, condition per cent is $100\% - nd$.

Under the sinking fund method, the calculation is more complex. D_m, the total amount of depreciation accumulated to date, i.e., after m periods, is the amount of the annuity A for m periods. From formula (3), Chapter XV, page 272, the amount of an annuity A is seen to be $\frac{A(R^n - 1)}{r}$. Therefore, $D_m = \frac{A(R^m - 1)}{r}$, and $D = \frac{A(R^n - 1)}{r}$, from which the ratio $\frac{D_m}{D} = \frac{\frac{A(R^m - 1)}{r}}{\frac{A(R^n - 1)}{r}} = \frac{R^m - 1}{R^n - 1}$. Accordingly, condition per cent under the sinking fund method is:

$$(7) \qquad 100\% - \frac{R^m - 1}{R^n - 1}$$

CHAPTER X

DEPRECIATION—APPRAISEMENT OF THE VARIOUS METHODS

General Considerations

No method of estimating depreciation will ever be devised which will be applicable under all conditions and to all kinds of property. Such a panacea for the ills of wasting assets can obviously never be found, for the very good reason that the same medicine will not suit all patients. What gives good results in one case may not be applicable or not equally so, in another case. In discussing the relative merits of the various methods, therefore, no dogmatic rules for their use can be laid down; furthermore, without a detailed knowledge of operating conditions, only their main points of strength and weakness can be pointed out, and this is all that will be attempted here.

In a critical discussion of methods and their effects, the fact of depreciation may be considered from either the viewpoint of time or service. Depreciation when viewed from the aspect of time may be said to be due to:

1. Decrepitude, which is merely the lapse of time.
2. Inadequacy, which is lack of capacity to do the work which increasing markets demand (a condition the essence of which is also time).
3. Obsolescence, which represents the inability to perform efficiently as compared with the service secured from more modern equipment, and which may be a condition brought about by lapse of time and the developments of an art or science.

When viewed from the aspect of service, depreciation may be due primarily to wear and tear, which is a condition directly dependent upon the service rendered.

It has been pointed out that these elements of depreciation, viz., wear and tear, inadequacy, obsolescence, etc., are single and isolated in their action and not cumulative. One of them, therefore, is the controlling element in any estimate of depreciation. Accordingly, in judging the merits of a method the kind of depreciation must be taken into account; i.e., depreciation must be viewed from a time and service standpoint.

Ideal Basis for Distribution of Depreciation Charge

Regardless of the actual progress of depreciation, the theoretically ideal method of distributing the charge, from the standpoint of a going concern, is so that each unit of output shall bear its just proportion of the burden. Any other attitude is inconsistent. Thus, assuming that actual depreciation does not progress uniformly, that, as some maintain, the rate of depreciation is heaviest towards the end of the service life of an asset, it would not be equitable to charge the product of those years with a much higher burden than that of the earlier years. Just as it is a misfortune to be born under some conditions, so here it would be a misfortune to a commodity to be produced during the latter years of the service life of an asset. The life-period of an asset must be viewed as a whole and its total depreciation should be distributed evenly over its output, if equity is to be secured—other conditions, of course, remaining the same. This principle does not apply alone to the depreciation charge but equally to all other charges in connection with the asset, such as repairs, maintenance, etc. The author does not believe that these other costs should include a charge for an assumed rate of interest on the money invested in the asset. For a full consideration of the question of

interest on capital as an item of cost of production, the student is referred to Chapter XXVI. Any method of distributing the depreciation cost must take cognizance of the other costs as well.

1. Proportional Methods

(a) Straight Line Method

The straight line method is, first of all, simple in application and can easily be adapted to any asset under almost any conditions. Partly because of the ease of calculation and application, it has been designated as an official method by many regulatory boards. Its basis is a time basis and it spreads the charge evenly over the periods of the service life of the asset. Accordingly, where the time elements of depreciation, viz., decrepitude, inadequacy, or obsolescence, control and where the output does not fluctuate much from period to period, the straight line method should give satisfactory results for its intended purpose, i.e., for allocating the real depreciation charge.

Its effect, however, must be considered also in conjunction with the distribution of the other costs connected with the asset. Many engineers maintain that repairs are light during the early life of an asset and heavy during the later years. If this is true and these costs are charged to the period in which they are incurred, the combined depreciation and up-keep costs place an unjustly heavy burden on the output of the later years. Almost equally good authority maintains that the cost of repairs is in no sense uniformly graduated as implied above but can be counted upon in practice to be extremely irregular. If this is true and up-keep costs are charged as above, then many periods are apt to be underburdened and others loaded too heavily.

While, however, these considerations must be given weight when a single asset is under view, in a large plant

after operation has continued to the point where a normal and fairly regular cost of up-keep has become established, the inequalities of the individual up-keep charges may merge into fairly equal charges for the up-keep of the plant as a whole. This the law of averages accomplishes to a greater or less degree. But in a small plant with few assets subject to depreciation, the equality of the whole might not result from the individual inequalities. After all, this magic rule of averages which is invoked to cover up many troublesome and embarrassing situations is obnoxious to scientific accounting; it is a makeshift which carries with it a shiftless trust in the happy outcome of things—a trust which has been so often betrayed as to carry little weight.

If depreciation costs can be predetermined with a satisfactory degree of accuracy—and an estimate of them is all that can ever be made—with equal accuracy and satisfaction can up-keep costs be predetermined. The one is no more difficult than the other and equal reason exists for predetermination in both cases, viz., the securing of an equitable distribution of costs. With both estimates made at the beginning of the service life of the asset, all costs in connection with the asset can thus be prorated over the years of its service life.

If, as stated above, the output is fairly regular as between periods, fair and equitable results will be obtained. If the output fluctuates violently, unsatisfactory costs and an inequitable burdening of product will be the result. The proper treatment of overtime and "beyond-capacity" work, i.e., abnormal operations, requires care. It is expected that such work will have a higher unit cost than normal output, and it is proper that a sliding scale of depreciation be applied in such a case.

(b) Working Hours Method

Most of the considerations taken into account for the straight line method are equally applicable to the working

hours method. Here, with the service life expressed in terms of working hours instead of fiscal periods, a far step has been made towards securing an equitable distribution of depreciation costs over product. The rate per working hour can in this way be applied directly to the product. The machine-hour and sold-hour methods of costing distribute the depreciation along with all other costs on this basis of "rate per working hour."

Where a machine or other asset is limited in its use to a few operations equally wearing in their effect, this method should give satisfactory results. Where, however, one asset can be used for many different processes, involving inequalities in wear and tear, if the service rendered is the controlling factor, an inequitable distribution will result. Similarly, beyond-capacity operation, i.e., operation beyond the normal speed at which depreciation cost has been predetermined, will not be taken care of automatically by this method. Adjustment is necessary and, though arbitrarily made, must be attempted. Thus, ten articles might be turned out in one working hour, whereas an estimated output of six formed the basis for determining the rate of depreciation per working hour. As with the straight line method, so here equal care must be exercised in securing an equitable distribution of up-keep costs.

(c) Composite Life Method

This is not a working method for estimating individual depreciation costs, but rather a method of proof or check, which proves very valuable in some cases. The method is discussed in detail on page 197 where the uses to which it may be turned are pointed out.

(d) Service Output Method

The service output method bases the depreciation cost not on years of life nor on life in terms of working hours of

service. Here an attempt is made to predetermine the output of the asset in terms of units of product, and so burden every unit with its fair share of depreciation. To secure full equality of charges, up-keep costs must be reckoned on the same basis, rather than on a time basis of service hours or length of life. If conditions are uniform and normal, this method, where applicable, secures perhaps the most satisfactory of all allocations of depreciation costs. To an individual machine performing several different processes the method would scarcely be applicable. To a group or battery of machines, turning out a uniform product in finished form or in the same degree of partly finished condition, the method could be well applied. The estimated total output of the group would then be taken as the basis for calculating the service output of each machine in the group. When calculating service life in whatever units, that speed of operation which secures the highest efficiency is taken as the figure of normal operation.

From the foregoing it follows that the service output method of calculating the depreciation charge per unit of output is well adapted to an inherently wasting asset, such as a mine, a quarry, and timber lands, and is almost invariably applied in such cases.

2. Variable Percentage Methods

(a) Fixed Per Cent of Diminishing Value Method

The chief merit of the variable percentage methods, in the eyes of their advocates, is the way they are automatically adjusted to the up-keep charges. The reader should study the graphs of these various methods as a means of comparing results.

On the graph, page 158, it is shown that under the fixed per cent of diminishing value method the periodic depreciation charges are heavy in the beginning and decrease toward

the end. It is argued that, inasmuch as up-keep costs increase as the depreciation charge decreases, this method automatically equalizes these two costs. This argument was examined in detail under the previous discussion of the straight line method. What was there set down applies equally here. The fixed per cent method is also based on service life by periods—a time basis rather than a service or output basis. Furthermore, it involves a complex calculation and is perhaps never applied with any degree of accuracy. Lawrence R. Dicksee prefers this method for handling depreciation on machinery.

(b) Sum of Expected Life-Periods Method

The objection of complexity of calculation to the method just discussed is overcome largely in the sum of expected life-periods method. Here the rate of decrease is more marked, but the method has the same general effect as the fixed per cent method. If the repair charges are handled, as suggested, by means of pre-estimates, the results will not be equitable. If repairs increase with uniform regularity as the depreciation costs decrease, fair equality is secured. Otherwise the method has little to commend it.

(c, d) Arbitrary Methods

The two other methods under this main group, viz.: arbitrary with increasing amounts in the one case and decreasing amounts in the other, are not based on any orderly scheme of calculation and, having little logic behind them, are not to be relied upon. Ease of calculation is perhaps their only merit.

3. Compound Interest Methods

General Considerations

In a discussion of compound interest methods the basic feature, that of the compound interest principle, requires

consideration. The thought of progression on a compound interest basis is fascinating to many. It is a powerful instrument of accumulation and its charm seems to lie in the fact that through its instrumentality small sums can be made to grow into large sums. Whether the principle is applied to the creation of a fund or simply as a method of *calculating* periodic amounts, the remarks of P. D. Leake,* an English authority, are equally appropriate. He says: "May I impress upon you that these devices are dangerous expedients in any but the most skillful hands. . . . It (the sinking fund) is apt to give a sense of false security, because its whole virtue depends upon its obligations being faithfully carried out over the whole period, and this condition is not always fulfilled. . . . . It is probable that in many cases the use of a sinking fund is an altogether unwarrantable draft upon the future, because there is no reasonable certainty that the fund, whether it be state, municipal or commercial, will not be raided before it attains its object."

Over short periods the difference between the periodic amounts under this method and the straight line method is slight, as will be apparent from a comparison of the two charts on pages 153 and 162, giving graphic illustration of the two methods. There the period is for five years. When the period is extended to, say, twenty or fifty years, the difference in burden, due to interest accumulations, between the early years and the later years is very marked. "Thus, a 10-year unit having no salvage value, loses half its value in 5 years under the straight line theory, regardless of the rate of interest, and at 5% under the compound interest theory it loses nearly as much—about 44% of its value in the same time; . . . . but a 50-year unit, losing half its value in 25 years, under the straight line theory, loses only 22.8% of its value, at 5%, under the compound interest theory."

* In "Depreciation and Wasting Assets."

(a) Sinking Fund Method

The sinking fund method as an orderly scheme for estimating the periodic depreciation charge *will* make the estimate, and, if adhered to faithfully, the entire depreciation will be written off by the end of the service life of the asset. In this respect it is to be preferred to any arbitrary or haphazard method. That it secures an equitable distribution of depreciation costs over the product of the various periods, or that it effects a correct valuation of the asset at intermediate periods of its life is open to serious questioning. The periodic charge under the sinking fund method perhaps bears no relation to the fact of depreciation. The method is, at the best, simply a mathematical device for an orderly calculation of periodic amounts. In the valuation work of public service companies or in regulation work where, as in California, actual funds must be set aside to accumulate at compound interest, there is no serious objection to the method. Although it rests on false or doubtful assumptions of fact and results in an inequitable burden on the product as viewed from the standpoint of individual assets, these are minor considerations; for the method does by the end of its service life take care of the loss in value. Judged from the standpoint of its relation to up-keep costs, the method lays an increasingly heavy burden on the later years of the life of the asset.

(b) Annuity Method

All that has been said with regard to the sinking fund method applies with equal point to the annuity method. As previously indicated, in the explanation of its essential features, this method automatically secures a charge for interest on the investment as a part of the depreciation charge. Not only is the charging of interest of doubtful propriety in itself, but certainly its inclusion under the title of depreciation is misleading and indefensible. The

courage of one's convictions with regard to interest as a part of cost should not allow interest to shelter itself under the cloak of "depreciation." By referring to the appraisal schedule and chart, it is seen that the real depreciation charge is exactly the same under the annuity as under the sinking fund method.

(c) Unit Cost Method

The unit cost method represents an attempt to secure an equal burdening of each unit of product with interest, depreciation, and operating costs. In the language of its proponents, "this theory is probably the soundest theory of depreciation, and when applied with intelligence, probably furnishes the truest measure of accrued depreciation." While the end sought by the unit cost method is commendable, it is a compound interest method and it mixes interest, up-keep, and depreciation under the one title "depreciation."

4. Miscellaneous Methods

Criticisms of the miscellaneous theories can be brief.

(a) Maintenance Method

This method is irregular in its incidence, and under it the depreciation charge fluctuates violently between periods. Just as maintenance is subordinated to the requirements and demands of the trade, so also are depreciation costs made to depend on the same conditions. The charging of depreciation thus becomes a matter of business convenience instead of an inexorable fact of production. Just as repairs are postponed to a slack period during which maintenance charges are in consequence heavy, so does the depreciation charge increase even though actual wear and tear has decreased. Presumably the method makes charges light during the early years and heavy during the later years of the life of the asset. In a large plant with various kinds of

assets, after a normal up-keep charge has been established, the maintenance method of estimating the periodic charge for depreciation for the plant as a whole may work out fairly well on the theory of averages or by accident; for maintenance is not a measure of depreciation.

(b) Replacement Method

This is not a method of measuring depreciation but rather of financing it, i.e., of making good the loss. It also is based on the law of averages, and in a large plant after the point of normal replacements has been reached it may prove a satisfactory method of accomplishing its purpose. It does not serve as a means whereby a periodic depreciation charge can be brought on the books. Furthermore, it disregards the depreciation accrued up to the point of normal replacements.

(c) Fifty Per Cent Method

This method is also based on the law of averages. Here the law is very apt to work out satisfactorily. When the point of normal replacement of the assets, to which the 50% method is applicable, has been reached, the amount of depreciation is approximately 50% of the original value of the group of assets. This amount may be booked at that time and will remain without change thereafter, for the assets are maintained constantly in that condition. As a means of valuation, the method may serve well; as a measure of periodic depreciation or as a means of distributing the depreciation cost over the product, it is inadequate.

(d) Appraisal Method

This method is also inadequate as a means of measuring the periodic cost of depreciation. The physical facts of depreciation are not usually discernible at such short intervals. A judgment of values must, therefore, almost in-

variably make use, consciously or unconsciously, of some of the other methods of estimating the amount of depreciation by periods. After all, all methods of measuring depreciation are appraisals. Under the appraisal method confusion between original cost and reproduction cost is almost certain to occur, for present market values usually control physical appraisals. A discussion of the relative merits of original cost and reproduction cost as a proper basis for estimating depreciation will be presented in Chapter XI.

(e) Insurance Method

This method of carrying the depreciation charge is analogous to the policy practiced by some concerns of taking care of their fire losses by carrying their own insurance. If physical conditions are such as to make such a policy advisable or prudent, it should work out satisfactorily. It should be noted, however, that the insurance method is a means of providing funds for financing replacements and renewals rather than a method of insuring an equitable distribution of the depreciation cost over the product. The method of providing funds does not need to be the same as the method of measuring the periodic cost of depreciation. The insurance method serves the former purpose but is not well adapted to the latter. Much of the criticism of the sinking fund method is here applicable.

(f) Percentage of Gross Earnings Method

Measuring periodic depreciation as a percentage of the period's gross earnings is a convenient and fairly satisfactory method under some conditions. If the principal element is wear and tear—a service factor rather than a time factor—output may have a very direct relation to gross earnings. If the commodity dealt in is a standardized product and its price does not fluctuate to any extent or, better still, is fixed, gross earnings will be a very fair measure of output.

It is true that the estimate is based on a sales valuation of output rather than its cost of manufacture, but under some conditions this is a good measure of relative output as between periods. A depreciation charge based on gross earnings may thus give an equitable distribution of the depreciation burden. In the case of public utilities, when the price of the commodity or service dealt in is fixed, an estimate based on gross earnings usually gives satisfactory results where used. In applying the method, the expected earnings during the composite life-period of the plant are estimated and depreciation costs are then prorated over periods on the basis of earnings for the period as compared with total earnings for the composite life-period; or more simply, a fixed percentage based on past experience can be applied to the earnings of each period. Some objections to the method, arising in some cases from a misunderstanding of its operation, were pointed out when an explanation of its working was given.

In some cases gross earnings bear no relation, or only the remotest, to the quantity of output or the units of service rendered. A depreciation estimate based on earnings would not in that case be logical and could not give satisfactory results.

From the above discussion of some of the merits and shortcomings of the various methods, the cogency of the introductory remarks, to the effect that no method of measuring depreciation can serve as a panacea, should be appreciated. Every depreciation problem is more or less an individual problem; sweeping generalities will not serve.

Effect on Return on Investment

Many interesting studies have been made of the effect of some of the above methods on stability of income as between periods and their effect on the return of the investment,

using hypothetical data as to the earnings of the depreciating asset. Except for the purpose of fixing rates in the case of public service corporations, where the public has an interest because of the monopoly granted, stability of income should be subordinated to the fact of depreciation and not serve as a test of the merit or demerit of a method.

CHAPTER XI

RECORDING DEPRECIATION ON THE BOOKS

Methods Commonly Employed

Two methods of booking depreciation in the ledger are commonly employed. The periodic adjusting entry on account of depreciation has as its basic purpose the separation of the mixed account under asset title into its two elements—the one to show the expense element, the other to set up the true valuation of the asset. The expense element is set up under the one title "Depreciation" for all the assets. The deduction from the values as shown in the unadjusted asset account may be made either by credit entry direct to the asset account or by entry to a separate "Depreciation Reserve" account, each one of these reserves distinguished by the name of the asset to which it applies.

The latter method is preferred because thus the asset account at any time shows the original cost of the property—information of value for many purposes and worth the effort needed to maintain it distinct from other items. Under this method every wasting asset account is immediately followed by its particular depreciation reserve account, called its "valuation" account. The depreciation reserve is as much a part of the record of the asset as is the asset account itself. The two accounts are complementary, neither giving reliable information without the other. The reserve account is thus always and only a balance sheet account.

The above statement indicates the most satisfactory method of handling the various depreciation reserve accounts on the balance sheet. Although appearing on the credit side of the ledger, they are in no sense liability accounts, being

interpreted always as credits to the asset account, held in suspense, as it were, in the reserve account, pending full determination of their accuracy, which governs their ultimate disposition. Thus, on the balance sheet, either only the net present value of the asset should be shown, or preferably its original cost with its value extended short, its depreciation reserve deducted, and the present value, thus determined, full-extended. Further information of some value is given if besides the amount of the reserve the rate of depreciation is shown, though this is not often done. Occasionally an entirely incorrect showing, from the viewpoint of strict form, is seen when not only are the depreciation reserves—usually in one item—shown on the right side of the balance sheet but are set up in the Net Worth section, seemingly as a part of the surplus or other true profit reserves. This practice cannot be justified on any ground except that the sheet is kept in balance—a consideration which is far removed from real essentials.

Renewals and Replacements

First Method. As to the handling of the reserve at the time of renewal of parts and replacement of the entire asset, here also two methods are met. Under the one, the original cost of the part (or whole) retired is transferred from the asset account, its salvage value as defined above being carried to a Salvage account, and the cost less salvage portion being charged to the reserve account of the asset. This clears the asset account of all capital charges on account of the part (or whole) retired. The new part (or whole) replacing it is now charged to the asset account which then represents true cost of the new asset. If it is a whole which is replaced, theoretically the charging of it against the reserve should just clear that account of all values. Practically the preliminary estimate or forecast of the amount and time of depreciation never coincides exactly with the fact of depreciation.

A credit balance in the reserve indicates an overallowance for depreciation and is an item of true reserved profits, i.e., surplus; whereas a debit balance indicates an insufficient allowance and is an expense item chargeable against surplus and not *current* profits. This matter is treated at greater length on page 205. When the whole asset is replaced, the depreciation reserve should always be cleared of any remaining balance, as indicated above, so that the new asset and its depreciation allowance may be handled and watched unobscured by the record of any inherited sins or virtues from the past.

Second Method. The other method of handling the reserve at the time of replacement requires a comparison of the cost of the displaced asset and the cost of the new asset. The old asset account is allowed to stand untouched, but any betterment, i.e., excess of reproduction cost over original cost, is charged to it so that the asset account may show cost of the new asset. This cost, except for its betterment portion, if any, is now charged against the reserve. Both methods thus accomplish the same purpose, but the first is more direct and simpler of operation. It may be interesting to note that, in early instructions to railway accounting officers, the Interstate Commerce Commission prescribed the second method, which emphasizes the betterment feature. The present regulation is in accord with the first method.

Occasionally one finds a practice which, though based on the second method, differs in that no determination of betterment values is made, the original asset values remaining undisturbed and the entire reproduction cost being charged against the reserve account. This practice, of course, is due to a lack of understanding of the nature and purpose of the depreciation charge and its offsetting reserve, and is counter to correct principles. There is, however, seeming judicial support for it in cases of the valuation of

utility properties for rate purposes. The problem is dis cussed in full on page 202. The entries on the general books thus present no difficulties.

Subsidiary Records

Subsidiary records should usually be kept to show the detail of the group asset accounts carried on the general ledger. Not only is this necessary to maintain an adequate check on the inventory of the group asset and control over it, but without a detailed record of items it is impossible to keep careful watch over the operation of the forces of decay and depreciation and, therefore, equally impossible to build up reliable experience data concerning each group of assets. The amount of detail necessary in the record of the plant assets is dependent upon the information desired and capable of being obtained within a limit of cost low enough to make it worth the cost. This is a matter of policy which the management must determine. It may be desirable to carry the records in much greater detail for a period than would be justifiable as a permanent policy. It may be worth while to make more or less frequent studies of particular groups of assets in order to check up the effect of the depreciation rates.

As is pointed out elsewhere, while the preliminary estimate of expected life, and determination therefrom of the depreciation rate, are of great importance and the utmost skill and judgment possible should be employed, only a policy of everlasting vigilance and readjustment, in the light of new data available with the increasing age of the asset, will bring satisfactory results. To predetermine a rate and then to expect it without supervision to work out to a successful conclusion is, to say the least, foolish. Only by means of a complete record of life histories can a mass of reliable data be built up which can be made to serve as a guide for the future. The depreciation problem is an individual problem

and must, from the nature of things, remain so to a marked degree. Until conditions under which the lives of assets are to be lived become more or less standardized, or so long as each concern must carry its own depreciation insurance, standard rates of depreciation will not have a controlling significance.

Grouping and Classification of Plant Assets

From what has been said it is evident that the assets of a plant must be divided into groups for the sake of simplicity and convenience in keeping record of them. The basis of grouping should be physical similarity, process, or product. Thus, all tram cars might be carried in a group, as also all machines doing the same work or process. Groups of machines performing different processes on the same product could well be treated as a depreciation unit, and likewise all buildings used for the same purpose, if of a similar type of construction. If the latter are of different types it might be desirable to keep separate records. As stated above, the information desired must govern the groups under which record of behavior and performance are kept.

A numerical or an alphabetic numeric system of classification and identification is advantageous. Each machine, piece of equipment, or other asset should be marked or tagged when installed so that any particular piece of equipment can be identified at any time. The tag should carry date of installation and the name of the maker or vendor, as well as its own identification number. By the use of a combined alphabetical and decimal numerical system, almost any possible grouping can be made according to main and auxiliary groups, processes, or products.

Form of Plant Ledger

The form of the plant register or ledger need not be elaborate. Its main subdivisions should correspond with the

subdivisions of plant and equipment carried on the general ledger. Thus, if we find therein accounts with buildings (factory, store, office, etc.), machinery, furniture and fixtures for factory, store, and office, delivery equipment, etc., subsidiary records should show corresponding subdivisions. It should be a matter of fixed policy to require a periodic proof of these subsidiary records against their respective controlling accounts on the general ledger. Only thus can the inclusion of all items in both records be made certain. The control established must cover both the items of the assets record—the original cost as shown by the asset account—and the accumulated depreciation as shown by the reserve account.

Asset Record

Aside from the title and classification and identification number, the plant register should provide a record of the asset under the heads of:

1. Date of installation or adjustment.
2. Estimate of life in periods, working hours, service output, etc.
3. Original value, including installation costs.
4. Periodic depreciation burden.
5. Periodic appraisal value.

On the form shown below, provision is made for adjustment of the original estimate of depreciation. Where there is a realizable scrap value, additional columns to show scrap value and total depreciation to be written off should be provided. The form shown would have to be adapted to the method of depreciation decided upon as applicable to a particular asset. Thus, if working hours or service output are the basis, provision should be made to show the basis of calculation of each period's depreciation burden. The following form is well adapted to make record of the asset under the straight line method of depreciation.

PLANT LEDGER													Sheet No. ______				
Unit Name or Number *Water-wheel Governors.*																	
YEAR OF INSTALLATION OR ADJUSTMENT	ESTIMATE OF LIFE	ORIGINAL VALUE	ANNUAL DEPRECIATION BURDEN														
			1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
1910	10 years	$406.00	$20.30	40.60	40.60	40.60	40.60	~~40.60~~	~~40.60~~	~~40.60~~	~~40.60~~	~~40.60~~	~~20.30~~				
								27.27	27.27	27.27	27.27	27.27	13.65				
Scrapped 1920		Summary $406.00 406.00 0.00															
Balance brought forward			$406.00	385.70	345.10	304.50	263.90	150.00	122.73	95.46	68.19	40.92	13.65				
Deduct Depreciation a. physical			20.30	40.60	40.60	40.60	40.60	27.27	27.27	27.27	27.27	27.27	13.65				
Deduct Depreciation b. functional			0.00	0.00	0.00	0.00	73.30	0.00	0.00	0.00	0.00	0.00	0.00				
Total			$20.30	40.60	40.60	40.60	113.90	27.27	27.27	27.27	27.27	27.27	13.65				
Depreciated Balance		$406.00	$385.70	345.10	304.50	263.90	150.00	122.73	95.46	68.19	40.92	13.65	0.00				
Add cost of Installation of year following		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Balance forwarded		$406.00	385.70	345.10	304.50	263.90	150.00	122.73	95.46	68.19	40.92	13.65	0.00				

From "Principles of Depreciation" by Earl A. Saliers.

Plant Ledger (showing adjustment of value)

Periodic Revision of Rates

In Chapter VIII where the problems in connection with depreciation rates were discussed, a periodic testing of the effects of the particular rate employed was laid down as an essential for the application of any rate. The determination of the rate in the first place is a problem requiring expert knowledge and the most careful consideration of many factors. Hardly less important, however, for the successful operation of any depreciation scheme is the attention given to the manner of its operation and a modification and readjustment of rates to bring the theoretical expectation of the wasting of the asset into accord with its actual wasting to date.

At the beginning, when the asset is first installed the depreciation rate must be based, so far as this particular asset is concerned, entirely on contingencies. None of its life has been lived; none of its actions and behavior have yet become a matter of record. What it is apt to do can be forecast only by a study of its ancestors—heredity as modified by a reasonable expectation of change due to different environment. However, at the end of five years, say, there is available a record of service and behavior in the light of which not only can the accuracy of the forecast be judged, but also a more reliable forecast for the remainder of its service life can be made.

Frequency of Revision of Rates

Because of the conditions stated above, a periodic testing of rates should be made. How frequently this should be done depends largely on local conditions. Certainly sufficient time should be allowed to pass to secure a really worthwhile test. What constitutes a sufficient time depends largely on the expected length of life. Long-lived assets obviously need not be tested so frequently as short-lived assets; and the periods should be shortened when the asset

has been serving under supernormal conditions; the intensity of its life would be a controlling factor. It is usually stated that this testing of rates and conditions should be made at least every five years in the form of an appraisal. In the physical appraisal care should be used not to allow present market prices to enter into it, else the element of fluctuation may easily be brought in to nullify or exaggerate the real results of depreciation.

Test of Condition Per Cent

At the time of reappraisal the estimated condition per cent or the expectancy as to remaining service life are the points most to be considered. C. E. Grunsky has made an interesting contribution to the study of expectancy—theoretical, it is true, in the sense that it is based on assumed hypotheses, but nevertheless of value as calling attention to a phase of the subject that presents large possibilities. He takes 10,000 similar articles, all of probable life-terms of 10 years, and all simultaneously installed. Assuming that of these 10,000, 100 will fail or go out of service at the end of the first year, 200 at the end of the second year, that the largest numbers will fail in the years just before and just after the expected life-term of 10 years, and from then on, that there will be a gradual decrease in the number of failures until the 20th year, beyond which time (double the estimated life-period) none will remain in service—the following table is shown, which gives in the last column at the right the life expectancy of all remaining articles as at the beginning of a given year.

It will thus be seen that an article which has survived its 5th year, has at the beginning of its 6th an expectancy, not of 5 years but of 6.12 years; an article which has lived its allotted 10 years has an expectancy of 3.67 years; and so on. Certainly Mr. Grunsky's study, if it serves no other purpose, at least draws attention to possible lines of development and,

Table of Expectancy*

The probable life of each article is 10 years or periods. For terms other than 10 years, each year in the table may be regarded as a period equal to one-tenth of the probable life-term.

(Based on the special hypothesis of failures as explained in the text)

Year or Period	For 10,000 Articles			Single Article
	Number of Failures	Remaining Number of Articles at Beginning of Year	Remaining Service at Beginning of Year	Expectancy at Beginning of Year or Period
1	100	10,000	100,000	10.00
2	200	9,900	90,000	9.00
3	300	9,700	80,100	8.27
4	400	9,400	70,400	7.46
5	500	9,000	61,000	6.77
6	600	8,500	52,000	6.12
7	700	7,900	43,500	5.51
8	800	7,200	35,600	4.95
9	900	6,400	28,400	4.44
10	1,000	5,500	22,000	4.00
11	900	4,500	16,500	3.67
12	800	3,600	12,000	3.33
13	700	2,800	8,400	3.00
14	600	2,100	5,600	2.67
15	500	1,500	3,500	2.33
16	400	1,000	2,000	2.00
17	300	600	1,000	1.67
18	200	300	400	1.33
19	100	100	100	1.00
20	0	0	0	0

* From "Valuation, Depreciation and the Rate-Base," by C. E. Grunsky.

read in connection with facts as to the known length of life of many assets which have outlived their expected terms, it draws strong attention to the need of very careful use of any so-called mortality tables. These life history tables for assets are similar to the mortality tables used by life insurance companies.

Composite and Group Rates

In the practical application of the depreciation rate in a large plant, every separate piece of property is not, of course, considered by itself. The plant is divided into groups of similar assets, determined roughly on the basis of life expectancy, conditions of service, etc. Using these groups it is possible to find the rate of composite depreciation—a figure which serves as a check over the group depreciation. This is also sometimes called the "mean life" of the plant. It is determined by two methods—one called the direct, the other the dollar-year method. Assuming groups of assets of varying life lengths and costs, the following examples show the manner of estimating the amount of depreciation for the whole plant and also composite life; that is, the mean average life of the individual assets when viewed not as units but as a composite whole:

MEAN LIFE

DIRECT METHOD

Group	Life in Periods	Value to be Depreciated*	Rate of Depreciation	Amount of Periodic Depreciation
A	5	$100,000	20	$20,000
B	10	75,000	10	7,500
C	15	60,000	6⅔	4,000
D	20	120,000	5	6,000
		$355,000		$37,500

* That is, cost less salvage.

Mean life is $355,000 ÷ $37,500, or 9 7/15 periods.

Under the dollar-year method, the invested values are weighted by the length of their investment term and thus all investments are reduced to the common basis of one dollar for one year:

Mean Life
Dollar-Year (or Weighted Ratio) Method

Group (a)	Life (b)	Values to be Depreciated (c)	Turnover Rate in Longest Life-Period (d)*	Total Investment During Longest Life-Period (e)	Dollar-Years (f)**
A	5	$100,000	4	$400,000	$2,000,000
B	10	75,000	2	150,000	1,500,000
C	15	60,000	1⅓	80,000	1,200,000
D	20	120,000	1	120,000	2,400,000
		$355,000		$750,000	$7,100,000

* That is, the number of times renewal of the asset will be required during the longest life-period of any of the assets.

** Dollar-years, column (f), is the product of the total invested values as shown in column (e), and the life of each group as shown by column (b). Thus, $400,000 invested for 5 years is the equivalent of $2,000,000 invested for 1 year.

Column (f) ÷ column (e), (7,100,000 ÷ 750,000 = 9 7/15) gives the mean life.

Column (e) ÷ the longest life-period, 20 years, (750,000 ÷ 20 = 37,500) gives an annual charge for the whole plant.

What is known as "mean" age or plant expectancy as to remaining life may be found similarly. Assume a physical appraisal made after 12 years' life of the above assets:

Mean Age (Life Expectancy)
Direct Method

Group (a)	Life (b)	Unexpired or Remainder Life (c)	Condition % (d)*	Values to be Depreciated (e)	Values Already Depreciated (f)
A	5	3	60	$100,000	$40,000
B	10	8	80	75,000	15,000
C	15	3	20	60,000	48,000
D	20	8	40	120,000	72,000
				$355,000	$175,000

* (d) = (c) ÷ (b).

Group A assets, having been twice renewed, would be in 60% condition; Group B, 80%; Group C, 20%; and Group D, 40%.

Column (f) ÷ column (e), (175,000 ÷ 355,000 = 49 21/71%) gives the per cent of composite depreciation already taken effect.

The mean life, as determined above, multiplied by per cent of composite depreciation gives the mean age or portion of the mean life already lived (9 7/15 × 49 21/71% = 4 2/3).

The figure of mean or composite life may serve two purposes. First, it forms the basis for comparison with other similar plants and is about the only fair basis for comparison. Second, it gives the basis for estimating the amount of annual depreciation of the plant as a whole. This statement does not mean that individual depreciation reserves are not to be carried for each group of assets and those charged with the value of the asset as soon as it is discarded and renewed. But the use of the estimated mean or composite life figure does give a control over the amounts which should always be found in the individual group reserve accounts, i.e., at any given time the sum of the individual reserve account balances should be approximately equal to the amount as shown by the reserve when calculated on the mean life basis.

The Reserve as an Index of Financial Condition

The statement is often made that a balance sheet showing depreciation reserves points to a conservative policy in the treatment of plant properties. Usually such a balance sheet affords little or no basis for expressing a judgment as to conservatism or the lack of it. All that it does show is that recognition is made of the *fact* of depreciation. As to its *adequacy* or *inadequacy*, a knowledge of other factors is necessary.

Fluctuating Reserve. According to successive balance sheets a reserve may vary little from year to year, or it may

show considerable increase or decrease, and any of these conditions may be entirely normal and express adequacy of reserve requirements. In the first case, stability of the reserve may result because the asset is short-lived and hence is more or less frequently replaced; or different units of the property may have been installed at somewhat regular intervals so that retirements from service are also somewhat regular. Under either supposition, the charges against the reserve for the units displaced would just about keep pace with the regular credits to reserve for replacement purposes. In other words, that condition of the reserve for that class of asset is the normal condition—except perhaps in the case of a rapidly expanding plant, or other conditions not counted as normal when the reserve requirements were put into operation—and any other condition should lead to inquiry and investigation.

Increasing Reserve. In the second case where the reserve is showing a considerable increase from year to year, that also may be a normal condition. Long-lived assets are seldom replaced with any degree of regularity in the annual charge against the reserve, except in the case of very large plants where the number of such assets is correspondingly large in proportion to their size. Here more or less regular installations may take place as a result of an expanding business, covering a period of approximately the same length as that of the life of the asset. So here, too, any other than a regularly increasing reserve must incite inquiry.

Decreasing Reserve. As to the third case, that of a somewhat regularly decreasing reserve, the condition is not usually normal but may occasionally be met in a plant where one type of equipment is being retired and not replaced, due perhaps to a changing line of activity; as when, for instance, a stock furniture manufacturer works gradually into the exclusive manufacture of automobile and carriage bodies. Some types of equipment will thus be gradually retired and

their reserves will constantly diminish, their place being taken by other reserves covering the new type of equipment. However, this condition of decreasing reserves, while entirely normal under certain circumstances, being unusual, should always receive careful investigation. It is here that mean life and mean age or composite plant depreciation are of assistance in forming a judgment as to the general adequacy of reserves.

The Reserve in Relation to Expanding Plant

In the case of a plant the development of which is stationary, the problem of judging the adequacy of the reserves is simple in comparison with a plant which is expanding, resulting not only in the installation of more of the same kind of equipment but also of equipment of other kinds. A disturbing element is thus introduced and careful oversight of the depreciation policy must be exercised. In all cases, intelligent reading of the reserve and its sufficiency are internal problems based on intimate knowledge of conditions. Lacking this knowledge no true judgment can be made. The character of the asset, number of units in use, dates of installation, a comparison of the assumed conditions at date of installation with the actual conditions of the present—all are factors to be taken into account.

Reserve as Related to Efficiency

The general relation of efficiency to depreciation has already been discussed. As to whether the condition of the reserve is any index of the efficiency of the service rendered by the plant unit, attention is briefly directed to a misinterpretation of individual reserves. Experts state that many types of equipment cannot deteriorate actually more than a fixed per cent of their cost and continue to give efficient service. If, say, 30% is the limit in the case of one type, this does not, of course, indicate that, as soon as the deprecia-

tion reserve shows an amount equal to 30% of the cost, the approach of inefficient operation and the time of discard are at hand. It must be borne in mind that the reserve is a device based on financial considerations and, if properly calculated and handled, no asset should be ready for retirement until its reserve approaches in amount the value at which the asset is carried in its account. Nor is the point of approaching inefficiency shown until that condition of the reserve is found.

Reserve not Based on Cost of Replacement

The question is sometimes raised as to whether reserve requirements should be based on original cost or cost of replacement new. The question usually reveals a lack of understanding both of the purpose of the depreciation charge and the means of financing depreciation. It is usually said that the reserves carried on the books are for the purpose of providing the means of financing the replacement. It is not the purpose here to go into the question of original cost versus cost of reproduction new, either as a basis for valuation of public utility properties or from the viewpoint as to where the incidence of the burden of replacement properly should rest—whether on the users of the service given by the asset to be replaced or on those using the new asset. In the private enterprise where the rights of the public are not so apparent, under present-day tenets of political and economic philosophy, only internal policies and purposes to be accomplished need be considered.

As stated above, the basic purpose of the creation of the reserve is to burden the product with depreciation charge as a real part of the cost of production. If we are concerned with real and actual costs of production, by no stretch of the imagination can replacement cost—what it might cost to replace the asset at some more or less distant time—enter into the question. It might, with equal obscurity of logic,

be said that, because the labor cost is bound to be higher 10 years from now than at present, in order to get the true *present* cost of the product the estimated future labor cost should be taken in place of the actual present cost.

The Financing of Replacements

If one purpose of the depreciation reserve is that of financing depreciation, this can mean only that the reserve must insure provision being made so that the capital invested will not be lessened or encroached upon by the wasting of the assets in which it is invested. It is no necessary or proper purpose of the reserve to provide for increasing the invested capital. *Financing* the *replacement* of the retired asset is a separate financial problem and only concerns accountancy, so far as the records may reflect that policy. The reserve, in itself, does not furnish the means of financing any part of replacement, as was fully shown above. If the new asset is expected to cost more than the old, certainly business prudence would dictate provision for the added cost as well as ready funds of an amount equal to the original cost. The actual capital provided originally need be sufficient only for the time being; to provide more than that, if remaining idle, would be folly. If there is evidence of expansion, or if it is recognized that more will be needed—due to change in markets—for replacement purposes than was originally needed at the inception of the enterprise, provision must be made therefor.

Methods of Financing Replacements. In the financing of replacements, three courses are open:

1. Capital stock may be increased.
2. Funds may be borrowed.
3. Profits of the past may be reserved in the business and the actual value of the holdings of the owners thus be enhanced.

In the third case present dividends may be sacrificed for the sake of the future. Such reserve profits must be kept and used for the intended purpose, the purpose dictating their form as liquid or fixed. It cannot be too strongly emphasized that these are reserves of *profits*—not valuation or offset accounts under the title of reserves. Depreciation reserves, except they become secret reserves in the sense referred to below, have no right to serve any other purpose than that intended, viz., to provide insurance that none of the originally invested capital shall be dissipated and that the current product shall be burdened with its just share of *all* the materials and costs of production.

Secret Reserve

A great deal has been said about inaccuracies in the depreciation charge; the need of periodic readjustments has been emphasized. Now it is purposed to look into the effects of inaccurate charges remaining unadjusted on the books. In a desire to be on the safe side, some concerns, notably financial institutions, make very liberal provision for depreciation. Such a policy is not entirely to be condemned and is decidedly refreshing in comparison with the parsimonious allowances, begrudgingly made in some quarters. The effect of such a policy, if operated without check, is to create what is known as a "secret reserve." The value of the asset is charged more rapidly against operation than the asset actually wastes. Hence the books show a reserve sufficient to cover the cost of asset while there are still values remaining in the asset. In other words, the business possesses an asset of value which is carried on the books as of no value. Were the real present value of the asset brought on the books, the contra credit would appear in some surplus or *profits* reserved account. Such would constitute a true record of the item, openly stated. So long as the asset remains concealed, i.e., without record on the books, its

contra credit is also latent and constitutes a *secret* reserve of profits.

A too liberal depreciation policy, if recognized and adjusted at the time of a reappraisal, will require a separation from the depreciation reserve of the portion brought about by the overallowance, and its showing as a part of the surplus. When so handled, an overcharge for depreciation has no permanently bad effect except as it may show, for purposes of comparison, too high costs of production for the period overburdened. However it may be and sometimes is, used for purposes of fraud and therefore, as a fixed policy, the practice of the secret reserve is to be condemned.

Insufficient Charge

On the other side is the parsimonious policy of too low a charge or none at all. This results, whether consciously or not, in a charge against capital instead of revenue. At the close of the fiscal period the books are supposed to be brought into accord with the facts of true condition as then existing. Therefore, if the full portion of the accrued expenses is not separated from the wasting asset accounts, but is allowed to stand on the books under the title of assets, then these true expense items will still be carried hidden under the cloak of asset titles. The depreciation is thus carried as a charge against capital. The depreciation of a *going* concern should never be so treated; it is an operating charge, and no flight of fancy or shuffling of figures can make anything else of it.

In the case of a property, showing inflated values because of too low depreciation charges in the past, which is taken over and rehabilitated, the sums spent on the property previous to operation to put it in condition are properly capital charges. This is allowed on the theory—unfortunately, not always a fact—that the difference between the book value of the property and what was paid for it represents the estimated expenditures necessary to bring the property up

to its book value. If such is not the case and full book value was given for the property, the charge is still allowed, being looked upon as in the nature of an organization expense, representing in an instance of this sort the measure of the bad bargain made. This will, of course, result in a penalty in the form of an added depreciation burden on all product from the property taken over and rehabilitated.

Appreciation as an Offset to Depreciation

If depreciation is so inevitable and the necessity of its charge so absolute, can anything be said in support of the proposal to offset depreciation against appreciation? By appreciation is meant an increase in value due to the passing of time. Judicial authority can be found in support of it in cases of valuation for rate purposes.* There is no question but that a *realized* increment in land or any other asset offsets a depreciation or any other expense charge in just the same way that any other item of income offsets an expense. There is, however, this marked difference between depreciation and appreciation: the former is an inexorable reality advancing day by day entirely independent of market fluctuations, whereas the latter is dependent on the market and usually cannot be realized until the asset is sold.

When, however, as is too often the case, the proposal to offset depreciation by appreciation is meant to justify a policy which takes no cognizance of depreciation on the books because it is offset by appreciation, no support can be found for that view. In itself it reveals an entire lack of knowledge of the purpose of the depreciation charge or a disregard of the fundamental and obvious requirements of prudence. Depreciation is one of the costs of production and without it true cost cannot be shown. Failure to show depreciation on the books would justify also the omission of a cash income

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* See Consolidated Gas Co. v. City of New York, 157 Fed. Rep. 855, and 20 I. C. C. Rep. 344.

item because the cash was to be spent immediately in payment of salaries—a cancellation outside the business records of income against expense which can under no circumstances be justified.

Appreciation Due to Physical Changes

There is a kind of appreciation which is not dependent on fluctuations of the market and which as surely accrues, up to a certain point, day by day as does depreciation. Properties the value of which has been enhanced by earth construction work done on them are susceptible of this kind of appreciation. "Appreciation is generally restricted to physical items, and measures their gain in value due to age, use, and properly directed labor. . . . It results from work not specifically charged to capital account . . . . and covers items not represented . . . . in connection with a valuation."* It is found in connection with such items as roadbeds, solidification and grassing of slopes, drainage, dams, embankments, etc.

Its two forms are called solidification and seasoning, and adaptation. By the first is meant a settling and compacting of loose earth and its protection from wasting and washing away, as by the grassing of slopes, and the planting of trees and shrubs to hold the snows. When a roadbed is turned over to the operating division, it frequently is far from complete in the sense of being in a high state of efficiency, and the cost of its maintenance and up-keep during the early years of its life is much higher than during later years. This appreciation due to seasoning is difficult of valuation, but perhaps the difference in up-keep between early and later years is the best measure of it.

Appreciation Due to Adaptation to Use

"Adaptation" is a term used to cover that class of expenditures needed for the better adaptation of the property

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* Valuation Committee of the American Society of Civil Engineers.

to its use. In the early stages of the development of a property many things cannot be foreseen nor can a proper basis be settled upon for a determination of the charges as between capital and revenue. The proper handling of such expenditures as those incurred for drainage requirements, better adaptation of the roadway to the surrounding topography of the country, etc., are difficult. If these costs have not originally been charged against capital, the properties may truly be said to have appreciated in value by reason of them. Items of this kind require a wise discrimination between costs of operation and capital charges. The effect of such changes is almost always lost sight of so far as physical appearance shows, and the appreciation due to them is difficult of valuation at a later time. In the case of railroads, perhaps the difference in maintenance cost as between the early and later years of the roadbed is the best index.

In the case of industrial concerns, the cost of a rearrangement of machinery and working facilities for the better and more economical handling of the product frequently results in an appreciation in value due to adaptation to use. This has already been discussed in Chapter V.

As stated above, appreciation has judicial sanction and its valuation, although fraught with many difficulties and uncertainties, has been made and the results accepted. The generally haphazard method of roughly estimating the value of an appreciation when its determination becomes necessary suggests that it were better, by far, to attempt the proper segregation of the charge between capital and revenue at the time of its incurrence, rather than to take cognizance of an appreciation in value at a later time. There are undoubtedly circumstances in which appreciation in value can be properly recognized and should be taken into the accounts not only of public utility properties but also of industrial concerns.

Unearned Increment

Appreciation in value due to so-called unearned increment is entirely a matter of market value. By this is not meant that the monetary value of this kind of appreciation fluctuates with the market; it accrues from day to day and is just as real as depreciation. Although very real, it does not become *realized* until the property is disposed of, a thing which is determined by business policy and does not rest on any principles of accountancy. It is not good practice to bring such unrealized values on the books. For a fuller consideration of this phase of the subject, see Chapter XVII where the problem is treated in connection with land and real estate.

Depreciation Policy and Stockholders

A final consideration concerns the relation of the depreciation policy to the stockholder. As stated above, a too liberal depreciation policy results in the creation of secret reserves which may be used to the prejudice of the stockholder by an unscrupulous managing clique desirous of buying minority holdings at a depreciated value or of manipulating the stock for speculative purposes. An insufficient depreciation allowance results in a false optimism, a payment of dividends out of capital, and perhaps finally in a wrecking of the property. Except for the transient, speculative shareholder, a fixed depreciation policy based on a conservatively accurate allowance is always for the best interest of the property and its owners.

CHAPTER XII

CASH AND MERCANTILE CREDITS

Introduction

In Chapter V an effort was made to establish the general principles of valuation as applicable to the main classes of assets found on the average balance sheet. In doing so, the fundamental distinctions between capital and revenue charges were set forth. In the six chapters on depreciation the general principles of depreciation and their application to problems in accounting have been developed, with particular emphasis on the problems of valuation and true costs. It is purposed now to consider in detail the various problems met in the valuation of the individual items found on the commercial balance sheet. It will be necessary also to consider the method of showing these items so as to indicate the basis of valuation and something of the financial policy employed. The various assets will be considered in the order of their appearance on the balance sheet, the arrangement being based on degree of liquidity, beginning with the most liquid.

What Cash Includes

There is little to be said about the *valuation* of an asset of such evident and definite value as cash. The problem here is rather one of showing the nature of the asset, although certain principles of valuation under given conditions need also to be considered.

The term cash as an item in the balance sheet usually includes all money and whatever serves as money. Thus, all legal tender of the realm, bank notes, checks, bankers'

drafts, postal and express money orders, and occasionally postage stamps and even "IOU's" are classed as cash. Not all items, however, that may be carried on the books as cash should appear under this caption on the balance sheet. There only the current asset cash should be listed in the group of current assets. All other cash, including that held for specific purposes under deed of trust or otherwise, should, unless it is readily applicable for the cancellation of current liabilities, be shown in some other group.

Where the petty cash or working funds of all sorts are operated on the imprest system, the funds should be replenished before the books are closed and should thus be truly valued at their ledger figures. The bank account should be reconciled with the cash book, and the figure should represent the amount at which the item is to be taken into the balance sheet. This means, of course, that all properly authorized claims against cash in bank are to be treated as cash disbursed if they have been regularly issued, whether presented for redemption at the bank or not. Checks written but not yet mailed are not usually treated as cash disbursed because they are still under control. Similarly, items left at the bank for collection and deposit may be counted as cash on hand. If, however, as might happen in exceptional cases, a comparatively large amount represented dishonored items and a second attempt was being made to collect these dishonored items, the better procedure would be to omit them from the cash total and include them with the receivable items. In this connection attention should be called to the practice occasionally met with of holding the cash open for a few days after the closing date for the purpose of making a better showing as to balance on hand by means of new collections. This, of course, is a practice which cannot be countenanced under any circumstances as it is simply an effort to mislead, even though the effect may not always be bad. A balance

sheet is a statement of financial condition purporting to be true as on a certain named date. The values shown therein are therefore to be those applicable to, and true on, that date and no other.

Stamps Remitted as Cash

Some concerns dealing in commodities of small value sold through the mails allow, and even encourage, payment by means of postage stamps, these in turn being used for their own correspondence and parcels post expense. The proper place to record the value of this item at the close of the fiscal period is in the inventory of office supplies or other similar heading instead of treating it as a part of the cash. This necessitates a transfer from cash to office supplies. The transfer can be accomplished in either of two ways without interfering with the usual handling of the cash whereby it is checked against the bank's record of deposits and checks as explained in Volume I, Chapter XXXV. The customary method is to use the cash book as the place of record for the receipt of stamps and then transfer them to the stamp drawer for office use. All other "cash" being deposited in the bank, the record of cash receipts as shown by the cash book does not thus check against the record of deposits as shown by the bank. To secure this agreement, a check may be made out payable to "Cash," "Ourselves," or "Postage," and passed through the bank periodically as a deposit and so secure the proper agreement between the bank's record and the concern's. The record of the check among the cash disbursements thus secures the proper charge to Postage or Office Supplies and also effects the proper agreement between the bank's record and the concern's. The use of a "postage" journal, operated on the same lines as the cash book and recording all receipts and disbursements of postage, would accomplish the same purpose and in some circumstances would be advisable.

Temporary Cash Disbursements

The practice of allowing proprietor, cashier, or others to take cash from the cash drawer and leave a memo of some sort to show responsibility or purpose is to be deprecated. Only where the principle is strictly adhered to of depositing all cash and disbursing only by check and by means of a petty cash fund handled under the imprest method, can adequate control over cash even be approximated. Where, however, such is not the practice, the problem is not that of the valuation of cash, for the memos are not cash, but of the valuation of claims receivable—a subject to be treated later in this chapter.

Disposition of Cash Funds

In the showing of cash for purposes of management, it is essential to indicate the present disposition made of the various cash funds or to show the immediacy of the control over them. Thus cash should be listed as:

1. Safe or drawer
2. Various working funds
3. Petty cash fund
4. Bank

Under "Bank" should be indicated how much is held on "current" account and how much is restricted to special purposes. Of the current balance it is desirable to show the portion subject to check for immediate needs and the portion representing surplus funds not immediately needed and therefore held to earn interest. These amounts subject to interest are almost always available on short notice, but usually only with the sacrifice of interest earnings to date.

Cash from the sale of capital stock or bond issues, or from the sale of old plant or any portion of it, under authorization from the stockholders that it be held for purchase or construction of new plant, or for other capital purposes,

comprises that held for specific purposes. Sometimes even cash in the sinking funds might be included in the list. As it is usually of importance to keep the management informed as to the amounts of cash available for the various purposes stated above, an effort should be made to give this information, without too much detail, in the balance sheet if it is drawn up for internal use.

Cash Held Abroad

There remains to consider moneys held in a foreign branch and thus subject to fluctuations of exchange. In Chapter XXXI, where the subject of the foreign branch is treated, a full discussion of the problem of exchange in its relation to the accounting records will be given. Here it is sufficient to say that as between countries where exchange rates vary little, the general practice is to use an arbitrary conversion figure for incorporating the results of the foreign branch with those of the head office. This conversion figure applies to cash as well as to all other items. The use of such an arbitrary basis will give substantially correct results under the conditions named.

The assets of the foreign branch are the properties, usually and for the most part, of proprietors and stockholders residing in the country of the home office, who are concerned merely with the distribution of the earnings of the foreign branch. Profits are made in one currency to be distributed as dividends in another currency. Hence, the rate of exchange prevailing at the time of closing the books would usually give the most accurate results and should, of course, be used when exchange is not fairly stable between the two countries. It may even be conservative and advisable to set up a reserve for fluctuations in exchange, with the object of absorbing what might otherwise be too great a charge or credit to the current period's profit and loss if a particularly unfavorable or favorable rate were prevailing on the date of conversion.

Accounts and Notes Receivable

In the valuation of accounts and notes receivable the problem is largely one of appraising the uncollectible items. The book account and note are intermediate stages in the conversion of merchandise into cash. Were they always worth their face value there would usually be no problem in their valuation except for the element of theoretical interest which is not commonly taken into account by commercial enterprises. In considering this problem of valuation, the question of the correct use of terms arises. For the sake of clearness, when showing the items on the balance sheet, attention will be first directed to this latter phase of the subject.

Objection to the Title, Accounts Receivable

The governing principle here is that only current items can be included in this group of assets when shown on the balance sheet. In accounting, as in economics, there is no distinctive scientific terminology. The economist makes use, for the most part, of every-day words and phrases. These are often open to misunderstanding and are sometimes capable of being used even for wilful misrepresentation. Recognition of this fact has made necessary a more careful definition of some terms. In the language of the street, almost any claim against outsiders may be spoken of as an "account receivable." The term is thus so broad as not only to include current claims against customers in regular course of trade, and accrued income, such as rents, commissions, interest, dividends, etc., earned but not yet received, but also to serve as a cloak covering many other kinds of claims and deposits. Among these may be enumerated:

1. Cash deposited to cover breakage or damage to equipment in use, to guarantee the payment of prospective expense, or to guarantee good faith in the performance of a contract.

2. Moneys advanced to subsidiaries, salesmen, and other employees on account of expenses and salaries.
3. Claims against creditors for returned or damaged goods, against railroads for lost or damaged goods, and against governments for rebates, drawbacks, and the like.
4. Prepayments on purchase or expense contracts, as payments made to bind a bargain or before delivery of goods; and expenses paid in advance, such as royalties, rents, interest, etc.
5. Unpaid calls or instalments on stock subscription contracts.
6. Claims against absconding officers for property appropriated or trusts violated.

It is necessary, therefore, to employ a term of more definite meaning which cannot be misused. The word "Customer" is sometimes used and is not objectionable. However, the term "Trade Debtors" is more generally employed and will be so used here as denoting all claims against customers, clients, etc., in regular course of business. Its appearance in a balance sheet is usually evidence of a careful discrimination among the various classes of claims and is not therefore a misleading term.

Risk from Credit Losses

As stated above, the chief problem in valuing accounts and notes receivable is that of estimating bad debts. It is a matter of general experience that some of those to whom credit is extended do not pay their bills. Hence, at the close of the fiscal period it is necessary, so as not to overstate the asset, to estimate the amount which probably cannot be collected. The necessity for this is recognized in a decision of the United States Supreme Court in Providence Rubber Co. v. Goodyear, 9 Wall. 788, and has the sanction of conservative business policy.

The effect of such an estimate is that the period in which the sale is effected is made to stand the loss, and not the one in which failure to secure collection is experienced. There is a close relationship between the actual loss from bad debts and the credit policy of a concern. Where the sales force is allowed to grant credit, the loss from bad debts is almost invariably large. Where the extension of credit is controlled by a credit department, the loss is less than in the other case but depends on thoroughness of information and investigation of the risk. However much care may be exercised, there will be nevertheless some loss, but a live credit supervision should keep the loss at a minimum.

Risk and Length of Credit Period

The amount of loss, or rather the percentage of loss, is not the same for different lines of business nor even for different concerns in the same line. The normal credit period for a particular business has some relation to the loss. Thus if credit supervision and collection effort are the same for two concerns, the one with the shorter credit period will usually have the smaller loss. In a business, for example, where the credit term is 60 days, we would expect fewer uncollectible accounts than in one whose credit period extends for a year or more. As between two concerns in the same line of business, *where conditions are fairly uniform*, however, there should be little variation in the loss from bad debts. As pointed out in Volume I, Chapter XXXVI, the sales discount policy is for the most part a device for overcoming the element of risk in the extension of credit.

Analysis of Customers' Accounts as the Basis for Estimate of Bad Debts

In estimating the amount of bad debts, experience within the particular business is the only safe guide. Oftentimes, however, the manager or proprietor is not the most com-

petent person for the task. The auditor, in consultation with the manager, may often arrive at a better estimate than could someone closely connected with the business. In making the estimate, it is an aid to analyze the accounts according to the length of time they are past due. Thus, there would be, after analysis, the amount of those overdue not more than 30 days, the amount of those overdue not more than 60 days, the amount of the 60 to 90 days overdue items, those 90 days to six months, those six months to a year, and all those more than a year overdue. The total amount outstanding minus the sum of these overdue classes represents the portion not yet due. Some part of the not-yet-due portion is, of course, still subject to discount if paid within the discount term. With the claims against customers thus analyzed, a much better basis is afforded for testing the adequacy of the provision for bad debts. The various methods of estimating this provision are discussed on page 219.

It may here be noted that when making up the estimate of bad debts it is by no means always necessary to analyze the outstanding items as suggested above. Such an analysis is of value in three cases:

1. In the case of a new concern where there is no past experience on which to base the estimate.
2. In the case of an outsider—a professional auditor or other party—being called upon to make the estimate.
3. Periodically, in any business, as a check on the work of the collection department.

The value of the analysis in cases (1) and (2) is based on the principle that the longer an item is overdue, the greater is its likelihood of proving uncollectible. The need of an increasing rate for the different classes as analyzed above is apparent. In case (3) its value lies in the fact that it reveals

the general effect of the collection policy and incidentally points out any change in policy. Any additional factors which may have wrought a change in the general financial situation must, of course, be taken into account.

Basis of Estimate of Bad Debts

Three methods of making an estimate of bad debts are found, in all of which a percentage of some given base is used. The various bases are respectively:

1. The amount of outstanding trade debt at the time of the balance sheet.
2. The amount of sales on credit made during the present fiscal period.
3. The total sales, both cash and credit, for the present period.

Trade Debtors as the Basis. The use of trade debtors as a base is obvious because it represents the uncollected charges from which alone can any loss from bad debts arise. The use of such a base seems correct in principle. This is so in cases where a balance sheet is made up only once a year, so that conditions as to the periodicity of the sales are practically the same from year to year. The amount of loss from uncollectible items is then somewhat nearly proportional to the amount of claims outstanding at the close of the fiscal year. But where it is necessary to make the estimate monthly, or oftener than once a year, it is very probable that at some of the intermediate periods the amount of outstanding claims will bear no logical relation to the loss from bad debts. Thus, in the garment industry the sales for practically the whole year are made within a few months, and during the other months the processes of manufacture and collection are carried on. For these reasons the amount of bad debts is not proportional to the outstanding claims at the end of each month, nor does such a base properly

allocate the losses to the periods in which the sales are made. Accordingly one of the two other methods previously mentioned is used.

Sales as the Basis. Inasmuch as there cannot be any loss from bad debts in the cash sales, theoretically the credit sales provide the proper base for making the estimate. Practically, total sales, either gross or net, furnish the base most frequently employed because the total is always available without the necessity for analysis. So long as the ratio of the two kinds of sales remains fairly constant, the loss from bad debts does bear a direct relation to total sales.

Summary. It may be said with respect to the use of trade debtors as a base, that it gives satisfactory results where conditions are uniform from period to period. In its use, however, cognizance must be taken of any change in the credit policy of the business whereby the term of credit is shortened or lengthened as that in itself would tend to change the ratio of the base to the estimated loss from uncollectible items. As between credit and total sales, theory favors the former but practical considerations the latter. If for any reason the ratio of cash to credit sales should change, the change would have to be taken into consideration when making a comparison between periods of the loss from bad debts. No justification can be found for a fourth method sometimes met with, which makes the provision for bad debts bear some relation to the net profits —large if profits are large, and small or none if profits are small.

In handling the estimate of bad debts on the books, the same considerations are to be observed as in booking depreciation. Care must be exercised not to allow the reserve to grow beyond liberally estimated requirements and so create a secret reserve, nor to fall below such requirements. This must be watched closely and, if need be, the rate changed to accomplish the desired result.

Discounts and Collection Costs

In connection with the valuation of trade debtors, the problem of collection costs and cash discounts must be considered. Some authorities connect these costs directly with sales and make provision for them in the valuation of the current trade debtors; i.e., an estimate of the cost of collecting the outstanding claims and of the probable amount of loss from discounts on the amounts outstanding is deducted by means of reserves from trade debtors and so shown on the balance sheet. Where such a practice is followed, strict consistency would require that a similar credit provision be made for discounts on purchases—a practice not often advocated. The weight of opinion is in favor of taking all such costs and credits into account only when they are actually met. This accords with the treatment of these items as financial management items (explained in Volume I, Chapter XXXVI) and as therefore bearing no direct relation to sales. If, however, unusual costs of this or any other kind are anticipated, prudence demands that provision, by means of reserves, be made for them. Usually the costs average up pretty well from period to period.

Valuation of Other Receivable Items on Open Account

The problem of valuing the other classes of receivable items previously mentioned on page 215, does not differ in the main from that of trade debtors just discussed. If they are worth their face value they should be so shown. If worth less, the necessary valuation reserves should be set up. With these items the *chief* problem, however, is their proper showing on the balance sheet; i.e., their correct classification and a suitable nomenclature. Most of the items are not strictly current, but even their inclusion under this head is not misleading if they are carefully earmarked to show their true nature. Some of them are decidedly fixed, some are in no sense assets. In some cases even

trade debtor balances as carried on the books are not strictly current. In concerns where sales are made on an instalment basis, usually the payments extend over several months and oftentimes years. The customer is charged with the whole amount and credited with the regular instalment payments as made. The portion of the outstanding balance covered by the more remote payments is thus not current. In concerns where both regular and instalment sales take place, a separation of the customers' balances on the basis of the sales contract gives the necessary information for balance sheet purposes. The accounts of instalment trade debtors normally require a much more liberal valuation reserve than those of regular credit customers.

Loss on Notes Receivable

In some cases the expected loss because of uncollectible notes may be less than that from open accounts, due to the greater formality of the note as an instrument of credit and the probably greater loss of credit to the maker in case of dishonor. However, in making provision for bad debts, the practice is almost universal to class the two receivable items together. Such practice is undoubtedly sound. In the case of notes, the request for payment is more forceable because of the definitely stated due date and the loss of standing if unpaid after such date. In some cases the payment of notes is not pressed, nor is any extraordinary provision made for past-due items—as in industries allied with farming when an unusually bad season makes impossible the payment of notes given by farmers. Again, the practice is sometimes made of taking notes for a long overdue, open account. These have usually no better value than the accounts and must be treated accordingly.

The usual method of handling overdue notes receivable is given in Volume I, Chapter XXXVIII. As there stated, where payment is allowed to lapse, it is generally advisable

to insist on the giving of new notes in place of the old. There may be circumstances in which this is not advisable, but the proper method will usually be apparent in each case.

Interest on Notes Receivable

The valuation of notes receivable—using the term to include all written promises to pay, i.e., promissory notes, accepted drafts, and the like, requires a consideration of interest. By far the larger number of notes given in trade are non-interest-bearing and are not therefore worth their face value until they become due. The interest problem in the valuation of notes is thus whether the notes should be shown at their face value or present, i.e., discounted, value. Notes which are interest-bearing from their date of issue are, of course, worth their face, on the assumption that the interest takes care of the discount. Where non-interest-bearing notes form a very considerable item it is well to value them on a discounted basis; if their amount is small, theoretical principles of valuation give place to practical considerations and they may be valued at their face. Where notes bearing interest are valued on a discounted basis, care must be exercised not to include the interest accrued both in their face valuation and also under the head of accrued income.

Balance Sheet Titles for Notes Receivable

The problem of terminology is also met in handling notes receivable. Under the balance sheet caption "Notes Receivable" should usually be included only notes received from trade debtors, and certainly it should never represent any but current asset items. Notes received from officers and employees, of indefinite term and the payment of which will not be pressed, should be recorded under some such title as "Notes Receivable Special." Long-term notes and those representing loans or advances of any sort should

be properly earmarked, as should also loans carried on open account, salary overdrafts, and the like. The latter should be shown under Deferred Charges. These nicer points of valuation cannot be presented on a condensed balance sheet, but care should at all times be taken to make such a showing as will not be misleading and will serve the purpose for which the statement is to be used.

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CHAPTER XIII

MERCHANDISE STOCK-IN-TRADE

Definition and Scope of Term

Stock-in-trade, as the term is usually understood, comprises all commodities purchased for resale. Thus, assets, which in one concern belong to the fixed asset group, may be the stock-in-trade of other concerns. In stating the principles of valuation for these assets, it is definitely to be understood that they apply only to such as are used as stock-in-trade, and not to the same items when used as fixed assets. Oftentimes the process of manufacture intervenes between the purchase of a commodity and its sale. In such a case the commodity, at the time of valuation, may be in different stages of completion. It is then usually so listed on the balance sheet under suitable titles, such as Raw Material, Goods in Process, and Finished Goods, all of which are treated as current assets. Included in the problem of valuation of stock-in-trade is the treatment of goods out on consignment, goods of others held for sale on a commission basis, and scrap material. Finally, some points to be observed in taking the physical inventory will be considered.

Valuation at Market or Cost Price

Inasmuch as stock-in-trade is purchased solely for resale or ultimate conversion into cash, it is desirable for the balance sheet to reflect the proper value of what remains on hand unsold. Such goods may have a realizable value higher or lower than cost value, from the standpoint of the market in which they were purchased, and will usually have a higher value in the market where they are to be sold. The value of

all current assets to be shown on balance sheet is usually stated at the present realizable value. As applied to stock-in-trade, that must not be understood to mean sale or retail value. To value the stock-in-trade on such a basis would result in taking into the current period the profits on sales not effected until the next period; furthermore, these profits would not even be offset by the costs of making the sale. It may be laid down as a principle of business practice based on sound reason, that the period in which the sale is made should be given credit for it. Stock-in-trade must therefore be valued on the basis of its purchase or wholesale market price and according to well-established practice, either at cost or market, whichever is the lower. This principle has the support of conservative practice throughout the world.

Objections to Valuation at Less than Cost

The effect of valuing the stock-in-trade at a lower market than cost is to bring into the period's results a loss which may never be realized, either because the change in the purchase market may not be reflected in the sale market, or because, if so reflected, the market may swing back before actual sale of the stock is made. If valuation is to be at the market when that is lower than cost, consistency would seem to demand that, when the market is higher than cost at the time of preparing the balance sheet, market value should be used and the profit occasioned thereby be credited to the current period. The answer to this argument is that operation would thus be placed on a speculative basis.

Again, it is sometimes argued that good buying is just as essential to profit-making as good selling. Accordingly, the purchasing department, with the foresight to buy in a favorable market, should receive the credit for it; if conditions are reversed, it should bear the blame, i.e., the loss. In other words, the period in which the purchase effort is expended should be credited or charged with the gain or the

loss brought about by a favorable or unfavorable condition of the current market as compared with its condition at the time the purchase was made.

Anticipation of Profits or Losses Undesirable

In answer to these various contentions, it may be stated that though good buying is an essential factor in profit-making, no refinement of logic can obscure the obvious fact that goods are bought to be sold and that no profit arises until the sale takes place. All effort before the sale, whether directed towards good buying, careful storing and display, the placing of advertising, or the selection of a sales force, will come to naught unless sales are made. It would seem, therefore, that potential profit or loss on any or all effort preliminary to the actual sale has no place in the current record. From the standpoint of the profit and loss statement, this conclusion as to the policy of valuation of stock-in-trade at cost can be stated without fear of contradiction. In support of this is a direction of the Treasury Department in connection with the federal income tax returns. This reads, as revised in October, 1916: "In case the annual gain or loss is determined by inventory, merchandise must be inventoried at the cost price, as any loss in salable value will ultimately be reflected in the sales during the year when the goods are disposed of."

From the viewpoint of the balance sheet, objection is sometimes raised—and supported by conservative practice and legal requirement as indicated above—that a balance sheet showing stock-in-trade at cost may thus very obviously under- or over-value the item, a situation not at all desirable. In this discussion, the whole problem of valuation is being treated from the point of view always of a going concern and not of one facing dissolution and the forced sale of its properties. Under these circumstances, such a balance sheet must frequently be used as the basis for asking credit, and

credit extended on inflated values of current assets is not properly extended.

Method of Treatment and Summary

To meet this situation, particularly in the case of large fluctuations in the market, the true status of affairs is disclosed by appending to the balance sheet a footnote in which is stated the present market value of the inventory. Without this information, oftentimes, when the market is showing steadily rising values, as much harm and financial ruin may result through the extension of insufficient credit, as under other conditions might arise from an ill-advised inflation of credit. Sometimes the present market value is indicated by setting up a reserve out of *profits*, called "Reserve for Market Fluctuations in Merchandise"—or other similar title—when the market is lower than cost. This method retains the inventory on the books at cost value and so does not burden the current profit and loss, although it does lessen the amount of profits available for dividend distribution. Without doubt the policy is good in cases of extreme and somewhat permanent changes in the market.

To sum up, therefore, the valuation formula of cost or market, whichever is the lower, while based on conservatism may unnecessarily and improperly burden the current income account. Valuation at cost, on the other hand, while placing the profit or the loss in the period when realized may cause the balance sheet to present an entirely inadequate and even misleading story as the basis for credit. To remedy this, three courses are open, viz.:

1. Carry the market valuation, whether more or less than cost, in a footnote to the balance sheet.
2. In case market value is less than cost, set up a reserve out of profits equal in amount to the difference.

3. Carry in an inner column in the body of the balance sheet the present market value.

It would seem, therefore, that valuation at cost with the present market value shown on the face of the balance sheet, is the most desirable practice from every viewpoint.

Depreciation of Stock-in-Trade

Quite apart from this discussion of the proper basis for valuation, which concerns itself with marketable merchandise, is the problem of the method of handling deterioration or depreciation of stock-in-trade as distinguished from fluctuations in value. Such deterioration may result from shelf wear, use of goods for display purposes, changes in style and shape, overstocking which causes an accumulation of goods which soon are out of date or of sizes and qualities seldom used, broken lots where such will injure the sale value, and so on. Many devices, such as the "spiff" or the offer of a premium to salesmen, are employed by up-to-date merchants to keep their stocks free from these items of deterioration; but in spite of all that can be done, it usually proves impossible to keep the stock live in every particular. A valuation at cost under these circumstances would be an obvious inflation of values. If the concern had purchased that quality of goods originally with the expectation of resale, valuation at cost, under the limitations suggested above, would be the correct basis for showing. Since, however, such is not usually the case, the proper basis of valuation is now the market price—the present price at which goods of similar kinds and qualities can be bought.

It may be objected that the effect here also is unduly to burden the current period with unrealized losses, but this is not the case. The deterioration in value is a very real loss which is entirely independent of any fluctuations in the market. If goods are shelf- and window-worn from display

usage, the deterioration is just as much an expense incurred for advertising as a display advertisement in a daily paper. The deterioration due to overstocking is a penalty which the current period should bear because of its poor buying effort or its inadequate sales efficiency. Thus, valuation of the inventory of any stock of goods must have regard to the effect of its present condition on its marketability. Any deterioration which renders the stock less salable is an expense to be borne by the present period and not the period in which the sale is made.

Full Costs of Stock-in-Trade

Cost having been established as the basis for valuing a stock of marketable merchandise, there must next be considered the elements of cost and their application to different classes of goods. By cost of goods is meant full cost, i.e., not only invoice price but all additional costs, needed to place them ready for sale. All costs, therefore, up to the point where goods are ready to create income are proper charges against the stock-in-trade. Customary costs of this kind are freight, drayage, insurance during transit and storage, duty, seasoning or aging costs, warehouse charges, and all similar items. The information as to these costs is usually recorded separately, but at a summary period they are loaded on the invoice cost of stock-in-trade.

In connection with this question of the proper composition of cost, attention is called to two other items sometimes requiring consideration. The first deals with the handling of cash discounts. The point at issue is as to whether the invoice figure should be recorded at the price quoted on a cash basis or on a credit basis. This point is discussed at length in Chapter XXXVI of the first volume where the conclusion reached is that the *credit* policy of each concern must govern the manner of making the record. If the concern has a fixed policy of buying at a cash price, that price

should be the price of record; whereas if all financial and other related policies are based on a 30- or 60-day credit term, the credit price for that term should be the price of record. Particularly is this true when viewed from the sales standpoint where the fixing of the selling price is a part of the financial policy. The second point requiring consideration in connection with cost is the item of interest on the money invested in stock. At the close of the fiscal period should the stock sold and that left on hand be burdened with interest on the average amount of capital tied up in it during the period? The student is referred to Chapter XXVI of this book, where a full presentation of the case for and against the inclusion of interest is made.

The Distribution of Costs Over Stock-in-Trade

It should be said that, due to the particular method of handling purchasing, delivery, and storage, it frequently is not practicable to take cognizance of all items which theoretically are constituents of cost. Each concern must establish a policy relative thereto and hold to it. Having done this, it is faced at inventory time with the problem of determining the cost figure applicable to each unit of the stock remaining unsold. Certain of the costs, such as freight and cartage, have probably been incurred by different lots of miscellaneous merchandise, and to distribute the proper charges to each unit comprising the lot is difficult. Usually a certain percentage sufficient to cover that particular item of cost is spread evenly over all units remaining on hand. Occasionally, especially where the stock is homogeneous and only a few varieties are dealt in, an effort is made to prorate these costs on a more accurate basis. In loading on the freight cost, for example, a combined weight and value record might be used or, where possible, the official freight tariff might govern. Such minute accuracy is not often needed or desirable, the flat percentage rate on value giving in most cases sufficiently correct results.

The Pricing of the Inventory

A rule-of-thumb method of valuation requires that the purchase price as carried on the last invoice of the article shall be used for pricing the inventory. This usually proves a good working rule, but often raises perplexing problems and is subject to abuse and misuse. If several purchases have been made during the period at different prices, should the last price paid govern the valuation of the portion unsold? The argument for so doing is that the portions unsold probably belong to the last lot purchased, good merchandising requiring that the old stock be sold out before the new is brought forward. That, of course, is not always the case. If it is made an inflexible rule that the price of the last lot bought shall be the price of the inventory, a dangerous tool is placed in the hands of the unscrupulous. A manager needing or desiring to make a better showing of profits might in this way make an insignificant purchase at a high price near the end of the fiscal period and so secure a much higher valuation than the cost for the whole inventory. Where the inventory is likely to contain remnants of the various lots purchased during the period, or where the condition as to an insignificant final purchase may exist, the policy of using an average price for the inventory will be more accurate in its results. The weighted average, whereby each purchase price is weighted with the volume or quantities purchased, is fairer, though more complicated than the straight average. Thus 10 units bought at $100 per unit, 15 at $90, and 3 at $110, would give a straight average of $100 but a weighted average of $95.71, $(1,000 + 1,350 + 330) \div (10 + 15 + 3)$. In manufacturing establishments where the fiscal period is short, say one month, and it is desirable to keep the raw material cost as nearly uniform as possible, the method of the weighted average is to be recommended.

As mentioned above, each concern must fix its own policy as to what items shall be included in the cost of goods pur-

chased. Whatever that policy may be, care must be exercised to make sure that the same items and no others form part of the value of the inventory. In the case of any doubtful items, instead of trusting to memory, a house classification of accounts or an accounting guide book should be drawn up so as to secure from period to period a similar handling of all items.

Valuation of Manufacturing Inventory

The whole of the foregoing discussion concerns the valuation of goods bought for resale, i.e., the inventory of a trading business. Some points in the application of the same principles to a manufacturing concern will now be considered.

Finished Goods. So far as finished goods are concerned, the principle of valuation at cost applies. What constitutes the cost of manufacture was discussed in Chapter III, from which it is evident that many other elements in addition to those which must be considered in a trading concern must be taken into account. The manufacturing cost formula comprises the three items of: (1) raw material consumed, (2) direct labor applied, and (3) factory expenses incurred, this latter item sometimes called overhead expenses. When a concern operates a detailed cost system, the valuation of the finished product is not difficult, being the goal towards which the system works. Where no cost system is used, great care must be exercised to make sure that every item of cost is calculated as accurately as possible and that a proportionate share of such costs is applied to the finished product still on hand unsold. It is sometimes urged that instead of this cost-to-manufacture price, the price at which the article could be bought on the open market should govern; or, alternatively, that the article should be valued at least sufficiently above cost to give a theoretical profit to the factory. Just as in the case of the discussion of "cost or market price" for the trading concern, the same conclusion

is reached here, viz., that cost should govern, because while good manufacturing is an element in profit-making, yet no profit is made until the sale is effected. It is true that if cost to manufacture is lower than cost to buy in the open market, a real *saving* has been made by the policy of manufacturing rather than of buying, but a saving is quite another thing from a profit. This differentiation between a saving and a profit will be fully discussed presently. Correct accounting, therefore, requires a valuation of finished goods at cost to manufacture.

Raw Material. The valuation of the inventory oi raw material is on the same basis as that of a stock of goods bought for resale, i.e., raw material is to be valued at full cost up to the point of its consumption.

Goods in Process. The valuation of partially completed goods, i.e., "goods in process," is a much more difficult problem. To simplify the discussion these will be divided into two groups, first, goods manufactured for stock, and secondly, those made on a specific contract or for special order. To the first group the principle of cost applies without any qualification. The problem involved is that of determining what has constituted cost up to that particular stage of completion. Where a detailed cost system is in use and a production schedule forms part of the system, it is possible at almost any moment to ascertain exactly the values accumulated on any article at each stage or process of manufacture. Where definite costs are not possible, a careful estimate based on full knowledge of conditions is the best that can be done. Where parts are first manufactured for assembly into a completed whole, they should be treated as finished goods and valued at full cost up to that point.

Contracts. The second group of goods in process, viz., those manufactured to fill specific orders, or, in large construction work, contracts taken but not completed, may be valued on a somewhat different basis from that applicable

to the first group. Here a sale has actually taken place and only the intervention of the closing of the books raises the question of valuation. In a case of this sort it is customary to make a careful estimate of the costs of the work or contract, up to its present state, due weight being given to remaining costs necessary to complete it and to any provision for possible contingencies. When handled in this way, the estimated profit on the work already done is said to be applicable to the current period and is therefore taken into account. In other words, the portion completed is treated as sold, after making the provisions indicated above, and is charged off the books against a corresponding part of the sale price. Hence, the valuation involved here does not concern the inventory, but the cost of goods sold.

It may be objected that, in the case of large contracts, perhaps running over a period of years, many unforeseen things may happen to wipe out any seeming profits on the completed portion, and that conservatism would demand that no profits be taken until the contract is completed or in a sufficiently advanced stage as to be reasonably sure of results. In such a case it frequently happens, however, that not only are stockholders impatient of delay, but very serious injustice may result to any who might be forced to give up their holdings before the completion of the contract. Moreover, a fair method of making payment on the contract is usually in force, the sale price often being on the basis of units of work accomplished, so that the contingencies giving rise to the objection mentioned are greatly minimized. Thus, some contracts may be on a fixed price per cubic yard of earth removed, per unit of goods manufactured, or other similar basis for periodic payment, a certain per cent being retained as a guarantee for the satisfactory completion of the whole. Again, where the price is for a lump sum, engineers representing the contracting parties may agree on the amount completed and periodical payment may be made on that basis.

This topic of uncompleted contracts will come up again for treatment when considering the profit and loss summary for the year. It is sufficient to note here that some share of the profit on the completed portion of a contract may be taken as indicated above, in which case the inventory problem may be disposed of either by adding the amount of estimated profit to the cost value of the uncompleted contract, or by treating the payments made as sales.

Contracts and Length of Cost Period

In some lines of business, orders are booked several months ahead of delivery date, the factory operations depending somewhat closely on the contracts entered into. During the period of manufacture there may be few deliveries of the product, and therefore no actual profit. Obviously, the easiest method of handling such a situation is to make the fiscal period long enough to include the greater part of the deliveries, and so leave the inventory comparatively free of goods in process. Where this method is adopted, there is no serious objection to valuing the goods still in process at the close of the period so as to take a fair portion of the profit, although conservative practice usually values them at cost. The difference in the amount of profit under the two methods is insignificant under the condition named. Under other conditions valuation at cost is the rule.

Valuation of Scrap

Raw materials are never completely used up in manufacture; portions too small for the main product, corners, odd-shaped pieces, defective pieces, etc., are usually thrown into scrap. This scrap is frequently utilized in the manufacture of side lines if a market can be developed; otherwise it may be valueless. The problem of the valuation not only of the scrap but of any product that may be made from it presents some interesting features. If the entire cost of the

raw material is charged to the main product, the scrap material used in the side line costs nothing, and to charge anything for it, either on the basis of cost or some arbitrary estimate, would result in inflation. Furthermore, the cost figures of a side line which is not charged for material might at some time be made the basis for a bid on a contract too large to be filled entirely out of scrap material, and so result in a loss. On the other hand, if the main product is charged only for the material actually consumed, and the side line is compelled to bear the cost value of the material it consumes, the cost of the side line may so increase that it cannot be marketed at a profit. The lowered cost of the main product might lead, in the face of keen competition, to the cutting of its price below real cost, unless, of course, all the scrap is being utilized in the side line which is also being sold at a profit. If such is the case, the valuation of the main product, the side line, and the scrap should be on a cost basis. This is not usually the case, however. No basis for valuation can be found which will prove entirely satisfactory under all circumstances.

In the light of the conditions involved, particularly as to whether there is a constant market for the utilization of all the scrap material in the manufacture of the side line, each concern must adopt whatever policy best suits its peculiar needs. At all times the application of materials costs to the product should provide an intelligent basis for entering into future contracts. A *blind* use of cost figures frequently invites disaster. In cases where scrap is not utilized in a side line, it has only scrap value. The thing to guard against is the double charge for the same material, i.e., a charge to the main product and also to the side line, resulting in an inflation of values.

Inventory-Taking

There remains, as a corollary to the problem of valuation, a consideration of the method of taking the inventory, for if

the count is wrong the most careful valuation per unit will not give true total value. In connection with the count of the inventory, two fundamental rules must be observed. These are: (1) make sure that everything, i.e., all stock-in-trade, belonging to the business is included; and (2) be careful that there is no duplication of count nor inclusion of any stock belonging to others.

In accordance with the first fundamental rule, care should be exercised to include all goods out for sale in other markets—these to be valued at full cost in those markets—and all goods not yet received into stock but belonging to the business. These latter include goods invoiced but not received, and goods received but not unloaded prior to the close of the period.

In accordance with the second fundamental rule, any goods of others held for sale on a commission basis must be carefully excluded from the count, as should also goods received before the close of the period but with invoices dated some time in the future. Furthermore, all goods inventoried from their invoices, i.e., all goods not taken into stock, must be earmarked so as not to be charged into the next period's purchases. This is best accomplished by stamping the invoices as "Included in the 19..... Inventory."

Inventory Methods. The careful organization of the physical stock to be inventoried, sorting any misplaced items, and separating them into classes, and an equally careful organization of the clerical force, acting under explicit directions based on a well-thought-out plan, are fundamentally essential to accuracy and to the prevention of any duplication of count. In some cases the use of duplicate or coupon tags proves very valuable. On these tags provision is made for recording in duplicate the number of units and condition as to salability, and they are ruled with two money columns. The tags are numbered on both parts consecutively and are charged out to the various departments, as many being issued

as there are classes or compartments of goods. As the count is made of a certain class of goods, a tag is attached to the compartment or other storage place as evidence that the count has been made, after which the lower portion is torn off and sent to the office. Any missing numbers indicate omissions in the count. If the card has been lost, the duplicate still attached to its compartment will indicate the count. After all cards are accounted for, the duplicates are detached and the goods covered by them are then released for sale or other use. In taking the inventory it is especially important that where goods are below normal as to salability, their estimated per cent of normal condition be noted on the tag. This gives a basis for valuing and should show the amount of deterioration and its cause.

Perpetual Inventory

The use of a perpetual inventory system is quite general in some lines. Its operation requires almost as careful a record of stock as is made of cash, i.e., not only must all receipts be recorded but all disbursements as well. In a trading concern this record usually takes the form of a stock book of some sort, to which entry is made, as to quantities only, from the purchase and sales invoices, the balance shown at any time being the stock remaining on hand. The application of the unit value gives the value of the entire stock and so makes possible monthly statements of approximate condition. In a factory, a separate stores ledger may be operated, carrying an account with every kind of material used. This ledger is controlled by the Raw Material or Stores account on the general ledger. Entry to the stores ledger accounts is made from the purchase invoices for receipts, and from formal requisitions drawn on the stores keeper for disbursements, i.e., for the issuance of material. The stores ledger may record not only quantities but also values, so that its balance should be the value of the stores on hand.

This is possible because the material is drawn out at cost price.

Oftentimes, for retail concerns, instead of the stock book method, the percentage method of book inventories described in Volume I, page 506, gives more satisfactory results when sufficient past experience can be drawn from.

Necessity of Physical Count. It must not be assumed that a perpetual inventory system obviates the necessity of taking a physical inventory, for it does not. All that it accomplishes is to secure a closer supervision over stock between inventory times and to make possible the showing of approximate results at interim periods. Where operated, it is possible to take the physical inventory piecemeal, although there is a marked advantage in taking a complete inventory periodically. The piecemeal method means that any department can do its stock-taking during a slack time without regard to the time when other departments take theirs. Thus there is less interference with the regular conduct of business. It must be borne in mind, however, that the physical inventory is just as essential as ever because of the many inaccuracies that tend to creep into the perpetual inventory system, and furthermore because of loss, theft, overmeasure, and so on, which throw the book record out of agreement with the actual count.

CHAPTER XIV

TEMPORARY INVESTMENTS; ACCRUED AND DEFERRED ITEMS

Temporary Investments

Nature of Temporary Investments

The next item to be considered for valuation in the current assets section of the balance sheet is temporary investments. These are assets, such as stocks and bonds of ready marketability, in which current funds are tied up temporarily. Investments in stocks and bonds for purposes of securing business connections and privileges essential to the most efficient conduct of the business do not belong to this category. The term usually covers only those assets representing the investment of temporarily surplus cash or those acquired in settlement with debtors with the expectation of early realization. As A. L. Dickinson* so well says, "such investments have no relation whatever to the business and can be disposed of without in any way interfering with its earning capacity, other than the loss of the dividends thereon."

In the case of concerns affected by seasonal changes in volume of business, there are periods when sums of surplus cash lie unemployed, unless the concern depends upon borrowed money to take care of seasonal increases. Business policy, therefore, demands that the surplus cash be put where it will earn something. Such investments are frequently

* In "Accounting Practice and Procedure."

of a somewhat speculative character. In fact, other things being equal, business acumen demands that the investment be made in those securities in which there is a chance of gain in addition to the regular income therefrom. It cannot be stated too strongly, however, that safety, freedom from great fluctuations, and ready marketability are always prime essentials to be observed in securing stocks and bonds for temporary investment. While the procedure is unusual, there may at times be circumstances under which such investments may be bought on a margin basis.

Valuation of Temporary Investments

The usual rule for valuing temporary investments at the time of drawing up a balance sheet is at cost or market, whichever is the lower. Inasmuch as they may be needed on short notice, the information desired is what they will be likely to realize. This is particularly true in the case of a concern with a rapidly expanding market, for which provision may need to be made by increasing the plant as well as the working assets. Where reserved profits have become tied up in fixed plant, the need for ready funds is apparent.

It may be argued that inasmuch as realizable value is the information desired, valuation at market, whether lower or higher than cost, is the only proper basis. The rule stated is, however, held to be the correct one from the standpoint of conservatism and the further fundamental objection to bringing unrealized profits into the current period, as would result from a market valuation higher than cost. Of course, a lower valuation than cost brings unrealized loss into the period's operations, but this is not regarded with the same disfavor. Where the market price is fluctuating from day to day, as is normally the case, the market valuation on the date of the balance sheet is perhaps no nearer to the amount that will be actually realized than the cost value, since cost value merely represents one of the many changing points in the

market. If a distinct market tendency in one direction or the other were likely to continue until the time of realization on the investments, there might be good reason for taking the profit or loss accrued to the date of the balance sheet. However, these considerations are of too speculative and uncertain a character to be given any weight.

There is some valid objection, on theoretical grounds at least, to the results of the period being affected by the unrealized profits or losses caused by taking the market valuation of temporary investments onto the balance sheet. Valuation at cost, with a footnote to show market value, gives all the information essential to a full understanding of the exact condition of the investment. The habit of adding footnotes to the balance sheet may, however, become objectionable and the practice is to be avoided wherever possible. Also, really essential information usually carries greater weight when incorporated in the balance sheet figures.

Reserve for Investment Fluctuations

To meet the foregoing objection and, at the same time, that of allowing unrealized items to affect the period's profit and loss, use may be made of an account called, say, "Reserve for Investment Fluctuations." The account should be operated in the same way as the Reserve for Market Valuation of Merchandise discussed in the preceding chapter. That is, if market is lower than cost, at the close of a fiscal period, surplus is charged and the reserve credited for the difference. On the balance sheet the reserve is treated as an offset to the investment account carried at cost. This incorporates the market valuation as a significant figure of the balance sheet and shows the cost for purposes of information. The charge to surplus avoids fluctuation in the current profit and loss results because of an unrealized item and so makes it more useful for comparative purposes. In case market is higher than cost, the difference is charged to

the asset and credited to the reserve. On the balance sheet, cost is thus the effective figure and the market price is given for informational purposes. When the investment is sold, the entry creating the reserve should be reversed in either case. This brings on the books in the period when the sale takes place, the actual profit or loss realized, being the difference between cost and sale prices. The adjusting entries on account of valuation do not thus permanently affect surplus, while the actual profit or loss reaches surplus in the usual way—a valuable desideratum.

"Stock Rights" on Investments

It may occasionally happen that while stocks are held for purposes of temporary investment, stock rights arise. Such a "right" is a privilege of subscription to a new issue of stock, granted holders of stock on a certain date, at a rate below the market quotation of the old stock. The stock records are closed temporarily to any transfers of stock in order to determine those entitled to these rights. Up to the date of closing the records, the market value of the stock carries an increased value to cover the value of the rights belonging to it, and the stock is quoted "rights-on." After this date the rights are dealt in separately and quoted separately on the exchange. Stock then sells "ex-rights." Should the end of the fiscal period of a concern holding stocks subject to rights fall after their issue, the stock and rights may be booked separately, though often shown together.

An illustration will show the theoretical method of valuation of rights. Take a corporation whose stock now sells at 125, issuing the right to subscribe at par for additional stock to the extent of 10% of present holdings. The case of a stockholder with fifty shares would work out as follows:

50	shares at $125	$6,250.00
5	" at 100	500.00
55	" at a cost of	$6,750.00

The average cost of one share is $122.73. Based on the former quotation of $125, the right is seen to be worth theoretically the difference, or $2.27. The quoted market price will usually be less.

Cost of Investments

In connection with the cost of temporary investments it may be well to point out that cost means full cost to the purchaser, including brokerage and other costs in connection with the purchase or subsequent thereto. If the investment is being carried on margin, the customary practice is to charge to the investment account the interest on the funds borrowed by the broker to finance the transaction and to credit thereto any dividends or interest received. The difference between the asset account kept with the investment and the liability account with the broker thus shows at any time the original equity in the investment. A credit to the investment account when the stocks are sold develops the net profit or loss on the entire transaction. There may be circumstances under which it will be desirable to separate from the asset account all charges and credits subsequent to the original purchase, carrying them in a suitable expense and income account.

Valuation of Bonds

In the case where bonds are held for temporary investment, purchased either at a premium or discount, it is not customary to take account of amortization, because the investment is temporary. The problem of amortization is postponed to Chapter XV, in which permanent or long-term investments are treated.

In brokerage firms, where stocks and bonds comprise the stock-in-trade, the same principle of valuation applies as with a merchandise stock except that the rule of valuation at cost or market, whichever is the lower, is applied to each

individual holding. In this way, decreases in the value of one stock are not offset by increases in the value of others as would be the case if total market and cost values for the entire lot were first determined and then the valuation formula applied. In this chapter the principle of valuation of stocks and bonds as stock-in-trade is mentioned only by way of contrast.

Valuation of Unissued Stock

Under the head of temporary investments, the company's unissued and treasury stocks or bonds are sometimes included. Such unissued stocks or bonds manifestly represent an inflation of asset values, offset, it is true, by an equal inflation of capital stock. In the first place, conceding for the sake of argument that the inclusion of unissued stocks among the assets is legitimate, the principle of equilibrium requires that they be valued at par on the balance sheet, a figure which is not cost and which may be very far from market. Again, the company's unissued stocks may be in no sense current assets. Furthermore, stocks which have never been issued have no owners and so can command no proprietorship in the enterprise. The most that can be said about them is that they are contingent assets, showing that certain legal formalities have been met which authorize their issue if so desired. The remaining necessary procedure, viz., that the stock be placed on the market and sold, is, however, the condition which must be met to create a real asset and to create proprietorship. Until that has been done there is neither proprietorship nor asset. Reference to Volume I, Chapter XLIX, where the various methods of opening the books of a corporation are illustrated, will show that the method to be preferred is one which eliminates the account Unissued Stock from the books. However, where it is set up, correct classification would seem to require that it be treated as of the nature of a valuation or offset account for capital

stock. In other words, the two accounts, Capital Stock and Unissued Capital Stock, must be read together to show the true status of the proprietorship stockholdings. The correct method of presentation on the balance sheet is here only indicated but will be illustrated in Chapter XXI where the problem of valuation of capital stock is treated.

Valuation of Treasury Stock

The case against the inclusion of treasury stock in temporary investments is not quite so apparent, but equally convincing upon examination. Treasury stock differs from unissued stock only in that it has once been issued but has, through various channels, found its way back into the possession and control of the company. While outstanding in the hands of stockholders and under their individual control, the increased stock proprietorship is reflected in increased assets. If the stock comes back into the treasury through donation, the decrease in proprietorship stockholdings is compensated by a new proprietorship element under donated surplus. Thus, while there are not so many shares outstanding, the value of each is enhanced by a combined or common proprietorship in donated surplus, which reflects exactly the status of the treasury stock. Whereas formerly there was individual control over the stock, now that it is in the treasury, control is common or combined. Stock proprietorship has been diminished and the balance sheet should show it by treating Treasury Stock as an offset account and not as a part of current assets under Temporary Investments.

As to the valuation of treasury stock at some other figure than par, the same argument holds as in the case of unissued stock. If the treasury stock has been acquired by purchase on the open market, its price may be a good and sufficient basis for valuation; but even here individual ownership and control has been exchanged for common and combined ownership. The individual stockholdings are decreased, and

the decrease is reflected on the assets by the amount paid for the stock. It would seem, therefore, that a showing more in accord with the facts would require treasury stock to be treated as a deduction from the capital stock authorized. Thus the best practice eliminates a company's own stocks from the list of its assets. Where such holdings are small and insignificant, they may without any serious impropriety be included among the assets and even under the caption "Temporary Investment" so long as substantial accuracy obtains.

Summary of Valuation Formula

To sum up, then, the valuation formula for current investments requires their showing at cost or market, whichever is the lower. The most satisfactory method of applying the formula is by means of the Reserve for Investment Fluctuations which makes possible the incorporation of market value whether lower or higher than cost, with the differences between market and cost carried in the reserve account. Thus the conservatism of the valuation formula is made effective and at the same time information is given as to the present market values of the investment.

Accrued and Deferred Items

Nature of Accrued Income

Income derived from many different sources is never fully received at the close of the fiscal period. For instance, of the sales made many will still be outstanding as charges to various customers; interest will have accrued on notes receivable and on investments held; rental income is earned day by day but is received only periodically; royalties based on the use of some machine or process are accumulating where the device or process is being used but settlement is made only periodically; and dividends on stocks or other investments may have been declared during the current period but are not payable and therefore will not be received until the next period.

Inadequacy of Cash Method of Handling Accruals

All these accrued items give rise to claims which must find expression in the accounts either currently or ultimately. In the case of sales of merchandise the customary practice is to set up the claim on the books when the sale is made. In the case of the other items usually no record is made until the income is actually received. Under this method—called the cash method—it is evident that the true income cannot be shown in the period in which it is earned and that the period in which it is received secures the credit for it. This means not only that the current period may at its beginning receive credit for items of income mostly earned during an earlier period, but at its end it will be deprived of similar earnings accruing from day to day up to its close but not credited because their time of payment overlaps into the next period. This method is defended as being substantially correct on the principle of averages, i.e., those earnings which do not entirely belong to the current period but for which credit is taken will in the long run just about offset the earnings accrued at the end of the period which are not taken account of.

The statement may be true and, if so, can be easily tested; but, whether true or not, modern practice requires the *accurate* accounting of all claims. It is therefore required that these accrued earnings be brought onto the books if reliable results are desired.

Correct Method of Handling Accruals

To show all earnings in the period in which they actually accrue is called the "accrual method." Under this method the income earned but not received during the current period is set up among the assets, just as in the case of sales, with this difference, however: the claim for the broken portion belonging to this fiscal period need not be recorded day by day but only at the end of the period. Most income items

of this sort are due, either by contract or by custom, at the end of certain definite periods. The setting up of a claim for a broken, i.e., an uncompleted portion, does not mean that such a claim is on that date legally enforceable, but that it is a claim equitably belonging to the current period.

Showing of Accrued Items on Balance Sheet

As to the section of the balance sheet in which these accrued income items should be shown, usually they are true current assets and should be so listed. They frequently arise in connection with current assets, e.g., the interest accruing on notes, stocks, and bonds held, and are therefore just as current as the assets themselves, or even more so. Where not so arising, as in the cases of rents, royalties, etc., usually the contract or customary period of settlement is so short as to make the claims under them true current assets. Occasionally the accrued earning is added to the value of the particular asset and so shown in the balance sheet. A better practice, because more definite, is to list them separately under the title, Accrued Income, Accrued Accounts Receivable, or other similar title.

Valuation of Accrued Items

The principle of valuation of accrued income items is apparent. On the supposition that the concern will continue in business, the accrued income is proportioned between the two periods on the basis of the portion of the time belonging to each period. However, this does not mean that the portion so taken shall be valued at its face. The accrued portion is worth as a portion neither more nor less than the whole is worth as a whole. If there is doubt as to the ability to collect it when it falls due, certainly the valuation placed on the accrued portion should express that doubt. In other words, unless the claim is fully secured by collateral or other pledges, valuation should be on exactly the same basis

as for the other receivable items, such as the claims against trade debtors, other open accounts receivable, notes receivable of various kinds, etc.

Accounting for Accrued Income

The accounting for accrued income presents no particular difficulties. In addition to the two methods discussed in Volume I, pages 116 to 119, a third which is considerably more laborious than either of them is frequently employed, and is as follows: At the time of adjusting and before closing the books, for every item of accrued income a separate asset account is set up. Thus, for royalties an account, Accrued Royalties Receivable, would record the claim on account of royalties at the same time the accrued income from royalties is being recorded in a suitable income account. Thus there is distinct separation of the asset and income elements.

From this point two methods are in use for handling the subsequent record of the item. Under the first method, the income when actually received or legally due is recorded in the regular income account. This thus shows an inflated figure because it is not offset by the portion credited to the previous period, the asset account covering this, remaining unchanged throughout the current period. At its close, however, proper adjustment is made by adding to, or subtracting from, the amount held over from the close of the previous period such an amount as will make its new balance show the correct amount of accrued income as at the close of the current period. The contra credit or debit to the above entry, as the case may be, is of course to the particular income account, causing it to reflect the true income for the current period.

Under the second method, the first entries for the new year consist in transferring all accrued income asset balances to their respective income accounts, where they serve the

purpose of automatically adjusting the full receipt of income a portion of which was credited in the previous period, to the amount properly belonging to the current period. At the close of the period any adjustment on account of accrued income is handled by debiting the asset account and crediting the income account exactly as before.

An illustration will show the differences between the two methods.

Illustration of Different Methods of Recording Accrued Items

Problem. The royalties income accrued December 31, 1916, amounted to $5,000. During 1917 payments were received on account of royalties to the amount of $35,000. On December 31, 1917, accrued royalties were $5,250.

Solution—Method 1

ACCRUED ROYALTIES RECEIVABLE

1916			
Dec. 31	$5,000.00		
1917			
Dec. 31 ....(A)	250.00		

ROYALTIES INCOME

		1917	
		....	$35,000.00
		Dec. 31 ....(A)	250.00

Method 2

ACCRUED ROYALTIES RECEIVABLE

1916		1917	
Dec. 31	$5,000.00	Jan. 1 ....(A)	$5,000.00
1917			
Dec. 31 ....(B)	$5,250.00		

ROYALTIES INCOME

1917		1917	
Jan. 1 ....(A)	$5,000.00	....	$35,000.00
		Dec. 31 ....(B)	5,250.00

Of the two methods, the second is somewhat fuller and probably presents the facts more consistently, although involving a little more book work. From a practical standpoint where regard is had to the amount of book work required, the method used in Volume I, pages 116 to 119, sometimes known as the inventory method, serves all the purposes of either of the above methods and requires much less work. By it the above problem would appear as follows:

ROYALTIES INCOME

1916		1917	
Dec. 31 Accr	$5,000.00	....	$35,000.00
1917		Dec. 31 Accr	5,250.00
Dec. 31 P. & L	35,250.00		
	$40,250.00		$40,250.00
1918			
Jan. 1 Accr..........	$5,250.00		

An objection, not at all serious, is that under this last method the ledger will show, as on the date of the balance sheet, the current assets in two places, viz., the current assets section and the income section, instead of altogether as under the other methods. This objection is more than offset by the saving in clerical labor. There is in some quarters an all too prevalent tendency to multiply the number of accounts and increase the bookkeeper's work without any adequate return in results.

Prepaid Items—Definitions and Kinds

Closely related to current assets, because through an overexpenditure of current funds this period a lesser expendi-

ture will be required next period, is the class of items known as prepaid expenses or deferred charges to operation. These items are not current in the sense that they will be turned into cash shortly, but they are analogous in that a saving in the expenditures of the next period will result. Because of the ease with which they may be put to improper uses, it is best to segregate them from current assets under a suitable balance sheet caption, such as "Deferred Charges to Operation." Where the two captions, Current and Working Assets, are shown, items of this class properly belong to the latter. Under this head will be considered such items as supplies of all sorts—office, factory, power house, stable—stationery, printing, postage, repair parts, insurance unexpired, advertising contracts and material, rent, royalties, interest and discounts paid in advance, salary overdrafts, premiums on long-term investments and discounts of long-term obligations, and sometimes organization expense, although this last item is perhaps best handled with the intangible assets.

Valuation of Prepaid Items

The purpose in considering these items at the close of a fiscal period is to secure a proper and accurate allocation of charges as between the two periods, without which true results as to profit and loss are not possible. The same argument as to these items averaging up fairly well between periods applies here as for accrued income. The only other point to be considered in connection with them is the basis for their valuation. Realizable values, i.e., what the items would bring under the hammer or at other forced sale, are manifestly inequitable. A three-year insurance policy with one year expired is to a concern which intends to avail itself of the remaining two years' protection worth more than the surrender value of the policy calculated on the short-rate basis with perhaps the expenses of doing business also sub-

tracted by the insurance company. Evidently to a going concern the protection enjoyed for the year just expired is worth neither more nor less than a pro rata share of the entire cost, nor are the remaining two years' protection to be valued at a less rate because redeemable at a less rate.

Hence, a valuation based on the going concern principle is to be used for deferred charges. As indicated above, this means, when used in this connection, a pro rata valuation based on the life of the supply and the portion unused. In the case of tangible supplies the rule can be most easily applied as a unit cost figure to the unused units still on hand. That is, an inventory of supplies is taken and valued at full cost. Although nearly related to current assets, deferred charges are seldom influenced by market fluctuations after they are once purchased, because if properly classed as deferred charges they are always held for own use and never for outside sale.

Danger of Overvaluation

Care must always be exercised—even more than in handling the stock-in-trade inventory—to see that there is no padding of this class of items. To this end, before taking inventory, a general clean-up of supply materials all over the plant is an exceedingly good policy. This should result in discarding, or reducing to scrap value, all obsolete and unusable supplies. Without such a clean-up it is easy, even when motives are of the very best, to carry forward from year to year as assets supply materials which will never be used and which are therefore nothing but expense items and should be charged against operation. Only a careful periodic appraisal of supply materials and an equally careful inventory indicating their usability can give a correct basis for applying the valuation formula.

Two or three items of deferred charges need a word of further explanation. In some mining industries, notably

coal and precious metals, leasing is done on a royalty basis with a minimum amount to be paid each period based on a minimum production of ore to be mined. If less than the minimum is mined, a frequent provision in the terms of the lease makes possible the application of any royalties overpaid one period against a future production of more than the required minimum. That is, no increased royalties are charged for a production over the minimum until all accumulated royalties from periods of underproduction are used up. In any period of underproduction such royalties may properly be treated as deferred charges only on condition that there is reasonable expectation that future production will increase to the point where it will consume the overpaid royalties of earlier periods. At times a company finds itself bound to such a contract, based on a minimum production, without any hope of relief because the prospect has not developed as anticipated. Under such conditions the entire periodical royalty charge is a charge against operation and must be absorbed entirely by the operations of each fiscal period.

Accounting for Deferred Debit and Other Items

The accounting for deferred debit items proceeds along the same lines indicated for accrued income. Nothing further need here be said than that such items as insurance, supplies of various sorts, etc., are frequently recorded originally as asset items instead of as expenses. At the close of the period so much of each of them as has been used is transferred to suitably named expense accounts and is thus taken into profit and loss. There is no objection to this and it usually works out very satisfactorily, although the usual practice is to treat all items of this class as expenses rather than as assets. This method is usually prescribed by regulatory commissions in the case of public utility companies.

The treatment of premiums paid on long-term investments and of discounts arising through the marketing of long-term obligations at a figure below par is reserved for consideration in the next chapter where their relation to the interest account and the problem of amortization will be considered.

CHAPTER XV

PERMANENT INVESTMENTS

Nature of Permanent Investments

As distinguished from the type of investment discussed in the preceding chapter, investments of a more or less permanent character will next claim our attention. These may be permanent in the sense that at the date of the balance sheet they have a long term to run before they mature and the expectation is they will be held for a considerable period of time; or permanency may be indicated because ownership of the investment is necessary or, at least, a valuable requisite to operation. Ease of conversion into cash may or may not be a characteristic of such investments, and certainly it is not a determining test for valuation as is the case with temporary investments, discussed in Chapter XIV.

The necessary test is always the condition in which the company would be placed, viewed from the standpoint of efficient operation, if the investment were disposed of. If its efficiency or its contracted or moral obligations would not be impaired, the investment may be said to be of a temporary character. Examples were given in the previous chapter. If, however, its efficiency would be materially affected, or its continuance as a business be hampered or threatened, then the investment must be considered as of a permanent character. This latter type of permanent investment will be discussed first, followed by a consideration of the long-term securities (bonds, stocks, and land) held as investments for certain funds (such as the building fund, bond and redemption fund, etc.).

Permanent Investments as an Aid to Operation

These permanent investments may take the form of ownership of the stock or bonds of other corporations, as in the case of the holding company. They may represent interests, active or silent, in partnerships; or they may take the form of advances of working capital or funds to other concerns. Whatever the form may be, and whether evidenced by formal securities, collateral, or merely by open book accounts, they serve the purpose of securing some essential facility without which operation could not be successfully carried on. A newspaper may secure full or controlling interest in a paper mill to insure its supply of print paper; a railway may become a heavy owner in a terminal company in order to give it terminal facilities; a refinery may purchase a controlling interest in an oil production company in order to give it a sure supply of crude oil; etc. Thus, the permanent or fixed investment is always a means of bringing about the efficient operation of a business. It may be effected in any one of three ways, viz.:

1. By practically full ownership of the subsidiary enterprise to secure complete control and so direct its policies.
2. By only a controlling ownership.
3. Through the agency of advances, particularly when, because of poor credit, the usual money markets may be closed to the borrowing company.

Valuation of Permanent Investments

The problem of the valuation of investments under the three forms mentioned presents some interesting features. It might seem that, inasmuch as the investment is in the nature of a fixed asset, valuation should always be at full cost; that market fluctuations should have no effect. The

last half of this statement is correct but the first part needs modification. It is to be expected that a concern in purchasing the stock of another will not pay more than it considers the stock to be worth. The price may be more or less than the face value of the stock, depending upon the existence of an element of good-will or the overstatement of the assets on the books of the vendee company; or again, where the stock is bought on the open market many other factors may cause a variance of purchase price from par value of the stocks.

Were the investment simply an inanimate asset to be used, cost, perhaps less depreciation, would be the proper basis for valuation. Since, however, a corporation cannot remain stationary—it must usually record a gain or a loss from year to year—ownership in that corporation must accordingly suffer change from year to year. So many things can happen to an operating corporation that cannot befall an inanimate asset held for use that the proposal to value both on the same basis is hardly tenable. Furthermore, if proper principles of valuation are applied to the subsidiary concern, its true value can be determined with fair accuracy. Accordingly, a true basis is secured for valuing it as an investment on the books of the holding company. Any increase in value over cost is due to the profits made by the subsidiary enterprise, and in the case of its complete ownership by the holding company these profits belong in full to the holding corporation. If all the profits are disbursed as dividends to the holding company, the subsidiary enterprise suffers no change in condition and therefore no change in value. If, however, some of the profits are retained, this would result in an increased value which should be reflected in the valuation of the subsidiary enterprise on the books of the holding company. How this may best be shown also requires consideration.

Holding Company and Subsidiary Enterprises

A holding company may have but few assets aside from its holdings in subsidiary concerns. A balance sheet showing only these few assets and its investments in the other concerns does not usually give much useful information. Therefore, as the assets of the subsidiaries belong to the holding company and really comprise its operating plant, a more intelligent way of showing the investments of the holding company is to combine or consolidate the balance sheets of the subsidiaries and incorporate them in the balance sheet of the holding company in place of the item of investments. This method is known as the "consolidated balance sheet" and is given fuller treatment in a subsequent chapter. Here attention is called to it merely as a device for showing the valuation of permanent investments represented by substantially full ownership of the subsidiary companies.

Controlling Investments

Where ownership is not complete but still controlling, the method of the consolidated balance sheet is not so fully applicable and often is not used. In this case the investment will appear as such on the balance sheet with whatever adjustments in value may be necessary due to the success or failure of the subsidiary's operation for the past period. Whatever profits are made enhance its value and in the enhanced value the controlling company has a pro rata share, the effect of which should be taken up in the valuation of its investment therein. The net amount of the enhancement in value is the difference between the net profit made by the subsidiary concern and that portion paid out in dividends—in other words, the portion reinvested in the business.

This portion, i.e., such part of it as belongs to the controlling company, may be taken up directly by charging the investment account and crediting a proper income ac-

count; or the share of the entire net profit belonging to the controlling company may be charged to the investment and credited to an income account. In the event of dividends being paid by the subsidiary company, these would be credited to the *investment* account of the controlling company, which account would then show, as in the first method, the new value due to the profits reinvested in the business. That this policy of increasing the value of the investment is conservative and sound is apparent when one considers that the holding company's ownership of the subsidiary concern controls the latter's policies, including the dividend policy. The profit taken onto the books of the holding company by the above method is a real, not a book, profit.

Advances to Subsidiary Concerns

Where control is secured through the medium of advances made on open account or by means of such advances together with ownership of stocks and bonds, a valuation must be made of these claims separately from the stocks owned. Where ownership is complete and valuation is shown by the consolidated balance sheet method, intercompany accounts and claims are, of course, eliminated and so do not show. In all cases, however, where claims against a subsidiary arise on account of advances, or even of sales, and these must be shown on the balance sheet of the owner of the claims, more than average care must be taken in placing a value on them. In the case of advances, frequently their exact status is not known at the time when made. The record is carried in a suspense account until its final status is determined, when record is made accordingly. The advance may be temporary, for the purpose, say, of enabling the subsidiary concern to take advantage of very favorable market conditions in the purchase of raw materials, in which case, of course, the claim is a current asset; or possibly the subsidiary company is about to make additions to

plant and equipment and is financing the expansion temporarily by means of borrowings from the parent company. Whatever method of permanent finance is finally settled upon, this should convert the open-account claim of the parent company on account of advances, into the regular securities or obligations of the subsidiary concern. Again, it is unfortunately true that advances to the subsidiary company often become necessary to recoup it because of operation at a loss. This may continue with little hope of repayment for years to come, if ever. The parent company may ultimately lose all the funds advanced to the subsidiary company because of the latter's financial instability.

Rules for Valuation

Because of the many factors involved, it is apparent that no absolute rule can be laid down for valuing the advances to a subsidiary enterprise. Each case will require careful investigation and must be settled on the basis thus established. If the investigation shows the loan to be temporary with good expectation of its full return, it should be shown at its face value among the current assets. If the advance is to be converted into the securities of the subsidiary concern and the latter is in good condition, the advance may be carried at par among the fixed assets. When the securities are received they should be valued as any other permanent stock investments, with due regard to the basis of conversion in comparison with the value of the securities given in settlement. If conditions upon examination are found to be serious, it may be necessary to treat advances made as expenses, i.e., they are of no realizable value. If the bankruptcy of the subsidiary concern seems probable, a question of financial policy and law arises, viz.: whether the interests of the parent company are best conserved by allowing its claims to remain on open account and so rank with other creditors, or to be converted into stock and rank with those

of other owners. It may be necessary to take that phase of the matter into account when determining the value of claims against the subsidiary concern.

Investments in Partial Holdings

For the sake of business connections, prestige, and good-will, oftentimes more or less permanent investments are made of such a nature or in such amounts as not to secure a controlling interest. Here, because the reins of business control are not held by the investing company, manifestly such an investment is on a very different basis from those in companies whose control is held by the investor. In the one case, business policy can be determined and made effective; in the other case, success or failure is under the control of others. Accordingly, the valuation of these partial holdings differs from investments in companies entirely owned or controlled by the investor. Where the holdings of these minor interests are not particularly substantial in comparison with other properties owned, there is no serious objection to valuing them at cost. They are held to secure certain benefits, and so long as the real values of the companies concerned are being maintained or enhanced, there is little probability of the investment being disposed of. Market fluctuations, therefore, should be given little or no consideration. Where, however, partial or minor holdings form a comparatively large portion of the investments, it may sometimes be wise to value them on the same basis as temporary investments of a current nature. In this case the profit or loss attendant upon bringing market values into the books should be handled as with temporary investments.

Where investments of this kind are shown on the balance sheet at cost, it is sound policy to call attention in a footnote or otherwise to their market values, as oftentimes the market gives some indication of the condition of the company.

The savings banks of the State of New York, in reporting to the State Department of Banking, must show the market value of the securities held. Usually three values are shown, viz.: market, par, and so-called investment value, to be explained later. Where the securities held are not listed on any exchange or are held closely and not traded in extensively, it is often difficult to secure reliable market quotations for them. Here cost, unless known conditions demand otherwise, seems the best basis for valuation.

Investments Producing No Income

Some investments may be of a permanent type and yet of themselves produce no income. Such are memberships on stock and produce exchanges, boards of trade, and the like, which are valuable for the privileges and prestige accruing therefrom and the business associations secured thereby. They should usually be valued at cost, thus allowing the period in which they are sold, if disposal becomes necessary, to get the profit or loss incident thereto.

Bond Values and Market Interest Rates

In connection with the valuation of bonds, some additional considerations should be taken into account. Assuming that the margin of security for the mortgage covering the bonds is ample, the value of a bond, i.e., its price on the market, is largely dependent upon the prevailing interest rate in the money market. Thus, if a bond bearing 5% interest is offered for sale in a market where the rate is 6%, it can be sold only at a discount sufficient to provide approximately 6% on the money invested. Similarly, a 6% bond offered in a 5% market should bring something more than par. It is not intended to convey the impression that whenever a bond sells below par it is because the market is demanding a higher rate than that offered by the bond; nor when a bond sells at a premium need the entire amount

of the premium be a reflection of money market conditions. An additional factor is oftentimes the credit standing of the issuing company. Thus, even though a bond may be amply protected, the poor credit rating of the issuing concern will be reflected in a downward tendency of the price of the bond, for under such circumstances foreclosure proceedings preliminary to sale and conversion of the security always loom large in the background. On the other hand, bonds of the United States are often above par because of the government's credit standing.

On the assumption that there is reasonable expectation that the bonds will be paid at maturity, their valuation on the balance sheet during the time they are held by an investor must have regard to the price paid as determined by the bond interest rate and the money market rate at the time of purchase. A bond bought at a discount and held to maturity is redeemed at par. If the bond is carried at cost until the period of redemption, that period would secure the credit for the difference between cost and par. Similarly for a bond bought at a premium, and carried at cost constantly, the period of redemption would bear the loss between cost and redemption price.

Nature of Bond Discount or Premium

To bring out more clearly the real nature of bond discount or premium, under the limitation stated above, consider a bond selling at 90 and bearing 4½% interest. This should be interpreted to mean that the issuing company, because of the low rate offered on the bond, will have to pay at maturity $1,000 for every $900 now received. It is, as it were, having to prepay $100 interest on every bond sold, in addition to its promise to pay the stipulated bond rate of interest periodically. It is selling a $1,000 security for $900 and is thus depriving itself of $100 which it might have had by contracting to pay the present market rate of interest.

From the other (i.e., investor's) point of view, he is willing to lend money at the bond rate only because he expects to be compensated by the $100 to be received in a lump sum at the maturity of the bond.

The wisdom of fixing the bond interest rate so that the bond will command either a premium or a discount hinges upon the soundness of the forecast as to the money market in the future. It is, of course, a speculative transaction. Since, then, discount on bonds is, from the standpoint of the issuing concern, a prepayment of a portion of the interest in amount sufficient to make the income rate on the bond correspond with the rates prevailing in the market, this prepayment is applicable to the whole period of the life of the bonds and should be spread equitably over that period. To accomplish this it is necessary, every time bond interest is paid, to transfer to the Bond Interest account a portion of the Discount on Bonds account, thus gradually wiping off the Discount account and making the Interest account show every period the real amount (and real rate) of interest as distinguished from the amount paid as indicated by the bond rate.

In the present discussion, the chief concern with the problem of bond discount and premium is from the point of view of the investor. Having established from the other point of view the true relation between premium and discount and bond interest, there will be considered the two additional problems as to the manner of carrying the record on the investor's books and as to the method of valuing the investment at each balance sheet period. First, then, is the problem of making the record.

Record of Bond Investments

When bonds are purchased the record may be made in two ways. Accounts may be kept with the bonds at par, separate valuation accounts being carried for the discount

or premium. An account with bond interest is also opened and sometimes one with prepaid interest on bonds, where, as is usually the case, the bonds are bought with accrued interest to date of purchase. The accrued interest, however, is more conveniently recorded as a charge in the bond interest account, thus automatically adjusting the income from the bonds when the first coupon after date of purchase is redeemed. As stated in Chapter XIV, the amount of the discount or premium is to be spread equitably over the life of the bond. The method of making an equitable distribution is a problem to which consideration will be given in later pages of this chapter. The entry to effect the distribution is a transfer entry between the premium or discount account and the bond interest account for the portion accrued as on the date of each payment on the coupons. The result of the transfer is to establish with the bond account at par a true valuation of the bonds held as on that date, and to secure the correct amount of income from bond interest to be credited to the current period.

The second method of making record of the bond investments is to record the purchases at cost in the bond account, carrying there full information as to premium or discount, no separate accounts with these being opened. When the bond interest falls due, the bond account itself is written up or down for the amount of the discount or premium accrued during the current period. The contra entry is in the bond interest account just as above. This latter method does not commend itself when the only record kept of bonds is that mentioned above. If the investments are so numerous as to require a subsidiary ledger for their record, where with each kind of bond accounts will be kept with its par, discount or premium, and interest, there is no objection to handling the controlling account on the general ledger by making the discount or premium adjustment directly to the bond account. Fuller information is given

and the record is less involved, however, when handled by the first method.

Amortization of Bond Discount and Premium

The equitable distribution (technically known as "amortization") of the discount and premium on bond investments is the essence of the problem of their valuation. There are two methods of making this distribution, termed the "straight line" and the "scientific" method. Under the straight line method the amount of the discount or premium is divided by the interest periods the bond has yet to run, and the quotient is made the amount of periodic amortization. Although not scientifically accurate, the method commends itself because of its simplicity and consequent ease of operation. Its use is allowed by the Department of Banking of the State of New York for valuing the investments of savings banks. The scientific method is based upon compound interest calculations and will be best understood by means of examples. Under this method the discount or premium is looked upon as the amount of an annuity. The portion which must be written off for any period is the present worth of the annuity on that date, taking into consideration the rate of interest and the time in interest periods the bond has still to run.

In practice, however, the amount of amortization is not found in that way. To find the periodic amortization, it is necessary to know the cost of the bond, its coupon interest rate, and the effective rate. By effective rate is meant the real income rate on the basis of the price paid for the bond. Assume that a 3% bond, interest payable January and July, has 3 years (6 periods) to run and is bought for $971.99 so as to yield 4% on the investment. At the end of the first semiannual period the actual interest received will be $15, but the real income on the investment is $19.44 because it was purchased on a 4% basis for $971.99 (2% on

\$971.99). Of the total discount of \$28.01, \$4.44 (19.44 − 15.00) is to be credited to the current period. The adjustment of discount brings about a new valuation of the bond, it being now worth \$976.43 (971.99+4.44), because nearer by six months to maturity when it will be worth par or \$1,000. So, for the next period the coupon is \$15 and the effective income, \$19.53 (2% on \$976.43), hence the amortization is \$4.53; and so on for the six periods, at the end of which the discount will have been completely distributed, i.e., amortized.

The following schedule shows the periodic amortization and new values of the bond:

3% bond, par \$1,000; bought on a 4% basis for \$971.99; 3 years to run; interest January and July.

Date	Nominal Income	Effective Income	Periodic Amortization	Value of Bond	Discount Adjusted Amounts
Jan. 1, 1915	\$.....	\$.....	\$.....	\$971.99	\$28.01
July 1, 1915	15.00	19.44	4.44	976.43	23.57
Jan. 1, 1916	15.00	19.53	4.53	980.96	19.04
July 1, 1916	15.00	19.62	4.62	985.58	14.42
Jan. 1, 1917	15.00	19.71	4.71	990.29	9.71
July 1, 1917	15.00	19.81	4.81	995.10	4.90
Jan. 1, 1918	15.00	19.90	4.90	1,000.00	.....
Total discount amortized........\$28.01					

A similar schedule for a bond bought at a premium immediately follows:

5% bond, par \$1,000; bought on a 4% basis for \$1,028.01; 3 years to run; interest May and November.

Date	Nominal Income	Effective Income	Periodic Amortization	Value of Bond	Premium Adjusted Amounts
May 1, 1917	\$.....	\$.....	\$.....	\$1,028.01	\$28.01
Nov. 1, 1917	25.00	20.56	4.44	1,023.57	23.57
May 1, 1918	25.00	20.47	4.53	1,019.04	19.04
Nov. 1, 1918	25.00	20.38	4.62	1,014.42	14.42
May 1, 1919	25.00	20.29	4.71	1,009.71	9.71
Nov. 1, 1919	25.00	20.19	4.81	1,004.90	4.90
May 1, 1920	25.00	20.10	4.90	1,000.00	....
Total premium amortized........\$28.01					

The problem of amortization is thus seen to be comparatively simple when the cost of the bond, its nominal rate, and effective rate are known, and successive valuations of the bond are equally simple. The crux of the whole calculation is thus seen to be the determination of the original purchase price of the bond. At the time of the purchase of the bond the following facts are known: the par of the bond, the time it has to run, its rate of interest, and the rate of earning desired on the investment. There are three methods or formulas by which this price can be determined and they will be explained in turn. However, the development of the formulas will be more easily understood if some points in compound interest and annuity calculations applicable to the three methods of valuing the bond are first explained.

Formulas for Compound Interest

In the determination of the present worth of a sum of money at compound interest due a certain number of years hence, the following symbols will be used:

A = the sum which placed at interest at the given rate will accumulate to the given amount in the given time.
B = the given amount accumulated
r = given rate of interest per *period*
$R = 1 + r$
n = the given number of periods

The present worth of B is manifestly A, the sum which, when placed at interest, amounts to B. At compound interest the amount to which A will accumulate in n periods is given by the formula:

(1) $B = A(1+r)\,(1+r)\ldots\ldots$ to n factors, which reduces to $= AR^n$, whence solving the equation for A

(2) $A = \frac{B}{R^n}$, i.e., the present worth $= \frac{B}{R^n}$

From this, the present worth of \$1 is seen to be $\frac{1}{R^n}$

Formulas for Annuities

An annuity is a given sum of money placed at interest usually at the end of each successive year or period, and allowed to accumulate at compound interest for a number of periods. For bond valuations it is necessary to know the amount of an annuity and the present worth of this amount. The following terminology will be used in the solution of the problem:

A = the sum put at interest periodically
B = the amount to which A accumulates
r = the rate of interest per period
$R = 1 + r$
n = the number of periods
P. W. = the present worth of the annuity

The first sum, A, placed at interest at the end of the first period will accumulate for $n-1$ periods and, according to formula (1) above, will amount to AR^{n-1}. The second sum, A, placed at interest at the end of the second period will amount to AR^{n-2}; etc. The last sum, A, will not accumulate and so is worth just A.

The amount of the annuity is thus seen to be the sum of the amounts of the several periodic sums. Expressed as a formula:

$$B = AR^{n-1} + AR^{n-2} \ldots\ldots\ldots + AR + A$$
$$= A(R^{n-1} + R^{n-2} \ldots\ldots\ldots + R + 1), \text{ whence}$$

$$(3) \qquad B = A\frac{R^n - 1}{R - 1} \text{ or } A\frac{R^n - 1}{r}$$

The expression in parentheses is a geometric series whose sum may be written in the fractional form shown.

The present worth of B, i.e., of $A\frac{R^n - 1}{r}$, is found from formula (2) above to be: $A\frac{R^n - 1}{r}$ divided by R^n. Expressed as a formula:

$$(4) \qquad \text{P. W.} = \frac{A(R^n - 1)}{R^n r}$$

Formulas for Bond Valuation

The method of valuing a bond makes use of the formulas (1) to (4) just established. The symbols used in the bond formulas will be:

P = the par or face value of the bond
r = the effective rate
c = the nominal rate — the rate specified in the bond
$C = Pc$, i.e., the value or amount of a matured interest coupon, the nominal yield of the bond
Pr = the interest yield on par at the effective rate
V = present worth or value of the bond

First Method. The present value of a bond may be looked upon as the sum of two present worths, viz.: the present worth of the face of the bond and the present worth of the annuity represented by the periodic interest payments, i.e., the coupons. The present worth of the face is, according to formula (2), $\frac{P}{R^n}$. The present worth of the coupon annuity is, from formula (4), seen to be $\frac{C(R^n - 1)}{R^n r}$. Hence the present value of the bond is the sum of these two present worths, i.e.:

$$V = \frac{P}{R^n} + \frac{C(R^n - 1)}{R^n r} \text{ or } \frac{Pr + C(R^n - 1)}{rR^n} \tag{5}$$

Second Method. Here, the determination of the amount of premium or discount which is fair payment for a bond is the point of attack. That is, using par as a basis, how much above or below par is the bond worth? The fair premium is based upon the difference between the nominal yield of the bond and the interest return in the present money market. Stated otherwise, in the case of a bond selling at a premium, the nominal interest return may be looked upon as composed of two parts, viz.: (1) a portion representing interest at the *effective*, i.e., current money market rate on the par value of the bond, and (2) a portion —the difference between the nominal yield and (1)—which

is of the nature of an annuity for the life of the bond. The present worth of this annuity is the fair premium on the bond.

To illustrate: A 6% bond sold in a 5% market would have a nominal yield annually of \$60. All that can be secured, however, on the par value is \$50. Hence, on the basis of valuation at par there is a \$10 excess of nominal over market yield which would be received every period. The present worth of this \$10 annuity is the fair premium which the bond will command. With the use of the previous symbols, this annuity is expressed by the quantity (C − Pr) whose present worth, as determined by formula (4) is $\frac{(C-Pr)(R^n-1)}{rR^n}$. Therefore, the value of the bond is the face or par of the bond plus the present worth of this annuity, i.e.:

$$V = P + \frac{(C-Pr)(R^n-1)}{rR^n} \tag{6}$$

This formula when simplified reduces to $\frac{Pr+C(R^n-1)}{rR^n}$, which is identical with formula (5) and, of course, values the bond at the same amount.

Third Method. Valuation by either of the methods above is rather complex, requiring for easy solution the use of logarithm or compound interest tables. A third method, requiring only the ordinary arithmetic processes is sometimes used, although very burdensome when the periods are numerous. This is sometimes called the periodic method because working backwards from par, the value at the next preceding period is determined, and from that the next is found, and so on till the value at the desired period is reached. Reference to the second amortization schedule shown on page 270 will help in understanding the process. Using the same terminology as above and this additional:

P_1 = the first preceding value above par ($1,004.90 in the schedule)
P_2 = the second preceding value above par ($1,009.71 in the schedule)
Etc.

formulas 7 to 9 below may be developed.

It was noted that any particular value of the bond is found by subtracting from the next preceding value the difference between the nominal and effective incomes. The nominal income is always based on par, and the effective on the value at the last interest period. For example, in the schedule referred to: $1,004.90 — ($25 — $20.10) = $1,000, the $20.10 being the effective income, 2% on $1,004.90. Using symbols the above equation may be generalized as follows:

(7) $P_1 - (Pc - P_1 r) = P$, whence $P_1 = \frac{P + Pc}{(1 + r)}$, and

(8) $P_2 - (Pc - P_2 r) = P_1$, whence $P_2 = \frac{P_1 + Pc}{(1 + r)}$, and generalized,

(9) $P_n - (Pc - P_n r) = P_{n-1}$, whence $P_n = \frac{P_{n-1} + Pc}{(1 + r)}$

This gives a working rule whereby it is possible to work back from the known value, par, by successive operations until any desired value is found. The calculation is somewhat as follows for the example used in the schedule:

$$\frac{1{,}000 + (1{,}000 \times .025)}{1.02} = \frac{1{,}025}{1.02} = 1{,}004.90$$

$$\frac{1{,}004.90 + (1{,}000 \times .025)}{1.02} = \frac{1{,}029.90}{1.02} = 1{,}009.71$$

Similar calculations will develop the other values in the schedule. In the case of a bond with, say, 30 periods still to run, the burdensome nature of the calculation by this method is apparent.

While commercial houses rarely need to use the algebraic

formulas for calculating bond values, it is the only really correct method of valuing bonds which are held for long-time investment, and the accountant should be conversant with it. For the balance sheets of savings banks, insurance companies, and other investment concerns, scientific valuation of bonds with the attendant amortization up and down of discounts and premiums is not only theoretically correct but practical considerations, in a market such as prevails in a time of marked but temporary depression, demand that it, or some approximation to it, be used.

A discussion of the valuation of serial and short terminal bonds, or those carrying more than one rate of interest, or those redeemable by lot at various times, is beyond the scope of the present work.

Valuation of Sinking Funds

The section of the balance sheet under consideration usually includes the various funds representing the investment of reserves. Sinking funds, building funds, insurance, pension, endowment funds, and the like, are examples of this class of asset. The use of the term fund should be strictly limited to specific assets set aside for specific purposes. The problem of valuation in connection with funds will be considered under two sets of conditions, viz., when the funds are invested in a concern's own securities and when invested in outside securities. The practical questions in connection with funds are those of finance rather than of accounting.

The determination of a policy of investment as between the concern's own and outside securities depends on many considerations, some of which do not come strictly in the purview of the accountant. It is argued that for the sake of immediate availability, investment of funds to be used for a specific purpose at a definite time should be in the securities of other concerns over whom control does not extend. In some cases, however, provision is made in the trust deed

of a sinking fund to the effect that the funds set aside shall be used to purchase the bonds to retire which the funds have been created. These bonds may be canceled or held for the sake of their income in the fund till maturity. There would seem to be no choice between a concern's own and outside securities, provided the same standards of moral obligation are observed in both cases. If the securities purchased for the funds are the concern's own bonds, they should as a rule be valued at cost and the premium or discount amortized over the remaining life of the security. They may, of course, be carried on the books at par and the premium charged immediately against any income in the fund. The showing on the balance sheet should be in exact accord with the facts. If the bonds have been purchased and canceled together with their coupons, the amount of such cancellations should be shown as a deduction from the bond liability. The fund is thus serving its purpose *currently* by reducing that liability. Any uninvested balance in the fund should, of course, be shown among the assets. When the bonds are purchased and held uncanceled for the sake of their income, it is probably better to carry them among the assets, indicating, if the information should be considered vital, that the securities in the fund are the concern's own securities.

If the funds are invested in outside securities, these should be valued on the basis of long-time investments. If bonds, their premiums or discounts should be amortized. If, however, the credit of the issuing concern is such as to cast doubt on its ability to redeem them at maturity, other bases for valuation should be taken. It might even be necessary to set up special reserves to replenish the expected shrinkage upon realization of the securities held in the fund. A final injunction may not be out of place, to the effect that all funds should be definitely labeled so as to show their purpose.

Valuation of Investments in Land

Investments of a more or less permanent nature sometimes take the form of investments in land. This may be for the purpose of securing an income; it may be of a speculative nature, as when land is held for appreciation in value; it may be to secure room for future expansion; or it may be for the purpose of preventing a competitor from securing favorable holdings as to trade location or facilities. For whatever purpose acquired, as here considered, the land is a permanent investment and should be separated in the records from land held for operating purposes. The manner of accounting for these investment holdings is somewhat dependent on the purpose for which they are held. In most cases, particularly if the land is income-producing, at least a land expense and income account will be needed in addition to the asset account or accounts with the land.

As to the valuation of these holdings, full cost with no account taken of depreciation or appreciation in value is the correct basis. As stated in Chapter XVII, page 307, under certain conditions the carrying charges on non-income-producing lands may be added to the value of the holdings. If lands are held over a long period to secure appreciation in value, certainly all carrying costs should be loaded on to the asset account, offset, as shown in Chapter XVII, by a suitable reserve. Care must always be taken not to secure inflated values by these methods. If any of these holdings are disposed of, the profit or loss then actually realized must be taken into account; but no unrealized profit or loss should be brought onto the books—except, perhaps, as a balance sheet footnote.

CHAPTER XVI

MACHINERY AND TOOLS, FURNITURE AND FIXTURES, AND OTHER EQUIPMENT

General Considerations

The valuation of assets grouped under the head of equipment presents nothing new in principle but requires consideration of many points in the application of principles and of some features in accounting. Here the principle of value as a going concern is particularly effective. As in the valuation of prepaid expenses on a going concern basis, so here forced sale or liquidation value has no place. The business is viewed as established and as expecting to operate continuously. Capital has become tied up in certain equipment essential to the undertaking, in the sense that to dispose of it in its entirety would mean a break-up of the business. It cannot therefore be freed or put to other uses without a reconstruction of the present enterprise. Accordingly, the possible market value, as second-hand property, should not in any way influence the valuation at which this group of assets is carried on the books. Only full cost at the time of installation and depreciation, using the term in its broad sense, need be considered in the problem of valuation.

Distinction between Personalty and Real Property

The present chapter deals with such fixed asset equipment as machinery and tools, furniture and fixtures, delivery equipments, patterns, lasts, dies, maps, drawings, electrotypes, ovens, furnaces, etc., as distinguished from the more fixed group of lands, buildings, leaseholds, and the like. In the main, the point of differentiation is the legal one of

personalty and real property, although the intricacies of the law on this vexed subject are never, so far as is known, reflected in the books of account, nor is it the purpose here to attempt to lay down any working rules or standards by which such differentiation can be made. There seem to be none except certain broad generalizations, each case resting on its own peculiar surroundings. Circumstances, however, may arise under which a clear-cut distinction is desirable. A bond issue supported by a mortgage on real property or on personal property *may* depend, although not usually, on such a distinction for a large share of its security. The margin of safety may hinge on this point. It may be desirable to be able to trace on the face of a balance sheet the particular property covered by a mortgage. And should foreclosure of the mortgage become necessary, it is, of course, essential to know exactly the property subject to the lien. These are not points under contemplation in a going concern, although the possibility of their arising should not be lost to view. Here the problem of valuation and accounting for such valuation is viewed from the standpoint of a going concern and not one facing partial or total liquidation. Furthermore, as stated above, the point is, in its final analysis, one of law and not of accounting.

It is not intended by the foregoing statement to sanction any method of keeping the records in non-accord with fundamental rulings of the law, but only to state that, so long as substantial agreement is secured, accounting has served its intended purpose. Wherever any specific property is known to be subject to a lien, it is of value to the management for the accounts to reflect the fact. There may, however, be circumstances under which it is not desirable that the *accounting* records give this information. Conditions must govern each particular case without prejudice, and the principle holds that so long as substantial accuracy is reflected in the accounts as to this point nothing more is necessary.

Machinery and Tools

Under this head will be included not only the assets carried under that ledger caption, but also power machinery, power transmission, shafting, connections, electric transmission cables, and the like. The term is used in a very broad sense. While all these items are subject to one general rule of valuation, usually each must be separately considered to determine the practical application of the rule. The valuation involves, of course, the factor of depreciation, and it is readily apparent that not only do different pieces of machinery differ in this respect, but the same machines in different factories will vary as to this element and even in the same factory two similar machines will not usually be affected in the same way. This may be caused by defects or differences in quality, almost invariably latent, inhering in the machine and also by the different conditions under which they are operated. As pointed out in Chapter VI on depreciation, many of these are engineering problems which the accountant alone cannot solve but the existence of which he should know. Manifestly, all that can be attempted here is to point out their existence.

Accounting Records

The valuation of machinery and tools as here contemplated is dependent largely on the accounting records. Therefore, it is desirable to keep separate records for each of the two classes. This is so because of the greater degree of fixity of the one over the other. As to tools a distinction is also made between machine tools and general shop or hand tools. Machine tools are those with which the machine does its work. Thus, cutting tools for use with any particular machine, auxiliary equipment used for some operations, but not for others, and the like, constitute a very essential and component part of the machine and should be recorded and valued with the machine even though the

tools need to be replaced much more frequently than the machine. On the other hand, shop tools comprise those of general utility which are largely used by hand. Hammers, wrenches, hand shears, pliers, chisels, bits, and the like, are examples of shop or hand tools.

Where the number of machines is large, proper accounting requires a subsidiary record known as a machinery ledger or register controlled by the machinery account on the general ledger. In this subsidiary record accounts should be kept with each class of machines, and with each machine separately if the record as to the performance of any specific machine furnishes essential information.

Operation of Machine Accounts

Every machine should be charged with its full cost. Full cost is understood to include invoice price, insurance during transit, freight, duty, and drayage charges, and installation costs. The last item usually includes the platform or stand on which the machine is erected, with all costs in connection therewith, when special supports or platforms in addition to the regular factory floor are needed. The cost of attaching the machine to the power and meters for measuring its power consumption are not usually included therein, these being classed as costs of power equipment—although practice is not entirely uniform in this regard. The machine record should also show the name of its manufacturer and its order number and any other useful information such as terms and period of guarantee, estimated life, rate of depreciation to be applied, numbers and kinds of tool equipment, etc. All deductions from the value of the machine must be on the same basis of full cost. Such deductions might arise because of fire, sale, or replacement. The proper handling of the account when deductions are necessary will be explained at the close of the chapter, as the method is applicable to all classes of asset equipment.

Valuations of Machinery and Tools

The statement of the principle of valuation for machinery is simple, but the application of the rule is complex. The valuation formula for machinery is cost less depreciation. As stated above, the condition of the market has no influence on the going concern valuation of fixed assets. If the market is now lower than at the date of purchase, this simply means that more capital was then required to start operations than is now required. If the forces of competition are free to act, the margin of profit or the margin of return on the investment in machinery will be somewhat less in the one case than in the other. If the market is now higher, then the situation is in favor of the earlier investment rather than the present one. In neither case should costs of production be falsified by valuing the machinery and other equipment at any other figure than cost.

Estimate of Depreciation

Estimating the depreciation on machines is the chief and vital problem in their valuation, because depreciation is reflected in the cost of the article manufactured, being a cost of production just as truly as the raw material used. As brought out fully in Chapter V, page 93, the so-called depreciating assets are really of the nature of deferred charges to operation and a depreciation estimate is the amount of the periodic charge against production. Because of the speculative nature of an investment in machinery (neither the quality of the machine being exactly determinable nor the conditions of its operation known), its depreciation is always an estimate. For this reason it should be based on the best possible knowledge available at the time of installation.

Any estimate so made must be the subject of periodic revision. How frequently this revision should be made will depend both on the length of estimated life and the way

in which actual experience compares with the expected or estimated conditions. The experience on which the estimate is based should, of course, be with the same or similar machines, gained, if possible, amid the same surroundings and conditions under which the new machine will operate. In default of such experience or as a valuable check thereon, the results of others in the use of the machine and the expert advice of those who have studied the problem of depreciation in its practical applications should all contribute to the making of this estimate.

History of Machine

This need of experience data creates the necessity of a means for gathering and preserving the data, and the machinery record above referred to serves the purpose. Therein should be set forth the complete life history of the machine—not only the original cost and the additional data given above, but also the time and cost of all replacements and all information relevant thereto and, as a memorandum, the cost of maintenance, repairs, up-keep, etc. The record is not complete without the data as to repairs. A periodic statement should also be made as to any abnormal conditions under which the machine has been operated, such as overtime, overload capacity, etc. Where possible, the output of the machine in units of product should be included in the record. Where a group or battery of similar machines is operated, the average experience of all of them is the best possible data on which to base future estimates of depreciation.

The more life histories available, the more reliable will be the average obtained therefrom. After making due allowance for changed conditions of operation, this average should prove a reliable forecast of future experience. After all, an estimate of depreciation is in many respects very like an insurance charge, and the time may come when

the life histories of a sufficiently large number of machines will provide a very reliable basis for estimate at any given time of the expected life of a machine when operating conditions are known.

Standards of Operation

One phase of the modern efficiency movement relates to the study of machine operation. This has helped in the study of depreciation, in that standardized methods of use have been established. These comprise a standard speed of operation, proper periods of rest, correct methods of throwing in the power, the proper adjustment of parts for each machine; and for each kind of machine tool, the proper degree of hardness to which the cutting edge must be tempered, the speed of cutting, and the number of operations before resharpening—all these standards have been established, resulting in an average performance of maximum efficiency which may be called the normal operating conditions of the machine. Where such studies have been made and where the set standards are uniformly observed, a very reliable basis is furnished for forecasting the future. To insure the observance of these standards a permanent card should be attached to every machine, giving all the information essential to standardized operation. A copy of this standard should be made a part of the record in the machine ledger.

Abnormal Operation

To make the periodic revision of the estimate of depreciation accord with the fact or rather with the best possible estimate of the fact, any abnormal operation of the machine should be considered. Thus, if the machine has been worked overtime, say on a three-shift day instead of one-shift, or if it has been crowded beyond its capacity, if repairs have not been made when they were needed, if the wage policy

has been changed from a per diem or per hour basis to a piece-work basis—all these points must be considered.

Machines which are seldom used require careful consideration. It is oftentimes necessary to include in the equipment special machines for infrequent operations and processes. The normal operation of such must be estimated for each particular factory and depreciation based on such use.

All of the foregoing points must be taken into account in connection with the operation of both machines and power equipment. In the case of the power machinery, a consideration of kind and quantity of fuel, manner of feeding and cleaning, quality of the boiler water, etc., with the set standards, forms the basis for a revision of depreciation rates and estimates.

Map of Machine Location

In connection with the machinery record, a complete map showing location and number of every machine is especially desirable. In case of fire it makes identification easy.

Methods of Application of Depreciation

In the application of depreciation, three methods are used more generally than any others. The straight line method, as discussed in Chapter IX, is the one most widely employed. It is to be preferred to all others, giving satisfactory results and being easy of application. The fixed rate of diminishing value method also has many adherents, and depreciation based on the number of units of product turned out is a third method often used where applicable—though applicable in a very limited degree.

Under the straight line method, it may be ventured as an opinion that 10% is a fair average minimum rate and 15% to 20% an average maximum. The knowledge as to

what constitutes an average rate serves little useful purpose, however, although it does give a rough estimate when spread over a large variety of machines. It has been said that from a mechanical point of view no machine can depreciate *actually* more than 30% and be operated efficiently. This does not, of course, mean that the depreciation reserve should never show more than a 30% offset to the value of the machine, as this would indicate too high a rate were the machine still in operation. It does mean that, according to a theoretical standard of operating efficiency, any machine which cannot fulfill at least a 70% efficiency test should no longer be used. It should be remembered that the depreciation reserve is a device for financing depreciation and nothing else.

Basis of Valuation

The basis, therefore, for the valuation of machinery is its full cost less estimated depreciation. Such an appraisal is subject to periodic revision by comparing the estimated with actual depreciation as more of the facts brought out by the period of life already expired become available. Perhaps the method of inventory, as will be explained in connection with hand tools, is best applicable to machine tools and even to certain small bench machines on the boundary line between tools and machines. However, special tools made for a particular purpose and perhaps not adapted to any other use should be charged against the job and not carried as an asset.

Scrap Material

A financial consideration in connection with machinery is the disposal of scrap material. This should be disposed of as advantageously as possible. It should be held until the market for old metals is high, if at the time of its discard prices are abnormally low.

Accounting for Tools

With regard to the method of accounting for hand and shop tools and the basis for valuing them, the additional factor of possibility of loss claims consideration. Unlike machines, which are for the most part securely attached to the premises, tools are loose, they may be carried off or lost, and so not only loss in value due to depreciation but loss from theft or carelessness must be taken account of. Unless an adequate control is established over the physical handling of loose tools, a very considerable *leak* may result at this point.

In accounting for tools, different practices are encountered. Thus, the Public Service Commission for the First District of the State of New York, in its Uniform System of Accounts for Gas Corporations, authorized that, "hand and other small portable tools liable to be lost or stolen shall, when first acquired and before issued for use, be carried in a suitable Materials and Supplies account; when issued, they shall be charged to the appropriate expense account. Portable tools and apparatus of special value may, however, be charged to the appropriate tangible capital account, and remain therein so long as record is kept of the persons to whom such tools and apparatus are issued and such persons are made responsible therefor."

Sometimes the practice is found of charging all purchases of tools to an asset account for a short period of, say, two or three years, and thereafter to a suitable expense account, with a periodic revision based on an inventory about once in five or six years. Again, the Loose Tools account may be handled just as any other asset account, i.e., charged with all purchases, credited with losses, and depreciation provided for. The manner of handling the record is not vital, any method sufficing that fits particular needs. All methods must, however, take cognizance of the fundamental distinction between capital and revenue charges and pro-

vide some means by which the Loose Tools account, as an asset account, shall represent substantially correct asset values. A successful method of securing control over the physical handling of tools, where the plant is large enough to justify it, is to place all tools when purchased in the care of a stores-keeper and issue them only on authorized requisition, thus securing an accurate record of them.

Depreciation on Hand Tools

As to the valuation of hand tools, depreciation is often left out of account on the theory that, so long as a tool can be used to perform the service expected of it, it is worth approximately what it cost. Where as an adjunct to this method of valuation, a physical inventory of tools is taken periodically and all losses so shown are charged to expense, substantially correct asset values are secured. Of course, *theoretically*, tools are as much subject to depreciation as other similar assets, but the method of the inventory valued at cost, and therefore disregarding depreciation, is perhaps the best practical way of handling the valuation of tools, and it gives sufficiently satisfactory results for most purposes.

Valuation of Home-Made Machinery and Tools

Machinery and tools made in own factory offer a problem in valuation. It may be stated thus: Shall such be valued at the market price at the time when made, or shall valuation be the cost to manufacture? It is argued that had the machinery been purchased on the market, as is usually the case, the cost would have been market price; the machinery is worth that price and should be so valued. If the cost to make is less than the market, to bring the machine on the books at market would necessitate the taking of a profit of the difference between cost and market. No profit has been made, only a saving in capital investment. This confusion between profit and savings is referred to in Chapter XIII.

In the long run, i.e., in the period covered by the life of the machine, it makes no difference in profits for that period whether the machine is carried at cost to make or at market, because its value is written off to depreciation during its life and the higher value means an increased depreciation charge. This will exactly offset during the period of the life of the machine the profit taken by bringing it onto the books in the beginning at market instead of cost. As a matter of principle, however, the point involved is of sufficient importance not to justify the practice. By cost to make is meant full cost, which includes materials used, labor applied, and a fair share of the overhead expenses. Whatever the cost to make, whether lower or higher than the identical equipment could be purchased for on the market, that represents the capital outlay and is the true basis for valuation, taking cognizance of depreciation for the elapsed period.

Expenditure for Rearrangement of Machinery

In connection with expenditures made in the rearrangement of machinery within the plant for various purposes, the question of the effect of it on the value at which the machinery is being carried requires some consideration. In Chapter V where an attempt was made to mark out broad boundary lines for capital and revenue expenditures, it was stated that any expenditure which produces greater earning capacity or without which a lessened earning capacity would result (assuming that all normal expenditures for maintenance and repairs are being made concurrently), may be treated as a capital expenditure or at least as a deferred charge to be spread over several periods.

In the case of depreciating assets, the practical identity of the two methods is apparent. Thus, if the expenditures for rearrangement of the machinery have either of the effects mentioned above, there is no serious objection on

theoretical grounds to capitalizing them. Instead, however, of injecting such intangible values into the machinery account, it is far better, because more exact and accurate, to show them separately. Practical considerations demand that such expenditures shall not usually influence the valuation of machinery and a conservatism born of the fear of inflation requires that when treated as deferred charges, they should be written off as quickly as may be done without undue burden on the periods' profits.

Definition of Furniture and Fixtures

Furniture and fixtures, as an asset title, is not clearly defined. It may include the usual tables, desks, filing cabinets, bookcases, typewriters and other mechanical equipment, safes, chairs, counters, and in addition, light, heat, and plumbing fixtures, show windows, partitioning, shelving, and the like. The account should be charged originally with all such items at full cost. Great care must be exercised in handling repairs and betterments to avoid an inflation of values. The distinction between capital and revenue expenditures as regards all such assets already acquired is usually so slight and uncertain as to justify the establishment of a policy of charging all these to expense. Otherwise, the ease of inflation is apparent. All new purchases should be charged at full cost to the asset.

Valuation of Furniture and Fixtures

The basis for the valuation of furniture and fixtures is at cost less depreciation. In applying depreciation, account should always be taken of the usually very small residual values in this class of asset. Scrap value in some cases is only as kindling wood and therefore almost or entirely negligible. In some cases of easily movable equipment, the method of the inventory as used for loose tools will give better results in valuation than an appraisal method

based on cost less depreciation. One often finds the conservative practice of bringing onto the books a rapid depreciation to scrap value during the first few years, at which nominal value the asset is carried thereafter. This is a common practice in financial institutions. While not theoretically justifiable, in comparison with the opposite tendency based on too great optimism as to the life of the asset, the practice is to be commended.

The average range for depreciation of this class of asset is from 10% to 20%, estimated by the straight line method. Where premises are leased and any equipment of this kind is, according to the terms of the lease, to remain with the building, it is necessary that a depreciation rate be taken high enough to accomplish complete writing off by the end of the lease. This rule also applies if the equipment may be removed but would be in a badly damaged condition, resulting in little remaining value.

Delivery Equipment—Definition and Valuation

Delivery equipment includes all property, direct or auxiliary, used in connection with the delivery of goods both inward and outward. Horses, wagons, and harnesses, motor trucks and cars, repair parts, and repair equipment, containers, holders, and the like, are common examples of this class of asset. In the main, these assets are handled very much as all the others of the general equipment group. Valuation is on the basis of cost less depreciation for the most part, but in many instances the method of the inventory should be applied.

If horses comprise a part of the equipment, not only must depreciation due to wear and tear be reckoned, but accidental causes such as death and disablement must be given consideration. Experience in each business based on the particular kind of work to be performed and the conditions under which it is being performed furnishes the

only adequate basis for estimating the depreciation rate. Thus, heavy or light draughting, speed to be maintained, kind of road on which the haul is made—cobble stones, brick, asphalt, wood blocks, or dirt—and the standard of appearance to be maintained—all these affect not only the cost of up-keep but also the rate of deterioration. Sometimes it may be safe, as with loose tools, to charge all purchases to capital for the first few years until the equipment is complete, and thereafter all renewals to revenue, depreciating the asset account, say, 20%, and maintaining it at that figure. Any marked increase or decrease in numbers would require respectively an added capital charge or a reduction of the original charge. Whether this method or the method of the inventory be used for valuation purposes, there should be a periodic appraisal by an expert horse dealer and adjustment of values based on this appraisal.

Wagons, trucks, and motor vehicles should be numbered and all accounted for periodically by physical inventory. It may be desirable in some cases to maintain a register for these, wherein the performance of each can be recorded and so compared. This is particularly desirable when a change of delivery policy is under contemplation and comparative records are needed of the performance of various types of vehicles. This class of delivery equipment is best valued on the basis of cost less adequate depreciation, with the periodic inventory as a check on numbers and condition.

Carriers and Containers—Valuation

The most difficult of all the items of delivery equipment to handle and value is that class represented by carriers and containers. These may be barrels, kegs, casks, bottles, baskets, and boxes, and are met in the brewery, dairy, bakery, laundry, and oil businesses. In some lines it is feasible and is the practice to charge the customer with the fair cost of the carrier, giving a return privilege with

refund, dependent upon the condition of the returned carrier. This is good where applicable, although it necessitates having an adequate redemption fund which may be operated somewhat as a bank's reserve is, i.e., only large enough for normal needs but capable of ready enlargement when the need arises. In other lines of business such a method of handling the container cannot be used. Here, as in the bottled milk trade, only experience will give a proper basis for estimating the depreciation through loss, theft, and breakage. The rate is almost invariably high, and liberal depreciation should be provided for. Taken all in all, throughout the various kinds of delivery equipment rates ranging from 16 2/3% to 25% constitute fair average rates.

Patterns, Molds, etc.—Valuation

The last kind of equipment items requiring consideration is comprised of such items as patterns, lasts, molds, dies, drawings, electrotypes, wood cuts, forms, models, and the like. Wherever possible, these should be charged to the particular job for which they were made and not carried as assets. Unless there is a probability that the pattern, mold, etc., will serve for other uses than those for which it was made, the costs of making should be borne by the job on which it was used. This is very often not the case, however, and these items can be used for successive production. This is particularly true of a standardized product which is not apt to be much affected by change in style or the whims of a purchasing public. At the best, however, they constitute a treacherous and highly speculative asset and require careful handling to avoid inflation of value. Thus, it is easy in the publishing business to allow electrotypes, wood cuts, etc., to assume unwieldy proportions to the other assets. In manufactories of wearing apparel, the fickleness of fashions requires that patterns, lasts, and

models be written down ruthlessly to the lowest possible figure. Here obsolescence is a big factor.

Under the limitations set, valuation should be based on cost with a very liberal periodic depreciation. The rate will *average* anywhere from 20% to 50%, though a lower rate may sometimes be proper.

Disposal of Assets

In connection with the handling of the asset and its valuation account, the disposal of all or some portion of the asset requires consideration. It is a fundamental principle that whatever is taken out of the asset account must be taken at the same cost as it was introduced into the record. Thus, an asset recorded at cost of $5,000 and sold for $4,500 would be shown as taken out of its account at $5,000, the apparent loss of $500 being recorded in a suitable expense account. If the asset has suffered depreciation between the date of purchase and sale, and the depreciation reserve shows this, that must be taken into account. Practically, it is best handled by transferring to the asset account from the depreciation reserve the part of the reserve applicable to the portion of the asset disposed of. Upon disposal there is an additional credit to the asset account of the difference between cost and the depreciation to date, i.e., the amount of this credit is the present appraised value of the asset sold, taking into account not only the recorded depreciation but the accrued as well. This brings out the true as distinguished from the apparent profit and leaves in the reserve only that portion which is applicable to the asset remaining.

An illustration will show the process of handling. Assume that the $5,000 asset is a portion of a $50,000 machinery account, for which the recorded depreciation reserve is $10,000 and the depreciation on the portion sold accrued to the date of sale is $200. The entries, necessary to effect the sale, are:

		Debit	Credit
(1)	Depreciation	$200.00	
	Depreciation Reserve Machinery		$200.00
	Accrued depreciation to date on the asset sold.		
(2)	Depreciation Reserve Machinery	1,200.00	
	Machinery		1,200.00
	To write down to appraised value the asset sold.		
(3)	Cash	4,500.00	
	Machinery		3,800.00
	Profit on Sale of Machinery		700.00
	To record sale of machine and the profit on it.		

CHAPTER XVII

BUILDINGS, LAND, AND WASTING ASSETS

Definition of Real Property

The movable fixed assets—paradoxical as the limiting adjectives may seem—having now been considered, the present chapter will treat of the immovable tangible fixed assets. By immovable is meant real property as distinguished from personalty, and by tangible the intention is to exclude from the present consideration such intangible items as good-will, patents, copyrights, trade-marks, franchises, and the like.

In accounting for this group of assets there is no place for the caption "real estate." In its stead the two titles, "land" and "buildings," are used. This is to avoid confusion and to afford a better basis for calculating depreciation. The term real estate or real property has a very definite legal connotation, but in the popular mind is held to include land and buildings. From the accountant's point of view there is no objection to the use of the term in the balance sheet, but in the accounts themselves the two assets should be carefully separated. For the private commercial enterprise, land as a fixed asset is subject neither to depreciation nor to appreciation; whereas buildings are constantly depreciating in value. While depreciation can be calculated with fair accuracy on the combined basis, the single basis of building values is the only scientific basis. The separation of the two values is also essential for insurance purposes and the proper adjustment of fire losses. They will therefore be separately treated in this discussion.

Cost of Buildings

Buildings as fixed assets should be valued by the formula for the fixed asset group, viz., full cost less depreciation. Some points in connection with proper methods of accounting and special cases of valuation require comment.

First, as to making the proper record of cost of the buildings. Three cases must here be considered:

1. If the building is purchased outright for cash, whatever costs are incurred in securing full title and expert opinion as to the sufficiency of the title are proper charges against the building. If the building is erected on contract, the full cost of the contract and any necessary supplementary charges comprise the carrying value of the structure.

2. If the building is bought by the issue of stocks or bonds, the present value of those securities and all costs in connection with their issue should constitute the cost of the building. Determination of the present value of the securities is oftentimes a difficult matter. When sales on the market take place concurrently, that determines the price. When, as is usually the case, several existing companies are bought up or merged to form a larger company, the old stockholders are given shares in the new company for their equities in the old. The book value of their old holdings may be the basis for the issue of the new stock or the issue may be on the basis of a larger or smaller value than this. This whole question of the value of the assets taken over is equally a question of the value of the securities issued therefor. This is considered in full in Chapters XX and XXI and will be given only brief treatment here.

Manifestly all considerations relating to buildings purchased by stocks and bonds have equal application to all other fixed assets so purchased, and the treatment in later chapters will therefore be more inclusive than could be any statement of the case applicable only to buildings. It suffices to say here that usually the par value of the securi-

ties issued constitutes the value placed on the assets bought. The valuation as a rule is made by an appraisal committee from the board of directors which inspects the various properties taken over and places a value on them. In the absence of fraudulent intent, the courts will usually sanction and uphold these values as having been made by interested parties competent to act. This is the method generally used for injecting water into properties.

3. When buildings are put up by the concern itself, full cost may include not only cost of material and labor and a fair proportion of the overhead where supervision of construction is local, but all other expenses directly incurred in connection with construction. These will include architects' fees for plans and supervision, cost of permits and licenses, interest on borrowed moneys and insurance during construction, accidents and injuries to workmen during the construction period, easements, damages, strike costs, and the like. If the structure is being erected on a site occupied by an old building, the cost of wrecking less any salvage value is a proper charge against the new structure. If bonuses have to be paid tenants in the old building to secure release of their quarters, these, too, are similar charges to the new structure. Charges such as interest and insurance during construction are capital charges only up to the point of fitting the building for occupancy and so making it an operating and income-producing unit. Thereafter these must be treated as revenue charges.

Some interesting and at times complicated situations arise when, as in the case of an office building, the structure is occupied in sections as completed. Theoretically, only the portions of the charges of this kind applicable to the completed sections now become revenue charges, the rest still being capitalized so long as sections remain uncompleted. Practically all that is desired is substantial accuracy. The items may be comparatively insignificant

but when in doubt the bias should always be on the side of conservatism.

Valuation of Buildings

In the valuation of buildings a much more difficult problem is encountered after the structure is completed and repairs and alterations are made. It is the old problem of the proper differentiation between capital and revenue charges, and is particularly difficult of solution in some instances. Nothing more can be said here than was stated in Chapter V where the fundamental rules to be observed in distinguishing between repairs, renewals, and betterments were laid down. Changes in interior arrangement to accommodate new fixtures and equipment, or a different distribution and arrangement of existing equipment with a view to better operating conditions require particularly careful handling. Such expenses were mentioned in connection with the treatment of machinery on page 290, and the reader is referred to it. Whatever decision is reached on any doubtful item of this or a similar kind, the supporting vouchers, bills, and papers constituting the full evidence should be carefully preserved and made available for review in case of any future questioning of the charges.

Betterments on Leased Buildings

In the case of betterments made on leased buildings, provision must be made to write off their entire cost by the time of the expiration of the lease, as they almost invariably revert with the building to the owner. Sometimes the betterment, if material and so agreed as between lessee and owner, may be taken over at a depreciated value upon expiration of the lease. Here depreciation of the betterment must be provided for. Whether all or only part of the cost of the betterment is to be charged off periodically, record of this is best accomplished as an addition to the periodic rent charge.

Application of Depreciation

As stated above, the basis for valuation of buildings is at full cost less depreciation. It is the method of appraisal, although the inventory may provide a good check in the case of concerns owning many structures. A subsidiary record of buildings showing separate costs and location, or at least a map showing location, may then prove very essential, particularly in the case of fire losses. In the application of depreciation to buildings many things must be carefully considered. Not only must the depreciation of use, i.e., wear and tear and lapse of time, be considered but also obsolescence and inadequacy as factors in shortening the service life of the structure.

Buildings used for some purposes deteriorate more rapidly than when put to other uses. Vibrations, whether caused by own use or due to exterior causes, increase the rapidity of deterioration. Susceptibility to fire, explosion, and the like, due to the nature of their use, should be taken into account. It is stated that powder plants operating under normal conditions provide for an entire replacement of plant every five years. Power houses depreciate more rapidly than store houses. A building put to various uses will be subject in its different parts to varying rates of depreciation. Although a composite rate applicable to the whole structure will give a satisfactory valuation, if accurate departmental costs are required it would be desirable to apply the different rates to the building values distributed over the various departments. In practice this is seldom done.

According to different authorities, rates of depreciation ranging from 1% to 5% constitute a fair average. The nature of the structure, whether occupied by owner or tenant, its location, kind of composition, etc., are additional factors for consideration. While some authoritative rates are available, no standard rates, unless compulsory, should

be used without a careful study of local conditions. Structures which are temporary should, of course, be charged for their net cost, i.e., full cost less salvage value, against the product or the job which makes use of them. Other cheap structures such as mine buildings, shaft houses, temporary housings for lumber mills, and the like, should be written down very rapidly. Having practically no realizable salvage value and their life being brief, they should be charged off the books at least during the period of their use.

Buildings owned as a freehold for life, or, stated otherwise, a life interest in buildings, are not subject to depreciation, the remainderman taking the building in its condition as released by the party owning the life interest.

Accounting for Land

In accounting for land as a fixed asset used in the conduct of a business, one or more accounts may be carried as seems best. If the land is in several different plots, perhaps widely separated and each plot held with other groups of assets and under varying conditions as to taxes and other obligations, some plots being subject to mortgages and others not so subject, separate accounts with each plot would be desirable. Otherwise, usually the one account will suffice.

The record should be as complete and full as possible. Notation after the title or elsewhere, giving the description and location of the holdings, is an advantage as a means of exact reference. The various items in the account should be supported by full explanatory matter together with documents available for the analysis of the various items and proof as to their legitimacy It should thus be possible, at any time, to determine the items comprising full cost. The purchase contract price, the attorney's fees, and broker's commissions or a fair portion of the purchasing agent's

salary, the costs of search and guarantee of title (if these are borne by the purchaser), notarial and recording fees, the assumption of taxes owing at date of purchase, local improvement taxes and assessments, such as sewer, water, curbing, paving, and the like—all these should be indicated with clearness and definiteness.

Where accounts with a "large number" of plots are kept, it may be advantageous to carry these accounts on a subsidiary record specially ruled to give the detailed information desired and control them all by one general ledger account. Local conditions and the information desired will determine the manner of keeping the records. In all cases, the account should carry a notation as to where the supporting legal papers and documents covering each parcel or plot may be found. This prevents much needless loss of time and worry when quick reference to those papers is desired.

Valuation of Land

The basis for valuing land with unclouded title, as a fixed asset for business purposes has already been clearly indicated. Full cost, usually with neither depreciation nor appreciation, constitutes the valuation formula. By full cost is meant complete cost in condition ready for use or, at least, up to full-title date. In addition to the items enumerated in the preceding section, there may sometimes properly be included such expenses as leveling, grading, filling, and draining. Even the costs of dikes, dams, and embankments, and in the case of railway construction the cost of the care and up-keep of *growing* trees planted to prevent land or snowslides, tunneling, and the like, may be carried as a part of land costs, although some of these may more accurately be recorded as improvements. In the case of mining land, the cost of stripping the surface to reach the ore body, and the cost of shaft-sinking and of tunneling are proper capital charges and may be recorded

under the land account, although preferably under a development account.

Whatever costs are necessarily incurred to make the land serve its intended use are proper capital charges and should be recorded in the land account unless better purposes are served by record in some supplementary account.

Depreciation or Appreciation of Land

The relation of depreciation and appreciation to land valuation is not difficult in theory but is often very perplexing and gives rise to complicated situations in practice. In theory, so long as the land is used for its intended purpose, fluctuations in the market either up or down should not affect the valuation at which it is carried on the books. Just as with the equipment group of assets discussed in Chapter XVI, any increase or decrease in the value of the land cannot be realized so long as the land is employed in operation. Its cost represents the capital tied up in it and the amount on which profits must be earned. This is therefore the value at which it should be carried on the books. Sometimes other considerations than those of accounting influence business policy in connection with the market value of land; but so long as it is used for the business purposes for which it was purchased, full cost price should be its valuation. This may sometimes place a prospective borrower at a disadvantage when using his balance sheet as the basis for credit. A footnote or other notation giving market value will usually suffice, although such value is often difficult of determination without a disinterested appraisal.

Appreciation of Land Values

When land is held over long periods in a growing community, appreciation in value almost always results; occasionally depreciation ensues. The amount of appreciation

is oftentimes not as much as it seems because land with buildings on it may not be convertible to some other use at the market price of similarly located vacant land; the cost of scrapping the buildings often being as much or more than the appreciation in land value. Also, appreciation may sometimes be of a temporary character, in the nature rather of a market fluctuation. If so, the distinction must be carefully observed. Perhaps in the majority of cases requiring consideration, appreciation not only is very real but also very considerable.

It may sometimes be desired to base an issue of bonds on real estate—land and buildings—which is being carried at an old cost figure as of many years ago but which has a greatly appreciated and available market value at the present time. Prudent financial considerations would require an independent appraisal to determine the amount of the bond issue. Upon the assumption that the issue is for a larger amount than the original cost of the security, a peculiar situation arises. In showing the transaction on the books and balance sheet, not only would no margin of security appear, but even an insufficiency of security so long as the original value of the security is carried. Here it would undoubtedly be wise to bring the appraised value of the security on the books, offsetting the appreciation in value by a suitably named surplus or reserve account, such as "Reserve for Land Value Increment" or "Appreciated Land Value Surplus." Another method and perhaps a better one where possible of application is to reorganize the concern by a sale of the old to a new company and so capitalize the increment in value of the old company's assets.

Another financial consideration in connection with appreciated real estate values concerns the advisability of the sale of the old and the erection of a new plant on less valuable land. Usually, the appreciation of land values is not reflected in increased profits; it may even result in

lessened profits due to higher rates of taxation and other expenses. If there are equally favorable locations for the particular kind of business, it may be the part of business sagacity to use the old location for rental purposes so that the benefit of the appreciation may be secured, or to sell and move to a less expensive site. In the one case the status of the land has been changed from that of an operating fixed asset to an investment, perhaps best considered permanent. In the other case, the increased value is through sale realized in a lump sum and, as a surplus item, is available for any purpose to which surplus may legitimately be applied. Of course, the amount of such surplus is the difference between the sum realized by sale and the cost of an equally efficient plant on the new site. It will usually happen that a better plant is erected, thus consuming some of the surplus arising from the sale.

Depreciation in Land Values

In a great many instances land depreciates. Decrease in value due to use will be considered under the discussion of wasting assets, page 311. When land suffers depreciation it is usually because of obsolescence or inadequacy. Due to certain natural facilities giving out, or to the removal, dismantling, or decay of artificial facilities, a site may depreciate so much as to become untenable. Business and residence property in a mining town may be of mushroom growth and have practically no value when the market, which is dependent on mining operations, declines. Ventures of this sort are recognized as highly speculative from the beginning and should be handled as such in the accounts. Wherever depreciation due to these causes can be foreseen, suitable provision should be made; otherwise the burden will fall entirely on the period when the plant has to be abandoned and this stage is usually preceded by periods of lessened profits. Depreciation of land is therefore always a local question.

Valuation of Land Investments

Business considerations oftentimes make advisable the purchase of adjoining or otherwise located tracts of land, with an eye to the future when enlarged facilities will be required. These should be carefully differentiated and segregated in the accounts from the land in use for business purposes. Some points in their valuation, in addition to those treated under the discussion of investments in land on page 278, need to be considered. Such tracts of land may usually without prejudice be valued at cost.

If later developments should turn out as originally expected, there can be no objection to loading the carrying costs of these lands, including taxes and interest on any borrowed purchase money, on their value year by year. The only reason for their purchase at the present time is because it is expected that the transaction can be more advantageously made now than later. If such should not be the case, the cost of the land proves to be higher than if purchased later. Only by loading these carrying charges can this information be developed. If the land is finally put to its intended use, no serious objection is seen in carrying it at the figure of full cost to the date of use. Because of the speculative nature of the transaction, it is usually advisable to set up a reserve of the same amount as the accumulating carrying charges. This reserve becomes free when the land is put to its intended use.

Because of the ease of inflation of values in transactions of this kind, due largely to an overoptimism as to the future and even sometimes to fraud, all such transactions must be scrutinized very carefully and ample provision against an unfavorable outcome should be insisted upon. It is interesting to note in this connection that in the case of valuations for rate-making purposes, as a usual thing carrying costs on land of this kind are not allowed as expenses to be covered by the rate of the service rendered. But when

these lands come into use such expenses become a part of the cost of the service.

Mortgages on Land

Mortgages on land require consideration as affecting the manner of showing the land value. Freehold land, i.e., land held in fee simple, if afterwards mortgaged should be shown on the balance sheet at full face value with the mortgage listed among the liabilities. The liability is usually a note or other bond which in case of the deficiency of the security would be a general claim against the free assets of the concern. It is therefore best, theoretically, not to show such a mortgage as an offset to its security. In the case of the purchase of land subject to mortgage without the assumption of the mortgage as a direct liability, theoretically the mortgage may be shown as a deduction from the full land value and only the equity value of land be extended as a significant asset. This differentiation is almost entirely an academic one and is seldom seen in practice. The land is usually listed among the assets and the mortgage as a liability.

Donated Land

The valuation of donated lands presents some interesting points. A town may offer a free site to secure the erection of a plant within its midst rather than allow it to go elsewhere. Sometimes the donation may be outright and absolute; at other times it may be conditional, depending upon the doing of certain things by the donee, such as the employment of a minimum force of men for a certain number of years, or the circulation of a certain amount of advertising, or the purchase of given amounts of raw material supplied locally. In the case of an outright gift, the cost to the company is usually nil, but for the proper statement of the concern's financial condition the land must be shown as an

asset. If the acceptance of the gift necessitates the scrapping of the old plant and removal expense to the new site, such costs would provide a minimum carrying value for the land. Where this is not the case, the land might be given a nominal value, with suitable explanation.

Usually, however, neither of these methods is so satisfactory as that of bringing the land onto the books at a fair appraised value and showing the contra side of the transaction as surplus, or donated surplus, or donated land surplus. Any gift received increases the proprietorship of a concern and should be so shown, and there need be no suspicion of inflated value in such a surplus item, if conservatively set up, and with the supporting records available. Any expense in connection with the acceptance of the gift is a proper charge against the donated surplus. Aside from this, it is free surplus available for customary uses so far as this transaction is concerned.

In the case of a conditional gift subject to reversion until the satisfactory fulfillment of the condition, no title nor asset value, other than a contingent one, inheres in the land. It is not therefore proper to show any. If a condition, extending over a period of, say, five years must be met, at the end of the first year one-fifth of the time has elapsed and the condition is nearer to fulfillment—the contingency has become more nearly a fact. But until its full satisfaction and the danger of a lapse has passed, there is no value in the gift. To show the progress and status of condition, the pro rata portion of the gift may be shown periodically by a charge to Donated Land or Equity in Land, offset by an equal credit to some suitable reserve such as Donated Land Reserve or Unrealized Profit on Land. On the balance sheet the reserve would be treated as a valuation item, no value being extended among the assets. This would seem to satisfy all demands for information and show the exact status of the transaction.

Land as Stock-in-Trade

A final consideration, not logically belonging here but treated as a matter of convenience, is that of land as stock-in-trade. In the case of a land company developing a tract of land for certain purposes, the individual plots, or the whole piece if division is not contemplated, constitute its stock-in-trade and it should be valued as such, i.e., as a current asset and not a fixed. All costs necessary to put it in condition ready for the market are capital charges and should be loaded onto the cost of the lands. These include all of the usual costs mentioned in connection with land as a fixed asset, and in addition all improvement costs such as parking, the laying out of streets, roading, etc. The loss in the use of land for these purposes should be prorated over the plots, or otherwise equitably distributed. Plots of land so developed are not usually sold all at one time. Any unsold plots should be inventoried at cost. Sometimes the first plots may be sold at a loss to make the rest of the proposition move. The practice is met of loading the loss in the early sales onto the unsold plots, and it is quite common to add any carrying charges to the cost of the unsold plots.

Both of these practices are to be deprecated and opposed. They are not right in theory and serve no necessary purpose. All costs after the stage of sale is reached are operating costs—charges against revenue which should not be capitalized. It may be desirable to know at what price the unsold plots must be disposed of to cover all expenses and losses and to make a profit, but that does not justify an inflation of the carrying values of the asset. If it is desired that the books shall show this, an amount equal to these costs and losses may be added to the carrying values if offset by a valuation reserve of equal amount, the costs and losses themselves being handled as operating expenses of the current period—or spread over several periods if applicable.

Wasting Assets—Definition and Characteristics

Wasting assets, as they are usually called, are better described as assets subject to depletion. They differ from depreciating assets in that, whereas the latter wear out through use or the effect of age, wasting assets simply "give out." They are subject to depletion because they comprise stores of raw materials and natural resources the supply of which, through being mined and disposed of, is definitely and finally diminished. The stores will in every case finally come to an end through yielding up their product. Examples of enterprises of this kind are minerals and deposits of all sorts, such as coal, gold, silver, lead, clays, slate, gravel, stone quarries, oil, asphalt, nitrate, timber, and "all growing plants yielding recurring crops, such as tea and rubber."

Dividends May Include Return of Capital

The law recognizes the distinction by requiring in the case of depreciating assets that the decrease in value must be made good before the payment of dividends—i.e., dividends cannot be paid out of capital—while in the case of assets subject to depletion it is recognized that some portion of the dividends paid may represent a return of the capital originally invested in the undertaking.

If the latter is the policy pursued, there will be no liquidating dividends at the time of the break-up of the undertaking, inasmuch as the regular dividends have already included a return of all or some portion of the capital. If, however, it is a matter of business policy to continue the enterprise elsewhere when the present natural stores are exhausted, then the dividends should represent only profits. During the process of operation, assets in other forms which represent the capital investment of the undertaking are retained in the business. This is accomplished on the books by a charge to each period's operations of such an amount as represents the depletion of the stores of product prepared

for the market during that period and by a credit to a depletion reserve account or direct to the property or stores account.

Basis of Depletion Charge

The amount of the period's depletion charge is reckoned by comparing the amount of product worked during the period with the total estimated amount owned. Whatever value was taken for the original purchase, that value becomes the basis for the annual or periodic depletion charge. There is, of course, a large element of speculation in some estimates of this kind. In the case of timber, the original amount purchased is easily determinable with fair accuracy by *cruising;* the amount cut each period is a matter of record. The ratio of the amount cut to the original amount is the portion of the original value or cost of the timber tract to be written off periodically. In the case of a mine or pit, the estimate cannot be made with an equal degree of accuracy. Competent engineers do make calculations of the amounts of available ores with sufficient certainty to warrant the expenditures of vast sums in the purchase of properties. If their estimate avails for this purpose, it can with equal certainty be made the basis for the periodic depletion charge. Nice questions arise in this connection when the property is being operated under a lease or on a royalty basis.

Application of Income Tax to Wasting Assets

Under the 1916 income tax law specific provision was made for allowing depletion and the manner of handling it is prescribed. First, for such a charge to be allowed as a deduction, it must be recorded on the books. Secondly, as soon as the depletion reserve equals the capital investment no further deduction can be made—all else is pure income. If, however, it is desirable to carry on the books

as an asset the estimated amount of product still remaining in addition to that written off, it may be done, the offsetting credit being to income, which must be shown as income on the tax return for the year in which it was brought onto the books. This new value may be depleted until wiped off the books.

The law as now operated bases value of the asset subject to depletion on the value existing as on March 1, 1913, or at cost or purchase price if acquired subsequent to that date. Because the book values on March 1, 1913 seldom agreed with the estimated values, it was necessary to adjust these by charging the asset, plant, or mining property and crediting an account called "Property Surplus" with the amount of the adjustment where the estimate showed more than the book value. When dividends are paid, if it is the policy to return capital as well as profits, the charge should be made partly against operating surplus for the profits share, and partly against property surplus for the capital share.

Depreciation on Buildings and Machinery of a Wasting Asset

In addition to the depletion charge, proper allowance should be made for depreciation of the other fixed assets, such as buildings, machinery, and the like. The limit of their service life is evidently the working life of the venture, which must be estimated. If there is still operating value in the equipment at that date, this is covered by the higher salvage value taken into account when fixing the depreciation charge.

Unusual Risks

In connection with both the estimate for depreciation and for depletion, the elements of unusual risks, due to fires, floods, and the like, should be taken into account. Their effect might be to cut down the supply of available

product and so increase the periodic depletion charge. Another factor, of great importance at times, is the available supply of any auxiliary product needed for the treatment of the main product. Thus, large ore bodies may remain unmined and unprofitable because of the failure of a ready supply of auxiliary material needed in the reduction, smelting, or refining of the ore. This applies particularly to iron ores.

Water Rights

Sometimes valuable water rights are acquired along with mining property, and it may be profitable to utilize them for the manufacture and sale of power long after the depletion of the mine. In that case their capital value should be separated from that of the mining venture, and retained as an investment; or a new company may be formed to carry on the power project after ceasing mining operations.

Leaseholds

On the boundary line between a depreciating asset and one subject to depletion stands a leasehold, i.e., the right of occupancy of premises for a stated term. Thus, a building may be rented for a term of years; or a piece of land may be leased for a long enough period to justify the erection of a building thereon, the building going to the owner of the land as a gift or at an appraised value, or the land may revert in its original condition to the owner upon expiration of the period of the lease, according to the contract. The payment for the lease may be an annual sum similar to a rental charge, or a bonus and an annual sum. In the latter case, the bonus should be treated as a deferred charge and spread as additional rent over the period of the lease.

Leases may run for any period up to 99 years, 63 and 84 years being favorite terms in New York. An original lessee may sell his lease outright for a set sum sufficient to cover

the remaining period of the lease, or on an annual rental basis. The set sum is calculated as the present worth of an annuity of the amount of a fair annual rental.

Where property values have greatly appreciated, a leasehold on favorable terms may have a high market value which may not appear on the books or balance sheet. If the terms of the lease call only for a *periodic* payment like rent, the value of the lease will not usually appear on the books. If the lease is purchased outright for a lump sum or a bonus is paid, some value for it will appear on the books. Where the balance sheet is to be used as the basis for credit, the present appraised value of the leasehold should appear, either in a footnote or preferably incorporated into the balance sheet with an offsetting reserve.

If the leasehold is carried at any value on the books, this must, of course, be depreciated or amortized by the end of the leased period. As stated above, the periodic charge for this is to the rent account and the credit to the leasehold account, writing it down directly instead of by means of a reserve. The straight line method of amortization is the easiest of application, but authorities seem to favor, on theoretical grounds, the annuity method which brings in the element of interest. If the agreement provides for the reversion of the building to the owner of the leased land, then also the full cost of the building must be depreciated over the life of the lease. Any excess of this depreciation over normal depreciation is in the nature of a rental charge but not usually of sufficient importance to require segregation. If the premises must be returned in original condition to the owner, the net costs of demolishing any structures erected thereon must be treated as expenses of the lease and provided for accordingly.

CHAPTER XVIII

INTANGIBLE ASSETS—PATENTS, FRANCHISES, GOOD-WILL

General Considerations

The final place among the assets of the balance sheet is given to the intangible items. Because this class of assets has so frequently been used for doubtful or illegitimate purposes, whatever the value given to them they should be shown boldly in a group by themselves and not merged with the values of tangible assets. Their real value, if any, should be open to verification. To list them with tangible items on the balance sheet is apt to raise a suspicion as to their validity much more than if they are shown in a group by themselves.

Because the assets of this group are intangible is no reason in itself for the hasty judgment frequently made that therefore they are worthless. It is true, as above stated, that the doubtful uses to which they may be put have caused them to be viewed with suspicion. Yet they have an entirely legitimate use and oftentimes constitute the most valuable portion of the assets. Therefore, the values at which these intangible assets are carried on the books should always be open to investigation and capable of verification.

It is purposed here to lay down the principles of the legitimate use of intangible assets, and to point out some of the wrong uses to which they easily lend themselves. The group comprises patents, copyrights, trade-marks, formulas, receipts, franchises, organization expense, going concern value, and good-will.

Patents a Monopoly Grant

A patent is "a grant made by the government to an inventor conveying and securing to him the exclusive right to make and sell his invention for a term of years." The purpose of the government in making such grants is to encourage and stimulate individual ingenuity along lines that will ultimately redound to public welfare. Letters of patent are in the nature of a monopoly grant but, although extreme care is taken in their issuance to see that they cover really new devices, no governmental guarantee implies that the patentee shall have free and uncontested use of his invention. If encroachment is made upon his rights under the patent, the courts are open to him for protection and similar privileges are extended to all alike. Oftentimes, until infringement proceedings have established a clear and uncontested right and property in an invention, little commercial value attaches to it. Patents therefore tend to create a monopoly in the marketable product protected by them and accordingly have value so long as the right to monopoly continues.

Purchase of Patents

The valuation of patents owned and made use of by a business should always be on the basis of cost. If owned by purchase from the inventor, the consideration paid for the patent constitutes cost. When the consideration is cash, there is no question as to the valuation at cost. When payment is made in the capital stock of the purchasing concern the problem is the same here as in the proper valuation of other fixed assets purchased in the same way, referred to in Chapter XVII. The federal income tax law takes cognizance of this different basis for valuation and attempts to establish a true cash basis by allowing depreciation on patents, when purchased by means of stock, only on the basis of the cash value of the stock. Prevailing practice

sponsors the bringing of patents onto the books at cost, as shown either by the cash paid for them or by the *par* value of the stock issued for them. Except where deceit and fraud are the points at issue, no serious objection can be raised to the practice, for any overvaluation thus occasioned is absorbed in the product by means of the depreciation charge spread over the life of the patent. Any additional costs necessary to secure the full enjoyment of the rights granted under the patent are considered proper charges against the patent, as giving it additional value.

Patents Developed within the Plant

When the patent is not purchased from outside but is developed within the plant itself, only the costs of development and of securing the patent are proper charges to the asset as constituting its value. In some concerns an experimental laboratory is maintained for the purpose of working out improved methods and devices. Much of the work of such a laboratory is often fruitless so far as patentable devices are concerned, but if the entire effort is directed towards the development of patents, then the entire cost becomes a proper charge to whatever patents result from the effort. More often some portion of the laboratory organization is also used for other purposes. However developed, whether in the formal laboratory or in any other way, the full cost of development and of securing letters patent is the figure for the original valuation of the patent. This cost includes the labor and material used in the process, drawings, models—including discarded models—attorney's fees, government fees, etc.

As in the case of purchase, all the costs, whenever incurred, of defending the right to the patent or of prosecuting for infringements constitute additional elements of value, as only by such means can the real holder be made secure in the exclusive enjoyment of his right. It is hardly neces-

sary to point out that if such proceedings and prosecution establish the right of the other party to a device which practically destroys or greatly diminishes the worth of the contested patents, not only must such costs usually be charged against revenue but also the whole or major portion of the value at which the patent is being carried. However, where the development of patents is one branch of a concern's organization, costs of this nature may usually be absorbed by those patents which are successful. Because inflation of values is easy at this point, a careful investigation to establish the legitimacy of all such charges is always desirable. Each case must be judged on its merits.

Patents Purchased and not Used

Patented devices are sometimes purchased with no intent to use them. This may be for the purpose of eliminating competition, of forestalling obsolescence or supersession, and so of postponing the necessity of making expensive alterations that would be required to meet threatened competition, even to the point of scrapping a valuable organization. The ethics of such practice is not under review here. Correct accounting practice justifies the addition of the purchase price of such devices to the value of the asset, patents, and its periodic depreciation in regular course.

Elements of Depreciation on Patents

Patents are subject to depreciation. At the time of their purchase or acquisition, they should be valued at full cost, as stated above. At any subsequent time, value should be calculated on the basis of full cost less depreciation. The elements of depreciation as applied to patents are (1) time lapse, (2) supersession, and (3) obsolescence.

1. *Time Lapse.* There is no such thing as wear and tear on a patent itself, but since the grant by the government is for a definitely prescribed term of years, as each of

those years goes by there passes with it some portion of the value attaching to the exclusive enjoyment of the right for the prescribed period. In this country a mechanical patent is granted for a term of seventeen years, after which the patented device or process becomes common or public property. The period allowed for patents covering designs is three and one-half, seven, or fourteen years, depending on the application. Thus, simply through the lapse of time the value of the right diminishes.

2. *Supersession.* If no other causes than time lapse were operative, the problem of depreciation would be a simple one, consisting of spreading the value of the patent over its life. In addition to lapse of time and operating simultaneously with it is the possibility of supersession. Supersession as an element of depreciation is the attempt to measure the probability of the patent's being superseded before the expiration of its term by a better machine, device, or method. The measure of this element of depreciation is always speculative but should be attempted with the best judgment possible.

3. *Obsolescence.* Akin to the element of supersession is that of obsolescence. Obsolescence is particularly operative in cases where the patent covers a product the life of which depends on the whims of fashion. Obviously, when the market for the product ceases, the value of the patent is gone.

From the above it is seen that the three elements of depreciation are usually operative concurrently and the rate of depreciation must take cognizance of them all.

Service Life of Patents

While the vast majority of patents become valueless before their expiration, some few may have a value beyond their protected term. It may happen that the concern using the patent has built up such an organization that

competitors cannot with profit enter the field after the patent has expired; or it may have acquired the good-will of the purchasing public to such a degree that buyers come to it rather than to a competitor. In these and other ways the value of the patent may extend beyond its life. This is exceptional, however, and cannot with conservatism form the basis for estimating the service life of the average patent.

The prevailing practice authorizes writing off the value of a patent quite rapidly during the early years of its life when its earning capacity should be at a maximum, leaving only a small part of the value to be spread over its later years. This policy applies to the possession of single or separate patents. An effective method used for extending the life of a patent is the securing of auxiliary patents every few years. Thus an improvement of some part may be patented, without which the use of the original or basic patent would not be worth while. The basic patent may thus have its effective life—though not its legal life—extended almost indefinitely.

Where an additional cost, such as infringement costs, is incurred some time after the grant is made, strict accuracy would demand that these costs be spread over the remaining life of the patent. Where, however, the above policy of securing periodic improvements is in force, sufficiently accurate results are secured by writing off at the end of each year—in the case of mechanical patents—one-seventeenth of the total values to date. In this way, by the end of the original 17-year term, there will be values left in the account which may be looked upon as applicable to the patented improvements. There is in these cases a constant overlapping of the grant periods and no serious inequity results as between fiscal periods by writing off each year one-seventeenth of the total value in the Patents account. In the case of the one original patent or an *occasional* im-

provement, the more accurate method is desirable because here the life of the patent is rather definitely limited.

If the estimated life on which the depreciation estimate is based, should prove longer than the real life, the value remaining in the asset at the end of its real life must be absorbed by the profits; i.e., charged against surplus. The Federal Income Tax Law allows this remaining value to be charged against the profits of the period in which it is written off.

Booking Depreciation on Patents

In booking the depreciation of patents, the periodic charge is to the expense account, Depreciation—or Depletion—and the credit is made either direct to the asset account or to the corresponding Depreciation Reserve account. It is sometimes argued that since the life of the patent is for a definite term, its depreciation is equally definite and the value of the asset should be written down rather than carry the estimated amount of the periodic depreciation in a reserve account. Because of the elements of supersession and obsolescence on which in the majority of cases the service life of the patent depends more than on its time grant, it is evident that determination of the amount of periodic depreciation is just as much a speculative estimate as is the case with any other asset. Either method of showing the periodic value of the patent may be used with equal propriety. If an easy determination of "total value to date" is sought, as under the policy referred to above, the information is better secured by carrying the offsetting estimate of depreciation in a reserve account. When no such purpose is to be served, it is a needless multiplication of accounts to use the reserve account.

Accounting Classification of Depreciation on Patents

A problem closely related to the valuation of patents has to do with the classification or incidence of the periodic

depreciation of the patent. According to some theorists it is stated that if the patent applies to the *process of manufacture* —i.e., to any part of the manufacturing equipment used— the periodic depreciation is a cost of manufacturing and should be allocated to the product at that point. But if the patent covers the *article itself*, its periodic depreciation expense should be treated as a selling expense. Perhaps the point is well taken but the distinction is rather finely drawn. Another view requires the showing of depreciation on patents among the general administrative items, on the several grounds that there is no logical basis or method for distributing it directly to the product; that there is no direct connection between the product and this expense; and that it is a general overhead item which must be cared for out of gross earnings but cannot be applied definitely to manufacturing or selling. Failure to establish a suitable basis on which to apply the cost in practice cannot, of course, be allowed to militate against the determination of its theoretical incidence.

Royalties

An analogous problem arises in the treatment of royalties where such cover the cost of renting the patented devices of others for the purpose of manufacture. Although the general practice is to treat this expense as a cost of manufacture, it is sometimes handled as a general management expense on the ground that it represents a policy of management which has adopted the royalty method of production in preference to the outright purchase or development of the patents. The point seems not well taken, however. The value of a patent may be looked upon as a prepaid expense item which is the equivalent of royalties expense and should therefore usually be treated as a manufacturing cost. There may be instances, however, where such treatment would not be advisable on practical and perhaps theoretical grounds.

Relation of Depreciation Rate to Cost of Manufacture

Related to this problem of patent costs is the effect on manufacturing costs of the rate of depreciation of the patent. It is evident that a too rapid depreciation will result in an inequitable loading of the product made during the early years of the life of the patent as compared with that of its later life. A product made under a patent still valuable after all value has been written off the books, bears none of the burden though enjoying the benefit accruing from its being a patented article. On the other hand, if the rate of depreciation is not rapid enough, the product is then underburdened. It should constantly be borne in mind that depreciation is always an estimate. It should be the best estimate possible and subject to periodic revision where accurate results are desired. Slight inaccuracies and inequities are bound to occur and must be absorbed by the future product; the record of the past is a closed book and cannot usually be reopened.

Sale Price of Patents

The sale price of a patent, as distinguished from the value at which the owner may carry it in his accounts, frequently is based on the estimated savings in royalties which could be made by a purchaser. When a new concern is organized and patents are owned by some of the incorporators, and purchased from them, the value at which they are carried is almost always speculative and arbitrary. A valuation based on the saving in royalties has no place on the books of a concern unless that price were paid in purchase. Similarly, licenses to use patents should not be carried as an asset unless purchased by a lump sum payment even though they grant a virtual monopoly in the product.

Copyrights

Copyrights are similar to patents in that they secure to the author or publisher the exclusive right for a term

of years to make and sell copies of literary or artistic productions. They are thus in nature a monopoly grant. The term for a copyright is 28 years, with a renewal privilege of 28 years if application is made within one year prior to expiration of original copyright.

A more rigid application of the principles of valuation enunciated for patents must be made for copyrights. On the books of the original grantee they should be carried at full cost which may be only the fees required in securing the copyright. For a subsequent purchaser they should be set up at full cost to him. A much smaller proportion of copyrights than of patents continue valuable for their granted term. Periodic valuations, then, require a very liberal and rapid depreciation from original value. In the accounts of publishers who make outright purchases of copyrights, extreme care is needed in keeping track of and valuing this asset, else a too optimistic outlook will result in carrying false and misleading values. Oftentimes the only satisfactory and reliable method of valuation will require an examination of each copyright owned and an independent appraisal of its worth.

Trade Secrets

Akin to copyrights are formulas for manufacture, receipts, and other trade secrets. These may constitute very valuable holdings, perhaps the most valuable of all the assets, but they are not usually carried on the books as assets under this title. A baker with a secret economical process of making yeast may have a marked advantage over competitors. An oil refiner with a process which secures a larger return of gasoline has a similar advantage over competitors without such means of refining. If costs are incurred in developing or acquiring these formulas or processes, the same reason exists for treating them as assets as in the case of patents or copyrights. If not protected in any way

by the government, greater need of rapid depreciation is apparent as the discovery of the secret by others might greatly reduce its value.

Trade-Marks

A trade-mark is an earmark of ownership for advertising and selling purposes. Thus a firm may adopt a label for their products or a manner of marking or displaying them which wherever used is evidence of the make, brand, and quality of the goods. A concern enjoying a trade built up by educating the public to recognize its trade-marks and what they represent may possess therein a very valuable property. The courts of the country guarantee the rightful owner in the exclusive enjoyment of any benefits arising from the use of his trade-mark. Priority of continuous use is the factor determining rightful ownership. Such priority is most easily established through registration of the trade-mark with the government. Registration is not necessary but is offered by the government as a convenient and certain means of establishing rightful ownership. Continuous use is necessary to retain unquestioned ownership of the right.

Trade-marks must be valued at cost. Cost to develop, cost of purchase, cost to defend—all are legitimate charges to the asset. At times even some portion of the advertising expense may be capitalized under the caption "Trade-Marks." This question and that of periodic revaluation follow so closely the principles of revaluation of good-will and the treatment of depreciation in relation thereto, that its consideration is deferred for combined treatment in later pages of this chapter.

Franchises—Definition and Kinds

A franchise is an intangible asset of considerable value in most cases. Its appearance on a balance sheet is usually

limited to those of public, or quasi-public, utility companies. There it is included as an asset of value from the standpoint of rate-making rather than for ordinary commercial purposes. Such companies are usually under the close supervision and regulation of public service commissions. The latter prescribe the manner of showing the utility company's accounts and the basis for the valuation of its assets, chiefly from the point of view of an adequate protection of the interests of the public. It is neither the purpose nor within the scope of the present volume to raise the question of the valuation of public utility companies, part of which problem would be concerned with the valuation of franchises. An attempt will be made, however, to lay down some principles of valuation from the commercial standpoint as distinguished from the rate-making standpoint, applicable to a very limited number of concerns which are not subject to state regulation, and to indicate briefly the tendency of the rulings of the best public service commissions with regard to franchises.

A franchise is defined by H. A. Foster * as "a privilege given by the community to a private person—or corporation—for use of the public property for the benefit of the public, and only incidentally is it the intention of the community in granting such a right, to allow the person accepting the same enough profit to insure his willingness to take advantage of it by investing in plant to make use of the grant." To the same effect is the statement of the Federal Court in the case of the Consolidated Gas Co. of New York, 157 Fed. 373: "The franchise is but a part of the power or privilege of sovereignty allotted to a private person for the benefit of all, and only incidentally given for private emoluments."

Franchises may be perpetual, where the grant is without time limit; limited, where the term is definitely stated;

* In "Engineering Valuation of Public Utilities and Factories."

and indeterminate where the privilege granted is good "during good behavior and may be terminated by the authorities at any time by paying the fair value of the property exclusive of the franchise." It may be noted that in Massachusetts no provision is made for buying the property of the utility company in case of revocation of the franchise. Manifestly the contract entered into with the state will influence very largely the manner of handling and the valuation of all the assets. Without regard to such contract and on the general principles of valuation as laid down for fixed assets, a franchise should be taken onto the books at full cost to acquire. Proper charges to the account would cover:

1. Lump sum payments to the state or some division thereof, applicable to the life of the franchise as distinguished from regular annual payments which are in the nature of a license or rental charge and are therefore an operating expense.
2. The full purchase price paid another company for the assignment of its rights and privileges under a franchise owned by it.
3. Legal and other fees in connection with securing the grant.
4. Any other legitimate expenses, such as the cost of securing the consent of affected property owners or of the whole community where such cost is to be borne by the petitioning company.

All of these are costs which from the standpoint of good business practice may be capitalized under the caption "Franchises."

Depreciation on Franchises

For periodic revaluations, depreciation should be in accordance with the terms of the grant. If the grant is

perpetual, no depreciation need be taken account of; if it is for a limited term, the cost of the franchise should be prorated over that term; if the grant is indeterminate, as defined above, not only should a very liberal depreciation policy be pursued with regard to the franchise but, in the case of the type of franchise granted by Massachusetts, a liberal provision for writing off all the assets should be made, unless in the execution of the law a policy of non-revocability of franchises has become fairly well fixed.

In contrast with the above, note the ruling of the Public Service Commission for the First District of the State of New York. "To this account—Franchises (Gas)—shall be charged 'the amount (exclusive of any tax or annual charge) actually paid to the state or to a political subdivision thereof as the consideration for the grant of such franchise or right' (Section 69 of the Public Service Commissions Law) as is necessary to the conduct of the corporation's gas operations. If any such franchise is acquired by means of assignment, the charge to this account in respect thereof must not exceed the amount actually paid therefor by the corporation to its assignor, nor shall it exceed the amount specified in the statute above quoted. Any excess of the amount actually paid by the corporation over the amount specified in the statute shall be charged to the account 'Other Intangible Gas Capital.' If any such franchise has a life of *not more than one year after the date when it is placed in service*, it shall not be charged to this account but to the appropriate accounts in 'Operating Expenses,' and in 'Prepayments' if extending beyond the fiscal year." To a depreciation account called "General Amortization" is to be charged, besides depreciation of tangible fixed capital, "such portion of the life of intangible fixed capital as has expired or been consumed during the month."

Such careful regulations as to the content of intangible asset accounts are not always nor everywhere imposed at

the present time. It is not putting the case too strongly to say that the reader of a balance sheet containing items about which practice is not standardized should always be on his guard to assure himself as to the content of such items in order to establish the legitimacy of their use and value.

Organization Expenses

Organization expenses are those costs necessarily incurred for the purpose of getting an enterprise under way, i.e., of putting it in readiness to do business and produce income. These expenses usually comprise such costs as state incorporation fees, attorney's fees for drawing up the application and other papers, the cost of prospectuses, soliciting costs for stock subscriptions, fees paid promoters and organizers, cost of printing and issuing certificates of stock, cost of capital stock records, and similar items. These are necessary and unavoidable expenses without which the company cannot come into being. A company organized and ready to commence business is in a better position than one whose elements have not been brought into harmonious working. In the same way that the costs of installing machinery in position and ready for use are capitalized by being added to the value of the equipment, so may the organization expenses of a corporation be legitimately capitalized as being the measure of the amount of the greater value which these organized business elements have over the same elements unorganized. Capital has been brought together and set to work, management and plan of operation have been secured, and business is ready to begin.

Organization expenses are therefore, from the standpoint of classification, best treated as an intangible asset rather than as a deferred or prepaid expense. In strict theory the value of these costs will last as long as the corporate existence. In Italy where corporate life is limited to fifty years, it is prescribed that organization costs be prorated

over the full life of the corporation. The best practice in this country requires a much more rapid writing off of these items; R. H. Montgomery* advocating writing them off as they occur or at most over the first two years' operation. To one not cognizant of the many abuses which have crept in—and even frauds perpetrated—through this channel, the treatment advocated may seem harsh and severe. Perhaps no harm is done in pursuing a more liberal policy, if such expenses are carried under a proper title, if they are not used to inflate the value of the tangible assets, and if the caution stated above is observed as to the need for investigating the values of all intangible asset items. Certainly organization expense should never be used as a cloak for discount on stocks or other securities marketed.

Good-Will—Definition and Nature

The last of the intangible assets to be treated is good-will. Lord Justice Lindley, in an English case, says: "Good-will regarded as property has no meaning except in connection with some trade, business, or calling. In that connection I understand the word to include whatever adds value to a business by reason of situation, name and reputation, connection, introduction to old customers, and agreed absence from competition, or any of these things, and there may be others which do not occur to me." The definition by George Lisle† is to the same general effect: "Good-will is the monetary value placed upon the connection and reputation of a mercantile or manufacturing concern, and discounts the value of the turnover of a business in consequence of the probabilities of the old customers continuing." Good-will therefore includes every advantage connected with location, premises, reputation, personality, name, etc. That all these are elements of good-will cannot be gainsaid, but unless

* In "Auditing, Theory and Practice."
† In "Accounting in Theory and Practice."

an earning power larger than that of a newly established competing concern goes along with these elements, no one would be willing to pay anything for the good-will of the old concern.

It sometimes happens in the case of a merger, that because of the dormant or latent good-will of the various units—or some of them—to be merged, a promoter may be willing to pay something more than the value of the tangible assets in order to acquire the various properties. Dormant or latent good-will signifies the excess earning power that would exist if it were not for poor management, an inharmonious working together of the various parts of the organization, and other similar handicaps which the new management will remove. It may be objected that until such handicaps have been removed there is no good-will; that any good-will brought into evidence through the removal of these handicaps is the good-will built up by the new concern and not the old It cannot be denied, however, that all the other elements of good-will may have been acquired and built up by the old company and that without them the new concern would be unable to bring good-will into evidence simply by a change of management. It is true that the merger may be able to build up quickly a good-will of its own through the elimination of competition, and through the full utilization of all the advantages of the different units—such as access to supplies of raw material, favorable trade agreements of various sorts, and the like.

While there is a sense in which expected future performance as indicated above, may be an element in the determination of good-will and may be legitimately paid for as such, as a usual thing the essence of good-will lies in the ability to make a profit in excess of the normal. Past performance must be reviewed by which to judge the normality of the present profits and the probability of their continuance in the future.

Local and Personal Character of Good-Will

It should be pointed out, as a corollary to the above statement that only those elements which are transferable and are transferred can be disposed of for a price. Thus, when a business goes to the new owner, if there is apt to be a very appreciable shrinking in profits—as is the case in the transfer of some professional businesses—or if the favorable location on which in some cases depends the ability to earn excess profits cannot be turned over to the purchaser because of the expiration of the lease or other reason, good-will may not be worth much to a prospective purchaser. There is thus a local and personal character to good-will which cannot be ignored.

Difficulty of Valuing Good-Will

The valuation of good-will presents at times many complexities. The general principle of valuation at cost—and not market—may be said to apply here, too. What constitutes cost is sometimes difficult to determine. A corporation which buys out an existing business, paying an agreed sum for the good-will, should set up on the books that sum as the value of good-will. The vendor concern during the years of the establishment of its good-will, unless specific expenditures were made for that purpose, should not show any value for it on its books. In an English case, Stewart v. Gladstone, 1879, the court said: "Is it reasonable . . . . that a changing thing like good-will, the value of which would vary year by year according to the state of the trade . . . . and to the reputation which the house had acquired or had lost for integrity, punctuality, solvency, and mercantile prudence, was to be valued from year to year," and the increase or decrease was to be treated as profit or loss for the year and distributed?

The impropriety of bringing good-will on the books unless paid for by purchase or otherwise, is established and rests on principles of sound business.

Creation of Good-Will by Advertising

There is perhaps only one case in which a concern which has not acquired good-will by purchase but has built it up for itself may with propriety set up its value on the books. Creating a demand for a product by means of extensive advertising is one of the quickest ways of building up good-will. The difference between the cost of the advertising necessary to retain a given volume of trade—which we may call the normal advertising expenditure—and the cost of the publicity required to secure that trade may be treated, in theory at least, as an expenditure on account of good-will and be so shown on the books. This is usually a difficult matter to determine at the close of the publicity campaign and before the cost of normal advertising is known, and the valuation at best is somewhat speculative. But where handled carefully and with conservatism there seems no serious objection to bringing good-will on the books at a value calculated in this way.

Unless it is possible to treat some expenditures of this sort as the direct cause of good-will, the evidence of the possession of good-will must be sought in the profit and loss record rather than in the balance sheet, as its existence would be indicated only by above-normal profits.

Valuation of Good-Will Based on Normal Profits

Valuing good-will for a purchaser is not so difficult. Two standard methods are in use, the one based on profits, the other on excess profits. According to the first, the value of the good-will is estimated as so many years' purchase price of the net profits of the last year; or, better, the average of the last three or five years. This simply means multiplying the profits by the number of years' purchase. The number of years to be used as a multiplier varies from one to fifteen, or twenty in some instances. Thus, if the agreement is to pay three years' purchase of the average

profit for the past five years and this average is $50,000, the price paid will be $150,000 and at that value good-will should be shown on the purchaser's books.

Valuation of Good-Will Based on Excess Profits

The other method determines first the excess profits, i.e., the amount by which the profits of a particular business exceed the normal or average figures for that line of business. Thus, if the profits are $75,000 and normal profits are $50,000, the excess earning capacity per period is $25,000. This amount is then capitalized on some arbitrary basis, ranging in practice from the prevailing interest rate, say 5%, to 20% or even 50%. The effect of such capitalization is to apply a multiplier, as in the first method, ranging from 20 to 5 or less. Thus, if 20% is the agreed rate, the excess, $25,000 multiplied by 5 gives $125,000 as the value.

It is, of course, apparent that the valuation of good-will for prospective purchase is largely dependent upon the individual judgment of the buyer and that seldom will any two men arrive at the same valuation. As a matter of prudence, under either method the average profits for the past few years should be used rather than those of the last year. The latter may be sporadic and under conditions such as not to warrant their continuance. An average figure gives a better indication of what the business may be expected to do under normal conditions. Inasmuch as the value of good-will depends on excess earning capacity, the second method of valuation rests on better theoretical grounds than the first. Practically there is no preference, since valuation is largely a matter of personal judgment under either method.

Valuation of Good-Will Based on Capitalization of Profits

A slight variation of the second method is sometimes used. Under it. the average net profits are capitalized at

some agreed rate, giving the amount of money on which the average profits could be earned at the rate used. The difference between this amount and the amount of capital actually invested gives the value of the good-will. Thus, if on an investment of $250,000 net average profits are $60,000 and the normal rate for this business is 15%, $60,000 would represent a 15% income on $400,000. Good-will must therefore represent the difference between $400,000 and $250,000, or $150,000. This must evidently work out in exactly the same way as the second method if the rate used is the same. Therefore it constitutes not a distinct method, but only a variation. In the one case the difference between the average and normal profits is capitalized; in the other both are capitalized and the difference of their capitalizations is taken.

False Good-Will to Cover Capital Deficiency

A method of valuing good-will which makes it represent the difference between the value of tangible assets contributed or purchased and the par value of the stock issued cannot be countenanced at all. This use of good-will to cover up a capital deficiency is not only improper and misleading but often fraudulent. It is the favorite means by which "water" is injected into corporations. Thus, a concern desiring to capitalize at $500,000 and unable to sell its stock for more than $300,000, might carry an asset, good-will, to take care of the $200,000 discount on stock. A partnership desiring to incorporate might issue for the partnership assets stock with a par value much more than the assets taken over, and either inflate the asset values or set up a good-will account to care for the difference. This practice cannot be too severely criticized. In connection with this it should always be kept in mind that a newly organized company can never include good-will among its assets except by purchase.

Somewhat analogous to the above practice is that of increasing the capitalization of a company and issuing new shares in exchange for the old. Thus a company capitalized at $1,000,000 might increase its capital to $2,000,000, issuing two shares of the new for each share of the old. This will necessitate bringing onto the books an intangible asset, usually good-will, to cover the additional $1,000,000 of stock issued. Sometimes a real good-will may be existent as shown by the abnormal profits. In such cases, the effect of an increase of capital stock will be to keep down the *rate* of profit on the capital stock and so decrease the market value of each share, but not the real value of the total shares nor the *amount* of profit distributable to each of the holders of shares of the original issue. The purpose in such an increase of capital stock is usually an ulterior one, such as the desire to cover up real earnings in order to prevent a reduction of rates, as in the case of a public utility company. The purpose may sometimes seemingly justify the practice. The problem is mainly an ethical one and it is not proposed to discuss it here further than to say that the practice is usually to be condemned.

Periodic Revaluation of Good-Will

Periodic revaluation of good-will must next be considered. This involves a determination as to whether it is subject to depreciation. From what has been established as the essence of good-will, viz., the ability to earn excess profits, it is apparent, as stated in the case Stewart v. Gladstone on page 333, that its value must fluctuate from time to time with the earnings of the business. Because of this changing and at times doubtful value, some authorities advocate its being written off the books periodically, and a good many concerns do so write it off. The effect of this, so long as there is any value remaining in good-will, is to create a secret reserve and this is justified on the ground

of conservatism. The practice is not reprehensible, though usually to be discouraged.

The weight of authority is to the effect that all purposes are best served by allowing it to remain always on the books at cost. There is no logical reason for writing it off. When profits are large, good-will is a very real asset. To write it off then is not logically consistent. When profits are small and good-will is accordingly of less value than before, it would hardly be logical to write off any amount less than its decreased value, yet the profits at such a time are rarely sufficient to stand so heroic a treatment.

As was stated above on page 330, all intangible assets should be examined carefully by a prospective purchaser as to the values at which they are being carried.

Good-will, because of the improper and misleading uses to which it has so often been put, is never above suspicion and its value should not be taken without close investigation. If it *really* exists, the profit and loss record will show it. That should guide as to its valuation and not the value carried on the balance sheet. Accordingly, since the asset does not depreciate but only fluctuates in value, and since it is neither prudent nor consistently possible to take these changing values onto the books, the best course for all purposes seems to be to retain good-will in the accounts always at its cost figure.

The above considerations as to the depreciation of good-will apply with almost equal weight to the depreciation of trade-marks.

In closing this chapter attention should be called to the fact that the term "going value" is used in the case of public utility companies in much the same way as good-will.

CHAPTER XIX

LIABILITIES ON THE BALANCE SHEET; CURRENT AND CONTINGENT LIABILITIES

Form and Valuation

The problem of handling liabilities on the balance sheet is usually not so complicated as that of assets. The questions of arrangement, form, groups, and suitable nomenclature have in the case of liabilities an equal or even greater importance than that of the assets, the governing principle being clearness and fullness in the information given, with due regard to the purpose and intended use of the balance sheet.

The problem of valuation, which assumes great importance in the treatment of the assets, has normally little or no significance in the consideration of liabilities. This is due to several causes. In the first place, human nature being what it is, there is normally little danger of an overstatement of liabilities; they are usually sufficiently large, and no desire exists to make them appear more than they really are. Secondly, and likewise based on human frailty, while a concern may desire to undervalue its liabilities, the other party to the liability, the person holding the claim, can usually be depended upon to press his claim with sufficient insistence as to make the concern aware at all times of the amount of its liabilities.

From the viewpoint of a going concern, while all business experience points to a decrease and a necessary diminution in the values at which certain assets may appear on the books, no such diminution in the value of liabilities can be looked for; as legitimate claims must be met if a business is

to exist as a *going* concern. Similarly, there is normally no tendency to inflate the liabilities by the inclusion of items which do not rank fully in this class—intangible liabilities seldom find place in any balance sheet.

On the other hand, there is frequently a very real hesitancy about the inclusion of some liability items until their claim becomes urgent or their full liability status becomes determined. Occasionally, and usually with ulterior intent, the liabilities may be inflated in value and items included therein which are fictitious; but our present concern is not with such conditions.

The one principle underlying the showing of both assets and liabilities is that their *true* status should be indicated. As applied to liabilities this means that they should be shown not only in correct amount but also in their true light, viz.: that all facts bearing on their relation to the business which ought to be known properly to judge conditions must be stated. The chief problem in handling liabilities is, therefore, how to show and list them so as to accomplish this purpose of truth and usually the further purpose of full truth. In a consideration of this problem, the auxiliary one of the inclusion of doubtful items among the liabilities will also receive consideration.

Arrangement on Balance Sheet

As to the classification and arrangement of liabilities on the balance sheet, it may be stated in a general way that whatever classification and arrangement are adopted for the assets, the liabilities should be shown similarly. For most purposes a standard grouping under the captions, Current, Deferred Income, Fixed or Funded, will suffice. The order of the groups as given here follows the order given for the assets. This is desirable for purposes of easy comparison, because in this way current liabilities are brought into juxtaposition with the group of assets to which current creditors

must look for payment of their claims; and fixed liabilities and capital are opposed to the assets in which for the most part they have been invested.

Items within Groups

Arrangement within the group may be attempted on the basis of relative degree of liquidity of the items. This, however, is not always determinable nor is it an end to be sought; the chief desideratum is to show items in the main group to which they properly belong.

The manner of listing the items within the group is not a question of relative order so much as it is of nomenclature and clearness of expression. Thus, desirable and valuable information would be given by a separation of the items to show (1) those past due; (2) those due but not payable because of their credit term; (3) those neither due nor payable, such as accruing items; and (4) contingent liabilities.* It may be remarked that such an analysis is seldom seen on the ordinary balance sheet. Corporations which have to report to a regulating body may be required to give more information concerning their business than those not so regulated. For internal use the suggested analysis has undoubted merit. For public use, it is neither necessary nor usually desirable that the information be given in that form; a showing of the items under the usual titles within the group to which they properly belong being here deemed sufficient.

Cancellation of Liabilities against Assets

Occasionally the practice is met of cancelling the liabilities, or some group of them, against corresponding assets, showing only the net assets remaining. Thus, Current Assets less Current Claims might appear as an item among the assets. Even for publication purposes this would not be deemed sufficient; for the outsider as a prospective

* P. J. Esquerré, in "Applied Theory of Accounts."

creditor or investor has a right to judge for himself the relative sufficiency of the assets to meet the claims of creditors. No basis for such judgment is offered by a cancellation of the one against the other with a showing of the net amount only. A somewhat analogous situation arises in the double-account form of statement used by some English companies. Here, the capital assets are canceled against the capital and fixed liabilities and only the net surplus—usually of capital—appears in the balance sheet proper. The criticism is not so pertinent here, however, because almost invariably the balance sheet is accompanied by the so-called capital account which shows the full detail of the net item in the balance sheet. So also, the practice is often condoned wherever an accompanying schedule shows the full facts as to assets and liabilities. As a matter of principle, it should be condemned because accompanying schedules do not always "accompany."

Inventory of Liabilities

The principle of showing the full truth as to the liabilities raises the problem of the complete inclusion or inventory of the liabilities. Under this will be considered any adjustments that must be made in the book record in order to show the true state of the liabilities, and also the proper treatment of contingent liabilities so as to show their relation to the state of the business.

The adjustment of the book record is not usually complicated. The necessary data are for the most part available. All that is required is an analysis of each item to determine what, if any, adjustment is needed to bring the books to a true statement of conditions as on the date of the balance sheet. These adjustments fall into six main groups, only two of which appear among the liabilities, while one of the others is often based on information obtainable only from an analysis of the liabilities. These groups are:

1. Accrued Expenses
2. Deferred Income
3. Deferred Expenses
4. Accrued Income
5. Valuation Reserves
6. Merchandise Inventory

The first three groups are discussed below, as well as another analogous group.

Accrued Expenses. These expenses comprise the liability existing at the close of a fiscal period because of expenses incurred but not settled for and oftentimes not yet due. Information as to these may be gathered—not in completeness however—from an examination of the various expense accounts and a somewhat intimate knowledge of the operations of the business. Unless a record is kept of all services being rendered to the business, it is very easy to omit some items of this kind. These will be discussed in detail under "Current Liabilities," page 350.

Deferred Income. This income comprises the items of income received in advance of the full performance of the service required to earn it. In cases of this kind there are in the possession of the business certain assets which must be used to perform the service not yet completed in order to entitle the business to the full enjoyment of the income. That is, the property of the owners is liable for the service not yet rendered. Also, in order to make a correct showing of results as between the current fiscal period and the next, this unearned income must be carried forward for credit in the period in which the service is performed.

Premium on Bonds. Somewhat analogous to deferred income is the item of premium on bonds. As indicated in Chapter XV this is preferably treated as a direct deduction from the periodic interest payments on the bonds, because the bonds were marketed at a rate higher than the interest

rate prevailing at the time of their flotation. Inasmuch as the premium must be spread over the life of the bonds, its unexpired portion will appear as of the nature of deferred income at all intermediate stages. A more detailed showing of this is given in Chapter XX, in the discussion of the liability, bonds.

Deferred Expenses. These expenses have been explained in detail in Chapter XIV. Here it is to be noted that, while this group of adjustment items is always an asset, for the proper determination of deferred interest an examination of the liability, notes payable, is often necessary. Notes payable given for a loan at the bank, or given to a creditor, with prepaid interest added to the principal of the debt as a part of the face amount of the note, will give the data for calculation of the amount of interest or discount to be deferred to later periods.

Contingent Liabilities

As stated above, the second group of items under the head of inventory of the liabilities is that of contingent liabilities. It is taken for granted that all items which on the date of the balance sheet have assumed a status of full and direct liability will, of course, appear as such on the books. Here, all that can be said without trespassing on the distinctive field of auditing, is that all such items must appear. For the method of detecting their omission, whether omitted with fraudulent intent or through carelessness and inaccuracy, the student is referred to a standard work on auditing.

We have here to consider, however, a group of items the status of which is one of suspended or indeterminate liability. Expressed otherwise, they are items concerning which it is hoped—it may be even expected—that the business will never incur liability but for which in the event of certain happenings liability must be assumed. There are,

of course, degrees of contingency, ranging from almost certainty to negligible remoteness. It would seem that no business man would omit the almost certain type from his books, and in case of doubt prudence demands that decision be rendered in favor of at least the greater probability.

Yet there is often seen a failure to book even the liability on account of goods purchased and shipped, but not received. If it is argued that the liability is not fully established until receipt and acceptance of the goods, every manager knows that non-acceptance of purchases is the exception, not the rule. On the other hand, upon receipt of consigned goods to be sold on account of a principal, no liability except to exercise ordinary care usually attaches to a broker until some part of the goods has been sold by him. Between these two extremes are many shades and degrees of probability, all of which in some cases are recorded as liabilities; in others none are so recorded. The importance of the information as to contingent liability on account of notes receivable discounted and discounted acceptances is now accorded general recognition. As to liability under court judgments awaiting appeal, guarantees of work and product, deposits made on contracts or bids—these and other similar matters will be treated fully in following pages.

These, then, constitute the main problems in connection with liabilities on the balance sheet. The group of current liabilities will now be considered, followed by a discussion of the nature of contingent liabilities.

Current Liabilities

Notes and accounts payable, using the terms broadly, constitute practically all of the current liabilities. Not all notes nor all accounts payable are, however, current items. The term "current" cannot be standardized; it varies and will perhaps always vary according to customs and practices in any particular trade. In the main, the 90-day period may

be taken as the average. That is, on the given date of the balance sheet a knowledge of the debts that must be met within the next 90 days is a minimum of necessary information for the purpose of judging business condition, particularly so far as concerns the credit extended to it. When a balance sheet is submitted to the bank as the basis for credit, other data concerning notes payable are usually called for—such as notes given for merchandise, notes negotiated to own banks, notes otherwise disposed of. The Federal Reserve Bulletin for April, 1917, under the title "Uniform Accounting a Tentative Proposal" suggests for balance sheet presentation a list of notes analyzed as to acceptances made for merchandise or raw material purchased; notes given for merchandise or raw material purchased; notes given to banks for money borrowed; notes sold through brokers; notes given for machinery, additions to plant, etc.; notes due to stockholders, officers, or employees. R. H. Montgomery* suggests a division of notes into the groups: notes issued for merchandise; notes discounted by own banks; notes sold through brokers; and demand loans. He suggests further that an additional separation into notes accompanied by collateral and notes with which no collateral is given would be desirable.

From the above it is seen that the present tendency of bankers is to insist on a full statement of essential facts needed to pass intelligent judgment as to the exact status of affairs. Even in the case of balance sheets, the accuracy of which has been certified by someone, some bankers require a certificate as to the character of the certifier unless he is well known. More and more is the fact being recognized that legitimate business has nothing to fear and much to gain by making a full and free statement of exact condition, and that the sooner business supported by fraudulent statement is eliminated, the better will it be for legitimate enterprises.

* In "Auditing—Theory and Practice."

In certain cases, however, the interests or purpose of a business would not be well served by the detailed information demanded by the banker and, here as elsewhere, no specific rule can be laid down other than that the purpose should in all cases govern the form and particularly the amount of detail.

Loans from Bank

In connection with advances from the bank it should be noted that the banker does not expect to become a permanent partner in the business, but that one of his legitimate functions is to furnish funds for seasonal fluctuations. Oftentimes a concern does not start with enough capital to carry its load of maximum trade, from the fear that advantageous investment of surplus funds during the dull season will not be possible. It may rightly expect its bank to furnish funds for this purpose when expenses are heaviest, and to await repayment of the loan out of the income, as accounts are collected after the peak of the seasonal trade is passed. This is one of the fields of legitimate banking and the banker has a right to whatever information is necessary to assure himself that his aid is being put to proper use.

General Classification of Notes

For general purposes, a separation of notes into notes for trade purposes and notes for other purposes is desirable. Trade purposes would be limited to merchandise purchases and loans for working capital. Other purposes would be long-time loans, purchase money notes often secured by mortgage on equipment, and notes of officers and employees. These last would best be classified by their showing as fixed rather than current liabilities.

Accounts Payable

The use of the term, accounts payable, to cover only creditors for stock-in-trade and other trade purposes is too

indefinite and inaccurate, the term being too comprehensive and inclusive. The considerations applying to trade debtors have equal weight in requiring the use of the term trade creditors for the purposes mentioned above. Accounts payable to trade creditors are usually the current items, whereas those payable to stockholders, officers, etc., and those due to a parent or holding company are more or less fixed, as there is usually no particular urgency as to the time of their payment. An analysis of trade creditors into "not due" and "past due" will at least bring out the information as to neglected discounts and some idea as to the amount of cash needed to pay off debts and to secure their discount.

There is no necessary relationship between accounts and notes payable, nor any significance in their relative amounts. In some trades notes are given in order to obtain the discounts; in others notes are given at the date of purchase of the commodities.

Deposits. Another group of accounts payable of a more or less current type consists of deposits of various sorts. The business may accept deposits from customers or employees for various purposes. Consumers' deposits with gas and electric light companies as guarantee to cover payment of bills and possible damage to meters or other company property; deposits covering locker privileges, breakage of materials, keys issued, and the like, are examples of this kind. These deposits are seldom all claimed at any one time; experience only can indicate the necessary financial provisions to be made currently for them. In some instances there is an accruing liability on account of interest on these deposits which must also be cared for.

Guarantees. Sometimes goods are purchased and only partly paid for, a portion of the purchase price being retained as a guarantee of quality until opportunity is given for adequate examination and acceptance or rejection. Similarly, in the case of construction work done by contract or sub-

contract, the owner—or, if a subcontract, the general contractor—retains a certain percentage of the contract price as a guarantee of performance of the whole according to contract agreement. This liability for the portion retained is a current liability, as a usual thing, and is to be listed under accounts payable with suitable subtitle.

Long-Term Notes. Long-term notes and accounts, bonds, and other fixed liabilities become current as their maturity closely approaches and provision for payment must be made.

Future Deliveries. On the border lines between contingent and full liabilities may be classed the liability because of goods purchased with long future dating. This is sometimes allowed by a seller to secure warehouse room for new product. It is undoubtedly best to set up both the asset and the liability, even where the goods have not yet been received.

Consigned Goods Sold. The factor's real liability on account of consigned goods sold should, of course, be shown as a current liability, offset by any claims for expenses incurred on account of the consignor and any accrued commissions earned on sales to date.

Dividends Not Yet Paid. Another item belonging to accounts payable is dividends declared but not yet paid. Though it may be the custom of a company always to declare a dividend on a given date, no liability is incurred on account of dividends until they are actually declared. Upon declaration of a dividend the company makes itself liable to stockholders for the amount of the dividend. This liability ranks as an unsecured debt on the same footing as unsecured liabilities to other creditors. The dividend liability in large part is usually soon liquidated. Any unclaimed dividends constitute a liability until claimed or authority is given for other disposition. The item is usually small and is best shown as a current liability even though the chance of its being claimed may be remote. The method of handling and safeguarding the dividend transaction is treated in Chapter XXIV.

Accrued Expenses

The final item to be considered among the current liabilities is the group of accrued expenses. These constitute such items as wages, salaries, rents, royalties, expense supplies purchased but unpaid for, interest, advertising, sales commissions, traveling expenses, freights, water and other taxes, etc.—in fact, all services which have been rendered the business previous to the date of the balance sheet but which on that date are unpaid. These usually comprise the most urgent of the liability items and so are properly classed as current. There is seldom any business in which items of this kind are not encountered and, as stated on page 343, a careful examination of the records and familiarity with the business is needed to secure a full statement of them.

With regard to some of these items, difference of opinion exists. It is argued that until the amount of the liability is known, no real liability can be said to exist. Thus, taxes for the current year may not be known until the following year. Proverbially taxes are as certain as death, and there would seem to be no unreality or contingency about their incidence. As the current year passes by, the accounts should include a charge for taxes. Since the real amount is not known, it must be carefully estimated; for any difference must be taken up when the real amount becomes known, and so may disturb and somewhat invalidate the results for comparative purposes. Because of the fact that the current amount is an estimate, the title given the liability thereunder is sometimes called "Reserve for Taxes" rather than "Accrued Taxes." No matter what the caption may be, it should usually be listed as a current liability.

Booking of Accrued Expenses

As in the case of deferred expenses, so in the booking of accrued expenses, in some quarters it is thought highly unscientific to record both the expense and liability elements

in the same account at the time of adjusting the books. Use is made of a separate liability account entitled "Interest Accrued," for example. When so used immediately at the opening of the new period, this account is either transferred to the expense account where it will act as an offsetting credit to the expense when paid, so automatically reducing the amount to the part properly applicable to the new period; or the account may be allowed to stand untouched (and therefore having no real significance) till the end of the next period when only the difference between it and the new amount accrued is made the basis of the new adjusting entry. Both these methods, while securing a more *evident* separation of the expense and liability elements, do so only at the cost of a needless multiplication of accounts and work. To one acquainted with the significance of bookkeeping methods, the old way of treating the liability element as an inventory in the expense account makes a definite allocation of the two elements, and does so with less burden on the bookkeeper and is to be preferred in most cases.

Deferred Credits

Deferred credits, as already explained, are analogous to current liabilities in that they represent unearned income. The enjoyment or earning of this income requires the rendering of certain services which are a claim on the current assets. In this sense, then, they belong to the current liability group, for the payment of which the current assets must be available.

Nature of Contingent Liabilities

Statement of Contingent Liabilities

As stated on page 345, contingent liabilities range from those almost certain to materialize to those extremely remote. For some purposes a full statement of all such liabilities is needed to give an adequate view of conditions

within the business. For other purposes, so detailed a statement may not be necessary although usually desirable. The Federal Reserve Board requires on a balance sheet submitted as the basis for credit a full statement of contingent liability as follows:

Kind of Contingent Liability	Amount
Upon customers' notes discounted, sold, or otherwise transferred	$. . . . . .
Upon drafts negotiated	. . . . . .
For accommodation indorsements	. . . . . .
For guarantees	. . . . . .
Upon leases	. . . . . .
Upon bonds or other obligations of subsidiary companies . . .	. . . . . .
Under contracts or purchase arrangements	. . . . . .
Under agreements	. . . . . .
Under pending lawsuits	. . . . . .

This company is not a guarantor or indorser of any liabilities or obligations of any individual, firm, or corporation, and it is not liable under any contracts, bonds, or profit-sharing arrangements, or any other agreements, and there are no lawsuits pending except as set forth above.

Sign Company's name here. . . . .

By . . . .

N. B. It is most essential that each question be fully answered.

Full answers to the above inquisition would often prove embarrassing but very enlightening. Two additional kinds of contingent liability not listed above sometimes exist, viz.: that arising out of a call for the unpaid portion of stocks owned but not fully paid for; and in the case of a corporation, unpaid accumulated dividends on preferred stocks. Some of these contingent liabilities require detailed consideration.

Notes and Drafts Transferred

The proper method of handling notes discounted, sold, or otherwise transferred, and negotiated drafts is given in Volume I and will not be repeated here. The showing of

these items on the balance sheet is by inclusion among both the assets and liabilities, or preferably by inclusion among the assets with the liability element shown deducted. When a person or firm lends its credit by means of an accommodation indorsement, the transaction should be recorded as a charge to the accommodated party and a credit to Notes Payable if the liability is primary; or to Indorser's Liability, if secondary. In case of primary liability, liability is full and must be listed on the balance sheet as a note payable. In case of secondary liability, liability is contingent, as in the case of discounted notes, and should be so shown on the balance sheet. In either of these cases, the practice of cancelling the liability against the corresponding asset and by a feat of mental dexterity persuading oneself that there is therefore no need to show the item on the balance sheet, is a practice to be universally condemned.

Guarantees as a Contingent Liability

Guarantees are of many sorts—guarantees of product sold or work performed, guarantees of the good faith of others in meeting their obligations, etc. The transferred note is one kind of guarantee. Oftentimes, a parent company may guarantee the principal and interest or the interest only of the bond or note obligations of a subsidiary. While the expectation is usually that the contingent liability will not become real, yet experience shows the need of making adequate provision against it. The recent example of the Denver & Rio Grande as guarantor of the bond interest of Western Pacific bonds drives home that necessity. In a case of this sort provision is best made in the creation of a contingency reserve, for there is no experience on which to base a better estimate. In the case of a policy of guaranteeing the quality of a product or its workmanship, after a few years' experience very accurate estimates can be made of the loss to be expected therefrom, and at the end of a fiscal period the

books can be adjusted on that basis just as they are for taxes. A charge to a suitable expense account and a credit to a reserve or accrued account comprises the book entry, with a listing of the reserve as a real liability.

Long-Term Leases

Contingent liability brought about by a lease covering a long period may be disregarded if the lease has a marketable value sufficient to cover the liability. Otherwise a contingent reserve should be set up. Liability under the subletting of a lease is best handled by means of a reserve.

Purchases for Future Delivery

Purchase contracts for future delivery, if made at a fixed price, may be disregarded unless at the date of the balance sheet market value is lower than cost, when a reserve should be set up. A fuller statement of the facts shows the transaction among both assets and liabilities. If the contract, being speculative, is not at a named price, the showing of the reserve is prudent and conservative.

Pending Lawsuits

In the case of pending lawsuits, the contingent reserve is usually all that is necessary. If the case is on appeal, it might in addition be wise to create a fund which would provide funds for settlement if the decision is unfavorable. Here the item of costs, fees, and accruing interest is usually large and liberal provision must be made.

Stock not fully Paid

Where shares of stock are held which are not fully paid, a liability attaches for the unpaid portion contingent upon call being made for it. Showing the stocks at subscribed price with the offsetting liability for the unpaid amount as a deduction, is perhaps the best method, though there is no serious objection to omit mention of it if the stock has in-

creased in value, or of using the method of a reserve. Where a double liability attaches to stock ownership in case of bankruptcy, no notice need be taken of the contingent liability so long as the business whose stock is held shows an entirely solvent condition. When such is not the case, whatever provision seems necessary should be made, even to the extent of liability to the full value of the stock held.

Accumulated Dividends on Preferred Stock

There is no liability on account of accumulated dividends on preferred stock until profits have been made out of which they may be paid. If the policy of management does not allow their declaration at the present time, although sufficient profits have been made, the accumulation of dividends should be shown as a liability. Where the company is unable to declare dividends because of insufficient profits, mention of the accumulating dividends should be made in a footnote as a possible future liability.

Signature to Surety Bond

The liability arising through signature to a surety bond is a contingent liability resting upon the good faith and honor of the bonded party. The practice of personal bondsmen is not so prevalent as formerly. Experience shows that the liability of the bondsmen may become very real, and not only should suitable provision be made for it but its existence should be shown on the balance sheet.

CHAPTER XX

FIXED LIABILITIES—BONDS AND MORTGAGES

Nature of Fixed Liabilities

Fixed liabilities, called also capital, bonded, long-term, and funded liabilities or debts, comprise all debts of which the date of maturity is some distance ahead and considerably longer than that of current liabilities. Government regulating boards, for purposes of standardization, may set a minimum life-period for this group of liabilities and any kind of debt falling within the period is so classified. Thus, the Public Service Commission for the First District of the State of New York says: "Funded debt comprises all debt which by the terms of its creation does not mature until more than one year after date of creation." Private undertakings do not need such exact uniformity. Any debt the maturity of which extends beyond the period adopted within that business for current liabilities will usually be grouped with the fixed liabilities, there seldom being an intermediate group.

Purpose of Fixed Liabilities

Fixed liabilities, as distinguished from current, are those issued distinctively for the purpose of raising capital. Due to insufficient original capitalization, funds may be needed for one or more of many purposes. Working capital may be required; extensions of plant and market may be desirable; additional equipment and improvement within the plant itself may be advisable; the control of the plant of a competitor may prove advantageous; it may be deemed wise to fund floating liabilities; the refunding of liabilities soon

to mature may become necessary; the financial policy may dictate the unification of several diverse forms of debt—these and other purposes may be served by the assumption of long-term debts.

Corporation Bonds

The most common type of fixed liability is the bond. As an instrument of credit the bond is limited almost exclusively to corporations. The purchasing public, interested in securities of this kind, looks with suspicion on a long-term promise to pay issued by either a single proprietor or by a partnership. Such businesses are almost wholly dependent on the health and ability of individual owners. During a long period of years so many contingencies may arise and seriously cripple the business that the long-term debts of a partnership or sole ownership have no market, although isolated instances of such issues exist. The corporation, however, has continuity of life, is not so dependent on individuals, and therefore has avenues for the raising of funds open to it which are closed to other types of organization.

Nature of Bonds

A bond may be defined as an instrument under seal promising to pay a certain amount of money at a definite or determinable future time. From a legal standpoint, a bond is a contract setting forth the terms and conditions under which the obligation is assumed. Furthermore, it is a negotiable contract transferable from hand to hand, though in some cases registration is necessary to prove ownership in the eyes of the issuing corporation. From a financial standpoint, a bond is essentially a long-term promissory note. Bonds, as here used, are to be distinguished from the old real estate bond and mortgage. Bonds are usually secured by a lien on some definite property or

prospect of property, just as the real estate bond and mortgage. The corporation bond, however, is a separate instrument, divisible into small parts, whereas the bond and mortgage is not usually an instrument of that type.

Corporation bonds are also to be distinguished from the surety bonds mentioned in the preceding chapter. These latter, as already noted, are instruments whereby individuals, firms, or corporations bind themselves as guarantors for the conduct of others or for the payment of sums of money for which the guarantor is not directly liable.

Difference between Bond and Real Estate Mortgages

With regard to the mortgage covering the bond issue, points of difference from the ordinary real estate mortgage are to be noted. To the ordinary mortgage there are two parties, viz., the party obligated and the party accommodated, the obligor and obligee. To the bond mortgage, the obligee is a trustee standing in the stead of the numerous bondholders who could not conveniently act individually. In this trustee the title to the property liened is vested for the benefit of the bondholders. The mortgage instrument itself is often a model of completeness and comprehensiveness, defining with minute care the relations, duties, rights, interests, and status of the issuing corporation, the bondholders, and the trustee under present circumstances and all possible future contingencies.

Kinds of Corporation Bonds

Since bonds were first issued, perhaps one hundred different kinds have been placed on the market. They all have the same fundamental characteristics but differ in minor particulars. No universally recognized basis exists for their classification, nor is such a basis possible, the use which they are to serve determining always the basis of analysis

into classes. Thus, in the opinion of a leading authority* on the subject bonds may be classified under the following heads, according to:

1. The character of the issuing corporation under which are treated:
   - (a) Civil loans
   - (b) Corporation loans

2. The security of the bonds under which come:
   - (a) First mortgage (second, third, etc.)
   - (b) General mortgage
   - (c) Divisional
   - (d) Guaranteed
   - (e) Collateral trust
   - (f) Debenture
   - (g) Income
   - (h) Land grant
   - (i) Real estate
   - (j) Prior lien
   - (k) Consolidated (consols)

   Etc., etc., there seemingly being no limit to the descriptive titles that may be used in order to indicate some feature of the security.

3. The purpose of the issue, as:
   - (a) Improvement
   - (b) Construction
   - (c) Refunding
   - (d) Purchase money
   - (e) Unified
   - (f) Subsidy

   Etc.

* "The Principles of Bond Investment," by Lawrence Chamberlain.

4. The conditions incident upon payment of principal and interest, as:

   For the payment of interest—

   (a) Income
   (b) Participating
   (c) Unconditional
   (d) Registered
   (e) Registered coupon
   (f) Coupon
   (g) Interchangeable
   Etc.

   For the payment of the principal—

   (a) Premium
   (b) Gold
   (c) Silver
   (d) Straight
   (e) Serial
   (f) Extended
   (g) Callable
   (h) Optional
   (i) Convertible
   Etc.

The issuing corporation often distinguishes its bonds by means of some descriptive adjectives purporting to classify them or indicate their nature. Thus, consolidated first and improvement, general and refunding mortgage, first mortgage extension, general lien railway and land grant, are titles sometimes met, though a simpler title carrying also the interest rate is more common, as general mortgage 4's of 1965, C. & A. 5's, Toledo Light & Power 4's, etc. As listed on the exchange the title usually gives the name of the issuing corporation (i.e., the obligor), the distinctive name of the bond, and its interest rate.

Bonds rank very much as mortgages do in the priority of their liens. A first mortgage bond has a first lien on the property securing it; a second mortgage bond has a second lien and its claim is said to be junior to that of the first. No attempt can here be made to explain the distinguishing features of the above-named issues. Attention is called to them only because the reader of a balance sheet—an investor or prospective creditor—often must have a knowledge of the various classes of bonds and a detailed knowledge of the conditions of particular issues. It is obvious that the accountant should have a knowledge of the particular issues of a business in order intelligently to draw up a balance sheet and make a report thereon.

Authority for the Issue of Bonds

A corporation has generally a charter right to issue bonds for the purpose of securing money, acquiring property, or in payment for labor or financial services rendered. The exercise of this right may be curtailed by, or be dependent upon, authority from a regulating body. Within the corporation itself, the right to issue vests in the stockholders. In some cases a majority vote suffices; in others as many as three-quarters of the votes may be required to authorize the issue. The directors themselves may, upon proper authorization from the stockholders, make the actual issue, and usually the initiative for a bond issue comes from them because they have intimate knowledge of the business and its needs.

Financial Considerations Involved in Issue

Financial considerations involved in the determination to issue bonds may be reviewed briefly. It is interesting to note that the bond has been used very extensively as a means of securing capital. There is, however, no necessary relationship between the amount of capital raised by stock issues and that raised by bond issues. The sale of additional

stock or of bonds or other similar securities is the main source of corporation funds for capital purposes. Some concerns have obtained approximately one-half of their capital through the issue of bonds. Percentages of capital so raised ranging from 15% to 40% are not uncommon.

The manner of raising capital is largely a matter of credit, expediency, and the question of fixed operating expenses. It rarely happens that bonds carry with them the privilege of voice in the management of the corporation's affairs; that is usually limited strictly to the shareholders. Accordingly, the issue of bonds instead of additional stock does not interfere with the management or control of the concern—so long as the contract requirements of the bond issue are adhered to.

Because of the definiteness of the income on bonds and usually the greater security of the principal, bonds may often find a market where stocks would not. On the other hand, if the stock can be marketed as advantageously as the bonds, no definite dividend rate is necessarily attached to them. The price at which stocks may be marketed, aside from the features of extra inducement which might influence the market, depends largely upon the prospective income rate judged mostly by what the company has been able to do in the past and any features of present condition or expected future condition which might influence the earning capacity of the corporation. Therefore, unless a dividend rate a little higher than the current interest rate is in prospect, the company usually finds it difficult to market its stock advantageously.

Bonds versus Stock Issues

The bond market furnishes opportunity for investment to quite a different class of people from those interested in stocks. Security, conservatism, and a definite income are the main elements desired. Thus conditions may oftentimes

be such that one market or another may be more favorable for absorbing an issue of securities, dependent on conditions in that market as much as on the credit and standing of the issuing corporation.

Aside from these points which are usually given consideration, is the question of how heavy are the fixed charges the corporation can carry. While from the investor's viewpoint an income at a fixed rate is highly desirable, from the corporation's point of view it may impose so great a burden as to eat up all the profits. The bond interest constitutes a fixed charge deductible before the determination of profits. In case of failure to meet the bond interest, the mortgage covering the bonds is subject to foreclosure. Upon foreclosure at forced sale values always shrink greatly, oftentimes the shareholders lose their entire interest in the company, and all the net assets may be taken to satisfy the claims of the bondholders. As compared with an additional issue of stock—common or preference shares, as may best meet the situation—a bond issue may thus be of doubtful value. One of the knotty problems upon a reorganization following insolvency is that of lowering the fixed charges by converting some of the bond issues into preferred stocks in order to prevent the recurrence of operation at a loss and so of inability to meet bond interest.

Accounting for Bond Issue

Accounting for the bond issue presents much the same problems as those connected with an issue of stock. Inasmuch as most corporation issues are sold in block to a banker who in turn markets them to the investing public, often through a syndicate (or the process may be one of underwriting), there is usually no need for detailed subscription records and accounts. In the case of coupon bonds no record of individual ownership is required because the bonds pass by delivery, possession evidencing ownership

and the interest coupon being payable to bearer. In the case of registered bonds, a record of individual holdings must be kept similar to the record of stockholders. The party in whose name the bond is registered on the company's records is the prima facie owner to whom the periodic interest check is also sent. If the bond is registered as to principal but bears coupons for the interest, records of individual ownership are also required here.

Entry of Issue on Books

Placing the bond issue on the books is accomplished by either of two methods. Assuming an issue of $500,000 of first mortgage 5% bonds of which $350,000 are sold at par for cash, the balance remaining unissued for the present, the entries would be:

First Method

		Dr.	Cr.
(1)	Unissued First Mortgage Bonds..........	$500,000.00	
	First Mortgage Bonds Payable....		$500,000.00
(2)	Cash..................................	350,000.00	
	Unissued First Mortgage Bonds....		350,000.00

Entry (1) is used to make a memorandum entry of the authorized issue. Entry (2) shows the amount sold for cash. The balance in the Unissued Bond account is treated as an offset to the Bonds Payable account. Sometimes the title "Treasury Bonds" is used instead of "Unissued," but the term is apt to be misleading because of the restricted meaning given the word in connection with treasury stock.

Second Method

		Dr.	Cr.
(3)	Cash..................................	$350,000.00	
	First Mortgage Bonds Payable.....		$350,000.00

Under the second method, the desired information as to authorized issue would be carried parenthetically in the account title. At the present time the tendency is to de-

precate an unnecessary multiplication of accounts as is brought about through the use of memorandum accounts. The second method is therefore the preferred method and in its operation brings onto the books the same information as the first method.

Entry of Premium or Discount on Books

Bringing the bond premium or discount onto the books is accomplished in the same manner as for stock. Thus, using the above data and assuming $100,000 of the bonds sold at 101 and the remaining $50,000 at 99¾, the entries would be, illustrating only the second method:

(4)	Cash	$101,000.00	
	First Mortgage Bonds Payable		$100,000.00
	Premium on First Mortgage Bonds Payable		1,000.00
(5)	Cash	99,750.00	
	Discount on First Mortgage Bonds Payable	250.00	
	First Mortgage Bonds Payable		100,000.00

Subsequent handling of the premium and discount accounts will be shown on page 368.

Bonds may be issued for cash or property, as in the case of stock. Unless there is evidence to the contrary, when bonds are issued for property they are brought onto the books at par value, the courts holding here as with stock that the parties to the transaction (usually the corporation's directors) are in a better position to judge the value of the property taken over than anyone else. This oftentimes results in an inflation of property values—an injection of water—and should not be countenanced where a true basis for determining the value of the bond is offered. Thus, if almost simultaneously with the issue of the bonds for property, some are sold for cash, the cash price received would usually be a fair basis for booking the premium or discount on those issued for property. The sale for cash must be a bona fide

sale in the open market if it is to represent the market's judgment of the offering. Sometimes an objection is raised to a Bond Discount account appearing on the books; hence the practice, wherever possible, of charging the discount against some asset account as a part of the cost of that asset. When the true nature of bond discount or premium in its relation to the periodic interest charge is appreciated, the objection has no weight.

Entry of Interest Payments on Books

Booking the payment of the periodic interest is accomplished by a charge to Bond Interest and a credit to Cash. This interest should never be entered in the regular Interest and Discount account. If the bonds are coupon bonds with the coupons redeemable through a designated trust company, a check for the full amount of the interest on the outstanding bonds should be issued and booked as above. If the coupons are redeemable at the company's office, an entry debiting Bond Interest and crediting Coupons Payable should be made, to record the interest charge and the liability therefor. As the coupons are redeemed, Coupons Payable is charged and Cash credited, any balance remaining in Coupons Payable account representing the liability existing because of coupons not yet presented for redemption. In the case of bonds registered both as to principal and interest, the interest checks made payable to the registered parties constitute a charge to Bond Interest and a credit to Cash. It is sometimes advisable to transfer by one check the total bond interest payable to a special bank account and issue the individual interest checks against this fund. Whenever the books are closed it is always necessary, unless the end of the fiscal period coincides with the bond interest date, to take account of the accrued bond interest as on that date. The adjusting entry here is similar to that for any accrued expense.

Relation of Bond Interest to Premium or Discount

The main problem in connection with accounting for bond interest is that of the relation between bond premium or discount and the periodic bond interest. At practically any time in the market there is a rate at which the bonds could be sold at par. This rate is known as the effective rate. If a company puts an issue of bonds on the market at a higher rate than this, the market will offer a premium for them. The amount of the premium will be, theoretically, the present value of the periodic sum represented by the difference between the stated bond interest and the effective interest, these periodic payments extending over the life of the bond. In other words, the premium represents the price paid to buy the additional interest, dollar for dollar, on a compound interest basis. The premium is therefore not an earning, an item of income, but is an offset to the excess bond interest. The portion of it applicable to each period represents the excess interest which deducted from the bond interest shows the real or effective cost of the money borrowed and to be paid back. Thus, the bond interest rate based on the money actually received, i.e., par plus premium, is exactly the same as the market or effective rate on par. In other words, the corporation is paying for its actual borrowings simply the current market rate of interest.

It is therefore incorrect to show on the books the cost of the loan at any other figure than the effective interest. The actual periodic payment of interest is, however, at the bond interest rate. This must be brought down to the effective rate by application to it of a portion of the premium which represents the sum paid for the privilege of receiving the higher rate of interest. Similarly, bonds are marketed at a discount when the bond interest rate is lower than the market rate prevailing on similar security at the time the bonds are floated. This may be looked upon as a payment

by the company in lump sum to compensate a purchaser for the difference in the income on the bond and what he might obtain on the open market. The discount should be applied, therefore, periodically to bring the cost of the loan up to its true figure, viz., the market or effective rate. An illustration will clarify the points of the above discussion.

Example of True Interest Cost

Assume a 7% bond, interest every six months, payable in 25 years (50 periods), par $1,000, sold in a market whose prevailing interest rate is 6%. By the method developed on page 273, the value of such a bond is found to be $1,128.-6488, the premium being $128.6488. At the effective rate the real cost to the issuing company is 3% on $1,128.6488, or $33.8595. The actual sum paid as interest is $35, i.e., 3½% on $1,000. The difference between the effective and actual bond interest, or $1.1405, is the portion of the premium to be used that period in order to reduce the amount of actual interest paid to the real or effective cost of the loan. The bookkeeping entries are:

(6)	Bond Interest	$35.00	
	Cash		$35.00
(7)	Premium on Bonds	1.14	
	Bond Interest		1.14

Similar calculations and entries for each of the succeeding 49 periods would be made, the application of the effective rate always being, of course, to the amortized value of the bond as on that date. This process is called scientific amortization of the premium (or discount) of the bond. Its effect is readily seen to be to spread over the life of the bond the premium (or discount) and so not to take credit for it in a lump sum during the period in which the bond is matured. There are four cases to which this principle of showing the true interest cost is applicable, as follows:

1. A bond sold at a premium to be redeemed at par on maturity.
2. A bond sold at a discount to be redeemed at par on maturity.
3. A bond sold at a discount to be redeemed at a premium on maturity.
4. A bond sold at par to be redeemed at a premium on maturity.

At the close of a fiscal period which does not coincide with the bond interest period, not only must the bond interest accrued to date be shown as an accrued expense, but also there must be so shown the portion of the premium (or discount) accrued to that date required to bring the bond interest cost down to the effective basis.

Presentation on Balance Sheet

The final problem in connection with bonds concerns the manner of their showing on the balance sheet. That has perhaps been sufficiently indicated. The amount of the authorized issue should be short-extended, and the amount unissued subtracted therefrom with the net amount outstanding full-extended as the significant figure in the balance sheet.

Other Fixed Liabilities

Real Estate Mortgages. Another item among the fixed liabilities is the simple real estate mortgage. This is usually called a bond and mortgage, the bond being simply the promise to pay and the mortgage being the security for the amount of money borrowed. In some states the more formal document called the bond is used as a contract according to which a named sum is to be paid in case the amount borrowed on the mortgage is not paid. This named sum is usually the amount borrowed, although in some states it is twice this amount. In booking a note or bond

supported by a mortgage, the customary title is "Mortgage Payable" rather than "Notes Payable" which is generally understood to be applicable in the main to current liabilities. In case the double amount is named in the bond, it is not customary to take cognizance of the contingent liability thereunder.

Loans on Collateral. Short-time loans are frequently made on collateral security. Stocks and bonds, particularly of the borrowing company or its subsidiaries, may also be made the basis of a long-time loan. This may take the form of a bond issue, promissory notes, or other similar obligations. Accounting for the loan and its showing on the balance sheet follow the principles already laid down. The title of the loan account should carry the word "Collateral" or other similar term to show its nature. Accounting for the collateral is usually accomplished by a memorandum in the stocks, bonds, or investments account to show exactly what securities have been withdrawn for deposit as collateral. No further record is needed other than a complete list of such securities; the securities are still owned by the company, though deposited under a conditional contract with someone else. If the loan is dishonored at maturity and the securities are sold in satisfaction thereof, the necessary entries must be made to show the sale of the securities, the profit or loss attendant thereupon, and the repayment of the loan. In showing the pledged securities on the balance sheet, it is well to present the securities in two groups or classes, viz., those pledged as collateral for the loan shown contra and those not so pledged.

Short-Term Securities. When the market is not favorable to the issue of long-term securities, because of the high rate of return demanded by investors, corporations often have recourse in their borrowings to short-term securities —usually note issues with maturities ranging from one to

five years, two- and three-year terms being the commonest. The financial consideration in their issue is merely a speculation that by the time of their maturity the market will be more favorable for the flotation of long-term securities. Thus the company hopes at the maturity of the notes to free itself from the need of paying so high an interest rate as it is required to pay now for the short-term securities. These notes may be in different denominations and are accounted for just as other notes. On the balance sheet they are grouped with the fixed liabilities until within a short time of maturity, when they must be shown with the other current items.

CHAPTER XXI

CAPITAL STOCK AND ITS VALUATION

Problems in Valuation

The problems in connection with the valuation of the assets and the liabilities and the manner of showing them on the balance sheet—and in some cases the manner of booking them—have been treated in some detail in the preceding chapters. It might seem that, inasmuch as proprietorship or net worth is determined always by the excess of assets over liabilities, no question would arise concerning the valuation of net worth, its value being automatically determined by whatever values are placed on assets and liabilities. That its value is so determined, that every change in net worth must be reflected in the assets and liabilities, does not admit of argument. There are, however, certain phases of the question of valuation and certain problems connected with it, that, because of their close connection with net worth or their direct effect upon it, are best treated under this head rather than under the head of each particular asset that may be affected. Thus, if treated among the assets, the valuation of properties purchased with stock would require, under the head of each asset which might be so acquired, an almost identical statement of principle. For this reason, some problems in valuation have been reserved for treatment here in connection with capital stock.

In addition, there are related problems which concern the surplus and reserves. It is true, these all have their origin in the general considerations of valuation as given for the assets and liabilities. But questions as to what constitutes a profit, whether all profits are applicable to dividends,

the proper treatment of capital profits, the relation of capital losses to profits and dividends, the differentiation of the classes of reserves, and finally the manner of showing and explaining the periodic changes in net worth by means of the supplementary statement of profit and loss—all these and other similar questions are closely related to the problem of valuation and, as indicative of the financial policy of a business, may directly affect all going concern values. On this account they require separate treatment from that of any individual assets and liabilities or group of assets and liabilities. Accordingly, the next few chapters will be concerned with these problems and any others which are relevant thereto.

Kinds of Stock

Capital stock is of various kinds—that with a stated par value and that without, common stock, various kinds of preference shares, debenture stock, guaranteed stock, founders' stock, convertible stock, and redeemable stock. The student is referred to Chapter I where these various kinds of stock are discussed.

Par, Real, and Market Values

Capital stock may have several kinds of value, as the term value is used. All stock is expressed as so much per share. The value mentioned as the stated value of a share of stock in the contract of issue is known as the par, face, or nominal value.

The book value of stock is the value of the stock, as shown by the books—not the amount carried in the stock accounts, but the entire net worth of the corporation divided by the number of shares outstanding. Thus, if the assets minus the liabilities—the net assets—of a corporation amount to \$1,500,000, of which \$1,000,000 represents 10,000 shares of stock of par value \$100, and the \$500,000 is surplus, the book

value of the stock is said to be $150 per share. From the standpoint of a going concern, this value is also spoken of as the real value in the sense that it is represented, dollar for dollar, by actual assets held by the corporation. Real value is also used to mean liquidation value, the value which the net assets upon forced or voluntary sale would realize for distribution to each shareholder.

Finally, there is the market value of stock by which is meant the value placed on it in the stock market or wherever stocks are dealt in. This value depends primarily upon the dividend-earning capacity of the stock, although many side issues of fact and opinion affect it. Thus, not only present, but past as well as prospective future dividends influence the market. At times, particularly in a declining market, the financial needs of the holders of the stock may affect prices more than the dividend rate of the stock.

The problem of stock valuation as related to the commercial balance sheet takes cognizance of only one of these values, viz., par value, though each of the others is related to and measured by the showing of values on the balance sheet. That par value is not always the true value cannot be controverted. As already shown, the inclusion on the balance sheet of assets of doubtful value is allowed when the doubtfulness of their value is generally recognized and no one is thereby misled. Some problems in connection with stock values and their inflation on the books will now be discussed.

Value Dependent upon Earning Capacity

Upon the inception of an enterprise the problem of stock valuation is always bound up with the question of valuation of the assets and liabilities, as pointed out above. When the asset to be valued is only cash, the problem is not usually difficult, as where the capital stock is sold for cash. Where, however, the sale is for a property taken over, the valuation of the stock is related to the larger problems of capitaliza-

tion, with which in turn the valuation of the assets is bound up. It seems best, therefore, for an intelligent understanding of the question to review briefly some of the bases of capitalization.

As indicated above, the market value of any stock is dependent in the long run more on the factor of its earning capacity than anything else. If investment in a stock nets the prevailing income rate on money, that stock will approximate its par value. So when determining the capitalization of a company which expects to be taken over as a going concern, the main consideration is not so much its true valuation as it is its earning capacity and its ability to pay dividends. Thus, if on a cost basis the net values taken over amount to \$250,000, but past performance and future expectation reasonably indicate a capacity to earn a normal dividend on \$1,000,000, it is very probable that the new company will capitalize at \$1,000,000. If this sum is actually and in good faith paid, little or no exception can be taken to recording the value of the plant taken over at \$1,000,000. The transaction is the result of a bargain. The additional value over cost may, in the estimate of the purchaser, represent the true value of the good-will or other intangible assets acquired but not included in the \$250,000 referred to above. In a bargain transaction such as the foregoing, judgment of value is sometimes wrong; but the buyer can only show the property bought at what it cost him at the date of the purchase—whether the payment is in cash, stock of a stated par value, or other assets.

Increase of Book Capitalization

If, however, the transaction is merely a reorganization of the old company by its owners solely for the purpose of increasing its book capitalization by bringing onto the books an existent good-will or by other means of inflation of assets, the result is a so-called watering of the stock. The propriety or impropriety of this is chiefly a question of business ethics,

and its discussion is beyond the limits and the purpose of this volume. It may be said here, in passing, that under certain conditions the practice may be entirely proper and no inequities may result. On the other hand, the purpose of such a reorganization may be fraudulent, in which case it frequently works hardship and injustice. The main accounting problem involved when the book capitalization of a concern is increased is the method of recording the transaction, so that the true status of affairs will appear unmistakably and any attempted fraud will be shown.

Capitalization on Cost

Opposed to the basis of capitalization on earning power is that of capitalization on cost. In a case of capitalization it is very difficult to know exactly what is meant by cost, as there are so many kinds of cost. There is original cost; original cost less depreciation; present cost new of an identical property, i.e., reproduction new cost; reproduction cost less depreciation, etc. In this discussion original cost is taken as the basis, less depreciation, or such cost plus a bona fide payment for good-will or for the privilege of securing an established business. All these other factors may and frequently do enter into the determination of a bargain and sale price and therefore affect capitalization.

The regulation of the Public Service Commission of the First District, State of New York, concerning the manner of keeping the capital stock accounts of public service corporations, is as follows: "To the account for any class of stocks shall be credited when issued the par value of the amount of stock of that class issued. If such issue is for money, that fact shall be stated; and if for any other consideration than money, the person to whom issued shall be designated and the consideration for which issued shall be described with sufficient particularity to identify it; if such issue is to the treasurer, or other agent of the corporation, to be by him

disposed of for the benefit of the corporation, that fact and the name of such agent shall be shown; and such agent shall in his account of the disposition thereof show the like details concerning the consideration realized thereon, which account when accepted by the corporation shall be preserved as a corporate record. If the fair cash value of the consideration realized upon the issue of any amount of stock is greater than the par value of such stock, the excess shall be credited to the account 'Premiums on Stocks' and the corresponding reference thereto shall be contained in the entry relating to such stock in the stock account."

The Law and Stock Issues

Thus, it is seen that the state takes cognizance of financial arrangements and methods of accounting in some of those particulars wherein the state is vitally interested. These regulatory provisions are usually found in the corporation laws of the state or amendments thereto. At the present time there are at least three types of such laws:

Under one type it is provided that, when property is taken by the corporation in payment of its shares, the incorporators alone are the judges of the values of such property and that the state's only duty is to prevent fraud. Fraud must be shown by the injured party and usually the facts by which this might be established are hidden in records to which a stockholder has no access. The remedy is against the directors personally. This type of corporation law is found in most of the states.

Under the second type active control of the issue of stock is undertaken by the state. This requires an independent appraisal and valuation by the state's experts. This type of law is found frequently governing the incorporation of public utility companies. It is based on a paternalistic theory of state functions not yet recognized as applicable to private undertakings.

Under the third type, we find the law authorizing the capitalization of any and all kinds of property—in the absence of fraud, of course—provided that a full statement is put on record showing the amount of stock and the exact manner in which it is paid for. The amount of cash received must be shown; the property acquired so labeled as to render identification possible; and any payments for services or other expenses must be shown. The attitude taken is that a prospective investor, provided with these facts about the company, can make his own judgment as to stock values.

Thus, we find that practice is not uniform in these regards. From the viewpoint of theory, any accounting treatment of the issue of stock which shows the full facts with regard thereto may be considered as meeting all reasonable requirements.

Treatment of Discount or Premium

Valuing capital stock when issued for cash presents no problem in itself, but the treatment of the discount or premium incident thereto requires consideration. In most of the states and in Great Britain stock cannot be issued below par. The manner of nullifying this provision has already been referred to in Chapter I. There it was shown how the issue of fully paid stock is made for property and how treasury stock is created by donation, which may then be disposed of for any price obtainable, without any additional liability attaching to it. In most of the states and in Great Britain, however, a sales commission is allowed which has, in some instances, been used as a cloak for sales at a discount. The booking of the discount or premium presents no difficulties, but the manner of handling it on the balance sheet is not uniform. Premium or discount on stock should be recorded as such on the books, under titles of definite meaning.

One occasionally hears the argument that the discount

on stock is a necessary expense incident to financing the company, a sort of "cost of getting started," an expense without which the enterprise could not be launched; accordingly the discount should be properly capitalized as a part of the property costs. The argument is plausible but not convincing. The information as to the discount on stock is very necessary to the prospective creditor or investor and should always appear as a separate item on the books. To the same effect is the ruling of the Interstate Commerce Commission that premiums on capital stock must be carried on the book permanently unless offset by discounts later allowed. Discounts may be extinguished by premiums, assessments, surplus, or by the retirement of an equivalent amount of stock.

A premium on stock may be looked upon as similar to a capital surplus. It represents a fund of capital originating upon the inception of an enterprise, and is in no sense an increase of capital, i.e., of net worth, due to operation. So far as the law is concerned, there is nothing to prevent the return of this surplus to the shareholders in the form of a dividend. To treat it as available for ordinary dividends, however, would seem not to be in keeping with the manner of its origin. Rather should it be set aside as a permanent surplus. One requirement in the case of national banks is the creation of a permanent surplus equal to 20% of the capital, and so, frequently the original subscribers agree to take their stock at a 20% premium, this premium providing the legal surplus required. In the case of discounts no accounting principles are violated if they are allowed to remain on the books. If there is a surplus from premiums, that should be used to wipe off any discounts. In the absence of premium or other capital surplus, conservatism usually sanctions the use of operating surplus for this purpose, thus bringing the value of the net properties owned at least into equivalence with the par value of the stock.

Valuation of Stock Issued for Property

The difficulty of valuing stock when issued for property has already been stated and the attitude of the laws towards any valuation placed on the properties taken over has been shown. Nothing further here need be said except to state that where also a bona fide sale of a portion of the stock takes place for cash at the same time, a fairly reliable basis for valuing the stock given for the property is offered. It is not the usual practice to show the probable discount on the stock, although such treatment would be logical and consistent with the facts. A similar valuation of the stock might be secured by an independent appraisal of the properties taken over, but this, if done, is not often made the basis for entry on the books. If all the facts are fully recorded, that probably is as much as can be hoped for under the conditions now prevailing. Undoubtedly the use of no par value stock for incorporations of this kind offers the best solution of the problem. With regard to booking the properties acquired by a stock issue, attention is here called to the method of valuation of the individual units by an appraisal committee usually appointed from among the directors and the use of their findings as the basis for the book entries of the transaction.

Valuation of Treasury Stock

In connection with the purchase of properties by stock, there often arises the need of working capital. This is frequently furnished by the pro rata donation or return of some of the stock to the corporation, the sale of which furnishes the necessary working funds. As illustrated in an earlier chapter this donation is booked at the par value of the stock, the charge being to Treasury Stock and the credit to Donated Surplus, Donated Working Capital, or other similar account. Being true treasury stock, it can be sold at any price without liability. It is usually disposed of at a dis-

count which must be recorded on the books either as a charge to Discount on Treasury Stock account which will later be closed against Donated Surplus or as a charge direct to Donated Surplus. Thus when the treasury stock is all disposed of, the net credit balance in Donated Surplus shows the real amount of working capital obtained through the donation. If not entirely sold, the portion sold gives a fair basis for the valuation of the unsold portion, although this value is seldom brought onto the books, it being used as a guide to financing rather than as an item to be regarded in accounting valuation.

Redemption and Reduction of Capital Stock

The redemption and reduction of capital stock presents a problem of surplus adjustment requiring careful treatment. If a corporation has accumulated no surplus of any sort and redemption of the stock is at par, no difficulty is met in making the entry. If, however, a surplus has been accumulated and redemption is either above or below par, care must be exercised to record the transaction properly. Redemption at a stated price is sometimes one feature of a preferred stock issue. Again the stock may be bought in the open market for the purpose of cancellation. Reduction of capital, except when made a condition of the original issue, cannot usually be accomplished without the consent of at least a majority of the shareholders and authorization from the state. For the sake of simplicity, assume just one class of stock and a surplus in which each share has an equal interest. If redemption is at par, the surplus is evidently not affected but each share of stock remaining outstanding has a larger share in the surplus and so acquires a higher book value.

Redemption of a stock at its *book* value is accomplished by charging capital stock for its par value and surplus for its pro rata share in the surplus, the offsetting credit to both

these being to cash. The value of the remaining shares of stock has not been affected in the least. If redemption is at any other figure than book value, not only is surplus affected, being increased if the redemption price is below par and decreased if above par, but also the value of the remaining shares. In the case of different classes of stocks, a careful determination of their respectively equitable shares in surplus would have to be made before the effect on the remaining shares could be calculated.

In passing from the question of stock values, it should be pointed out that an undervaluation of stock when issued for property, though seldom seen in practice, has the refreshing effect of creating a secret reserve. That is, property values are carried on the books below their actual values and a secret reserve is thereby created. A further discussion of secret reserves will follow in a later chapter.

Dividend Stock

Stock is sometimes issued for dividend purposes. In such cases, it is always issued as of par value. If profits have been earned or a surplus accumulated out of which a dividend may be declared, that dividend may be paid in any way the corporation sees fit. Payment may be made in cash, scrip, or in the shares of the company. If the corporation has neither unissued stock nor stock in the treasury, permission to increase its capitalization must be secured before a stock dividend can be paid. Some corporations, notably financial institutions, often make it a matter of policy to accumulate a large surplus and then distribute it by means of a stock dividend. Declaration of the dividend is made and recorded as usual. Record of the payment in stock is made as a debit to Dividends account and a credit to Capital Stock.

The effect of a stock dividend is twofold. From the point of view of the management of the surplus it has the effect of a permanent investment of the surplus in the busi-

ness. Thus it places the accumulated profits beyond the control of any future board of directors. If left in surplus, a cash dividend might have been declared and the asset dissipated to that extent. The stock dividend, however, keeps the profits invested in the business in such a way as not hereafter to be available for dividends. From the point of view of the stockholder, upon the declaration of a stock dividend his equity, his proprietorship in the business, is not in the least affected excepting that it is divided into more parts; he has more shares to represent it than he had before. Before he possessed as a community right a pro rata share in the surplus. Now the ownership of that share has become personal, individual. Each share of ownership thus has a smaller book value but each stockholder's equity is the same as before.

Stock Issued as a Bonus

The manner of recording stock issued as a bonus with bonds or for any other purpose has been illustrated in an earlier chapter. Here, attention is called to the effect of such an issue in states where stock cannot be sold below par. There is no legal bar to the sale of bonds below par. If, then, the price received for the bond carrying a bonus of stock is at least equal to the par value of the bonus stock, there is nothing extra legal in the transaction. However, record must be made of the issue of the stock at par, the discount or bonus being carried as applying to the bond.

The valuation of stock issued in effecting combinations or for labor or services follows along the same general principles as of that issued for property, and the same general considerations are pertinent.

Unissued and Treasury Stock on the Balance Sheet

When showing capital stock on the balance sheet, it is best to treat unissued and treasury stock as valuation items.

The reason for this was stated and discussed in Chapter XIV. Here the relevancy of showing the unissued stock will be considered, as a statement of the outstanding stock is thought by some to be all that is required. It has been argued that the unissued stock does not in any sense represent an asset nor does it show proprietorship. Why not, therefore, leave it off the balance sheet statement entirely? It is true that an investor, a creditor, or a stockholder is interested in the main only in the condition of the business as shown by its present assets and liabilities. Unissued stock has no value till placed on the market; all that it shows is that certain legal requirements have been met authorizing its issue and to that extent it has a contingent value which may become a real source of capital to the corporation if additional funds become necessary. While, therefore, the omission of the item entirely from the balance sheet does not affect present conditions, it is considered best, in the interest of full information as to the exact status of the company, to show the amount of the authorized capital with the amount unissued extended short on the balance sheet, the difference being the amount outstanding—which is full-extended as the significant item, thus:

Capital Stock Authorized........	$1,000,000.00	
Less Amount Unissued..........	250,000.00	
Amount Outstanding......................		$750,000.00

A similar showing of the treasury stock is also considered best, although good authority can be found for its inclusion among the assets.

Preferred Stock Covered by Redemption Contract

On the border line between liabilities and proprietorship is preferred stock covered by an unfulfilled redemption contract. Such stock is issued with a definite redemption contract to become effective at stated dates, and is manifestly

different from preferred stock redeemable upon call at any time *after* a named date. In the latter case the option of redemption is with the company, whereas in the former case the company binds itself to a contract enforceable at a definitely stated time. From the financial standpoint the wisdom of a company binding itself to a contract enforceable some time in the future may be open to question because of the inability at the time of issue to foretell the company's condition at the time of redemption; although in this respect the condition is practically the same as that confronting a company at the time of a bond issue. There is this marked difference, however: A bond issue is always a liability and continues as such after maturity; but in the case of a stock redeemable at a given date, the point at issue is whether the failure of the company to redeem automatically changes the status of the owner of the stock from that of a proprietor to that of an outside creditor.

"For instance, a corporation sold $750,000 of first preferred stock, with a provision for the retirement of $150,000 annually after a certain period had elapsed. When the first instalment became due the corporation was unable to meet its obligation. There was no provision in the certificate bearing on the treatment of the overdue payment in the accounts or the balance sheets. The auditors declined to certify the balance sheet until a decision was reached as to whether or not the amount represented a liability to be liquidated as soon as funds were available. So long as this possibility existed the position of the general creditors was subject to change. Finally it was decided to secure an extension from all stockholders and upon satisfactory evidences thereof the auditors passed the balance sheet.

"No general rule can be laid down for the auditor's guidance in such cases as this, as each case must be decided on its merits. The most important facts for the auditor to ascertain are the rights of stockholders to insist upon payment,

and the aggregates and due dates of all probable obligations. Their disposition in the accounts is then a matter of disclosing full information to creditors, prospective creditors, and to other stockholders."*

* Montgomery's "Auditing, Theory and Practice."

CHAPTER XXII

PROFITS

Difficulty of Determining Profits

What constitutes a profit is oftentimes a perplexing question and at all times its determination is more an estimate than an absolute fact. This arises from the nature of accounting itself in that so many items of expense are known to exist and must accordingly be provided for but the amount of such expenses cannot be exactly determined. This is seen to be true in the case of the provision which must be made for bad and doubtful accounts and for depreciation of fixed assets and is, of course, inherent in all problems of valuation. As is proverbially true of the prescriptions of different physicians for the same malady, so no two accountants would arrive at the same figure of profit for any given concern.

Economic Definition

It may be of some advantage at this point to attempt a definition of profits although to compress the meaning of the word within defined limits is hardly possible and for this reason the formulation of a working definition is very difficult. Etymologically, "profit" comes from the Latin word *proficere*, meaning to make progress, and a better definition than this would be difficult to find. At the best the term is an elusive one, being used with slightly different connotations in different schools of thought. Thus, we find the word used and defined in economics, law, and accountancy, and some of the definitions are twisted almost to the point

of absurdity. Alfred Marshall,* the English economist, says: "If a person is engaged in business, he is sure to have to incur certain outgoings for raw material, the hire of labour, etc. And, in that case, his true or net income is found by deducting from his gross income 'the outgoings that belong to its production.'" Charles S. Devas† says: "The income from production combining both labor and capital is profits." He defines gross income as "the total wealth added to the property of a given person in a given time from *whatever* source . . . . and net income as gross income minus the following items: (a) Destruction, damage, or loss by fire or other accident, by violence, by thieves, by bad debtors. (b) Using up of materials in production, and wear and tear of machinery and industrial buildings such as factories or shops. (c) All sums spent on purchases of goods that are to serve the purchaser not as subjects of enjoyment, but as means of getting an income. (d) All sums spent on hire of goods that in like manner are to serve as means of getting an income. (e) All payments for labor that in like manner are to serve as means of getting an income." One wonders if Marshall's idea of incomings and outgoings is limited to a cash basis or if he recognizes accruals. On the other hand, from the point of view of accounting, Devas includes too much, as will be pointed out later. E. R. A. Seligman‡ says: "Profits are the income from business enterprise. . . . . Profits are always a surplus. They are the difference between the cost of production or acquisition and the selling price." He summarizes expenses of production as including cost of raw materials, wages, rent, interest on capital borrowed or *invested*, taxes, and miscellaneous outlays such as insurance, advertisements, and transportation expense. Again, he says: § "Income is that which comes in to an individual above all necessary

* In "Principles of Economics."
† In "Political Economy."
‡ In "Principles of Economics."
§ In "Income Tax."

expenses of acquisition and which is available for his own consumption." He recognizes depreciation as a necessary expense.

All of this attests the statement made above that the formulation of a satisfactory working rule for the determination of net profits, from the business standpoint, is extremely difficult. It should be said, of course, that in some respects the idea of net profit as used in economics differs from that used in business; the chief difference being that interest on *invested* capital is in economics looked upon as an expense deduction before the determination of profits.

Legal Definition

The efforts of the law, as evidenced by court decisions, to mark out definitely the meaning of net profits have resulted in many odd twists of terms and meaning. In an English case* decided as recently as 1902, this language is used: "If it is a mere question what were the profits made in a particular year, it seems to me that the duty is to ascertain what cash has been received and what cash has been expended, and, if that is fairly done, you know the profits of the year. If there is a large outstanding liability which cannot be settled, the partners will estimate that, and it will not be considered as part of the profits. If there is a large outstanding possible loss, and there is a large sum due to a client, then you would provide for that. But in ascertaining what is really actually divisible for the year fairly, you would take the cash account as it stands." In the light of such mental obtuseness and obliquity, one cannot wonder at the occasional reluctance of business to entrust the determination of important matters to the courts.

In cheering contrast is a legal opinion quoted by R. H. Montgomery,† in the following: "I should think that no

* Badham v. Williams.
† In "Auditing, Theory and Practice."

commercial man would doubt that this is the right course—that he must not calculate *net profits* until he has provided for all the ordinary repairs and wear and tear occasioned by his business. That being so, it appears to me you can have no net profits unless this sum has been set aside. . . . . If you had done what you ought to have done, that is, set aside every year the sum necessary to make good the wear and tear in that year, then in the following years you would have a sum sufficient to meet the extra cost." Even here confusion is apparent between a valuation reserve and a reserve which has been funded and the emphasis is rather on the point of providing funds necessary for the purpose—a financial problem as distinguished from an effort to define net profits.

Between these extremes of legal opinion and phraseology one finds all shades and degrees of understanding and misunderstanding. In recent years there is evident in the decisions of our higher courts and of our many excellent governmental commissions and bureaus a real appreciation of some of the technical points involved in profits determination. It is believed that a body of authoritative decisions will in time and perhaps soon reflect the best opinion of the business men of the country.

Accounting Definition

The purpose of this chapter is to discuss some of the points at issue in this vexed problem, but before entering upon this discussion it will be of advantage to quote from leading authorities on the attitude of accountants towards the determination of profits.

A. Lowes Dickinson* says: "In the widest possible view, profits may be stated as the realized increment in value of the whole amount invested in an undertaking; and, conversely, loss is the realized decrement. Inasmuch,

* In "Accounting Practice and Procedure."

however, as the ultimate realization of the original investment is from the nature of things deferred for a long period of years, during which partial realizations are continually taking place, it becomes necessary to fall back on estimates of value at certain definite periods, and to consider as profit and loss the estimated increase or decrease between any two such periods." It is in the making of these estimates that the most difficult problems of profits determination are met.

Mr. Montgomery in his dictum, "The net profit of a business is the surplus remaining from the earnings after providing for all costs, expenses, and reserves for accrued or probable losses," offers the best available working definition, although a caution is needed against the danger of relying exclusively upon any one definition.

Methods of Determining Profits

Systems of bookkeeping, in the main, provide two distinct methods for the determination of profits, namely, by means of single entry and double entry. The student is referred to the author's first volume for the detailed working out of profits by single entry. Here it is sufficient to say that the determination of profits rests upon a comparison of assets and liabilities as at the beginning of a fiscal period, with those as at the end of the period. Then the increase or decrease in net worth as so determined, after making due allowances for any withdrawals or investments of capital during the period, constitutes the figure of net profit or loss for the period. The disadvantages and inaccuracies inherent in this method have already been pointed out.

The method of determining profits by means of double entry provides an entirely distinct set of accounts known as temporary proprietorship or profit and loss accounts. These record the daily changes in net worth and must be summarized through the Profit and Loss account at the close of the fiscal period, at which time they must prove against

the profits as determined by the balance sheet, the method of which is essentially the single-entry method. In addition to this control secured by checking the results obtained by one group of accounts against those of another group, is the important advantage of presenting in the record a mass of statistical information for guidance in the conduct of a business, without which the present-day enterprise with its many complexities of organization and working could not hope for any certain measure of success.

The Problem a Question of Valuation

Inasmuch as every profit made must be reflected in a corresponding increase of some asset or the decrease of a liability, and, conversely, every expense incurred is reflected as a decrease of assets or increase of liabilities, it is apparent that profits determination is largely a question of the valuation of assets and liabilities and therefore rests upon the principles already established. Thus the amount of *gross* profit is not determinable until the value of the stock of merchandise on hand is known. Gross profit rests on inventory valuation, whether that be accomplished by the perpetual inventory method or that of periodic stock-taking. While under the double-entry system the charges for expense are more or less fixed and certain and not so dependent on inventory, it has been seen in Chapters XIV and XIX that before accuracy can be secured, here too there must be an inventory or appraisal to determine the prepaid and accrued expense items. The basis for valuing these was indicated in the chapters referred to. Estimates of depreciation, bad debts, and other similar items must also be made to secure a proper appraisal of the corresponding asset items. Similarly, in the determination of other income, accruals and prepayments must be taken into account. In the making of the record of temporary proprietorship data, the fundamental distinction between

capital and revenue charges is vital and must be kept constantly in view.

Thus the problem of profits is seen to be in its broader aspects the same problem of valuation to which attention has already been directed. It is purposed here to point out the application of the valuation problem to the periodic determination of profits and to re-examine some phases of the problem from the standpoint of profits as distinguished from that of assets.

Effect of Asset Losses on Future Profits

The first question for discussion may be stated as follows: In the determination of *periodic* profits must all the data which have affected proprietorship during that period be summarized in order to make a proper showing of profits for the period? An illustration will better present the issue. A manufacturing concern with plants in many places suffers a heavy loss from fire. Must this loss be considered (1) as an expense applicable to the current period and to be taken account of before the determination of profits for the period; or (2) may it be treated as a deferred expense to be shared by several succeeding periods; or (3) may it be charged directly against capital?

Three somewhat different solutions are thus presented. The first treats the loss as a *temporary* proprietorship charge; the second as a deferred charge to operation and so includes the portion deferred among the assets and to this extent does not reflect the loss as a diminution of net worth; and the third treats the loss as a charge against *vested* proprietorship.

Any adequate treatment of the question requires a consideration of (1) the type of business organization, i.e., single proprietorship, partnership, or corporation; (2) the appropriation of profits, whether they are to be withdrawn or reinvested in the business; and (3) the nature of the loss.

as to whether fixed or current assets were affected. The practical aspect of the problem is the adoption of a policy not in contravention with the law, and in the determination of this phase of the subject there are some court decisions none of which, however, seem entirely trustworthy.

It must be borne in mind that in the types of organization known as single proprietorship and partnership, there is little legal restriction in their formation and operation. The law presumes that the full liability of the owner or owners offers sufficient protection to creditors. Hence the withdrawal of profits or capital is not safeguarded in any way in the interest of creditors. With the corporation, however, provision is specific that nothing shall be returned to the stockholder except profits so long as the business continues in operation. Exception here is usually made for those concerns operating assets which are subject to depletion, in which case it has been held that dividends may include a return of the depleted portion. The theory of the law is that, except as just indicated, the capital of a corporation is an *indication* to creditors of the amount by which the assets may suffer shrinkage and their claims still be protected in full. Hence, the return of capital in the form of dividends is not allowed, as that would impair the margin of safety for creditors.

From the practical standpoint, therefore, the problem concerns only the corporate form of organization and that only in its relation to dividend payments. So long as the profits are reinvested in the business, neither creditors nor owners have any cause for action, except in case of fraud.

Legal Decisions as to Asset Losses

In decisions relating to this question of asset losses, the courts have seen fit to make a distinction between what they term fixed and circulating capital, corresponding in the main to the fixed and current classification of assets

for the balance sheet. In the leading English case,* it was held that a trust company holding stock, which during the last business year paid 50 per cent dividend but which before the end of the year became utterly worthless, may include the 50 per cent in its yearly profit, without deducting a penny for the depreciation of the property from which this profit was derived. In the language of the court Lord Justice Lindley said: "Fixed capital may be sunk and lost and yet the excess of current receipts over current payments may be divided. But floating or circulating capital must be kept up, as otherwise it will enter into and form part of such excess (seeing that circulating capital, with the particulars of its purchase and sale, must appear in revenue account), in which case to divide such excess without deducting the capital which forms part of it will be contrary to law."

The stock held by the trust company was for permanent investment and therefore in the nature of a fixed asset. The language of the court is quite specific and there would seem to be no *need* for including all or any portion of the loss in the current statement of profit and loss. Other later decisions have somewhat extended the doctrine so that it has been held that the current profits may be determined without making any provision for a loss, even of circulating capital, occurring in a *previous* year. Thus it would seem that so far as the *legality* of profits determination is concerned, each fiscal period may be counted as entirely free from liability for the happenings in other periods—a unit of business history distinct from all other units. These decisions are English cases and have not always been followed in this country. For a statement of the prevailing opinion in this country, see page 443 of Chapter XXIV, "Dividends." The danger of the position is apparent. In the hands of unscrupulous managers the profit and loss

* Verner v. General and Commercial Investment Trust, Limited, 2 Ch. 239 (1894).

might be so manipulated that alternate years would always show profits in spite of the fact that the company's capital was constantly being depleted.

Loss Charged against Current Profits

In stating the question on page 393, three alternatives were presented by way of solution. The first of these suggested that the entire loss be treated as a charge against the profits of the current period. It has been seen that there is no support in law for this method of handling the loss, nor is there any need or justification for it from the standpoint of correct accounting theory. Only such losses as occur more or less regularly and which within the experience of the business can be fairly accurately estimated, are proper charges to the current period. It is not the function of the periodic profit and loss statement to reflect charges covering contingencies which with almost equal certainty may or may not materialize.

Loss Treated as Deferred Expense Charge

The second solution suggested, viz., that the loss be treated as a deferred expense to be shared by several succeeding periods, has much to commend it and little to condemn it, except a possible lack of business foresight as will be evident when the third solution is examined. It may be argued, and with a good show of reason, that such losses are so infrequent, occurring perhaps only once or twice in the life of any business, as to make it unfair as between periods to burden some with a charge of this sort and not all. For comparative purposes, the spreading of the loss over several periods will tend to obscure the true state of operations for those periods, although that is largely a matter of the way in which results are presented. The situation is relentless, however. If it is desired to recoup the loss in order not to show an impairment of capital, the loss

must be charged in its entirety or piecemeal against profits. If there are no accumulated profits against which it can be charged in its entirety, it must be charged piecemeal against current profits.

Loss Charged to Capital

The third solution suggested that the charge be made directly against capital. Without the limitation as to the policy of recouping the loss mentioned above, this solution may take two somewhat different directions. If a surplus has been accumulated out of previous profits, such surplus constitutes a part of the capital and provides the logical place for setting up the charge. If no surplus is available, the loss must be charged against the capital stock, thus constituting an impairment of it. In either case, the results of the current period's operation are not affected, except in so far as a diminution of the assets may have made necessary a curtailment of operation. Of course, the charge against the capital stock, whether made direct to the account or carried in a separate account, does not automatically bring about a reduction of the capital stock; that can be accomplished only by legal process and is often shunned because of the difficulties incident thereto and also because of a possible reflection on the concern's credit occasioned thereby. The charge does indicate a reduction in the value of the shares outstanding. Since there is no compulsion in law and there may be no need from a business standpoint that the loss be recouped, undoubtedly this third method offers the best solution both practically and theoretically.

That this is so is brought out clearly by H. R. Hatfield's almost classic illustration:* "An individual's entire income is derived from ten houses each worth $10,000 and each yielding 10 per cent net income. If two of these houses burn down, uninsured, the common sense view is that the

* In "Modern Accounting."

proprietor's income is thereby cut down from $10,000 to $8,000 per annum, and that coincidentally, there is a loss of capital of $20,000. It never occurs to him that he must consider his income as entirely cut off for two years until the principal can be restored. Similarly it might be an act of cruelty to dependent stockholders to stop dividends entirely until an exceptional loss is reimbursed. The main difficulty is that in a corporation such an occurrence really calls for a reduction of the nominal capital, a cancellation of part of the capital stock. . . . The criticism properly to be made is not so much that dividends are paid before restoring the capital . . . . but rather that the capital stock has not been reduced to correspond with the amount of remaining assets, before the dividend is paid."

It should be stated that this criticism is of little real weight if the balance sheet shows the true condition of the business. Carrying the loss as a part of the assets, particularly if clothed with a title the meaning of which even a code expert could but lamely guess at, is to be condemned. If, however, the title clearly indicates the nature of the item, the situation is not so bad, although it does reflect the slavery to form which compels some very well-meaning individuals to show impairment of capital on the asset side of the balance sheet for the sake of making it *balance*. The best practice compels the showing of impairment items as direct deductions from capital. The carrying value of the asset destroyed must, of course, be reduced to accord with the facts of present value, and, if there is no surplus available, the amount of the loss should be shown as a deduction from the capital stock outstanding, short-extended, with the present capital full-extended, somewhat as follows:

Capital Stock Outstanding.......	$1,000,000.00	
Fire and Earthquake Loss resulting in impairment..............	250,000.00	
Net Capital available for the business..........		$750,000.00

Profit on Work in Progress

A second problem to be solved in the determination of profits is concerned with the allowance or non-allowance of profit on work in progress but not completed. Most manufacturing and contracting concerns have at all times a more or less constant volume of work in various stages of completion. At the close of the fiscal period when results are summarized, the proper treatment of this uncompleted work is an important matter. The general principles governing the valuation of this work were discussed in Chapter XIII where it was pointed out that in the main conservative business policy demands that work in progress be included in the inventory at full cost, which is to include both prime cost and an equitable share of burden accrued to date. Manifestly this principle precludes the taking of any profit, the theory being that there is no profit until goods are sold. A full discussion of the subject requires separate consideration of work which is being done on order or contract and work for the concern's own stock-in-trade, due weight being given always as to whether the unit of work is large or small.

Goods Made for Stock but not Sold

The general principle mentioned above must usually be applied to the valuation of the concern's own stock-in-trade in process of manufacture. Here sales are being made constantly from finished stock and manufacture replenishes the stock. But the essential step before profits can be claimed, viz., making the sale, usually comes after the process of manufacture and not before. It may sometimes happen that stock is sold out ahead of its manufacture, because the factory is not able to keep up with sales. It is not intended here to include the case in which it is the custom of the trade to sell goods in advance of their manufacture and regulate the operation of the factory to turning

out the advance orders booked. This will be considered later. The discussion here concerns those firms which usually keep their finished stock well ahead of sales but because of the exigencies of the market find themselves behind their sales. Such a situation is sometimes called a sellers' market. If purchasers contract for goods with full knowledge of factory conditions, such sales are in the nature of work on contract and might in unusual instances be so treated. Usually, however, conservative management requires that no profits be taken under such circumstances.

Goods Made to Order

Where the factory works only on order, conditions as to profit-taking are somewhat changed. Here, the sale has already been made for delivery of the product at some future time, named or left indefinite. While, of course, cancellation of the order is always possible before date of delivery and acceptance, inasmuch as here we have under consideration a special product made to individual specifications and not a stock or standardized article, cancellation of the contract is not probable without incurrence of damages or even being held to specific performance. Under these circumstances it is apparent that, within reasonable limits, a portion of the profit may be taken up in the current period, which has, of course, done a portion of the work and therefore earned a portion of the profit, if there is one. This last contingency is, of course, the crux of the whole problem. If a portion of the profit is taken, this necessitates a predetermination of profit on the whole contract, an estimate of the portion of the contract completed, and adequate provision for unforeseen difficulties in completing the work. Where conditions are such that these things can be done with any degree of certainty, there is not only no objection to taking up a portion of the profit for the current period,

but it is the only way in which profits may be allocated to the period earning them and so stabilized somewhat as between periods. As has been said already a number of times, the summary of results at the close of regular periods is in many cases based on *estimate*, which in the final analysis is merely the expression of an opinion. If the estimates are made with due care, in the light of all available information and probable contingencies, and without intent to deceive or defraud, more than that cannot be asked of any concern.

The practical application of this principle requires consideration. In some few cases the volume of product passing through the factory will be fairly constant as between periods. Where this is so—and frequent tests should be made to establish it—it would be a useless expenditure of effort to make the estimates necessary for determining profits on uncompleted work. The same situation is met with also in concerns where the unit of work is small. Here the effort entailed in making the estimate is more than offset by any advantage gained thereby. If the product is somewhat standardized, it may be possible as a result of past experience to make a rough estimate on the basis of the *volume* of work in progress instead of by means of an examination of the conditions of each contract. Such a policy is fraught with many pitfalls and, as a usual thing, does not commend itself to conservative management; speculative conditions are too many.

Profits on Long-Term Contracts

Where the unit of work is large, conditions are somewhat different, however. The necessary estimates are not based on so many uncertainties, and, oftentimes, financial considerations and an equitable treatment of stockholders demand the determination of profits on work in progress. Thus, one contract extending over a number of years may occupy

the entire attention and facilities of a concern. To withhold profits if earned, until the completion of the contract might work a real injustice. Such contracts are usually financed by means of periodic payments on account, based on a careful estimate by the supervising engineer or architect of the portion completed on such dates. As these estimates are sufficiently accurate on which to base payment of contract price, they can be allowed to serve as the basis for a determination of profits after liberal reserves for contingencies are made.

The nature and terms of the contract itself will usually indicate the method of estimating the profit. If the price agreed upon is for the contract as a whole, then extraordinary care must be exercised in estimating the portion completed and almost a seer's prevision of the requirements to complete is needed. If, on the other hand, the contract is broken into smaller units on which price is based and there is no guarantee as to the number of units in the contract, profit may be taken on the number of units completed. Thus, a contract calling for excavation of earth or other material may be taken at a named price per cubic yard. The building of a canal, the driving of a tunnel, the construction of a dam and reservoir, are frequently handled on this or a similar basis. So, also, the use of a concern's equipment and organization on a per diem basis. Under these conditions each fiscal period can safely take its profits or losses with little regard for the uncompleted portion of the work. Contracts taken on a so-called "cost plus" basis, i.e., at cost plus a definitely agreed upon per cent of profit, may have their profits determined without consideration of the uncompleted portion.

Profit on Goods Awaiting Delivery

Similar to the problem of profits on work in progress is that of profits on goods awaiting delivery. The goods

have been sold, are completed, and may even be prepared for shipment. All that remains is delivery and that cannot be effected until the date agreed upon. In some lines of trade this method of sale is a time-honored and even necessary custom. The practice is found in some kinds of clothing industries, woolen manufactures, farm implements, etc. Here because the product is a standard product, cancellations take place and are usually allowed right up to, and in some instances beyond, the date of shipment. Because of this trade practice, profits should never be taken until delivery has been effected. To a similar or even greater extent than with work in progress, costs and expenses are under this principle incurred and charged in one period and the profit is taken in another period which is not thus charged with the cost of getting the income.

Two methods of handling the difficulty are met. The one operates on the expectation that the volume of such orders awaiting delivery is fairly constant as between periods; hence, the income from goods of this sort delivered during the current period is charged with the costs and expenses of goods to be delivered in future periods. This is the rule-of-thumb method to be used where accurate allocation of costs is neither necessary nor justified by results.

The other and more accurate method consists of deferring the costs and expenses properly applicable to the deferred income. But the difficulty of determining just what expenses are so applicable often causes this method to break down, giving less accurate and dependable results than the first. The roseate optimism of the average proprietor or manager as to his own business almost always results in a too liberal estimate of the portion of expense to be applied against the deferred income. In treating this problem of profits in connection with contracts and the length of the cost period (Chapter XIII), the principle was stated that such goods should be included in the inventory at cost.

This results in deferring the main item of cost, but omitting the further costs of selling and administration which belong to all sales effort made and to the progress of the order up to the point of delivery. While theoretically these should be deferred, practically the estimate of the amount to be deferred should lean on the side of too little rather than too much. Where, as stated above, the volume of this kind of trade is fairly constant, the rule-of-thumb method first stated gives more satisfactory and safer results.

Interdepartment Profits

The problem of interdepartment profits was stated and discussed briefly in Chapter XIII, page 233, and will later be treated in another connection (see page 607 following). Here, it may be repeated that while such profits are not to be allowed because they are not yet realized, they may, under exceptional circumstances, be estimated and shown if offset by reserves of an exactly equal amount.

Profits Due to Appreciation of Assets

The problem of profits due to appreciation of assets, both fixed and current, has also been handled in the chapters on valuing the various assets. All that need be said here is that such profits are not realized until the asset is sold. While for purposes of credit it may be wise and proper to show the true valuation of the assets, for the purpose of profits, particularly profits available for dividends, such appreciation in values must not be taken into account. It should be remembered that appreciating the value of fixed assets frequently results in the necessity of meeting higher depreciation charges and is thus not an unalloyed gain. The payment of dividends based on such profits would, without taking profits from other sources into consideration, always result in the diminution of the fund of working capital.

Capital Profits

There remains a final problem, viz., that of capital profits, which is more a question of their disposition than determination. When any of the fixed assets are sold, the profits, if any, are classed as capital profits. These are as legitimate as those arising from sale of stock-in-trade or other source, and belong to the owners. The question of their disposition hinges mostly on practical considerations. If the sale is for cash, funds are available for distribution without encroaching upon the working capital. If not for cash, payment of dividends based on such profits might seriously diminish working capital. The question as to whether capital profits should ever be distributed is, of course, a mooted one. Many well-known cases of such distribution—the so-called cutting of juicy melons—are on record. Conditions seem to justify their payment at times, and under other equally impelling conditions distribution of them should not be made. As a general policy it is always safe to set aside such profits in a special reserve to be used to care for capital losses. If the company is well provided with such reserves beyond any reasonable doubt, it is oftentimes unwise and unjust to withhold their distribution. Of a similar nature and to be handled under like considerations are the profits arising from sale of capital stock at a premium, the reissue of forfeited stock, etc.

In concluding this subject no better summarization of the accounting principles and practical considerations to govern in the determination of profits can be given than the following from A. Lowes Dickinson:*

"1. All waste, both of fixed and circulating assets, incident to the process of earning profits by the conversion of circulating assets must be made good out of the profits earned.

* In "Accounting Practice and Procedure."

"2. Profits realized on sales of fixed assets should be first applied to make good estimated depreciation (if any) in other fixed assets not resulting from the ordinary conduct of the business. If there is no such depreciation, such profits may be distributed as dividends, but should be distinguished from the operating profits.

"3. A sufficient surplus should be accumulated (in addition to the provisions required to maintain wasting capital assets) for the purpose of making good losses due to shrinkage in values of fixed assets arising from causes other than the ordinary operations of the company. This provision must, however, be considered more a question of policy than a requirement of sound accounting."

CHAPTER XXIII

SURPLUS AND RESERVES

Definition

Under the corporate form of organization, "surplus" in its broadest sense represents the difference between the net worth of the business and the capital stock issued and outstanding. Because of the legal requirement that the value of the capital stock be shown always at the original amount—which is usually par—any increments or decrements in value because of profits or losses made and reinvested in the enterprise must be shown under separate heads. Thus surplus—or deficit—is the general term to indicate this increase in value. In England the term "rest" is used in almost this same sense. "Margin" is also a title occasionally seen.

Because of a much narrower technical meaning given to surplus, the general adoption of another term with the broader connotation above given would serve a really useful purpose. Of the titles in use, margin seems best to express the exact shade of meaning. In the interest of a standard terminology, the highest accounting authorities are coming to restrict surplus to that portion of the margin available for dividends and in that sense the word will be used in this chapter. Contrary uses of the word are frequently met. In banking institutions the surplus is almost as inviolable as the capital stock itself and is never used for dividend purposes. In government-controlled or supervised institutions, these special uses of the term have become too well established by law and custom ever to hope for a change in the interest of general uniformity.

Creation of Margin

The sources of the margin have for the most part been already indicated. The chief source is the net profit for the period as determined by the Profit and Loss account balance. What enters into that balance has been discussed in Chapter XXII, where it was also pointed out that under some circumstances it may be entirely legitimate to carry some temporary proprietorship items directly to a vested proprietorship account instead of by way of the summary account. Thus there may be other sources of margin than the current balance of Profit and Loss—extraordinary items whose inclusion with current summaries of operation would render those summaries useless as a guide for judging comparative results of various periods.

Capital Stock Premiums. Sometimes, for the purpose of creating a margin at the inception of an enterprise a fund is contributed beyond the par value of the capital stock issued. This is accomplished by purchase of the stock at a premium, and is frequently seen in banking institutions, where it serves as an easy and speedy way to satisfy the law's requirements for the accumulation of a "surplus." The effect of this is to give the institution a better standing than it would otherwise have. The reduction of the capital stock outstanding without full recompense to the stockholder also results in the creation of margin. This is often done in reorganizations when fewer shares of the new stock are given than were held of the old. The effect, then, is to set up a book profit against which may be charged the existing deficit, and so secure a balance between the real net worth and the par of the new stock issue.

Stock Donation. Another source of margin is a stock donation. This may result in only a book profit. It is exceedingly difficult and generally impossible to determine the true value of many speculative ventures, such as mining enterprises. As a general rule, capitalization based on

opinion is usually overcapitalization. While a stock donation may have no relation to real values and is merely a method of securing working capital, its effect when the stock is sold is to increase the cash asset and show a profit of an equal amount. Some authorities hold that instead of retaining the profit on the books, the logical thing is to reduce the carrying values of the speculative assets by the amount of the realized profit on stock donation. There would be more reason for this treatment were there any real relationship between the amount of the stock donation and the overvaluation of the assets. Since usually there is none and the whole undertaking is speculative, there is no valid objection to showing the realized profit, as the public is sufficiently warned by the nature of the enterprise. All stock donation is not of this sort, however. Occasionally a very real profit results which should be treated as a margin item.

Stock Assessments, etc. Similar to a stock donation is a stock assessment. In cases of reorganization or of impending bankruptcy, a pro rata assessment is levied on the outstanding shares. Being a donation, it constitutes a proprietorship increase item and becomes a part of the margin. This method is frequently used for the purpose of wiping out a deficit, an impairment of capital, and is, of course, a *real* profit as distinguished from a *book* profit. Similarly, additional payments made by common shareholders to convert their holdings into preferred shares are a realized profit and should be recorded as part of the margin.

Capital Profits and Bonuses. Capital profits, as discussed in Chapter XXII, have their proper place of record direct into some margin account rather than by way of the current Profit and Loss. Donations from the outside, such as factory sites and other bonuses, sometimes given to induce enterprises to locate in certain places, must also be

treated as entries direct to a margin account. These and other like items constitute the chief sources of the margin.

Disposition of Profits

The statement of profit and loss carries the summary of operations to the point of showing a net profit or a loss for the period. The next step for consideration is the disposition made of these profits. This is sometimes spoken of as the appropriation of profits. Two practices are met at this point. Under the one, appropriation is made directly from Profit and Loss for all desired purposes. Any unappropriated balance goes into Surplus account, which will represent the balance of profits available for dividends but not used. Under the other, the Profit and Loss balance is transferred to Surplus out of which all appropriations are made, the residue remaining therein showing the same condition as under the first method. Where this second method is followed—and it is more prevalent than the first—a statement of surplus is needed for full information of the period's transactions, thus providing a connecting link between the statement of profit and loss and the balance sheet. The form of this statement is given on page 426.

Reserves

From the point of view of the stockholder's immediate interest, the appropriation of profits for dividends is his chief concern. Other and equally vital and urgent uses are found for profits in any well-managed concern with an expanding outlook towards the future. The appropriations of these profits to definite uses are very generally carried under the title of reserves with suitable descriptive phrases. Thus we may have a Sinking Fund Reserve, an Insurance Reserve, a Building Fund Reserve. Sometimes these are called "reserve funds" but the demands of an accurate nomenclature limit the use of "fund" to an asset account.

The title "undivided profits" is also met. Where careful differentiation is made, "surplus" should be used to denote profits available for dividends; "reserve," for profits set aside for a specific purpose; and "undivided profits," for those on which no definite action has been taken.

Different Meanings of Reserve

Because of the loose way in which the term reserve is used by the layman and its different uses by the professional accountant, an examination of these uses will be made at this point. As a distinctive banking term, "reserve" is used to indicate the amount of cash and cash items on hand and on deposit which under the law may be counted as a cash reserve fund held against deposits and note issues. This use of "reserve" is limited strictly to financial institutions.

We find also various so-called reserves shown on the commercial balance sheet, both among the liabilities and the assets. As deductions from the assets are the various depreciation reserves and reserves for bad and doubtful accounts and notes receivable. These items are "offsets" to the carrying values of the assets in order to effect a true valuation of them. For reasons previously set forth, these offsets are carried in accounts separate from their corresponding assets. Thus they are in the nature of suspended credits to asset accounts and, if properly estimated, are in no sense related to profits; nor have they any of the elements of profits or proprietorship in them. It is unfortunate that there is lacking an adequate title, other than reserve, for this group of items. The terms "allowance" and "estimate" have been suggested, but so far have not found general favor. This group of reserves are called valuation reserves.

Reserve for Bad Debts

A fine distinction is sometimes drawn between the reserve for depreciation and the reserve for doubtful accounts, on

the ground that at the time of the creation of the reserve in the one case, the depreciation is an accomplished fact, all that is then required being a fair estimate of it; whereas in the other case no *particular* account is known to be uncollectible, business experience teaching, however, that in the aggregate there will be some loss from this source. The purpose of this reserve is to bring about as on a given date an appraisal of the claims against customers in the light of past experience, and so apply the expense due to this cause to the period in which the sale transaction took place. This purpose is not always accurately accomplished but the estimate at the close of each period does effect an equalizing of the bad debts expense from year to year. This distinction makes the reserve for doubtful accounts closely approximate to a contingent reserve, as will be seen later. It seems best, however, to hold to the original classification and include the bad debts reserve with the other valuation reserves.

Under- and Over-Estimate of Reserves

Inasmuch as these reserves must from the nature of things always be estimates, the probability exists of an under- or over-estimate. It is apparent that an underestimate effects an inflation of profits due to an overvaluation of the assets. Equally apparent is it that an overestimate brings about an understatement of profits due to an undervaluation of the assets. The effect of this is to make the valuation reserve account a mixed account. Instead of its content being solely a suspended credit to an asset, it includes also a true reserve of profits. If at any time the facts indicate a too liberal or too parsimonious estimate in the past, adjustment should be made to accord with the newly determined facts of experience. An immediate adjustment is usually preferable to a gradual one effected by an allowance below or above the new basis determined for the estimate.

Depletion Reserves

Similar to the depreciation reserve is the depletion reserve. On the basis of the value at which the wasting or depleting asset was originally brought upon the books, a periodic estimate of the portion used up in operation is necessary to show the true present value of the asset. Thus, timber and mining properties require for their periodic appraisal an estimate of the extent of exhaustion of the natural product. This is neither required by law nor always by business policy. But when the estimate is made it is in the nature of a valuation reserve and will be so classed here.

Operating Reserves for Accrued Costs

Another group of items, frequently carried under the title reserves, includes estimates of expenses the exact amount of which is not known at the time of closing the books, and sometimes those of which the exact amount is known but which are unpaid as on that date. Among the first are such items as taxes, sales discounts, and the like. Among the second are wages, salaries, rents, etc., accrued. These two classes are together sometimes called "operating reserves."

There is some difference of opinion with regard to the proper allocation of taxes and estimated sales discounts. Inasmuch as taxes are not usually determined, or at least payable, during the period covered by them, there is a temptation to defer their incidence to a later period. If the taxes become a claim of the state against the property as on a given date, certainly they should be treated as applicable to the period covered by the claim even though the amount of them cannot with accuracy be determined.

With regard to sales discount, the situation is somewhat analogous. At the close of any fiscal period, some of the open claims against customers are by the sales contract

subject to discount, and experience proves that some of these discounts will be taken advantage of. Here also, difference of opinion prevails as to the proper allocation of the expense. Should the period in which the sale is made suffer the loss, or should it be charged to the one in which the discount is taken? If sales discount is looked upon either as a direct deduction from sales or as a selling expense, certainly it should be charged to the period making the sale. On the other hand, if it is regarded as an item of financial management, a means of securing ready funds, it is sometimes argued (though this is not the usual point of view) that the period enjoying the benefit should also be charged with the expense of securing the benefit. Against this argument it may be pointed out that the current period carrying the customers' accounts which are subject to discount fails to show its liability, based on the sales agreement, to accept something less than the face amount of the claims. A balance sheet in which no suitable provision is made therefor is one which does not reflect the true status of all items, and to that extent is not a good balance sheet. Provision should be made not only for those expenses which are known to have been incurred and which remain unpaid, but also for those which the statistics of experience show will have to be met. Conservative practice, therefore, requires the inclusion of this estimate and applies it as an expense of the period in which the originating transaction took place. All the costs of the contract entered into, of which expected sales discount is one, are made to apply to the period giving rise to the contract.

Collection Costs not under Contract

The above argument is occasionally made use of in support of the inclusion of expected collection costs on claims against customers outstanding at the close of a period. From a theoretical aspect the point may be argued, but,

unlike the item of sales discount, these are not costs which the concern is liable for *under contract.* From a practical standpoint, except under very unusual conditions, it is an undesirable refinement of the principle of allocation of costs as between periods. Where a collection department is maintained, costs of collection are practically uniform from period to period and are best considered as expenses of the period in which the cost is incurred.

Sales Discounts on the Balance Sheet

As to the manner of showing expected sales discounts on the balance sheet, practice is not uniform. It is sometimes shown added to the reserve for doubtful accounts and the sum of the two deducted from claims against customers, indicating thus the amount which it is expected can be realized therefrom. Others show it among the liabilities, on the ground that it differs from the estimate for bad debts in that it is an expense for which the concern has made itself liable under its sales contract. The distinction is finely drawn but probably well taken.

Distinction between Reserves and Accrued Items

The use of the title reserve for some of the items included as operating reserves is unfortunate and leads to confusion both in terminology and in understanding. Why unpaid expenses of any kind should be called reserves for expenses when the amount of them is definitely known has never been satisfactorily explained; yet the practice is sometimes met. There is some excuse in the case of expense items the amount of which cannot be definitely determined either from the nature of the item itself or other conditions over which the concern has no control. Thus, "Reserve for Wages" is usually a misnomer, the title "Wages Accrued" showing the item correctly; but "Reserve for Taxes," while just as true a liability as the other item, may be justified

on the ground that the latter is only an estimate subject to correction when the exact amount is known, whereas the former is already definitely known.

Contingent Reserves

So-called contingent reserves are sometimes handled as a part of this group, although best classified by themselves. A contingent reserve is one which represents an effort to provide for certain contingencies, such as guarantees on work done or products sold, lawsuits pending adjudication, etc. As R. H. Montgomery* so pertinently says: "the reserve should be based on evidence more tangible than a mere desire to be conservative. A vague feeling that something might have been overlooked which would decrease the assets or increase the liabilities is not the proper subject for a reserve. Conservative management 'reserves' part of its surplus for such contingencies, but it appears as surplus and not as a liability." As mentioned above, sometimes the reserve for bad debts is classed as a contingent reserve. Contingency is inherent in the item but the certainty of its occurrence cannot be reasoned away. The use of contingent reserves may therefore well be limited to provision against contingent liabilities. In other words, they represent the best available estimate of the amount of such liabilities. To draw a dividing line between operating and contingent reserves is extremely difficult; both are created by charges to various expense accounts. It is merely a matter of degree as to the certainty of the events' happening for which provision is being made. On the border line between the two are such items as reserves for insurance where the concern carries its own insurance and must make a periodic expense charge in lieu of the usual premiums; reserves for pensions where a pension policy is in effect, the charge creating it being here viewed as a part of the wages

* In "Auditing, Theory and Practice."

expense—the share of wages to be paid in the future which must be borne by the current period; reserves for sick benefits, which are in all respects similar to pension reserves; and so on. In some cases reserves for supersession of patents, or other assets whose length of service life is dependent on extreme contingency, are classed with this group.

Deferred Income—Misuse of Term

Deferred income is sometimes classed as a reserve. Thus, insurance companies carry the portion of their unearned premiums as on a given date, as a reserve. The use of the title is well established in that connection and the nature of the items is well understood. On commercial balance sheets where no outside authority can give a definite meaning to the term, its use for deferred income is to be deprecated and discouraged. Deferred income is a liability and not a reserve; the current period has not rendered the service to earn the income and is liable to the period in which the service is rendered.

Proprietorship Reserves

This disposes of all the asset and liability reserves and leaves for consideration the true profits or proprietorship reserves. As between these two main classes of reserves, as their titles indicate, the proper allocation of the one is among the assets or liabilities, while the other must be shown as a part of the net worth of the corporation. As to the nature of proprietorship reserves little more need be said. There are just two classes of items met here, viz., those shown as such openly on the balance sheet and those which are hidden or secret, latent among the various other items on the balance sheet. Proprietorship reserves represent profits reinvested in the business. Any profits, operating or capital, not paid out as dividends give rise to proprietorship reserves.

Secret Reserves

So-called secret reserves are brought about in various ways. Their creation may be intentional or accidental, but their source is the same in either case. Reserves of profits may be hidden either by undervaluation of the assets or overvaluation of the liabilities. Undervaluation of the assets may point to an ultra-conservative policy of management. Thus, some concerns write off the value of their fixed equipment of various kinds as rapidly as the net profits can absorb it and still leave sufficient for a reasonable dividend. Financial institutions in this way carry their furniture and fixtures and sometimes even banking houses, at ridiculously low figures or do not show them at all.

Undervaluations are accomplished in various ways. Charging an excessive rate of depreciation; making unnecessarily large reserves for uncollectible accounts, sales discounts, etc.; showing a more rapid depletion of natural assets than justified by the amounts used; charging the sums spent for assets to an operating expense; setting up an excessive cost of goods sold by means of inventory valuations of stock-in-trade at a figure lower than cost or market; crediting items of income to asset accounts instead of to income accounts, such as rentals on properties owned; crediting interest and dividends received to the stocks and bonds accounts—all of these serve the purpose of creating hidden reserves by means of a misstatement of fact.

Items wrongfully included among the liabilities bring about the same result. Here, however, the procedure is somewhat more patent because the creditors themselves check up on all actual liabilities. Liabilities can be settled only by an actual reduction of assets. Manipulation of the operating and contingent reserves explained above offers, however, an easy means of overvaluing the liabilities. A too liberal estimate of the amounts of these reserves makes them represent in part true proprietorship reserves but the pro-

prietorship element in them is obscured by their title and their inclusion among the liabilities on the balance sheet.

It is, of course, apparent that no balance sheet containing secret reserves is a true statement of condition and the practice of creating secret reserves must usually—perhaps always—be condemned.

Argument for Secret Reserve

In justification of the secret reserve, it is sometimes said that in certain lines of business where the maintenance of unquestioned credit or the promotion of a stability ordinarily lacking in speculative enterprises is highly desirable, there is a very pressing need for the secret reserve. Through its use, extraordinary losses, which otherwise would result in very unfavorable fluctuations of stock values, may be absorbed by means of a charge to some undervalued asset and so bring it to its true value; or by a charge against an overestimated liability reserve and so bring it to a true showing. This frees the current profit and loss from the charge, maintains a regularity of net profits, and prevents the disasters sometimes attendant upon violent fluctuations of stock values brought about by the knowledge of these extraordinary losses. That is the strongest case which can be made out in favor of the secret reserve.

Argument against Secret Reserve

The fact, however, must not be overlooked that without any understatement or misrepresentation of property values at any time there could just as easily be created an open "surplus" or margin of an amount equal to the secret reserve, against which these losses could as well be charged. The creation of such a margin can be justified on the same grounds on which the justification of the secret reserve is attempted, viz., the maintenance of high credit and stability. The reduction of the margin through its absorption of the

loss would, of course, be somewhat more patent than the reappearance of values previously written off, although analysis of a balance sheet will invariably bring the true state of affairs to light. Furthermore, present stockholders, and certainly prospective investors and creditors, have a right to know the true condition of affairs. The appearance of a large proprietorship in addition to capital stock, revealed by a sizable margin, gives the stock a value in addition to that based solely on the dividend rate. A stockholder has a right to his share of the profits during the period of his ownership. If it is not received in the form of dividends, he should at least be partially recompensed when he disposes of his holdings, by an increased price for the stock as reflected by the portion of profits reinvested in the business.

The attitude occasionally taken that directors know best what information as to true condition of affairs should be given to the owners and what should be withheld, should, in these days of increasing publicity, be given no serious consideration. In the hands of unscrupulous directors, the secret reserve is an instrument for the covering up of questionable and even fraudulent practices. Stock values can be intentionally hammered down by a false showing of profits and so inure to the benefit of a group of prospective purchasers desiring to "freeze out" unsuspecting stockholders. All in all, therefore, little can be said in justification, but much in condemnation, of the practice of accumulating secret reserves.

Earmarking of Reserves

According to the definition of surplus laid down in the beginning of this chapter, limiting the term strictly to the profits available for dividends, those profits which are applied to reinvestment for specific purposes must be separated from the "surplus" and given distinguishing marks to indicate their purpose. Thus, profits reserved for the

purpose of acquiring a fund of assets out of which to pay off debt obligations maturing in the future may be set aside under the title "Sinking Fund Reserve"; those set aside for the purpose of extension of plant as "Building Fund Reserve"; those for the purpose of providing a pension fund as "Pension Fund Reserve"; and so on. This is sometimes called "earmarking" the reserve.

Separation into differently named reserves serves no other purpose, however; it does not in any way insure the inviolability of the reserve; it acts merely as evidence of the intention and purpose of the board of directors which authorized the application of profits to that purpose. It is the expression of a business policy and as such is, without other compelling force, subject to the approval and continuance or to the disapproval and nullification of any subsequent board. These reserves are profits and as such belong to the shareholders and may be distributed among them as dividends. A reasonably conservative policy as to reserves usually has the support of stockholders, and a subsequent board will not risk loss of position and standing with the stockholders by a change of policy as to reserves without good and sufficient reasons for doing so.

Continuity of Reserve Policy

Effort is sometimes made to secure continuity of the reserve policy. This may be accomplished in several ways. Oftentimes it is made compulsory by outside regulatory authority, as in the case of national banks which are required to set aside annually a certain part of their profits until these have accumulated to an amount equal to 20% of their capital stock. Similar conservatism can also be compelled by contract entered into with creditors. It is a frequent provision of the trust agreement covering an issue of bonds that "there shall be set aside out of profits" a certain amount at the close of each fiscal period for the

purpose of creating a fund with which to redeem the bond issue when it falls due. The funds may be placed in the hands of a trustee, which guarantees the application of them to their intended use but does not, of course, insure the retention of profits to an equal amount in the business. Finally boards of directors may be compelled by the stockholders to adhere to a certain policy by provision in the by-laws for the accumulation of reserves. This policy is, of course, subject to change by the stockholders themselves. Where the power to make and change by-laws is put in the hands of the directors, this last method is not applicable.

Reserves may always be made a part of the permanent capital through their distribution in the form of a stock dividend. This secures the continuance of profits reserved to date but does not guarantee either a similar application of future reserves or even a continuance of the present reserve policy.

Covered Reserves

When a reserve is spoken of as being covered, it is meant that specific funds have been set aside for the purpose named, in amount equal to the reserve. As in the case of sinking funds, the assets set aside may be invested in stocks and bonds control of which remains with the company itself; or the assets may be turned over to a trustee who then has control of their investment and use. The student is referred to Chapter XXV on sinking funds for a full discussion of the merits and disadvantages of the two methods as to control over the funds.

In connection with covered reserves, attention is called again to the use, in the interest of standard practice, of the caption "reserve fund" as a suitable title for the assets placed in the fund, and the caption "reserve," with suitable descriptive phrase, as the title for the reserved profits, the proprietorship element of the transaction.

Classification of Reserves

Before leaving the subject of reserves, it is purposed to give several classifications of the various kinds of reserves. Paul-Joseph Esquerré* classifies reserves under the following heads: (1) Reserves for Depreciation; (2) Operating Reserves; (3) Reserves for Surplus Contingencies; (4) Reserves for Redemption of Debt; (5) Secret Reserves; and (6) Reserves for Exhaustion of Physical Assets. Their titles well indicate the kinds of items included under each head.

H. R. Hatfield† classifies them on the basis of the use to which they are to be put, not attempting a classification to include all items shown on the balance sheet under the caption of a "reserve," but limiting it to reserves of profits. His classes are:

"1. Reserves created to provide a permanent increase of capital.
   (a) As an additional guaranty to creditors.
   (b) To provide for extension of its fixed or other capital assets.
2. Reserves created to provide an additional capital which can be used to cover unusual losses or to provide for other emergencies without encroaching on the nominal capital.
3. Reserves created to provide for equalizing dividends by retaining part of one year's profit to be used to make up scanty profits for other years."

The classification used here has as its basis the place of allocation of the various reserves in the balance sheet because their nature determines their place, which after all is the important consideration. From that point of view two broad classes may be marked off as discussed in the preceding pages, viz.: (1) valuation reserves, using the term with

* In "Applied Theory of Accounts."
† In "Modern Accounting."

a somewhat more extended meaning than is customary; and (2) proprietorship reserves. Under valuation reserves will be included all reserves shown either as deductions from the assets or as liabilities. Here the term reserve will be limited to those items which are estimated, as distinguished from those the amount of which is definitely known. The other items which are sometimes wrongly called reserves, as discussed on page 415, will not be included here, other titles being more accurately descriptive of them.

1. Valuation Reserves
   - (a) Asset Valuation Reserves
     1. Depreciation Reserves
     2. Depletion Reserves
     3. Bad Debts Reserves
     4. Appreciation Reserves
     5. Market Fluctuations Reserves, etc.
   - (b) Liability Valuation Reserves
     1. Operating Reserves
     2. Contingent Reserves
2. Proprietorship Reserves
   - (a) Secret Reserves
   - (b) Open Reserves
     1. Reserves for Debt Extinguishment
     2. Reserves for Plant Extensions
     3. Reserves for Working Capital, etc.

Legitimate Use of Surplus Account

There remains only a consideration of the Surplus account. The manner of handling the surplus as a clearing account for the appropriation of net profits has already been treated. After profits have been appropriated or reserved out of it for specific purposes, the surplus shows by its balance the portion still available for dividends. As has been indicated, it is not usually desirable to use all of it for

dividends, a sufficiently large balance being always maintained for such purposes as stabilizing the dividend policy, strengthening credit, and other surplus contingencies.

Surplus account is frequently as badly abused as the proverbial "general" expense account, by being used as a dumping ground. It has, however, a legitimate and an illegitimate use. As the Profit and Loss account is strictly limited to use as a clearing account for the normal items of income and expense applicable to the current period's operations, manifestly all other charges and credits to proprietorship must be cared for elsewhere. With very few exceptions—such as premiums and discounts on capital stock, donated working capital, etc.—these charges and credits are made to Surplus. High accounting authority deprecates the use of Surplus for these purposes, on the ground that too often it is used as a convenient place in which to hide items properly chargeable to the current Profit and Loss but which would not make a favorable impression if shown there. Just as with many other abused accounts, its wrongful use hardly constitutes sufficient grounds for withholding sanction of legitimate use. Where it is felt that certain items should not go directly into Surplus they should be recorded in a final section of the Profit and Loss account, just before its balance is shown transferred to Surplus. As the financial statements are usually published, this method secures more certain publicity to these items.

Occasionally, instead of the use of either Profit and Loss or Surplus for this purpose, an account is set up on the books called "Surplus Adjustments" through which these items are cleared into Surplus. The objection raised above to this use of Surplus applies with equal force to "Surplus Adjustment."

Statement of Surplus

At the close of each period account must usually be taken of a group of items which cannot properly be treated

as belonging to that period. Some of these may be items which were overlooked at the close of previous fiscal periods and cannot now be taken into the record for that period. Some things may wrongfully have been included in, or omitted from, the inventory; the inventory may have been under- or over-valued; errors may have been made in the separation of capital from revenue expenditures; wrong depreciation and bad debts estimates may have been made—these and similar items call for adjustment at the close of the current period. Where adjustments are few and simple, the statement of surplus on the balance sheet may be extended sufficiently to include them. Much better, however, is it to append as a schedule or statement in support of the balance sheet, a statement of surplus, showing therein the detail of all entries affecting it during and at the close of the current period. Particularly is this desirable when the statements of financial condition are prepared for internal use.

Such a statement of surplus should start with the amount of surplus as at the close of the previous period. Then the adjustments applicable to that period should be shown, thus determining the true surplus for the period. Following that should appear the entries made directly to Surplus for the current period, the net profit transferred thereto, and finally all appropriations of profit, leaving as the balance of Surplus the same amount which appears in the balance sheet. In skeleton form the statement should appear somewhat as follows:

X Y Z COMPANY

STATEMENT OF SURPLUS, JUNE 30, 1918

Balance of Surplus as on December 31, 1917..............		$.....
Adjustments applicable to period ending December 31, 1917:		
Additions:		
Inventory omissions, undervaluations, etc....	$.....	
Items wrongly charged to Revenue.........	.....	
Overestimate of Depreciation, etc...........	.....	$.....

Deductions:			
Inventory overvaluations, etc.	$.....		
Items wrongly charged to Capital	.....		
Underestimates of Depreciation, etc.	.....	.....	
Net Increase (or Decrease)			.....
True Surplus as on December 31, 1917			$.....
Extraordinary Profits (or Losses) this period		$.....	
Net Profit this period		.....	.....
Amount available for appropriation			$.....
Appropriations of Surplus:			
Reserves (shown in detail)		$.....	
Dividends		.....	.....
Net Balance in Surplus as on June 30, 1918			$.....

CHAPTER XXIV

DIVIDENDS

Introduction

Dividends, as the term is generally used, may be defined as those profits of a corporation which are divided among the owners. Except in the case of wasting assets, the law is very explicit in limiting dividends to profits. Therefore profits need to be determined with painstaking care. Most of the major problems met in the determination of profits were discussed in Chapter XXII. Here it is purposed to limit the discussion to one phase of the disposition of profits, viz., as dividends, having treated in Chapter XXIII other appropriations of profit for reserves and surplus.

Disposition of Corporation Profits

The profits of a solvent going corporation, whether current profits or those reinvested in the business, are owned absolutely by the owners of the corporation and are subject to their disposition and control, except where the law imposes restrictions. Oftentimes, the stockholders themselves impose restrictions by incorporating restrictive provisions in the charter or by-laws of the corporation. Of course, the same power which made them has power to remove them, though the exercise of the amending power is usually more difficult than the original expression of that power in enacting rules. The nature of a corporation is such, however, that many acts and privileges which are *per se* rights of the stockholders must in their exercise be delegated to others. Thus, while the right of ownership and control of the profits of a corporation is inherent in its proprietorship, the control is

indirect—through the medium of a board of directors subject to periodic review and election by the owners. This board, during the period of its incumbency, acts for the stockholders and, during the prosecution of its duties, if performed in good faith, with sound judgment, and without fraudulent intent, is free from interference.

Shareholders' Rights as to Profits

Shareholders' rights in regard to sharing in the profits are therefore dependent upon the action of their elected board of directors. As soon as that board authorizes a dividend, however, its control over the portion of the profits so appropriated ceases except as to the routine of payment of the dividend. The right which the stockholder thereafter possesses is of the same nature as the claim of an outside creditor, and in the event of dissolution the assets of the corporation must be applied to the liquidation of this claim equally with all other unsecured claims. Thus, a claim for dividends must be met before the determination of the net assets with which the ownership of capital stock is liquidated.

Directors' Control over Profits

As stated above with regard to profits generally, the directors have entire control of the declaration of dividends, except where limitation is specifically imposed by the state or by the owners as expressed in charter or by-laws. The following expression of directors' power over profits and dividends, contained in the English Companies (Consolidation) Act of 1908 is typical of most laws covering the question: "The directors may, before recommending any dividend, set aside out of the profits of the company such sums as they think proper as a reserve or reserves which shall, at the discretion of the directors, be applicable for meeting contingencies, or for equalizing dividends, or for any other purpose to which the profits of the company may be properly applied,

and pending such application may, at the like discretion, either be employed in the business of the company or be invested in such investments (other than shares of the company) as the directors may from time to time think fit."

Provisos as to Declaration of Dividends

Specific provision may be made in the by-laws covering the declaration of dividends. Thus, the directors may there be ordered to set aside for specific purposes a certain amount of the profits earned and to declare dividends only from any residue. This may represent a permanent policy but usually only temporary; that is, periodic reservation of profits may continue until a definitely named reserve (or surplus) has been created, after which all profits become free for such disposition as the directors may see fit to make. A somewhat different policy is occasionally prescribed by which the directors are ordered to pay out of each period's profits dividends of a named amount, after which any residue shall be carried to a reserve (or surplus). The objection to this latter policy, as ordered in the by-laws, is that it ties the hands of the directors to the division of profits among the owners regardless of the exigencies of new situations, as they arise, bringing very different conditions from those under which the policy was originally ordered.

The power of the directors as to declaration of dividends extends not only to common stock but also to preferred. No dividends, common or preferred, can be declared except from profits. Legal inhibition of the payment of dividends out of capital is one of the chief points of difference between the corporate and other forms of business organization.

As stated in a preceding section, regulatory bodies and commissions sometimes impose rules compelling corporations over which they have authority to set aside to surplus some portion of the profits before the declaration of any dividend.

Stockholders' Rights to Dividends

Where profits exist, either earned currently or accumulated, the matter of a declaration of dividends is thus seen to be always a question of financial policy. In view of the other problems confronting the corporation—its policy of growth and expansion to meet competition and enter other markets, its specific and pressing requirements for funds—the question of the wisdom of a declaration and payment of dividends frequently demands careful consideration. If under the circumstances, in the exercise of their discretion, the directors do not declare dividends, their action is final and, in the absence of fraud or an abuse of discretion, will not usually be interfered with by the courts.

Courts do sometimes intervene, however, as in Matter of Rogers, 161 N. Y. 108 (1899): "The directors must act in good faith. If they fail to do so and it clearly appears that they have accumulated earnings not required in the prosecution of the business which they withhold from the stockholders for illegitimate purposes, a court of equity may interfere and compel a distribution of such earnings." Again, in Hunter v. Roberts, Throp & Co., 83 Mich. 63 (1890), the court said: "Courts of equity will not interfere in the management of the directors unless it is clearly made to appear that they are guilty of fraud or misappropriation of the corporate funds or refuse to declare a dividend when the corporation has a surplus of net profits which it can, without detriment to its business, divide among its stockholders, and when a refusal to do so would amount to such an abuse of discretion as would constitute a fraud or breach of that good faith which they are bound to exercise towards the stockholders."

In the case of preferred dividends, the courts are somewhat readier to act because of the ease of a fraudulent retention of profits. Where stock is non-cumulative and non-participating and particularly if non-voting, it would be

possible for a board of directors to refuse dividend declarations for a number of years and then pay to common stockholders most of the profits so saved. Such a policy is so manifestly unfair and fraudulent as to warrant immediate intervention of the court. When stock is cumulative as to unpaid dividends, such a policy could not be practiced, as the corporation cannot declare dividends unless profits are made, nor, except as above stated, need it declare dividends even when profits are made. But upon the declaration of a dividend, the rights of cumulative preferred shareholders require the payment of all accumulation of unpaid dividends before the other classes of stockholders can share.

Declaration of Dividends

The matter of a declaration of dividends is usually a formal one. The minute book record must always show the authorization. It may appear as a formal resolution or merely as a statement of the declaration. Such resolution or statement will usually carry the amount of the dividend, which may be either a named per cent on the par value of the stock (or the amount paid up on the stock where stock is not full-paid), or it may be a named amount on each share; the date on which it is effective; the date and manner of payment; and to whom payable, i.e., to the stockholders as of a given date. Dividends may be declared to become effective on some future date but never on a past date. Antedating a dividend so as to make it apply to past stockholders who may no longer have any interest in the corporation would manifestly be unfair, opening the way to manipulation and fraud.

A stockholder is entitled to notice of every dividend declaration. This may come to him by published notice in the newspapers or through the mails. A dividend check mailed to his last-known address has been held to constitute sufficient notice.

Liability of Directors

Together with the power and control over dividends by the directors is a responsibility and liability for those wrongly declared. The law is very specific and emphatic in its refusal to allow dividends except from profits. The State of New York in its Stock Corporation Law has this to say with regard to the liability of directors for making unauthorized dividends: "The directors of a stock corporation shall not make dividends, except from the surplus profits arising from the business of such corporation, nor divide, withdraw, or in any way pay to the stockholders or any of them, any part of the capital of such corporation, or reduce its capital stock, except as authorized by law. In the case of any violation of the provisions of this section, the directors under whose administration the same may have happened, except those who may have caused their dissent therefrom to be entered at large upon the minutes of such directors at the time, or were not present when the same happened, shall jointly and severally be liable to such corporation and to the creditors thereof to the full amount of any loss sustained by such corporation or its creditors respectively by reason of such withdrawal, division, or reduction."*

In some states the liability of directors is made to include, in addition to restitution of the amounts wrongfully paid, liability for all debts contracted during their term of office and even to a body judgment for misdemeanor. The stockholders receiving such a dividend are held to have known of its illegality and are liable for restitution. While payment of dividends out of capital is the most frequent source of illegality, a declaration of dividends contrary to the provisions of the charter or by-laws relative thereto, or a declaration which disregards the rights of other stockholders, is equally illegal. Thus, a dividend paid before reserving profits, where the by-laws require antecedent reservation, or

* Ch. 59 of the Consolidated Laws (Ch. 61, Laws 1909).

one paid to common shareholders ahead of an accumulated dividend to cumulative preferred stockholders, is classed as illegal.

Revocation of Dividends

A dividend once legally declared and of which *notice* has been given cannot be revoked. As stated above, such a dividend becomes a claim against the corporation and ranks with the claims of outside creditors. Even further than this, it has been held that if actual funds have been set aside, as by deposit in a bank, for the payment of these dividends, these funds cannot be touched by other creditors in case of insolvency, but must be applied to the payment of dividends.

With regard to the revocation of dividends, such action is held to be possible only until the fact of declaration has become known outside the board of directors. The revocation of a dividend is merely looked upon as a reconsideration of business policy. In case of illegally declared dividends, they may be revoked by the directors any time previous to payment and the directors may be enjoined from making payment of them.

Payment of Dividends

Inasmuch as a declared dividend becomes a debt of the corporation, it may be settled by whatever means another debt might be. Thus, if a stockholder owes anything to the corporation, the debt for dividends may be used as an offset and only the net payment be made or received, as the case may be. In this way dividends may be made to apply to unpaid subscriptions on capital stock.

After the declaration of dividends provision must be made to pay them. Before the declaration, a report from the treasurer will have probably shown the financial condition of the company to be such as to warrant the payment. Unless specifically ordered otherwise, payment in cash is understood.

Payment of the dividend is a duty of the treasurer. If present at the board meeting when the dividend is declared, that is sufficient notification to him to make arrangement for paying it. If not, notice may come to him verbally, by an inspection of the minute book, or by formal notice from the secretary.

Dividends may be paid by check through the mail or by notifying the stockholders to appear at a designated place to claim their dividends. Under this latter procedure, receipt for the dividend is usually made by signature of a form of receipt in the dividend book. Where payment is made by check, the signing of a formal receipt may or may not be required. In a large corporation the stock of which is widely held, a distinct series of checks formally marked "Dividend Check" is made use of. If these checks bear an identification phrase on their face, as Dividend No......, indorsement by the holder upon receipt of payment by the bank and the bank's cancellation stamp undoubtedly constitute sufficient receipt for payment. However, if desirable, a formal receipt may be issued with the check and its return requested. In a small corporation, the regular check series may be used and marked as dividend checks.

Dividends Paid as Salaries

A peculiar method of payment of dividends is by means of excess salaries—which is largely a matter of bookkeeping. In a close corporation where all the stockholders are officers of the corporation, salaries, in addition to those regularly paid, may be voted in lieu of dividends. The courts have held that, so long as all the parties interested—incorporators, stockholders, directors, and officers—assent to the scheme for the distribution of profits by the payment of salaries, the plan is not objectionable. Salaries so paid would usually be in proportion to holdings of stock and as such become dividends, merely booked as salary.

Methods of Paying Dividends

An interesting point is raised in the question as to whether it is legal or wise to borrow funds to pay dividends. This question in its turn raises the point as to the various ways in which dividends may be paid. In addition to the payment of dividends in cash, other property owned, such as the stock and bonds of other concerns, even the more or less fixed assets if these can be apportioned, may be used for this purpose. The issue of the company's obligations in the form of its own bonds, or in a special form of promise to pay known as dividend scrip; and, furthermore, the absorption of the dividend by the business through the issue of its own shares—both these methods have been employed to liquidate the dividend obligation.

It will be noted that payment by cash or other asset has the effect of decreasing the assets in order to decrease the liability for dividends; that payment by the issue of bonds or scrip cancels one kind of liability by the issue of another kind; whereas payment by the issue of the company's own shares liquidates the liability by increasing proprietorship through the issue of stock, thus reinvesting in the business the portion of profits distributed as dividends.

Borrowing to Pay Dividends

The answer to the question as to the legality of borrowing funds to pay dividends may be inferred from the discussion above as to the status of a declared dividend. Where the question of legality is not involved in the *declaration* of dividends, i.e., where a declared dividend is legal in all respects, the legality of borrowing to pay the dividend is no more open to question than the legality of borrowing to pay any other legally contracted debt. Though there may be ample profits, the affairs of a corporation may be in such shape financially that the payment of a dividend would result disastrously to the shareholders and even to the creditors.

Here it is possible to enjoin the directors from making payment. Action cannot be based on the illegality of making payment but on the abuse of discretion amounting to illegality in the *declaration* of the dividend.

If by so doing the finances of a corporation are not crippled, there is no more legal objection to borrowing to pay a dividend debt than to borrow to pay other debts. The courts have not always held so, however, but the weight of authority seems to be that where profits have been earned but become tied up in the enterprise the corporation may "borrow money on the faith of it and divide that," may sell the property in which the profits are tied up and distribute the proceeds, or may borrow funds on the general credit of the corporation sufficient to meet the dividend payments.

It has even been held that where the income has been applied to the extension and betterment of the plant but the expenditure has been wrongly booked as an expense charge instead of being capitalized, the income so used may be re-created on the books by proper correcting entries and dividends declared and paid therefrom. To the accountant such a procedure seems perfectly correct, though the courts usually look askance at anything savoring of a payment of dividends out of capital.

The chief question involved, therefore, in borrowing funds for the payment of dividends is purely a financial one and the wisdom of such a procedure must be based on financial considerations. If from that standpoint, it is deemed feasible to borrow, the further question as to the form of the loan must be considered. Is it for the best financial interest of the company to borrow on short or long time, to create a floating or a funded debt, etc.—these points require consideration and can, of course, be answered only in the light of the conditions prevailing in each case as to the status of the working capital requirements.

Dividends Paid in Property, or by Borrowing on Property

Payment of dividends by means of property is unusual. It is seldom that the property held can be so divided as to serve this purpose without loss of value. Exception is found in the case of liquidating dividends, discussed on page 445, for which purpose often the shares of stock and bonds of the vendee may be distributed as payment to the vendor's stockholders. More often, the stocks and bonds will be used as collateral for a loan with which to pay the dividend, or the real estate will be mortgaged for the same purpose, thus effecting a borrowing of funds, a discussion of which has just been given. Plots of land may sometimes be so divided as to be acceptable as equitable shares of a dividend, where the stock of a corporation is held in comparatively large blocks.

Bond and Scrip Dividends

Reference also has been made to the issue of the company's own obligations for payment of the dividend. If financial policy dictates a long-term obligation, payment may be made out of any unissued bonds which the company may possess or by means of a bond issue for this specific purpose.

More usual, however, is the payment of dividends by means of short-term obligations known as scrip or dividend scrip. Scrip takes many forms. It is usually so drawn as to constitute the corporation's promise to pay. It may be unconditional, and so negotiable, or it may be hedged about with limiting conditions. Date of payment may be absolute or contingent. Scrip may be convertible into the bonds or stock of the company at the option of either party. Unredeemed scrip may even bear dividends. Usually, however, the issue of scrip is for the purpose of deferring date of payment of the dividend until cash can be accumulated from sale of property or from the profits of the new period.

Stock Dividends

The one remaining method of settling the dividend claim is by the issue of stock. As pointed out above, the effect of this is to convert some portion of the "margin" or surplus into capital stock. This change in the *form* of proprietorship is accomplished by a reduction of proprietorship through the declaration of a dividend and an equal increase of proprietorship through payment of the dividend in stock of the company. The effect of a stock dividend, therefore, is to *fix* a portion of the "margin" so that it becomes a part of the permanent capital of the corporation and, as such, is no longer subject to the direct control of the board of directors. Excepting in states which expressly forbid the stock dividend —and even here the same result is accomplished by other means—its legality is thoroughly established.

Thus, in Howell v. Chicago, etc., Ry. Co., 51 Barb. (N. Y.) 378 (1868), the court said: "It becomes immaterial whether such increase (in *capital*) is made by awarding the stock to stockholders as dividends in lieu of money, retaining the money for the purpose of the company, or by paying the stockholders the dividends in cash from the earnings of the company and selling the stock in the market to raise money for the use of the company." In Williams v. Western Union Telegraph Co., 93 N. Y. 162 (1883), the court ruled: "If it [the corporation] can issue stock in payment of property to be obtained by it as part of its capital for its legitimate uses, why may it not issue stock in payment for property in effect purchased of them [i.e., the shareholders] and added to its permanent capital and which they relinquish the right to have divided? So long as every dollar of stock issued by a corporation is represented by a dollar of property, no harm can result to individuals or the public from distributing stock to stockholders. . . . All that can be required in any case is that there shall be an actual capital in property representing the amount of share capital issued."

Any unissued or treasury stock in the possession of the company may be used for this purpose and, in the case of unissued stock, becomes full-paid if the property against which it is issued is of equal value to it. If the necessary legal requirements are met, even authority for an issue of new stock may be given and the stock used for the purpose of paying the dividend.

Stock Dividends in Estate Accounting. An interesting point is raised in estate accounting as to whether a stock dividend should be treated as principal or income as betwèen the life-interest party and the remainderman. In such a case, the *income* from the stock which yields the dividend belongs to the life-interest party, while the *stock* itself is the principal and belongs to the remainderman. Of course, any dividend declared before the decedent's death, though not payable until after it, is a part of the principal of the estate. The original fund of principal being established, all dividends, whether in cash or stock, which disburse current earnings belong to the life-tenant as income. Where a dividend partakes of the nature of a liquidating dividend—i.e., represents a return of some portion of the net worth as at the decedent's death—the portion so returned should, in equity, be looked upon as principal.

Any stock dividend has the effect of lessening the value of the stock previously outstanding by the circumstance that it, while issued at par, after issue takes on its pro rata share in any accumulated margin. Thus, by the very fact of payment of a dividend in stock, the principal of the estate diminishes in value. Courts have usually held this proper, however, but in cases of manifest injustice, as where profits have been reserved in large amounts and thus have come to be treated as a part of the permanent capital, the "cutting of the melon" in the form of a stock dividend would work so markedly to the injury of the value of the principal that exception would be made here.

Dividends Proportional to Holdings

Dividends must be exactly proportional to the holdings of stock. If there is but one class of stock outstanding, each share must bear the same dividend as every other share. Any other basis of distribution is sufficient cause for asking the intervention of the court. If several classes of stock have been issued, the same requirements hold within each class; but as between the classes themselves the dividend rates may vary, this variation frequently being the differentiating mark. Among the members of any class, therefore, distribution must be made with absolute impartiality, the number of shares held by each determining the amount of dividend for each owner. Also, time and manner of payment, except by special consent, must be the same for every member within each class.

To Whom Payable

As stated above, the formal resolution declaring the dividend prescribes where it shall go, so there can be made up a list of those to whom the dividends are to be paid. To accomplish this it is usually stated that the stock records for transfer of stock ownership shall be closed between certain named dates and that dividends will be paid to those who appear as shareholders as on the initial date of the closed period. This makes it possible to bring the stock record up to that date and determine who are owners at that time. Thus, a dividend resolution may read somewhat as follows:

> A dividend, No. 94, of two and one-half per cent (2½%) for the quarter ending March 31, 1918, has been declared by the Board of Directors out of past earnings, payable April 1 to stockholders of record at the close of business March 23. Stock transfer books will be closed from March 23 to April 1 inclusive.

The stock records may, however, remain open, the matter being one of convenience only.

If a transfer of stock should take place subsequent to the named date of record, sale is usually made ex-dividend. If, however, sale should be made with right to the dividend, notification of the assignment of the dividend before the mailing of the dividend checks by the secretary or treasurer constitutes an order for him to pay the dividend to the new party. The same rule would obtain in the case of a sale made previous to the declaration of dividends but not recorded till afterwards; so also in the case of pledged stock, although payment should be made to the pledgee. Unless the corporation is notified, its list of stockholders according to its records governs in determining the owners of the dividend.

Accounting Record

Little need be added to what has been said in other places as to the method of handling dividend transactions on the books. Their declaration is booked as a charge against either the current Profit and Loss or the Surplus account, with a credit to Dividends Payable. Their payment by any of the methods already discussed in this chapter cancels the Dividends Payable account and is reflected either by a decrease of assets, an increase of liabilities, or an increase of proprietorship. In setting up the entries, ample explanations should be made in the record itself or by reference to the minute book.

As to handling the payment of the dividend, methods vary somewhat. The secretary's list of stockholders made up from the stock records should show the stockholders according to the kinds of stock they hold, the amount of the holdings of each, the dividend rate on each class, and the amount of the dividend payable to each stockholder. This list, with its calculations verified by the treasurer, is the schedule according to which the dividend checks are made out. Where a separate series of checks is made out for this

purpose, it is best to draw a check on general cash for the full amount of the dividend and deposit it to dividend account with the bank. The individual dividend checks are drawn against this account and so the detail of the transaction is kept off the general books.

If all checks reach their destination, the dividend liability is canceled. If any are unclaimed, a liability exists on account of them offset by funds appropriated and set aside for its cancellation. If the fund is in the hands of a trustee—which is not usual—and so beyond the control of the corporation, there would be no reason for including the liability on account of such dividends on a balance sheet as of that date. Under most circumstances, the cash in the fund should be counted as cash on hand and the liability shown. When in this way an unexpended balance of cash is shown in dividend account, subsequent charges against it must be carefully watched to see that they are properly authorized, otherwise the way to fraudulent practice is opened.

Relation of Capital Losses to Dividends

Reference was made in Chapter XXII on "Profits" to the relation of capital losses to dividends. The laws are very explicit in their declaration that dividends shall not be paid out of capital. In this connection two problems treated in Chapter XXII must be reconsidered. Here it is purposed simply to restate them and summarize conclusions. These problems are: (1) the interpretation of the law's requirements in relation to the payment of dividends without providing for the depletion of wasting assets; and (2) the bearing of the law on dividend payments without making good all previous encroachments on capital.

With regard to the first problem, law and practice are pretty well established and are in accord. The decision in the case of Lee v. Neuchatel Asphalte Co., L. R. 41, Ch. D.

1 (1889), has been followed quite generally. There it is held that "if the objects of the company include the sinking of capital in the acquisition of wasting property, even depreciation by waste is not necessarily a revenue charge, but may by the regulations be thrown upon capital." And again, if a company is formed "to acquire and work a property of a wasting nature, for example, a mine, a quarry, or a patent, the capital expended in acquiring the property may be regarded as sunk and gone, and if the company retains assets sufficient to pay its debts, it appears to me that there is nothing whatever in the Act to prevent any excess of money obtained by working the property over the cost of working it from being divided amongst the shareholders."

The inclusion in the periodic dividend of the return of a portion of the capital thus legalized is approved from a business standpoint on the ground that from its very nature the enterprise is speculative in greater or less degree and creditors are therefore sufficiently warned in their dealings with such a concern. Of course, if any such company expects to be permanently engaged in such enterprises it may be the part of wisdom to reserve from distribution all the capital or whatever portion of it may be necessary to finance each new undertaking. This is solely a matter of business policy, however. "It is for the shareholders to say whether or not they will put by a sinking fund to meet the waste. . . . They may if they like, but they are not bound so to provide."*

As to the second question raised above, the general rule and practice in this country requires the making good of such losses first and the payment of dividends only from a resulting surplus. Shields v. Hobart, 172 Mo. 491, 517 (1902), states the prevailing law in the matter as follows: "Dividends can properly be declared only from the profits over and above the capital stock and the debts of the company."

* Lee v. Neuchatel Asphalte Co.

There may be circumstances in which this rule may work a very real hardship, and there is some support both in law and in a sense of justice under given conditions for the view that each period stands by itself so far as dividends are concerned, and that there is no need to use the profits of one period to make good the encroachments on capital of a previous period before paying a dividend. In such cases, the remedy is provided by a reduction of capital stock by the amount of the encroachment upon it. The payment of dividends on the remainder is then above question of law or the best business policy. In this connection the student is referred to page 395, Chapter XXII, for an often-quoted decision of the English courts.

Liquidating Dividends

Any dividend which represents a return of any portion of the capital is to the extent of the portion returned a liquidating dividend. In other words, a payment to a stockholder on account of capital invested is a liquidating dividend. Such a dividend is met when the affairs of a corporation are being wound up. The liquidation of a corporation is discussed in a later chapter. Here the term is only defined because of its relationship to the dividend paid by a corporation which is operating a wasting asset of some sort. Usually the dividends paid by such a concern are not separated as to content, showing how much is profits and how much is a return of capital. A commendable exception to this is seen in the recent dividend notice of the Shattuck Arizona Copper Co., reading as follows:

> The Board of Directors of Shattuck Arizona Copper Company has this day declared a dividend of Twenty-Five (25c.) cents per share, and a capital distribution of Twenty-Five (25c.) cents per share, payable January 19, 1918, to stockholders of record at the close of business December 31, 1917. Stock Transfer Books do not close.
>
> November 30, 1917.

If a reserve for depletion of the property is set up, the offsetting charge to Profit and Loss results in that account's balance showing the true profit. Dividends declared in excess of this represent the part of the capital being returned. In booking these liquidating dividends, the charge must, in strict theory, be made directly against Capital Stock account. A charge to an account called "Capital Liquidated as Dividends," "Capital Returned to Stockholders in Dividends," "Capital Payments," or other self-explanatory title, may be made instead of the direct charge to Capital Stock. If so, such an account should be carried as a valuation account for Capital Stock and shown on the balance sheet as a deduction from Capital Stock.

Where, as has been allowed in connection with income tax returns, there has been a revaluation of properties operating wasting assets, and values in excess of the capital stock are established, such excess may be brought onto the books as a charge to Property or Plant and a credit to an account called "Property Surplus" or other similar title. Dividends thereafter declared, provided the depletion charge is made periodically, will be charged as to their profits against Surplus and, as to their return of capital portion, against Property Surplus until that is exhausted, after which the charge should be made as indicated above.

CHAPTER XXV

THE SINKING FUND

Origin and Use

The sinking fund is a recognized and well-established instrument for the financing of business. A great deal has been written about the subject, and over some of its phases much wordy warfare has raged. As usual, however, the controversy has had little or no effect on the practical application of the principle of the fund.

The sinking fund seems to have been first used as a practical instrument for the repayment of debt in the year 1716, although the idea germinated some time before this. At first its application was limited entirely to public finance. Through the efforts of Sir Robert Walpole, legislation was enacted in England which made certain specified taxes perpetual. Any surplus remaining after applying them to the purpose for which they were levied was to be put into a sinking fund for the purpose of paying off the public debt. Due to bad administration of the fund, it was not successful. Its use was attempted a second time in 1786 by William Pitt, at the instance of a Dr. Price. Since then it has had a rather checkered career in public finance. In some fields, notably among municipal corporations, the device has been very successful. Through the extension of the principle to the field of business the sinking fund found the use to which it was best adapted.

Definitions

A sinking fund may be defined as "a fund formed by the investment of annual savings or other contributions with

a view to the ultimate application of the moneys so accumulated in the payment of a previously incurred . . . . debt." An English accounting authority defines a sinking fund as "a fund set aside out of *assets* and accumulated at interest for the purpose of meeting a debt."* This latter definition draws attention to the fact that the sinking fund is a fund of assets—not simply a book account set up to indicate recognition by the board of directors of the *need* of providing for payment of a debt, but certain definite assets set aside and, after accumulation, to be used for that purpose. Attention should also be called to the fact that usually the fund is not dependent solely for its increase upon interest accretions. As generally handled, the fund is added to at regular intervals by setting aside more or less regular amounts of assets to be applied to the same purpose. Frequently the contract agreement entered into between the company and the creditors holding the debt to be repaid governs in detail the way in which the fund is to be provided and the way in which it is to be handled.

A sinking fund may be used for other purposes than the payment of debt. Thus, occasionally one finds it created for the purpose of providing funds for the retirement of capital stock issues, notably preferred stocks of various kinds.

It may be well again to point out the unfortunate lack of uniformity in the use of the term. Thus "Sinking Fund" as an item in the balance sheet is found sometimes among the debits and sometimes among the credits. Other titles under which the item appears are: Sinking Fund Account, Sinking Fund Reserve, Sinking Fund Investments, Sinking Fund Trustee, and Sinking Fund Cash. While in this chapter the term will be used to indicate assets set aside in a definite fund—and limitation to this use is growing among the best

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* George Lisle in "Accounting in Theory and Practice."

authorities—explanation will also be given of what the other uses indicate as to financial policy and the manner of booking such policy.

Mathematical Principles on which Based

The mathematical principles on which the computation of the sinking fund rests will first be explained. The problem involved here is the calculation of the amount which set aside periodically and invested at compound interest will provide a sum sufficient to pay off the debt when it matures. Needless to say, the sinking fund is usually applied only to the redemption of long-term debts, as only over a comparatively long period is the real potency of the compound interest principle secured. For the solution of the problem it must be known whether the periodic increments to the fund are set aside at the end or at the beginning of the period. It is usually understood to be at the end of the period unless otherwise specified.

Assume, therefore, that a bond issue is made with maturity in n years and that the contract with the bondholders calls for the creation of a sinking fund with payment thereinto at the end of each period. It is required to find the amount to be paid into the fund periodically. We will assume that:

P = the principal sum to be redeemed at maturity
n = the number of periods till redemption
A = the amount paid into the sinking fund at the end of each period
r = the rate per cent per period at which the moneys in the sinking fund are invested at compound interest
$R = 1 + r$

Reference to Chapter XV, page 271, gives the amount, A, of a sum of money put at compound interest at $r\%$ for a term of n years, as $A(1 + r)^{n-1}$. It is evident here that the sum, A, paid into the fund will accumulate for $n - 1$ years and that each succeeding payment remains at interest

one year less than the next preceding amount, the last amount earning no interest. Accordingly, the first A—we will denote it as A_1—will amount to $A(1+r)^{n-1}$; A_2 will amount to $A(1+r)^{n-2}$; A_3 to $A(1+r)^{n-3}$; etc. The sum of all these amounts must be equal to P, the debt to be redeemed. Therefore, the equation may be formed:

$$A(1+r)^{n-1} + A(1+r)^{n-2} \ldots\ldots\ldots + A(1+r) + A = P \text{ or}$$
$$A(R^{n-1} + R^{n-2} \ldots\ldots\ldots\ldots\ldots\ldots + R + 1) = P, \text{ whence}$$
$$A\left(\frac{R^n - 1}{R - 1}\right) = P \text{ and}$$
$$A = \frac{P(R-1)}{R^n - 1} \text{ or } \frac{Pr}{R^n - 1},$$

which being interpreted means that the theoretical amount to be set aside at the end of each period can be found by multiplying the amount of the debt by the fraction $\frac{r}{R^n - 1}$. If the annual payment is made into the fund at the beginning of each period instead of at the end, then A will be $\frac{Pr}{R(R^n - 1)}$ and the multiplying fraction $\frac{r}{R(R^n - 1)}$.

It is evident that in practice some allowance will usually have to be made for failure to keep all payments in the fund and interest accretions thereto constantly invested at the calculated rate. This is not a matter of serious import, however, for small inaccuracies can be adjusted during the last period or the last few periods by increasing or decreasing the annual payments as may appear necessary at those times. From a financial standpoint it should be borne in mind that there is no absolute necessity for the accumulations in the fund to be sufficient in all cases to retire the entire debt. Refunding a portion of it may be resorted to. Other conditions being equal, it should be a much easier task to borrow only a portion as compared with borrowing the original amount.

Accumulation Based on Agreement

It is necessary to call attention to the inapplicability of the above method to all cases. Of course, where the contract between the borrower and the lender makes definite provision for the manner of creating and handling the sinking fund, that contract must therefore govern. However, in the case of a concern operating wasting assets, a frequent provision of the trust agreement in the case of a bond issue is that the periodic payments into the fund shall be proportional to the amount of the natural product extracted or used. Thus in the coal mining industry the trust agreement may provide that, say, five cents for every ton mined shall be placed in a sinking fund. In determining the amount for each ton, the total amount of the debt to be extinguished is divided by the estimated number of tons of coal in the mine. This gives the amount of the debt which each ton must bear. Conservatism and business prudence require an ample allowance for mistakes in the estimate of tonnage which it will be profitable to mine and, also, for a liberal margin of safety. The relation between the life of the bonds and the estimated annual output has an important bearing also, for the charge per ton must be sufficient on the basis of the tonnage mined during the period covered by the bonds to retire the bonds at their maturity, regardless of how much coal there is still in the mine at that time—unless a refunding operation is contemplated.

Similarly in the case of timber properties, sinking fund payments are usually roughly proportional to the amount of timber cut; in earthwork or quarry enterprises, to the amount of material removed or quarried; in real estate development companies, to the number of divisions made ready for the market. In such cases the compound interest method, scientifically accurate, often gives place to annuity methods more or less roughly calculated, under which, by

trust agreement, definitely named sums, approximately sufficient to accomplish redemption at maturity, are set aside periodically.

Other methods fix the amount as so many per cent of gross or net profit, of the bonds outstanding, of total business done, etc. Oftentimes, scientific accuracy, even if desirable, is impossible because of provisions in the trust agreement to the effect that the moneys in the sinking fund are to be used for the purchase of the company's own bonds at market but providing a maximum price above which none are to be bought. This involves purchases at a premium, or possibly a discount, unknown at the time the periodic amount must be calculated. An amount figured on the maximum price would be conservative; or the amount may be based on par with the stipulation that the difference between par and market shall be handled each period through the profit and loss.

Effect of Settlement of Debt

As an introduction to the discussion which will follow of the relation of the sinking fund to profits, we will first consider the several ways in which a debt may be settled. For that purpose there is nothing which makes clear the principle involved better than the fundamental schedule of debit and credit, showing the interplay of all transactions as they are brought onto the books. At the risk of unnecessary repetition, that schedule is accordingly set up here for ease of reference.

SCHEDULE OF DEBIT AND CREDIT

Debit:	*Credit:*
(1) Increase of assets	(a) Decrease of assets
(2) Decrease of liabilities	(b) Increase of liabilities
(3) Decrease of proprietorship	(c) Increase of proprietorship

From this it is seen that the redemption of a debt—a number (2) transaction—may be accompanied, and therefore accomplished, by any one of the three offsetting credits or by a combination of them. A debt may be settled (a) by the conversion of an asset; (b) by the creation of another liability; or (c) by an increase in net worth. Cash or other assets may be used for the purpose, resulting in a decrease of assets, as in (a) of the schedule. It should be noted that the borrowing of, say, $1,000 and its repayment in cash leaves the borrower in the same relative financial condition as before, except for the gain derived from the use of the money borrowed. Such loans, to be repaid in this way, are usually of a temporary nature, to tide over an emergency—such as the handling of the load of seasonal activity, or other similar situation. This method of settlement is, of course, not confined to payment of debts for money borrowed, but includes debts contracted for merchandise purchased on credit and other current liabilities.

Again, a debt of one kind may be settled by the creation of a debt of another kind, as in (b) of the above schedule. Thus, an open account payable may be converted into a note or acceptance payable. Here, the liability canceled and the new one created are usually of the same class, viz., current liabilities, and the need for a more or less permanent increase in working funds is not contemplated. So also, a current liability, or a group of them, may be converted into a funded debt. This may be deemed advisable when it is seen that there will be a permanent, or at least a long-term, need for funds which have up to this point been provided by short-term borrowings and credits. Again, a refunding operation would have the effect of a decrease of one liability offset by the increase of another.

Finally, a debt may be canceled through an increase of proprietorship, as in (c) of the schedule. By this means the redemption of the debt may be direct or indirect.

Capital stock, either treasury or previously unissued stock, may be accepted by creditors in satisfaction of their claims. They thus change their status from creditors to proprietors and the result is an increase of the concern's net worth. Indirectly a debt may be settled by the reservation of profits. Instead of distributing the profits as dividends, they may be retained in the business and so provide funds, i.e., assets, for the redemption of debts. In either case the settlement of the debt has been effected by means of increased net worth evidenced by new issues of stock or by reserved profits.

In these various ways, therefore, a debt may be settled. As pointed out above, the first method contemplates no permanent need for increased working funds and the extinguishment of the debt leaves the borrower in approximately the same position financially as before its incurrence. Under the second method, the relative positions before and after are the same excepting in the case of funding a floating debt. Here a permanent or long-term increase in working funds is secured. With the third method a permanent increase is secured in the capital funds available for use in the business. Financial policy, governed by the needs of the business and its markets, will always dictate the method to be used for extinguishing or contracting a debt.

Relation of Fund to Profits

The relation of the sinking fund to profits will next claim our attention. This point has been much debated, reaching the acrimonious stage at times. It is variously contended: (1) that there is a necessary relationship between profits and the payment of a debt; (2) that for final settlement only assets will suffice; and (3) that the policy of reserving profits to an amount equal to the sinking fund is a policy not dictated by any fundamental principle of relationship between profits and debt redemption.

With regard to the first claim, it is sufficient to call attention to the discussion above where the various ways of paying a debt were considered. As there pointed out, a reservation of profits may offer the only available means of providing assets with which to redeem debts. Accordingly, at least an indirect relationship between profits and debt redemption is established.

As regards the second point, that only assets can be used for the final payment of debts, this also is seen to be too broad a claim, for the issue of new stock may accomplish the same end—directly, as where issued to creditors, or indirectly, as where sold and the proceeds applied to liquidate the claims of creditors.

As to the third claim, it might be said with equal relevance that there is no basic relationship between debt redemption and any *method* of settlement. The assertion can be made with little fear of contradiction that so long as the claims of creditors are satisfied, the manner of doing it is of small importance. Of course, only the currency of the realm is a legal tender for debts but, if other forms of payment prove satisfactory and are accepted, the matter ends. It is therefore solely a question of financial policy, no principles of accounting are involved, and the only point in which accounting is concerned is in making the record so as truthfully to show what is taking place, i.e., to reflect accurately the financial policy adopted.

If the needs of the business require a permanent addition to the capital, as mentioned above, that can be secured in only two ways, viz.: (1) the sale of stock and (2) the reservation of profits. If, on the other hand, the debts to be repaid have provided funds for the emergency or purpose for which they were contracted and that emergency or purpose no longer exists, then the repayment of those funds to the creditors is the business policy dictated. Under these circumstances, to load the business with capital funds

not needed in the enterprise might well be the height of business folly. According to the conditions to be faced, there may or may not be any necessary connection between debts and profits.

It should be pointed out that the kind of debt—i.e., the long-term obligation—for the settlement of which the sinking fund method is often employed, is almost invariably an indication of the need of a larger capital fund. Recognition of this is frequently evidenced by the provisions of the trust agreement requiring the payment into the sinking fund *out of profits* of the periodic contributions. This forces the ultimate increase of capital to be made by the owners. Two other alternatives are open, viz.: borrowing again at the maturity of the debt—a refunding operation—and securing additional capital through the sale of stock. Conditions of the financial market at the time the funds are needed, the policy of the concern as to the admission of other owners, and the relative bargaining strength of the two parties to the loan—these are determining factors in the financial policy to be adopted.

Accounting for Sinking Fund

The various problems met in accounting for the sinking fund will now be discussed. First among these is the manner of showing its status on the balance sheet. This may be done in four different ways. Here, also, the chief problem involved is an accounting problem only so far as it concerns the best manner of setting forth truthfully the facts of financial policy.

1. The sinking fund, then, under suitable title, may appear only among the assets. As to financial policy, this indicates the creation of a distinct fund of assets for the purpose of the sinking fund but it does not show definitely the way in which they are being provided. They may be secured by cutting down certain assets previously carried in larger

amount than is now deemed necessary; by a reinvestment of profits; or by the sale of additional capital stock. The balance sheet is silent as to what method is being employed.

2. The balance sheet may record the sinking fund status among the assets as a definite fund and also among the items of net worth as a sinking fund reserve. As to financial policy this not only indicates the creation of a fund of assets, but shows that this was accomplished by a withholding of profits from the stockholders and a reservation of them for this very purpose.

3. There may appear on the balance sheet as the only evidence of a sinking fund policy the sinking fund reserve among the net worth items. This shows a reservation of profits for this purpose and therefore their investment in the business. The reserve is not a covered reserve, however, no definite assets being set apart as representing these profits, or, if set apart, as having been already applied to the cancellation of a portion of the debt. This latter phase is explained more fully on page 458 following. Unless the assets have been applied in this way, the balance sheet gives no assurance to the creditors that funds will be available for the settlement of their claims at maturity. It may be that the reserved profits are being used for further extensions of plant and so will not be easily available at maturity of the obligations. Again they may be invested in increased stocks of current assets and so be readily available. Only an analysis of the balance sheet will show the financial policy that is being pursued.

4. There may be no record of the sinking fund transactions shown on the balance sheet. This might come about through the cancellation of some portion of the debt by the conversion of assets. The balance sheet, except by comparative analysis, carries no indication of the way in which it is accomplished. It may be that it is being done at the expense of current activities—a poor policy—or through

the withholding of owners' profits. The balance sheet is non-committal.

Whatever method indicates the policy being followed with regard to the sinking fund is the one which should be employed. So far as possible indefiniteness of expression as well as nomenclature should be avoided; not only does an indefinite statement fail to show the policy but it may be misleading.

The Sinking Fund on the Balance Sheet

In drawing up the balance sheet, the sinking fund assets usually appear under the caption "Investment of Sinking and Other Funds." Occasionally one finds the Sinking Fund account treated as a debit valuation account, being shown as a deduction from the Bond account. Such treatment indicates the amount of bonded indebtedness not yet provided for by the sinking fund—an item of hardly enough importance to justify its separate showing, particularly when an easy comparison, under any other method, will give the same information. The cancellation of assets against liabilities or of liabilities against assets is not good accounting practice. Where, however, the trust agreement provides for the investment of the sinking fund cash in the company's own bonds and the cancellation of these bonds as purchased instead of holding them in the fund for the sake of their income accretions, the bonds so canceled would, of course, be deducted from the amount previously outstanding and only the present liability for bonds be shown. There is no objection to showing this deduction on the face of each balance sheet, as it thus shows the amount redeemed during the current period. If the company's own bonds are purchased but kept live, it is better to show the sinking fund among the assets. All sinking fund *reserves* should, of course, be listed in the net worth section of the balance sheet.

Entries to Sinking Fund

Accounting for the sinking fund presents nothing new in principle. There are, in the main, three kinds of entries to be made, viz.:

1. Those dealing with the original and subsequent periodic payments into the fund.
2. Those required to book the trustee's periodic report of his handling of the fund.
3. Those to show the redemption of the debt and the final disposition of the accounts relating to the fund.

In the illustration, for the sake of definiteness, it will be assumed that the governing financial policy is the second one discussed above, according to which not only is a sinking fund created but also an equal amount of profits is reserved each period; that the funds are placed in the hands of a trustee for investment and that any income from the investments is to go into the fund; and that it is desired to show both the investments of the trustee and the unexpended balance of cash in his possession. The account titles are suggestive only, many varying titles being used. The entries required to show the original payments into the fund are:

(1) Sinking Fund Cash in Hands of Trustee........	$.....	
Cash..................................		$.....
To record payment to trustee of first payment into the sinking fund created according to terms of trust agreement to retire the first mortgage 6% bonds.		
(2) Surplus.................................	.....	
Sinking Fund Reserve....................		.....
To show the creation of a reserve to provide funds for the redemption of bonds.		

Subsequent payments into the fund would be recorded in exactly the same way as the original payments.

Booking the Trustee's Report

Upon receipt of the trustee's report on the handling of the fund, entries must be made to bring a summary of the report onto the books. This report should cover a full accounting of the funds turned over to the trustee, his investment of them, all expenses of the trust, and any income received or accrued. The funds may be left for accretion in a savings bank; they may be used to purchase high-grade securities; or with them the very bonds which they are to redeem may be bought and canceled immediately, or allowed to run, the interest accretions going into the fund also. Securities for investment may be bought at a premium or a discount. Expenses will be incurred by way of commission or salary for the trustee, expenses of the trust, advertising, brokers' commission, etc.; and income will be received by the trustee from the securities held and even from the unexpended balance of cash.

As to the purchase of securities at a premium or discount, the problem involved is the proper handling of the premium or discount. Theoretically, whether in the hands of a trustee or under own control, premiums and discounts on securities bought for long-term investment should be amortized. The reader is referred to Chapter XV, page 267, for the various methods of booking such investments. Oftentimes, however, the premium is charged at once against the sinking fund income along with all other expenses.

To book the investments of the trustee, the entries needed are:

		Dr.	Cr.
(3)	Sinking Fund Investments....................	$.....	
	Sinking Fund Cash in Hands of Trustee...		$.....
	(List here the securities purchased and their price.)		
(4)	Sinking Fund Expenses......................	.....	
	Sinking Fund Cash in Hands of Trustee...		.....
	(Itemize here all expenses chargeable against the fund or its income.)		

(5) Sinking Fund Cash in Hands of Trustee......... $.....
    Sinking Fund Income .... $.....
    (Record here the income from interest on unexpended cash balance and from securities, with proper adjustments on account of amortization of premium or discount.)

Treatment of Income and Expense

Practice varies as to the proper handling of the income and expense of the sinking fund. Sometimes they are treated as affecting—i.e., increasing or decreasing—only the sinking fund reserve and as having no place in the current profit and loss. That seems a mistaken view; the fact that the investment is beyond the company's control none the less renders its income and expense a fact of current profit and loss, and it should be so shown. Accordingly, the sinking fund expense and income accounts above should be closed into profit and loss, after which their net result will be transferred from surplus to Sinking Fund Reserve, to show the net increment or decrement as a result of the trustee's operations. Thus:

(6) Sinking Fund Income......................... $.....
    Profit and Loss......................... $.....
(7) Profit and Loss.............................. .....
    Sinking Fund Expenses................ .....
(8) Profit and Loss.............................. .....
    Surplus............................. .....

Entry (8) is not strictly a sinking fund entry but transfers the entire balance of the period's profit and loss to surplus, out of which the net increment or decrement of the sinking fund operations is transferred to Sinking Fund Reserve by entry (9):

(9) Surplus.................................... $.....
    Sinking Fund Reserve.................. $.....

An amount equal to the compound interest increment must always be transferred to the reserve, if accurate results are desired.

Practically the same entries will serve if the investments are the company's own bonds. If the bonds are canceled, instead of entry (3) the following entry would be made:

(10)	First Mortgage 6% Bonds....................	$.....	
	Sinking Fund Cash in Hands of Trustee..		$.....

Here the item of premium or discount is usually to be found and the question then arises as to whether the item is not better handled as a charge or credit direct to Sinking Fund Reserve rather than through the current profit and loss.

Final Disposition of Fund

There remain to be considered the entries recording the payment of the bonds at maturity and the disposition of all sinking fund accounts. The securities of the trustee must be reconverted into cash to be used for redeeming the bonds, often resulting in a difference between the book value of securities and the actual amount realized therefrom. This must be adjusted by charge or credit to the Sinking Fund Reserve. After cancellation of all the bonds, any cash balance is turned back by the trustee to the company. The entries on the books would be:

(11)	Sinking Fund Cash in Hands of Trustee........	$.....	
	Sinking Fund Investments..............		$.....
	To record sale of securities in the sinking fund.		
(12)	Sinking Fund Reserve.......................	.....	
	Sinking Fund Investments..............		.....
	or		
(13)	Sinking Fund Investments..................	.....	
	Sinking Fund Reserve..................		.....
	To adjust the difference between book and realized values of the securities.		
(14)	First Mortgage 6% Bonds..................	.....	
	Sinking Fund Cash in Hands of Trustee..		.....
	To record redemption of all bonds.		
(15)	Cash....................................	.....	
	Sinking Fund Cash in Hands of Trustee..		.....
	To record transfer to company of cash balance in hands of trustee.		

Treatment of Sinking Fund Reserve

Only the Sinking Fund Reserve account now remains on the books. Having served its purpose of providing funds by retaining profits in the business for the redemption of the bond issue, resulting in an addition to the net worth of the business, this reserve is now free to be used as deemed best. It may be thrown into surplus and so become available for dividend purposes; or it may be used as the basis for an increase in capital stock and be distributed as a stock dividend, thus making the increase in net worth permanent. The following entries respectively accomplish these ends:

		Dr.	Cr.
(16)	Sinking Fund Reserve........................	$.....	
	Surplus............................		$.....
(17)	Surplus....................................	.....	
	Stock Dividend Payable................		.....
(18)	Stock Dividend Payable.....................	.....	
	Capital Stock.........................		.....

Relation between Depreciation and Sinking Fund

A final problem deals with the relation between depreciation and the sinking fund. If the trust agreement requires that a sinking fund reserve shall be created by charge against profits, must provision be made also for the depreciation of the mortgaged property held assecurity for the bonds? The fact of depreciation is omnipresent and cannot be escaped. Also, the trust agreement must be lived up to. To carry out both requirements simultaneously would manifestly result in a double charge. The charge for depreciation is an expense charge which must be made before net profits can be determined. The charge for the creation of the sinking fund reserve is against surplus, i.e., it takes effect after the determination of net profits. Theoretically, therefore, the provision for depreciation must be made, else true profits cannot be determined. Equally certain must be the provision for the sinking fund reserve. Authorities seem to agree that not only is there no need for provision for both

but that to provide for both places an unnecessary burden on the stockholders during the periods of the creation of the sinking fund.

It is true that if the periodic amounts of the estimate for depreciation and the sinking fund are practically the same, and if provision is made only for the sinking fund reserve, there will be in that reserve a sufficient amount to care for the depreciation. Assuming the life of the asset and the life of the bonds to be the same, such a policy means simply that the asset, usually a fixed asset, has been converted by use into current funds which have been applied to the liquidation of the bonds. There has been no reservation of real profits for this purpose. Upon the complete depreciation of the asset, the book value not having been written down in the meantime because no depreciation has been booked for it, the asset must be charged against the reserve, thereby mutually extinguishing each other. No principles of accounting are necessarily violated.

Failure to book the depreciation as such results, however, in an inflated showing of net profits. If the sinking fund reserve is charged against current profit and loss instead of surplus, the showing of net profits is thus corrected but there has been no real reservation of profits, the sinking fund reserve being in reality a valuation account for the depreciating asset, and thus the letter of the trust agreement is violated. If the intent of that agreement was to increase proprietorship, as discussed on page 456 above, this procedure will not accomplish that purpose.

Provision for both depreciation and the reserve does not effect a double charge against *profits*. As pointed out above, the one is an expense charge without which true profits cannot be shown, and the other is a charge against real profits, resulting in a lessening of dividends. Where there is no trust agreement to compel the creation of a sinking fund reserve, it is merely a matter of financial policy as to how

the bonds shall be redeemed, and there is no objection in theory to the conversion of the depreciating asset to that purpose. Much more is this the case when the mortgaged asset is a wasting asset, the exhaustion of which is inevitably bound up with the operation of the business. Here there is no need either to increase proprietorship or even to maintain capital intact, and the conversion of the wasting asset, without providing for its replacement, to the payment of the bond issue is legitimate and wholly unobjectionable as a financial policy.

CHAPTER XXVI

PROBLEMS IN CONNECTION WITH THE PROFIT AND LOSS SUMMARY

Interrelation of Profit and Loss and Balance Sheet

Because of the supplemental character of the profit and loss summary to the balance sheet, no study of the latter is complete or adequate, whether viewed from the standpoint of valuation or from any other aspect, without at least a consideration of the profit and loss summary in its larger bearings. Some general features of the summary will here be considered, followed in the next chapter by a discussion of its terminology, form, and content.

Every change in an asset which is not reflected among the other assets or the liabilities relates to proprietorship; or, as stated from the profit and loss point of view, every change in proprietorship, except it be merely a transfer between proprietorship items, is reflected as a change in assets or liabilities. The original contribution of capital is reflected among the assets. Other items of vested or permanent proprietorship have been discussed in Chapter XXIII, "Surplus and Reserves," leaving for consideration here the temporary proprietorship, i.e., the profit and loss items. Of these, every income item results either in an increase of assets or a decrease of liability, while every expense shows as a decrease of assets or increase of liabilities.

The relation of the profit and loss phase of an enterprise to the problem of valuation is apparent—the majority of the changes in value of the assets being connected with profit and loss activities. Thus sales result in cash or claims against customers, and a valuation of these claims gives

the amount of bad debts expense. The valuation of fixed assets determines the amount of depreciation expense. On the valuation of the stock-in-trade depends the cost of goods sold and therefore the gross profit. Only those profit and loss items which are realized or settled in cash are not dependent upon the valuation of related assets, and even here, in so far as cash must under some circumstances be valued, these may be, at least remotely, dependent upon valuation. As, therefore, the balance sheet is primarily an expression of opinion and judgment, rather than a statement of fact, so also in large measure must the profit and loss summary be regarded as an expression of opinion. The same factors which enter into appraisals and valuations determine profits and losses.

Periodic Adjustments

In Chapter XXIII, on "Surplus and Reserves," attention has been called to the use of a statement of surplus for the purpose of showing the changes which take place in surplus from period to period. These changes are due to profits earned, dividends declared, extraordinary profit and loss items not handled through the profit and loss summary, and adjustments in profit and loss applicable to previous fiscal periods—such adjustments being necessary because of errors in the profit and loss summaries of those periods, due to insufficient information for making an accurate summary at the time. The periodic profit and loss summary is limited in its purpose and scope to the activities of the current period and to an equitable share of those income and expense items running over a number of periods. Because the adjustments just mentioned are frequently necessary, the periodic profit and loss summary as it appears on the books is never an entirely accurate reflection of the profit and loss activities for any period, but it is usually sufficiently so to serve all current needs. When, however,

the earning capacity of a concern needs to be judged with great accuracy, over a number of periods, it is not safe to depend entirely upon the periodic profit and loss summaries. It may, for example, be necessary to judge earning capacity because of a contemplated sale or merger. Here the basis for determining value should be not the earnings of one period but the average of several periods. It then becomes necessary to reconstruct the periodic profit and loss summaries as carried on the books in the light of any additional information that may have become available later.

The adjustments to be made in such cases comprise not only the most obvious ones, caused by the oversight of accruals and deferred items of various sorts, changes in inventory valuations due to an incorrect inclusion or exclusion of some items, etc., but also changes in those items which in the light of a longer experience are shown to be inaccurate. This latter class of adjustments embraces particularly the estimated items the amounts of which are not definitely determinable. As time passes, more complete knowledge may indicate insufficient or excessive estimates of such items as depreciation, bad debts, provision for contingent liabilities, and similar reserve items, the valuation of which must be corrected for an accurate showing of earning capacity. Thus a distinction must be made between summaries compiled to show the current profit and loss results and those which give a true index of earning capacity over a longer period.

Interest as a Cost of Manufacture

A controversial point with a bearing on the profit and loss summary is whether or not interest on invested capital should be included as an item of manufacturing cost. One school of thought on the subject maintains, with a considerable degree of argumentative warmth, that interest should be included; while another school takes the opposite point

of view. An attempt will here be made to summarize the arguments for and against the treatment of interest as an item of manufacturing cost. The one school bases its main contention on the economic theory of profits; namely, that profits represent the balance remaining after deducting the cost of land, capital, and labor. The function of the entrepreneur, it is contended, does not in itself involve the owning of capital. Profit is the reward for combining the other factors of production and assuming the risk involved. Interest is a cost for the use of capital and it does not matter who owns the capital.

It is further contended that, in order to bring a fair return on the capital invested, the selling price must include interest on capital investment. While this contention is true, the fact remains that no manufacturer would think of fixing selling price as a matter of general policy at a figure which would not return a fair rate of interest on his investment. But why that necessitates taking into the books interest as an element of cost is not explained by this theory.

It is also argued that to determine whether it is better to manufacture or to buy goods in the open market, and whether it is better policy to manufacture by means of expensive machinery and other equipment or by manual labor, interest on investment must be considered. While these arguments also are well taken, they again offer no satisfactory justification for the showing of interest on the books. It is furthermore contended that the cost of carrying the inventories for which the purchasing, stores, and planning departments of a manufacturing concern are responsible, should be shown with interest on the money invested in them taken into consideration—this for the purpose of providing a check on the efficiency of these departments. Where also both old and new machinery is used side by side and it is desirable to compare their costs of production, the element of interest should be considered.

Further argument for the inclusion of interest as an item of cost is the fact that in numerous processes time is an important element. Thus, the smelting of ore, the tanning of leather, the curing of tobacco, the seasoning of lumber, etc., are examples of relatively lengthy processes the cost of which should include interest on the capital invested. Interest on investment is also a factor that may sometimes determine manufacturing and selling policies, especially during slack periods when production is curtailed, part of the plant stands idle, and the fixed charges on the unused manufacturing capacity need to be taken into consideration. The same argument also applies to the accumulation of a large inventory of raw materials or finished stock during a period of low prices. The soundness of such a policy can only be judged when the item of interest on the capital investment is considered.

Arguments against the Inclusion of Interest

The majority of accountants are, however, opposed to the inclusion of interest as an item of manufacturing cost. The chief objections raised to its inclusion are:

1. The difficulty of determining the rate at which interest should be charged.
2. Inasmuch as the amount of investment in current assets is difficult to determine since it fluctuates daily, is interest to be charged both on fixed investment and on current investment, or only on the fixed?
3. If interest is to be charged, how shall the offsetting credit be handled on the books?
4. The introduction in production costs of a more or less constant element tends to obscure fluctuations in actual cost due to causes which may be corrected, and thereby partly defeats the very purpose of cost-keeping.

5. As the business world is accustomed to consider interest and dividends as of the same nature, namely, as a return on capital invested, to treat interest as a cost of operation would produce financial statements which are misleading.

With regard to the rate of interest, three different theoretical rates have been suggested: (1) a so-called "pure" interest rate, i.e., one yielded by the safest investment; (2) the rate at which money might be borrowed for the particular type of industry; and (3) a rate sufficient to attract permanent investment in the enterprise. From the practical standpoint of results there are serious objections to all these suggestions. As it is beyond the scope of this chapter to discuss this phase of the question, the interested student is referred to the numerous writers who deal with the question.

Problem of Charging Interest on Books

Where interest is treated as a manufacturing cost, the booking of it raises a perplexing accounting problem. The charge has to be made to some factory expense account, while the credit must be carried over to possibly a financial management income account. If the entire output of the factory were sold out by the close of the fiscal period and no product was in process of manufacture at that time, the result of booking interest in this way, so far as net profit is concerned, would be nil. It would be like taking money out of one pocket and putting it in another. This situation, however, is never met at the close of the fiscal period. Almost invariably some finished stock is on hand and goods are in process of manufacture. Where interest is added, the result is to inflate the value at which the goods must be carried on the inventory—a very undesirable procedure from an accounting and financial viewpoint. By such means it is conceivable that a factory might be made to

show a handsome profit even before any of the product had been sold.

Considering both the ends to be attained by, and the defects and disadvantages of, the inclusion of interest as an item of factory cost, its exclusion seems best. In this connection it is to be noted that all government contracts on a "cost-plus" basis do not allow the inclusion of interest as one of the cost items. Furthermore, all the ends aimed at by its inclusion may be secured almost if not equally as well by statistical records, thus eliminating the objections to the bringing of interest as an item of cost onto the financial records.

Unrealized Profits

A similar problem to the above is the practice of charging a manufacturing profit to the selling department. The practice is prevalent in some concerns, of transferring the output of the factory to the selling department at a value above the cost to manufacture. The purpose of such a transfer is to show on the books the profit arising from the policy of manufacturing the product instead of buying it on the open market. The value at which the product is transferred from the factory to the selling department is usually the wholesale market value, though it may be at a fixed per cent above the cost of manufacture. The effect of this is, of course, to limit definitely the showing of factory profit. Where the compensation or the efficiency of the factory management is measured by the savings effected over the wholesale market price of the output, there is perhaps some practical advantage in the allowance of a manufacturing profit.

The main objection to charging the factory output to the selling department at any price other than cost is that such a policy introduces an element of unrealized profit. This objection is not serious if, at the time the books are closed

for the purpose of showing results for the fiscal period, the unrealized profit is eliminated from the stock-in-trade inventory. So far as the profits on the portion of the output which has been sold are concerned, the net result is the same. The effect is to diminish the profit of the selling department by the amount of profit allowed to the factory. To bring assets onto the books at inflated values is, however, always objectionable, both because of the temptation to inflate profits by valuing the goods for the inventory at an inflated figure, and also because of the ease with which the adjustment of such items may be overlooked or forgotten at the close of the fiscal period. Where the adjustment is made with care, correct results can be shown as well by the one method as by the other. The adjustment needed applies only to the inventory of goods remaining unsold at the close of the period, which adjustment is usually shown by means of a valuation reserve account, by means of which the book value of the inventory is brought down to the factory cost value.

The whole problem of profit between departments is one phase of the larger problem of the intercompany profits of a holding company. In such a case it usually happens that one of the subsidiaries with separate corporate organization turns over its product to some other subsidiary company at a price which returns a fair rate of profit. As the product passes through the hands of the various subsidiaries, by the time it is ready for final distribution to the public the accumulated profits represent those of all the companies engaged in its production. If, now, all these subsidiaries belong to the same parent company, the book value of the unsold product shows, at the close of the fiscal period, a large unrealized profit which must be adjusted in order not to show the stock-in-trade at an inflated value. This problem is discussed more fully in Chapter XXXIV where the main problems of the holding company are taken up.

Corporation Dividends

In addition to these general problems of the profit and loss summary, some further questions arise at the time of closing the records of a corporation for the fiscal period. Much more care must be taken in closing the books of a company than is necessary in the case of either of the other general types of business organization. Thus, the corporation authorized to issue a number of different kinds of stock must see that the dividend declaration is based only on the amounts of the various classes of stock outstanding, and not on the stock unissued or brought back into the treasury. It is customary to set up separate dividend accounts for each class of stock. Oftentimes the terms of issue covering the various kinds of stock introduce complexities in the calculation of the dividend. This is particularly true in the case of stocks which have the privilege of participating in all dividends over a certain amount. Some stocks are cumulative as to their dividend, while others may be non-cumulative. All these conditions of issue must be considered carefully at the time of the declaration of the dividend.

Discount on Bonds

Another problem requiring care is the treatment of discount or premium on bonds as they are related to the bond interest charge. In Chapter XV where bonds are discussed, the relation between the bond premium or discount and the bond interest rate is brought out. This necessitates at the time of the payment of the bond interest an entry to bring about the gradual amortization of the bond premium or discount so that by the expiration of the life of the bond issue the premium or discount is written off the books. Where the interest period does not coincide with the close of the fiscal period, for an absolutely accurate showing not only must the accrued bond interest be taken into account but also the accrued amortization of bond premium or discount.

Sinking Funds

A third problem at the time of closing the corporation's books relates to bringing the sinking fund transactions up to date. Where the sinking fund is in the hands of a trustee, the corporation's books can show the status of the fund only upon the receipt of the report of the trustee showing the changes in the fund for the current period. Care must be exercised to demand a report from the trustee as on the date of the closing of the corporation's fiscal period. The character of the adjustments needed and the entries necessary to book them have been explained in Chapter XXV.

Working Capital

A fourth problem which sometimes needs to be considered is that of "working capital." Technically the working capital of a business is represented by the excess of current assets over current liabilities. As pointed out in Chapter XXV, a credit account called "Sinking Fund Reserve" is frequently set up to indicate the financial policy pursued in making provision for the retirement of a bond issue at maturity. At the time of the retirement of the bonds this reserve need no longer be shown as a separate item to indicate financial policy and should therefore be closed out. It may be thrown back into general surplus or it may be transferred—to indicate that it is a part of the permanent capital of the corporation—to an account entitled "Working Capital" or "Working Capital Surplus." In all cases where an item of surplus is created for a specific purpose, care must be exercised to see that the conditions surrounding the creation of the item are lived up to in its final disposition. In cases of surplus created by gift, as in scholastic institutions or hospitals, this problem is particularly important.

A similar problem is also met at the time of the redemption of an issue of preferred capital stock, inasmuch as such redemption is usually at a figure above par.

The Correction of Closing Errors

A final consideration has to do with the correcting of errors in the closing work of previous periods. Any omissions and wrong valuations of items in previous periods demand correction, but such correction must not be allowed to affect the results of the current period. These corrections must therefore be made either direct through surplus or by means of an entry in the final section of the profit and loss account as will be indicated in the next chapter. Sometimes where entries of this kind are numerous an account called "Profit and Loss Adjustment" is opened as a clearing account through which these items are carried net into surplus. The chief objection to this procedure is that the adjustments are too easily lost sight of when only the net results appear in surplus. These entries usually carry information of value to shareholders and they should therefore be set forth as a part of the statement of condition rendered at the close of each fiscal period.

CHAPTER XXVII

THE PROFIT AND LOSS SUMMARY—FORM AND CONTENT

Standardization of Form

As stated in Chapter XXVI, the profit and loss summary is supplementary to the balance sheet and should always accompany it whenever it is desirable to make a full and comprehensive showing of condition. This summary is given various titles and is shown in various forms, depending somewhat upon the general class of enterprise to which it relates, the particular purpose for which it is compiled, and sometimes on the predilection of the person who draws it up or for whom it is drawn. With the passage of time the form of the summary, and to a less degree its content, tend to become standardized. The regulations of various governmental bodies have given an impetus in this direction. The Interstate Commerce Commission, the Comptroller of the Currency, public service commissions of various states, superintendents of state banks and of insurance—all require standardized reports from the concerns under their jurisdiction. The Federal Reserve Board has recommended certain forms of statement of both balance sheet and profit and loss to be submitted as the basis of credit by merchants and manufacturers. Investigations made by the Federal Trade Commission point out the desirability of a more uniform method of presenting the results of business activities than now exists. These regulations and requirements as to standard forms of statement do not interfere with the presentation of other forms of statement for other purposes than those required by the regulatory

bodies. As local conditions frequently give rise to problems which are peculiar to individual concerns, standard forms of statement will not always meet local needs. Flexibility to meet given conditions, and deviation from set forms must always be permissible if the accounting department is to render the highest kind of service of which it is capable.

Synonymous Terms

Various titles are used as synonyms for the profit and loss summary, among which are the following: Statement of Profit and Loss, Loss and Gain, Outlay and Income, Revenue, Revenue and Expenditures, Income, Income and Expenses, etc. Of these, the term most generally used is "Profit and Loss." "Business Statement" and "Statement of Outlay and Income" are phrases seldom if ever employed nowadays, while "Loss and Gain" finds little favor. Of the two terms, "Revenue" and "Income," Revenue is used more often in connection with non-profit-making concerns, particularly in connection with state and municipal accounts. "Income and Expenses" is usually limited to the profit and loss statement rendered by clubs, churches, libraries, hospitals, etc., although the term "Revenue" is frequently used in this connection. "Income Statement" and "Account" are terms frequently applied to the profit and loss summary of trading, industrial, and professional concerns; but except where custom has established certain well-defined uses, as indicated above, the title "Profit and Loss" is all-sufficient; there is no doubt as to its meaning or content, and its use for summarizing the temporary proprietorship items is thereby established, particularly in connection with profit-making concerns.

Cost of Goods Sold—Manufacturing Concern

Profit-making enterprises may be roughly divided into several groups as follows: industrial or manufacturing

selling, agency and commission, public carriers or transportation, and financial. The profit and loss summary for these different groups is, in the main, the same although, of course, the content of the summary depends materially upon the nature of the business. In all cases the source of income is from sales—whether of a commodity or of services makes little difference. The first deduction from gross earnings under the title "Sales" or other similar title is the cost of sales. At this point the first marked divergence among the various groups is met. In an industrial enterprise the cost of sales is the cost of goods manufactured and sold as well as the cost of any goods purchased for immediate resale. This latter cost is met only in enterprises which combine manufacture with selling. This does not imply that manufacturing concerns have no selling problem, but rather that in many cases they also purchase other products for sale along with their own product, perhaps as side lines.

For a manufacturing concern which sells only its own product, the first deduction from sales is the cost of the goods manufactured and sold. As stated in Chapter III, the elements of the cost of manufacture are: (1) material, (2) labor, and (3) factory expense. The cost of goods manufactured must be combined with any unsold output at the beginning of the period and a similar output at the end of the period, in order to determine the cost of the goods sold. Cost of manufacture corresponds roughly to the net purchases of a trading business.

Cost of Goods Sold—Trading Concern

For a trading business, i.e., a business which buys its commodity for resale, the first deduction from sales is likewise the cost of goods sold as determined by a "cost of goods sold" formula as follows: To the goods on hand at the beginning of the period is added the full cost of the net goods purchased, and from the sum of these two items is

deducted the cost of the goods on hand at the end of the period. In the case of both the industrial and the trading enterprise, when the cost of the commodity sold is deducted from the sales the result is the first significant figure as to profits known usually as "Gross Profit." Among public carriers the first deduction from sales is the "Cost of Services Sold or Rendered"; this is usually carried under the title "Costs of Operation" or "Operating Expenses," giving the figure of net earnings.

For the other types of business mentioned—agency and commission concerns, and financial enterprises of various sorts—the allocation of the direct costs of the service rendered is much more difficult and is seldom attempted. The so-called general and administrative expense and the expense of selling are usually so inextricably merged with the direct cost of rendering the service that a separate showing of the items is seldom attempted. However, where any expenses are directly applicable to the service rendered, they should be deducted first, before the general administrative and selling expense.

Further Differentiation of Terms

Before going into a detailed explanation of the elements of the profit and loss summary, it may be wise to make a further differentiation of terms sometimes employed, such as: Income and Expenditures, Receipts and Disbursements, Receipts and Payments, etc. All three terms are often met and are frequently misused as titles for the profit and loss summary. Their proper use should limit them to cash transactions or activities only. It is true that in some instances the profit and loss summary is mistakenly made up on a so-called cash basis, cognizance being taken of the income and expense items only when realized in cash. It would hardly seem necessary to convince the modern business man that sales made on credit and not yet realized in

cash are part of his income as much as the items of income realized in cash, the chief difference being that provision must be made in the one case for uncollectible items, while in the other case no such provision is necessary. Yet even today it is sometimes difficult to convince the proprietor of a small business of the necessity, from the standpoint of accurate accounting, of taking cognizance of accrued and deferred expense items. Instances may sometimes, though rarely, arise in which all income has been received in cash at the end of the fiscal period and all expenses applicable to that period have been met in cash and that no deferred items need to be taken into account. Where such is the case, a statement of cash receipts and disbursements might give a fair indication of the profit and loss for the period. In the case of clubs, churches, and other institutions, practically all that is required of the managing officers in accounting for their trusteeship is a statement of trusteeship of cash, i.e., a statement of receipts and disbursements. The point of this discussion is merely that the terms, "Receipts and Disbursements," "Receipts and Payments," and, to a less extent, "Income and Expenditure," should be limited to a statement of cash activities and never applied to the profit and loss summary.

Desirability of Uniformity in Terms Used

So far as the standardization of the sections of the profit and loss summary is concerned, much the same remarks are applicable as to the general title of the "Temporary Proprietorship Summary." Such terms as Gross and Net Profit, Gross Revenue or Income, Net Revenue or Income, Gross Trading Profit, Net Trading Profit, Net Profit or Profit from Operation, or simply Business Profit, are used with little uniformity by the business world at large and even by the accounting profession. While it is never desirable to lay down many hard and fast rules or definitions because

any statement or method of showing results should always be flexible and adapted to the conditions met, still the use of the same terms for different purposes and the use of different terms for the same purpose or section of a statement are, to say the least, confusing to the student. The committee of the Federal Reserve Board which drew up tentative forms for the profit and loss account and balance sheet, has done a good work in the interest of uniformity in accounting terminology. Their suggested form is applicable, however, only to the business of a manufacturer or merchant. In the case of public carriers the regulation of their accounting systems by the Interstate Commerce Commission has brought about a very desirable uniformity of terminology. Other regulating bodies in various states have performed a similar service in the case of public utility concerns, although because of divided authority their rulings lack uniformity.

Profit and Method of Showing

In general it may be said that the term "Gross Profit" is properly applicable to what is left after deducting from the main income the cost of that income. In a merchandising concern this figure is sometimes called "Gross Trading Profit," though the term "Gross Profit" serves the purpose equally well and does not introduce a confusing adjective. When, from this gross profit, the two groups of selling expense and general administrative expense are deducted, there remains what is termed "Profit from Operation" or "Net Operating Profit." One occasionally finds the group of selling expenses deducted by itself from the figure of gross profit, leaving what is termed the "Net Trading Profit." Such a method of presentation serves no useful purpose and shows a figure which has little or no significance. The net trading profit merely represents what is left after deducting one group of expenses, and gives no essential information

which the total of selling expenses would not give equally as well.

There is some difference of opinion as to whether the figure of net operating profit should be arrived at before considering any of the items of financial management, i.e., as to whether such items as interest income and expense, cash discount items, bad debts, etc., which are more or less common to every business, should be included before determining net operating profit or should be set up separately after its determination. The best practice seems to be to use the term "Net Operating Profit" as indicated above, and to show the financial management items in a separate section. In public service utility statements and also in those of some manufacturing concerns, such terms as "Gross and Net Earnings" and "Gross and Net Income" are met. Where these terms are used the gross earnings correspond approximately to sales and indicate the amount of the main income before any deductions are made. After the deduction of the direct cost of securing this income, the item is frequently called "Net Earnings." Alternative terms for these two are "Total Operating Revenue" and "Total Net Revenue." When, to the item of the net earnings or net revenue, income from other sources is added, the figure of total Gross Income is arrived at. When, from this figure of total income the "Charges Against Income" are substracted, which are roughly the financial management expenses, we arrive at the figure of net income which corresponds to the figure of net profit. The use of the terms "Earnings" and "Income" in this restricted way is illogical, and must be regarded as the outgrowth of custom—a custom which is, as stated above, fairly uniform in the case of public utilities.

Form of Presentation—Account Form

As to the form of the profit and loss summary, in the main, two types are met. One is known as the account

form because the items of income and expense are set up like credits and debits in an account. The other is known as the statement or report form. This is sometimes referred to as the non-technical method of presentation because the items are set up in running form without regard to a debit or credit terminology, the order of arrangement being dictated by the logic of the ordinary business man. In the case of the account form the sales or main items of income are placed in juxtaposition on the one side with the direct costs of that income on the other side, the balance of the two sides being brought down as the gross profit. Against this are set up the groups of selling and general administrative expenses. The difference between the two sides is again brought down as the figure of net operating profit to which are added other items of income. The charges against that income, i.e., the expenses incurred in financing the business, are then shown. The balance at this stage is the net profit for the fiscal period and opposite this appears its disposition, showing the portion appropriated to dividend purposes, to reserves of various sorts, and finally to surplus of the portion remaining unappropriated to other uses.

Non-Technical or Report Form

When the profit and loss summary is set up in non-technical form, the figure of sales is first shown. Beneath this rather than in juxtaposition as in the other case, the cost of sales is given, which cost deducted from sales gives the figure of gross profit. Below this appear the groups of selling and general administrative expenses, the deduction of which from the gross profit figure gives the figure of net operating profit or, as sometimes stated, the figure of "Net Profit on Sales." To the net profit on sales are added the other items of income, and from the sum of these are subtracted the expenses of financial management, leaving, as in the other case, the net profit for the period.

Examples of Forms of Presentation

It is impossible and undesirable, as stated above, to lay down any hard and fast form which must be rigidly followed, because a basic principle of all accounting is that it must adapt itself to the needs and requirements of particular conditions. Therefore, only the bare skeleton of a form can be set up with any hope of its being applicable to all conditions. In other words, the form of arrangement and method of showing the statement to be presented at the close of the fiscal period must be flexible, depending upon the use to which the statement is to be put and also depending upon the information which it is desired to set forth.

The skeleton form given below which is suggested by A. Lowes Dickinson* follows the general lines laid down in this chapter. It is designed to serve as a framework for all uses.

MANUFACTURING AND MERCHANDISING:

Gross Earnings from Sales	$........	
Less—Returns, Allowances, and Discount	....	
Net Earnings from Sales		$........
Deduct—Cost of Production or Service		....
Gross Profit		$........
Deduct—Cost of Selling	$........	
Expenses of Management	....	....
Net Profit from Operations		$........

AGENCY AND COMMISSION:

Commissions Earned		$........
Deduct—Expenses of Management	$........	
Cost of Guarantees	....	....
Net Profit from Operations		$........

* In "Accounting Practice and Procedure."

TRANSPORTATION:

Earnings from Operations........................		$........
Deduct—Operating Expenses..............	$........	
Taxes........................	....	....
Net Profit from Operations or Operating Income................................		$........

BANKING:

Earnings from:		
Interest................................	$........	
Commissions...........................	....	
Other Profits..........................	....	$........
Deduct—Expenses of Operation and Management......		....
Net Profit from Operations......................		$........

PROFESSIONAL:

Gross Earnings from Fees.....................	$........	
Less—Out-of-Pocket Expenses included therein..............................	....	
Net Earnings from Fees..............................		$........
Deduct—Expenses of Operation and Management......		....
Net Profit from Operations......................		$........

(The form for the remainder of the statement will be the same in all cases, viz.:)

Net Profit from Operations..................	$........	
Other Income............................	....	$........
Deduct—Interest on Bonds...............	$........	
Other Fixed Charges............	....	....
Surplus for the year..................................		$........
Extraordinary Profits (detailed).........................		....
Surplus brought forward from preceding year.............		....
		$........
Deduct—Extraordinary Charges.....................		....
Total Surplus available................................		$........
Dividends on Stocks................................		....
Surplus carried forward................................		$........

Form for Manufacturers and Merchants

The form suggested by the Federal Reserve Board as suitable for manufacturers and merchants is presented below. It is shown as a comparative statement of several years, but the same content and order of arrangement of items would, of course, be followed for any individual year. When presenting a single year's activities, the money columns should be so used as better to present significant figures and their interrelations. The use of one column for items and another for totals accomplishes this. The form shown presents, after the figure of Net Income—Profit and Loss, a statement of extraordinary charges and credits to profit and loss tied up with the former balance of surplus, an appropriation made of profit and surplus at the end of this period, giving as a final figure the new surplus at its close—which is the figure carried on the balance sheet. This last portion of the statement is often shown as a separate statement of surplus. The items which are best handled as charges direct to surplus so as not to affect the profit and loss showing for the current period, have been discussed in Chapter XXIII on "Reserves and Surplus." There the illegitimate use of surplus as a dumping ground for items which it is desired to conceal was mentioned. To prevent this misuse of surplus the final section of the profit and loss statement is often shown as set forth above. Where, however, a separate statement of the surplus is included as a part of the exhibit of the condition for the fiscal period, the statement of profit and loss will, of course, end with the figure of net profit, if that profit is transferred to surplus, out of which all appropriations of profit to its various uses are made. If, however, appropriations of this period's profits, as distinguished from the accumulated profits of other periods, are to be made for specific purposes, their disposition is best shown in a final appropriation section as a part of the current statement of profit and loss.

Comparative Statement of Profit and Loss

	Year Ended 19—	Year Ended 19—	Year Ended 19—
Gross Sales	$.......	$.......	$.......
Less Outward Freight, Allowances, and Returns	....	....	....
Net Sales	$.......	$.......	$.......
Inventory beginning of year	$.......	$.......	$.......
Purchases, Net	....	....	....
	$.......	$.......	$.......
Less Inventory end of year	....	....	....
Cost of Sales	$.......	$.......	$.......
Gross Profit on Sales	$.......	$.......	$.......
Selling Expenses (itemized to correspond with ledger accounts kept)	$.......	$.......	$.......
Total Selling Expense	$.......	$.......	$.......
General Expenses (itemized to correspond with ledger accounts kept)	$.......	$.......	$.......
Total General Expense	$.......	$.......	$.......
Administrative Expenses (itemized to correspond with ledger accounts kept)	$.......	$.......	$.......
Total Administrative Expense	$.......	$.......	$.......
Net Profit on Sales	$.......	$.......	$.......
Other Income:			
Income from Investments	$.......	$.......	$.......
Interest on Notes Receivable, etc	....	....	....
Gross Income	$.......	$.......	$.......
Deductions from Income:			
Interest on Bonded Debt	$.......	$.......	$.......
Interest on Notes Payable	....	....	....
Total Deductions	$.......	$.......	$.......
Net Income—Profit and Loss	$.......	$.......	$.......
Add special credits to Profit and Loss	....	....	....
Deduct special charges to Profit and Loss	....	....	....
Profit and Loss for period	$.......	$.......	$.......
Surplus beginning of period	....	....	....
	$.......	$.......	$.......
Dividends Paid	....	....	....
Surplus ending of period	$.......	$.......	$.......

Content and Manner of Showing

Some problems in connection with the content of the various sections of the profit and loss summary and also with the manner of showing the content will now be taken up. The first item to be considered is the handling of the deductions from sales. On the Federal Reserve form of statement not only are sales returns and allowances deducted but also outfreight charges and, in some instances, other expenses which are regarded as direct selling costs as distinguished from the indirect costs shown in the group of selling expenses. Practice is not at all uniform in this regard. It should be stated that where the policy of the business is to sell goods f.o.b. destination, the outfreight charges may be regarded as a proper deduction from the figure of gross sales, as otherwise that figure is inflated by the item of freight, the cost of which is no part of the business organization nor is it under its control. Where, however, goods are only sold occasionally f.o.b. destination, the outward freight is more properly treated as a cost of making the sale in the same way as advertising. It should therefore be included in the group of selling expenses rather than be treated as a direct deduction from sales.

Supporting Schedules

With the object of presenting a bird's-eye view of the profit and loss activities for the year, it is desirable that as little detail be shown on the face of the statement as may be necessary to furnish the information desired. The profit and loss statement under this method of treatment must be supported as to its detailed content by schedules giving the full information which may at times be valuable to proprietor or manager. The first supporting schedule may well be headed "Cost of Goods Sold." Therein should be shown the statement of inventory on hand at the beginning of the period, goods purchased during the year, inward

freight and carriage costs, purchase returns and allowances, and goods on hand at the close of the year, the result being the figure carried on the profit and loss summary. Where manufacturing is also carried on, this cost of goods schedule should include a statement of manufacturing activities, set up in the following order: raw materials used in manufacture which will be derived from a statement of raw materials inventory at the beginning, purchases, inward freight, purchase returns, and raw materials on hand at the close of the period. To this figure of raw materials consumed in manufacture should be added the direct labor costs for the period, the sum of the two giving the significant figure of prime costs. The addition to this of the factory expense set up in detail gives the cost of manufacture for the period.

Adjustment of Inventories

An adjustment should be made somewhere in this manufacturing section of the inventories of goods in process at the beginning and end of the period. This adjustment is usually made at the end of the manufacturing statement, but the position depends largely on the cost system in use and therefore the cost elements which make up the value of goods in process. If these values include raw materials, direct labor, and factory expense, and a separation of these elements is difficult or impossible, the adjustment is perhaps best made at the close of the manufacturing statement. Where, however, the elements referred to are easily separable, the difference between the cost of materials in the opening inventory of goods in process and the closing inventory should be added to the materials used in manufacture during this period or subtracted from them, as the case may be. Likewise, the difference between the labor items in the two inventories should be added to, or subtracted from, the direct labor cost for the current period. This makes possible an exact showing of the prime cost for the period.

The element of factory expense in goods in process should then be handled in the factory expense section, in this way doing away with the adjustment at the end of the statement as in the other case. While this method is more difficult and complicated, it is usually to be preferred. The cost of the finished product turned out during the period, as shown by the manufacturing section, must be added to the inventory of the finished product on hand at the beginning of the period, and from the sum of these two items must be deducted the finished product on hand at the close of the period in order to develop the cost of the manufactured product sold during the period. If, now, other commodities are bought and sold in addition to those manufactured, the cost of the goods bought and sold should be shown as for a trading business.

Selling Expense and Administrative Schedules

The second schedule to be shown in support of the profit and loss statement will be the selling expense schedule. Herein will be included all the customary selling expense items, the total of which is carried on the face of the profit and loss statement. It may be desirable in some instances to omit advertising costs from this group and show them on the face of the statement as a separate item. This is a particularly desirable policy either where advertising is a large item, or where results are to be shown during an advertising campaign.

The third schedule is the general administrative items. It seems hardly worth while to attempt a separation of so-called general expense items from those of administration, as any basis of separation must necessarily be arbitrary.

The fourth schedule will show the financial management expense and income items. These are the items which are shown on the statement under the heads of "Other Income" and "Deductions from Income."

These are the customary schedules presented. When the statement of surplus is made a part of the profit and loss statement, as is sometimes the case, and there are many detailed entries during the period direct to surplus, a final schedule should present these charges and credits to surplus during the period.

Schedules for Special Needs

It frequently happens that it is desirable to carry additional schedules to those explained, in order to show an analysis of certain earnings or operations which may be of special interest to the individual concern. Thus, it might be desirable to show an analysis of sales by departments, by geographical districts, or by branches. Similarly, expenses might be analyzed on the same basis. A branch organization, for example, might show all its activities, including the net operating profit by branches, the sum of the branch operating profits being taken into the combined profit and loss statement, after which appear the items of financial management expense and income. As heretofore stated, all these are problems concerning which no arbitrary ruling can be made, the organization of the business and the information desired being always the determining factor.

The problem of valuation as related to the commercial balance sheet has now been completed. Some miscellaneous matters of corporation accounting and finance follow and these complete the second year's course of study.

CHAPTER XXVIII

LIQUIDATION OF A CORPORATION

Reasons for Liquidating—Partial and Complete Liquidation

There are a number of ways in which a corporation may cease to exist and a liquidation take place. The charter, if created for a fixed number of years, may expire. The state may see fit to repeal the charter in accordance with the right reserved at the time it was granted. The corporation may of its own accord surrender its charter; or the courts may decide that the corporation has forfeited its charter rights by reason of non-performance or because of some wrongful act. Failure to pay taxes due the state is an instance. The liquidation of a corporation may take place because of a consolidation resulting in loss of its original identity. In the case of a merger the merged corporation ceases to exist under the terms of the agreement made which may call for a more or less complete liquidation. Sometimes a reorganization effects the liquidation of an insolvent corporation. If the new corporation obtains the assets of the previous corporation under a forced sale, the money received would be applied to the satisfaction of the old creditors' claims.

Insolvency is the most usual reason for liquidating a corporation. Insolvency may be either actual or legal. By the National Bankruptcy Act insolvency is defined as the condition in which the assets of a person, firm, or corporation are less than the debts. This definition emphasizes the economic point of view. A corporation is legally insolvent when the cash assets are not sufficient to pay debts when they become due. Either of these conditions may exist without necessarily disastrous results, though it generally leads

to disaster sooner or later. However, the fact that these conditions do exist indicates that the business in question is not well managed. It is well, therefore, to bring out the more prevalent causes leading to insolvency.

Current Assets Transferred into Fixed Assets

A common cause of insolvency is the tying up of current assets in plant and equipment. While this may be the actual cause, the post-mortem assigns the cause generally to lack of "working capital." When a business expands and orders are coming in in excess of the facilities at hand, there is a great temptation to put a large part of the incoming funds into plant in order to take full advantage of the opportunities in sight. The result is that eventually the point is reached where it is impossible to get the cash necessary to meet maturing obligations. While the need for plant and equipment may justify the outlay, they cannot readily be converted into cash for they are usually of such a special nature as to be of small value without the organization.

Tying up Cash in Stocks of Material

The conversion of the cash resources of a company into stocks of material is another cause of insolvency, especially if the turnover is slow or the business is of such a nature as to require large sums invested in materials. Though capital in this form is generally being converted into cash or other forms of working capital, the fact that large sums are invested in material does not always mean that its cash value measures the amount of working capital. On the liability side of the balance sheet there may be items such as short-time loans or accounts payable which must be deducted in order to determine the net working capital. If the stock carried is disproportionate to requirements, it is a sign of poor management. When this state of affairs is allowed to

continue for some time, the chances are that stocks will become obsolete or deteriorate, resulting in a loss. This will eventually result in the accumulation of current liabilities or floating debts and so bring about a condition of insolvency.

Unwise Use of Cash for Paying Dividends

Dividends are sometimes paid at a rate entirely out of proportion to average earnings, or a rate is maintained that is at variance with current earnings. Profits depend to a large extent upon economic and financial conditions. Business does not move on an even level throughout the years. The rule with conservative corporations is that dividends must not be allowed to rise, even in most prosperous periods, above a conservative estimate of the average earnings. In periods of prosperity the demand on the cash resources of a business increases as the prices of material, labor, and money rise. The result is that while a company may make large profits it may not be in a position to pay more than the usual rate of dividends. Many a corporation after paying big dividends in prosperous times has ended by placing its affairs in the hands of its creditors. Dividend payments are dependent not only upon profits but to a greater extent upon the concern's cash position. To endeavor to do a large volume of business with a small working capital is generally a sure and a quick way of landing in bankruptcy. The prudent way is to withhold dividends until in the normal course of events cash is accumulated beyond the requirements of the business. The book surplus must be reinforced by a satisfactory cash balance as a basis for the declaration of cash dividends.

Sometimes corporations may find it sound practice to pay dividends with the proceeds of temporary bank loans. This is not open to objection under certain circumstances. For example, the company's business may be subject to

wide seasonal fluctuations or it may be of such a nature that it nominally operates with a small working capital. Even in these cases the assumption must be that the loans can be repaid when due without any undue strain or effort. There is some question regarding the soundness of the practice, sometimes resorted to, of issuing long-term obligations or of selling additional stock for the purpose of obtaining cash to pay dividends. If the profits are extraordinarily large and the probabilities are that they will remain so, then the increased capitalization may not be a serious handicap in itself. However, where the surplus shown on the books is fictitious or when a legitimate showing of profits cannot be made, then such a transaction would clearly be fraudulent.

Inability to Secure Cash for Refunding Operations

Corporations sometimes issue bonds because of the fact that a larger return is gained to the stockholders than if more stock were sold. The interest rate on bonds is generally much less than the rate of profits and even less than on short-term loans or notes. The distinction between bonds and notes is mainly that of time. The proceeds from the bonds are commonly used for permanent improvements, while the notes are issued to bridge over the changing of some form of quick assets into cash. Generally the bonds are issued during a period of easy money but they may mature when the money market is hard. If a sinking fund has been provided, all that is necessary is to convert the securities in which the funds have been invested into cash and take up the bonds. But the fact that the returns on the securities in the sinking fund are as a rule much less than can be realized by placing the money in betterments, operates against its use.

When, therefore, the bond issue becomes due in a period of financial stringency, or even during normal times if the business has not been highly successful or if its credit has

been impaired, the company may be unable to liquidate its assets and pay it off. The consequence is that a foreclosure of the mortgaged property is made.

Excessive Borrowing on Short-Term Securities

A frequent cause of insolvency is excessive borrowing by means of short-term securities in the form of accounts payable, acceptances, and notes. The notes may be classified into: (1) notes discounted at some bank; (2) notes sold to the public; and (3) merchandise notes. There are three legitimate uses to which they may be put, namely: (1) to take care of a temporary lack of funds; (2) to extend further credit to customers; and (3) to increase the stock of easily marketable goods on hand. Definite provision must be made to meet the notes at maturity, which in the case of bank loans run from 30 days to six months—generally 60 to 90 days. The use made of funds obtained in this manner is a matter of importance to bankers when extending loans.

To use any one of these forms of borrowing for the purpose of financing betterments and additions is dangerous and essentially unsound. Such obligations are generally contracted during a period of prosperity and expanding business for the purpose of taking care of temporary needs. They frequently become a source of embarrassment when a period of money stringency sets in. If the borrowings are in excess of the quick assets, the policy is unsound at all times. Conservative managers make provision for meeting their notes at maturity before they issue them.

The short-term notes sold to the public usually are for longer periods than those discounted at the banks--the period ranging from one to five years. When the time is not appropriate for a bond issue and it is desirable to defer it, short-term notes are generally issued and marketed through note brokers, often throughout the country. This is an ef-

fective means of deferring a bond issue until money is easier and better terms can be obtained for the larger issue. When the bonds are sold the notes are retired with a part of the proceeds. The danger of this financial practice is that the notes may mature before the bonds can be marketed, as would probably be the case if a period of depression ensued. This would involve disaster if provision for refunding had not been made, especially as the proceeds of such notes, like the proceeds of a bond issue, are generally used for betterments and additions.

Losses in Conducting the Business

A business, through defects of management, does not always fulfill the expectation of its promoters. The price of the product may be set without regard to true costs, and losses pile up with or without the knowledge of the management. Competitive conditions may have to be met and efficiency of management be an absolute requisite if profits are to be made. An organization is of slow growth and the price paid for experience may eat up all the profits. Poor workmanship, duplication of effort, poor planning in the factory, resulting in a high unit cost—these are all factors which may bring disaster if not detected and remedied in time. The promoters may have been unusually optimistic in regard to the business that could be done, with the consequence that a plant is constructed much in excess of actual market possibilities. Losses of a serious nature then result from the poor utilization of fixed assets. "Lack of ability" is the phrase commonly used in describing this cause of insolvency. The usual symptom of the malady is a reduction in current assets and greater difficulty in obtaining credit.

Loss through Fraud, Theft, or Unavoidable Causes

The corporate form of business lends itself to exploitations of many kinds. The public is usually victimized, but

sometimes the stockholders suffer through a breach of trust on the part of officers—as for example, the granting of contracts or the payment of exorbitant salaries to the detriment of the large body of stockholders. Another form of exploitation is the diversion of profitable business to some other corporation controlled by the untrustworthy officers. Then again the officers may buy up unprofitable ventures and sell them to the corporation at a large profit. The juggling of accounts may cover up fraud and exploitation. The profits may be sacrificed for the purpose of squeezing out the minority stockholders, or contracts may be made with a subsidiary whereby it takes most of the profits, or the profitable features of the corporation may be sold to a new company. These modes of freezing out the minority are naturally promoted by the majority stockholders. Whatever may be the means used, these various methods of exploitation may lead to insolvency, their ultimate effect depending upon the condition of the company and the extent to which they are carried on.

Unavoidable causes which may lead to the impairment or complete loss of a corporation's assets are the disruption of the organization and its earning capacity through fire or earthquakes or other natural causes; or new inventions may kill the demand for its product; or improvements in machinery and equipment may render obsolete a large capital investment.

Methods of Liquidation

There are several forms of procedure in case liquidation is found advisable or necessary, and in general there are three courses open, viz.: bankruptcy, voluntary dissolution, and receivership.

Bankruptcy. This perhaps is the most common method. It is of two kinds—voluntary and involuntary. If voluntary bankruptcy is contemplated, the debtor files a petition in

the federal court for his district, stating the number and amount of his debts and the amount of his assets. Creditors are then served with the notice and copies of the petition. Further proceedings are similar to those in involuntary bankruptcy. Involuntary bankruptcy proceedings may be brought if the debts are not less than $1,000 and an act of bankruptcy has been committed.

The following are legal acts of bankruptcy:

1. To convey, transfer, conceal, or remove, or to permit to be concealed or removed, any part of the debtor's property with intent to hinder, delay, or defraud his creditors.
2. To transfer while insolvent any portion of the property to one or more creditors with intent to give preference to them.
3. To make a general assignment for the benefit of creditors, or being insolvent to apply for a receiver or trustee for the property.
4. For the debtor to admit in writing his inability to pay his debts and his willingness to be adjudged a bankrupt on that ground.
5. To suffer or permit, while insolvent, any creditor to obtain preference through legal proceedings and not have vacated such preference at least five days before the sale or final disposition of the property affected by such preference.

After the petition has been presented the next step is the appointment of a receiver or trustee for the purpose of protecting the creditors, and also in the case of the individual to secure the application of his property to the settlement of his debts so far as possible and so secure for him a discharge from further liability.

Bankruptcy proceedings are regulated by the National Bankruptcy Act of 1898. The courts of the Federal Gov-

ernment have jurisdiction in these proceedings. Under the National Bankruptcy Act, a person is insolvent "when the aggregate of his property, exclusive of any property that he has conveyed, transferred, concealed or removed, or permitted to be removed with intent to hinder, delay or defraud his creditors, is not, at a fair valuation, sufficient in amount to pay his debts."

Voluntary Dissolution. A corporation may or may not be insolvent when making a voluntary dissolution. The reasons for the decision on the part of the stockholders to take this step may be various. Perhaps business is falling off and further profitable use cannot be made of the capital, or the company while solvent is losing money and drawing on its surplus. Again the cause may be due to legal complications, especially when concerns are adjudged combinations in restraint of trade. Voluntary dissolution in general is due to the fact that the condition of affairs seems to be unprofitable and the near future promises nothing better.

Receivership. One method of liquidating an insolvent corporation is by means of a receivership. The appointment of a receiver in equity is different in purpose from that of a receiver in bankruptcy. The function of the receiver in equity is to continue the business until it is wound up. In bankruptcy proceedings a receiver is appointed temporarily to preserve the property until a trustee can be elected. He does not conduct the business, but merely takes care of the goods, and pays taxes and dues, until the election of the trustee. A receivership in equity is frequently a preliminary step to reorganization. While the concern is technically insolvent in that the quick assets are not sufficient to meet maturing obligations, the total assets really exceed the total liabilities. Were the fixed assets sold, only a small fraction of their value might be realized. Under these circumstances the appointment of a receiver in equity is a valuable measure, giving time to provide for permanent remedies.

Liquidation under Bankruptcy

In involuntary bankruptcy proceedings the creditors file a petition in the federal courts located in the judicial district where the bankrupt has his place of business or in which his property is located. A copy of the petition is served on the bankrupt. The petition generally asks for the appointment of a receiver to protect the property until a trustee can be elected. The receiver is appointed by the court and is given charge of all property of the bankrupt until the first meeting of the creditors. The proceedings are generally conducted before a referee in bankruptcy appointed by the court. After the expiration of 20 days, during which the bankrupt is allowed to make his reply, he is required to file a list of all claims against him. A meeting of all creditors whose claims have been allowed by the court is then called and, if the petition is granted, a trustee is elected. Creditors who have some security for their claims are not allowed to vote for the trustee unless the security is insufficient to cover their claims, in which case they may vote on the amount of claim which is unsecured.

As soon as the trustee has been elected the creditors should file their claims with him together with the proof of the claims. This may consist of an affidavit stating the nature and amount of the claim, and the security held, if any. The bankruptcy proceedings are carried through unless the creditors and debtor agree to compromise.

The trustee's first duty on his appointment is to collect all the property and any debts owing to the bankrupt, and to turn everything into cash in as short time as possible without unduly sacrificing the assets. As a general rule it is necessary to keep the business going for some time in order to get the most out of it. From the receipts the trustee pays taxes, filing fees, court costs, attorney's fee and wages due, and then the creditors. Servants and persons employed for three months prior to the bankruptcy proceed-

ings are entitled to be paid before any other claims are settled. After that the secured debts are discharged to the value of the security. When these items have been paid, if there remains enough to pay 5% of the total amount of all other claims, the creditors are entitled to have a dividend declared within 30 days after the debtor has been adjudged a bankrupt. If not, they must wait until the trustee has collected a sufficient amount. Afterwards the creditors are entitled to dividends from time to time until the entire amount in the hands of the trustee has been paid out. When the final dividend has been paid the trustee makes up his accounts, presents them at court, and asks for a discharge. He then is entitled to his fee based on the value of the funds that have gone through his hands.

Liquidation under Voluntary Dissolution

A corporation may be dissolved and its affairs wound up by the proper procedure if all its stockholders consent. In some states a majority is sufficient, and in certain cases even less. Statutory provisions prescribe the procedure in most of the states. The process of voluntary dissolution consists simply of gradually closing down the business by realizing on the assets, and distributing the funds among the creditors and stockholders. This usually involves a vast amount of detail work, such as the transfer of contracts, the sale of parts of the business, the taking of inventories, the making of appraisals, and so on.

Liquidation under Receivership

The receivership in bankruptcy is only a step in the chain leading to the appointment of a trustee under whom the process of liquidation takes place. As already stated, the receivership in equity is sometimes not a process of liquidation but a means of carrying on the business pending reorganization. In case the assets are greater than the

liabilities, it may be advisable to effect some sort of reorganization to continue the business. The receiver can continue the business in whatever way the court will permit. Any of its unprofitable and unessential parts may be sold and in this way a partial liquidation may be effected.

With permission of the court the receiver may issue receiver's certificates to meet immediate and necessary running expenses. The certificates usually have the first claim on the assets. It seldom happens that these remedies are sufficient to put the company on its feet and the receiver in the end will wind up the business by disposing of the assets and distributing the proceeds as instructed by the court.

A receiver is an officer of the court and acts under its instructions. In all dubious matters he can protect himself from liability by procuring an order of court or by refusing to act until authorized by an order of court.

Status of Creditors in Liquidation

Creditors may be divided into two groups—secured and unsecured. Those that have a lien upon some specific part of the assets, such as buildings, machinery, or materials, and holders of bonds are among those whose claims are secured. Trade credits and bank loans often have no other security than the standing of the firm.

If the business has been in a receiver's hands and receiver's certificates have been issued, these may be given priority over all debts except those for taxes. The bondholders are usually given the opportunity to appear and present their arguments for or against the issuance of receiver's certificates. The court directs the issuance at its discretion.

Preferred and common stockholders receive what is left after everyone else has been paid. If the preferred stock is preferred as to assets, it takes priority over the common stock. Often, however, the preference is only as to earnings, in which case the two stock issues share equally in the

liquidation. Directors are prohibited by law from declaring dividends except out of earnings. If it should appear that dividends have been paid out of capital and not out of earnings, the stockholders are liable for any amounts thus paid out to them. If the stock issued is only partly paid, the stockholders are liable up to the amount which remains unpaid.

Accounting for Liquidation

Accounting for liquidation may be simple or complex, depending upon circumstances, but it involves practically nothing new in principle. The main bookkeeping features for a liquidation which takes place because of bankruptcy or receivership are treated in Chapter XXXV where some specialized forms of statement are discussed and illustrated. Here it is purposed merely to point out the accounting procedure necessary in the case of a voluntary dissolution. Under a voluntary liquidation the same books of account are used as for the regular record of business transactions, and the procedure is merely a matter of recording the conversion of assets into cash. This involves taking into consideration, in the case of depreciating assets, the adjustment between the asset account, the depreciation reserve, and the loss or gain realized upon the final disposal of the asset. It may be desirable to separate these losses and gains on the sale of fixed properties from the losses and gains of the stock-in-trade, particularly if operations are continued up to the point of the final disposal of the merchandise stock on hand through the regular channels of trade. If, however, the sale of the whole property, including stock-in-trade, is effected, there is no occasion for the separation of the results of the liquidation of the two types of assets. But if this is desirable a separate clearing account, sometimes called "Liquidation Profit and Loss," may be opened to summarize the losses and gains on fixed assets before transferring

the net result of both into surplus. As the assets are sold and converted into cash the liabilities will be liquidated in due course, the accounting features here being the same as during the period of regular operation. After all assets have been converted into cash and all liabilities liquidated, only the cash and net worth accounts will remain on the books of the corporation. If the net result of the liquidation has been to encroach upon the original capital, the net worth accounts will consist of a deficit account and one or more capital stock accounts. If, however, a profit has resulted or if the resulting deficit is not sufficient to wipe out any previously accumulated surplus, the net worth accounts will consist of a surplus account and the various capital stock accounts.

The final step in liquidation will be the declaration of a liquidating dividend of the amount of cash on hand; this will be apportioned, just as all other dividends, on the basis of the stockholdings of the various shareholders. The books will be finally closed by charging the dividend and deficit, if any, to the various capital stock accounts in the one case; or by charging the dividend against the various capital stock accounts and surplus in the other case. In practice the closing of all accounts on the books is seldom carried out, the bookkeeping ceasing with the declaration of the liquidating dividend which disposes of the cash. Except as a matter of complete record, nothing is to be gained by closing off the accounts.

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CHAPTER XXIX

COMBINATIONS AND CONSOLIDATIONS

Reasons for Combination

The primary purpose of the formation of a combination or a consolidation of two or more corporations, or of the taking over of a partnership business by a corporation, is to secure greater profits through unity of control. To this end the various parties to the consolidation agree to subordinate their own interests if the effectiveness of the larger unit is thereby increased. The main object in view is the control of any external or internal factors that affect earnings. Profit may be increased by economy of operation resulting from large-scale production, by economies in use of by-products, by the standardization of product and improvement of quality, and by the elimination of duplicate effort; or the control of sources of supplies or of a marketing organization, or greater ease in obtaining capital, or greater facility in dealing with labor, may be among the advantages obtained. In the past the most important of all factors has been the elimination of competition by the control of selling prices, thus securing a greater hold on the market and reducing selling expense. A consolidated enterprise enjoys the advantage of adding to its plant facilities and rounding out the scope of its activities without the expenditure of new construction or capital purchases entailing the raising of large sums of money.

Types of Consolidation

In the popular mind the terms, combination, trust, holding company, consolidation, and merger stand very

much for one and the same thing. The end sought is generally the same, namely, the power to control in some degree the conditions surrounding a particular industry. The means used are dictated by the actual conditions governing the situation, such as the possibility of coming to an agreement, legal aspects, financial factors, etc.

Where the elimination of competition was the main consideration, the end sought was most easily achieved by arrangements variously termed a "gentleman's agreement," an "interlocking directorate," a "community of interest," a "pool," or a "voting trust"—the results of which were generally referred to as "combinations." Like the earlier form of the holding company, the "trust," they are known in the federal courts as "combinations in restraint of trade," are illegal, and are no longer entered into.

The trust derived its name from the fact that it was controlled by a board of trustees who issued trust certificates in lieu of the stock of the participating companies. Popular aversion to this form of control has led to the formation of another and better type of organization known as the "holding company." While the holding company is generally classed among the combinations in restraint of trade and in a number of instances, like its predecessor, has come to grief through the enforcement of the anti-trust laws, its legality is recognized in those states where ownership of the stock of other corporations is allowed by law and where no restraint of trade or interference with competition is effected. A holding company organized in one state may control corporations organized under the laws of other states. The holding corporation can itself be controlled by the ownership of 50 or 51 per cent of its stock, and the control of its subsidiaries is obtained with stock ownership in the same ratio. Thus a relatively small capital investment may exercise a far-reaching control.

A holding company as a rule buys up the controlling

stock interest of the companies in which it is interested, and elects its own men on the board of directors of the subsidiaries. Frequently the larger stockholders of competing corporations get together and form the holding company. In this case very little difficulty is experienced so far as financing is concerned, which is usually a matter of exchanging the stock of the various companies for the stock of the holding company.

One of the advantages accruing to the holding company, aside from the favorable financial and legal aspects of the enterprise, is that the subsidiaries remain as operating and business units. This is often desirable because of the value of the good-will accruing to the constituent companies from years of business dealing with their customers. The advantages of the close consolidation may be often obtained by stimulating rivalry between the various plants of the same industry and by exchanging information as to successful methods of operation.

A holding company does not generally own all the stock of the subsidiary. Often, however, this is necessary because of the trouble that a small minority of the stockholders can create if the interests of the subsidiary and the holding company clash; such as might be the case if, for reasons of efficiency, the plant of the subsidiary were closed down. It would naturally be a gain to the holding company but a loss to the minority stockholders of the subsidiary if the productive capacity of another plant could be utilized to better advantage.

Accounting for the Holding Company

In Chapter XV where the principles of valuation of permanent investments were discussed, reference was made to the method of valuing the holdings of the stock of subsidiaries as carried on the books of the holding company. A distinction was there made between the accounting proce-

dure in showing the holdings of the subsidiary stocks when the parent company has complete ownership, and when its ownership is only partial—though usually a controlling—ownership. If the ownership is complete, as there pointed out, to show the consolidated balance sheet and profit and loss summaries is the best and only intelligible presentation of condition. Where ownership is not complete the balance sheet of the holding company must carry the stock of the subsidiary at a valuation which varies in accordance with the earnings and dividend policy of the subsidiary. In addition to the method of showing the valuation of the holdings in the subsidiary, it may for certain purposes and particularly for internal use, be desirable to append to the statements of the holding company financial statements of each of the subsidiaries so as to give an intelligent view of the condition of the properties of all the companies. These appended statements are, of course, not an integral part of the financial statements of the holding company but are necessary as furnishing information which the officers of the holding company may need in their direction of the policy of the subsidiary. For a detailed discussion of the consolidated balance sheet and profit and loss summaries the student is referred to Chapter XXXIV.

Aside from the financial statements, no special accounting problems or peculiarities arise in accounting for the holding company. Where, as is usual, accounts with the subsidiaries appear on the books of the holding company other than stock accounts showing the investment, the chief problem lies in the valuation of these accounts. That feature was also discussed in Chapter XV to which the student is referred.

Distinction between Consolidation and Merger

Consolidation, in the legal sense, refers to the complete union of two or more enterprises. It is a fusion whereby

each company loses its identity in the larger unit of the new corporation. The prior corporations are dissolved and cease to exist. The stock of the old corporation is exchanged for that of the new corporation upon an agreed ratio. The usual procedure for statutory consolidation is as follows:

1. Agreement by the directors of the various companies as to terms, etc.
2. Assent of the stockholders of each company to the directors' agreement.
3. Filing of certified copies of the agreement, with the vote in its favor, in the same offices in which the certificates of incorporation of each corporation were originally filed.
4. The exchange and issuance of new stock for the old stock of the constituent companies.

The merger of a number of corporations is generally held to be a method of consolidating. The difference is that a consolidation is a fusion while a merger is rather an absorption. The constituent companies are merged into an existing one and no new corporation is formed. The rights, franchises, and interest are deemed to be transferred to, and vested in, the corporation into which the various companies have been merged without any deed or transfer, and the liabilities follow the rights.

Formation of Consolidation and Merger

In the formation of a consolidation or a merger the services of a promoter may be necessary. This is especially true if the various companies are direct competitors and deep-rooted jealousies exist. Under the circumstances an outsider has the best chance of effecting an agreement between the parties. The difficulty encountered in all consolidations and mergers is the exaggerated idea of officials regarding the importance and value of their own plant

and organization as related to the rest. This difficulty is accentuated in effecting a merger because of the irrevocable nature of the compact and the almost complete disappearance of lines of demarcation as to the tangible and intangible assets of the various units. These difficulties are overcome in many instances by the promoter's keeping the terms arrived at with each company a secret. Direct dealing is possible in the case of a merger when the various companies are supplementary to each other, such as would be the case where a selling organization is merged into a manufacturing corporation the product of which it distributes.

Principles of Valuation of the Constituent Companies

In all the foregoing cases the question at once arises as to the principles which should govern in arriving at a valuation. Should the value of the net assets comprising plant, equipment, etc., or the earnings for a number of years serve as a basis in arriving at the ratio of exchange in cash or stock? What relative weight should be given to the various items? A concern with large assets when not running its plant to full capacity would be averse to having the apportionments based on earnings. The corporation with relatively small assets but with large earnings on the capital invested would not want the value computed on net assets.

If the net assets are an important factor of valuation, an appraisal should be made either through a committee or by independent appraisers. If such an appraisal cannct be made, the books should be examined to see that the valuation of each plant and equipment is correct. Great care should be exercised to see that capital additions represent actual additions to the plant or serve to increase its capacity or lower its cost of production. The method of handling improvement expenditures should be uniform. It is necessary to determine that proper entries have been made in respect of property abandoned or equipment removed from

service. Another point requiring careful investigation is the provision of ample reserves for depreciation, and the same method of calculation and consideration of the different elements of depreciation and the conditions under which they are operative must be taken into account in all the companies.

The main problem in using earnings as the basis for valuation is the determination of the number of years' profits to be averaged. Care must be exercised to handle uniformly the earnings and expenses of the various companies.

Fundamental Principle of Equalization of Conditions

Before an intelligent estimate or computation can be made of the relative value of each unit in the proposed consolidation or merger, the various items that make up the assets and earnings of each company should be examined from the same point of view. Accounting systems and methods are so varied that a common basis of computation must be constructed or agreed upon before a comparison can be made. In general, the following points should be considered:

1. A uniform accounting system for all the companies to be merged, in order to have the same basis in arriving at the results.
2. The reserves for depreciation should be based on an analogous system of calculation.
3. Costs should be determined in the same way if the companies carry on the same industry; if the industries are not similar the cost should be reduced to the same basis.
4. The apportionment of labor, factory expense, and factory overhead should be uniform.
5. Only real items of cost should be included under the head of cost of plant and all income charges should be eliminated so as to give a basis for comparing manufacturing items.

6. The same methods of inventory-taking, both of working assets and fixed capital, should be used. Proper valuation of accounts receivable should be made. The accounts payable should be properly shown.
7. The amount of orders on hand should be considered. The past year may have been poor and the books may not reflect the true state of affairs.

Valuation of Partnership

Where, as frequently happens, a partnership is a party to the merger, it is necessary to consider the method of handling certain items in the partnership accounting which differs from their handling under the corporate form, so that the valuation of the assets and earnings of all the properties can be placed on an equitable basis. Such items are partners' salaries and drawings, and the interest on capital and drawings for the purpose of adjusting the various partners' interests. In partnership accounting the proper treatment of partners' salaries, drawings, and interest on capital and drawings requires that these appropriations of profits be shown in the profit and loss summary; i.e., the figure of net profits for a partnership is determined before taking into consideration the items mentioned. However, one occasionally finds partners' salaries and adjustments on account of interest handled as expenses of the business. To place the earning capacity of the partnership on an equitable basis for comparison with the earnings of a corporation, a reasonable figure for the salaries of the partners as managers of the business must be agreed upon and treated as an expense chargeable to operations before the determination of net profits. Partners' drawings and interest adjustments on account of capital and drawings should not be taken into account in the determination of earning capacity. In determining the amounts of partners' salaries, that which

would be appropriate for similar capacities in a corporation should be allowed as deductions from earnings. All the items mentioned above in connection with placing the properties of the several corporations on an equitable basis for valuation apply with equal force to the properties of any partnerships which may become parties to the merger.

Earning Capacity

Any extraordinary profits or losses not due to the ordinary operations of the business should be eliminated when computing profits. Interest on borrowed money should not be included. The charges to operating expense on account of repairs should be adequate, and care must be taken to see that charges to the repair accounts do not show a sudden falling off toward the close of the period under review. The reserve for depreciation should be credited with the proper amounts. Sales, effected for a subsequent period, are not to be considered in the accounts of the current period as this would tend to inflate the profits. Shipments made to branch offices or on consignment account should not be regarded as sales. Ample provisions should be made for all liabilities for expenditures incurred during the period under review and outstanding at the close thereof. The inventories should be checked over carefully and certified by the parties taking them. Allowance for old or obsolete material should be made.

Good-Will

The determination of the value of good-will is generally a delicate proposition unless the parties to the consolidation or merger first agree as to the basis on which it is to be computed. This is generally anything that the interested parties choose to make it.

The two methods commonly used for estimating the value of good-will have already been discussed in Chapter XVIII.

Capitalization of a Consolidation or a Merger

The capitalization of a corporation, in a legal sense, is the sum total of the par value of the authorized capital stock. From an investment or economic point of view it is the sum total of all the stock and bonds issued or outstanding.

There are three different bases of capitalization: (1) cost of property plus accumulated surplus value; (2) cost of reproducing the property; and (3) earning power. According to legal theory the investment or the cost plus surplus is the proper basis. This idea has been fostered by the fact that shares have been assigned a definite face value. While at the beginning of a new enterprise investment value and capitalization may closely correspond generally, they soon diverge widely—due to smaller or greater earnings than were estimated or to depreciation or accretion in the value of the assets. When the *potential* earning power of the business begins to be realized, conditions begin to change and the value of the tangible and intangible assets fluctuates. The basis of capitalization changes with these fluctuations and the laws regulating it are in practice only complied with nominally. The custom is to adjust the value of the assets to harmonize with the capitalization rather than vice versa. Such a policy is to be deprecated.

The cost of reproducing the property as a basis of capitalization is as yet only seriously considered in theory. It is very doubtful if the method will ever be used in actual practice.

Earnings, past or potential, perhaps form the basis for capitalization most frequently used. Investment value closely corresponds to the rate earned and the degree of permanency of the earning power. To secure an income is the motive of all investment. In practically all consolidations and mergers the estimated increase in earnings due to the application of better methods of operation plays an

important part not only in the promotion and formation of the new company, but also in deciding upon the capitalization. While the plant value and the past earnings of each of the companies may be considered in allotting them their respective interests, these are not a safe guide as to future earnings. In the case of partnerships especially and often in the case of corporations, there is a loss of valuable good-will. It is generally held that the benefits of consolidation greatly overbalance these disadvantages. The savings due to the elimination of duplicate work in factory and office, the cutting down of the item of rent, the saving in the cost of selling, the greater effectiveness of advertising, etc.—all are reasons held out as warranting this or that capitalization.

Payment of Amalgamated Interests

In a consolidation or a merger the usual practice is to pay the various interests in the companies which are amalgamated with bonds, preferred and common stock, and in some instances with cash. The proportion and kind of payment will depend upon the conditions surrounding each case. The prevalent custom is to pay for the net assets in preferred stock and to issue common stock for good-will. Often, however, bonds are used to pay for the tangible assets; preferred stock is issued for the intangible assets; and common stock represents the additional profits that are expected to accrue to the corporation through the consolidation or merger. The issue of bonds to cover *all* the tangible assets is generally a dangerous procedure because of the high fixed charges resulting therefrom—though advantageous when the difference between the fixed charges and the net earnings is large. Bonds generally carry relatively small interest because of their safety, whereas the use of preferred stock entails a smaller equity for the common. The bondholder is not concerned with the capitalization or nature of

the issues over which he takes precedence. For the same reason it is not usual for the preferred stockholder to complain about overcapitalization through the use of common stock. The business risk involved depends upon the nature of the business and the ability of the management. No financial arrangements should be made that do not take into consideration the fluctuations that are inherent in the business and their effect upon net income.

Another apportionment sometimes made is to issue bonds for the fixed assets; preferred stock for the working capital; and common stock in proportion to the prospective earnings of the consolidation or merger. New bonds are exchanged for the old bonds or preferred stock of the constituent companies, while the common is exchanged for the corresponding issues in the merged corporations. The balance is used for the purpose of paying organization expenses and the fees of the promoters, and to provide working capital for the consolidation. The ratio and the medium will depend to a great extent upon the nature of the business, the attitude of those who are interested in the merger corporations, and the optimism or hopes of the promoters.

Closing the Books of the Merged Concerns

Closing the books of the merged concerns presents the problems of accounting for the sale of the subsidiary companies. This may be effected in two ways. Where the sale is made at the book values as carried on the records of the subsidiary, no adjustments whatever become necessary. Where, however, the price received is less or greater than the book value of the concern, it becomes necessary to show the difference between book and sale valuation. In taking account of these differences two methods are employed. Under the one an adjustment is made of all the detailed valuations of the items of property as taken over. It becomes necessary, therefore, to adjust each property account

through its depreciation reserve or through surplus, in order to bring it to the value at which it is taken over. This may, and frequently does, necessitate setting up a good-will account on the books of the vendor company. After the books are thus brought into accord with the sale agreement, the closing of the accounts follows the procedure laid down in Chapter XXVIII for the liquidation of a company.

Under the second and more common method, no attempt is made to adjust the individual items of properties sold in accordance with the appraisal committee's report, but all differences are cleared in a lump sum through the surplus or deficit accounts. If the sale is made for cash, the amount received is then disbursed as a liquidating dividend to the shareholders. If the property is sold for stock and bonds in the merged company, either this stock is handed over *en bloc*, in which case it is likewise distributed as a liquidating dividend, or the merger company may issue the stock and bonds as a liquidating dividend for the vendor company on the basis of the report of the shares belonging to each stockholder. Upon notice that such stock and bonds have been issued to its shareholders, the vendor company closes up its records completely by cancelling its proprietorship accounts against the charge account set up against the merger company until the stock is issued.

Opening the Books of the Merger

As a merger is a corporation, the opening of its records follows the same lines as that of any other corporation, excepting that when payment of subscriptions for capital stock is to be recorded, cognizance must be taken of the manner of payment. The subscription contract, in so far as it relates to the various subsidiaries, is usually canceled by turning over the properties of the subsidiaries. The assets are taken over at an appraised price which becomes the basis for the amount of subscription to the stock of the

merger by each subsidiary. In Chapter I, where mention was made of the payment of stock subscriptions in property, it was pointed out that it may be desirable to bring onto the books the lump sum representing the appraised purchase price paid for the subsidiary some time before the appraisal committee has submitted its report on the detailed valuation of the various items of property taken over from the subsidiary. The customary method of handling the situation on the books of the merger was there shown. The bookkeeper is not concerned with the valuation of any of the items taken over, but must make his entries in accordance with the valuation report turned in by the appraisal committee. The main problem in the merger, then, is one of valuation and not of accounting. As stated above, payment to the subsidiaries may be made by the merger in either of two ways. An entire block of stock may be turned over to the subsidiary company and be distributed by it as liquidating dividends to its stockholders, or the merger may issue shares to the individual stockholders of the subsidiaries in accordance with information furnished by the subsidiary.

CHAPTER XXX

BRANCH HOUSE ACCOUNTING

Advantages of Branch and Agency System

The branch and agency forms of increasing sales in large enterprises are an outgrowth of the policy of "service" combined with economy of management which dominates all present-day capitalistic enterprises. The tendency of a successful business is to absorb other businesses in the same line through combinations and amalgamations, and thus the policies of apparently independent units in a single district or throughout the entire country may be controlled by the central management at a head office.

Where a business serves consumers direct by means of retail stores, as for instance, the chain tea stores, the chain cigar stores, the 5c and 10c stores, the system offers one of the best means of bringing the business into close personal touch with customers. It gives customers an opportunity to examine the wares at their convenience, and at the same time it gives the local branch manager an opportunity to build up good-will for the distant proprietor.

By these means also, stocks of merchandise can be better selected for local needs, and the buying power of each territory and the quantities carried on hand can be better adjusted to secure the greatest possible turnover of stock during an operating year.

There is no doubt that a campaign of education to introduce new goods or appliances can be more successfully conducted through local branches or by personal visits of local agents residing in the territory. Illustrations of this are the present methods of selling sewing machines, phono-

graphs, pianos, electric and gas appliances, etc. When branches are given authority to sell on credit and collect their own accounts, credits can be more intelligently extended and collections can be more carefully watched by a local branch manager.

Agency and Branch Differentiated

There is a great deal of difference between the organization and management of agencies and of branch houses. An agency simply acts as a local salesman for a certain territory. It secures orders and forwards them to the head office. The head office passes on the credit of the purchaser and assumes the risk of refusing or accepting the order. If it accepts the order it also collects the account when it is due. Naturally it must keep a memorandum of sales, either to pay a commission to the agent, or to ascertain whether or not the agency is a paying venture, or for both reasons. A branch, on the other hand, has a much higher degree of self-management. It may receive at least the greater part of its stock of merchandise from the head office, but it usually makes its own sales. It may pass on its own credits and may collect its own accounts receivable; and sometimes it pays all its own expenses.

There are many modifications of the self-management of branches, especially in the matter of financial control. Some branches deposit all their receipts to the credit of the head office and have no authority to withdraw money for any purpose. In such cases the branch is supplied with a separate petty cash fund kept at a fixed sum on the imprest cash system. Other branches receive and pay money and simply make periodic remittances of surplus amounts to the head office as if they were entirely independent units. Various policies of control have been formulated to suit the nature of the business and the degree of self-management granted to the local branches.

Degree of Control Desired

The question of the particular kind of branch or the size of the agency or branch which it is desired to establish depends entirely on the peculiar needs of the business under consideration, and the degree of head office control which is necessary to secure the maximum results with the minimum of expense. An agency by its very nature is completely under the control of the central office. The agent has no powers other than those granted by his principal.

If the business is such that a large stock of merchandise is necessary, and a high degree of discretion and executive ability must be exercised, or if it is desirable to establish practically independent units with only central executive control over the entire purchasing and financial systems, branch stores may best serve the purpose.

The same system, however, will not meet the needs of every business, or even of every branch in the same business. Changes must be made for diversified local conditions which are peculiar to each establishment.

Factors of Successful Management

Certain points must be watched in all systems and under all conditions. Since the total net profits or losses are determined largely by the average turnover of circulating capital invested in the merchandise, the control of the quantity of merchandise, as well as the price, is a question which must have very careful attention and intelligent supervision. The stock on hand must be that quantity which will insure a supply adequate at all times to meet the demands of the trade, and which at the same time will be the minimum necessary to accomplish such a result. Each article turns in accordance with certain fixed principles. Certain goods turn faster than others, but there is a general relation between the rate of turnover and the profit per turn which should be carefully watched.

In the last analysis the success of every branch store system depends upon three things:

1. A fair gross profit on sales, augmented by
2. A proper rate of turnover on the merchandise carried, and
3. Economical management.

Since expenses are a more or less fixed item, their relation to the total volume of business transacted must have the constant attention of the manager. Statistical charts made up from the reports sent in by the various branches, with summaries of total results, compared either by territories or by branches or by product will show to the manager the past history and also the present trend of the business as a whole or in parts. From these charts he is able to form an intelligent basis for inaugurating future policies of control.

Main Principles of Branch Accounting

The underlying principles upon which branch store accounting is based are very simple, but the superstructure will be simple or complex according to the nature of the business and the information which the head office requires for its accounts and records.

The main points to be kept in view in installing a system of accounts are to insure:

1. Control or supervision by the head office.
2. Separate results for the trading of each branch.
3. Facilities for centralizing and comparing such separate results.

In discussing the question of branch accounting any treatment of the problems peculiar to it is so dependent on the particular system employed that only a very general statement of principles can be made unless the comment is confined to a particular system and this might not be

relevant to all systems. There are, however, certain principles which apply fundamentally to all systems. The question of the degree of control desired by the head office and the resulting information which must be given by the branch to the head office governs largely the detailed ramifications of general principles which will be necessary. Also the amount of information as to the results of the business done at each branch which it is desirable for the branch management to know has an important bearing on the manner of keeping the accounts. Sometimes it is not desirable that the branch manager should know the amount of profit which his branch is earning. While, of course, it is impossible to keep a shrewd manager in entire ignorance of the results of his management, yet the exact figure of profit earned by his branch can be kept from him if the books are handled properly. It is purposed here to develop by statement and illustration most of the problems which are peculiar to branch and agency accounting.

Agency Accounts

What has been said with regard to the difficulty of presenting a widely applicable statement of branch accounts is equally true of agency accounts. There is no well-marked line of distinction between agency and branch organization. What may be termed an agency by one concern will be looked upon as a branch by another concern. For the purpose of this discussion, however, the distinction stated above between these two forms of organization will be adhered to. Where, therefore, the agency is for the most part simply a sales agency, practically nothing in the way of accounts and accounting control is necessary other than what must always be used in connection with traveling salesmen. The agency must be furnished with an expense fund and must, of course, send in to the head office all its orders and sales. The expense fund is best operated under

the imprest system. To keep track of the results of the various agencies it will be necessary on the head office books to keep the records of the activities of each branch separate from one another and from those of the head office. At the close of the fiscal period a comparison of agency sales with the direct costs of making those sales and with the expenses of maintaining the agency will develop the net result of the agency's activities. The problem, therefore, of agency accounting is simply one phase of the general problem of accounting, viz., furnishing, by means of whatever analysis may be necessary, the information which will be of greatest advantage to the management of the business.

Branch Accounting Records

The accounting records of the branch will be simple or complex according to the conditions to secure control over which they must give information. Sometimes a very simple set of records will furnish all the data needed. In other cases just as elaborate detailed records as are employed at the head office may be required to secure the information desired. Sometimes it may appear best for the branch to keep but few records, and for the head office to keep all the main accounting records by means of duplicate reports of all branch transactions. Again, to exercise proper control over the branch, even where it keeps a full set of records, it may be advisable to require periodic reports of all branch activities. Sometimes these are required daily, but more often a weekly or monthly summary of activities serves the purpose equally well.

Illustration of Simple Branch Accounts

The simplest method of keeping the branch and head office accounts can be illustrated by a short problem in summarized form. In the illustration given it is assumed that the head office furnishes the cash necessary to inaugu-

rate the branch, and that all stock-in-trade is supplied by the head office. It is further assumed that the branch keeps a complete set of records which will furnish information as to profits and losses at the close of the fiscal period. On the branch books it will be necessary to open accounts with Merchandise (here, for the sake of brevity, carried under one title rather than as usually shown), with Cash, with Expenses (again, for the sake of brevity, carried under one head), with the Head Office, and with Profit and Loss. These accounts present no peculiarities excepting the Head Office account which stands on the branch books as the net worth or proprietorship account. It is credited with all values received from the head office and charged with all values returned to the head office or expended on head office account. The net profit for the period is closed from the Profit and Loss account into the Head Office account in order to show the present net worth or proprietorship with which the branch enters the new fiscal period.

On the head office books there need be carried only an account with each branch by name or number. The charges and credits in this account are the exact reverse of those in the Head Office account carried on the branch books. At the close of the fiscal period it is necessary to receive the report of the branch profit or loss before that can be incorporated in the branch account on the head office books. The following problem will show the manner in which these accounts are kept.

Problem. The head office sends to the branch during the year $5,000 cash and $50,000 worth of merchandise. The branch makes sales to customers on account amounting to $45,000 and cash sales of $10,000. It incurs expenses of $7,500. Its collections from customers on account amount to $25,000. It remits $37,000 to the head office. The inventory of merchandise at the close of the year is found to be $12,500.

Solution

Branch Books

Cash	$ 5,000.00	
Head Office		$ 5,000.00
Merchandise	50,000.00	
Head Office		50,000.00
Customers	45,000.00	
Merchandise		45,000.00
Cash	10,000.00	
Merchandise		10,000.00
Expense	7,500.00	
Cash		7,500.00
Cash	25,000.00	
Customers		25,000.00
Head Office	37,000.00	
Cash		37,000.00
Merchandise (Inventory)	12,500.00	
Merchandise		12,500.00
Merchandise	17,500.00	
Profit and Loss		17,500.00
Profit and Loss	7,500.00	
Expense		7,500.00
Profit and Loss	10,000.00	
Head Office		10,000.00

Head Office Books

Branch	$55,000.00	
Cash		$ 5,000.00
Merchandise		50,000.00
Branch	10,000.00	
Branch Profit and Loss		10,000.00

In making up the head office balance sheet, the Branch account as carried on the head office books will be an asset representing the property of the head office invested in the branch. Instead of carrying this property under the title "Branch," it is sometimes desirable to include all branch values with similar values at the head office. This results in a balance sheet which is similar to the consolidated balance sheet explained in Chapter XXXIV.

Illustration of More Complex Branch Accounts

As an illustration of a somewhat more complex method of keeping the books, a problem is appended illustrating the sending of goods to the branch at a nominal figure or at sales price. Here it is not desired that the branch management be able to determine the profit and loss of its activities; consequently the goods from the head office are not charged to the branch at cost but at some fictitious value. Where this is done it is best to open two accounts, the one to record the merchandising transactions between the branch and the head office, and the other to record all other interactivities.

Problem. The head office sends to the branch during the year $10,000 cash and $77,000 worth of merchandise as billed at a conventional price. The branch makes sales to customers on account, of $60,000, and for cash $25,000. The expenses of the branch are $10,000. Collections from customers amount to $45,000 and remittances to head office amount to $66,000. The inventory of the stock-in-trade at the close of the year is $14,000, this valuation being on the same basis as the original charge, i.e., at the conventional figure.

Solution

Branch Books

On the branch books two accounts are opened with the head office, one entitled "Head Office General," and the other "Head Office Merchandise." Neither one of these accounts represents the full proprietorship of the head office in the branch, nor do both of them together represent the true proprietorship because of the fact that the merchandise is priced to the branch at a fictitious figure. The branch books cannot show the true status of relations with the head office so long as the policy of billing goods in this way is maintained. That is the chief reason why it is best to set

up the two accounts, in one of which appear the merchandise transactions at the fictitious figure, while in the other appear all other transactions correctly valued. This Head Office Merchandise account is more in the nature of a memorandum or consignment account and is offset by an account called "Purchases from Head Office." On the branch books appear also accounts with Customers, Branch Sales, and Expenses—as in the other case. There is no Profit and Loss account because it is impossible to determine on the branch books the correct profit and loss for the period. All expense and income accounts are closed directly into Head Office General. The entries necessary to book properly the activities as set forth in the illustrative problem are as follows:

Cash	$10,000.00	
Head Office General		$10,000.00
Purchases from Head Office	77,000.00	
Head Office Merchandise		77,000.00
Customers	60,000.00	
Cash	25,000.00	
Sales		85,000.00
Expense	10,000.00	
Cash		10,000.00
Cash	45,000.00	
Customers		45,000.00
Head Office General	66,000.00	
Cash		66,000.00

In closing the branch books the inventory is brought into the Purchases from Head Office account which by its balance shows at billed price the goods disposed of by sale. The latter figure is taken into the Head Office Merchandise account so that its balance will also be the amount of goods still on hand as shown by the inventory. Purchases from Head Office and Head Office Merchandise are memorandum accounts calling attention to the fact that the merchandise on hand at the branch is not carried at its correct valuation but must be adjusted before incorporation with the head

office accounts. The entries to effect this adjustment on account of the inventory and to close the branch books are as follows:

Purchases from Head Office (Inventory)	$14,000.00	
Purchases from Head Office		$14,000.00
Head Office Merchandise	63,000.00	
Purchases from Head Office		63,000.00
Sales	85,000.00	
Head Office General		85,000.00
Head Office General	10,000.00	
Expense		10,000.00

These entries close the books of the branch so far as is possible in view of the fact that accurate results as to profit and loss cannot be shown from the way in which merchandise is billed to the branch. There is perhaps no objection to using a Profit and Loss account as a summary account for income and expense items rather than the Head Office General account as shown here; though a Profit and Loss account is somewhat of a misnomer since profits and losses cannot be determined. In the problem given all expenses are grouped under one Expense account. This is done for the sake of brevity, and it is to be understood that as detailed an expense record will be kept on the books of the branch as may be necessary to give the information desired.

Head Office Books

Where the head office bills merchandise to the branch at any other figure than cost, the record of such shipments is best made in much the same way as with consignments. Memorandum accounts are set up to indicate that goods have been shipped to the branches. This is necessary because of the fact that shipments should not be entered in the regular merchandise accounts of the head office at any other figure than cost. Periodically, from memoranda carried in these special accounts, the true values of the mer-

chandise shown as handled through them must be brought into the regular merchandising accounts. The manner of making these adjustments is taken up on page 535. Here will be shown all the accounts affected on the head office books by the current transactions with the branch. The entries necessary to record the data of the problem are as follows:

Branch A General	$10,000.00	
Cash		$10,000.00
Branch A Merchandise	77,000.00	
Sales to Branches		77,000.00
Cash	66,000.00	
Branch A General		66,000.00

It is to be noted that separate merchandise accounts are opened with each branch by name but that only one Sales to Branches account need be opened. The Branch Merchandise account with each branch provides all the necessary data for making the adjustment at the close of the period, the offsetting memorandum account for all the different Branch Merchandise accounts being the Sales to Branches account. At the close of the period, upon report of the total activities for the period at the branch, the following entries are made on the head office books:

Branch A General	$85,000.00	
Sales		$85,000.00
Expenses	10,000.00	
Branch A General		10,000.00

An alternative method of summarizing branch activities is sometimes used, as follows:

Branch A General	$85,000.00	
Branch A Profit and Loss		$85,000.00
Branch A Profit and Loss	10,000.00	
Branch A General		10,000.00

Under the first method the effect is to merge the activities of the branch with the similar activities of the head

office. A statistical abstract of the different branches is then depended upon by the head office management to show the results of the period's trading at the various branches. Under the second method the effect is to bring onto the books under the various branch Profit and Loss accounts the results of the trading in each case. Whichever method best gives the information desired by the head office will, of course, be adopted.

A brief discussion will now be given of the chief problems met in branch accounting. No attempt will be made to discuss the problem of branch organization from the standpoint of system or control. Such a discussion belongs more particularly to the field of auditing than to that of accounting.

Purchases

From the head office point of view no special problems are met in the matter of purchasing. From the standpoint of the branch the question of purchases is largely the same as the question of sales from the head office standpoint, and the problem of sales is chiefly one of the price at which goods should be billed to the branch. This is treated in the next section. Attention is called here to the need of a very careful control and checking up on purchasing activities of the branch where the branch is permitted to buy some portion of its goods from outside sources. This may become necessary in cases of emergency, or may be a matter of fixed policy in those cases where commodities are sold at some of the branches which the head office does not care to furnish or cannot handle with economy. Where the branch makes purchases both from outside and from the head office, the result may be to complicate the adjustments necessary at the close of the fiscal period. The underlying principles on which the accounts and their adjustments rest are, however, the same.

Sales

From the standpoint of the head office, the problem of sales to the branches is, as mentioned above, largely a problem of policy as to whether goods shall be invoiced at absolute cost; at cost plus a small percentage for overhead expenses; at sales price, i.e., at the price at which the branch is expected to sell the commodity; or at some arbitrary figure which is designed for the purpose of keeping the branch in ignorance of the actual cost of the goods dealt in and therefore of the profit and loss upon the branch's activities. If goods are billed to the branch at sales price and disposed of at the same price, a comparison of the branch records covering their purchases and their sales should indicate by the difference between the two the amount of stock on hand at any time; i.e., billing the goods to the branch at sales price makes the merchandise records of the branch virtually a perpetual inventory of the goods on hand. This method effects a closer check on losses and waste, for which, of course, a small allowance must always be made. One of the most serious wastes to be checked up is occasioned by too liberal weights and measures to customers. On the other hand, invoicing the goods at sales price gives the branch manager less discretion in adjusting differences with customers inasmuch as defective goods must usually be returned to the head office to secure for the branch full credit. Further, billing the goods at sales price with the purpose of securing accurate control over the branch merchandise necessitates the pursuit of an inflexible policy of sales at the billed price. Daily or weekly adjustments on account of fluctuations in the market cannot be made without losing the control over stock which the policy of billing at sales price secures. In some lines of business this is an insuperable defect.

Where merchandise is invoiced at cost the branch manager has a rather more secure hold on his customers in that he can give immediate satisfaction by making allowances and

adjustments to settle difficulties as they come up. Particularly where the manager has an interest in the profits, a much greater incentive is offered him to conduct the affairs of the branch in an efficient and economical manner. This responsibility and power to make adjustments may be abused, however, and a greater degree of control can usually be secured by the head office where merchandise is billed at sales price.

As mentioned above, sometimes goods are billed to the branch at an arbitrary figure. Inasmuch as the question of control by means of a perpetual inventory does not enter into this policy, large discretion can be given the branch manager without unsatisfactory results in checking up the merchandise. He may be allowed to make whatever adjustments with customers seem advisable. Changes in selling price can be made as often as conditions demand, either at the instance of the head office or at the discretion of the manager. A policy of this sort requires a much more thorough system of report from the branch to the head office in order to give the head office a means of checking up periodically the activities of the branch.

It is well to point out that on the books of the head office sales to branches are in no sense income items and must never be recorded with regular sales to outside parties. Similarly, sales or transfers among branches are in no sense earnings. It should be noted that, to keep the head office records correct and up to date, any transfers of goods among branches should be reported immediately to the head office; better still, the authorization of the head office, except in cases of emergency, should be given before such transfers can be made.

Adjustments on Branch and Head Office Books

Head Office and Branch accounts are essentially accounts current between the head office and the various branches.

At the close of the fiscal period when the results of the period's business are being summarized, the four classes of adjustments which are sometimes necessary in the case of accounts current may have to be made. The head office may show a charge to the branch for items which the branch has not yet received at the close of the fiscal period. Similarly, the branch may have charges and credits to the Head Office account which the head office records do not show. If this condition exists, the two accounts must be reconciled in accordance with the method shown in Volume I, page 497. Almost invariably, unless a system of complete daily reports is in effect between the branch and the head office, the head office will have to wait for certain reports from the branch at the close of the fiscal period. The nature of the entries to effect these reports is given in the problem illustrated on page 532.

The chief adjustment which is needed on the head office books is brought about through the policy of charging the branch with merchandise at some other figure than cost. Where this is done, the profit and loss on the branch activities cannot be determined until true costs are taken into the accounts in place of the fictitious figures used during the current period. The basis for converting the fictitious figure into a true cost figure is, of course, a secret known only to the head office. The memorandum accounts covering the merchandising transactions with the branch furnish the basis for determining the cost of goods sold by the branch. Thus, if goods are billed at, say, 30% above cost the billed price becomes 130% of the cost. It is therefore possible to determine the cost of all goods disposed of by the branch and of those still on hand. If it is desired to merge all the branch activities with the similar activities of the head office, the only adjustment necessary at the close of the fiscal period is to convert the sum total of the inventories on hand at the various branches to a cost valuation basis and include

them with the head office inventory. This gives the data needed to determine the cost of goods sold and gross profit on the combined activities of the various branches and head office.

It is usually essential that the results of trading at each branch be determined, whether or not such results be incorporated separately on the head office books. Under the assumption that they are to be set up on the records of the head office, the billed cost of the goods disposed of at each branch must be converted to a cost basis and shown transferred from the Head Office Purchases account to the Profit and Loss account with each branch. This separates the total cost of goods sold as among the various branches and the head office. When the various branch Profit and Loss accounts are credited with their respective earnings from sales, the gross profit or loss on the trading activities at the various branches will thus be shown. Similarly, the regular merchandise accounts in which have been recorded the head office merchandising activities will show the gross profit on sales made at the head office. These adjustments are made without interfering in any way with the memorandum accounts carried on the branch books and on the head office books—accounts which have no place in the balance sheet of the head office. In their stead will appear the combined inventory of goods on hand at the branch and the head office converted to a cost basis.

Example of Adjusting Entries

The character of the entry needed to effect these adjustments will now be shown, using the data of the illustrative problem shown above. Comparison of the report of inventory from the branch, $14,000, with the record of goods shipped to the branch, $77,000, shows that goods to the billed value of $63,000 were disposed of at the branch. The records in the head office show that the goods were

billed to the branch at 140% of cost. Converting this figure of $63,000 on the basis of 140% of cost develops a true cost of goods sold of $45,000. This is brought onto the head office books by the following entry:

Branch A Profit and Loss	$45,000.00	
Purchases		$45,000.00

Reference to the solution above shows that Branch A Profit and Loss has been charged with $10,000 expenses and credited with $85,000 earnings from sales. The gross profit, therefore, on the period's activities at Branch A is the balance of the Branch A Profit and Loss account, i.e., $30,000. The only other adjustment necessary is the conversion of the Branch A inventory of $14,000 to a cost basis. The true cost here is, of course, $10,000 since the goods were billed at 140% of cost. The $10,000 will be included with the inventory of goods on hand at the head office before the determination of the head office cost of goods sold and gross profit can be made.

To secure a better understanding of the interrelations of these various accounts it is suggested that the student set up all the accounts and follow through them the transactions given in the illustrative problem above, both on the books of the branch and on the books of the head office.

A final problem of adjustment as between the head office and branch books concerns the treatment of fixed assets carried on the books of the branch. It may happen that the branch makes purchases of various pieces of property which are charged up to fixed asset accounts on the branch books. To secure uniform treatment, particularly as regards depreciation, it is customary at the close of the fiscal period to transfer the record of all fixed assets to the head office books. This is accomplished by entry on the branch books of a charge to Head Office General account, and credits to the various fixed asset accounts. On the books of the head

office the record will be a charge to the various fixed asset accounts and a credit to the various Branch General accounts. Usually, therefore, on the branch books appear only current asset items, current liability items, expense and income items.

Reports from the Branch

The reports which the branch makes to the head office depend entirely on the degree of control to be exercised by the head office over its various branches. Accordingly, no general methods of universal applicability can be described. A statement of some of the different kinds of reports and the use made of them will be given. In some cases the branch books are kept in duplicate, the duplicates of all books of original entry being sent to the head office at the close of each month or oftener if desired. From these duplicate records the head office can keep a ledger record with every branch for comparison with the ledgers as kept by the branches. In other cases the head office requires that the branch send in daily duplicate copies of all business papers covering the transactions of the branch. Thus sales tickets are made in manifold, one copy of every sale, whether cash or credit, being sent to the head office. This furnishes the head office with a control over the selling activities of the branch. If the branch has charge of its cash a duplicate ticket of all deposits made should be forwarded to the head office. The canceled checks drawn by the branch must be forwarded by the banker to the head office. This procedure keeps the head office informed as to the cash transactions of the branch, giving both a control over the cash and a fairly complete knowledge of disbursements on account of expenses and of receipts from collections. If, now, all purchases of stock-in-trade are made from the head office, the latter has a close control over all the activities of the branch. It may thus keep a duplicate

set of records, although that is scarcely necessary inasmuch as summaries can be made by which to check up the books of the branch at the close of the fiscal period.

Sometimes, instead of daily reports periodic summaries of the branch activities are made to the head office and these provide the basis for checking up on the branch at the close of the fiscal period. Where the head office maintains traveling auditors, such frequent reports are not necessary.

Examples of Reports

Below are given two examples of different kinds of reports from the branch to the head office. The first is a periodic summary of cash transactions followed by a statement of collections from customers. The second form is a type of ledger account carried with each branch on the books of the head office in accordance with detailed reports made by the branch or by traveling auditors from the head office. It will be noted that provision is made in the account by means of special rulings to show the total expenses of each branch, which total will enter into the trial balance; and also for an analysis of the expenses of each branch under suitable heads, these latter being treated simply as memoranda. Any credits or adjustments are entered in red ink, and are to be deducted before showing totals.

PERIODIC CASH SUMMARY

Receipts		*Payments*	
Cash Sales (by days) $.....		Wages.................	$.....
Total for period.....	$.....	Expenses...............	.....
Customers' Accts. (as below).................	.....	Sent to Head Office.....	.....
Other Receipts..........	.....	Payments into Bank (dates & amts.).............	.....
		Balance on Hand, carried to next statement......	.....
Total..............	$.....		$.....
Balance, per last statement	$.....		

CUSTOMERS' ACCOUNTS COLLECTED

Name	L. F.	Discount	Cash	Name	L. F.	Discount	Cash

Branch Report to Head Office

BRANCH A EXPENSES *

Date	Description	Total	Salaries	Rent	Office Supplies	Tel. Tel.	Stable	Misc.

Head Office Ledger Account—Summary of Branch Expenses

* Credits in red ink.

CHAPTER XXXI

BRANCH HOUSE ACCOUNTING (Continued)

Foreign Exchange

The foreign trading of American firms has grown of late years to such proportions that a practical acquaintance with the exchange values of foreign currencies is necessary for the accountant. The rate of exchange is the equivalent of the currency of one country in that of another. For instance, the standard value of the British sovereign in the currency of the United States is $4.8665; that is, the value of the quantity of pure gold in one sovereign in London is equal to that represented by $4.8665 in New York. Other things being equal, this should always be the par rate of exchange between the United States and England. The question of the rate of exchange between countries which have a gold standard is a comparatively simple matter. Where one of the countries has a silver currency, the variations assume more importance, for the reason that the intrinsic value of silver converted into gold must be accounted for. Paper currency, especially in times of war, causes a still greater complication, because in this case it is uncertain when such paper will be made convertible into gold or silver.

In addition to differences in exchange arising from the conversion of one currency into another, called the par rate, other things enter into exchange transactions which have a marked effect upon the actual, or market, rate of exchange. Such conditions as supply and demand for remittances between countries to satisfy debit balances; the necessary expenses, including cost of transmission (which can never be more than the actual cost of transporting the specie itself):

interest on the money for the time the draft has to run to maturity or to the time of payment in the foreign country —these and other factors must be taken into account. The expense of cabling and the profits of the bankers who transmit the money must be added. Some intangible factors are the credit condition of the countries and the risks involved in making transfers.

The Accounting Problem of the Foreign Branch

From the viewpoint of accounting, the only problem in connection with foreign branches which differs from those of domestic branches concerns the conversion of the foreign currency—in terms of which the records of the foreign branch are kept—into the currency of the head office. Periodically—usually at the close of the fiscal period—the results as shown by the branch records must be incorporated with those of the head office. The problem involved is for the most part due to the fact that, while the activities of the various branches have been transacted and recorded in terms of one or more currencies, the net results of those activities are to be taken effect of, usually as a disbursement of dividends, in the terms of the head office currency. That is, earnings are made and expenses incurred in one currency, and the net result of the branch's trading must be disbursed in terms of another currency. The fluctuations in exchange prevailing throughout the year at the time of the various transactions of the branch and at the time when the net results of the branch are disbursed as dividends from the head office, sometimes give rise to a very complicated problem if accurate and satisfactory results are to be secured.

It is impossible, from the standpoint of practice, to convert every transaction of the branch into the currency of the head office at the rate prevailing at the time of the transaction; and furthermore, the funds out of which ultimately some portion of the dividends must be paid are,

at the close of the fiscal period, still held in the possession of the branch and so are not available except through the process of conversion. Accordingly, the question of the rate of exchange prevailing at the close of the fiscal period has a very important bearing on the correct showing of the branch's activities on the head office books.

It is not purposed here to go into the question of organization, or method of keeping accounts for the foreign branch. As was stated above in connection with domestic branches, any system of accounts depends very largely upon the general organization of the head office and its branches, and this in turn depends on the degree of control and amount of information desired. The discussion will be limited to the assumption that the branch has an almost independent organization and is expected to make a full report periodically by means, at least, of a trial balance of the branch.

Accounts Opened on Books

On the books of the branch a Head Office Control or Adjustment account will be carried which represents the ownership of the head office in the branch; and on the head office books a Branch Control or Adjustment account which is the complement of the head office account on the branch books. Frequently, in addition to these interrelated accounts, a Remittance account is carried for the purpose of facilitating reference. In this account are entered the remittances made by the branch to the head office, instead of entering such transactions in the Head Office Control account. The problem to be discussed here concerns the method of converting the branch trial balance before incorporating it, and the root of the problem lies in the determination of the basis for the conversion of the various kinds of items listed therein. Fixed and current asset and liability items, expense and income items, the Head Office Control

and Remittance accounts—all must be converted. For an accurate and equitable showing of the branch activities on the head office books under certain conditions, these different classes of items should not be converted at the same rate. Under other conditions no serious inequity results from the use of a uniform rate of exchange for the conversion of all items, and in practice such a rate is handled much more simply than different rates. Of course, the branch trial balance is in balance previous to conversion but is almost invariably out of balance after conversion. It becomes necessary, therefore, to take up the difference by means of a debit or credit to an account called "Exchange" or "Fluctuations in Exchange"—sometimes also called "Reserve for Fluctuations in Exchange."

Handling Fluctuations in Foreign Exchange

The proper handling and ultimate disposition of this Exchange or Fluctuations in Exchange account requires some consideration. If there is a loss in the conversion of the branch trial balance into the head office currency, that may be treated as a current expense to be charged ultimately to the current period's profit and loss. Any profit accruing from the same source may be similarly handled. Some concerns set aside all profits accruing in this manner into a Reserve for Fluctuations in Exchange account, against which are charged any losses incurred through conversion. If the first period shows a loss on conversion, it would, of course, be necessary to reserve out of that period's profits a sufficient amount to take care of the loss. Usually, however, the items of profits and losses on conversion of exchange counterbalance each other fairly well throughout succeeding periods. The item is for the most part comparatively small and either method of handling it is satisfactory and gives sufficiently correct results under normal conditions but often too inaccurate under abnormal conditions.

Conversion of Branch Results

The basis on which the closing entries are converted from the foreign to the local currency is a very important factor. If the ratio between the two countries is more or less stable, an average rate may be adopted without much variation in the established values. All profits or losses on exchange resulting from differences between actual rates on current transactions and this average rate will be entered in the Fluctuations in Exchange account. However, in periods of rapidly fluctuating rates of exchange, or in transactions with branches where silver currency or depreciated paper or non-guaranteed currency are in use, the conversion of all items at some arbitrary or average rate will not give accurate or satisfactory results. In such cases certain practices have been established as being the most equitable in converting the various accounts of the branch balance sheet into the local currency for the purpose of amalgamating them into the home office balance sheet. These practices are summed up as follows:

First convert the foreign currency into dollars at the following rates:

1. Fixed assets at the same rate as before, that is, the rate at the time of purchase, or average rate for the purchases of a fiscal period. The reason for this is that *fluctuations* in the value of fixed assets, whether expressed in one currency or another, are not allowed to affect the period's results.
2. Floating assets and liabilities at the rate current as of the date of the balance sheet.
3. Revenue items at an average rate for the period.
4. Remittances at the actual rates paid.
5. Control or adjustment account at the same rate as that which had been established on the head office books at the last period.

To arrive at the average rate in the case of fixed assets it is sufficient to take the rate prevailing at the end of each month throughout the year and divide the total by twelve. This becomes necessary where construction or purchases of fixed properties take place throughout the year. The difference, if the rate is less than par, is credited to the capital expenditure and debited to Profit and Loss on the head office books. The branch is notified of the adjustment and makes a similar entry crediting Exchange and debiting the head office with the amount.

Current assets and liabilities are converted at the rates current at the date of the balance sheet because the balance sheet should represent these values at the exact cost of converting them into cash at the present moment. If in practice they were actually liquidated, this could not be realized but in principle it represents the present condition. Revenue items are convertible at the average rate because they represent items accumulating during the entire fiscal period; they represent the result of the business activities for the past period, at varying rates of exchange. Since the remittance account represents the actual cash paid for cash transmitted, there is no occasion for changing the rate which has been used at various times during the period. The Control or Adjustment account likewise was converted at the time the entries were made to it and represents the exact cost of the various transactions recorded in it.

After all balance sheet items have been converted according to the rates prescribed, it is a general custom to provide a reserve account to cover any losses on exchange not provided in the conversion of the accounts. This is done for the purpose of guarding against overstating values and thus paying dividends out of the capital, since the conversion into head office currency merely serves as a medium of estimating what the foreign investment really represents to the stockholders.

An illustrative problem is given below with its solution based on the principles of conversion just stated. It is to be noted that in practice, within the limitation stated on page 546, a uniform rate of conversion is generally made use of for all items except remittances, for which the actual rate is used.

Illustrative Bookkeeping Problem

Problem. At the close of the fiscal period a condensed trial balance report of the London branch of a New York concern showed as follows:

Trial Balance—London Branch

	£	£
N. Y. Control (4.7475)		100,000
Remittance	50,000	
Cash	5,000	
Customers	75,000	
Merchandise Inventory	25,000	
Furniture and Fixtures	1,000	
Creditors		31,000
Sales		150,000
Purchases	95,000	
Expenses	30,000	
	281,000	281,000

Final Inventory £30,000

The London Control account on the New York books showed a balance of $474,750, and the Remittance account $237,987.50. Set up, in journal form, the entries necessary to take on the New York books the results of the period's activity at London and show the London Control and London Profit and Loss accounts after adjustment, using the additional data:

1. The Remittance account comprised 5 drafts of £10,000 each, at 4.75, 4.7575, 4.74875, 4.7625, and 4.78 respectively.

2. The current rate of exchange is 4.7545.
3. The average rate is 4.7525.
4. The rate at time of purchase of fixed assets was 4.83.
5. No account is to be taken of probable loss from uncollectible accounts nor of depreciation.
6. Carry the difference in exchange to a reserve.

Solution

Conversion of London Trial Balance

	£	£	Rate of Conversion	$	$
New York Control....	......	100,000	4.7475	....	474,750.00
Remittances*........	50,000	......	(See note)	237,987.50	....
Cash................	5,000	......	4.7545	23,772.50	....
Customers...........	75,000	......	4.7545	356,587.50	....
Merchandise Inventory	25,000	......	4.7475	118,687.50	....
Furniture and Fixtures	1,000	......	4.83	4,830.00	....
Creditors...........	......	31,000	4.7545	....	147,389.50
Sales...............	......	150,000	4.7525	....	712,875.00
Purchases...........	95,000	......	4.7525	451,487.50	....
Expenses............	30,000	......	4.7525	142,575.00	....
Reserve for Fluctuations of Exchange...	......	......	....	....	913.00
	281,000	281,000		1,335,927.50	1,335,927.50

Final Inventory £ 30,000 @ 4.7545 = $142,635

* This item comprised 5 drafts, of £10,000 each, at 4.75. 4.7575, 4.74875, 4.7625, and 4.78 respectively.

Journal Entries to Adjust New York Books

(1) Remittances..........................	$237,987.50	
London Control................		$237,987.50
To Credit London with its remittances:		
£10,000 @ 4.75 = $47,500.00		
10,000 @ 4.7575 = 47,575.00		
10,000 @ 4.74875 = 47,487.50		
10,000 @ 4.7625 = 47,625.00		
10,000 @ 4.78 = 47,800.00		

		Dr.	Cr.
(2)	London Control....................	$712,875.00	
	London Profit and Loss.........		$712,875.00
	To charge London with its sales: £150,000 @ 4.7525		
(3)	London Profit and Loss...............	118,687.50	
	London Control................		118,687.50
	To credit London with initial inventory: £25,000 @ 4.7475		
(4)	London Profit and Loss...............	451,487.50	
	London Control................		451,487.50
	To credit London with its purchases: £95,000 @ 4.7525		
(5)	London Control....................	142,635.00	
	London Profit and Loss.........		142,635.00
	To charge London with final inventory: £30,000 @ 4.7545		
(6)	London Profit and Loss...............	142,575.00	
	London Control................		142,575.00
	To credit London with its expenses: £30,000 @ 4.7525		
(7)	London Control....................	913.00	
	Reserve for Exchange Fluctuations		913.00
	To charge London with the profit arising from conversion.		
(8)	London Profit and Loss...............	142,760.00	
	Profit and Loss................		142,760.00
	To transfer profit at London branch to general Profit and Loss.		

Appended are the London Control account as it would appear after posting the above entries on the New York books; and the London Profit and Loss account on the New York books.

LONDON CONTROL

Items	Rate	£	$	Items	Rate	£	$
Balance one year ago.		100,000	474,750.00	Remittances ......See	J(1)	50,000	237,987.50
London Profit & Loss (Sales)...........	4.7525	150,000	712,875.00	London Profit & Loss (Initial Inventory)..	4.7475	25,000	118,687.50
London Profit & Loss (Final Inventory)..	4.7545	30,000	142,635.00	London Profit & Loss (Purchases)........	4.7525	95,000	451,487.50
Reserve for Exchange Fluctuations......			913.00	London Profit & Loss (Expenses).........	4.7525	30,000	142,575.00
				Balance.............		80,000	380,435.50
		280,000	1,331,173.00			280,000	1,331,173.00
Balance............		80,000	380,435.50				

LONDON PROFIT AND LOSS*

Initial Inventory......	$118,687.50	Sales.................	$712,875.00
Purchases...........	451,487.50	Final Inventory.......	142,635.00
Expenses............	142,575.00		
Profit & Loss.........	142,760.00		
	$855,510.00		$855,510.00

* This also may be kept in both currencies if desired and only totals carried in the London Control account.

Local Supervision of the Foreign Branch

A question which enters into the accounting with foreign branches arises in connection with the law of the land in which the branch is opened. "Most foreign countries have some regulations as to what books must be kept, and the manner of recording the transactions. In France, for instance, the law requires that a summary of all transactions shall be entered through the journal, which therefore becomes the posting medium for every transaction. This book has, in the first instance, to be produced to a public official, who examines it to see that it is duly paged, none missing, etc., and then stamps it as correct, and anything requiring legal proceedings in which accounts are concerned must be proved from the journals with the official *visa*."

"Since the work of organizing and installing systems of accounting in branch houses abroad is of undoubted and growing importance, it is necessary to have not only a practical acquaintance with the currencies in which the foreign books are kept, and the laws of the land in regard to the kind of books which must be kept, but in addition a thorough knowledge of the manner in which transactions are to be transmitted periodically to the home office, and of their assimilation with the home accounts and the drafting of the final accounts, balance sheets and profit and loss statements becomes indispensable."

The Foreign Sales Agency

Where the foreign branch is merely a selling agency for the home office, and invoices must be made out at the home office in foreign currency, a convenient way to handle these accounts is to keep a separate set of records for each foreign currency. A foreign sales journal, customers ledger, and cash receipts journal, together with foreign notes receivable and sales returns and allowances journals, where necessary, will comprise all books of original entry needed to secure

sources for postings to the customers' individual accounts in terms of foreign money. In this way all charges for goods sent, and credits for returns, allowances, cash and notes received and discounts allowed, can be kept entirely in foreign currency.

Method of Conversion of Results

Periodically—say, once a month—the total transactions for the month must be converted into home currency and brought into the general ledger. In *normal* times a fixed average rate of exchange based on past experience gives sufficiently accurate results, saves many tedious calculations and much unnecessary work. At certain times and in certain businesses the prevailing rate of exchange on the actual day, or the monthly average of daily rates, may need to be used to secure satisfactory results. With the use of the fixed average rate, as above, the totals of foreign sales and sales returns journals are converted into home currency and carried respectively as debits and credits to Accounts Receivable control, and credits and debits to Sales. The total of the discount column of the cash receipts journal is converted, at the average rate, and charged to Sales Discount and credited to Accounts Receivable control.

The conversion of the cash received must be handled differently, however. The actual rate at which the foreign draft or bill received in payment of the customer's account is converted by sale to the banker—and so credited to the home office bank account—almost always differs from the average rate at which the item was charged to the customers' controlling account. This, of course, makes no difference with his individual account which is kept in foreign currency, but does make necessary an adjustment of the general ledger Accounts Receivable control in order to make it agree with the foreign customers ledger when converted at the average rate.

Accordingly, in the general cash book two additional

columns are provided, viz.: Profit on Exchange and Loss on Exchange columns, which are used somewhat as is the Sales Discount column. Every foreign draft or bill when received is entered, in foreign currency, in the foreign cash book and posted from there to the credit of the customer. When that draft or bill is sold at the bank (it may be held for some time after receipt for a favorable turn of the money market) and so converted into home currency, it is entered in the Accounts Receivable column at a figure representing conversion at the fixed average rate. The difference between this figure and the actual amount received at the bank is entered in either the Profit on Exchange or Loss on Exchange column as the case may be, with extension of the actual amount into the bank column as a charge to the bank account. Thus, the total of the Accounts Receivable column when posted to the general ledger Accounts Receivable control adjusts that account so that it controls the foreign customers ledger converted at the average rate. The totals of the Profit on Exchange and Loss on Exchange go as credits and debits respectively to the Profit and Loss on Exchange account.

The foreign sales agency often collects the accounts and remits total collections periodically by purchase of one bill or draft on its local bank for the total. There must, of course, accompany each such remittance a statement of the detailed receipts for proper credit to individual accounts. The general cash book will show only the total remittance, however. Regular agency accounts as explained in Chapter XXX will secure the control of the home office over the agency's expenditures.

It is usually best to make the foreign customers ledger self-balancing. The Adjustment account necessary to effect this may, if desired, be kept in both foreign and home currency, thus showing on its face, by the balance of the home money columns, the agreement of the foreign ledger with its control account on the general ledger. If, instead of one

fixed average rate of conversion, varying rates are used, the keeping of the Adjustment account in both currencies becomes imperative.

Where, in the case of foreign sales, the sales invoice and charge to the customer are made in home currency and payment of that amount in home currency is demanded, the problem of conversion, as explained above, is not encountered, foreign sales being recorded and handled in exactly the same way as home sales.

The Foreign Purchasing Agency

If the purchase is made in terms of foreign currency and settlement must be made in that currency, a procedure and system may be used exactly similar to that just explained for handling sales.

In both the sales and purchase record books, returns may be entered in the same record by using red ink, and deducting the red ink totals at the end of each page. This obviates the necessity of keeping subsidiary adjustment accounts in a separate book, and brings all information regarding the branch transactions in one compact record.

CHAPTER XXXII

SUSPENSE ACCOUNTS; NUMBERED ACCOUNTS; ADJUSTMENT OF FIRE LOSSES

Suspense Accounts

Definition of Suspense Accounts—General Purpose

Any account which is used as a place of temporary record for items pending a determination of their final status or allocation may be called a suspense account. The definition points out the general purpose for which such accounts are opened. It frequently becomes necessary to record items on the books as soon as the transactions giving rise to them have taken place. At the time, the information needed to determine their final place of record may be lacking. Stock certificates may find their way into the secretary's office with the name of the party to whom transferred omitted; cash may be received through the mails with the identity of the sender not disclosed; provision must be made for bad debts before it is known what accounts will prove uncollectible—these and similar items call for record before their final status is determinable.

When cash is either short or over, the Cash Short and Over account serves as a temporary adjustment account. Discrepancies between the book record and the physical inventory of cash due to various causes are temporarily thrown into this account until further information discloses the cause. When it becomes evident that such information cannot be secured, any balance is usually treated as a profit and loss item at the end of the fiscal period. Similarly,

discrepancies between the bank's cash record and that of the business may be thrown into an account called "Bank Adjustments" or some other similar title, to show the nature of the items there recorded. The Petty Cash account, between the periods of its adjustment by means of a replenishing check, is in the nature of a suspense account. Only when an analysis of the petty cash expenditures and the replenishing check are recorded on the books is Petty Cash an asset account. Failure to locate an error in the trial balance is sometimes recorded on the books through the medium of a Trial Balance Adjustment account so as not to carry the difference over into the trial balance of succeeding months. Where such an account is set up it is a suspense account pending the finding of the error.

Again, it may sometimes become necessary to adjust arbitrarily a difference between a controlling account and the total of the ledger which it controls pending the finding of the discrepancies between the two. Thus, an Accounts Receivable Control may not accord with the sum total of the customers' accounts carried in the sales ledger, and it may be deemed advisable to accept the subsidiary ledger record as correct rather than the figures of the controlling account. The adjusting item is usually incorporated in the controlling account but is in the nature of a suspense item pending the allocation of the difference. As mentioned above, a cash receipt from an unidentified customer must be recorded in a suitably named suspense account. Similarly, unclaimed wages which have been charged on the books to the proper ledger account and credited to cash must be carried until they are called for or until their record may with reasonable certainty be closed on the books. Unclaimed dividends must also be held in suspense until such time as a definite settlement of their disposition may be determined. Advances to subsidiaries when recorded as a charge in open account against the subsidiary are frequently of the nature

of suspense items. The subsidiary may settle the account by payment of cash, by payment of its bonds or stock, or the account may not be settled and it then becomes necessary to write it off as a bad debt.

Similarly, purchase invoices and other like items in dispute may be booked as suspense items under suitable titles. However, in cases of this kind it is more usual to hold the invoices until some basis of settlement is reached before recording them on the books. If the fiscal period closes with these items still unsettled, it will be necessary to bring them on the books as contingent liabilities.

The Reserve for Depreciation may be looked upon as a suspense account. The credit entries therein which serve the several purposes explained elsewhere, are in the nature of items belonging to asset accounts which are held in suspense pending the final disposal of all or some part of the asset. This final disposition may take place either because of sale, loss by fire, or the discard of the asset on account of complete depreciation. At such a time it becomes necessary to transfer the portion of the reserve belonging to the asset finally disposed of as a credit to the asset account in order to clear that account of the asset values therein shown.

Reserve for Doubtful Accounts as a Suspense Account

In like manner the Reserve for Doubtful Accounts is a suspense account because at the close of the fiscal period it becomes necessary to make an estimate of the probable amount of uncollectible items in order to appraise correctly the value of outstanding claims against customers. This estimate must be carried as a credit in the Reserve for Doubtful Accounts because at that time it is not known definitely to what particular customers' accounts it applies. During the following periods, as the information becomes definite as to what accounts are absolutely uncollectible, the

credit held temporarily in the reserve account is transferred to the particular customer's account which has proved uncollectible. Thus, we often speak of charging an uncollectible customer's account against the reserve, which is another way of saying that we transfer from the reserve a portion of the credit held there in suspense, to the customer's account after it has been determined to what customer's account it belongs.

Use of Suspense Ledger

In an effort to keep closer track of doubtful accounts and notes receivable, such accounts are frequently transferred to what is known as a suspense ledger. A fundamental misunderstanding seems to exist with regard to the meaning of such a transfer. A business man often points with pride to the fact that he has transferred a number of items from his regular customers ledger to a suspense ledger, implying thereby a policy of conservatism in the value at which he carries his customers' accounts on his books. As a matter of fact, the transfer to the suspense ledger in no sense changes the valuation at which the accounts are carried on the books. Separation of the doubtful items from those considered good provides a convenient basis for analysis according to which, at the end of the fiscal period, it will be possible to make a much more accurate and intelligent estimate of the probable loss from uncollectible items. Aside from that and another fact of importance, namely, that by keeping all such accounts in a suspense ledger it becomes much easier to watch them closely, nothing is to be gained by the use of a suspense ledger. As to the proper method of handling this ledger, it is best to carry in conjunction with it a separate control on the general ledger supplementary to the customers ledger controlling account. This would be effected at the time of removing an individual account to the suspense ledger, by transferring the same

item from the customers ledger controlling account to the suspense ledger controlling account.

The form of the suspense ledger is somewhat different from that of the regular ledger in that provision is made for gathering information as to the efforts made to collect the items and the result of those efforts. A loose-leaf or card ledger serves the purpose best. While the form is not standardized, such information as the report of the mercantile agency at the time of granting the original credit; the agent in whose hands the account is placed for collection; the date of placing the claim in his hands; his report on his efforts to collect the account; the lawyer to whom the account is given in case suit is brought; the attorney's report; the name and address of the trustee or receiver in case the customer has gone into bankruptcy; the date of filing a claim with the trustee; the judgment secured; the particulars as to settlement; and provision for additional remarks—all this information is of value and provision should be made to record it. It may also be sometimes desirable to make use of a suspense journal where information in addition to that for which provision has been made on the ledger account can be collated and kept for reference.

Accounts Receivable Hypothecated

In connection with the handling of accounts receivable it may be well to draw attention to the growing practice of discounting open accounts receivable in much the same way in which notes receivable are discounted. In recent years a group of non-professional bankers have initiated this kind of financing. It may sometimes happen that a merchant exhausts his credit with his regular banker and is unable to raise further necessary funds in the usual way. By applying to the so-called commercial credit companies or these non-professional bankers it is frequently possible for him to discount his *new accounts* as he creates them

through current sales to customers and so secure funds for tiding him over a temporary stringency. The practice, however, is looked upon in business and regular banking circles as evidence of the financial instability of the merchant and his probable bankruptcy in the near future. The cost of raising funds in this way is almost prohibitive excepting in cases of dire need and it is not resorted to by business houses whose financial condition is sound.

The practice works out somewhat as follows. A merchant desiring to discount his accounts turns over to the credit company with whom he has made the arrangement, the invoices of all accounts to be discounted as evidence of the sales just made to customers. The credit company on the strength of these invoices advances anywhere from 70% to 80% of their face value, thus maintaining a margin of safety of from 20% to 30%. The charge made is called commission rather than interest, and varies from 2% to 5%. To protect the credit company, frequently such invoices, as they go out to customers, bear a notation to the effect that payment of the bill is to be made to the credit company and not to the merchant selling the goods. An obvious and serious objection to this practice is that it gives the customer information as to the method of financing to which the seller has been reduced. In view of this objection a few bankers are willing for payment to be made as usual to the merchant, who must in turn transfer the identical item or the merchant's own check for an equivalent amount to the banker. A periodical settlement with the banker secures from him a statement and return of the moneys held by way of margin. The accounts as settled are paid in full to the banker who has previously furnished, say, 70% of their face value in cash to the merchant. The banker thus holds 30% more money than he has furnished to the merchant, and as these margins accumulate it may sometimes happen that the banker is loaning the merchant

the latter's own money. Consequently, it becomes imperative for the merchant to keep careful record of all accounts discounted with, and of their payment to, the banker so that he can protect himself by requiring a settlement as may be shown necessary.

Accounting for Accounts Receivable Discounted

The accounting procedure in keeping track of these items is very similar to that for notes receivable discounted. Inasmuch as the practice does not involve an outright sale of the accounts to the banker, a contingent liability is created in case the customer does not pay his account, which the merchant will have to make good to the banker just as in the case of notes receivable unpaid at maturity. The bookkeeping record of discounted accounts may be considered under four aspects:

1. At the time of discount.
2. At the time of the banker's report of customers' payments.
3. At the time an account is charged back by the banker because of inability to collect.
4. At the time of final settlement with the bankers.

1. At the time a group of accounts is discounted the charges are to Cash for the amount of cash received, to Commissions Paid on Discounted Accounts for the amount of commission, and a charge to the Bankers or to a Bankers' Margin account for the margin. The credit offsetting these debits is to an account called Customers' Accounts Discounted. No further entry is necessary until the banker's report of customers' payments.

2. At the time an account is reported as paid by the banker, the contingent liability thereon as carried in the Customers' Accounts Discounted account has ceased to exist and a reversing entry becomes necessary, Customers'

Accounts Discounted is charged, and the customer's account is credited.

3. When an account is not collected and is charged back by the banker, the contingent liability as carried under Customers' Accounts Discounted becomes a real liability which has to be settled by payment to the banker of the amount of the cash originally advanced by him at the time of discount. At such a time the entry made will be a debit to Customers' Accounts Discounted offset by credits to Cash and to Bankers or Bankers' Margin account, as the case may be.

4. At the time of final settlement with the bankers, all that remains to be done is for them to pay over the balance of cash in their hands belonging to the merchant. This balance of cash is reflected by the amount of margins which they have demanded at the time of discount. Hence, on the merchant's books the transaction will be recorded as a debit to Cash and a credit to Bankers or Bankers' Margin account.

In order to keep close track of all accounts under discount it is advisable and almost necessary to make use of what may be termed a "discounted accounts register." Every account, as discounted, should be given a number and entered in numerical sequence in the register. As an account is paid by the customer and reported by the banker it should be there shown as paid. The banker at the time of final settlement must render an accounting for all the accounts not shown as canceled by the register, either in cash or by a return of the claim against the customer.

Numbered Accounts

Allotment of Numbers to Accounts

The allotment of a series of numbers to a certain kind of accounts not only classifies them in an orderly manner by

grouping them according to their resemblances and separating them according to their differences, but the notation also greatly facilitates locating them and saves much time and effort in indicating them on vouchers, journal entries, etc. Another advantage is that posting records may be checked as to their general correctness by an official who has only a general knowledge of the system. As an illustration, if the asset accounts have the general classification of 1 and the expense accounts have the general classification of 9, it needs only a cursory survey of voucher, or ledger posting data, to see whether an expense item has been charged to a capital account or vice versa.

The framework of the classification should be so constructed that any account, new or old, not already included in the scheme, can be inserted without disturbing the general order. If this is done, the system can never become obsolete in the sense of becoming impracticable, because changes can be inserted in their appropriate place as soon as they occur.

The different schemes or symbols which have been developed from time to time are the Dewey decimal system with its variations; the mnemonic system; and a combination of the two. The Dewey decimal system is undoubtedly the most complete and highly perfected in theory of any, and, as the name indicates, is a combination of figures and periods giving a symbol of almost unlimited expansion. The use of figures and symbols offers an infinite number of possible combinations, but the straight decimal system is in no way practical for general use, chiefly because a voluminous key is necessary even to interpret the symbol.

The mnemonic system, as its name indicates, was devised for the purpose of supplying a symbol which would be suggestive and which would indicate the object that it was intended to identify. The mnemonic symbol consists cf a combination of letters and figures with the occasional use of

a period or a dash. In order to classify completely any object in a large system, according to general classifications and special subdivisions, it is sometimes necessary to use five, six, or seven letters to identify one particular piece of machinery. In this case also, the use of a key becomes a necessity. The mnemonic system pure and simple is more often used for identifying machinery and tools or other stock, kept in a factory stock room. It is adapted also to the filing of correspondence.

The two advantages claimed for the mnemonic over the Dewey system are:

1. The letters of the alphabet are used and so give opportunity for a more rational classification than the ten possible groups of the decimal system.
2. A system consisting of letters may be made more easily mnemonic, each letter being, as a rule, the initial of the term symbolized, and may be recalled to mind more easily than a number arbitrarily chosen for that purpose.

The following example shows how easily a machine can be located and described. If:

M is used for machine
L for lathes
C for core ramming machines
P for power machines
R for ramming machines

then:

ML would immediately suggest a lathe
MCR a core ramming machine
MPR a power ramming machine
Etc.

Where there are several styles of the same type of machine, numerals may be added, as MPR 1, MPR 2, etc.

A combination of these two systems which has been applied to large institutions is characterized by grouping all departments which perform the same class of service under one letter of the alphabet, and then numbering their functions. Frederick A. Parkhurst* has outlined a very useful system which may be used in a manufacturing or other plant somewhat as follows. Group A with subdivisions would include:

1A Accounting Room	1B Sales Department
2A Cost Department	2B Order Department
3A Credit Department	3B Stenographic Department
4A Billing Department	
5A Filing Department	

Each department of the factory has an arbitrary letter allotted to it and is always referred to in all records by this letter and number.

The Interstate Commerce Commission uses a numerical system of numbering accounts by first grouping each class under "general accounts"; then under each group of general accounts, special accounts called "primary accounts" are numbered consecutively. These accounts have been analyzed so minutely that not much leeway is given for inserting new accounts and for this reason the method is not so elastic as a good classification requires. Thus, Operating Revenue accounts are classified generally into:

I Transportation—Rail Line
II Transportation—Water Line
III Incidental
IV Joint Facility

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* "In Symbols."

The primary accounts under these general subdivisions are numbered as follows:

Transportation—Rail Line	from	#101	to	#116
Transportation—Water Line	from	121	to	128
Incidental	from	131	to	143
Joint Facility	from	151	to	152

Operating Expense Accounts are classified under the following general accounts:

I Maintenance of Way and Structures
II Maintenance of Equipment
III Traffic
IV Transportation—Rail Line
V Transportation—Water Line
VI Miscellaneous Operations
VII General
VIII Transportation for Investment—Cr.

The primary accounts under these are numbered from 201 to 462.

Another numerical method which can be used for general businesses and which corresponds somewhat to the above is arranged as follows:

100 to 700 Assets and Deferred Charges
800 to 1100 Capital Stock, Liabilities, Reserves, and Surplus
1500 to 2500 Profit and Loss Accounts

The even hundred accounts are the controlling accounts in the general ledger. The details are carried in subsidiary ledgers and are numbered consecutively from 101 to 199, etc.

This system also is not so elastic as one constructed on the theory of the Dewey decimal system, which may be expanded indefinitely without disarranging the system as a

whole. First of all the general ledger accounts may be classified into nine fundamental groups as follows:

1 Asset Accounts
2 Investments and Treasury Securities
3 Prepaid Items
4 Liabilities
5 Accrued Items
6 Valuation Reserves
7 Capital and Surplus
8 Income
9 Expense Accounts

These general groups may be further subdivided indefinitely into groups of nine, keeping in mind continually that the process of division should be from general to special and that the progress should be gradual.

1 Asset Accounts
- 11 Fixed Assets
  - 111 Land
    - 1111 Used and Useful in Operation
      - 11111 Details in Subsidiary Books
    - 1112 Held for Speculative or Investment Purposes
      - 11121 Details in Subsidiary Books
      - 11122
  - 112 Buildings
  - 113 Machinery
  - 114 Tools
  - 115
  - 116
  - 117
  - 118
  - 119
- 12 Current Assets
  - 121 Cash in Bank
    - 1211 Local Bank
    - 1212 New York Bank
    - 1213 Chicago Bank
  - 122 Petty Cash Fund
  - 123 Notes Receivable
  - 124 Accounts Receivable

125 Merchandise
  1251 Inventories
  1252 Purchases Raw Material
  1253 In Process
  1254 Finished Goods
  1255
  1256
126
127
128
129

8 INCOME ACCOUNTS
 81 Sales
  811 Merchandise
   8112 By Departments, etc.
  812 Consignments
   8121 Details in Subsidiary Records

9 EXPENSE ACCOUNTS
 91 Manufacturing
  911 Prime
   9111 Wages
   9112 Freight
  912 Manufacturing Expenses
 92 Selling Expenses
  921 Salaries
   9211 Details in Subsidiary Records
  922 Traveling Expenses
  923 Commissions
  924 Advertising
  925 General Selling
 93 Administrative Expenses
 94 General Expenses

All accounts under 100 are general ledger accounts, and accounts over 100 are accounts kept in subsidiary records.

From this outline it is apparent that even though each series is limited to nine as in the Dewey decimal system, it may be indefinitely expanded to include a large number of accounts, and will be elastic enough to accommodate any number of future additions to the system. It also classifies accounts so definitely that errors in posting are very rare. A skilled bookkeeper would not be likely to post an income account in any account beginning with 9 for instance.

If this system is used by a large corporation or holding company which operates branches or factories in different sections of the country, all forming part of the general system, letters of the alphabet may be allotted to each factory or branch in addition to the numerical classification. By this means the accounts of each branch may be kept separate on the books of the head office, but the corresponding expense accounts will have the same numbers and may be incorporated in the head office books or balance sheet without any difficulty. This illustrates the principle of grouping all accounts belonging to the same classification and separating all accounts which belong to different units of the same organization.

In establishing a special system of classification for any purpose whatever, the main points to be kept in mind are that the following requirements shall be fully met:

1. To enumerate all the kinds of information which may be classified.
2. To group these items into a limited number of classes.
3. To give each class a definite and unchanging symbol.
4. To provide for expansion of the classification under each group, and symbolize each subdivision by an addition to the symbol for the group.

If these general rules are observed, the notation may be numerical or alphabetical, whichever serves the purposes noted above, and also is most easily memorized without the use of an elaborate key to interpret the system.

Adjustment of Fire Losses

The Insurance Contract

A fire insurance policy is a contractual engagement, modified by the conditions stated, to pay or replace, in

part or in whole, any loss through fire, covering the property specified for a definite period. The amount to be paid cannot exceed the face value of the policy. The main points covered in the policy are the parties, the property, the risk, the amount, the term, the premium, and the conditions governing. There are three ways in which the contract may be terminated, namely: by expiration, cancellation, or forfeiture. Generally the contract holds good until noon of the day named as the date of expiration. Therefore, if a fire should break out in the forenoon on that day but the greater part of the damage were caused after the noon hour, the whole loss would be covered according to the terms of the policy. The policy can be canceled immediately by the insured by giving notice to the insurance company. The latter, however, must give notice and wait five days before the cancellation will be effective.

In case of cancellation, the premium cost for the expired term is usually higher proportionately than for the whole term; what is known as the "short rate" becoming effective. The causes for the forfeiture of the policy are many and various. Among the reasons are concealment or misrepresentation, or fraud in connection with taking out the policy or in substantiation of claims for losses incurred. Some of the parts of the agreement relative to occupancy, vacancy, change in title, use or allowance of dangerous substances may be the cause. Then again, neglect of the clauses as to the maintenance of an adequate sprinkler system, making provisions for watching the building, etc., may lead to forfeiture.

Requirements in Case of Loss

When a loss occurs the first thing necessary is to give at once a written notice to the insurance company and to endeavor to protect the property from further damage. The next step is to separate the damaged and the undamaged

movable property, and to put these two classes in order so as to facilitate checking up. Then follows the making out of an inventory giving accurate details concerning the kind, the amount, the cost, and the damage claimed in respect to the goods. Upon the arrival of the adjuster of the insurance company, adjustment may be made immediately, or it may be a protracted affair, depending on conditions. The insured is required by the terms of the policy to submit a sworn proof of loss within 60 days. This proof must enumerate the facts and beliefs of the insured regarding the origin and time of the fire, the interest the insured has in the property, together with the interest, if any, held by others, the cash value of each item, the sum total of the loss sustained, the encumbrances on the property, other insurance, whether valid or not, a copy of all descriptions and schedules of all the policies, any change in title, use, occupation, location, possession, or exposure of the property since the issuance of the policy. It is also required to state by whom and how the insured building was occupied at the time of the fire. Sometimes the insurance company may require that this proof be verified by plans or specifications of the building, machinery, or fixtures that have been destroyed or damaged. At its option, it may request a certificate from an impartial magistrate or notary public substantiating the correctness and honesty of the claims presented. It is further required that the insured keep himself ready to exhibit any remains of the property in question. He may also be required to submit to an examination under oath and produce at the option of the insurance company any books of account, bills and other vouchers, and permit copies or extracts to be made from them.

Determination of Value of Loss

The insurance policy gives no hard and fast rule regarding the determination of value. The usual phraseology is:

"This Company shall not be liable beyond the actual cash value of the property at the time any loss or damage occurs and the loss or damage shall be ascertained or estimated according to such actual cost value, with the proper deduction for depreciation, however caused, and shall in no event exceed what it would then cost the insured to repair or replace the same with material of like kind and quality."

The insurance company has accordingly the option of using the lower of two bases of settlement, viz.: (1) actual cash value at the time of the fire; or (2) what it would cost the insured party to replace the property lost. The price which governs, cost or selling, will depend upon the nature of the property. As a general rule, it is the cost price. For goods which cannot be readily or advantageously reproduced, like cereals and cotton, the adjustment basis is the local open market price prevailing immediately before the fire. In adjusting values, adequate depreciation allowance is made not only for ordinary wear and tear, but also for losses incidental to changes of fashion, demand, etc.

Adjustment of Differences

Whenever there is a dispute regarding the standards applicable in the adjustment or a disagreement regarding the method by which the standards are applied, one or the other of the parties generally invokes the provisions of the policy for an appraisal. In accordance with the terms of the policy, the insurer and insured may each appoint an appraiser who in turn selects an umpire. This official does not act except when called on for a decision if the appraisers disagree on some point. The appraisers proceed to make a joint appraisement of the damage caused and the value of the loss. If this appraisal is incorporated in a written award and signed by the appraisers, it is binding on both parties, and will be upheld by the courts. This provision is applicable to total and partial losses, but is limited to ques-

tions of value and damage. The appraisers are generally experts, but may call in any other person to give testimony. They are not bound by any legal rules of evidence, but may determine their own procedure.

After the value of the loss has been arrived at, by agreement or appraisal, the liability as modified by the conditions or limitations comes up for consideration. There are generally a number of these clauses present in every policy although they are not always in force. One of these is the pro rata or the contributing clause. In the standard policy this clause reads as follows: "This Company shall not be liable under this policy for a greater proportion of any loss . . . . than the amount hereby insured shall bear to the whole insurance, whether valid or not, or by solvent or insolvent insurers covering such property." The apportionment of the loss on this basis is often a complicated affair.

Effect of Coinsurance Clause

Another limitation clause is the "coinsurance," sometimes called the "average clause" or "reduced rate" clause. The object of this clause is to make the relation between value and insurance somewhat more stable and to adjust the rates in accordance with the ascertained probability of big and small losses. The assumption is that partial losses to the property will also be partial losses to the insurance company. Rates can be adjusted in the light of the ascertained probability of the respective occurrence of slight and serious losses, and on the assumption that partial losses to the property will also be only partial losses to the insurance company. This clause does not operate to reduce the insured's recovery if either the loss or insurance equals or exceeds the named percentage of value. Where applied, it does so only after any apportionment under the contribution clause has been determined.

The effect of the coinsurance clause is usually to make the

insured a coinsurer with the company for the difference between an amount limited in the policy and the face of the policy. The limiting amount is usually 80%, though it may be any other agreed per cent. The clause in the policy may read somewhat as follows:

"In consideration of the premium for which this policy is issued, it is expressly stipulated that in event of loss this company shall be liable for no greater proportion thereof than the sum hereby insured bears to eighty per cent of the cash value of the property described herein at the time when such loss shall happen, nor more than the proportion which this policy bears to the total insurance."

Thus, in order to make the insured a coinsurer, in the event of loss the company's liability is limited to that proportion which the sum insured bears to 80% of the cash value of the property described in the policy at the time of loss. Where the loss or the insurance equals or exceeds 80% of the value, the clause has no effect; when both are less, the insured and the insurer bear the loss in certain proportions. A few illustrations will show the way in which the liability of the company is determined. In the case of an 80% coinsurance clause, the formula by which the liability can be determined is derived as follows:

A = the sum insured, i.e., the face of the policy
B = the amount of the loss
C = the cash value of the property at the time of the loss
L = the liability of the company

Then, in accordance with the provisions of the coinsurance clause,

$$L = \frac{A}{.8C} \times B \text{ or } \frac{AB}{.8C}$$

Three applications of the formula will be illustrated. In the first, both the face of the policy and the amount of loss are less than 80% of the cash value of the property. In the

second, the policy carries 80% of the value of the property but the loss is less than 80% of the property value. In the third, while the face of the policy is less than 80%, the loss is more than 80% of the property value. From the formula, it is evident that where A is 80% of C, the formula reduces to B; and where B is 80% of C, it reduces to A. It must be borne in mind, however, that the insurance company is never liable for more than the amount insured, i.e., the face of the policy, nor for more than the amount of the loss.

	Face of Policy "A"	Cash Value of Property "C"	Amount of Loss "B"	Liability of Insurance Company "L"
(1)	$3,000	$5,000	$2,500	$1,875
(2)	4,000	5,000	2,500	2,500
(3)	3,000	5,000	5,000	3,000

Applying the formula in:

(1) $$\frac{AB}{.8C} = \frac{3,000 \times 2,500}{.8 \text{ of } 5,000} = 1,875$$

(2) $$\frac{AB}{.8C} = \frac{4,000 \times 2,500}{.8 \text{ of } 5,000} = 2,500$$

(3) $$\frac{AB}{.8C} = \frac{3,000 \times 5,000}{.8 \text{ of } 5,000} = 3,750$$

It will be noted in (3) that, inasmuch as the policy is $3,000, only $3,000 can be collected.

When the amount of the liability has been determined, the insurance company has three options:

1. Payment may be made in cash within 60 days after the completion of the proof of loss.
2. It may rebuild or replace the property. Notice of such intention must be given within 30 days from the filing of proof.

3. It may pay the "sound" value, i.e., the actual cash value of the property and dispose of what remains of it for its own account.

In most cases the first method is followed.

Method of Record-Keeping to Facilitate Ready Adjustment

Under the standard contract the insurance company must make adjustment within 60 days after the report of the loss. Where no differences exist or only such differences as are capable of easy adjustment between the company and the insured, payment of the loss is usually made without any delay because of the advertising value in the community of a quick adjustment of fire losses. Most of the differences which cause delay in the making of adjustments result from the inability of the insured to prove satisfactorily the amount of his loss. Failure to prove loss usually results from a slipshod manner of keeping the records and a loss of the supporting vouchers. The standard policy provides that the insurance company may require the production of original bills and vouchers to establish the cost of the property destroyed. Where these are not obtainable the process of adjustment may be delayed until data on which to figure the original cost can be secured which is satisfactory both to the insurance company and the insured. Accordingly, in order to secure adjustment of fire losses without delay, the record of all assets should be supported by original vouchers. Where the asset account is a group account, i.e., one composed of numerous pieces of property, a subsidiary ledger or register, or inventory record as it is sometimes called, should be carried, in which appear the details of the group account. If, then, the assets covered by the group account are only partially destroyed, it is then possible readily to determine the cost value of the portion destroyed by comparison with the portion left. In the case of machinery and tools, furniture and fixtures, delivery equipment,

etc., the use of such a register is particularly advantageous. If the voucher system of account-keeping is in use, there will be supporting data for all charges to asset accounts and an examination of these will make it possible to determine the legitimacy of all such charges.

Another point to be kept in mind if ready adjustment is desired is to make sure that the policy covering particular property makes a sufficiently definite statement of the property covered so as to indicate clearly the exact property to which the policy applies. Oftentimes policies are taken out on buildings with the description so indefinitely worded that it becomes very difficult, where there are many buildings, to know just what is covered by any particular policy. Where policies are taken out covering new equipment as it is purchased, and at some future time the equipment is moved from building to building, the problem of allocating the policy with the property covered by it becomes particularly difficult. To surmount these difficulties it may be wise even to draw up charts and maps of all buildings and their equipment, indicating on the insurance policies the particular pieces of property covered by them as shown on the map. As mentioned above, clear, businesslike records kept by the insured and properly supported by original data will always make for speedy adjustment of fire losses.

Adjusting Entries for Fire Losses

To make the books record properly the loss suffered by fire, it is necessary to set up a special account called "Fire Loss." To that account will be charged the full amount of the loss, including any expenses incurred in connection therewith and also the portion of the unexpired insurance premium which is canceled by the fire. This account will be credited with the amount of insurance received or allowed by the insurance company. Stated otherwise, to the account will be transferred the book value

of all property destroyed and all expenses in connection with the fire. After the account is credited with the amount of insurance received, the balance shows the net loss suffered by the fire and will be closed directly into surplus so as not to affect the results of the current period's operations. As a rule, at the time of the loss of a fixed asset, depreciation has accrued from the close of the last fiscal period and this must be taken into consideration in making the adjustments on the books. The amount of such accrued depreciation must be charged to the current period's Depreciation account because the period must bear its proper proportion of the expense. The offsetting credit to such charge will be made directly to the asset account rather than to its Depreciation Reserve account. The depreciation applicable to the asset destroyed which has accumulated in the past must now be transferred as a credit to the asset account. After such transfer and entry in the asset account of the accrued depreciation, the balance of the asset account shows the appraised value of the asset as at the time of the fire. If this appraised value is accepted as the true value by the insurance company, no further adjustment is needed and this becomes the figure or amount which is transferred to the Fire Loss account. If, however, settlement is made on a lesser valuation, in strict theory, the difference between the book value of the asset and the value accepted as the basis for settlement should be charged to surplus as an adjustment item occasioned by insufficient depreciation charges in former periods. Usually, however, no cognizance is taken of such adjustment and the total book value of the destroyed asset is charged to Fire Loss account.

If the loss is complete or the insurance company makes a settlement of the total amount of the policy, the policy is canceled and all unexpired premiums applicable to it are used up and constitute an additional loss occasioned by fire. The amount of such unexpired premiums is therefore

charged to Fire Loss account. If settlement is not made for the total amount of the policy, the amount of the settlement is indorsed on the policy in order to show the amount of insurance still in force for which the company is liable. The due proportion of the unexpired premium will be charged off to Fire Loss account. This proportion will be represented by the ratio of the amount of the settlement to the face of the policy.

In the case of loss of stock-in-trade by fire it is very necessary to have available as the basis for determining the value of the merchandise destroyed the inventory record as at the close of the previous fiscal period. The record of all purchases, purchase returns, sales, and sales returns from then until the time of the fire, and the records of previous years, should also be available in order to determine the average rate of gross profit. If such rate of gross profit is not available, there must be a rate agreed upon by the insured and the company as the basis for settlement. The method of determining the value of the goods on hand at the time of the fire by means of the data just mentioned is explained in full in Volume I, page 506, under the head of "Book or Estimated Inventories." Here also, as in the case of fixed assets, clear, businesslike records lead to a speedy adjustment of the loss.

CHAPTER XXXIII

STATISTICS IN BUSINESS; PRIVATE BOOKS; JOURNAL VOUCHERS; BUILDING EXPENSES AND INCOME

Statistics in Business

Value of Business Statistics

Because of the complexity of modern business it is practically impossible for the management or an executive of a large organization to rely on personal observations and impressions when formulating plans and policies. To do so would lead to frequent errors and costly mistakes of judgment. The human mind cannot adequately grasp the significance of a multitude of facts in the variety of their occurrence. In consequence many problems of management are today being solved by the intelligent use of statistical records or tabulations of past and present operations. By this means the pertinent facts regarding a business are classified and summarized, and the analysis of complicated figures and large aggregates is made possible. The relation of the groups to each other and of each group to the past, the relation of the unit to the whole, and so on, is best shown by the tabulation of facts in the form of figures. By reducing the facts to figures comparisons can easily be made and the proportion of one thing to another is more accurately presented. By divesting facts from their aspect in daily life and the caprices of temperament, a truer estimate of tendencies can be made. Because statistics generally deal with large masses or great numbers, standards, ratios, and types

can easily be established. The mortality statistics of insurance companies afford a good example of general averages or ratios that hold true when applied to such an uncertain proposition as the length of human life. Business statistics, however, cannot attain this accuracy because facts of a similar kind are not of such frequent occurrence and consequently the average is not so reliable. But the manager who is acquainted with the limitations of the statistical method and who intelligently understands the business forces with which he is dealing, finds it sufficiently accurate in the great majority of instances. The frequent and almost universal use of the sampling method of testing mailing lists, the use of figures as to the density of population in selling campaigns, and the increasing use of time studies in factories, show that statistics can be made to serve as a valuable guide in arriving at important decisions.

Railroad Statistics

Railroad companies have for a long time used statistics to aid them in interpreting the mass of detail involved in operating over a large area. The figures are generally grouped into two classes: (1) those showing results of operations, such as annual reports; and (2) tabulations of operating details. The latter are devised mainly for the purpose of checking and control. Another classification, more minute, is the grouping of railroad statistics according to their nature into:

1. Statistics pertaining to maintenance of roadbed, track, buildings, signals, etc.
2. Cost of maintaining locomotives, cars, and rolling stock in general in good condition.
3. Expenses connected with the movement of trains.
4. Expenses in connection with the securing of new business.
5. Administrative expenses.

By comparing the figures for each group the existing relationship leads to valuable conclusions.

The compilation of figures showing receipts per passenger, average journey per passenger, average haul of merchandise, receipts per ton of freight, relation of cars run to business done, proportion of loaded and empty car space, cross hauling of empty cars, percentage of empty to loaded cars, compilations showing cost per passenger mile or ton mile—these are all valuable and pertinent facts about railroad operation. The most significant way of stating some facts is by means of figures. This is especially true of such important and related phases of operation as, for example, the ratio of the pay-roll to operating revenue, a comparison of the pay-roll of engine men and trainmen with the engine and train mile, or a comparison of the business done with the pay-roll at each station.

Manufacturing Statistics

Statistics are being increasingly utilized for recording facts in connection with production, especially in factories where a system of cost-keeping is in vogue. Various forms and cards are frequently used to collect the required data which is then grouped or classified in various ways. The performance of each workman is recorded and the various records are combined into groups and compared. Statistics as to output, orders on hand and in process, figures showing idle time, capacity of machines and actual use, are examples.

Mercantile Statistics

The use of statistics in mercantile establishments is perhaps even more prevalent than in factories. This is chiefly because factories handle comparatively few lines, whereas mercantile houses generally carry or deal in a large number. The figures compiled are generally concerned with one or more of the following:

1. Sales. The comparison here is by totals, departments, cash and charge sales, salesmen, territories, lines, percentages to total, new business, etc.

2. Profits. The same classification is applied as for sales. Generally discounts and profits are compared.

3. Inventory of stock. Comparison made by cost or selling price, purchases, quantities sold, used, balance, percentages of sales, departments, lines, etc.

4. Cost of conducting the business. Comparison made by classes of expense, departments, percentage of sales, etc.

5. Collection. Comparison made by percentage of sales, territory, etc.

6. Notes, etc., due. Comparisons made with sales, territories, lines.

7. Goods returned. Comparisons made with lines, territories, percentage of sales.

8. Efficiency of employees. Tabulations made showing profits, percentage on standard of work performed, comparisons between departments.

9. Advertising. Compilations by departments, mediums, results, etc.

10. Turnover. Compilations showing total business and rate of turnover, compared by departments, lines, number of sales, etc.

11. Cash. Statistics giving receipts and disbursements in convenient groups.

12. Mark-ups and mark-downs. Statistics by departments, percentages, etc.

13. Summaries of operation. These are generally compiled periodically but are carried on continuously as long as is desirable.

14. Production. Statistics showing amount, completed work, work in process, orders on hand, time lost, total costs, unit cost, labor cost, material cost, overhead. All are classified into groups or further subdivided for comparison.

Each individual manager selects the particular set of facts which he thinks will best show the trend of the business. The complexity of the business usually determines the number of reports.

Use of Graphs in the Presentation of Statistics

Long experience or special aptitude may qualify a man to grasp readily the full significance of statistical compilations in a variety of forms without the use of charts or graphs. The quicker and surer method, however, in driving

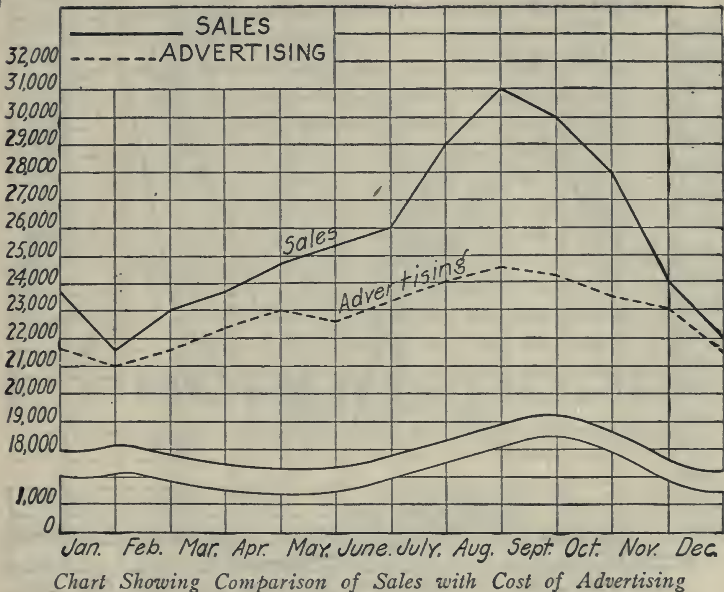

Chart Showing Comparison of Sales with Cost of Advertising

home the essential points of statistics is their graphic presentation. For the majority of business men the graphic method will accomplish what statistical tabulation fails to do. While facts are of prime importance, their method of presentation affects their usefulness and is therefore of greater importance. The great mass of figures that accountants

and efficiency men only too often present in incomparable form, sometimes far in excess of requirements, is best classified by means of charts.

Advantages of the Use of Graphs

The arguments in favor of the use of charts are that the importance of written words or figures is apt to be judged from the amount of space used, or the time spent in writing or compiling them; whereas the graphic method shows the

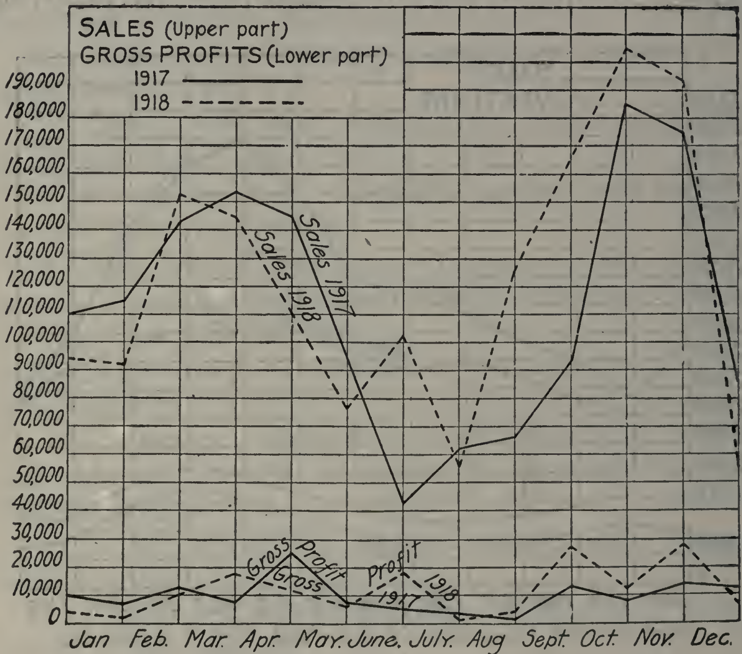

Chart Showing Comparison of Sales with Gross Profits

vital facts in a way which compels attention. The statistics are easily compared and when figures are visualized in graphic form relations are seen at once. One week is readily compared with another, one year with the previous year, one man's performance with another's, and so on.

Graphic methods are not only in many cases better but also cheaper. This is especially true if a number of copies have to be made. It requires more work to copy a mass of figures than to draw a few lines or figures by means

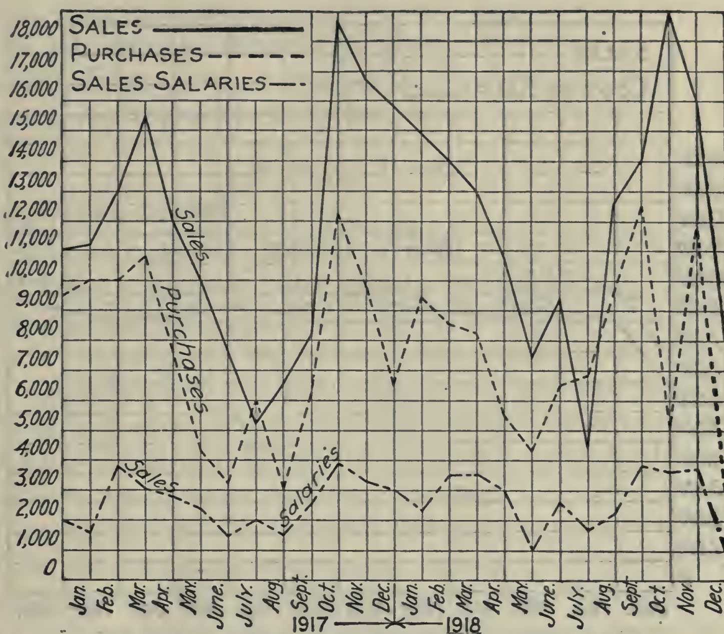

Chart Showing Comparison of Sales, Purchases, and Sales Salaries

of blue-print tracings. If many copies are needed, the photographic method of reproduction may be used. Then again, in statistical tabulations it is necessary to rearrange the figures in various orders so as to make different tabulations comparable.

Principles of Graph Construction

The following principles should be observed in making graphs:

1. Graphs should be simple so that the full significance is readily seen. If a chart requires a great deal of study its

very purpose is defeated. As a general rule, only two lines should be used. This is especially true if the lines are apt to intersect one or more times. If there are a number of interrelated figures to be presented, it is better to make

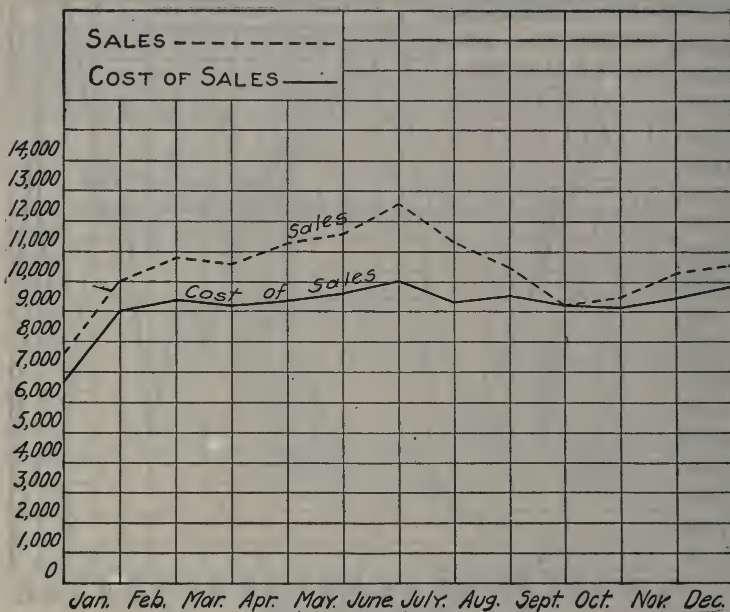

Chart Showing Comparison of Sales with Cost of Sales

separate charts on one sheet or to place them together in some other way.

2. Most statistics can be presented by one or more curves where the quantity is expressed by the distance of the curve from the base line, and the time is represented by the horizontal movement of the curve.

3. For a curve the vertical scale should be so selected that the zero line will appear on the diagram. This may require a break in the graph, as shown on page 585.

4. When the scale represents percentages the 100% line should be emphasized in some distinctive way.

5. The curves should be sharply distinguished from the ruling of the paper.

6. The lettering and the figures should be so placed as to be read as easily from the base as the bottom, or from the right-hand edge of the diagram as the bottom.

7. The titles should be clear and complete and, if necessary, subtitles and descriptions should be used.

The illustrations on pages 585–588 show how data lend themselves to graphic presentation.

Private Books

Purpose and Content

Private books are sometimes kept when it is not desirable for employees to know certain important data relative to the business. Secrecy then is the main purpose in their use in a great many businesses. The general knowledge of certain facts about the business or certain processes or methods of procedure which belong peculiarly to the business might be harmful. Where competition is particularly keen between two or more concerns, instances have been known of the employees of one concern being the paid agents of the other, thus securing information essential to underbidding on contracts. It is desirable at times to keep the employees of a partnership or a corporation in ignorance of the earning capacity of the business or of any secret contracts covering price agreements that may be in effect according to which larger rebates are to be allowed one concern than another. Other items about which it may be necessary to maintain secrecy are: the valuations at which patents, franchises, and other intangible assets are carried; partner's capitals, drawings, and salaries; manufacturing costs; the method and rate at which the overhead expense is apportioned over the product; the policy as to the creation of reserves of various sorts; the profit and loss account; the methods of financing as indicated by notes payable; and so on.

Operation of Private Books

No particular difficulty is experienced in the keeping of private books. A full set of records composed of journal, cash book, and ledger, may be maintained, though there is often no need for a cash book. These records, while containing essential information about the business, are usually spoken of as being subsidiary to the general books in the sense that the general books are operated by an employee who maintains a controlling account for the private books. In order to gather the material for the controlling account the books of original entry of the general records must be provided with additional columns for the private ledger. Any item about which it is desirable to keep employees in ignorance is simply charged or credited to private ledger with no explanation on the general books as to its ultimate disposition. The same item as taken into the private books is, by means of a journal entry, given its proper disposition, with the offset as a charge or credit, as the case may be, to a general ledger controlling account which is carried on the private ledger. These two controlling accounts—the one on the general ledger with the private ledger, and the one on the private ledger with the general ledger—are complementary to each other, thus making both ledgers self-balancing. A consolidation of the two trial balances, the one from the general ledger and the other from the private ledger, with both controlling accounts eliminated or treated as canceled items, is necessary in order to present the full statement of the business.

To illustrate the way in which secrecy covering certain types of transactions may be maintained, it may be well to trace a few transactions through the books. Suppose it is desired to make a cash rebate to a favored customer. The check is drawn payable to private ledger account and run through the cash book as a charge in the private ledger column, to be posted ultimately to the private ledger con-

trolling account on the general ledger. The check is entered as a cash receipt on the private cash book with the credit to general ledger. A check is then drawn on the private ledger cash payable to the favored customer, with the proper charge to Sales Rebates and Allowances or other similarly named account, and posted to that account on the private ledger. In a similar way checks for dividends, salaries, etc., can be drawn to the order of private ledger and their proper distribution be shown only on the private books.

At the time of closing the books, if some temporary proprietorship accounts are carried on the general ledger and some on the private ledger, those carried on the general ledger are closed off by transfer to the Private Ledger Controlling account instead of, as usually, to the summary Profit and Loss account. The adjustment of the books is usually made both on the general ledger and on the private ledger. If certain fixed assets subject to depreciation are carried on the general ledger, the adjustment of their values will have to be made by debit as usual to Depreciation account, with a credit to the suitable Depreciation Reserve account. This Depreciation account, of course, is in closing charged to Private Ledger instead of to Profit and Loss. If the Merchandise Inventory account and the Sales and Purchases accounts are carried on the general ledger, the cost of goods sold will be developed as usual on the general ledger and then transferred to the Private Ledger account. More often, however, most of these adjustments on account of depreciation reserves and reserve for doubtful accounts and the merchandise inventories are handled only on the private ledger. The Profit and Loss account as carried on the private ledger shows the net profit and usually all appropriations of that profit. The result is that the dividend accounts, the various reservations of profits, and Surplus account are handled only on the private books.

The private books are usually kept by the general auditor, the secretary, or general manager of a corporation, and by one of the partners or a trusted employee in the case of a partnership.

Journal Vouchers

Need for the Journal Voucher

Since the introduction of special journals to take care of cash, sales, and purchases, the present-day journal is used principally as a record for adjusting entries between accounts, the opening and closing entries of the ledger, and any other unusual transactions for which no other specialized form of book has been provided. For this reason it is very important that all the evidence which may be necessary to explain or to prove the correctness of an entry, together with the authority for making it, shall be instantly available in some convenient form. This not only saves much time and irritation in hunting up scattered data to explain an unusual entry, but it relieves the bookkeeper of any personal responsibility which might attach to him for making entries not strictly in accordance with correct accounting principles. It has been seen in an earlier chapter that the authorization of cash disbursements by means of the formal voucher gives a valuable control over cash and the bookkeeping record of it. In like manner, for entries appearing in the journal, the use of the journal voucher accomplishes these purposes.

The forms in which journal vouchers are made out vary with the requirements of each business, but in general they are very simple and follow the same general principles. Two features are essential: (1) the voucher must show clearly the purpose for which it is drawn; and (2) it should provide proper authority, with full explanation of the reasons for making the entry. The usual form is illustrated below:

Jan. 1918

Jr. V. No.......

Name———————————

		Dr. Cr. Explanation				

Approved.	Approved for Entry.

Entered: Jr. Folio ——. By: ————————

Journal Voucher (face)

Jan. ...... 1918 J. Vr. No.... Name——	Accts. to be charged:					Accounts to be credited:				

Journal Voucher (reverse)

The entries at the top of the back of the voucher give information for filing purposes only. Where the original vouchers are kept in a loose-leaf binder (thus constituting the journal), only the duplicates, folded lengthwise and filed in an upright binder, need have the notations made on the back.

Method of Use

The same form of voucher may be used in two ways. A regular journal may serve as the posting medium to the various ledger accounts affected. In this case each entry is given a number which corresponds with the number on the

voucher. All the original data and the explanations which are necessary to authorize the entry are attached to the vouchers which are filed away by months in numerical order.

The second method is to make out vouchers in duplicate. The original, with the approval of the proper officials and a brief explanation, is filed in a loose-leaf binder which constitutes the journal. The duplicate, numbered like the original, has attached to it all bulky papers, correspondence, or other evidence, and is filed away by months in numerical or alphabetical order, whichever best serves the purpose of the accountant. This method saves the time of recopying the debits and credits in a bound book, and also makes it possible to separate journal entries for use in different posting departments.

There is still some objection to loose-leaf general journals, however, though it is gradually disappearing with the use of proper safeguards.

Index to Journal Vouchers

If vouchers are filed numerically and it is found advisable to keep an alphabetical list for the purpose of bringing together all journal vouchers on one subject or from one firm, a supplementary card index giving year, month, and voucher number, may be kept which will serve for several years—as shown below:

X Y Z Co.		New York	
1917	11/15	12/87	12/99
1918	1/92	3/26	4/58

Card Index for Journal Vouchers

If it is desirable to keep a record of the amounts also, this simple form may be extended to include voucher numbers and amounts as follows:

X Y Z Co.			New York		
Year		Year		Year	
V. No.	Amt.	V. No.	Amt.	V. No.	Amt.

Card Index for Journal Vouchers

Content of Voucher

Vouchers for the different journal entries should comprise the following information: in general, correspondence or memoranda approved by proper authority, which should explain the reason for the entry and refer to the original charge or item against which the entry applies. Vouchers for returned purchases should have the following information attached: the shipment record, the stock record, the credit memorandum from the vendor, and correspondence or signed memoranda explaining why requirements were not up to standard.

Monthly depreciation charges should have attached a list of the capital accounts, the percentage of depreciation charged to each, and the one-twelfth which applies to the present month.

Adjustments for allowances on contracts should have the reference or copy of the contract agreement, all correspondence which finally disposes of the settlement, and references to any other legal or official authority which was instrumental in effecting the present settlement.

In making unusual deductions or reserves at the time the books are closed, all the data bearing on the subject should be gathered, or, if this is not possible, very clear references should be made to the places where such material may be found. This is important, because investigations may be made at any time either to readjust or to confirm the entries, or to locate the responsibility for making them.

Little time is needed to gather all the facts bearing on a transaction at the time it is entered on the books, but if the present officials are promoted or leave, it may at a later date take days or weeks to collect the information necessary to explain the reason for the entries made.

Other Methods of Authorizing Entries

A method sometimes used of authorizing journal entries requires the use of a loose-leaf journal for its easy operation. Every entry made by the bookkeeper is sent for approval to the auditor, manager, or other responsible person. Approval is evidenced by signature or initialing. Where the use of the formal journal voucher is found to be cumbersome, this method gives satisfactory results.

Similar to the journal voucher as authority for entry is the debit and credit slip used for authorizing inter-ledger postings. In a large establishment where the sales ledger, for instance, is divided alphabetically among a number of ledger clerks, adjustments as between the different ledgers are usually made by means of these debit and credit slips, which when properly signed by the head bookkeeper give the authority for making the necessary ledger entry.

Building Expenses and Income

Allocation of Building Expense

It is purposed here to draw attention to two problems in connection with the bookkeeping records of buildings

owned by the business. The one problem has to do with the proper allocation of the various building expenses as between the different departments of a business such as manufacturing, selling, general administration, etc., and even the subdepartments within these general classifications. It frequently happens that the same building is used partially for manufacturing and partially as a warehouse and salesroom, while it may also contain the administrative offices. Within each of these groups there may be various subdepartments. A large store may be departmentalized and it may be desirable to show the results of operation by departments. If cost accounting by departments is determined upon, it becomes necessary to carry the departmental analysis beyond the gross profit stage, in which case building expense must be taken account of and spread equitably over the various departments. Likewise, within the factory it may be desirable to allocate the item of building expense over the various departments of storeskeeping, costing, and production proper, and even a further analysis may be necessary depending somewhat on the detailed information desired. Where building expense has to be spread over these various departments and subdepartments, an equitable basis of distribution must be found. A common basis is the amount of floor space used by the various departments. This method is not always fair inasmuch as some portions of the building are subject to heavier wear and tear, and therefore to heavier maintenance and depreciation charges, than other portions. Consideration must be taken of all the physical factors involved in order to secure an equitable distribution of the expense.

Ownership versus Renting

The second problem has to do with the gathering of information as to the relative advantages of owning or renting a building. The chief elements of expense which

must be met in connection with the ownership of buildings are maintenance, depreciation, taxes, and insurance. In determining the relative advantages of ownership or leasing, the item of interest on investment in buildings must also be taken into consideration. It is doubtful, however, whether this last item should be brought onto the books as a cost of ownership. As in the case of a manufactured product, the item of interest is best handled by means of a statistical record rather than as an entry upon the financial records of the business.

Methods of Bookkeeping

Two methods of presenting the information on the books are met with. In the one case, an account is kept with Building Expense and Income to which are charged all expenses in connection with the building and to which are credited any items of income, as from subleasing, etc. Instead of having the one account, separate accounts may be kept and cleared at the end of the fiscal period through Building Expense and Income account before transfer to Profit and Loss. The difference between the net cost of building ownership, as indicated by Building Expense and Income account, and the market rental value of similar space and accommodations elsewhere will represent the net advantage or disadvantage of ownership as compared with leasing. At this point, before making the comparison, it will be necessary to take into consideration the item of interest on the money invested.

The second method is simply a variation of the first so far as securing the information desired is concerned. Under it the Building Maintenance account is charged with all expenses as above and credited with a fair rental value as determined by market conditions for similar space elsewhere. The difference between the charges and credits to the Building Maintenance account will be an indication

of the profit or loss on the policy of the ownership. A theoretical objection to this last method is that the crediting of a fair rental to the account makes necessary a charge to a rent account, which will have to be shown as a charge to some department or phase of business activity, such as the factory, sales department, etc. As in the case of interest, the best authority inclines towards treating rent as an item of financial management rather than as a burden to the other departments of the business. Practically, however, where the expense of rent is actually incurred through the use of a building belonging to outside parties, the prevailing practice at the present time is to charge rent expense to the departments using the accommodations. Consistency seems to demand that both interest and rent be treated in the same way, and handled as financial management items.

Workmen's Dwellings and Social Betterment Work

To maintain a fairly constant supply of labor, a corporation frequently finds it necessary to provide housing accommodations for its employees. This may be because the concern is located far from a settled community and outside capital cannot be induced to provide the needed accommodations. Accordingly, corporations oftentimes spend large sums in so-called social betterment work, and it is customary for the corporation to charge a fair rental on workmen's dwellings. The expense in connection with such work is to be treated rather as an item of extraordinary expense just as the income from the corporation's investment in workmen's dwellings must be treated as income outside the regular operations of the business. The problem here is simply the determination of the proper place to show the items of expense and income in the profit and loss summary for the period.

CHAPTER XXXIV

THE CONSOLIDATED BALANCE SHEET AND PROFIT AND LOSS SUMMARY

Purpose and Function

The consolidated balance sheet is a form of statement distinctively American. As indicated in previous chapters, its use has arisen as a result of the corporation laws of some of the states which allow the formation of the holding company. This, if strictly a financing company, has a very simple operating organization. Its chief assets are usually the securities, capital stock and bonds, of the subsidiary companies which it owns in part or in full. Accordingly, its balance sheet is comparatively simple; in fact this very simplicity results in giving little information as to its real financial condition or that of the subsidiaries which it owns. If, however, the holding company is at the same time both an operating and a financing corporation, all the complexities encountered in the balance sheet of a manufacturing company will be found on that of the holding company. However, the financial statement of an operating holding company is not any more intelligible because of its complexity than that of a purely financing corporation.

The items on the balance sheet of either type of corporation which are evidence of the activities peculiar to a holding company are, as stated above, the securities of the subsidiary concerns held by the holding company and whatever advances have been made on open account to the various subsidiaries in order to provide funds for making extensions or for recouping losses incurred by the subsidiaries. The principles governing the valuation of the securities of the

holding company have already been stated and explained in Chapter XV. In that chapter were stated the different applications of the principles of valuation to the three conditions met; namely, (1) the condition in which the holding company owns the entire capital stock of the subsidiary; (2) the condition in which a controlling but partial interest only is held; and (3) the condition in which the holding company is a minority stockholder of the subsidiary. In making up the balance sheet of the holding company the application of these principles to the valuation of the holdings of the corporation must be carefully handled. Aside from this problem of valuation, the balance sheet of the holding company presents no new problems. Such a balance sheet, however, gives very little information as to the actual financial condition of the corporation because its finances are tied up so completely with the financial condition of the various subsidiaries. In order, therefore, to present a statement which will intelligently show the real condition of the holding company, it becomes necessary to combine or consolidate the statements of financial condition of all its subsidiaries.

Problem of Partial Ownership

Where the ownership of the subsidiaries is complete, the consolidated balance sheet in which are brought together all the various assets and liabilities of the subsidiaries, presents a true, full, and intelligent statement of the financial condition of the holding company. Where, however, ownership is not complete, in which case there may be majority or minority holdings, the problem of drawing up a statement which will present the actual condition of the holding company is more difficult and much more complex. Manifestly, a consolidated balance sheet under either of these latter conditions as to partial ownership cannot be applicable alone to the holding company, inasmuch as in

such a statement there must be included interests over which the holding company has no direct control or authority.

Because of this difficulty, three different ways of attempting to show the holding company's condition are met with. One method makes no attempt to overcome the difficulty but limits itself to showing simply the balance sheet of the holding company as explained in the early part of this chapter. A second method consists in showing the balance sheet of the holding company supported by the separate balance sheets of all of the subsidiary companies. The third method is the method of the consolidated balance sheet which has just been briefly explained. This last is, perhaps, the most satisfactory method of the three. The insufficiency of the first method and the objection to it have been referred to already. The second method gives all essential information but presents it in such form that it is practically impossible for anyone but a trained student of finance and accounting to correlate the various parts and arrive at an intelligent understanding of actual conditions. The stockholder or the outsider is usually completely at a loss to know the meaning of all the figures and statements presented. Under the third method the data as to the condition of the various companies are brought together and presented in logical form on the consolidated balance sheet so that the combined statement shows as clearly as is possible the condition of the holding company.

Conditions under which Used

It should be clearly understood that the consolidated balance sheet is not a balance sheet of the holding company except and only when the holding company owns the entire capital stock of all the subsidiaries. A consolidated balance sheet, therefore, is a statement which presents the condition of all of the subsidiary companies. If it reflects the condition of the holding company better than the latter's balance

sheet, then, and then only, should a consolidated balance sheet be used. A fine distinction must sometimes be drawn to determine when it is more desirable, in the interests of an accurate showing of condition, to present a consolidated balance sheet rather than the balance sheet of the holding company, and a delicate appreciation is needed of the various financial problems involved. When the holding company is not the complete owner but nevertheless has a controlling interest in all the subsidiaries, the method of the consolidated balance sheet is usually the better way of showing its financial condition. Where the holding company, however, holds only minority interests, it is oftentimes open to question as to whether the consolidated balance sheet gives a true presentation of the facts of financial condition, especially in view of the fact that the holding company cannot always control the policies of its subsidiaries.

The Setting Up of the Consolidated Balance Sheet

With this explanation of purpose and function of the consolidated balance sheet, it is purposed now to draw attention to some of the problems met in drawing up such a statement. The first essential condition to facilitate the consolidation of the balance sheets of the various subsidiaries with that of the holding company is that standardized methods of accounting resulting in a similar classification of accounts and presentation of results be used by all the subsidiaries. The consolidated statement is then merely a combination of the values of similar items in all the balance sheets to determine the valuation at which the consolidated items shall appear.

On the balance sheets of the various companies certain accounts will appear which represent intercompany relationships. Thus, on that of the holding company appear the securities which are represented on the statements of the subsidiaries by their net assets. In other words, the secu-

rities of the holding company are assets represented by the proprietorship items of the various subsidiaries. Sometimes on the consolidated balance sheet both items are shown. This results, of course, in an almost exact duplication of items inasmuch as the holding company's securities are a statement of the net asset values of the subsidiaries. The better method of presentation, however, seems to be the elimination of the securities of the holding company against the proprietorship items of the subsidiaries. It may frequently happen that the values of these two items to be eliminated are not the same. This will always be the case if the holding company values its securities either above or below the par of the capital stocks of the subsidiaries, plus any surplus belonging to the subsidiary at date of purchase by the holding company.

It is to be presumed that the values at which the securities are held on the books of the holding company represent the latter's estimate of the value of its interests in the various subsidiaries. If this value is more than the net worth of the subsidiary as shown by its capital stock outstanding and surplus at the time of purchase by the holding company, the difference between the value at which the securities are carried by the holding company and the net worth of the subsidiary must represent the value placed by the holding company on the good-will of the subsidiary. This good-will does not appear, of course, on the books of the subsidiary. Hence, in consolidating the balance sheet of the subsidiary with that of the holding company, it is necessary to set up the asset good-will and thus increase the net worth of the subsidiary to the point where it can be exactly canceled against the value of the securities on the balance sheet of the holding company. If, however, the value of the securities on the holding company's books is less than the net worth of the subsidiary, that condition indicates that in the opinion of the holding company the

assets of the subsidiary as carried on the subsidiary's books are overvalued. In this case it becomes necessary, upon consolidation, to set up a depreciation reserve under suitable title.

The effect of this, so far as the eliminations on the consolidated balance sheet are concerned, is merely to set up under the title Depreciation Reserve the portion of the subsidiary's capital stock—or capital stock and surplus—not canceled by the amount at which the holding company carries on its books the value of its interest in the subsidiary. Instead of carrying this difference in values under the title Depreciation Reserve, it is sometimes shown as Capital Surplus. This is merely another way of saying that the portion of the subsidiary's capital stock not canceled by the holding company's investment in the subsidiary is simply carried on the consolidated balance sheet under another name. Another method of handling this uncanceled amount is to carry it into the consolidated balance sheet as a credit to Good-Will account, and so secure a reduction in the value at which this intangible asset is shown in the balance sheet of the allied companies. This may sometimes result in reducing the value of good-will to a negligible figure, or in writing it off the books entirely, or even in showing it with a credit balance. There is little to choose between the methods; the author prefers the use of the depreciation reserve. The balance sheets of all of the subsidiaries are in this way consolidated with the balance sheet of the holding company.

On the consolidated balance sheet as at the date of the purchase of the various subsidiaries, there will not therefore be shown any item of surplus, inasmuch as the items of surplus on the balance sheets of the various subsidiaries have been eliminated together with their capital stock items against the securities on the balance sheet of the holding company. This is as it should be. Surplus account prop-

erly used should represent only profits reserved from operation. The holding company cannot, therefore, previous to its operation, show any item of surplus even though the subsidiary companies have accumulated profits which they, of course, are entirely right in showing under the title Surplus.

A distinction must be made here between what is termed "contributed" surplus and "operating" surplus. Any corporation, the holding company included, may at the time of its organization have some portion of its capital represented by contributed or capital surplus. It has been pointed out that this may arise either through subscription to its stock at a premium, or by a later donation of stock by its stockholders which, when sold, may be recorded as working capital surplus or contributed surplus. It is not possible, however, for any corporation, previous to its operation, to show as a balance sheet item an operating surplus from which it might be possible to declare dividends.

Showing of Intercompany Accounts

At the time of consolidation, intercompany accounts of various sorts will also appear. The holding company may have made advances of cash to some of the subsidiaries. These will be shown on the books of the holding company as open account claims against the subsidiaries, while on the books of the subsidiaries they appear as increases among the assets—usually cash or other current items—offset by open liability claims in favor of the holding company. The account receivable on the holding company's books should be eliminated against the account payable on the books of the subsidiary. Similarly, there may be numerous intersubsidiary accounts which may be eliminated, the ones against the others. The need for a very careful classification of accounts receivable in order to separate the claims against trade debtors from those against allied companies

should be emphasized when it is desirable to consolidate balance sheets on which these various classes of accounts receivable appear.

Showing of Notes Discounted

One kind of intercompany item needs further consideration. A corporation may, as the holder of the notes of an allied company, have had those notes discounted. On the maker's books the notes appear as a liability. On the holder's books, after discount, the notes will be shown as a contingent asset offset by a contingent liability of equal amount. Upon consolidation of all the balance sheets, neither the contingent asset nor liability will appear, being canceled against each other, but the full liability as maker of the notes must be shown; for now that the notes have passed into possession of an outsider, the bank, the liability is no longer an intercompany liability but one for which the consolidated interests are fully liable.

Reconcilement of Current Accounts

Previous to the consolidation of the balance sheets, it is possible that some of the intercompany accounts may need reconciliation just as any other current accounts. For instance, Company A may have shipped goods to Company B and have charged B's account, but A's account on B's records may not yet have been credited because the goods have not yet been received. All items in transit will require reconciliation. These are all intercompany transactions which will be eliminated upon consolidation; but to make exact cancellation possible, the intercompany current accounts on the books of the various companies must be reconciled.

Valuation of Inventory

The problem of the valuation of the stock-in-trade inventory on the consolidated balance sheet is perhaps the

most troublesome. The situation with regard to inventories of stock-in-trade is often complicated by the fact that the same raw material or partly finished material may pass through the hands of several companies each doing certain processes upon it. The process of manufacture may not be completed until the goods are turned over ultimately to the holding company for sale and final distribution to the consumer. This—or other possible variations of the procedure—is usually the situation so far as stock-in-trade is concerned. Inasmuch as the various subsidiaries are independent corporate organizations, the price at which they transfer their product to the allied subsidiaries is not cost price but a sale price determined, perhaps not by market conditions, but rather by some fixed policy set by the holding company; although it frequently happens that market price is the price at which the partially completed product is turned over to allied subsidiaries. However determined, the price includes an element of profit which from the standpoint of the holding company is not a realized profit until the goods are finally disposed of to the outside consumer. Were the manufacture carried out by a single corporate organization, the product, as it passed through its various stages of manufacture, would be charged into each succeeding stage at the costs accumulated during preceding stages, and the element of profit would not need to be considered until the product was ultimately sold by the holding company.

Thus, the valuation at which the inventory of stock-in-trade is carried on the books of the various subsidiaries is often inflated by the profit in each case, so that by the time the product reaches the holding company it may carry a very large element of unrealized profit. While from the standpoint of each subsidiary company the act of transfer has been legally a sale and therefore the seller is entitled to a profit on the sale, without which there would be no element of profit appearing in the operations of each sub-

sidiary company at any time, from the standpoint of the holding company such transactions are in no sense sales, but are simple transfers from one process or stage of manufacture to another.

In order to show the true condition as to the value of the inventory of stock-in-trade on the consolidated balance sheet, it becomes necessary to eliminate these inter-company items of profit loaded onto the goods at the time of transfer between companies. The figure at which the value of the consolidated inventories will appear in the consolidated balance sheet should represent the actual cost figure, as if the entire process of manufacture were carried on under one corporate organization. The corresponding offset to this reduction in value of the consolidated inventories will appear as a reduction in the surplus as shown on the consolidated balance sheet.

This principle of inventory valuation should always be applied to the full in the case where the holding company is the complete owner of all its subsidiaries. It cannot, however, be too rigorously lived up to under conditions where the holding company may not have absolute control over the policies of the subsidiary companies. It may sometimes even be modified by the fact that the product as turned over by one company to another is in such stage of completion that there is a ready market for it outside that of the allied subsidiaries. The accountant is, however, treading on somewhat uncertain ground when he attempts to incorporate any element of profit in the consolidated inventory. Conservative management as adopted by some of our largest corporations eliminates all elements of profit, and that should be the standard practice. Only under unusual circumstances and after a very careful consideration of all the conditions should the consolidated inventory be carried at any other valuation than that of full manufacturing cost.

Reserve for Intercompany Profits

In eliminating intercompany profits from the valuation of the inventory, use is sometimes made of a Reserve for Intercompany Profits account. The reserve is created by a charge against Surplus. The inflated valuation of the inventory is allowed to stand but it is offset by this reserve in sufficient amount to reduce its value to a cost basis.

Valuation of Inventory—Minority Interests

An interesting problem arises in handling the consolidated inventories and other similar items when there are minority interests to be taken into account. To write down the inventory to a cost basis for the consolidated companies involves a valuation below cost for the subsidiary companies which purchased the commodities from their allied companies. This is hardly equitable to the minority interests in those companies, for they are concerned not with what is the proper basis for valuation on the consolidated balance sheet but rather on their own balance sheet. Their company as a distinct legal organization has the right to show all the profits arising out of a valuation of its inventory on its own purchase-cost basis. Recognizing this right, some accountants advocate carrying the portion of the inventory represented by the ratio of the minority interests to the whole interests, at the cost price to the subsidiary and writing down the rest of it to a true cost basis for the consolidated companies. The effect of this is to leave undisturbed the portion of the subsidiary's surplus belonging to, or, more strictly, representing the minority interests. Such a method results in the valuation of the inventory on two different bases for the consolidated balance sheet—a practice which is objectionable. The more conservative policy is to write down the whole inventory to a consolidated cost basis, charging the amount written off against the consolidated company's surplus. This will leave the minority interest

surplus unaffected by the changed basis of valuation —a desirable thing from the standpoint of equity to the minority.

Valuation of Liabilities

So far as the liabilities of the corporation are concerned, the values at which these will be carried on the consolidated balance sheet will be the combined values of all the liabilities of the subsidiaries, aside from the intercompany accounts payable and other similar items which have been canceled against the accounts receivable of the subsidiaries and holding company.

Showing of Capital Stock

The showing of the capital stock item on the consolidated balance sheet will depend somewhat on the degree of ownership of the holding company. If the ownership is partial, in addition to the capital stock of the holding company a statement must appear of the consolidated minority interests of the various subsidiaries. This should, of course, be shown separately from the capital stock of the holding company. This becomes necessary because of the fact that items which do not belong in full to the holding company have been incorporated with the assets on the consolidated balance sheet. It is seldom if ever feasible to attempt a separation of the various asset items on the basis of the degree of ownership of the holding company; hence, the only offset to the inclusion of asset values not belonging to the holding company is by showing the outside interest in those assets by means of the minority holdings of capital stock.

Showing of Surplus

The other element of net worth, i.e., the surplus, will also have to be adjusted in order to give the best showing of the

interest of the various parties therein. This is, of course, the operating surplus referred to above. The portion of the surplus belonging to the holding company as indicated by its proportion of ownership in the allied companies will be shown separately from the portion of surplus belonging to the minority interests. Sometimes when this is relatively insignificant it is shown as a liability rather than as an item of net worth, on the ground that the minority has a claim on that surplus and will very probably, in the near future, receive it by way of dividends. It would seem to be, however, a truer index of the exact status of affairs at the time of the consolidation, to show the item separately as a portion of surplus in the net worth section of the balance sheet.

Showing of Deficit

When it becomes necessary to incorporate a deficit rather than a surplus, conservative practice usually demands that the entire deficit be shown as belonging to the holding company rather than merely its proportionate share as indicated by its share of ownership in the subsidiary. This is advisable because an initial deficit is often an indication of the inability of the company to be operated profitably, in which case the holding company may have to stand practically the entire deficit.

Showing of Profit and Loss Summary

The consolidated balance sheet should be supported by a consolidated profit and loss summary. Just as with the balance sheet, a distinction is made between the profit and loss statement of the holding company and the consolidated profit and loss statement in which are brought together the summaries of all of the allied companies. If the holding company is primarily a financing company, its chief source of earnings will be from dividends on the stocks of the subsidiary companies held by it. The profit and loss summary

of the holding company may be a true reflection of its earning condition for the current year if proper provision has been made for the losses of the subsidiary companies which have been operated unprofitably. The information which the holding company's profit and loss summary gives, however, is not adequate or sufficient on which to base an intelligent judgment as to whether it is a correct statement of current operations. Much the same difficulties are met in connection with it as in connection with the balance sheet of the holding company referred to above. For instance, if, during a given period, some of the subsidiary companies were operated at a loss or on a narrow margin of profit but dividends were declared out of surplus earnings accumulated from other periods, there would be no indication on the profit and loss summary of the holding company as to the actual conditions under which the earnings of the holding company had been secured. In other words, there would appear on the profit and loss summary of the holding company as earnings for the current period items representing accumulated earnings from previous periods.

Thus, the profit and loss summary of the holding company would not give a true reflection of the earnings for the current period, and furthermore would give no information whereby it would be possible for an interested party to form any judgment as to the current operations of the holding company and its subsidiaries. Inasmuch as the holding company usually owns a majority interest in all the subsidiaries and therefore can dictate their policies, the management of the holding company is always in possession of the true status of affairs, but the stockholder or other interested party can form no judgment whatever as to the actual condition. On the profit and loss statement of the holding company there will be no data as to gross earnings, operating expenses, fixed charges, or miscellaneous income and expense items reflecting the operating conditions of the

various subsidiaries. Furthermore, if a subsidiary company has been operating at a loss and has declared no dividend, the absence of that item of earnings from the profit and loss summary of the holding company would not be necessarily a proper reflection of the condition of the subsidiary on the holding company's summary. It might be necessary, in order properly to show the true condition of affairs, to make provision by way of a reserve for the loss of the subsidiary.

Again, it becomes very easy, if control of the holding company is in the hands of an unscrupulous clique, to understate the profits of the holding company by refusal to declare such a dividend on the part of each subsidiary as will reflect the true earnings of the subsidiary for the current period. Such a policy may be used for the purpose of manipulating the stocks of the various companies.

The Consolidated Profit and Loss Summary

For these reasons and others of the same kind as those mentioned in connection with the balance sheet of the holding company, it is best, in order to give an intelligent showing of condition, to set up a consolidated profit and loss account. The comment made on the consolidated balance sheet is here pertinent also. It is not a profit and loss account of the holding company for it includes also items representing other interests. In some respects it is an unwieldy instrument, but it seems to be the best way in which to show the actual condition of the holding company's operations. On the consolidated profit and loss summary the earnings from dividends which appear as the chief source of the holding company's earnings on its profit and loss summary will be eliminated and in their stead will appear the combined earnings of the allied companies. This might seem to be an inflation of earnings inasmuch as the goods which were sold by one company and are recorded by it as earnings will be resold by another company on whose

books they will appear also as earnings. The sale of the same goods may thus appear as earnings in many of the subsidiaries. However, such a showing of combined results does provide a true basis on which to judge earnings in comparison with the values invested by the various companies from the use of which values the earnings have been derived. Similarly, on the consolidated profit and loss statement will appear all the operating expenses and other items belonging to the individual profit and loss summaries of the subsidiaries. As it is necessary on the consolidated balance sheet to make some adjustments in the surplus on account of the unrealized elements of profits in the values at which the combined inventories were taken over, so this same adjustment will perhaps be best handled as an appropriation of profits in the last section of the consolidated profit and loss summary.

If the holding company owns all of the stock of the subsidiaries, a true profit and loss summary with no inflated values should be drawn up. In this there will appear only the sales to outside consumers; no intercompany sales should be shown. The cost of goods sold will be determined on the same basis, viz., the basis of cost from the standpoint of the consolidated companies as a unit organization, all intercompany profits being eliminated. All the expenses of the subsidiaries are loaded onto, and therefore absorbed in, the cost of the goods sold by the holding company. Usually only the holding company's expenses—selling, general administrative, etc.—will appear as such on the consolidated profit and loss summary. Where, however, there are minority interests to be taken into account, the method of combining all the elements is doubtless the most satisfactory.

Illustration of Consolidated Balance Sheet

Problem. Company X, the holding company, owns all of the capital stock of Company Z and 60% of the stock of

Company Y. Company X is chiefly the financing company, Company Y is the selling company, while Company Z manufactures the commodities and turns them over to Company Y at a price slightly under the market. The following balance sheets of the several companies show their condition at the close of the fiscal period. Company Z records show that the cost of the merchandise carried on the balance sheet of Company Y at $75,000 is $60,000. It is required to draw up a consolidated balance sheet of the affiliated companies.

Company X—Balance Sheet

Cash	$ 50,000.00	Notes Payable	$ 100,000.00
Notes Receivable Y	100,000.00	Bonds	500,000.00
Advances to Z	250,000.00	Capital Stock	1,000,000.00
Stock Y	300,000.00	Surplus	250,000.00
Stock Z	550,000.00		
Patents	500,000.00		
Other Property	100,000.00		
	$1,850,000.00		$1,850,000.00

Company Y—Balance Sheet

Cash	$ 25,000.00	Notes Payable X	$100,000.00
Accounts Receivable	125,000.00	Accounts Payable	25,000.00
Notes Receivable	100,000.00	Bonds	75,000.00
Notes Receivable Z	50,000.00	Capital Stock	500,000.00
Z (open account)	50,000.00	Surplus	25,000.00
Merchandise	75,000.00		
Plant	300,000.00		
	$725,000.00		$725,000.00

Company Z—Balance Sheet

Cash	$ 40,000.00	Company X (open account)	$250,000.00
Accounts Receivable	180,000.00	Notes Payable Y	50,000.00
Notes Receivable	230,000.00	Company Y (open account)	50,000.00
Merchandise	150,000.00	Capital Stock	450,000.00
Plant	350,000.00	Surplus	150,000.00
	$950,000.00		$950,000.00

Solution

WORKING SHEET

Assets	Co. X	Co. Y	Co. Z	Combined	Elimination	Consolidated
Cash	$ 50,000.00	$ 25,000.00	$ 40,000.00	$ 115,000.00	$	$ 115,000.00
Notes Receivable	....	100,000.00	230,000.00	330,000.00	....	330,000.00
Notes Receivable Y	100,000.00	....	....	100,000.00	(a)100,000.00	....
Notes Receivable Z	....	50,000.00	....	50,000.00	(b) 50,000.00	....
Accounts Receivable	....	125,000.00	180,000.00	305,000.00	....	305,000.00
Advances to Z	250,000.00	....	....	250,000.00	(c)250,000.00	....
Co. Z (open account)	....	50,000.00	....	50,000.00	(d) 50,000.00	....
Stock Y	300,000.00	....	....	300,000.00	(e)300,000.00	....
Stock Z	550,000.00	....	....	550,000.00	(f)550,000.00	....
Merchandise	....	75,000.00	150,000.00	225,000.00	(g)*15,000.00	210,000.00
Patents	500,000.00	....	....	500,000.00	....	500,000.00
Other Property	100,000.00	....	....	100,000.00	....	100,000.00
Plant	....	300,000.00	350,000.00	650,000.00	....	650,000.00
Good-Will	....	....	....	....	(f)**100,000.00	100,000.00
	$1,850,000.00	$725,000.00	$950,000.00	$3,525,000.00	$1,215,000.00	$2,310,000.00
Liabilities and Capital						
Notes Payable	$ 100,000.00	$.........	$.........	$ 100,000.00	$	$ 100,000.00
Notes Payable X	....	100,000.00	....	100,000.00	(a)100,000.00	....
Notes Payable Y	....	....	50,000.00	50,000.00	(b) 50,000.00	....
Accounts Payable	....	25,000.00	....	25,000.00	....	25,000.00
Co. X (open account)	....	....	250,000.00	250,000.00	(c)250,000.00	....
Co. Y (open account)	....	....	50,000.00	50,000.00	(d) 50,000.00	....
Bonds	500,000.00	75,000.00	....	575,000.00	....	575,000.00
Capital Stock	1,000,000.00	500,000.00	450,000.00	1,950,000.00	(e)300,000.00	1,000,000.00
					(f)450,000.00	200,000.00
Surplus	250,000.00	25,000.00	150,000.00	425,000.00	(g) 15,000.00	410,000.00
	$1,850,000.00	$725,000.00	$950,000.00	$3,525,000.00	$1,215,000.00	$2,310,000.00

* Intercompany profit between Z and Y.

** Subtraction item, usually shown in red.

Company X and its Subsidiaries

Consolidated Balance Sheet

Assets		*Liabilities and Capital*	
Cash	$ 115,000.00	Notes Payable	$ 100,000.00
Notes Receivable	330,000.00	Accounts Payable	25,000.00
Accounts Receivable	305,000.00	Bonds	575,000.00
Merchandise	210,000.00	Total Liabilities	$ 700,000.00
Other Property	100,000.00	Capital Stock of Co. X	1,000,000.00
Plant	650,000.00	Capital Stock of Subsidiaries not owned by Co. X	200,000.00
Patents	500,000.00	Surplus of Affiliated Companies	400,000.00
Good-Will	100,000.00	Surplus of Minority Interests	10,000.00
	$2,310,000.00		$2,310,000.00

Comments on Problem. There is little in the solution to which attention need be directed. In the handling of the capital stock items, it will be noted that only $300,000 of Company Y's stock is eliminated, the remainder of $200,000 being shown on the consolidated balance sheet as a minority interest. In eliminating Company Z's capital stock, it becomes necessary to bring a good-will item of $100,000 onto the consolidated balance sheet. This is shown on the working sheet by means of the three "f" items in the "Elimination" column. On the consolidated balance sheet it will be noted that the minority interest in Surplus (40% of $25,000, Y's surplus) is not shown affected by the reduction of Y's inventory to a cost basis. The solution assumes that all the surplus items on the balance sheets of the various companies represent operating surplus accumulated since the purchase of the subsidiaries by the holding company.

This problem calls attention to some of the questions encountered in handling the consolidated balance sheet, although in practice much more complicated situations arise.

All that can be hoped for here is to impress upon the student some fundamental principles to be observed and to point out some of the methods used in order best to express the relations of the various interests in the business. The idea of the consolidated balance sheet is simple in concept but usually difficult of full realization.

CHAPTER XXXV

ACCOUNTS AND REPORTS OF RECEIVERS AND TRUSTEES

Appointment of Assignee or Receiver

A condition of bankruptcy does not necessarily exist in order to secure the appointment of an officer of the court or a representative of a business for the purpose of taking possession and disposing of the property and applying the proceeds to the liquidation of some or all of the debts. The titles given to the various capacities of the representative of the business or the court are assignee, receiver, and trustee. An assignee is a party to whom the owner of a business makes a general assignment of his business, usually for the benefit of his creditors. The owner is usually bankrupt or verging on bankruptcy at such a time. The assignee becomes a representative of the owner, appointed by him, and to that extent the owner is able to regulate the distribution of his estate. As a usual thing the creditors must consent to the appointment of the assignee if the estate is to be liquidated and distributed under his control. If such consent is not given or if the appointment of the assignee and his conduct of the liquidation prove unsatisfactory, it is possible for certain creditors to bring bankruptcy proceedings against the owner and secure the settlement of the estate under bankruptcy procedure. It is usually held, however, that no creditor who has given active approval of the liquidation under assignment can become a party to an application in bankruptcy. The procedure of the assignee in winding up the affairs of the owner does not differ in any essential respect, so far as the

accounting is concerned, from that of the receiver or trustee. The accounting features, therefore, will be treated under the later heads of "Receiver" and "Trustee."

If everything is satisfactory to both parties, a complete settlement of the estate will be effected by the assignee and the affairs of the owner will thus be wound up. In case of dissatisfaction, or in the absence of a general assignment in favor of creditors, proceedings in bankruptcy may be brought against the owner. As was pointed out in Chapter XXVIII, a receiver as an agent of the court may act in two capacities, he may be either a receiver in bankruptcy or a receiver in equity.

The receiver in bankruptcy takes possession of all the property of the bankrupt with the expectation of its ultimate disposal and the application of the amounts realized therefrom to the liquidation of the debts of the bankrupt. The receiver in equity, however, usually comes into possession of only a part of the property, which he is to use in whatever way seems best for the liquidation of the more pressing current claims of creditors. In this latter case a condition of insolvency cannot be said to exist because usually the assets exceed the liabilities. Simply because the management has allowed the current assets to become tied up in a more or less unrealizable form which is inapplicable to payment of liabilities, the business finds itself in difficulty. It becomes necessary temporarily to turn the property over to a representative of the owner and his creditors in order to satisfy their claims and at the same time to preserve the property from needless dissipation until such time as a satisfactory settlement with creditors can be made and the business placed on a sound footing once again. In case, however, a condition of insolvency exists, i.e., a condition in which the liabilities exceed the assets, a receiver in bankruptcy may be appointed by the court upon application of the creditors or at the request of the owner.

Appointment of Trustee

If the owner makes a voluntary application for settlement in bankruptcy there is usually no need to appoint a receiver. The creditors may come together almost immediately and elect a trustee who takes charge of the property and applies it to settlement with the creditors. If the bankruptcy is involuntary, it is frequently necessary for the court to appoint a receiver to whom the property of the proposed bankrupt is turned over for safe-keeping until the exact status of the owner can be determined and a trustee appointed. The primary duty of the receiver and the purpose of his appointment is to prevent the dissipation of the owner's property and to maintain its integrity, thus insuring its full application to the claims of creditors. Hence, whether the procedure is one in voluntary or in involuntary bankruptcy, the receiver may be appointed if the court deems that the conditions so warrant. A receiver will almost always be appointed in case any of the properties of the proposed bankrupt are of a perishable nature and must be disposed of immediately to secure any return from them. In the absence of a receiver, sometimes the marshal in bankruptcy is called upon to take possession of the property and preserve it.

The receiver holds the property until the first meeting of the creditors which must be called by the court within 30 days after the owner has been adjudged a bankrupt by the court. Creditors are entitled to 10 days' notice of the meeting in order to make their plans to attend. The chief business of this first meeting of creditors is the appointment of a trustee who takes over the property from the receiver in case one has been appointed, or from the bankrupt in the absence of the intermediary receiver. It is the duty of the trustee to take charge of the entire property, to turn it into cash as quickly and advantageously as possible, and to apply the proceeds to the liquidation of all claims against it.

It is purposed now to discuss some of the accounting phases of the receiver's and trustee's activities and to present also some more or less academic theories with regard to such accounting.

Accounts and Reports of a Receiver in Equity

When a receiver in equity is appointed by the court, he is entrusted with property for a specific purpose and must render a full accounting of his stewardship. It becomes necessary, therefore, for him to keep full record of all his activities. In simple situations where his activities are not complex, the keeping of a record of cash receipts and disbursements is sometimes deemed all that is required. Usually, however, it is much better for the receiver to keep a complete set of books showing the detail of his operation of the business, thus enabling him to furnish any desired information. The receiver generally acts under the somewhat specific orders of the court and must be careful to follow out those instructions in all matters. The opening up of the accounts of the receiver will depend somewhat on the court's order specifying the property to be taken over.

It frequently happens that only a portion of the property passes into the possession and control of the receiver. As a usual thing he does not take onto his records the liabilities of the corporation incurred prior to his appointment, although he may be ordered by the court to pay those liabilities or some portion of them. His books will show, however, the liabilities incurred by him in his conduct of the business. Sometimes this requires a nice distinction and care must be exercised in making it—as in the case of goods ordered prior to the appointment of the receiver but not received until after his appointment. At the time the receiver takes over the properties, an account is opened with him on the books of the corporation, in which he is charged

with all properties turned over to him and credited with all valuation reserves applicable to those properties. But, as stated above, no credit for liabilities is entered. The offsetting entries to the receiver's account are credits and debits respectively to the accounts of the assets taken over and the valuation reserve accounts. On the books of the receiver these entries are reversed, i.e., the various asset accounts will be charged and their valuation reserves credited and a credit will be made to the corporation in receivership for the net values taken over. In case he is required by the order of the court to pay any of the prior liabilities of the corporation, the entry for such becomes a debit to an account called Debts Paid for the Corporation, or other similar title, and a credit to his cash.

In keeping account of the regular operations of the receiver, nothing new in principle is met. The receiver must at all times be careful to keep distinct all payments on his own account from those for the corporation. Similarly, he must keep separate the expenses which are incurred by him and those which belong to the corporation but which he pays. It is held, for instance, that the interest charges on the corporation's obligations are not an operating expense of the receiver although he may be ordered by the court to pay them. Some of his duties will more than likely be to realize partly or fully on some of the assets turned over to him, in addition to the regular trading assets with which he conducts most of the business. These are accounted for on his books just as they would be on the books of the corporation. In a similar way any liabilities liquidated, record of which appears on his books, will be shown canceled in the usual way. As mentioned above, care must be exercised to keep his liabilities separate from those of the corporation. In the payment of liabilities the question of priority often arises. He must be careful in passing on their priority and he may have to secure the instructions of the court before

settling the matter. This will be true particularly with regard to receiver's certificates, the court usually determining at the time of their issue their relative priority as compared with the other liabilities. On the books of the receiver certain expenses will appear which are peculiar to the receivership. These include such items as lawyers' and accountants' fees, bonding company costs, etc., and are, of course, to be treated as his expenses. He should close his books periodically, and so far as possible the period of closing should correspond with the regular fiscal period of the corporation for the sake of preserving the continuity of the records for purposes of comparison.

Reports to the Court

The receiver must make periodic reports to the court—the first report to be made shortly after the assumption of his duties. In it he presents schedules or inventories of the properties taken over. If some of these are mortgaged or have other liens on them, the facts should be indicated. At the same time schedules of the corporation's creditors should be drawn up, grouped under the heads of preferential, secured, unsecured, and contingent. In the preferential group appear those claims against the corporation which are given preference by law, such as taxes due the state, wages due workmen, mechanics' liens, etc. In the secured group appear the claims of creditors who hold property as partial or full security for their claims. In the unsecured group appear all claims not secured; while in the contingent group appear the usual items of contingent liability such as were discussed in Chapter XIX.

Subsequent reports will be made to the court at its will or at least once yearly. No standardized form is followed in the submission of these reports, the attorney's wishes usually governing. The report is designed for the purpose of apprising the court of the progress of the receiver's administration

and should cover such items as the assets realized during the period since the last report, the liabilities liquidated, and the results of the operation of the properties held by the receiver. A convenient form for the showing of this report is that known as the "charge and discharge" form. Under it the receiver is shown charged with certain items of property and income received, and discharged with liabilities paid and other similar items. Whatever variations from this form are needed to meet particular conditions, these should be incorporated. The report may follow somewhat the order of the items shown below.

"The receiver charges himself with:

1. The assets at the date of the receivership (or at the date of the last report), exclusive of permanent or fixed assets.
2. Additions to such assets since discovered.
3. Increments upon realization of such assets.
4. Amounts realized from the sale of permanent or fixed assets.
5. Amounts realized from the sale of receiver's certificates.
6. Increases in the amount of receiver's liabilities.
7. Gross income from the operation of the property.

"The receiver credits himself with:

1. Preferred or other liabilities of the company paid.
2. Decreases in the assets stated as taken over at the date of the receivership.
3. Losses on realization of such assets.
4. Expenditures on permanent or fixed assets.
5. Receiver's certificates repaid.
6. Decreases in the amount of receiver's liabilities.
7. Interest charges paid.
8. Expenses of operation of the property.

9. Receivership expenses.
10. The assets at the close of the period covered by the report, exclusive of permanent or fixed assets."*

This report may well be supported by a comparative balance sheet showing the condition at the time of the previous report and now. A profit and loss account to show the operations of the receiver is also helpful. A summary of all cash transactions may be included.

In a final report to the court a summary should be presented of all the operations since the beginning of the receiver's control. This will, of course, show whatever property is turned back to the corporation. Upon the close of the receivership the receiver's books may be closed up by crediting the accounts of the various assets which are turned back to the corporation, charging the corporation's account which was originally set up at the time the property was taken over by the receiver and through which adjustments of the values of the assets have been made at the time of sale or otherwise. An important thing to keep in mind in connection with all accounts and reports of the receiver is the necessity for making full and adequate explanations of all entries, giving the authority for them and their source.

Accounts and Reports in Bankruptcy Proceedings

Initial Statements Presented to the Court

In the case of a voluntary bankrupt, as was stated in Chapter XXVIII, at the time of the petition to the court a schedule must be presented of all the property owned by the bankrupt and a list of his creditors giving the address, if known, the amount of the claim, the consideration, and the security held, if any. If the bankrupt makes any claim for

* From a paper by Herbert C. Freeman, entitled "Accounting for Receivership," presented at the annual meeting of the American Institute of Accountants at Washington, D. C., 1917.

exemption of any properties, that claim should be presented at this time. These schedules must follow the forms prescribed by the court. In the case of an involuntary bankrupt, these various schedules will, of course, not be available at the time the petition is made, inasmuch as the condition of the proposed bankrupt is undetermined; the amounts of his assets and of his liabilities are unknown. It becomes necessary, therefore, to examine him in the presence of the court for the purpose of securing a statement of all property owned and of all claims against it. This information, as elicited by court examination, becomes the basis for the receiver's and trustee's records. If a receiver is appointed by the court and remains in possession of the property for any length of time, it will be necessary for him to present periodic reports to show the condition of the property at various times and a statement of his operations. The reports which he will make will be similar to those which a trustee would make had he been appointed immediately; therefore, the matter of reports and accounts for both the receiver and the trustee can be treated together.

Reports and Accounts of Receiver or Trustee

The law provides that the trustee must keep regular accounts showing all amounts received and the sources from which received, and all amounts expended and on what account such expenditures were made. This would seem to imply merely the keeping of a record of the cash received and expended. The trustee, however, is looked upon both as the representative of the bankrupt, as custodian of his property, and as the representative of the creditors for the purpose of liquidating their claims. Immediately upon assuming office he must make, or cause to be made, a complete inventory of all property coming into his possession. In valuing this inventory all real and personal property belonging to the bankrupt's estate must be appraised by

three disinterested appraisers appointed by the court. The trustee must make a written report to the court of the condition of the estate, as to the amount of money on hand and any other details demanded by the court, within the first month after his appointment, and bimonthly thereafter unless otherwise ordered by the court. His final report must be made 15 days before the final meeting of the creditors is called by the court.

In disposing of the property of the bankrupt, provision is made that without court order the trustee cannot sell any of the property for less than 75% of the value at which it was appraised by the court's appraisers. The right of set-off is allowed, i.e., if the bankrupt has a claim against any of his creditors, the amount of the claim is canceled dollar for dollar against the creditor's claim and only the balance of the claim is to be prorated on the same basis as the other creditors.

The trustee must keep a careful record of all properties disposed of by him and of all liabilities liquidated. What constitutes a careful record will depend largely on the circumstances in each case. Sometimes merely a record of cash received and disbursed will fulfill all requirements. In other cases it may be necessary to keep a full set of books in order properly to secure the information needed in the accounting to the court and the creditors. All reports made should be narrative in form rather than consisting only of formal schedules and accounts. A straightforward statement of all the activities of the trustee, supported by schedules in order to show summarized results, is the desideratum.

Liquidating Dividends

Whenever the cash in the hands of the trustee is sufficient to pay the claims of preference creditors and a 5% dividend to the unsecured creditors, a dividend must be declared.

The declaration of the dividend is placed in the hands of the referee in bankruptcy who is a direct representative of the court in most bankruptcy matters. The trustee must pay the dividend within 10 days after its declaration by the referee who prepares and delivers to the trustee dividend sheets showing the dividend declared and the parties to whom payable. All dividend checks drawn by the trustee must be countersigned by the referee.

Relative Standing of the Creditors

In connection with the creditors of a receiver in equity a statement was made above of the various classes of creditors whose claims are to be satisfied. These consist of preference creditors, secured creditors, and unsecured creditors. The trustee in making his liquidating dividends will pay first those creditors who are given preference by law. Within the preference class the order of priority of claims is as follows:

1. Taxes due the government, the state, or the municipality.
2. The actual costs incurred by the trustee or receiver in the preservation of the estate subsequent to time of filing the petition in bankruptcy.
3. The filing fees paid by creditors in the case of a petition in involuntary bankruptcy.
4. The costs of administration by the trustee.
5. The wages due workmen, clerks, servants, etc., earned within three months prior to the date of commencement of proceedings—not exceeding $300 to each claimant.
6. Debts owing to any person who, by federal or state law, is entitled to priority. In the State of Pennsylvania claims on account of rent are frequently entitled to this kind of priority.

Creditors who are fully secured rest their claims against the security held by them and not against the trustee. Any surplus realized on the property held must be turned over to the trustee for the benefit of unsecured creditors. The general rule in the case of a lien is that the remedy against the property must be exhausted first before any creditor may share with the unsecured creditors. When all the property has been realized upon and all the cash which has come into the hands of the trustee has been disbursed in satisfaction of the claims of the various creditors, the trustee's duties are at an end and his records may be closed up.

Statement of Affairs

While having no legal status in this country, the statement of affairs, as it is called, is used to serve certain purposes in connection with matters in insolvency proceedings. Under the English bankruptcy laws such a statement is required of every insolvent debtor. Its complementary schedule, known as the deficiency account, is also required. In this country the chief significance of these two forms of statement is found in the examinations set by the various state boards of certified public accountants. They may, however, serve some additional purposes, chief of which are the following:

1. To show whether a receiver in equity should be appointed to manage the affairs of the business.
2. To show whether the creditors should advance funds in order to allow the business to continue, and perhaps in this way be able to meet its debts in full.
3. To show whether bankruptcy should be forced.
4. It may prove a valuable method of showing the exact condition of affairs to an incoming partner or investor.

The statement of affairs presents lists of all assets at their book values and also at the values which they might fairly be expected to realize upon a forced sale. Against this showing of the assets, an analysis is set up of all the claims against the business by its outside creditors on the basis of the various classes of creditors referred to above, namely, preference creditors, fully secured creditors, partially secured creditors, and unsecured creditors. Such a statement gives information in such form that it can be used for the purposes enumerated above. There are two forms of presenting this information. In the one the liabilities are shown on the left-hand side and the assets on the right-hand side, as is the case with the English form of balance sheet. The reason sometimes given for this is either that it is analogous to the English form of balance sheet or that in such a case the liabilities may be expected to exceed the assets and are therefore of prime importance. In the other form the assets are shown on the left and the liabilities on the right, as in the usual form of balance sheet. This latter form is the one shown here. The statement of affairs thus ties together the values shown on the balance sheet as taken from the books, with a fair estimate of the values which may be realized, and so indicates the shrinkage in value expected by forced realization of the assets.

Basis of Valuations in Statement of Affairs

The basis for the estimate of valuations is the same as in the case of bankruptcy proceedings where appraisers are appointed to determine the value of properties. Here, however, the matter is not under court control and the best appraisal possible must be made by the parties concerned, although if proceedings have progressed to the point where the appraisers' report is available, these values may be incorporated. The order of marshalling the assets and liabilities in the statement is not standardized although it would

STATEMENT OF AFFAIRS

Book Values	*Assets*	Items	Expected to Realize	Expect'd Loss on Realizat'n	Book Values	*Liabilities*	Items	Expected to Rank
	Cash					Creditors Unsecured (see Schedule 5)		$......
	Notes Receivable (see Schedule 1)							
	Accounts Receivable (see Schedule 2):					Creditors Partly Secured (see Schedule 6)	$......	
	Good	$......				Less Securities Held (see contra)	......	
	Doubtful	......				Portion Unsecured		......
	Bad	......				Creditors Fully Secured (see Schedule 7)	$......	
	Merchandise					Less Securities Held	......	
	Securities on Hand (see Schedule 3)					Excess Carried contra	$......	
	Securities Pledged with Creditors:							
	Partly Secured	$......						
	Fully Secured	......						
	Deducted contra					Contingent Liabilities (see Schedule 8)		
	Excess of Pledged Securities over Claims of Creditors Fully Secured (see contra)					Preferential Creditors (see Schedule 9):		
						Deducted contra	......	
	Other Properties (see Schedule 4)					Capital		
	Total Unpledged Assets		$......			Surplus		
	Less Preferential Claims (see contra)		......					
	Net Free Assets for Unsecured Claims		$......					
	Deficiency (see Deficiency Account)							

seem best to follow the customary balance sheet order for the assets, running perhaps from the most liquid to the fixed. With the liabilities, those entirely unsecured may be shown first, followed by the partly secured, the fully secured, and the preferred creditors. A comparison of the total values expected to be realized from the sale of the assets with the total of the unsecured creditors gives some indication of the share which each creditor in the unsecured class may expect to receive. The student is referred to the type solution and form shown on pages 635–638.

Deficiency Account

It is customary to support the statement of affairs by a deficiency account, which bears somewhat the same relation to the statement of affairs that the profit and loss account does to the balance sheet, i.e., it is a statement of the expected losses incurred upon realization of the assets and must prove against the losses or deficiency as shown by the statement of affairs. Sometimes on the asset side of the statement of affairs a third column is shown in which is indicated in detail the expected loss on realization for each asset. Where this is done the information which makes up the deficiency account is readily available. On the debit side of the deficiency account appears such items as losses on trading, shrinkages in value of the assets, and, if a partnership, withdrawals of capital. On the credit side appear the capital as shown by the books. The difference between the two sides is the amount of deficiency as shown by the statement of affairs. It may sometimes happen that the assets will realize more than enough to meet the claims of all creditors, leaving a remainder to be distributed among the owners. Where such is the case the deficiency account, instead of being technically described as such, is sometimes called an impairment of capital account—carrying, however, essentially the same information. The balance of the

account is on the opposite side and indicates the present capital as impaired by the losses incurred. The skeleton form on page 633 and that given below show the way in which the various items may be presented.

DEFICIENCY ACCOUNT

Detailed Shrinkage in Values as per Statement of Affairs.............		Appreciation in Values as per Statement of Affairs.................	
(Net Impairment of Capital)..................		Capital..................	
		Surplus.................	
		Net Deficiency as per Statement of Affairs...	
	———		———

Illustration of Statement of Affairs and Deficiency Account

Problem. The following balance sheet shows the condition of the A B C Company as on December 31, 1918.

A B C COMPANY

BALANCE SHEET, DECEMBER 31, 1918

Cash......................		$ 3,000.00	Notes Payable....	$ 25,000.00
Notes Receivable..........		55,000.00	Accounts Payable.	310,000.00
Acts. Rec.	$255,000		Accrued Expenses.	10,000.00
Res. for Bad Debts	5,000	250,000.00	Bonds Payable....	175,000.00
Merchandise..............		77,000.00	Total Liabilities	$520,000.00
X Y Co. Stock............		30,000.00		
Mach. & Equip...	$ 95,000		Capital Stock.....	250,000.00
Depr. Res.......	25,000	70,000.00	Surplus..........	25,000.00
Buildings.........	$ 88,000			
Depr. Res.......	13,000	75,000.00		
Land.....................		110,000.00		
Good-Will................		125,000.00		
		$795,000.00		$795,000.00

The company has had difficulty in meeting its current claims. Interest to the amount of $5,000 on its bonds is past due. On January 10, 1919, it would become liable for $30,000 on accommodation paper to that amount, because

of the bankruptcy of the makers. It is estimated that the creditors will receive 50% of their claims. At a meeting of its creditors, where this condition of affairs was disclosed, it was decided to have a statement prepared to show the condition of the company on a liquidating basis, any action respecting a petition in bankruptcy to be deferred until after receipt of such statement. An appraisal committee made the following report, to be used as the basis for the statement.

In the cash are found I O U memos, not collectible, $500. The notes receivable, all estimated good, are pledged with

Solution

A B C

STATEMENT OF AFFAIRS,

Book Values	*Assets*		Items	Expected to Realize	Shrinkages
$ 3,000.00	Cash			$ 2,500.00	$ 500.00
250,000.00	Accounts Receivable:				
	Good		$100,000.00	100,000.00	
	Doubtful—worth 50%		80,000.00	40,000.00	40,000.00
	Bad	$75,000.00			
	Less Reserve	5,000.00	70,000.00		70,000.00
			$250,000.00		
30,000.00	Claim Against Accommodated Party (Estimated to yield 50%)			15,000.00	15,000.00
77,000.00	Merchandise			50,000.00	27,000.00
70,000.00	Machinery			20,000.00	50,000.00
	Securities Pledged with Creditors:				
	Partly Secured:				
55,000.00	Notes Receivable (Deducted contra)		$ 55,000.00		
	Fully Secured:				
75,000.00	Buildings		$ 55,000.00		20,000.00
110,000.00	Land (at market)		125,000.00		*15,000.00
	Deducted contra		$180,000.00		
30,000.00	X Y Co. Stock (at market)		35,000.00		*5,000.00
	Deducted contra				
	Excess over Claims against it			10,000.00	
125,000.00	Good-Will				125,000.00
	Total Unpledged Assets			$237,500.00	
	Less Preferential Creditors (see contra)			5,000.00	
	Net Free Assets for Unsecured Claims			$232,500.00	
	Deficiency (see Deficiency Account)			52,500.00	
$825,000.00				$285,000.00	$327,500.00

* Increments in value.

A B C Co. will be able to pay, on the basis of the above showing, 81.6

creditors on open account to secure claims of $61,000. Of the accounts receivable, $100,000 are good, $80,000 doubtful, estimated at 50% of their value, and the remainder bad. The merchandise is estimated to bring in $50,000, the machinery $20,000, and the land $125,000. The land and buildings are expected to yield no surplus above the claims of bondholders. The X Y Co. stock is pledged with the holders of notes payable and should produce a surplus of $10,000. The accrued expenses comprise taxes $1,500, unpaid pay-roll $3,500, and bond interest $5,000.

COMPANY

DECEMBER 31, 1918

Book Values	*Liabilities*		Items	Expected to Rank
	Unsecured Creditors:			
$249,000.00	Accounts Payable		$310,000.00	
	Less Partly Secured		61,000.00	$249,000.00
	Partly Secured Creditors:			
61,000.00	Accounts Payable		$61,000.00	
	Less Notes Receivable Held as Security		55,000.00	6,000.00
	Fully Secured Creditors:			
25,000.00	Notes Payable		$25,000.00	
	X Y Co. Stock Held as Security		35,000.00	
	Excess of Security Carried contra		$10,000.00	
175,000.00	Bonds Payable	$175,000.00		
5,000.00	Accrued Interest on Bonds	5,000.00		
			$180,000.00	
	Land & Buildings Held as Security		180,000.00	
	Contingent Liabilities:			
30,000.00	Accommodation Notes			
	Maker, now bankrupt, will pay 50%			30,000.00
	Preferential Creditors:			
1,500.00	Taxes		$1,500.00	
3,500.00	Wages		3,500.00	
	Deducted contra		$5,000.00	
250,000.00	Capital Stock			
25,000.00	Surplus			
$825,000.00				$285,000.00

cents on the dollar of all unsecured claims.

A B C Company

Deficiency Account, December 31, 1918

Estimated Shrinkages in in Value:		Estimated Increments in Value:	
Cash	$ 500.00	Land	$ 15,000.00
Accounts Receivable	110,000.00	X Y Co. Stock	5,000.00
Claim against Accommodated Party	15,000.00	Capital Sunk:	
Merchandise	27,000.00	Capital Stock	250,000.00
Machinery	50,000.00	Surplus	25,000.00
Buildings	20,000.00	Net Deficiency to be borne by Creditors (see Statement of Affairs)	52,500.00
Good-Will	125,000.00		
	$347,500.00		$347,500.00

Comments on Problem. From the above solution it will be noted that the order of showing the assets is not quite the same as would be ordinarily followed on a balance sheet. A separate group is made to indicate the securities pledged with creditors, shown under the two heads "Partly Secured," and "Fully Secured." It is to be further noted that the securities in the hands of partly secured creditors have no realizable value applicable to general *unsecured* creditors; hence, they are always shown deducted on the liability side of the statement from the claims of partly secured creditors, the difference giving the amount of such claims which must rank with other unsecured creditors. In the case of fully secured creditors, if the value of the security held is estimated to exceed the claims against it, this excess will be shown on the asset side of the statement as property to which the unsecured creditors may look for the satisfaction of their claims.

It should be noted that the amount of net worth is included in the Book Values column of the liabilities, chiefly for the purpose of showing a complete balance sheet. This makes possible an easy estimate of the deficiency figure, as shown on the face of the statement. The estimate is made by subtracting the figure of net worth from the total

of the Shrinkages column. This is, of course, the same figure as shown in the Deficiency account and is arrived at in practically the same way. In the solution given, the two items indicated by asterisk in the Shrinkages column represent increments in value, and in arriving at the total of that column these are, of course, subtracted from the total shrinkages.

Inasmuch as the accommodation notes were not previously carried on the books of the bankrupt, they must here be inserted in the balance sheet columns both as an asset and a liability.

It is to be noted that the amount due the preferential creditors must be shown deducted from the total unpledged assets because the creditors have no claim against any specific asset although a first claim against all unpledged assets. After deducting the amount from the total unpledged assets, the figure of net free assets which can be applied to the claims of unsecured creditors is arrived at. A comparison of this figure of net free assets with the total amount due unsecured creditors gives the percentage which the creditors may expect on their claims. It is to be understood that the expenses of winding up the business will also be a charge against the net assets before the creditors can receive anything. It therefore usually happens that the estimate of this percentage is higher than is actually realized at the time of final settlement.

Realization and Liquidation Account

The realization and liquidation account is a statement which has played a somewhat prominent part in C. P. A. examinations. It is never used in practice and has no value other than to test the ability of the student to analyze and present in logical form facts and activities which are sometimes difficult to analyze and present in a condensed form

and in such fashion as to show the relation of the various items. Presumptively, the purpose of the statement is to show the activities of the trustee after the appraisal of the bankrupt's estate. In some instances the realization and liquidation statement takes the values of the assets as appraised by the trustee or other party making up the statement of affairs and shows the activities carried on through the realization of the assets and the liquidation of the liabilities. In other cases the realization and liquidation account is tied up with the values at which the assets are carried on the account books. There is no principle at issue as between the two methods. It seems perhaps more logical to look upon the two accounts, namely, the statement of affairs and the realization and liquidation account, as a unit statement covering the entire bankruptcy proceedings. Under that interpretation the "expected-to-realize" value as shown by the statement of affairs would form the basis for the realization and liquidation account, but, as stated above, either method is correct and no accounting or legal principle is involved.

Evolution of the Realization and Liquidation Account

The development of the realization and liquidation account through its various stages seems to have been based on three theories. When first used it was supposed to represent an account actually opened on the books of the bankrupt through which his assets and liabilities were shown transferred to the receiver or trustee.

The theory underlying the account was that it represented the trustee, who was to be charged with all the assets turned over to him and credited with the liabilities assumed. During the process of realization and liquidation he was to be credited in the same account with the assets at the amount realized therefrom, and debited with the liabilities as liquidated. Under this theory, strangely enough, the account

was charged also with the expenses incurred by the trustee and credited with any income items received during his trusteeship. The balance of the account was the profit or loss on the realization and liquidation transactions. This theory of the realization and liquidation account as an account actually opened on the books has given place to a second theory, though the account itself as set up for showing solutions to problems set in certified public accountants' examinations is still sometimes constructed according to this first theory.

The advocates of the second theory maintain that the realization and liquidation account represents the trustee's report to the court, accounting for the charges and credits therein on that basis. The nature of such a report has been explained earlier in the chapter, from which it is seen that the formal realization and liquidation account as usually set up cannot represent nor take the place of the trustee's report to the court.

Under a third theory the realization and liquidation account is looked upon simply as a condensed summary of the trustee's activities analyzed into sections, the purpose of which is to present all the information needed for almost any report which the trustee may have to make. The theory of its debits and credits is not so important here and in some cases may not apply, the effort being simply to arrange the data in such fashion that a full accounting can be given for all the properties turned over to the trustee and all the liabilities assumed by him, the whole being supported by a statement of the trustee's operations. This information is set up in account form and brought together in one account supplementary to which there must be carried also a summary of the trustee's cash transactions. The information as given in these two accounts provides the data for any reports which the trustee may have to make. The two forms are shown in skeleton form just below:

Realization and Liquidation Statement—Usual Form

Debit		Credit	
Assets to be Realized		Liabilities to be Liquidated	
(In detail)		(In detail)	
New Assets Acquired		New Liabilities Assumed	
(In detail)		(In detail)	
Liabilities Liquidated		Assets Realized	
(In detail)		(In detail)	
Supplementary Charges		Supplementary Credits	
(In detail)		(In detail)	
Liabilities Not Liquidated		Assets Not Realized	
(In detail)		(In detail)	
Gain on Realization		Loss on Realization	
Assets to be Realized		Liabilities to be Liquidated	
(Balance brought down)		(Balance brought down)	

Realization and Liquidation Statement—Improved Form

Debit		Credit	
Assets Taken Over		Liabilities Assumed	
(Original and after-acquired)		(Original and after-acquired)	
(In detail)		(In detail)	
Disposition of Liabilities		Disposition of Assets	
(A full accounting for all values assumed as above, per contra)		(A full accounting for all the values taken over as above, per contra)	
Operations of the Trustee:		Operations of the Trustee:	
Expenses		Income	
(In detail)		(In detail)	
Values Continued or Returned to the Owner:		Values Continued or Returned to the Owner:	
Assets		Liabilities	
(In detail)		(In detail)	

In the first example, which may be termed the usual form, the net balance of the account indicates the profit or loss incurred in winding up the business. If the values used as the basis for the statement are those of the statement of affairs, this profit or loss is in addition to the expected loss

shown by the deficiency account. If, however, the book values are used as the basis for the statement, the profit or loss will be the net profit or loss on the entire realization and liquidation. Under the new and second form a full accounting is made for the value at which every asset is brought into the statement so that a separate figure of profit or loss is not shown excepting in so far as that is made a part of the operating section of the statement. Sometimes a third form is used which is not a formal statement but consists rather of the auditor's working sheet. In this, columns are used to show the assets taken over by the trustee; the new assets acquired by him; the realization of the assets; the losses incurred on realization; the net assets remaining to be realized or to be returned to the owner; a similar statement in columnar form showing the liabilities to be liquidated; the full or partial liquidation of the liabilities; and the portion turned back to the owner or continued for further liquidation.

Supporting Schedules

Where the first form of the realization and liquidation statement is made use of, the profit or loss as shown by that statement should be explained by means of a supporting statement known as the realization and liquidation profit and loss account in which will be shown the losses on realization of the assets and any other items which have entered into profit or loss as shown by the realization and liquidation statement. Another schedule known as the trustee's cash account is also usually presented. In this appears a more or less summarized statement of cash receipts and disbursements, indicating the main lines of activity of the trustee and their results.

The Question of Cash

It is sometimes maintained that inasmuch as cash is a realized asset it has no place in the realization and liquidation

statement. Accordingly, under that theory the cash appears only in the trustee's cash account. There is a good reason, however, for the insistence of some that the realization and liquidation statement should show all the assets taken over by the trustee or receiver and a full accounting for them. Therefore, the cash taken over by the trustee and all subsequent cash acquired by him must be shown in the realization and liquidation statement and fully accounted for as disbursed or still on hand. Inasmuch as the statement has no foundation in practice, it has no standardized form and therefore such matters of opinion will largely be left to the individual student except so far as the force of logic may in the course of time indicate the best method of treatment.

The Handling of Valuation Reserves

In both the statement of affairs and the realization and liquidation statement the handling of valuation reserves presents some difficulty. Either they must be included among the liabilities, which is awkward inasmuch as they cannot be shown as belonging to any of the classes of creditors, or the asset value as set up in the Book Value column must be the value after deducting the reserve therefrom. This latter method, which seems to present the least difficulties and raise the fewest objections, is the one followed here.

Illustration of Realization and Liquidation Statement

Problem. The Kay Corporation became embarrassed because of the tying up of current funds in fixed properties. A friendly receiver was appointed to operate the plant until the assets could be realized upon sufficiently to reduce the most pressing of the claims against the insolvent corporation. At the time the receiver took possession, the balance sheet of the company showed as follows, in summarized form:

KAY CORPORATION

BALANCE SHEET

Assets		Liabilities and Capital	
Cash	$ 4,000.00	Notes Payable	$ 80,000.00
Accounts Receivable	120,000.00	Accounts Payable	110,000.00
Merchandise	60,000.00	Accrued Expenses	14,000.00
Other Property	500,000.00	Bonds Payable	200,000.00
		Capital Stock	250,000.00
		Surplus	30,000.00
	$684,000.00		$684,000.00

A summary of the receiver's transactions showed that he made sales of $131,000, of which $51,000 were for cash. He purchased $70,000 worth of merchandise for which he paid $12,500 cash, $25,000 in notes of the corporation, and the rest was carried on account. He bought other property for $20,000, giving therefor $10,000 cash and $10,000 notes. He collected $100,000 cash from customers and wrote off $25,000 as uncollectible. Other property carried on the books at $75,000 was sold for $69,000 cash. He collected from rentals $1,000. Selling expenses amounted to $10,000 and the receiver's administrative expenses were $7,500, both of which were paid. Of the liabilities he liquidated $70,000 of notes payable and $100,500 of accounts payable. All the accrued expenses were paid. The inventory of merchandise was $20,000 when the receiver turned the property back to the owners.

Set up a realization and liquidation statement and receiver's cash summary to show the receiver's stewardship and result of his operations.

Solution

KAY COR-
REALIZATION AND

	Original	Acquired under Receivership	Total
Assets Taken Over:			
Cash (see Receiver's Cash Account)	$ 4,000.00	$221,000.00	$ 225,000.00
Accounts Receivable	120,000.00	80,000.00	200,000.c0
Merchandise	60,000.00	70,000.00	130,000.00
Other Property	500,000.00	20,000.00	520,000.00
	$684,000.00	$391,000.000	$1,075,000.00
	Liquidated	Continued	
Disposition of Liabilities:			
Notes Payable	$ 70,000.00	$ 45,000.00	115,000.00
Accounts Payable	100,500.00	42,000.00	142,500.00
Accrued Expenses	14,000,00		14,000.00
Bonds Payable		200,000.00	200,000.00
	$184,500.00	$287,000.00	$1,546,500.00
Operations of the Receiver:			
Expenses:			
Merchandise originally taken over	$60,000.00		
Purchases	70,000.00	$130,000.00	
Merchandise Returned to Owner		20,000.00	
Cost of Goods Sold		$110,000.00	
Profit on Sales (carried down)		21,000.00	
		$131,000.00	
Selling Expenses		$10,000.00	
Expenses of Receiver's Adm.		7,500.00	
Losses on Realization:			
Accounts Receivable:		25,000.00	
Other Property		6,000.00	$48,500.00
			$48,500.00
Values Returned to Owner:			
Cash		$ 500.00	
Accounts Receivable		75,000.00	
Merchandise		20,000.00	
Other Property		445,000.00	
			$540,500.00

PORATION

Liquidation Account

		Original	Acquired under Receivership	Total
Liabilities Assumed:				
Notes Payable		$ 80,000.00	$35,000.00	$115,000.00
Accounts Payable		110,000.00	32,500.00	142,500.00
Accrued Expenses		14,000.00		14,000.00
Bonds Payable		200,000.00		200,000.00
		$404,000.00	$67,500.00	$471,500.00
		Disposed of	Continued	
Disposition of Assets:				
Cash (see Receiver's Cash Acct.)		$224,500.00	$ 500.00	225,000.00
Accounts Receivable:				
Amount Collected	$100,000.00			
Loss on Bad Debts	25,000.00	125,000.00	75,000.00	200,000.00
Merchandise:				
Sold for (see next section)	$131,000.00			
Profit on	21,000.00	110,000.00	20,000.00	130,000.00
Other Property:				
Sold for	$69,000.00			
Loss on	6,000.00	75,000.00	445,000.00	520,000.00
		$534,500.00	$540,500.00	$1,546,500.00
Operations of the Receiver:				
Income:				
Sales			$131,000.00	
			$131,000.00	
Profit on Sales (brought down)				$21,000.00
Rental				1,000.00
Decrease in Value of Business under Receivership				26,500.00
				$48,500.00
Values Returned to Owner:				
Notes Payable			$ 45,000.00	
Accounts Payable			42,000.00	
Bonds Payable			200,000.00	
				$287,000.00

RECEIVER'S CASH ACCOUNT

Balance Taken Over by Receiver		$ 4,000.00	Purchases	$ 12,500.00
Sales	$ 51,000		Other Property	10,000.00
Accts. Rec.	100,000		Selling Expenses	10,000.00
Other Property	69,000		Receiver's Administration	7,500.00
Rentals	1,000		Accrued Expenses	14,000.00
			Notes Payable	70,000.00
Cash Acquired under Receivership		221,000.00	Accounts Payable	100,500.00
			Balance Returned to Owner	500.00
		$225,000.00		$225,000.00

Comments on Problem. Under the method of solution presented here, it will be noted that the trustee is held to an accounting for both the original assets which have been turned over to him, and all new assets acquired during the course of his receivership. Inasmuch as all income items, usually from sales and, in this case, from rentals also, are reflected in the assets acquired under the receivership, the receiver is thus charged with the income received by him.

In rendering his accounting for the assets acquired, he must make a full accounting for all values turned over to him. Accordingly, in the "Disposition of Assets" section are shown not only the amount realized from the sale of the assets, but also the loss incurred in their sale. This makes possible the tying up of the assets accounted for with the value at which they were turned over to the receiver. It is to be noted that in the case of merchandise there is a profit on sales and not a loss. This is shown by setting up the merchandise disposed of at its sales figure—as is also indicated in the next section below under the head of "Operations of the Receiver: Income"—and deducting from it the profit made as shown by the next section contra under the head of "Operations of the Receiver: Expenses." The difference between these two figures of merchandise at sales price and the profit on the merchandise gives the value of the mer-

chandise with which the receiver is charged. By showing in parallel columns the values disposed of and the values still on hand, the final column accounts for the full value with which the receiver has been charged contra.

As a supplement to his accounting for the assets and liabilities, the receiver's expenses and income are incorporated as a part of the statement. This is done not with the idea that he is to be charged with the one and credited with the other, for the principles of debit and credit, as stated above, have little logical application to the statement, but in order to bring onto the face of the statement informational data which are essential to an intelligent reading of his accounting.

The difference between the two sides of this section of the statement—in this case $26,500—is the decrease in net worth of the business during the period of the receivership. This figure is capable of proof by comparing the net worth of the business as originally turned over to the receiver with the net worth as turned back by him. In the one case it is $280,000, as shown by the difference between total assets of $684,000 and liabilities of $404,000. In the other case it is $253,500, as shown by the difference between the total assets of $540,500 returned to the owner and the total liabilities of $287,000 turned back.

When this information is given in the one statement, the latter becomes somewhat complex, but by careful analysis all the information desired can be secured from it and the attached receiver's cash summary.

Uses to which Realization and Liquidation Statement May be Put

The realization and liquidation statement is frequently used also to analyze the activities of a receiver in equity. Where such is the case, the final section of the statement shows the assets and liabilities returned to the business at

the close of the term of the receivership. The statement is sometimes used also to summarize by instalments a trustee's activities, in which case at the end of the first period (at which time the realization and liquidation have been only partially completed) the final section of the statement will be the inventories of the assets yet to be realized and the liabilities yet to be liquidated which are carried over to the second instalment period. The statement for the second instalment period follows exactly the lines of that presented for the first period.

It should be understood always that the statement has no basis in practice, is purely theoretical, and any discussion of it is largely academic. It is presented here only because it is so frequently met in the formal examinations for the C. P. A. certificate.

Liquidation of a Partnership by Instalments

Nature of the Problem

In connection with the problem of realization and liquidation, a similar problem is sometimes met upon the voluntary dissolution of a partnership. This, as stated in Volume I, Chapter XLIV, is briefly:

Where the process of liquidation is of long duration, the partners may desire to receive what is due them by instalments rather than wait until the termination of proceedings and receive their respective shares in one amount. If the profit and loss sharing ratios of the partners are the same as their capital ratios, no trouble will be encountered in making the liquidating dividends on capital account as the dividends will be in the profit and loss sharing ratio. Trouble is encountered, however, when the two ratios are different inasmuch as it is not known at the time the various instalments, except the last, are made what the expenses and losses will be in the end. Because of the fact that these

expenses and losses are shared in a different ratio from the capital ratios, their capital ratios are constantly changing after the losses and expenses to be borne by the various partners are charged in each case. Liquidating dividends are always made on the basis of capital investment ratios rather than profit and loss ratios. By this is meant simply that after all expenses and losses have been determined and charged to the partners in their profit and loss sharing ratios, their capital accounts show their respective interests in the business, and upon dissolution payment must be made to them in accordance with the showing of their capital accounts. Where, however, payment is made in instalments, neither the capital ratio nor the profit and loss sharing ratio, if these are different, gives the correct basis for making the distribution of the instalment. If payment of the instalments is made on some arbitrary basis or on the ratio of the profit and loss or of their capitals, it may result in an overpayment of some of the partners and an underpayment of others. Accordingly, the only safe method of handling the situation is to pay the first instalments to those partners whose capital ratios are in excess of their profit and loss ratios until their capitals are reduced to the point where the capital ratios of all the partners are the same as their profit and loss ratios. Thereafter further instalment payments are made in the profit and loss ratio, not because it is the profit and loss ratio but because now the capital ratios are the same as the profit and loss ratios so that whatever loss or expense must ultimately be cared for will automatically be distributed to the partners' accounts in this way.

The solution of the problem is perhaps best handled, at the time of the first instalment, by deducting the amount of the first instalment from the total net capitals of the partners at that time. This leaves the capital remaining after payment of the instalment. A distribution of this net remaining capital is made in the profit and loss ratio. A comparison

of the former capital to the credit of each partner with his new capital as derived by means of the distribution just made in profit and loss ratio indicates the share each partner is to receive of the first instalment. If the first instalment is sufficiently large to adjust the partners' capital ratios to their profit and loss sharing ratios, no trouble will be experienced with future instalments. However, it very frequently happens that the first instalment is not sufficiently large to adjust the capitals to the profit and loss sharing basis. To do this would require the contribution of additional capital by those partners whose capital ratio is less than their profit and loss ratio, and it is doubtful if such a contribution would ever be made. Accordingly, it becomes necessary to distribute the instalments only to those partners whose capital ratios are in excess of their profit and loss ratios.

A new problem is met here, namely, the determination of the respective shares of the deficiency which must be borne by partners sharing the first instalment. How this is to be treated can perhaps be seen best in the illustrative problem on page 654. There it is seen that with the distribution in profit and loss ratio of the capital remaining after the first instalment, a deficiency of $6,000 arises representing the amount of C's capital deficiency. This $6,000 must be borne by A and B and their shares therein are based on their relative profit and loss sharing ratios. Since A bears 25% of the profits or losses and B 35%, A should bear 5/12 of C's capital deficiency and B 7/12—amounting to $2,500 for A and $3,500 for B. This reduces their shares in the first instalment to $3,000 each, as shown in the columns headed "Actual Distribution." Similarly, the second instalment still results in a capital deficiency for C of $2,700 which must be borne by A and C in the amounts indicated. The third instalment is sufficiently large to give all of them something and at the same time reduce their capital ratios to a profit and loss sharing ratio. Thereafter all instal-

ments are distributed on the profit and loss sharing basis.

After the final instalment is distributed, it will be noted that a net loss results on liquidation of $20,000 which is distributed automatically to the partners in the sums of $5,000 to A, $7,000 to B, and $8,000 to C, which represent their profit and loss sharing ratios. In conclusion it should be said that the problem is theoretical and academic and will perhaps seldom, if ever, be met in practice because of the objections which the partner whose account shows a deficiency would raise to non-participation in all instalments until his capital deficiency had been eliminated. It may be said that where such objections are raised the only course of the liquidating partner or agent is to refuse distribution of any instalment until a sufficiently large sum has accumulated to place the partners' capitals on a profit and loss sharing basis. Such is the exact situation in strict theory. In practice, however, any agreement which the partners might make as among themselves would have to be carried out by the liquidating partner and would, of course, protect him in case of ultimate overpayment to any of the partners.

Illustration of Liquidation by Instalments

To illustrate the liquidation of a partnership by instalments, a typical problem is appended shown in summarized form.

Problem. A, B, and C, sharing profits in the ratios of 25%, 35%, and 40% respectively, decide to dissolve partnership and distribute the net assets by instalments as realized. A balance sheet as on the date of dissolution showed net worth of $100,000, in which A's interest was $30,000, B's $40,000, and C's $30,000. The liquidator distributed a first instalment of $10,000, a second instalment of $8,250, a third instalment of $15,000, a fourth instalment of $16,750, and a final instalment of $30,000. Show the shares which each of the partners will have in the various instalments.

Solution

	Net Capital of the Firm	A, 25%		B, 35%		C, 40%	
		Theoretical Distribution	Actual Distribution	Theoretical Distribution	Actual Distribution	Theoretical Distribution	Actual Distribution
Original Capital.........	$100,000.00	$30,000.00	$30,000.00	$40,000.00	$40,000.00	$30,000.00	$30,000.00
First Instalment.........	10,000.00						
Net Capital.............	$ 90,000.00	22,500.00		31,500.00		36,000.00	
		$ 7,500.00		$ 8,500.00		*$6,000.00	
Instalment Deficiency to be borne by A & B....		2,500.00	5,000.00	3,500.00	5,000.00		
		$25,000.00	$25,000.00	$35,000.00	$35,000.00	$30,000.00	$30,000.00
2nd Instalment..........	8,250.00						
Net Capital.............	$ 81,750.00	20,437.50		28,612.50		32,700.00	
		$ 4,562.50		$ 6,387.50		*$2,700.00	
Instalment Deficiency to be borne by A & B....		1,125.00	3,437.50	1,575.00	4,812.50		
		$21,562.50	$21,562.50	$30,187.50	$30,187.50	$30,000.00	$30,000.00
3rd Instalment..........	15,000.00						
Net Capital.............	$66,750,00	16,687.50	4,875.00	23,362.50	6,825.00	26,700.00	3,300.00
			$16,687.50		$23,362.50		$26,700.00
4th Instalment..........	16,750.00		4,187.50		5,862.50		6,700.00
Net Capital.............	$50,000.00		$12,500.00		$17,500.00		$20,000.00
Final Instalment........	30,000.00		7,500.00		10,500.00		12,000.00
Net Loss on Liquidation..	$20,000.00		$5,000.00		$7,000.00		$8,000.00

* Represent capital deficiencies at the time of the 1st and 2nd instalments.

APPENDIX A

PRACTICE WORK FOR STUDENT—FIRST HALF-YEAR

Instead of the student's practice work appearing at the close of each chapter of the text as in Volume I, it has seemed best in this volume to place this material in a separate appendix at the end of the text because of the impracticability of dividing the text matter into uniform sections with one or two chapters constituting a lesson assignment. In some classes more practice work may be undertaken than in others. The practice work is, however, laid out in fairly uniform portions and it is expected that the student will be able to handle one practice assignment for each hour of class work. Thus, if the lecture period is of two hours' duration, two assignments of work should be set.

The practice work is given in three parts. Appendix A will be found to contain sufficient material for the first semester of approximately 30 hours of lecture work. This appendix, in the main, is comprised of a formal set of accounts relating to a manufacturing corporation, to be worked out with suitable blanks. A few miscellaneous problems bearing particularly on some portions of the text are also provided. Appendix A should be covered in connection with the first twenty-seven chapters of the text.

Appendix B contains a series of well-graded problems more or less closely connected, illustrating, by means of its method of keeping accounts, the growth of the business. Single entry is changed to double entry, a simple trading business into a complex manufacturing concern, and many of the problems peculiar to such types of business or-

ganization are incorporated. Some unrelated problems illustrating special forms of statements, combinations, capitalization, and the consolidated balance sheet are also included.

Appendix C contains a group of unrelated, miscellaneous problems, taken mostly from C.P.A. examinations. These can be used to supplement the assignments from Appendices A and B and to give variety to the work during succeeding years.

I

Problems

1. J. B. Rogers and B. R. Jay, owners of similar businesses, agree to consolidate under a partnership agreement whereby each turns over his business as it stands, subject to the liabilities shown, and the deficient partner contributes sufficient cash to equalize their capitals. Rogers' standing is: cash $750; merchandise $3,900; notes receivable $1,000, with interest accrued on same $10.25; accounts receivable $750, estimated as worth $725; furniture $975; notes payable $1,000, being his personal non-interest-bearing note at 60 days discounted at 8% with 20 days yet to run; accounts payable $325. Jay's standing is: cash $365; merchandise $4,500; accounts receivable $1,350, guaranteed as good; furniture $825; delivery equipment $325; valued at $300; accounts payable $265; notes payable $1,200, with accrued interest of $8.69; salaries earned but unpaid $50. The furniture in each case is taken in at its face value.

Make the opening journal entry and balance sheet for the new firm. Make journal entries for each partner to close his old set of books.

2. From the following information take a trial balance, make closing journal entries and summary statements as of December 31.

Notes receivable on hand $3,000; accounts receivable $7,500; notes payable $2,100; accounts payable $4,600; real estate $6,000; plant and machinery $8,000; rent and taxes $600; general expense $2,000; salaries $1,500; wages $600; freight $150; duty $200; cash on hand $150; cash in bank $1,800; bad debts written off $140; goods on hand at beginning of year $9,500; purchases $26,000; sales $40,000; interest paid $210; furniture $600; Jas. Buckham, partner, invested $10,000, withdrew $1,450; E. J. Cockburn invested $14,000, withdrew $1,300; the merchandise on hand is valued at $9,000; rent unpaid $250; insurance unexpired $140; interest accrued on notes receivable $25; wages accrued $115. Allow 10% depreciation on plant and machinery, and 12½% on furniture. Estimate losses from bad debts as 5% of accounts and notes outstanding. Losses and gains are divided 4/7 to Cockburn and 3/7 to Buckham. Interest on capitals at 6% is to be allowed.

3. At the end of the first year of a partnership, Wilson has an interest of $18,000 and Peters of $9,000, each drawing profits in proportion to his capital. They decide to admit Johnson into the partnership, selling him a one-quarter interest, valuing their good-will at $3,000. Under the conditions named, in what two ways may Johnson secure his interest? What will be the amount of his investment in each case?

Instructions

Problem 1. The student is referred to Volume I, pages 458–459, where a similar problem is illustrated.

Problem 2. See Volume I, pages 285–286.

II

Problems

1. The Ibex Manufacturing Co. is incorporated with an authorized capital stock of $500,000 common and $250,000 6% preferred; $150,000 of the preferred is subscribed for and paid in full. One-half of the common is subscribed for and 50% paid in, the balance to be paid in five monthly instalments. The remaining preferred stock is later subscribed for at 101 and 50% paid, and half of the remaining common is subscribed for at 90 and paid in full. After operating for six months the remaining common is sold at 102 to provide funds for enlargement, one-half paid in cash and the balance in one month. Balance of preferred subscriptions are paid in cash. Show all the above transactions by means of journal entries.

2. At the close of the first year, the Ibex Manufacturing Co., being short of ready funds and not desiring to extend its credit further, secures from its stockholders a donation of $50,000 common and $10,000 preferred, one-half of which is immediately sold at 90 and 101 respectively. At the end of the second year the remainder of the donated stock was disbursed to the stockholders as a dividend, net profits for the year amounting to $45,000. Journalize all the above transactions, showing ultimate disposition of the working capital.

3. The Smith Brooks Publishing Co. has a capital stock of $750,000, of which one-third is 6% cumulative preferred stock. The company has a surplus of $65,000. It has an outstanding bond issue of $200,000 at 4½% interest. The profits for the year are $61,392.75. No profits have been distributed for three years. The directors pay the bond interest, declare a 3% dividend on common, and carry $7,500 to the sinking fund. Bring all of the above onto your books.

4. A corporation has been formed with an authorized capital stock of $200,000, one-fourth of which is 7% cumulative preferred. The entire issue of preferred is subscribed for at par and 50% paid in. When the balance is paid, one share of common is to be given as a bonus with every five shares of preferred. The promoter of the company is given $15,000 in common for

his services. The company paid cash $250 for a set of stock records; $25 for corporate seal; $500 for lawyer's fees in incorporating; $250 for state charter, and $375 for sundry expenses in organizing. $75,000 of the common stock has been subscribed for at par to be paid in five monthly instalments. The balance has been paid on the preferred stock and three instalments on the common. Make journal entries covering the above transactions.

Instructions

For the opening entries of a corporation, the student is referred to Volume I, Chapter XLIX, in addition to Chapter I of the present volume.

Problem 1. Make entries covering the five monthly instalments.

Problem 2. Assume that no preferred dividend was paid during the first year.

III

Problems

1. Draw up a form of voucher check suitable for a professional man.
2. Draw up a form of voucher check suitable for a trading concern.
3. Draw up a form of voucher register for a manufacturing concern desiring to segregate manufacturing, trading, and general expenses under which there are twelve, ten, and fifteen subdivisions of expense, respectively. Provide for other possible expenditures. Treat purchase discounts as a reduction of cost price.
4. Using the voucher register you drew up for Problem 3, from your own data make at least one entry in each column and three in the Sundries column. Show the register footed, closed, and posted.
5. What change would you make in the form of a voucher register in order to treat purchase discount as a financial management item?
6. Using your own data for a purchase ledger in which there are at least six open accounts, show the entries necessary to close it and open a voucher register to take its place.

Instructions

See Chapter II where all these points are discussed.

IV

Problem

Caxton & Dolton began business January 1, 1916. Caxton invested $12,000, and Dolton invested $11,000. May 1, 1916, Caxton withdrew $3,000, and Dolton invested $1,000. July 1, 1917, Evans was admitted to the partner-

ship, investing $8,000. October 1, 1917, Evans invested $4,000 more, and Dolton withdrew $2,000. July 1, 1918, Dolton and Evans purchased Caxton's interest in the business. On that date their books showed the following financial condition: cash $19,364.50; merchandise $17,500; notes receivable $10,000; accounts receivable $8,945; interest receivable $248.50; real estate $6,500; accounts payable $14,000; notes payable $5,130; interest payable $167.40; accrued expenses $325.60. For the purpose of the sale good-will was estimated at $5,000; depreciation on real estate 5%; bad debts at 3% of the outstanding notes and accounts. Each partner was to share in profits on the basis of capital and the length of time the capital was invested. Of the purchase price of Caxton's share, Dolton and Evans were to pay such amounts respectively as would make their new capitals equal. Set up the partner's ledger accounts and show all entries to them in order to take effect of all the above data.

Instructions

For explanation of this method of sharing profits, see Volume I, pages 281–284.

V

Practice Data

This set contains material for the student's practice work in keeping the records of a corporation engaged in trading and manufacture. Two blank books will be used for the record. Of the "Journals," pages 1–32 comprise the general journal; pages 34–44 the cash book; pages 45–48, the sales journal; page 49 the sales returns and allowances journal; page 51 the purchase journal (to be used for the month of September only); and pages 54–57 the voucher register (to be used after the purchase journal is discontinued). Pages 58–60 are to be used for the record of continuous trial balances. Of the "Ledger" blank, pages 1–44 comprise the general ledger; pages 45–51 the sales ledger; and pages 52–56 the purchase ledger. Column headings for the different journals are given in the blanks.

It is expected that the student has already acquired correct habits of the daily posting of customers' and creditors' accounts. In addition to a training in some peculiarities of manufacturing accounts, the purpose of the course is to give the student practice in handling some of the larger problems of accounting which are not of daily occurrence. For the first few assignments considerable detail is given to provide a necessary minimum of practice in the summarization and posting of the different books of original entry. After this the ordinary transactions are given in condensed form to save unnecessary repetition and burdening the student. In the use of the analytical general journal, the student must be very careful to make entries in the proper column

as otherwise trouble will be experienced with the controlling accounts. (See Volume I, pages 410, 430, and 431.)

Open the following accounts in the various ledgers as indicated. The numeral preceding the account title indicates the ledger folio on which the particular account is to be opened.

General Ledger—Give one-third page to each account except Notes Receivable, Trade Debtors, Merchandise Inventory, Notes Payable, Vouchers Payable, and Subscribers, for each of which allow 4 additional lines, shortening the allowance for the account next following in each case.

1. Drew National Bank
1. Petty Cash
1. Sinking Fund Trustee
2. Notes Receivable
2. Notes Receivable Discounted
2. Notes Receivable Special
3. Trade Debtors
3. Reserve for Doubtful Accounts
3. Accounts Receivable Special
4. Prepayment on Purchases
4. Merchandise Inventory
4. Raw Materials Inventory
5. Goods in Process Inventory
5. Plant and Sundry Assets
5. Jackson, Edwards, Hansen, Vendors
6. Delivery Equipment
6. Depreciation Reserve Delivery Equipment
7. Patterns
7. Depreciation Reserve Patterns
8. Furniture and Fixtures
8. Depreciation Reserve Furniture and Fixtures
9. Power Equipment
9. Depreciation Reserve Power Equipment
10. Factory Buildings
10. Depreciation Reserve Factory Buildings
10. Tools
11. Machinery
11. Depreciation Reserve Machinery
11. Factory Land
12. Patents and Trade-Marks
12. Good-Will
12. Organization Expense
13. Notes Payable
13. Vouchers Payable
13. Boston Office Company
14. Dividends on Common
14. Dividends on First Preferred
14. Dividends on Second Preferred
15. Purchase Money Mortgage on Machinery
15. Bonds Payable (Authorized Issue $20,000)*
15. Discount on Bonds
16. Subscribers
16. Call No. 1
16. Call No. 2
17. Capital Stock Subscriptions
17. Capital Stock Common (Authorized Issue $100,000)*
17. Capital Stock First Preferred (Authorized Issue $50,000)*
18. Capital Stock Second Preferred (Authorized Issue $25,000)*
18. Discount on Stock
18. Treasury Stock
19. Surplus
19. Donated Working Capital
19. Sinking Fund Reserve

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* The account title may be written just as given or, better, the parenthetical part may be put on the small half-line space immediately below the title line as that is usually ruled. (See ruling at top of any ledger page.)

20. Manufacturing
21. Profit and Loss
22. Desks and Tables Sales
22. Desks and Tables Sales Returns and Allowances
22. Bookcases and Filing Cabinets Sales
23. Bookcases and Filing Cabinets Sales Returns and Allowances
23. Sundry Office Supplies Sales
23. Sundry Office Supplies Sales Returns and Allowances
24. Knoxfraud Sales
24. Knoxfraud Sales Returns and Allowances
24. Desks and Tables Purchases
25. Bookcases and Filing Cabinets Purchases
25. Sundry Office Supplies Purchases
25. Raw Materials Purchases
26. Knoxfrauds Manufactured
26. In-Freight and Delivery
26. Receiving and Shipping Room Expense
27. Direct Labor
27. Indirect Labor
27. Factory Supplies
28. Light, Heat, and Power
28. Building Maintenance and Repairs
28. Machinery Repairs
29. Assembling and Setting-Up Expense
29. Depreciation
29. Sundry Factory Expense
30. Royalties
30. Experimental Expense
31. Salesmen's Salaries
31. Salesmen's Commissions
31. Salesmen's Traveling Expense
32. Delivery Expense
32. Warehouse Expense
32. Warehouse Rent
33. Sundry Selling Expense
33. Advertising
34. Office Salaries
34. Stationery and Printing
34. Telephone, Telegraph, and Postage
35. Sundry Office Expense
35. Insurance
35. Taxes
36. Rent
36. Interest and Discount
36. Collection Expense
37. Bond Interest
37. Sales Discount
37. Bad Debts
38. Purchase Discount
38. Rent Income
38. Commission Income
39. Loss from Sale of Power Equipment
39. Fire Loss
39. Strike Costs
40. Damage Claims
40. Damage Claims Reserve

SALES LEDGER—Allow one-third page to each account.

45. Smith Brooks Stationery Co.
The Brush Co.
The Kistler Stationery Co.
46. C. F. Hoeckle Office Supply Co.
John Bach & Sons
T. J. Stewart Office Specialties Co.
47. Saxon Edwards
47. T. C. Macie & Co.
The Alexander Jacobs Co.
48. Field & Co.
Sundry Customers
49. Salesmen Advances
New Method Manufacturing Co.
General Ledger Adjustment

Purchase Ledger—Allow one-third page to each account.

52. P. J. Johnson Mills Co.
B. F. Brainard & Co.
Jackson City Supply Co.
53. F. C. Good Rubber Co.
53. B. A. Franklin Press
Brickley Desk Co.
54. R. M. Goddard Furniture Co.
City of Hoboken

The column headings for the different books are given in the blanks with a few exceptions. The fourth columns of the sales and sales returns and allowances journals are left blank. The student should write in here "Sundry Office Supplies." This will be used till October 31, 1916, at which time it will be necessary to write in its place, "Knoxfrauds." The heading for voucher register, column No. 5, which is left blank, must be written in as above, "Sundry Office Supplies Purchases," for use until October 31, when "Raw Materials Purchases" will be substituted.

Messrs. Stanley Jackson, J. T. Edwards, and P. Hansen, on September 1, 1915, made application as incorporators to the Secretary of State for a certificate of incorporation authorizing the Acme Office Furnishings Co. to transact a general business of all kinds in trading, manufacturing, and printing, as principals or as agents, to acquire and trade in real estate, patents, trade-marks, licenses, and the like, and to act as promotion and financial agents. The customary certifications were made, the organization tax of $50 was paid, and the certificate duly issued. The authorized capital stock was $100,000, divided into 1,000 shares of common stock only, of par value $100 each. Subscriptions at par to capital stock had been made as follows:

Stanley Jackson	225 shares
J. T. Edwards	162 "
P. Hansen	113 "
T. J. Noble	100 "
A. H. Lawrence	75 "
H. C. McCullough	50 "

At the first meeting of the incorporators and subscribers, after the adoption of a set of by-laws and organization thereunder, a proposal of sale made by the Jackson, Edwards, Hansen firm of their business and good-will at a stated figure of $50,120.97 was referred to the board of directors for their consideration and investigation, with authority to act. After looking over the properties, all of which it was found would be advantageous to the company, the proposal was accepted and transfer was made. A committee from the board was appointed to make a careful appraisal of the purchased properties and report as soon as possible. Accordingly, on September 15, the following report of valuation was made and accepted and authority given for the opening up of a set of accounting records with the stated values of the properties. The services of a public accountant were secured to plan and install a system that would meet the needs of the proposed business and to open the books.

The properties acquired were: cash $5,269.14; accounts receivable, as per schedule following, $10,125.61; notes receivable $1,250; desks and tables

inventory $15,694; bookcases and filing cabinets inventory $18,392; sundry office supplies inventory $8,196.27; rent prepaid $125; insurance unexpired $95.36; delivery equipment $492.50; store furniture and fixtures $526; office furniture and fixtures $274; good-will $4,500.

The liabilities assumed were: accounts payable, as per schedule following, $10,126.73; notes payable $4,692.18. Upon the guaranty by Jackson, Edwards, Hansen of the accounts and notes receivable taken over, the company assumed the contingent liability on notes receivable under discount amounting to $250. No cognizance was taken of prepaid discount.

Payment was made to Jackson, Edwards, Hansen by the cancellation of indebtedness on their subscription contracts in the amounts severally shown, and in cash for the balance (distributed in the ratio of their subscriptions)—Jackson $54.44, Edwards $39.19, and Hansen $27.34.

A. H. Lawrence and H. C. McCullough on September 20 paid in cash 75% of their subscriptions, the balance due in 30 days. Certificates of stock, properly executed, were issued September 20 to all the above-mentioned parties, except Noble, in the amounts of their subscriptions.

Open the books and prepare a balance sheet of the company according to the data given.

Instructions

The fourth method illustrated in Volume I, pages 454 and 457, is to be used for opening the books.

Record the cash payment of organization tax as on September 1.

The purchase of the Jackson, Edwards, Hansen business is to be recorded under date of September 1, making use of the accounts "Jackson, Edwards, Hansen, Vendors" and "Plant and Sundry Assets." Upon receipt of the appraisal committee's report, bring the detailed assets and liabilities onto the books. It is to be noted that only one Inventory account is carried, in which the detail must be shown, using one line for each kind of commodity. Bring the discounted note on the books. This is not included in the amount given for notes receivable outstanding.

In a small corporation with stock closely held, certificates are sometimes issued although not yet fully paid for.

VI

Practice Data

The following schedules support their respective titles found among the assets and liabilities taken over and appraised by the Acme Office Furnishings Co.:

Accounts Receivable

Smith Brooks Stationery Co., June 24, $750; July 7, $100; August 22, $113.14; 2/10 .... $963.14

The Brush Co., May 20, $825; August 15, $216.69; 2/10, 1/30....	1,041.69
The Kistler Stationery Co., April 18, $1,000; June 15, $250; August 20, $317.40; 2/10..................................	1,567.40
C. F. Hoeckle Office Supply Co., March 12, $1,000; July 18, $123.90..	1,123.90
John Bach & Sons, June 13, $300; July 30, $119.36.............	419.36
T. J. Stewart Office Specialties Co., July 20, $319.45; August 12, $523.12..	842.57
Saxon Edwards, February 10, $585; May 23, $206.75...........	791.75
T. C. Macie & Co., May 11, $115.10; June 21, $210.15; July 8, $450; August 25, $465.15; 2/10, n/30....................	1,240.40
The Alexander-Jacobs Co., August 28, $362.25; 3/5, 2/10.......	362.25
Field & Co., June 15, $1,015.05; July 6, $250; August 24, $508.10; 2/10, n/30..	1,773.15

Accounts Payable

The P. J. Johnson Mills Co., January 15, $1,895.60; August 5, $736.15; 1/30..	$2,631.75
B. F. Brainard & Co., April 18, $590.10; July 11, $802.15.........	1,392.25
Jackson City Supply Co., June 10, $512.60; June 25, $428.20; July 18, $622..	1,562.80
F. C. Good Rubber Co., July 1, $175.19; August 13, $300; 2/10, 1/30..	475.19
B. A. Franklin Press, May 2, $850; June 22, $262.15.............	1,112.15
Brickley Desk Co., March 8, $912.50; May 6, $1,500; August 16, $540.09; 2/10, 1/30..................................	2,952.59

Notes Receivable

John Bach & Sons, dated July 3, for 3 months with interest at 6% and discounted at the Drew National Bank, August 16, at 8%. Face of note $250.

Andrew Jackson, dated August 25 for 60 days, without interest. Face $750.

The Brush Co., dated July 29, for 2 months, with interest at 6%. Face $500.

Notes Payable

No. 91, favor Second National Bank for $2,500, dated July 15, at 3 months, discounted at 6%.

No. 95, favor Brickley Desk Co. for $1,261.40, dated August 20, at 4 months, interest 6%.

No. 96, favor B. F. Brainard & Co., for $930.78, dated August 25, at 60 days, interest 6%.

The new system provides for a voucher register, but due to delay on the part of the printer, a creditors ledger will have to be opened temporarily. Open the sales and purchase ledgers according to the data given.

Instructions

Record the above data *directly* (i.e., not via journal) in the various ledgers. The details of the various sales and purchases should be shown, and not just the total to be charged or credited to each account.

VII

Practice Data

The board, having completed negotiations with T. J. Noble, authorizes the purchase from him of the whole of his right, title, and interest in a patent device known as Knoxfraud to be used for the purpose of preventing the raising of the amounts of commercial paper. The transfer is made, including the trade-mark covering "Knoxfraud," and payment to Noble is made by the cancellation of 90 shares on his subscription contract and full-paid stock is issued him therefor. Make the entry under date of September 20.

In order to avoid detail, all additional customers will be handled under a collective account in the sales ledger called "Sundry Customers." Transactions will be grouped and summarized wherever possible. Make record under proper dates. (Figures at beginning of paragraphs signify September dates.)

September 1. Received check for $311.05 from Kistler Stationery Co. in payment of their bill of August 20, $317.40, less $6.35 discount.

3. Alexander Jacobs Co. paid their bill of August 28, $362.25 less $10.87 discount. Sold the Brush Co. at 2/10, n/30, desks and tables $875.40, and bookcases $469.75.

4. Drew petty cash check for $150 and placed it in petty cash drawer in charge of bookkeeper. Field & Co. paid their bill of August 24, $508.10 less $10.16 discount, and $500 on account.

5. Paid P. J. Johnson Mills Co. bill of August 5, $736.15 less discount $7.36, and $500 on account. Smith Brooks Stationery Co., paid their bill of August 25, $113.14 less $2.26 discount. T. C. Macie & Co. paid their bill of August 25, $465.15 less $9.30.

6. Bought of R. M. Goddard Furniture Co. at 1/30, n/60, desks and tables $5,912.60, bookcases $3,190.10, and office supplies $837.40. Sold C. F. Hoeckle Office Supply Co. n/30, desks $1,512.75, filing cabinets $647.80, office supplies $215.69.

8. C. F. Hoeckle Office Supply Co. paid $750 on account.

9. Paid B. F. Brainard & Co. bill of April 18, $590.10. Sold T. C. Macie & Co. at 2/5, 1/10, tables $1,575.50, filing cabinets $440.25, office supplies $175.30.

11. Paid Jackson City Supply Co. bill of June 10, $512.60.

12. Sold C. F. Hoeckle Office Supply Co. at 1/30, n/60, tables and desks $1,895, bookcases $625.30, office supplies $110.85.

13. Paid F. C. Good Rubber Co. bill of August 13, $300 less $3 discount. Jno. Bach & Sons paid $250 on account. The Brush Co. paid their bill of September 3, $1,345.15 less $26.90 discount.

15. Paid Brickley Desk Co. bill of August 16, $540.09 less $5.40 discount, and bill of March 8, $912.50 less special discount of $12.50 in consideration of giving our note No. 1, for $1,500 at 6%, payable in 6 months, in settlement of bill of May 6, $1,500. Brush Co. paid bill of August 15, $216.69 less $2.17 discount. Sold Jno. Bach & Sons at 2/10, n/30, desks $1,680, filing cabinets $725.90, office supplies $240.60.

16. Bought of P. J. Johnson Mills Co., at 2/10, n/30, tables $3,085.95, bookcases and filing cabinets $5,293.85, office supplies $1,750.90.

18. T. J. Stewart Office Specialties Co. paid their bill of July 20, $319.45. Sold Alexander Jacobs Co., at 1/30, n/60, desks $1,465.85, bookcases $625.95, office supplies $145.60.

19. T. C. Macie & Co. paid their bill of September 9, $2,191.05 less $21.91 discount.

21. Sold Saxon Edwards at 2/5, 1/10, tables and desks $1,327.85, bookcases $842.60, office supplies $222.60.

24. Sold Field & Co. at 1/30, n/60, tables and desks $1,825, bookcases and filing cabinets $735, office supplies $246.

25. Saxon Edwards paid on account $500.

26. Bought of B. F. Brainard & Co., at 1/30, n/60, desks $4,675, filing cabinets $5,080, office supplies $1,280. Jno. Bach & Sons paid bill of September 15, $2,646.50 less $52.93 discount. Paid P. J. Johnson Mills Co. bill of September 16, $10,130.70 less $202.61 discount.

Instructions

For the transactions of September, the cash disbursements journal will be operated as a full posting medium, i.e., all charges for cash paid out will be posted from it.

VIII

Practice Data

(Figures at beginning of paragraphs signify September dates.)

September 27. Sold Smith Brooks Stationery Co. at 2/5, 1/10, tables and desks $1,200, bookcases and filing cabinets $1,150, office supplies $175.

28. Paid B. A. Franklin Press bill of May 2, $850.

29. Brush Co. paid their note of July 29, $500 with interest $5. The board of directors authorized the purchase of a piece of land lying outside the city limits, with good shipping and warehouse facilities, to be used as a site for a factory for the manufacture of Knoxfrauds, paying the Hoboken Development Co. $10,000 cash (with the current year's taxes of $75 unpaid and due

the City of Hoboken, February 1, 1916), and $125 to J. N. Hicks for fees in connection with special search of title and recording of deed. Plans and specifications which Noble had had prepared six months ago when negotiations with him had been opened by Jackson in behalf of the Jackson, Edwards, Hansen firm were adopted and ordered placed with contractors for bids to be received not later than October 6, the board reserving the right to accept any or reject all bids.

30. Sold Brush Co. at 2/5, 1/10, tables $1,475.80, bookcases $723.85, office supplies $340. Paid salesmen's salaries $2,500; commission to salesmen $500; salesmen's traveling expense $1,500; in-freight and delivery $525.69, delivery expense $200; rent September 15 to October 15, $250; receiving and shipping room expense $150; sundry office expense $100.25; office salaries $600; advertising $275; petty cash voucher $137.10, of which $45.50 was for telegraph, telephone and postage, $50 for office stationery, $25 for sundry selling expense, and $16.60 for sundry office expenses. Cash sales for the month were: office supplies $1,325.40, bookcases $2,150, desks and tables $4,250.

Summarize and post completely all books of original entry. (See Volume I, page 431, for general journal summary.) Take a trial balance, recording it in the first two columns on pages 58–60, "Journal Blank." Enter *all* accounts —whether needed for this trial balance or not—in the order in which they are carried in the general ledger. Leave bottom and top lines free for totals and forwarding where necessary.

Instructions

September 29. Record the accrued taxes on land in the general journal as a liability to the City of Hoboken.

30. Distribute the cash sales through the sales journal, entering only the total for all departments in the cash book.

IX

Practice Data

The directors plan to keep sufficient funds on hand to take advantage of all discounts offered on purchases. All invoices will therefore be entered "net" in the Vouchers Payable column of the voucher register. Extension will be "gross," however. Postings to Purchase Discount account will be made from the voucher register. Purchase Discount column in the cash book will be used as a memo column of discounts actually taken. The difference between the totals of the purchase Discount columns in voucher register and cash book at the end of a month (or other posting period) shows the amount of unearned discount on that date. This should always be checked against the discounts entered in detail in the voucher register, for the unpaid vouchers as shown in Unpaid Vouchers column of the register. (Figures at beginning of paragraphs signify October dates.)

October 1. Delivery of the voucher register having been made, your accountant closes the purchase ledger and opens the voucher register, transferring the balances thereto. The Kistler Stationery Co. presented their bill for $150 ($95.50 for stock books, records, etc., and $54.50 for stationery and printing). Paid New York Novelty Works $15 for corporate seal. Paid Northwestern Fire Insurance Co. $125 for 1-year policy on stock of goods.

3. Sold Jno. Bach & Sons at 2/10, n/30, desks $1,755, bookcases and filing cabinets $658.90, office supplies $140. In order to raise money for the purpose of building and equipping the Knoxfraud factory, the board of directors authorized the sale of the rest of the unsubscribed stock at not less than 95. Accordingly subscriptions were received from A. J. Scobey for 90 shares at 96, from A. K. Ladd for 125 shares at 95, and from J. B. Gaynor for 60 shares at 97. One-half is received in cash, the rest due on October 25. Certificates of stock are issued the new stockholders.

4. Smith Brooks Stationery Co. paid their bill of September 27, $2,525 less $50.50 discount.

5. The bank notified you John Bach & Son's note for $250, dated July 3, for 3 months at 6% and under discount with them since August 16, has gone to protest; you took up the note, drawing your check in favor of the Drew National Bank for $256.25 including protest fees, and notified John Bach & Sons. Paid R. M. Goddard Furniture Co. bill of September 6, $9,940.10 less $99.40 discount.

6. Bought of Jackson City Supply Co. at 1/30, n/60, office supplies $3,028.95. Sold T. C. Macie & Co. at 2/5, 1/10, desks $1,685, bookcases $642, office supplies $156. Paid Hoboken Electric Co. light and power bill for September, $50 ($30 was for sign display).

7. The bids for the construction of the factory were opened and all found to exceed the architect's estimate by $10,000 or more. It was accordingly decided to reject all bids and construct the factory upon their own responsibility, retaining I. M. Builder as supervising architect and appointing J. T. Noble as purchasing agent and general superintendent during construction. All funds from the sale of stock were ordered placed under a Building Fund account in the Drew National, subject to drawing by Hansen in payment of all bills when passed for payment by Edwards and Noble. The transfer of funds was accordingly made. Alexander Jacobs returned desks and tables $465.85 of their purchase of September 18. Brush Co. paid their bill of September 30, $2,539.65 less $50.79 discount. C. F. Hoeckle Office Supply Co. paid their bill of September 6, $2,376.24.

8. Drew check for $500, advances to salesmen, which the bookkeeper charged to an account entitled Salesmen's Advances opened in the customers' ledger. Paid N. G. Goodman, accountant, $250 for services, in connection with installation of the system of accounts.

9. Sold Kistler Stationery Co. at 1/30, n/60, tables and desks $1,858.95, bookcases and cabinets $720, and office supplies $248.

10. Took at cost price, furniture from stock for store and office (desks and tables, $150 for office and $300 for store; bookcases and filing cabinets, $175 for office and $75 for store).

11. Bought from the New Model Truck Co., delivery trucks for $3,000, giving our note with 6% interest at 6 months for $2,500 and $500 cash.

12. Sold C. F. Hoeckle Supply Co. at 1/30, n/60, tables and desks $1,625, bookcases and cabinets $720, and office supplies $140.

13. Received J. T. Noble's demand note without interest for $1,000 in payment of balance of subscription contract. The C. F. Hoeckle Office Supply Co. paid bill of September 12, $2,631.15 less $26.31 discount. T. C. Macie & Co. paid their bill of October 6, $2,483 less $49.66 discount.

15. Sold Alexander Jacobs Co. at 1/30, n/60, desks $1,825.85, bookcases $642, office supplies $240. Paid note No. 91, $2,500. Jno. Bach & Sons paid their bill of 10/3, $2,553.90 less $46.98 discount, and an allowance of $50 on bookcases and $155 on tables account of damage.

16. Bought of R. M. Goddard Furniture Co. at 1/30, n/60, tables and desks $9,425, bookcases and cabinets $8,227, office supplies $1,025.

18. Sold T. J. Stewart Office Specialties Co. at 2/5, 1/10, desks and tables $1,878, bookcases and cabinets $580, office supplies $249.

19. Alexander Jacobs & Co. paid their bill of September 18, $1,771.55 less $17.72 discount.

20. T. J. Stewart Office Specialties Co. returned office supplies $49.50 and cabinets $75, of their purchase of October 18. A. H. Lawrence and H. C. McCullough paid $3,125, the balance on their subscriptions.

24. Andrew Jackson paid his note of August 25, $750. The T. J. Stewart Office Supplies Co. paid their bill of October 18, $2,582.50 less $51.65. Sold Field & Co. at 1/30, n/60, desks and tables $1,789, bookcases and cabinets $680, office supplies $348. Sold Sundry Customers at n/30, desks and tables $1,100, bookcases and cabinets $860, office supplies $350. Paid note No. 96, $930.78 with interest $9.31.

25. A. J. Scobey, A. K. Ladd, and J. B. Gaynor paid the balance on their subscriptions, $13,167.50.

26. Bought from Brickley Desk Co. at 2/10, n/30, tables and desks $6,240, bookcases and cabinets $3,780. Paid B. F. Brainard & Co. bill of September 26, $11,035 less $100.35. R. M. Goddard Furniture Co. made us an allowance on purchase of October 16, of $200 on desks and $150 on cabinets due to latent defects.

27. Paid Kistler Stationery Co. bill of October 1, $150.

Instructions

October 1. See page 39 for method of transferring purchase ledger accounts to voucher register.

October 5. See Volume I, page 327, for handling Bach's protested note. Here the record will be partly in the voucher register and partly in the general journal.

October 7. Where a special bank account is kept temporarily, oftentimes a separate cash book is used. One additional column on each side of the cash book will also serve to segregate the charges and credits to it. Here, since receipts are few, they will be entered in the regular bank column with an "X" placed in front of them to secure periodic analysis. All disbursements will be made by regular voucher check, but recorded in the first column of the cash disbursements journal instead of the regular bank column. Inasmuch as only the one account is kept on the ledger with the bank, postings to it will have to be made in two items—one the regular, the other the building fund—for both receipts and disbursements. An alternative method is to carry the detail of the account only in the cash book, posting only totals of all receipts and disbursements to the ledger bank account. However handled, the cash book should show, when balanced, the amounts in both funds and the trial balance should contain the same information.

To effect the transfer of cash to the Building Fund account at the bank, a regular voucher check is drawn to order of Building Fund account. This is distributed in the voucher register to Sundry columns as a charge to Voucher Payable and must be entered on both sides of the cash book but, of course, not posted.

October 8. Charge payment to Goodman to Organization Expense.

October 10. Distribute the merchandise taken from stock through the sales journal, with the necessary correcting entry in the general journal. (See Volume 1, pages 423 *et seq.*) Since but one Furniture and Fixtures account is carried, the detail necessary for analysis must be shown in it just as with Merchandise Inventory.

October 11. The Model Truck Co. transaction must be split, the cash portion being recorded in the voucher register, the rest in the general journal. (See page 43 for method of handling notes payable under the voucher system.)

October 13. Certificate of stock is issued to Noble.

October 20. These receipts from subscribers are regular items.

October 25. These receipts from subscribers are building fund items.

October 26. The student will perhaps detect at once that the discount of $100.35 on the Brainard bill is incorrect. It is to be entered as given, however; correction will be made later.

X

Practice Data

October 30. Sold Jno. Bach & Sons at 2/10, n/30, tables and desks $1,465, bookcases and cabinets $456, office supplies $435. Sold Sundry Customers at n/30, desks and tables $1,800, bookcases and cabinets $620, office supplies $300. Cash sales for the month were desks and tables $3,500, bookcases and cabinets $2,832.60, office supplies $3,167.40. Office supplies drawn from stock for use by the office, $350. Pay-roll check on Building Fund carried $1,950.70 for excavating and foundation labor, Noble $200 salary,

Builder $350 commission. Paid Hoboken City Hospital $50 bill for workmen injured during construction. Paid regular pay-roll $5,769 (salesmen's salaries $2,650; salesmen's commission $580; salesmen's traveling expense $1,525.50; delivery men $250; receiving and shipping clerks $163.50; office salaries $600); N. Y. C. Ry., freight-in $631.72; N. Y. Paper Co. for sundry office expense $84.75; Ward & Gow Publicity Co. for advertising $280, and sundry selling expense $50.25; petty cash voucher $144.95, of which $50.75 was for telegraph, telephone, and postage, $5 to Bullinger Publicity Co. for entry in city directory, $62.50 for stationery and printing, $10 for credit information to R. G. Dunn & Co., $16.70 for sundry office expenses. Paid the Builders Testing Laboratories $50 for test of cement and concrete for use in factory construction. Paid J. P. Landown rent, October 15 to November 15, $250. Sundry Customers returned tables $150, bookcases $85, and sundry office supplies of $52.50 of their purchase of October 24 as not being what they had ordered; we returned bookcases $500 to the Brickley Desk Co. of our purchase of October 26, because of failure of patent doors to operate.

Summarize all the books of original entry and post completely. For method of summarizing the voucher register, see page 36. Extend into the Unpaid Vouchers column all unpaid vouchers as shown by the Manner of Payment column. Take a trial balance as of October 30, 1915, recording it in the third and fourth columns of pages 58–60 of the journals. Be sure to show the two balances for cash, the regular and the building fund.

When posting, make the sales ledger self-balancing and take a trial balance of it, recording it on page 61, journal blank. (See Volume I, page 420, for method of making ledger self-balancing.)

Verify the balance of Vouchers Payable account by checking against the Unpaid Vouchers column of the voucher register.

Instructions

Charge office supplies drawn from stock to Stationery and Printing.

Pay-roll checks are usually drawn to the order of treasurer or other company official. Make the necessary distribution in the voucher register.

Bookcases, $500, returned to Brickley Desk Co. are priced at billed price, i.e., the net credit allowed us will be $490 ($500 less 2%). Be careful to make the proper voucher register entry, as three columns are affected, viz., Vouchers Payable, Purchase Discount, and Bookcases and Filing Cabinets Purchases.

It should be noted that wherever an allowance is made, the figure given in the practice data will always be the gross figure, unless specifically stated otherwise.

Charge credit information cost to Sundry Office Expense.

XI

Practice Data

Make the following detailed entries for transactions with customers and creditors under the dates given:

November 2. Field & Co. gave their note for 1 year at 6% for $3,571.05 in payment of invoices of July 6, September 24, and balance June 15. Gave P. J. Johnson Mills Co. our note at 6 months for $1,462.59, which included $66.99 interest to date at 6% for balance of bill of January 15, $1,395.60.

3. Kistler Stationery Co. honored our sight draft for $1,250 payment of bills of April 18 and June 15.

4. Wrote B. F. Brainard & Co. claiming a $10 adjustment on account of overpayment on October 26 of bill of September 26, on which the discount allowed was $110.35.

5. Paid Jackson City Supply Co. bill of October 6, $3,028.95 less $30.29 discount. Gave Brickley Desk Co., our note for $9,329.60 at four months at 6% for bill of October 26, $10,020 less $190.40 discount and credit memo of October 30 for $500.

6. Field & Co. wrote stating that our monthly statement of account to them carried a charge for October 24 of $2,817, whereas their bill of that date carried $2,310. An investigation showed their contention correct, the error being due to a transposing of charges between them and Sundry Customers for sales on October 24 when the sales journal entry was made. The error was corrected and correct statements were sent out. The Brush Co. paid their bill of May 20, $825.

7. Received credit memo from B. F. Brainard & Co. for $10 in reply to letter of November 4.

10. Kistler Stationery Co. gave their note for 6 months at 6% for $2,826.95, payment of bill of October 9.

12. Jno. Bach & Sons paid their bill of October 30, $2,356 less $47.12. Saxon Edwards paid their bill of May 23, $206.75, and balance on February 10, $85. Paid B. F. Brainard & Co. bill of July 11, $802.15 less credit memo of November 7, $10.

15. Paid R. M. Goddard Furniture Co. bill of October 16, $18,677, less credit memo of October 26 for $350 and discount of $183.27. C. F. Hoeckle Office Supply Co. paid their bill of October 12, $2,485 less $24.85 discount.

18. Alexander Jacobs paid their bill of October 15, $2,707.85 less $27.08 discount.

21. Saxon Edwards paid their bill of September 21, $2,393.05.

24. Sundry Customers paid their bills of October 24, $2,529.50.

25. Field & Co. paid their bill of October 24, $2,310 less $23.10 discount.

27. T. C. Macie & Co. gave their note for $775.25 in payment of bills of May 11, June 21, and July 8.

30. Sundry Customers paid their bills of October 30, $2,720. C. F. Hoeckle Office Supply Co. paid their bill of July 18, $123.90, and balance on March 12, $250.

December 4. Paid Jackson City Supply Co. $1,050.20 for bills of June 25, and July 18.

9. Smith Brooks Stationery Co. gave their note for $873.15, including interest $23.15 on unpaid bills of June 24 and July 7.

13. T. J. Stewart Office Specialties Co. honored sight draft for bill of August 12, $523.12.

17. Offered Field & Co. a discount of $71.05 from the face of their note of November 2 if they would pay $2,000 cash and give a new note for $1,500 for the balance. Offer was accepted and cash and new note for $1,500 received on December 20. (In making adjustment take account of accrued interest on old note of $26.79.)

18. Paid F. C. Good Rubber Co. bill of July 1, $175.19.

20. Paid our note No. 95, $1,261,40, with $25.23 interest, held by the Brickley Desk Co.

23. Honored B. A. Franklin Press draft at sight for biil of June 22, $262.15. Bank's statement of account showed charges of $1.25 and 75c respectively for collection of Kistler Stationery Co. draft of November 3, and T. J. Stewart Office Specialties Co. draft of December 13.

Instructions

November 2. Treat all sight drafts when honored as cash transactions.

November 6. Field & Co. adjustment is made in the general journal. Be careful to make entry in proper columns.

November 7. The $10 allowance made us by B. F. Brainard & Co. must be recorded *in red* in the voucher register close beside the next voucher which will be paid to Brainard—in this case the bill for $802.15 dated October 1. No entry will need to be made in the general journal to secure the proper posting of this item, as the entry in the voucher register is merely a memo to prevent overpayment at time of next settlement. (See page 40 for discussion of the problem of returns and allowances.)

December 17. Handle the Field & Co. note transaction with care. The liscount is a charge to Interest and Discount.

December 23. Run the bank's collection charges through on a voucher which must be recorded in voucher register and cash book.

XII

Practice Data

The following transactions took place during the remainder of the fiscal year which ended August 31, 1916, and are to be entered as of the given date:

January 3. A one year's insurance policy at a cost of $250 cash was taken out on a stock of merchandise which had been removed to a warehouse, as stated below.

February 1. The accrued taxes of $75 at date of purchase of factory site were paid.

March 1. On account of the flourishing condition of the sales, an interim dividend of 4% was declared and paid. Noble's was applied as a partial payment on his stock note.

June 15. The Boston Office Co. sent $5,000 of office specialties to be sold on a 5% commission basis for their account.

July 1. A statement of affairs was received from Jno. Bach & Sons showing their insolvency and copy of an agreement signed by several creditors to accept settlement of all claims on a 40% basis. Your attorney, having been unable to collect and having investigated, advised the acceptance by you of their offer. Accordingly on July 27, a check was received from Bach & Sons for 40% of the balance as shown by your books. (Charge Jackson, Edwards, Hansen with 60% of $169.36, the part guaranteed by them, and Reserve for Doubtful Accounts with 60% of $256.25.)

On August 15, 1916, the factory building was completed. The following expenditures had been made: for steel, concrete, brick and other materials $15,740.20; for labor of all sorts $11,579.35; for insurance, injuries incurred during construction, legal expense in defense, and interest on moneys borrowed for the building fund, $750; J. T. Noble's salary $2,000; I. M. Builder's fees and commission $1,113.51; and Builders' Testing Laboratories $250. The factory was largely of concrete and numerous tests were necessary. Several purchases of cement had been returned as not being of the required standard. The company's note for $10,000 had been discounted for $9,800 and the proceeds placed in the Building Fund to finance the undertaking. The $200 discount is included in the $750 mentioned above.

Noble reported that orders for machinery and equipment had been placed with sundry firms and that about three months would be required before the machinery could be placed and ready for operation as some of the machines were of delicate and complex construction and would require careful testing before acceptance. He suggested that orders for the raw materials used in the manufacture of the Knoxfraud be now placed to take advantage of a low market. Accordingly $10,000 worth was ordered, an advance payment of $2,500 being made on August 25 and charged to New Method Manufacturing Co. in the sales ledger to show our claim against them for the prepayment—the balance to be paid when delivery is made, not earlier than October 31.

Due to lack of floor space in the sales department and the necessity of carrying a large assortment of styles in stock at all times, on January 2, 1916, a warehouse was rented nearby for a monthly rental of $100 payable in advance. Under date of August 31, 1916, enter a payment of $900.

The receiving and shipping room quarters were also removed to the warehouse. On March 1, a portion of the warehouse was sublet at a monthly rental of $40 payable in advance. Enter a receipt of $280 under date of August 31, 1916. Services of A. Pinkerton for $20 a month beginning March 1 were secured to watch store, warehouse, and factory. Record on August 31, 1916, a payment of $120.

It was decided to close out the division of sundry office supplies and dispose of the balance on hand October 31 at a lump sum.

Instructions

February 1. Refer to Practice Data VIII for the original booking of this item.

March 1. Charge the interim dividend to Dividend account, since there is no Surplus on the books against which to charge it.

June 15. No entry will be made of the Boston Office Co. consignment. (A memo entry in the journal may be made, if desired. This would consist merely of a statement of the receipt of the goods, with no extension of amount into the money column.)

July 1. Handle the Jno. Bach bankruptcy with care. The basis for the entries indicated rests on the original sale agreement between the Acme Office Furnishings Co. and Jackson, Edwards, Hansen, Vendors. (See Practice Data V.)

August 15. Record the discounted note for $10,000 as usual. Be careful not to post the discount twice. All expenditures are cash items.

August 31. Charge A. Pinkerton's salary to Warehouse Expense. This is not quite accurate, but sufficiently so.

XIII

Practice Data

In addition to the special data given in Practice Data XII, the following transactions in due course took place:

Make the record as of August 31, 1916 with summary entries.

Sales Journal—Sales to Sundry Customers were: desks and tables $200,670.20, bookcases and filing cabinets $153,803.40, and sundry office supplies $16,115.26. Cash sales were: desks and tables $35,000, bookcases and filing cabinets $21,500, and sundry office supplies $2,825.15. Return sales and allowances to Sundry Customers were: desks and tables $4,240.15, bookcases and filing cabinets $4,250.65, and sundry office supplies $675.50.

Cash Book—Received: from cash sales as above; from Sundry Customers $269,359.50 less sales discount of $3,940.20; from notes receivable $5,000; from notes payable discounted $42,500 less $350 discount; from notes receivable discounted $15,000 less discount of $50. Disbursed for vouchers payable $359,720.40, of which $100 is chargeable to Building Fund (Noble's salary).

Journal—Gave our notes to Sundry Creditors for $8,500; received notes from Sundry Customers $25,200.50; notes receivable discounted were paid by makers at maturity $10,250; stationery was drawn from stock $250 and used for advertising purposes.

Voucher Register—Bought desks and tables $99,842.95, bookcases and filing cabinets $73,758.15, and sundry office supplies $12,684.40. Purchases discount was $2,153.40; in-freight and delivery $3,740.28; receiving and shipping room expense $2,690.14; light, heat, and power $725.16; sales-

men's salaries $65,840.20; salesmen's commissions $20,730.30; traveling expenses $42,420.70; advertising $12,280; sundry selling expense $940.03; delivery expense $7,280.90; warehouse expense $50; office salaries $11,600; stationery and printing $450; collection and exchange $30.05; interest and discount $1,096.27; sundry office expense $72.15; telephone, telegraph, and postage $475.03; notes payable $47,250.19; rent $3,250; power equipment $5,000; taxes $160.15; Noble's salary for August $200. (Charge $100 to Factory Building and $100 to Power Equipment.)

Instructions

These transactions are listed in summarized form to avoid detailed entry and, at the same time, to provide the necessary volume of business. They are to be entered as indicated. Use as little space as possible.

Sales Journal—Use 2 lines for the entries. Enter returns and allowances in their proper journal.

Cash Book—Be careful to indicate by some distinctive mark all interest and discount items recorded in the Sales Discount column. No purchase discount on paid vouchers is given inasmuch as the cash book record of it is merely a memo, although providing data for checking the amount of unearned discount at the close of a period. It will doubtless be found that in this summarized method of stating transactions much detailed information is omitted (because not absolutely essential), that would be available under ordinary conditions.

Journal—Treat stationery taken from stock as a credit to Sundry Office Supplies Sales; this is not included in the sales journal data given above.

Voucher Register—For the sake of saving space, run all these transactions through on one voucher, using just one line for the entry, except in Sundry column, where use as many as are needed. $100 of Noble's salary comes out of building fund cash, as indicated on page 675.

XIV

Practice Data

Summarize the various books and post completely. Be careful, in summarizing, to show any extraneous items recorded, for the sake of convenience, in theoretically improper columns or books.

XV

Practice Data

Take a trial balance of the general and sales ledgers and record them as usual.

XVI

Practice Data

Draw up statements for the year, supporting both the profit and loss statement and the balance sheet by schedules. (See Volume I, pages 411–412 and 509–510, for suggestive forms and instructions as to methods of condensation of data.)

Take into consideration the following data:

Rent income received in advance $40; warehouse rent paid in advance $100; interest accrued on notes receivable $50; salesmen's salaries accrued $420; salesmen's commissions accrued $125; advertising bills unpaid $100; advertising paid in advance $250; stationery on hand $50.

Insurance: first policy, one year, bought October 1, cost $125, part unexpired $10.04; second policy, one year, bought January 2, cost $250, 4/12 unexpired $83.33. Taxes for the year 1916, estimated $565.42, 2/3 used $376.-95. Purchases discount not yet taken advantage of on unpaid vouchers, $475.

The Knoxfraud patent had 15 years to run when purchased. Write off 1/15 of its value, it being the policy of the company to maintain an experimental laboratory and so overcome any possible supersession. Write off organization expense and good-will 5% each. Create reserves for: furniture and fixtures 10%; delivery equipment 15%; doubtful accounts ½% on all sales gross. Take no account of depreciation on factory building or power equipment.

Inventories of stock-in-trade: desks and tables $4,943.86, bookcases and filing cabinets $1,521.31, sundry office supplies $3,197.20, total $9,662.37.

In-freight and delivery: charge $2,500 to Desks and Tables purchases, $2,100 to Bookcases and Filing Cabinets Purchases, $297.69 to Sundry Office Supplies Purchases.

Light, heat, and power: charge 3/4 to Selling, 1/4 to General Administrative.

Receiving and shipping room: charge 3/4 to Shipping, 1/4 to Receiving, of which 50% to Desks and Tables, 45% to Bookcases and Filing Cabinets, 5% to Sundry Office Supplies.

Rent: charge 4/5 to Selling, 1/5 to General Administrative.

Insurance: charge $335.24 to Selling, $41.75 to General Administrative.

Taxes: charge all of the 1915 taxes ($160.15) to Surplus.

Discount on stock: charge to Factory Buildings.

Instructions

Most of the above data are necessarily arbitrary, particularly the basis for distribution of the various expense items. For many such items, even in practice, a more or less arbitrary basis must be adopted. See Chapters III, XIV, and XXVII for a brief discussion of this point.

The student may object to the indicated methods of handling some of the items but is asked to make the record as suggested. Any necessary corrections will be made later.

Draw up all formal statements, for presentation to the instructor, on blank paper, letter size, i.e., 8½ x 11 inches.

XVII

Practice Data

Adjust and close the books in accordance with the information given in the preceding Practice Data XVI.

The student is referred, for illustration of the work of adjusting and closing the books, to Volume I, Chapters XXIX, XXX, and XLIII, and to certain portions of Chapters XIV and XIX of Volume II.

XVIII

Practice Data

The results for the year proving very unsatisfactory in comparison with the volume of business transacted, N. G. Goodman was retained to make an audit of the year's operations in an effort to locate the trouble. In his report covering the audit, he called attention to the following items:

(a) In the Trade Debtors are included two charges, viz., advances to salesmen $500, and New Method Manufacturing Co. for purchases $2,500, which are in no sense charges to customers.

(b) In the Notes Receivable is included Noble's note given in payment of the balance on his subscription to capital stock $1,000 but now reduced to $600 through the application of his March dividend as a partial payment. This does not belong in Notes Receivable account.

(c) There is on the books no record of the Boston Office Co. consignment received on June 15, 1916. Investigation showed that on July 2, a sale of $4,500 was made from the consignment and the balance was included in the Sundry Office Supplies Inventory, being there valued at $1,000. It was ascertained that the freight and cartage paid on the incoming consigned goods amounted to $25.12, and had been charged to the In-freight and Cartage account.

(d) The inadequacy of the purchases system was shown. Perhaps due to the fact that during the year the main stock was withdrawn from the store and the immediate supervision of the responsible head and placed in the warehouse, the stock had been allowed to run down so that it amounted at the close of the year to only $9,662.37—correct value being $8,662.37 when allowance for the inclusion of the Boston Office Co. consigned goods was

made—as compared with $42,282.27 on hand at the beginning. Suggestion for the installation of a distinct purchasing department and the introduction of a stock record was made in order to keep track of the condition of the stock.

(e) The depreciation of good-will is to be reversed.

(f) The discount on capital stock, charged to Factory Building, is to be taken out and shown as a separate item under its own name.

(g) An analysis of the sales developed that: on desks and tables sales gross profit was 47%, and rate of turnover was 9+; on bookcases and filing cabinets gross profit was 38% and turnover 6.4+; and on sundry office supplies a gross loss of 17+% was sustained and the turnover was only 3+. Taken as a whole, the selling expense was too high, very probably due to salesmen's abnormal traveling expenses and commissions. The present commissions policy was severely condemned as tending to an increase of sales without regard to the financial standing of the customer. For the purpose of establishing a consistent policy of passing on credits and following up collections, the installation of a department of credits and collections was advised.

(h) It was advised that the petty cash be taken out of the bookkeeper's control.

(i) Of the 1915 taxes charged to Surplus, one-third should have been charged to Profit and Loss.

Make all of the entries necessary to adjust the books in accordance with the auditor's suggestions. Post, close, and draw up corrected statements, including the adjustments to Surplus. Supporting schedules may be omitted; the condensed statements will be sufficient.

Instructions

Study carefully all the suggestions made by Goodman and determine the proper correcting entries. All necessary accounts have already been set up on the books.

The principles involved in suggestions (a) and (b) are covered in Chapter XII. For (c) see Volume I, Chapter L, and Volume II, Chapter XIII. Take cognizance of the accrued commission. For (e) see Chapter XVIII, and for (f) see Cnapter XXI. For the surplus statement to show all adjustments made through it, see Chapter XXIII.

XIX

Practice Data

September 2, 1916, the remainder of the Boston Office Co. consignment was sold for $1,250 cash and our check sent for the balance due them. Desks and tables $575, and filing cabinets $250, were taken from stock for use in the factory. Additional benching and racks were bought for $450 cash. Shop and hand tools cost $875.25 cash.

September 10, 1916 a one-year fire insurance policy covering factory building and equipment was bought from the Northwestern Fire Insurance Co. for $584.68.

At a meeting of the directors and stockholders for the purpose of reviewing Goodman's report and forecasting a policy for the coming year, the following items were thoroughly considered:

(a) In order to pursue a vigorous sales policy such as would now be necessary and along the lines suggested by Goodman, immediate purchases in large amounts would have to be made.

(b) The company's credit, at the present time, with more than $70,000 of current payables outstanding, would not bear further expansion. Ready funds of at least $20,000 would have to be provided within the next month to take up outstanding notes and the more pressing bills, to say nothing of the amount needed to take advantage of all discounts offered on new purchases.

(c) The contracts entered into for purchases of machinery and raw materials would soon have to be fulfilled, requiring an additional sum of $20,000 to $25,000.

(d) In view of the policy previously determined to close out the division of sundry office supplies on October 31 and push with vigor the new Knoxfraud, a widespread advertising campaign was decided upon for the next six months in order fully to present the need for the new device and its merits. It was estimated that $15,000 or $20,000 would be required for this.

(e) The absolute necessity for additional capital was apparent. Before the company could hope successfully to secure subscriptions to a new issue of stock, not only would that stock have to be made attractive, but the company's condition as to surplus would have to be improved. Accordingly, it was voted to donate 10% of the capital stock into the treasury and offer it for sale first to the present stockholders and then to the public at not less than 90. Then it was ordered that the capital stock be increased by the issuance of $50,000 of first preferred 6% cumulative, and $25,000 of second preferred 8% non-cumulative, both classes of stock to have further participation on the following basis:

In the event of dividends in excess of the requirements for the preferred stock and 6% on the common, the first preferred should share 1/3 and the common 2/3 of such excess for an additional dividend until they should have received in all an 8% dividend and so be placed on an equality with the second preferred. Of all further dividends the common was to share 3/4 of the amount of such excess dividends, and the two preferred classes the other 1/4 distributable between them in the ratio which the amount of each outstanding bore to the total of both classes outstanding. It was decided, at the time of the application for an increase of capitalization, to change the name of the corporation to the Knox-Davis Manufacturing Company.

The necessary legal requirements for increasing their capital having been met, the present stockholders took all the treasury stock at 90, and the two classes of preferred were entirely subscribed for at par, payable ½ down and

the remainder subject to two equal calls at the end of 4 and 8 months respectively. Cash was received for treasury stock in full and for the preferred as indicated, i.e., for the 1/2 down in cash at the date of subscription. Permission was granted to change the name of the corporation as requested.

Make the entries to record the above data under date of October 25, 1916. (Charge the discount on stock against the surplus received from donation.) Transfer the cash balance in the Building Fund into the General Cash, there being no longer any need of the separation.

Instructions

September 2. Make careful calculation of the balance due Boston Office Co. Record in the general journal the stock drawn for factory furniture and fixtures, as a credit to proper sales account.

October 25. Transfer of the balance of Building Fund cash back to General Cash is effected in the same way as the original creation of the fund. Issue certificates of stock to new holders.

XX

Practice Data

By October 31, 1916, all of the sundry office supplies had been closed out for $2,000 cash.

The raw materials contracted and partially paid for on August 25, were received, and on November 10 a check for the balance due less 2% discount on the contract, was sent to the New Method Manufacturing Co. (Be sure to book the proper charge to Raw Materials.) Materials were insured for one year at a cost of $175 cash.

On November 30, the last of the machinery was received from the Harvey Machine Manufacturing Co. and installed. The invoice cost was $15,000, of which $12,000 was paid in cash and the company's note secured by mortgage on the machinery was given for the balance. In-freight and delivery on the machinery amounted to $675.40, and placement expense (not including concrete platforms and piers which had been charged to the building at a cost of $750) amounted to $225, all of which were paid in cash. Noble's salary for the three months while passing upon and superintending the placing and erection of machinery is to be charged $400 to Machinery and $200 to Power Equipment. The additional expenditure of connecting the machinery with the power—including shafting, belting, labor, etc.—amounted to $550.50 cash.

On December 2 an insurance policy for one year covering machinery was purchased for $275.40 cash from the New Jersey Mutual.

Full factory operations were commenced on December 1, 1916, and orders were taken for Knoxfrauds for delivery beginning with the first of the year.

It was determined to extend the current fiscal period and not close the books until December 31, 1917.

Call No. 1 on unpaid subscriptions to capital stock for one-half the outstanding was made on February 25, 1917.

The advertising campaign was producing results so that to fill orders the factory had to work two shifts of men beginning with March 1, 1917. As a result of seeming prosperity and a discontent engendered by labor leaders who had recently unionized the works, a demand for a 15% increase in wages was made and refused, resulting in a walk-out on March 30. A patrol against strike-breakers was established on April 2, after about one-third of the full complement of workers needed for operation had been secured. Some of these defected and the rest were quartered in the shops to prevent violence. After three weeks of partial operation at an increased expense of $1,500 directly attributed to the strike, one of the boilers exploded damaging the building and equipment, the resulting fire consuming supplies and damaging raw materials. An investigation placed the blame on a half-crazed workman whose sympathies were with the strikers. Hospital fees for injured workmen amounted to $500. (Record these two items as cash expenditures for the purposes named under date of April 20.) The insurance companies settled the losses as follows: the building and the power equipment on which the estimated damage was $3,500 were placed in complete repair; the estimated damage on materials, determined after an inventory and comparison with stock records, amounted to $4,000 and was covered by $3,200 insurance which was paid. In making the estimate, scrap value of damaged goods was placed at $1,000 but only realized $750 when sold; machinery costing $3,500 on November 30, with a scrap value of $500, realized on sale by the company $650, the insurance received being $2,000. (Depreciation on the machinery at the rate of 8 1/3% annually on cost value is to be taken into account, and the portion of the unexpired insurance—roughly estimated at $150—now canceled by the payment of the insurance on both raw materials and machinery is to be considered in making charges to the Fire Loss account.) Additional loss and expense due to decreased production and cancellation of orders because of not being able to deliver goods when promised was estimated at $7,500. The strike was finally settled by granting a 5% increase in wages.

The directors had under consideration the incorporation with the Knox-fraud of a patent listing and adding device owned by J. Q. Osgood. In view of the need of some additional capital anyway due to the strike losses, it was decided to incorporate the new device now, since it would be easier to make the needed changes at this time than after operations had been resumed. Accordingly, a rearrangement of the machinery was necessary to make room for the new machinery and place it for proper routing of the product. This entailed a cash expenditure of $750 for the rearrangement, and $5,500 for new machines to replace those disposed of and to manufacture the new device. (Make the record as of April 30.) The contract entered into with Osgood

was on a royalty basis per unit turned out by the machines and for one year's time beginning May 1, 1917. The directors decided on a continuation of the advertising campaign. To provide funds for these purposes a bond issue was determined upon—$20,000 20-year 6%, interest coupons redeemable November 1, and May 1,—secured by mortgage on the factory and its equipment. The trust agreement provided for the payment at the close of each fiscal year of $750 out of profits into the hands of the Guaranty Trust Co. for investment in securities until a sinking fund sufficient to retire the bonds at their maturity shall have been established. $15,000 of the bonds were offered for sale and were purchased at 95 for cash except one purchase on a note for $950. The remaining $5,000 were held in the treasury until needed.

Record the above transactions as of the dates given—the bond transactions took place on May 1.

Instructions

October 31. The columns in sales journal, sales returns and allowances journal, and voucher register headed "Sundry Office Supplies," will now be given the headings "Knoxfraud" for the first two journals, and "Raw Materials" for the voucher register.

November 10. A part of the charge to Raw Materials must be made in the general journal. "Prepayment on Purchases" account will be closed.

November 30. Record the note payable secured by mortgage under the title "Purchase Money Mortgage on Machinery." Voucher the cash portion of this purchase of machinery. Transfer the cost of concrete platforms from Buildings to Machinery account. This had previously been charged to Buildings and is merely a transfer entry here. Run Noble's salary through the voucher register as a cash transaction, making the proper distribution of it. The payment of $550.50 for connecting power is to be charged to Power Equipment.

April 20. Charge these two items as cash expenditures to Strike Costs. In accounting for the fire losses, clear the accounts of their original values by transfer to Fire Loss account (Raw Materials Purchases $5,000, and Machinery $3,500 less depreciation for 4 2/3 months, i.e., from November 30 to April 20). Credit Fire Loss from the cash book with the insurance received and with the cash received from sale of scrap. Charge Fire Loss also with the canceled insurance premiums. Record all of this under date of April 20. (The student is referred to Chapter XXXII for a full treatment of fire loss adjustments.)

Indirect losses due to strike must not be brought onto the books.

No sinking fund entries will be made till the close of the fiscal year.

May 1. Handle the sale of bonds in cash book and general journal.

Treat the note received as a "Note Receivable Special." No record will be made of the unissued bonds.

XXI

Practice Data

The remaining data for the 16 months ending December 31, 1917, have been summarized in most instances and were as follows: (In making record, use the dates given or December 31, where none are given.)

June 1. A dynamo costing $525 on August 31, 1916, was sold for $415 and a larger one purchased from the General Electric Co. at a cost of $975.50 installed. (Take into account depreciation at 12 1/2% per annum.) Additional motor trucks were purchased from the New Model Truck Co. for $1,790. (Entry was made at $1,740, taking into account a special discount of $50 for payment within 10 days. Through oversight the voucher was not paid till July 1, thus losing the discount.)

June 25. Call No. 2 was made for the balance of unpaid subscriptions to capital stock.

Voucher Register—Bought desks and tables $200,431.95, bookcases and filing cabinets $149,878.79, raw materials $62,749.63. Purchases discount was $4,290.89; in-freight and delivery $8,650; pay-roll, direct labor $99,475.50, indirect labor $11,900.17; engineers and firemen's wages $5,125.67; building maintenance and repairs $200; machinery repairs $193.50; receiving and shipping clerks $1, 550.20; assembling and setting-up labor $500.80; salesmen's salaries $173,790.25; traveling expense $91,475.89; salesmen's commissions $79,612.40; delivery men $3,500; office salaries $15,900; patterns $1,250; factory work benches $75; experimental laboratory $2,500. Materials purchased for building maintenance and repairs $326.40, for machinery repairs $85, for patterns $550. Coal and water cost $11,193.40; sundry light, heat, and power expense $1,062.60; packing and shipping supplies $4,469.70; delivery expense, including motor-truck repairs and maintenance, $12,989.14; taxes for 1916 $585.43; factory supplies $1,124.17; sundry factory expense $750.28; royalties $875; insurance, including employers' liability insurance for factory workmen, $2,277.45; warehouse expense $540; warehouse rent $850; sundry selling expense $2,196.40; rent $7,500; stationery and printing $2,310.17; telephone, telegraph, and postage $1,092.15; sundry office expense; $1,312.43; collection expense $1,025.43; interest and discount $902.20; bond interest $450; materials for laboratory $1,500; legal expense in defending patents $175; street and sewer improvement tax on factory site $525.60; advertising $123,470.10; notes payable paid $25,261.75; notes receivable discounted but protested and charged back, $1,260.50; advances to salesmen $1,500.

Sales Journal—Sales to sundry customers: desks and tables $290,721.15; bookcases and filing cabinets $204,422.20, Knoxfrauds $351,622.50. Cash sales were: desks and tables $91,213.10, bookcases and filing cabinets $71,253.20, Knoxfrauds $124,121.25. Sales returns and allowances were: desks and tables $10,192.50; bookcases and filing cabinets $8,269.10, Knoxfrauds $21,569.65.

CASH BOOK—Received: from cash sales as above; from Sundry Customers \$624,736.74 less sales discount of \$15,962.14; from interest \$750; from notes receivable discounted \$19,260.25 less bank discount of \$210.25; from notes receivable \$10,192.60; from rent income \$160—the sub-lease on the warehouse was canceled because the room was needed for increased stock; from first call on outstanding subscriptions to capital stock \$18,250, from second call \$18,000. Disbursed: for vouchers payable \$1,005,833.95.

JOURNAL—Received notes from Sundry Customers \$59,370.50. Gave notes to Sundry Creditors \$45,000. Notes receivable discounted were paid by makers at maturity \$12,379.60. Trade debts proved uncollectible from bankruptcy or other cause to the amount of \$3,572.40.

Instructions

June 1. Charge the loss on sale of dynamo to Loss from Sale of Power Equipment. Accrued depreciation for 9 months must be taken into account. Run the neglected discount item through on a new voucher, making cross-reference to the original. Be sure to make proper distribution of it.

June 25. Call No. 2 is for \$18,750.

Voucher Register. Make careful distribution of all items—particularly as between capital and revenue charges. Discounted notes receivable protested will be charged to Sundry Customers.

Journal. Make here also the entry necessary to complete the record of the discounted notes which went to protest, as indicated by the voucher register entry above.

XXII

PRACTICE DATA

Summarize and post the books and take a trial balance as of December 31, 1917. Record the trial balance in the usual place.

XXIII

PROBLEM

A trial balance taken from the general ledger of the Metal Bed Manufacturing Co. for December 31, 1917, showed as follows:

Bed Sales..................................		\$325,198.67
Bed Sales Returns and Allowances..........	\$10,240.80	
Bed Accessories Sales		192,460.90

Account	Debit	Credit
Bed Accessories Sales Returns and Allowances	8,175.25	
Raw Material Inventory	25,240.16	
In-Freight and Drayage	1,460.24	
Beds in Process	15,970.20	
Finished Beds	42,490.70	
Accessories Inventory	19,580.65	
Direct Labor	35,918.60	
Indirect Labor	10,372.40	
Light, Heat, and Power	8,917.18	
Manufacturing Expense	5,890.10	
Rent	3,300.00	
Machinery Repairs and Renewals	575.00	
Raw Materials Purchases	175,460.18	
Raw Materials Purchases Returns and Allowances		9,840.60
Accessories Purchases	95,640.81	
Accessories Purchases Returns and Allowances		4,890.06
Advertising	4,800.00	
Salesmen's Salaries	13,690.75	
Salesmen's Commissions	4,610.15	
Traveling Expense	10,111.25	
Out-Freight and Shipping	790.20	
Delivery Expense	3,816.25	
Insurance on Sales Room Stock	475.00	
Insurance on Factory Materials	820.00	
Insurance on Buildings and Equipment	1,890.00	
Miscellaneous Selling Expense	4,175.30	
Office Salaries	15,210.40	
Interest and Discount	3,620.55	
Bank Expense	125.45	
Office Furniture and Fixtures	1,240.00	
Depreciation Reserve Office Furniture and Fixtures		620.00
Office Supplies	720.20	
Miscellaneous Office Expense	1,810.65	
Leasehold (99 years)	99,000.00	
Extinction Reserve for Leasehold		24,000.00
Buildings	125,000.00	
Depreciation Reserve for Buildings		50,000.00
Machinery	72,520.70	
Depreciation Reserve for Machinery		21,490.16
Tools	5,140.17	
Patterns	7,500.00	
Depreciation Reserve for Patterns		5,405.14
Factory Furniture and Fixtures	8,100.00	

Depreciation Reserve Factory Furniture and Fixtures		3,190.20
Sales Room Furniture and Fixtures	10,250.00	
Depreciation Reserve Sales Room Furniture and Fixtures		4,330.10
Sales Discount	8,440.05	
Purchases Discount		10,375.90
Good-Will	50,000.00	
Accounts Receivable	110,472.05	
Notes Receivable	5,640.10	
Accounts Payable		62,490.35
Notes Payable		10,000.00
Mortgage Payable		15,000.00
Petty Cash	150.00	
Surplus		150,154.24
Reserve for Doubtful Accounts		3,519.72
Capital Stock Common		100,000.00
Capital Stock Preferred 6%		50,000.00
Harriman National Bank	10,114.55	
Common Dividend No. 37	2,000.00	
Preferred Dividend No. 25	1,500.00	
	$1,042.966.04	$1,042,966.04

The company conducts a factory for the manufacture of metal beds. It deals also in mattresses, springs, bed furnishings, etc., which it buys ready-made and sells to the retail trade. Its two classes of sales, beds and accessories are kept distinct.

Draw up a balance sheet and profit and loss statement for the year, taking into account the following inventories and other adjustments:

Inventories:	
Raw Materials	$31,216.15
Beds in Process	18,793.80
Finished Beds	31,470.95
Bed Accessories	24,640.10
Accrued Expenses:	
Direct Labor	690.20
Indirect Labor	325.00
Rent	300.00
Light, Heat, and Power	180.20
Advertising	590.00
Sales Commissions	319.40
Interest	150.00

Prepaid Expenses:	
Coal, Waste, Oil, etc.	$125.00
Advertising	300.00
Office Supplies	75.00
Bank Discount	125.00
Insurance on Sales Room Stock	50.00
Insurance on Factory Materials	125.00
Insurance on Buildings and Equipment	256.40
Interest earned on Notes Receivable but not yet due	75.20

Depreciation is estimated as follows on a yearly basis:

Office Furniture and Fixtures	8 1/3%
Factory Furniture and Fixtures	10%
Sales Room Furniture and Fixtures	10%
Buildings	2%
Machinery	10%
Patterns	20%

The leasehold was originally for 99 years of which 25 years have now expired. Bad debts are calculated as 2% of the accounts and notes outstanding. Tools now on hand amount to $4,800.25. In-freight and drayage is to be charged 55% to Factory and 45% to Selling. Light, heat, and power charge 90% to Factory, 9% to Selling, and 1% to Office. Rent, charge 60% to Factory, 35% to Selling, and 5% to Office. Insurance on buildings and equipment distribute according to the values invested, separating buildings' values on the same basis as rent. Dividends No. 26 for 3% on preferred and No. 38 for 6% on the common are declared and paid.

Instructions

The leasehold was purchased for a lump sum with provision for the payment of a small annual rental in addition. The rent item on the books covers this charge. $1,000 a year is the amortization charge on the leasehold.

Insurance on buildings and equipment covers buildings, machinery, tools, patterns, and office, salesroom, and factory furniture and fixtures. Be careful to distribute this among the manufacturing, selling, and office sections of the profit and loss summary. Separate the asset values of these items, which show investment in the factory, the selling section, and the office section of the plant, and distribute the insurance on the basis of the investment shown.

Depreciation on buildings will be distributed also on the same basis as rent.

Dividends 25 and 37 have evidently been paid but not yet charged against Surplus. This is sometimes done when it is desired to charge an interim dividend against profits of the current year. In drawing up the balance sheet take cognizance of the fact that dividends 26 and 38 have also been declared and paid though not yet booked.

Support the balance sheet and profit and loss statement with the customary schedules. The "Cost of Goods Sold" schedule must in turn be supported by a schedule showing the "Cost to Manufacture." As explained in Chapter III, in the cost of goods sold schedule the cost of goods manufactured —shown by the cost to manufacture schedule—takes the place of the item "Net Purchases" in a trading business. A typical form of manufacturing statement is shown below.

EXHIBIT B—SCHEDULE 1

COGSWELL & SONS, MANUFACTURERS

COST TO MANUFACTURE, FOR THE YEAR ENDING DECEMBER 31, 1917

FIRELESS COOKERS:			
Raw Materials:			
Inventory, January 1, 1917		$25,000.00	
Purchases, Net	$125,000.00		
In-Freight and Cartage	5,000.00	130,000.00	
		$155,000.00	
Less Inventory, December 31, 1917		28,100.00	
Cost of Raw Materials Used in Manufacture			$126,900.00
Direct Labor			178,600.00
Prime Cost			$305,500.00
Factory Expenses:			
Indirect Labor		$30,000.00	
Light, Heat, and Power		20,000.00	
Factory Supplies		5,000.00	
Sundry Factory Expense		1,500.00	
Machinery Repairs		750.00	
Building Maintenance and Repairs		1,225.00	
Depreciation		6,210.00	
Insurance		850.00	
Taxes		2,195.00	
Royalties		15,276.00	83,006.00
			$388,506.00
Deduct, excess of:			
Goods in Process, December 31, 1917 over		$40,210.00	
Goods in Process, January 1, 1917		32,794.00	7,416.00
Cost of Finished Cookers (carried to Schedule 2)			$381,090.00

As stated above, this "Cost of Finished Cookers" is carried to Schedule 2, "Cost of Goods Sold," where it is combined with its initial and final inventories to develop the cost of the cookers sold during the period. With the exception noted, this schedule, for a departmental business, follows the forms already shown and will not be repeated here. The same thing is true of the other supporting schedules.

XXIV

Problem

Using the information of Problem XXIII and the statements drawn up there, prepare adjusting and closing journal entries covering just the *manufacturing* activities of the business.

Instructions

It is desired here to give the student practice with the group of entries with which he is not yet familiar. The adjusting and closing entries covering the other activities of the business follow the methods already explained. In summarizing the manufacturing group of entries, the process is the same, in the main, as other summary entries. The exact entries necessary depend, of course, on the accounts carried and the way in which they are used. This applies particularly to the use of one or several different inventory accounts and the Goods in Process account.

To bring the goods in process inventory on the books requires a debit to Manufacturing and a credit to Goods in Process to clear it—i.e., Goods in Process—of the initial inventory, and then a debit to Goods in Process and a credit to Manufacturing to set up the present inventory. This secures the proper charge or credit, for the excess of the one inventory over the other, necessary to develop the correct cost to manufacture.

Where a Finished Goods account is carried, it is sometimes used as an inventory account, in which case the method of handling it is similar to that of Goods in Process excepting that the Finished Goods account is used in connection with the Profit and Loss (or Trading) account instead of the Manufacturing account. When Finished Goods account is used in this way, the balance of the Manufacturing account, i.e., the cost of goods manufactured, is transferred *in toto* to the Profit and Loss account in which the cost of the manufactured goods sold is developed. Where other commodities are dealt in, in addition to the manufactured product, this may result in an awkward and inconsistent method of developing the costs of the different commodities sold. This has sometimes led to the use of the Finished Goods account somewhat on the lines of a purchases account. To it the balance of the Manufacturing account is transferred, and the cost of finished goods sold is developed in it by bringing the two inventories into this account. This necessitates the use of a Finished Goods Inventory account in addition to Finished Goods account—or finished goods inventory may be set up in Merchandise Inventory account, where only one inventory account is carried. The cost of manufactured goods sold is then transferred from Finished Goods account to Profit and Loss account, where, together with the costs of the other commodities sold, it helps to effect the closing of the books.

In this problem use the Finished Beds account as an inventory account.

XXV–XXVI

Practice Data

Prepare a condensed balance sheet and profit and loss statement as of December 31, 1917, taking account of the following adjustments and inventories. Also draw up a statement of surplus for the 16 months of the current fiscal period.

Coal and Power Supplies on Hand	$1,240.19
Packing Materials on Hand	340.20
Gasoline on Hand	125.00
Factory Supplies	100.00
Insurance Unexpired	540.23
Warehouse Rent Prepaid	150.00
Stationery on Hand	150.00
Experimental Laboratory Materials on Hand	425.00
Advertising Prepaid	500.00
Purchases Discount Not Yet Taken on Unpaid Vouchers	840.22
Advertising Unpaid	1,000.00
Direct Labor Accrued	1,793.75
Indirect Labor Accrued	225.33
Engineers and Firemen's Wages Accrued	125.67
Receiving and Shipping Clerk's Wages Accrued	75.50
Assembling and Setting Up Wages Accrued	15.00
Salesmen's Salaries Accrued	2,524.50
Salesmen's Commissions Accrued	1,360.18
Deliverymen's Wages Accrued	67.50
Royalties Accrued	150.00
Rent Accrued	400.00
Interest Payable	17.25
Taxes on Factory Accrued	819.37
Taxes on Stock Accrued	395.62
Bond Interest Accrued	150.00

Inventories of stock-in-trade and raw materials were:

Desks and Tables	$20,855.10
Bookcases and Filing Cabinets	17,671.40
Knoxfrauds, Finished	2,511.20
Raw Materials	15,241.92
Goods in Process	9,255.65

Calculate depreciation at the yearly rates given below. The balance in the account is to be used as the basis, reckoning for 16 months.

Power Equipment	12 1/2%
Machinery	8 1/3%

Factory Buildings	1 1/2%	
Patterns	20%	
Patents	1/17	
Delivery Equipment	15%	
Furniture and Fixtures, Factory	12 1/2%	
Furniture and Fixtures, Store and Office	10%	
Organization Expense	5%	of the original cost
Tools Inventory	$825.50	

Allocate the following charges as indicated:

Insurance: $2,196.43 to Factory and $519.24 to Selling.

Taxes: $1,012.24 to Factory and $411.23 to Selling.

Receiving and shipping: 3/4 to Shipping and 1/4 to Receiving, of which 40% to Desks and Tables, 35% to Bookcases and Filing Cabinets, 25% to Raw Materials.

In-freight and delivery: $4,400 to Desks and Tables, $3,500 to Bookcases and Filing Cabinets, $750 to Raw Materials.

Rent: $6,400 to Selling, $1,500 to Office.

Light, heat, and power: 92% to Factory, 6% to Selling, 2% to Office.

Create a reserve for doubtful accounts of 1/2% of all gross sales for the period. It is decided to take into account as an additional expense chargeable to this period 1 1/4% of outstanding trade debtors for sales discounts that will probably still be taken advantage of.

Close Loss on Sale of Dynamo against Surplus.

Close Fire Loss and Strike Costs to Surplus.

In closing, bond discount is to be amortized on a straight line basis, i.e., 1/40 each half-year. Take account of accrued amortization for the two-month period since November 1.

The experimental laboratory has succeeded in securing a patent for a listing and adding device for use with the Knoxfraud, of much simpler operation and cheaper to manufacture, than the one on which royalty is being paid. Hence, when the royalty contract expires it will not be renewed. Capitalize the laboratory expense to date.

A very careful analysis of the advertising costs shows an expenditure of $78,445.25 above normal. It is decided to transfer this to Good-Will.

Claims for damage have been filed against the railways amounting to $1,025.10. (Bring this on to the books with an offsetting reserve of the same amount.)

A dividend of 12 1/2% on the common is declared payable January 20, 1918.

Take into consideration the sinking fund requirements of the bond mortgage.

Instructions

On the condensed balance sheet, show all receivables (other than the claims against customers on note and open account) under the title "Other Accounts

Receivable," immediately following but separate from the current asset group. Carry all inventories under one title "Inventories." All fixed assets, except the intangibles, show under the title "Plant and Equipment," from which show deducted the total of the various depreciation reserves. List the intangible assets individually. Set up supporting schedules for all condensations effected. The profit and loss statement must have supporting schedules, also.

Although some inaccuracies result from using the bases indicated for the calculation of depreciation, they are insignificant. Note that the basis for writing down patents has been changed since the last period. This indicates a policy of intention to secure patented improvements on the various devices owned. (See Chapter XVIII for discussion of this point.)

Declaration of a dividend on common stock means, of course, that the required dividends on both issues of preferred have also been authorized. The student is required to calculate the rates on these.

XXVII–XXVIII

Practice Data

Adjust and close the books in accordance with the data given in assignments XXV—XXVI.

Treat the account "Knoxfrauds Manufactured" as a purchase account as explained in assignment XXIV.

Handle the estimate of 1 1/4% of trade debtors for expected sales discounts, as an accrued item in Sales Discount account.

There is no accrual on sinking fund provisions, inasmuch as the trust deed requires that payment out of profits be made at the close of the fiscal period and not at the time bond interest falls due.

The Knox-Davis blanks, with all statements, are due at the time of the last class period and must be turned in whether completed or not, if credit is desired for the course.

APPENDIX B

PRACTICE WORK FOR STUDENT—SECOND HALF-YEAR

In this appendix enough material is furnished for approximately 30 hours of classroom work. If more time is devoted to the work, this material may well be supplemented by drawing on Appendix C.

The student will find it convenient to have a supply of standard-ruled journal paper and of analysis paper—10- or 12-column—to be used for working sheets.

For all formal statement work prepared for presentation to the instructor, it is suggested that plain, unruled paper of uniform size (8 1/2 x 11 inches, letter size) be used. The chief purpose of this second semester's work is to give training in analysis—the ability to grasp the essentials of a given set of conditions and to see the significance and interrelations of the various parts. Next in importance to this is the ability to draw up a statement or statements which shall present clearly and in proper order the results of your analysis. The student should develop the habit of thinking clearly and setting forth conclusions in intelligent, clean-cut form. In ninety-nine cases out of every hundred, slovenly, sloppy work evidences a like characteristic of reasoning ability. If the course develops clear thinking and clean-cut presentation, it will have accomplished its two main purposes.

The problems have a more or less direct relation to Chapters XXVIII to XXXV of this volume, but of course they are not limited to the principles developed there. Many of the problems are somewhat closely con-

nected and relate to each other while some are entirely disconnected. They are graded, proceeding from the simpler to the more difficult by easy stages. Where necessary, instructions are given, although the student is thrown more on his own resources than previously. In the solution of problems involving trial balance, adjustments, and financial statements, the method of the accountant's working sheet will be found to offer the best procedure. See Volume I, Chapter XLIII, pages 386–391, for explanation and illustration.

As to the method of attacking problems, the student is perhaps already aware that before attempting solution it is best to read and study the problem carefully to determine exactly what is called for and then to decide as to the treatment of all doubtful points and items—what they mean and how they must be handled to arrive at what is called for. With these preliminary points cleared up, the solution itself is mostly a matter of accuracy and form. In all problems calling for financial statements, the trial balance should first be tested as to the equality of debits and credits. As stated above, the method of the work sheet is usually the best method for summarizing results, although sometimes skeleton ledger accounts will be found helpful in order to visualize the effect of entries and to trace their course through the accounts. Only painstaking work and the solution of many problems will produce facility and confidence in work of this kind.

The instructor should direct the student to take Problem XXVIII under consideration throughout the whole semester, in order adequately to get his material together and into shape. It may well be treated as a thesis for the semester.

I

At the close of the fiscal year ended June 30, 1913, Thomas J. Howe called you in to determine his financial condition. From the books, which were kept on the single-entry plan, and from other sources, you gathered the following information:

The ledger contained the following accounts: Thomas J. Howe, Capital, $4,000; Thomas J. Howe, Drawing (debit) $472; Expense (debit) $184; Sales $18,945; Purchases $17,450; customers' accounts considered good: H. E. Brewer $110; D. Cohen $85; Will Benton $190; Linn Bros. $77; customers' accounts which have proved uncollectible and are considered bad: Peter Metz $43; L. C. Fish $101; creditors' accounts: Stone Bros. $942; Little & Co. $1,082; H. Hudson $1,220; also accounts with Salaries $375; Advertising $112.

Other sources yielded this information: stock of goods on hand inventoried at $5,641; horses and wagons estimated as worth $730; store fixtures $1,114; rent of store building unpaid $300; clerks' salaries unpaid $84; notes receivable $2,300; notes payable outstanding (non-interest bearing) $2,400. Bill of goods received from Stone Bros., which has been included in the inventory but which has not been entered in Stone Bros.' account, $193; interest accrued on notes receivable $16; cash in the bank and safe $1,724.

It was found that the following information was available for determining his financial condition as at the close of the preceding fiscal year, June 30, 1912: cash $1,478; notes receivable $500; notes payable $800; Howe's capital $4,000; store fixtures $900; inventory of goods in stock $2,800; horses and wagons at an estimated value of $800; customers' accounts total $2,314; creditors' accounts total $3,609.

From the foregoing prepare:

(a) Statement of financial condition of Thomas J. Howe as of June 30, 1913.

(b) Statement showing the amount of profit made or loss sustained for the fiscal year ended June 30, 1913.

(c) Statement setting forth in numerical order the advantages of double-entry over single-entry accounting systems.

(d) As a result of your convincing argument Mr. Howe has decided to change his system of accounting from single- to double-entry. Prepare the necessary entries to change the accounting system to double-entry, continuing the use of the old ledger and providing for controlling accounts for customers and creditors.

Instructions

See Volume I, Chapters LV and LVI.

II

The following trial balance was taken from the books of Thomas J. Howe at the close of the next fiscal year.

THOMAS J. HOWE

TRIAL BALANCE, JUNE 30, 1914

Cash	$894.00
Notes Receivable	5,000.00

Accounts Receivable	18,000.00	
Thomas J. Howe, Capital		6,000.00
Thomas J. Howe, Drawing	560.00	
Notes Payable		3,000.00
Accounts Payable		15,640.00
Purchases	77,100.00	
Sales		93,620.00
Merchandise Inventory, June 30, 1913	5,641.00	
Purchase Discounts		743.00
Sales Discounts	1,420.00	
Freight Inward	2,884.00	
Insurance	300.00	
Interest Earned		146.00
Returned Sales	930.00	
Returned Purchases		760.00
Furniture and Fixtures	2,000.00	
Horses, Wagons, and Harness	1,200.00	
Rent	1,500.00	
Advertising	300.00	
Expense	180.00	
Salaries	1,600.00	
Commissions Paid on Sales	400.00	
	$119,909.00	$119,909.00

At this date, you will find that the following items must be considered to determine the financial condition of Mr. Howe: Merchandise inventory $2,470; insurance unexpired $100; interest accrued on notes receivable $66; interest accrued on notes payable $30; he owes for two months' rent $300.

1% of net sales is to be set aside as a reserve for uncollectible accounts. Furniture and fixtures are to be written off in the amount of 10%. Provide for a reserve of 10% for depreciation of horses, wagons, and harness.

Advertising carried forward to the next period $75; unused stationery and other expense items $42; commissions on sales due but unpaid $90.

(a) Prepare the working sheet.

(b) Construct the balance sheet as of June 30, 1914.

(c) Prepare profit and loss statement—percentages based on net sales.

(d) Write the adjusting and closing journal entries.

III

Joseph Mason was Howe's greatest competitor. After getting better acquainted with each other, Howe conceived the plan of uniting their capital and services in the form of a partnership. After some discussion it was decided

to operate as Howe & Mason, the capital to consist of $12,000, of which Howe is to contribute $8,000 in the form of his existing business. The excess of Howe's net worth, as shown by the balance sheet of June 30, 1914, over $8,000, his investment in the partnership, is to be considered as a loan to the firm. Mason is to transfer his entire business—assets and liabilities—and sufficient cash to make his net investment $4,000, or one-third of the total capitalization.

As of July 1, 1914, the date of the formation of the partnership, Mason's assets and liabilities were as follows: cash $1,340; accounts receivable $2,460; notes receivable $1,120; stock of goods inventoried at $4,590; furniture and fixtures appraised at $1,316; accounts payable $5,280; notes payable $1,770; rent unpaid $320.

Prepare journal entries to give effect to the foregoing on Howe's books, which are to be continued for the partnership.

During the year Charles Palmer purchased one-third interest in the capital and profits of the firm by contributing $9,000 in cash. The total capital of the new firm is set at $18,000. Business is to be conducted under the old firm name, the old partners retaining their respective capital investments. Howe's loan account is to be continued at its original amount.

Write the necessary journal entries to record on the books of the firm the admission of the new partner and the adjustments between Howe and Mason.

Before determining the profits for the year Palmer assigns his interest in the capital and profits of the firm to John H. Bartlett, who settles directly with Palmer for $10,000. Howe and Mason agree to admit Bartlett as a partner in place of Palmer and new articles of partnership are signed by the members.

Give journal entries to show the effect on the partnership books.

Instructions

Note carefully the terms under which Palmer is admitted. His capital will appear on the books as $6,000. Make the adjustment through a goodwill account. Howe and Mason withdraw cash to effect their respective adjustments.

IV

The business has been in operation as a partnership one year. At the conclusion of this period the trial balance given below shows the condition of the accounts on the books of the firm.

HOWE & MASON

TRIAL BALANCE, JUNE 30, 1915

Cash	$1,872.00	
Accounts Receivable	22,945.00	
Reserve for Bad Debts		$384.00

Horses, Wagons, and Harness	3,100.00	
Reserve for Depreciation, Horses, Wagons, and Harness		120.00
Furniture and Fixtures	5,390.00	
Merchandise Inventory June 30, 1914	7,060.00	
Notes Receivable	12,456.00	
Notes Receivable Discounted		4,780.00
Accounts Payable		24,220.00
Notes Payable		8,500.00
Thomas J. Howe, Loan		1,540.10
Thomas J. Howe, Capital		8,000.00
Thomas J. Howe, Drawing	2,440.00	
Joseph Mason, Capital		4,000.00
Joseph Mason, Drawing	1,710.00	
John H. Bartlett, Capital		6,000.00
Sales		158,335.00
Returned Sales and Allowances	3,890.00	
Purchases	144,244.60	
Freight Inward	3,518.50	
Warehouse Labor and Supplies	1,002.00	
Returned Purchases and Allowances		2,714.00
Salesmen's Salaries	2,215.00	
Advertising	872.00	
Freight and Cartage Outward	316.00	
Office Salaries	2,619.00	
Postage	82.00	
Stationery and Printing	116.00	
Legal Expenses	85.00	
Office Heat and Light	212.00	
Interest Earned		117.00
Interest on Bank Balances		14.00
Cash Discount on Sales	2,306.00	
Cash Discount on Purchases		3,041.00
Interest Paid	143.00	
Telephone and Telegrams	17.00	
Insurance	500.00	
Rent	2,200.00	
Miscellaneous Expense	74.00	
Commissions on Sales	380.00	
	$221,765.10	$221,765.10

Additional information is as follows:

Merchandise inventory, June 30, 1915, $13,260; stationery and printed matter on hand $35; unused postage stamps $17.00. One-fourth of advertising is to be applied to the next year. Warehouse labor of $130, due but unpaid,

has not been recorded on the books. Interest accrued but not recorded: on notes receivable $71, on notes payable $47, on bank balances $8. Rent prepaid $200.

You find that no record has been made on the books for $750 worth of merchandise received from Marsh & Co., but that these goods have been included in the current inventory. Four-fifths of the insurance has expired. Interest is to be accrued on Howe's Loan account at 6%. Through error $100 of commissions on sales has been charged to Salesmen's Salaries account.

It has been decided to provide for depreciation and reserves as follows: 10% reserve on reducing balances for horses, wagons, and harness; a reserve of 1/2% on sales for uncollectible accounts; by writing off 10% of the book value of furniture and fixtures.

Profits and losses are to be shared according to the original investments of the partners.

Give due consideration to the foregoing and construct:

(a) The working sheet as of June 30, 1915.

(b) Balance sheet.

(c) Profit and loss statement containing percentages on sales.

(d) Adjusting and closing journal entries.

Instructions

Note the bases for the various depreciation reserves and that depreciation on furniture and fixtures is to be *written off* the books, i.e., no reserve is to be set up.

V

July 1, 1915, the capital of the firm of Howe & Mason is increased to $30,000 and Wm. R. Gray is admitted as a partner.

Among other things, the articles of copartnership provide that:

Business is to be conducted under the firm name of Howe, Mason & Co.

The representation of the partners in the capital of the firm shall be Howe, 8/20; Mason, 5/20; Bartlett, 3/20; Gray, 4/20.

Profits and losses shall be shared according to the capital representation of the partners as at the time of formation of this partnership. In the event of the death of a partner an accounting shall be made at the close of the fiscal year in which the death occurs and the value of the deceased partner's estate determined as of the date of his death by prorating profits on a monthly basis.

Gray is to pay for one-fifth interest in the capital of the firm by giving the firm his note for $2,000 and $4,000 in cash. The difference in capital is to be supplied by good-will, which is to be distributed among the three partners constituting the firm of Howe & Mason on the basis of their original capital representations in that firm, i.e., in the ratio of $8,000, $4,000, $6,000 respectively.

After adjustments have been made, the respective partners' drawing accounts shall be settled in cash.

(a) Write the necessary journal entries to admit Gray as a partner and to adjust the several partners' capital and drawing accounts.

(b) Set up the capital and drawing accounts of all the partners.

Instructions

The partnership agreement is to be interpreted to mean that, after distribution of the good-will, Howe, Mason, and Bartlett are to contribute or withdraw cash necessary to give them the respective capital shares agreed upon for the new firm.

VI

Wm. R. Gray died November 30, 1917, two years and five months after he became a partner in the firm of Howe, Mason & Co. As provided in the articles of partnership, the business continued until the end of the fiscal year, June 30, 1918, at which date an accounting was made on the basis of the following trial balance and subjoined data.

HOWE, MASON & CO.

TRIAL BALANCE, JUNE 30, 1918

Land	$10,000.00	
Buildings	40,000.00	
Reserve for Depreciation, Buildings		$2,000.00
Delivery Equipment	6,000.00	
Reserve for Depreciation, Equipment		1,200.00
Furniture and Fixtures	5,990.00	
Good-Will	6,000.00	
Cash	2,010.00	
Accounts Receivable	36,000.00	
Reserve for Bad Debts		1,460.00
Notes Receivable	7,500.00	
Notes Receivable Discounted		4,500.00
Merchandise Inventory—Bags, June 30, 1917	6,770.00	
Merchandise Inventory—Trunks, June 30, 1917	12,410.00	
Mortgage Payable		25,000.00
Accounts Payable		26,000.00
Notes Payable		14,400.00
Thomas J. Howe, Loan		2,000.00
Thomas J. Howe, Capital		12,000.00
Thomas J. Howe, Drawing	1,210.00	
Joseph Mason, Capital		7,500.00
John H. Bartlett, Capital		4,500.00
Wm. R, Gray, Capital		6,000.00

Wm. R. Gray, Drawing	$1,100.00	
Sales—Bags		$71,432.00
Returned Sales and Allowances—Bags	3,690.00	
Sales—Trunks		222,386.00
Returned Sales and Allowances—Trunks	1,508.00	
Purchases—Bags	59,315.00	
Returned Purchases and Allowances—Bags		4,230.00
Purchases—Trunks	184,824.00	
Returned Purchases and Allowances—Trunks		2,716.00
Freight Inward	7,020.00	
Warehouse Labor and Supplies	1,875.00	
Salesmen's Salaries	4,303.00	
Salesmen's Traveling Expenses	2,809.00	
Advertising	2,146.00	
Freight and Cartage Outward	1,154.00	
Commissions on Sales	981.00	
Office Salaries	2,274.00	
Miscellaneous Office Supplies	170.00	
Legal Expense	200.00	
Postage	127.00	
Telephones and Telegrams	93.00	
Interest Earned on Notes Receivable		385.00
Cash Discounts on Purchases		3,547.00
Rent Collected		1,500.00
Taxes	1,312.00	
Insurance	680.00	
Interest Paid	472.00	
Cash Discounts on Sales	2,789.00	
Collection and Exchange	24.00	
	$412,756.00	$412,756.00

The books have been closed at the end of each fiscal year.

Merchandise inventories, June 30, 1918, bags $2,431, trunks $4,380. A reserve of 1/2% of the sales is to be provided for bad debts. The furniture and fixtures are to be written down 10% of their book value.

The old account of Horses, Wagons, and Harness was closed and Delivery Equipment opened when the horses were sold and an automobile service installed. It is deemed advisable to increase the reserve by 10% of the declining value.

An additional 5% of the original cost of the buildings will be set aside as a reserve for depreciation.

Accruals are as follows: taxes $370; interest on mortgage 9 months at 5%; interest on notes receivable $80; interest on notes payable $520; interest on bank balances $61.20; office salaries $150; interest on Howe loan 6% for one year.

Advances made to salesmen on salaries $400; tenants paid $300 in advance rent; unused postage $32; miscellaneous office supplies on hand $30; one-fourth of the insurance remains in force; advertising deferred $600. Distribute in-freight and warehouse labor on the basis of gross purchases.

Profits and losses are to be shared according to the original investments, as stated in the articles of partnership.

One clause in the partnership agreement entered into July 1, 1915, read as follows:

"In the event of dissolution, good-will is to be increased at the rate of 24% per year of the original value." Take this into account now as effective for 2 years and 5 months.

As of June 30, 1918:

(a) Prepare working sheet.

(b) Construct balance sheet.

(c) Construct income statement.

(d) Write the closing journal entries.

(e) The three remaining partners, as a firm, take over the interest of Gray's estate, paying therefore cash $1,000 and three equal notes with interest at 6%, maturing in one, two, and three years, for the balance.

(f) Write entries which will adjust the partnership interest represented by Gray's estate and show settlement of that interest.

VII

The Ironclad Trunk Corporation was organized and incorporated November 1, 1912, for the purpose of manufacturing trunks, bags, and brushes of all kinds and dealing in traveling requisites of every description.

The authorized capital of $100,000 consists of 750 shares of common stock having a par value of $100 per share, and 250 shares of preferred stock of the same par value.

The incorporators subscribed for at par and paid for the common stock as indicated below:

Arthur Butler, 250 shares in cash.

A. J. Lindsey, 150 shares by transferring the following assets and liabilities: cash $3,000; accounts receivable $7,000; notes payable $3,000; notes receivable $2,000; stock of raw material $9,000; accounts payable $5,000; furniture and fixtures $2,000.

Edward Harrison, 100 shares by giving bill of sale of machinery appraised at $6,000; the balance to be paid in one year.

Charles E. Wells, 50 shares by his personal note for $5,000 with interest at 6%, due in one year.

In connection with the organization of the corporation the following items were paid in cash: corporation tax $50; filing fees $20; recording fees $12; legal expenses $500.

(a) Write journal entries to record this information on the books of the corporation.

(b) Prepare a balance sheet showing the condition of the corporation at this date.

Instructions

Refer to trial balance of VIII to see the method pursued in making the opening entries for the corporation.

VIII

The following trial balance was taken from the books of the Ironclad Trunk Corporation at the close of its first year. From it and the additional notations appended thereto you are asked to furnish:

(a) Working sheet.
(b) Balance sheet.
(c) Income statement.
(d) Closing journal entries.

IRONCLAD TRUNK CORPORATION

TRIAL BALANCE, OCTOBER 31, 1913

Fifth National Bank	$7,940.00	
Imprest Cash	200.00	
Land	10,000.00	
Buildings	30,000.00	
Machinery and Tools	25,000.00	
Materials and Supplies, October 31, 1912	9,000.00	
Accounts Receivable	12,000.00	
Notes Receivable	10,000.00	
Notes Receivable Discounted		$4,000.00
Advertising Unexpired	1,000.00	
Insurance Prepaid	200.00	
Purchases—Material	108,000.00	
Notes Payable		18,000.00
Taxes Accrued		200.00
Wages Accrued		3,400.00
Returned Sales	2,200.00	
Returned Purchases		2,800.00
Factory Supplies	2,600.00	
Labor—Direct	70,000.00	
Superintendence	4,000.00	

Heat, Light, and Power	12,000.00	
Miscellaneous Wages—Factory	3,620.00	
Factory Expense	400.00	
Accounts Payable		26,000.00
Reserve for Depreciation, Buildings		3,000.00
Interest Accrued on Notes Payable		700.00
Sales		214,706.00
Interest on Bank Balances		46.00
Freight Inward	2,770.00	
General Expense	1,920.00	
Taxes	350.00	
Rent of Building		1,000.00
Reserve for Depreciation, Machinery		2,500.00
Salesmen's Salaries	4,200.00	
Repairs to Machinery	630.00	
Reserve for Bad Debts		1,000.00
Cash Discount on Purchases		3,110.00
Interest Earned		418.00
Commissions—Salesmen	3,600.00	
Office Salaries	2,800.00	
Insurance	150.00	
Freight Outward	1,100.00	
Bad Debts	1,000.00	
Furniture and Fixtures	3,700.00	
Authorized Capital Stock—Preferred		25,000.00
Authorized Capital Stock—Common		75,000.00
Unissued Stock—Preferred	12,000.00	
Unissued Stock—Common	20,000.00	
Subscriptions	4,000.00	
Notes Received—Stock Subscription	6,000.00	
Bonding Employees—Office	100.00	
Cash Discount on Sales	2,300.00	
Depreciation	5,500.00	
Advertising	600.00	
	$380,880.00	$380,880.00

You are presented with properly certified statements showing the present inventory of materials and supplies to be $16,300; goods in process $1,400; finished goods $9,800, and factory supplies in storeroom $700. It has been estimated that $200 of the freight inward is applicable to the present inventory of materials and supplies. Salesmen have been overpaid $600 on their salary accounts. Items aggregating $400 which have been charged to Expense are found to be on hand. In the customers ledger you find accounts having credit balances amounting to $1,500, and uncollectible accounts to the amount of $710. You decide to write down furniture and fixtures 10%.

Instructions

It will be noted that the trial balance presented indicates that the books have been partially adjusted. The uncollectible accounts of $710 were taken into consideration when the estimate for reserve for doubtful accounts was made. Charge them against the reserve.

IX

After Edward S. White, the inventor of a process for constructing a superior fiber for trunk-making, demonstrated the practicability of his process, the Ironclad Trunk Corporation purchased all his rights in patents granted by United States, Canada, Mexico, and Great Britain. The sale went into effect January 1, 1914. The consideration of $100,000 was made payable $60,000 in cash, $20,000 in bonds at par, and $20,000 in two-year interest-bearing notes of the company.

To provide for payment of the patent, the corporation, after duly complying with all legal requirements, issued $100,000 in 20-year 6% sinking fund bonds, under date of December 1, 1913, interest payable June 1 and December 1. During the month $70,000 of the bonds were sold for cash on a 7% basis, and the remainder at the same price during the following month.

The trust agreement provided that a sinking fund should be established by a charge against profits every interest period, of an amount sufficient on a 4% compound-interest basis—interest compounded semiannually—to retire the bonds at maturity. The fund was placed in a trust company for accumulation.

(a) Give journal entries to effect the foregoing on the corporation's books.

(b) Prepare a statement setting forth the condition of the sinking fund at each interest date during the last five years previous to maturity of the bonds.

Instructions

It will be noted that the problem requires the calculation of the selling price of the bonds, i.e., their valuation on the given basis. This may be found from bond tables but preferably by the formula of Chapter XV. The sinking fund may also be found from tables or the formula of Chapter XXV.

($1.035^{40}=3.95925972$; $1.02^{31}=1.84758882$; and $1.02^{40}=2.20803966$)

X

(a) Prepare an amortization schedule covering the first five years life of the bonds.

(b) Write the journal entries for:

1. The first sinking fund instalment.
2. The first bond interest payment.
3. The liberation of the sinking fund at maturity.
4. The retirement of the bonds at maturity.

Instructions

Averaging the bonds sold at par with those sold on a 7% basis places the whole issue approximately on a 6.787% basis. Use that as the effective rate for the amortization schedule.

XI

Several customers of the Ironclad Trunk Corporation protested vigorously against paying their accounts when we sent them statements requesting payment. They denied that they owed the amounts shown on our books and produced receipts and canceled checks to prove their contentions. In many cases we found that the receipts and checks were dated several weeks before the credits appeared on the books and in some cases no credits had been entered.

The manager immediately requested Leroy Swift, a certified public accountant, to make a thorough audit. Among other things, the accountant's report disclosed the following:

The petty cash sales had been entered in the cash book at smaller amounts than the records showed. The discrepancy between cash book and sales records was: trunks $1,040, bags $360.

Freight bills had been raised $300. The Railroad Company had been overpaid this amount but refunded it on the request of our bookkeeper, S. O. Bright, who cashed the checks and retained the money.

The Customers column and Net Cash column in the cash book were short-footed $8,430. To make the balance in the Customers' controlling account agree with the total of the individual accounts, the sales book was short-footed the same amount—bags $2,790, and trunks $5,640.

Credits to customers' accounts in the amount of $4,740 were missing. Not a trace of a record for this amount or any part thereof could be found in any book.

Leather novelties amounting to $1,560 had been sold from the National Novelty Co.'s consignment but no remittance had been made. The only record of the transactions were duplicate bills of the sales made. The money received for these sales had not been deposited and was appropriated by the embezzler.

Nine productive labor pay-rolls had been over-footed $100 each.

A $1,000 note receivable had been transferred by forged indorsement as $950 part payment on a $1,300 automobile bought by the embezzler for his personal use. The Self-Starter Auto Co. were the holders of the note.

Checks for $1,800 were drawn to the order of fictitious creditors. The indorsements were forged by Bright and the checks duly passed through the bank.

The relatives and friends of Bright agreed to repay the company the greater part or all of the losses due to his embezzlement. In order to provide funds for

immediate needs the present stockholders donate 20% of their present holdings of stock, both common and preferred.

Prepare journal entries to give effect to the foregoing as of December 13, 1913.

XII

The City of Oswego donated to the Ironclad Trunk Corporation a building site having a market value of $40,000, on condition that the company build a factory worth at least $100,000 and operate at least five years, employing not less than 100 factory operators.

To take advantage of this offer the corporation obtained permission to issue $100,000 of 7% cumulative preferred stock having a par value of $100 per share, dividends payable semiannually. A condition of the issue made the stock redeemable by lot at the call of the company, the shareholder having the option of receiving 110 in cash or 120 in common stock. A redemption fund is to be created out of profits at the yearly rate of 10% of the issue.

The entire issue was sold for cash May 1, 1914 at 100½. On the same day 101 Blue Valley R. R. 4% bonds, par $1,000, were purchased at 98 with accumulated interest. The bonds are payable July 1, 1924; interest payable January 1 and July 1. The entire bond investment was set aside as a building fund.

Record as of July 31, 1914, the transactions that took place in connection with the erection of the building and the removal from the old to the new plant.

The corporation paid taxes of $400 on the building site and partially completed building. Of this amount $100 applied to the uncompleted building. During the period the manager devoted two-thirds of his time to superintending building operations and one-third to supervising installation of machinery and equipment. His salary amounted to $3,000.

The old land and building and part of the machinery were sold to the American Harness Company for $49,000, payable $11,000 in cash and the balance covered by mortgage for five years at 6%. The amount of the sale was distributed—land $12,000, building $29,000, machinery and tools $8,000. At the date of the sale the accounts appeared on the books as follows: land $10,000; buildings $31,000, with a reserve of $3,000 and nine months' depreciation on a 5% basis still to be provided for; machinery and tools $25,000 with a reserve for depreciation of $2,500. The machinery and tools sold cost $12,000, on which depreciation has been booked for one year at 10% on original cost. Take into consideration an additional period of nine months.

The remaining machinery, having been designed especially for our use, could not be sold for more than one-half its cost; accordingly, the directors had the machines moved to the new plant. The old machines appear on the books at a cost of $13,000, with reserve recorded for one year at 10% and nine months' depreciation still to be booked. Additional expenses of removing were as

follows: dismantling $40; crating, drayage and freight $170; labor for setting up machines $60; superintendent's time for moving and installation $150.

The manager, not being sure as to the amount at which to book the machinery, obtained an estimate to duplicate this particular machinery and put it in running order for $9,000.

(a) Write the journal entries to place the above data on the company's books.

(b) Explain briefly the theory underlying your treatment of the old machinery transferred to the new plant.

Instructions

See Chapters V, XI, XVI, and XVII, where most of these matters are discussed.

XIII–XIV

The directors of the Ironclad Trunk Corporation, after receiving full authority from the stockholders, set December 31 as the close of the fiscal year, thereby making the present fiscal period fourteen months instead of one year.

From the following trial balance and supplementary data prepare:

(a) Condensed balance sheet, supported by schedules.

(b) Condensed income statement, supported by schedules.

TRIAL BALANCE, DECEMBER 31, 1918

Land Donated	$40,000.00	
Buildings	129,000.00	
Machinery	47,000.00	
Tools	4,680.00	
Delivery Equipment	5,900.00	
Furniture and Fixtures	2,300.00	
Patents	108,000.00	
Loans to Employees	6,320.00	
Dividend No. 6, Cumulative Preferred Stock (Payable January 10, 1919)		$1,400.00
Dividend No. 7, Preferred Stock (Payable January 10, 1919)		1,500.00
Dividend No. 8, Common Stock (Payable January 10, 1919)		3,000.00
Interest Accrued on Bonds Receivable	3,200.00	
Freight Inward	4,334.82	
Freight and Express Outward		2,613.07
Royal Leather Preferred Stock (100 shares)	7,480.00	
Fire Loss	6,000.00	
Strike Loss	4,200.00	
Credit Department Expenses	2,950.40	

Pamphlets, Price Lists, and Posters	973.00	
Advertising Space Prepaid	260.00	
Advertising	731.40	
Directors' Fees	200.00	
Entertainment of Customers' Agents	174.50	
Charity	60.00	
Workmen's Compensation Insurance Premiums	640.00	
Rent from Houses for Employees		2,390.00
Maintenance of Houses for Employees	318.30	
Watchmen's Wages	700.00	
Bonuses Paid to Employees (Direct Labor)	1,980.10	
Experimental Expense	2,300.00	
Contingent Royalties Fund	2,140.00	
Mercantile Agency Reports	80.00	
Accounting Expense	500.00	
Legal Expenses	300.00	
Claims Against Transportation Companies	3,792.00	
Bright—Special	14,500.00	
Suspense		370.00
Delivery Expense	1,194.50	
Due to Consignors		4,387.20
Imprest Cash	200.00	
Raw Materials Inventory, October 31, 1917	21,304.00	
Trade Customers	108,946.63	
Finished Goods Inventory, October 31, 1917	22,100.00	
Notes Receivable	18,000.00	
Notes Receivable Discounted		3,460.00
Insurance Prepaid	200.00	
Insurance	480.00	
Raw Materials Purchases	240,000.00	
Accrued Office Salaries		760.40
Accrued Taxes		1,220.00
Accrued Advertising		190.00
Sales, Trunks		416,775.00
Sales, Bags		93,518.80
Returned Sales, Trunks	1,750.00	
Returned Sales, Bags	619.00	
Returned Purchases, Raw Material		2,320.00
Returned Purchases, Bags		974.00
Factory Supplies	2,436.00	
Labor, Direct	78,751.20	
Labor, Indirect	3,497.00	
Factory Superintendence	3,200.00	
Heat, Light, and Power Service	7,147.10	
Miscellaneous Factory Expense	283.14	

Trade Creditors		40,309.00
Reserve for Depreciation, Buildings		13,810.00
Reserve for Depreciation, Machinery		18,411.00
Reserve for Depreciation, Delivery Equipment		2,300.00
Reserve for Depreciation, Furniture and Fixtures		750.00
Reserve for Expiration of Patents		21,000.00
Reserve for Sinking Fund—Bonds of 1933		18,128.08
Reserve for Contingent Royalties		2,140.00
Reserve for Supersession of Patents		20,000.00
Interest Earned		7,810.00
Interest Paid	11,200.00	
Office Expense	1,873.38	
Warehouse Labor on Raw Materials	1,143.26	
Salesmen's Salaries	4,500.00	
Salesmen's Commissions	12,305.40	
Repairs to Machinery	1,748.80	
Repairs to Buildings	3,755.50	
Reserve for Doubtful Accounts		3,330.70
Discount on Purchases		3,751.30
Discount on Sales	6,400.00	
Office Salaries	7,974.00	
Provision for Doubtful Accounts	2,379.12	
Capital Stock, Cumulative Preferred		100,000.00
Capital Stock, Preferred		50,000.00
Capital Stock, Common		200,000.00
Unissued Stock, Common	10,000.00	
Treasury Stock, Common	40,000.00	
Assessment for Street Improvements (Donated Land)	2,000.00	
Bonding Employees—Office	200.00	
Surplus		41,394.49
Drawings and Patterns	4,606.00	
Mortgage Receivable (due 1923)	38,000.00	
Accrued Pay-Roll		957.75
Reserve for Land Donated		40,000.00
Bonds Payable		100,000.00
Employees' Pension Fund	47,500.00	
Reserve for Employees' Pension Fund		47,500.00
Discount on Bonds Payable	7,332.33	
Wrapping and Crating Supplies	1,418.90	
Ralston National Bank	17,841.53	
Bond Sinking Fund	18,128.08	
Redemption Fund—Cumulative Preferred Stock	40,000.00	
Reserve for Redemption of Cumulative Preferred Stock		40,000.00

Houses and Land for Employees..............	$24,600.00	
Purchases—Bags..............................	91,360.00	
Trunks in Process, October 31, 1917...........	4,984.20	
Commissions Earned..........................		$564.80
Notes Payable...............................		7,108.00
Taxes.......................................	1,520.00	
Accrued Interest Receivable..................	250.00	
	$1,314,143.59	$1,314,143.59

A careful investigation disclosed the following:

Interim dividends had been paid May 15, 1918: No. 5, cumulative preferred stock, $1,400; No. 6, preferred stock, $1,500; No. 7, common stock, $3,000.

The Royal Leather Co. stock now has a market value of $90 per share.

Items to be distributed:

Account	Distribution
Buildings Expenses........	Selling 1/4; Office 1/8; Factory 5/8.
Furniture & Fixtures Expense	Selling 1/4; Office 1/8; Factory 5/8.
Light, Heat, and Power.....	Selling $842.90; Office $392; Factory $5,912.20.
Freight Inward............	Materials 3/4; Bags 1/4.
Taxes....................	Building and Equipment $1,300; Employees' Houses $220.

The Suspense account was credited for $370 received from a former customer in payment of an old account which had been charged off as uncollectible some years ago.

In many cases notes payable have been issued with interest included in the face of the notes. Of this interest $290 is applicable to the succeeding period.

Provision for contingent royalties was begun two years ago in anticipation of an unfavorable decision in an action brought against us for infringement of patents. Recently the action was decided in our favor.

Legal expenses of $1,500 for prosecution of infringements of patents had been charged against profits at the close of the previous year. Of the present legal expenses, $100 was paid for services in protecting patents.

Inventories as at December 31, 1918:

Wrapping and Crating Supplies Unused............	$387.50
Factory Supplies on Hand..........................	718.50
Pamphlets, Price Lists, and Posters on Hand........	450.00
Workmen's Compensation Insurance Prepaid........	160.00
Bags in Stock..................................	12,542.00
Trunks in Stock................................	28,050.00
Raw Materials..................................	8,000.00

Trunks in Process as under: materials $6,497.10, direct labor $2,680.40, manufacturing expense $976.50

Fire Loss was debited for $6,000 which represents damage to buildings of $4,000 and loss of machinery of $2,000 after making due allowance for depre-

ciation. Just after the trial balance was made a check for $5,400 was received from the insurance company in full settlement of our claims for fire damage.

The Repairs to Buildings account contains $3,500 of charges for replacing the parts destroyed by fire.

Provision for reserve for depreciation is to be made on a straight line basis, at the following yearly rate: buildings 5%; machinery 10%; delivery equipment 12%; furniture and fixtures 12%.

It was deemed advisable to write off 20% of the accounts of Tools, and Drawings and Patterns. Also, to reserve from profits $2,000 for supersession of patents in addition to providing for the reduction in the life of the patent.

Interest has accrued on bonds payable for one month, and there is accrued amortization.

Bright—Special account shows the balance due on Bright's embezzlement. The company holds good collateral in the form of stock for the full amount.

Trunks in Process, October 31, 1917, comprised raw materials $3,115, direct labor $1,120, and factory burden $749.20.

The account, Freight and Express Outward, represented items charged to customers on account of outward freight charges assumed by us and still owing to the transportation companies.

It was ascertained that on Oct. 31, 1917, the patents had 164 months yet to run, and that the policy is to depreciate the value remaining at the end of each fiscal period over the remaining life of the patents.

Royal leather stock was being held because of trade advantages secured thereby.

Claims against transportation companies represented claims for damage acknowledged as good by the companies.

Instructions

In a footnote to the balance sheet call attention to the contingent value of donated land. Extreme conservatism might require the setting aside of a reserve of surplus covering any expenditures on the land, such as assessments for street improvements, inasmuch as the same contingency attaches to them as to the land. So long as a good balance of general surplus is maintained, a special reserve is not usually considered necessary.

Note that both the Contingent Royalty Fund and its reserve are free. Transfer the fund to general cash, and the reserve to surplus.

Note that the reserve for supersession of patents is a reserve created out of surplus and therefore to be treated as a part of net worth. This is, of course, contrary to best practice.

Fire Loss account, as it appears in the trial balance, has been properly charged with the values of the assets destroyed but has not yet been credited with the insurance. Consider carefully the proper booking of the repairs tc buildings on account of the fire.

See Problem XXVI, Appendix A, for instructions as to content of condensed balance sheet. See also Problem XV, this Appendix.

XV

From the information furnished in the preceding problem.

(a) Construct a surplus statement.

(b) Write the adjusting and closing journal entries.

Treat the surplus statement as a schedule supporting the balance sheet.

XVI

Some time ago the stockholders of the A. M. Strong Fiber Co. and the Randall Manufacturing Co. appointed committees on merger. At a joint meeting of the two committees a plan for merger of the two companies was adopted. The stockholders of the respective companies accepted the plan for the joint committee and instructed and authorized their boards of directors to carry out the terms of the merger. The agreement provided that a new corporation be formed to acquire the assets and assume the liabilities of the two companies as shown on their balance sheets of December 31, 1916, except as noted.

The subjoined balance sheets show the conditions of the two companies. The balance sheet of the Randall Co. has already been adjusted to meet the conditions of the merger. The agreement provided, however, that the machinery and tools of the Strong Co. should be taken over at a 10% reduction of their present book valuation; that the book value of the Special War Plant assets be written up $20,000 on account of their adaptability to the regular needs of the merger; and that the reserve for bad debts be increased to $5,000. The surplus, after these adjustments, was reduced to even multiples of $10,000.

A. M. STRONG FIBER CO.

BALANCE SHEET, DECEMBER 31, 1916

Assets		*Liabilities and Capital*	
Machinery	$60,000.00	Notes Payable	$10,000.00
Tools	4,000.00	Accounts Payable	75,000.00
Furniture and Fixtures	7,500.00	Reserve for Bad Debts	3,000.00
Good-Will	150,000.00	Depreciation Reserve for Machinery	7,000.00
Raw Materials	75,000.00	Depreciation Reserve for Furn. and Fixt.	1,500.00
Cash	25,000.00	Depreciation Reserve for War Plant	50,000.00
Notes Receivable	47,500.00	Bonds Payable (6%)	100,000.00
Accounts Receivable	112,500.00	War Munition Bonds (7%)	60,000.00
Special War Plant	130,000.00	Reserve for Sinking Fund	30,000.00
		Capital Stock, Common	150,000.00
		Capital Stock, Preferred (6%)	100,000.00
		Surplus	25,000.00
	$611,500.00		$611,500.00

Randall Manufacturing Co.

Balance Sheet, December 31, 1916

Assets		*Liabilities*	
Land	$90,000.00	Accounts Payable	$35,800.00
Machinery	70,000.00	Notes Payable	20,000.00
Tools	10,000.00	Wages Payable	2,000.00
Motor Trucks	12,000.00	Interest Accrued	1,000.00
Furniture and Fixtures	3,000.00	Reserve for Bad Debts	1,200.00
Patents	60,000.00	Bonds Payable (5%)	100,000.00
Raw Material	14,000.00	Capital Stock, Preferred	50,000.00
Goods in Process	8,000.00	Capital Stock, Common	100,000.00
Finished Goods	19,000.00	Surplus	40,000.00
Cash	8,000.00		
Notes Receivable	16,000.00		
Accounts Receivable	40,000.00		
	$350,000.00		$350,000.00

To effect the reduction of the surplus of the Strong Co. to even multiples of $10,000, by consent of all the stockholders, a special dividend was declared to be shared by both common and preferred stockholders equally on the basis of their respective holdings; and it was further agreed that because the preferred stock carried a participation privilege and preference as to assets, in the distribution of the stock of the merger in payment of the respective interests of the present stockholders, the preferred holders should be considered as being entitled to a pro rata share of the adjusted surplus and good-will.

The net profits for the last period, after deduction therefrom of 8% interest on the respective capitals as adjusted by taking effect of the foregoing items, were capitalized in even thousands of dollars on a 20% basis, to determine the value of the good-will of the two companies; the good-will of the Strong Co. so determined to be in addition to its present good-will. It was ascertained that the net profits for the last period were: Strong Co. $41,750, Randall Co., $30,000.

To carry out the plan of the merger, the Sterling Trunk Corporation was organized with sufficient capital in 7% cumulative preferred stock and common stock to acquire the two other companies, and additional common—to remain unissued for the present—to bring the total capitalization to $750,000.

(a) Submit a statement showing the capitalization of the Sterling Trunk Corporation and the distribution of the capital stock to the other companies.

(b) Prepare the balance sheet of the Sterling Trunk Corporation as of December 31, 1916.

(c) Write the journal entries necessary to adjust the books of the A. M. Strong Fiber Co. and to show its sale and the transfer of its properties to the Sterling Trunk Corporation.

XVII

1. A fire partially destroyed the power plant and equipment of the Zehner Manufacturing Co. on the night of June 30, 1918, entailing a loss of $25,000 on the building, and a 2/3 loss on the equipment. Insurance for one year, with the 80% coinsurance clause, had been purchased January 1, 1918, for $1,775, covering the above property. The policies carried $40,000 on the power house and $100,000 on the power house equipment. On that date—January 1, 1918 —the values of the power house and equipment as shown on the balance sheet were:

Power House	$75,000.00	
Less Depreciation Reserve	12,000.00	$63,000.00
Power House Equipment	$200,000.00	
Less Depreciation Reserve	80,000.00	120,000.00

Depreciation was estimated at the rate of 4% per annum on the power house, and 10% on the equipment.

The insurance company settled on the above basis.

Show the journal entries necessary to make all the adjustments in the accounts.

For the purpose of the problem assume that the rate on the power house was the same as on the equipment.

2. The Colorado Rock Drill Co. authorized the issue of $100,000 of 6% cumulative preferred stock callable by lot in amounts as follows:

$10,000 at the end of 5 years at 107 in cash.
$10,000 at the end of 7 years at 106 in cash.
$15,000 at the end of 10 years at 105 in cash.
$15,000 at the end of 12 years at 104 in cash.
$50,000 at the end of 20 years at par in cash or convertible into the company's common stock at the option of the company.

The entire issue was sold for cash at 103.

Set up the accounts showing the handling of all redemption transactions at the five periods above referred to, with these additional facts: It is the expectation of the company to provide for a permanent increase in capital of $100,000, the amount of the preferred stock issue, during the life of the issue; and at the end of the 20 years, the company exercises its option by converting $30,000 of the preferred into common stock out of unissued common to that amount held in the treasury.

Instructions

Problem 1. Refer to Chapter XXXII.
Problem 2. Refer to Chapters I and XXI.

XVIII

The Sterling Trunk Corporation, hoping to recoup excessive trade losses, engaged more extensively in the manufacture of war supplies. Instead of realizing the enormous anticipated profits, they sustained a severe loss through an explosion followed by a disastrous fire on August 1, 1918. The assets destroyed were only partially protected by insurance because of difficulty in getting a reasonable rate. Also some policies which had expired had not been renewed.

The following information was accepted by the insurance companies as a basis for settlement. Date of policies January 1, 1918.

Name of Property Insured	Original Value of the Property	Reserve for Depreciation Jan. 1, 1918	Yearly Rate of Depreciation	Face of Policy	Amount of Property destroyed on Aug. 1, 1918	Unexpired Premium on Policy Aug. 1, 1918	Coinsurance Clause in the Policy
Buildings...	$110,000	$10,500	5%	$30,000	$80,000	$200	80%
Machinery..	76,000	14,000	10%	20,000	3/4	150	100%
Furniture & Fixtures..	4,700	1,200	12%	4,000	70%	10	80%
Patterns & Drawings.	3,500		20%	1,500	All	None	60%
Finished Goods*...	16,400			80% of selling price	90% of selling price	120	80%

* The finished goods were listed at the factory cost but the policy covered the selling price which was based on a profit of 60% on the factory cost, with 10% on sales added for selling expenses.

(a) What is the effect of the coinsurance clause?

(b) Determine the amount of insurance received for each asset.

(c) Indicate, by means of journal entries, the effect on the various accounts involved in the settlement of the losses.

XIX

The European War caused a reduction in the income of the Trunk Company by an abrupt falling off of sales; also as a result of the rapid increase in materials several contracts were completed at a loss. These losses together with the unexpected loss by fire placed the company in an embarrassing financial condition. There was great pressure from bondholders because the interest for the last year had not been paid, and dissatisfaction among stockholders because dividends had been passed. Current debts could not be met and it was clearly evident that the business could not continue long in its present condition. To remedy this a meeting of the stockholders was called and a committee on reorganization appointed. The recommendations of the committee, which are given below, were put into effect on December 31, 1918.

The holders of the 6% bonds were given one share of new cumulative 7% preferred stock in payment of defaulted interest on each bond. The holders of the $100,000 of 5% bonds assumed for Randall Manufacturing Co. contributed in cash 5% of the amount of their bonds and received for each $1,000 bond a new $500 bond bearing 5% interest and $700 in non-cumulative 6% preferred stock. The holders of $60,000 7% war munitions bonds received for each $1,000 bond $600 in 6% preferred stock and $500 in common stock. The old cumulative preferred stockholders were given new non-cumulative preferred stock, share for share. The old common stockholders were given new common stock and were assessed $20 per share for which they were given new cumulative preferred stock.

(a) Determine the amount of cash, bonds and various classes of stock to carry into effect the reorganization.

(b) Present the journal entries necessary to record these data.

See Problem XVI for other necessary data. Assume all common stock outstanding. Par value of old issue bonds, $1,000; stock, $100.

XX

The Hillsdale Co. operates a factory and general sales organization from its main plant and conducts two branches, A and B, as distribution centers at conveniently located points. The branches maintain independent records which are subject to periodic audit by the head office. At the close of the fiscal period the branch trial balances are sent to, and incorporated with, the head office trial balance to determine the results of combined operation. Below are given the trial balances of the head office and branches with the data necessary to close the books and determine results. You are asked to present closing journal entries for Branch A and the entries necessary to incorporate the branch results with the head office and to close the head office books. Also present a consolidated balance sheet after closing.

TRIAL BALANCES, JUNE 30, 1918

	Branch A		Branch B	
Cash	$3,000.00		$1,000.00	
Notes and Accounts Receivable	70,000.00		50,000.00	
Salaries	15,000.00		5,000.00	
Rent	2,700.00		1,500.00	
Other Expenses	10,000.00		7,000.00	
Sales		$75,000.00		$48,500.00
Sundry Accounts Payable		5,000.00		7,200.00
Purchases from Head Office	70,000.00		50,000.00	
Head Office Merchandise		70,000.00		50,000.00
Head Office General		20,700.00		8,800.00
	$170,700.00	$170,700.00	$114,500.00	$114,500.00

Inventories, at billed price: Branch A $10,000, Branch B $5,000.

Create on the branch books reserves for doubtful accounts of 1% of the sales at each branch.

HEAD OFFICE

Plant and Equipment	$250,000.00	
Depreciation Reserve Plant and Equipment		$50,000.00
Cash	25,000.00	
Notes and Accounts Receivable	100,000.00	
Reserve for Doubtful Accounts		5,000.00
Merchandise Inventory, June 30, 1917	27,500.00	
Notes and Accounts Payable		45,000.00
Purchases	170,000.00	
Sundry Expenses	35,250.00	
Depreciation	12,500.00	
Bad Debts	1,125.00	
Sales		225,000.00
Sales to Branches		120,000.00
Branch A, Merchandise	70,000.00	
Branch B, Merchandise	50,000.00	
Branch A, General	20,700.00	
Branch B, General	8,800.00	
Capital Stock		250,000.00
Surplus		75,875.00
	$770,875.00	$770,875.00

Head office inventory, $30,000.

Goods were billed to the branches at 150% of cost.

XXI

A New York company doing business in London, received the following trial balance from its London office at the end of a fiscal year:

TRIAL BALANCE—LONDON OFFICE

Plant	£100,000	
Accounts Receivable	75,000	
Accounts Payable		£ 35,000
Expenses	10,000	
Income		100,000
Merchandise	20,000	
New York Office Account		135,000
Remittance Account	60,000	
Cash	5,000	
	£270,000	£270,000

The New York books showed as follows:

TRIAL BALANCE—NEW YORK BOOKS

Capital Stock		$1,000,000.00
Patents	$600,000.00	
London Office Account	656,100.00	
Remittance Account		291,712.50
Expenses	10,000.00	
Cash	25,612.50	
	$1,291,712.50	$1,291,712.50

The remittance account consisted of four 60-day drafts on London for £15,000 each, which were sold in New York at 4.85 1/2, 4.86, 4.86 1/2, and 4.86 3/4 respectively.

Make such journal entries as are necessary to incorporate with the New York accounts the results of the year's business in London (conversion to be made at the average rate of exchange of the four remittances), and establish the new balance of the London office account so that it will agree with the London books when converted into sterling at 4.87 1/4, the rate of exchange ruling on the last day of the year. Show also trial balance of the New York books after closing.

XXII

Company A owns the entire capital stock of Companies B and C. The assets and liabilities of the respective companies are as follows:

Company A: cash $10,000; deferred charges $150; inventories $1,000; due from allied companies $25,000; notes receivable $15,000; petty cash $100; trade creditors $1,000; capital stock $100,000; surplus $5,250; notes payable $50,000; other investments $55,000; investments in allied companies $50,000.

Company B: trade debtors $10,000; cash $4,000; deferred charges $200; notes receivable $1,000; petty cash $500; inventories $8,000; land $10,000; buildings $25,000; equipment $20,000; surplus $1,000; dividends payable $500; due allied companies $30,000; notes payable $10,000; accrued liabilities $200; capital stock $25,000; trade creditors $12,000.

Company C: capital stock $30,000; notes payable $15,000; cash $2,000; trade creditors $4,000; notes receivable $1,000; petty cash $200; accrued expenses $100; trade debtors $3,500; allied companies $5,100; surplus $2,300; inventories $5,000; land $7,500; deferred charges $100; equipment $15,000; buildings $12,000.

Prepare consolidated balance sheet. Submit with your solution your working papers.

Criticize briefly (not to exceed 500 words) the condition of each company and state whether, in your opinion, the investments in allied companies are valued correctly.

XXIII

Jones & Robinson, merchants, are unable to meet their obligations. From their books and the testimony of the insolvent debtors, the following statement of their condition is ascertained:

Cash on Hand	$5,500.00
Debtors ($1,000 good; $600 doubtful but estimated to produce $200, $1,000 bad)	2,600.00
Property (estimated to produce $9,000)	14,000.00
Notes Receivable, Good	4,250.00
Other Securities ($3,000 pledged with partially secured creditors; the remainder held by the fully secured creditors)	28,000.00
Jones, Drawings	9,000.00
Jones, Capital	10,000.00
Robinson, Drawings	8,400.00
Robinson, Capital	16,050.00
Sundry Losses	13,500.00
Preferential Claims—Wages, Salaries, and Taxes	700.00
Trade Expenses	7,400.00
Creditors Unsecured	25,000.00
Creditors Partially Secured	23,900.00
Creditors Fully Secured	17,000.00

Prepare a statement of affairs and deficiency account.

XXIV

Parker & Riley, being unable to meet their obligations, have made an assignment. You are asked to prepare a statement of affairs for presentation at a meeting of their creditors. Some of the creditors are entirely or partially secured, the security being a part of the assets. The following is a trial balance of their ledger at the date of the assignment:

Cash	$1,200.00	
Stock and Material (old inventory)	12,000.00	
Reliance Trust Co. Stock (20 shares at cost)	2,200.00	
Accounts Receivable	10,550.00	
Notes Receivable	2,000.00	
Mortgage Receivable (second mortgage)	1,000.00	
Real Estate (store building and lot)	14,000.00	
Fixtures	1,700.00	
Horses, Trucks, and Harness (asset account)	1,400.00	
Accounts Payable		$28,000.00
Loans Payable		7,000.00
Mortgage on Real Estate		5,000.00
Purchases	30,000.00	

Sales		36,000.00
Rents		1,200.00
Salaries	3,500.00	
Interest and Discount	960.00	
Taxes Accrued		740.00
Insurance Unexpired	500.00	
General Expenses	4,130.00	
Parker, Capital		8,000.00
Riley, Capital		4,000.00
Parker, Drawings	3,000.00	
Riley, Drawings	1,800.00	
	$89,940.00	$89,940.00

The accounts receivable are classed as: good $8,000; doubtful $1,500 (estimated to produce $1,000; worthless, $1,050. Notes receivable will realize $1,800; the second mortgage is estimated to produce $800; the trust company shares $1,800; delivery equipment $900; fixtures $1,000; and real estate $12,500.

Of the accounts payable $20,000 is unsecured and $8,000 is secured by the second mortgage and trust company stock. The loans payable are secured by the equity in the real estate. The inventory of merchandise on hand which foots $5,000 is expected to realize $3,000. Other liabilities not booked are employees' wages $550, and interest on mortgage $125. The unexpired insurance is expected to yield $150 upon redemption.

Draw up a statement of affairs and deficiency account.

XXV

The Metropolitan Book Co., a corporation, goes into voluntary liquidation and a trustee is appointed. The following is the trial balance of the company on July 1, 1918, the date when its affairs are turned over to the trustee.

Capital Stock		$20,000.00
Cash	$553.69	
Office Furniture	1,666.92	
Meter Deposit	60.00	
Accounts Receivable	26,153.95	
Rogers & Co. (moneys collected for their account)		14,738.00
Notes Payable		27,573.50
Accounts Payable		4,197.22
Purchases	27,404.74	
Sales		8,045.35
Expense	10,751.97	
Surplus	7,962.80	
	$74,554.07	$74,554.07

Value of merchandise on hand is $20,183.86, and the other assets are appraised at book value. The trustee's cash receipts and disbursements are:

Dr.	Cash		*Cr.*
Balance taken over	$553.69	Notes Paid	$27,573.50
Meter Deposit	60.00	Accounts Paid	4,197.22
Office Furniture	487.90	Merchandise Bought	562.55
Accounts Receivable	22,872.75	Expenses	5,697.01
Additional Collections for Rogers & Co. (in full)	1,965.24	Rogers & Co. (in full)	16,703.24
Sales of Merchandise	22,090.70		
Commission from Rogers & Co.	6,703.24		
	$54,733.52		$54,733.52

Accounts receivable not collected are worthless.

Prepare a realization and liquidation account in technical form.

XXVI

Messrs. Sharp and Green having given the firm's notes to a friendly company as an accommodation, became embarrassed through failure of the payee and appointed a trustee to realize and liquidate. The following is a statement of their condition January 1, 1916:

Assets		*Liabilities and Capital*	
Cash	$500,00	Mortgage on Real Estate	$5,000.00
Merchandise	20,000.00	Mortgage Interest Accrued	250.00
Real Estate	25,000.00	Taxes Accrued	375.00
Notes Receivable	5,000.00	Accounts Payable (including accommodation paper as contra)	61,550.00
Accounts Receivable (including accommodated party $58,000)	62,000.00	Notes Payable	1,000.00
		Henry Maxwell, Special Partner	10,000.00
		Samuel Green, Capital	20,325.00
		James Sharp, Capital	14,000.00
	$112,500.00		$112,500.00

The following is a memorandum of the trustee's transactions for the year: purchases to complete contract orders $70,000; sales for the year for cash $108,000; uncollected accounts $2,000; stock of goods on hand December 31, 1916, $10,000; notes receivable collected at a loss of $600; accounts receivable collected $3,600, balance lost; received 75% in full settlement of acccommodation notes and paid cash on account of same $48,000 giving renewal notes for

$10,000. The legal fees and petty expenses paid on account of accommodation paper amounted to $2,400. The following payments were also made: mortgage, with interest, and one year's accrued interest to December 31, 1916; all taxes, notes payable, and accounts payable; and clerk hire, wages, and other expense, including an allowance of $100 per month to each of the active partners, one year's interest at 6% to Maxwell, interest on Green's excess capital ($6,325) for one year at 6%, and trustee's fee of $5,000—in all $10,000.

The special partner had a 1/10 interest and the general partners shared alike in the residue of the net profits.

On January 1, 1917, the estate was returned to the owners.

Prepare the trustee's realization and liquidation account in technical form, supported by trustee's cash account. Show a balance sheet of the estate as turned back to the partners, and set up the partners' accounts.

XXVII

Three partners contribute capital as follows: X $90,000, Y $45,000, Z $15,000. They share profits in the proportion of X 50%, Y 30%, Z 20%. X's salary is $5,000, Y's salary is $3,000, Z's salary is $2,000. At the end of their fiscal period X dies. The books are closed and the net assets ascertained to be $152,500. Z and Y liquidate the firm's affairs and distribute the surplus assets quarterly as follows:

First quarter	$42,410.20	
Second quarter	74,622.30	
Third quarter	31,967.50	$149,000.00

Prepare a statement of the partners' accounts, showing how the distribution of assets should be made, together with the apportionment of the loss. Give your authorities.

XXVIII

Use the following instructions as a guide in preparing a special report on a business with which you are familiar, either by experience or through investigation.

(a) Write a short history of the business, giving:

1. Title.
2. Character of business in which engaged.
3. Date of beginning and amount of capital invested.
4. Successive changes affecting:
   - The ownership (individual, partnership, or corporate).
   - The amount of capital.
   - The character of the business in which engaged.

(b) Submit:

1. A trial balance at the close of a fiscal period.
2. A balance sheet for the same period.
3. A profit and loss statement for the same period.
4. Adjusting and closing journal entries for the same period.

   Note: If possible, give 1, 2, 3, for two successive periods and prepare a comparative balance sheet and profit and loss statement.

(c) Prepare:

1. A list of the different books and blanks used to record the financial transactions.
2. A sample page or blank or a copy of each item listed under 1.

   Note: If the copy should require a great deal of space, simply give the form of ruling, headings, and size of page.

(d) Write one or two typical entries in each book and show the form of closing in actual use.

(e) As a separate problem:

1. Outline the course of an article from the time the order is placed until the goods reach you. This would be a purchase department record.
2. Outline the course of an article from the time you receive the order until the goods reach your customer. This would be a sales department record.

   Note: For both 1 and 2 attach actual forms used or copy of same, if possible.

(f) Information in regard to:

1. Terms of sale.
2. Treatment of C. O. D. or approval sales on the books.
3. Treatment of freight inward on the books.
4. Treatment of freight outward on the books.
5. Treatment of accounts for containers or boxes to be returned by your firm; by your customers.
6. Treatment of petty cash. If this has not been furnished under (c) 2, give sample page of petty cash.
7. Treatment of consigned goods on the books.
8. Closing journal entries. If this has been furnished under (b) 4, omit.
9. Treatment of instalment sales.
10. Pay-roll system.
11. Your method of entering payment from customers.
12. Provision for bad debts.
13. Method of providing for depreciation. Give an example.
14. Provision for redemption of bonds payable.
15. Interest on daily or other balances.

16. Proportional discount.
17. Assignment of accounts receivable.
18. Use of check figures.
19. Number of customers.
20. Amount of gross sales.
21. Amount of gross purchases.
22. Methods of obtaining inventories and basis for valuation.
23. Usual gross profit.
24. Usual gross expense.
25. Figuring profits. On selling price or cost price.
26. Figuring expenses. On selling price or cost price.
27. Use of selling or expense charts or charts of any other kind.
28. Insurance carried and manner in which it is written off.
29. System of branch or agency accounts.
30. Nature of items found in allowances.
31. Use of mechanical appliances in offices.
32. Filing systems, other than for correspondence.
33. Frequency of audits by firm's staff. By outside parties.
34. Cost system in use.
35. Date of installation of present system.
36. Rate of turnover.
37. Treatment of cash sales.

(g) Give:

1. Adverse criticism of any department or part of same which you know from actual experience does not work out as it should.
2. Your opinion as to the cause.

(h) Constructive criticism of any department or part of same which you think would make it more effective or less expensive if conducted according to your plan.

(i) Anything peculiar to your business which has not been included in any of the previous divisions.

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APPENDIX C

MISCELLANEOUS PROBLEMS FOR SUPPLEMENTARY WORK*

Partnership

1. A partnership on equal terms between A and B is dissolved July 1, 1917, the books on that date showing the following:

A's capital paid in was $16,000, and his drawings were $3,500. B's capital paid in was $2,000, and his drawings were $1,500. Goods purchased $50,000; sales $40,000; business expenses $1,800. A loss of $1,600 was made on a $5,000 consignment of goods to Liverpool. In the settlement A agrees to pay B an old debt of $3,500. Prepare requisite accounts, and show final balance payable by one partner to the other.

2. A and B are partners carrying on a business in Winnipeg. On January 1, 1918, after adding profits for the past half-year, A's capital amounted to $150,000, and B's to $100,000. On that date they take into partnership C, upon the following terms: viz.: he is to bring in capital amounting to $25,000, and each partner is to be credited with interest on his capital at 6% per annum. All profits (after debiting interest) up to $25,000 are to be shared by A and B exclusively in proportion to the amounts of their capital at January 1, 1918. All profits in excess of $25,000 are to be shared equally by the three partners. Accounts are to be prepared and profits and interest credited half-yearly. C is to be credited with a salary of $5,000 per annum. On June 30, 1918, the profits divisible after debiting C's salary, which he has drawn, but before charging interest on partners' capital, amounted to $75,000. The partners' withdrawals which are not chargeable with interest were: A $12,500, B $10,000, and C $3,750. Draw up partners' separate accounts as they should stand on July 1, 1918.

Assume that instead of a profit, a loss of $75,000 had occurred. How would you have treated it in the accounts in the absence of any direct provision in the partnership agreement relative to losses?

3. A, B, and C were partners in business for several years. A died December 31, 1917. The articles of copartnership provided that on any change in the firm the good-will should be taken into account and its value divided

*Most of these problems in Appendix C are C. P. A. problems of various states. The dates have been changed to recent dates.

—one-half to A and one-quarter each to B and C. The balance sheet at the date of A's death was as follows:

Assets		
Cash	$1,500.00	
Merchandise on Hand	12,000.00	
Sundry Notes and Accounts Receivable	15,000.00	
		$28,500.00
Liabilities		
Sundry Accounts Payable	$8,500.00	
A's Net Investment	10,000.00	
B's Net Investment	5,000.00	
C's Net Investment	5,000.00	
		$28,500.00

In January, 1918, B and C arranged with D to come into the firm with $5,000. The good-will is, by agreement, to be valued at $3,000. The new firm, consisting of B, C, and D, takes over the business and good-will in equal shares, subject to an allowance of 2 1/2% on the notes and accounts receivable. It pays the estate of A $5,000, with the understanding that the balance due A's estate shall remain as a loan at the rate of 5% interest.

Prepare the balance sheet and the capital accounts of B, C, and D as they should appear at the beginning of the new business, writing off the purchase of good-will in equal proportions to the amount of capital invested.

Corporation—Opening the Books

4. C, D, and E are partners sharing profits in accordance with capital investments. At end of the fiscal year, after all nominal accounts are closed, the books show the following:

Cash	$20,051.00	
Plant	60,422.00	
Inventory of Merchandise	41,300.00	
Bills Receivable	18,028.00	
Book Accounts Receivable	70,402.00	
C, Drawings	8,400.00	
D, Drawings	6,000.00	
E, Drawings	4,800.00	
Bills Payable		$5,211.00
C, Capital		100,000.00
D, Capital		50,000.00
E, Capital		50,000.00
Profit and Loss, Undivided Profits		24,192.00
	$229,403.00	$229,403.00

The partners thereupon incorporate a company with an authorized capital of $250,000. The company so formed purchased the partnership assets and good-will, not including the cash, for $250,000, payable $200,000 in stock and $50,000 in cash, the last-mentioned cash being the proceeds of sale of stock to F.

It is the intention to divide the purchase-money stock among the vendors in proportion to their former capital and to adjust their accounts by the division of the cash shown in trial balance, which will then be placed to their credit as loans to the company at 6% interest and remain as working capital. The bills payable are to be settled by the partners. As the drawings of the partners are not in proportion to their respective shares in the profits, the partners are charged with the interest thereon in the following amounts, viz.: C $231, D $165, and E $132.

(a) Frame the necessary entries to close the partnership books and show the amount of cash received by each partner.

(b) Referring to question (a), frame the necessary entries to open the books of the company and prepare a balance sheet showing the condition of the company at the beginning of its operations.

5. The Frost Manufacturing Co. was incorporated April 10, 1918, with a capital stock of $200,000, divided into 2,000 shares of a par value of $100 each.

Payments were made on this date as indicated in the following subscription register:

Subscriber	No. Shares	Amount	Form of Payment
C. Dunn	100	$10,000.00	Cash
E. Ferris	200	20,000.00	Cash
G. Hall	400	40,000.00	Cash $10,000, and Hall's note with interest at 6%, due in one year, for the balance.

April 12. Expenses of $1,200 incidental to the organization of the corporation were paid in cash.

April 15. The corporation purchased J. King's entire plant valued at $170,000 and assumed his liabilities amounting to $70,000, giving in full payment 1,200 shares of stock at par.

April 20. S. Samson subscribed for 50 shares of stock and paid an instalment of $30 per share in cash.

April 22. To provide working capital, each of the following stockholders donated 1/10 of his shares of stock: Dunn, Ferris, Hall, and King.

April 25. Cash was received for 100 shares of donated stock sold at 85.

April 27. Samson gave his note due in six months for the balance due on his stock subscription.

April 28. The directors authorized an issue of $50,000 in bonds, with interest at 5%, to mature in 20 years.

April 30. Bonds having a par value of $30,000 were sold for $28,000 in cash.

(a) Write journal entries to record fully all the above information in the financial books of the corporation.

(b) Prepare the corporation balance sheet for April 30, 1918.

Manufacturing Statement

6. The Marine Equipment Co., a corporation, manufactures metal boats and deals in marine supplies. A trial balance of the general ledger, December 31, 1917, is given below:

Land	$20,000.00	
Buildings	50,000.00	
Machinery and Tools	40,000.00	
Automobile Trucks	5,000.00	
Patents	7,000.00	
Office Furniture and Fixtures	700.00	
Accounts Receivable	19,000.00	
Notes Receivable	10,700.00	
Notes Receivable Discounted		$6,000.00
Raw Materials Inventory, January 1, 1917	20,000.00	
Goods in Process Inventory, January 1, 1917	5,000.00	
Metal Boats Finished Inventory, January 1, 1917	8,000.00	
Marine Supplies Inventory, January 1, 1917	12,000.00	
Union National Bank	8,740.00	
Capital Stock		100,000.00
Surplus		18,000.00
Treasury Stock	10,000.00	
Bonds Payable, 5% First Mortgage		40,000.00
Reserve for Depreciation, Buildings		1,200.00
Reserve for Depreciation, Machinery and Tools		1,000.00
Reserve for Depreciation, Automobile Trucks		200.00
Notes Payable		2,000.00
Accounts Payable		24,000.00
Purchases, Raw Material	40,000.00	
Purchases, Marine Supplies	30,000.00	
Freight Inward, Raw Materials	2,450.00	
Freight Inward, Marine Supplies	1,340.00	
Freight and Cartage Outward	824.00	
Sales, Metal Boats		131,130.00
Sales, Marine Supplies		58,960.00
Productive Labor	32,400.00	
Non-Productive Labor	15,230.00	
Superintendence	3,420.00	
Heat, Light, and Power	8,500.00	
Shop Supplies	2,490.00	
Miscellaneous Factory Expense	1,300.00	

Insurance	300.00	
Repairs to Machinery and Tools	2,146.00	
Taxes	400.00	
Advertising	3,420.00	
Returned Sales and Allowances, Metal Boats	1,200.00	
Returned Sales and Allowances, Marine Supplies	862.00	
Discount on Sales	3,710.00	
Discount on Purchases		5,071.00
Salesmen's Salaries	6,570.00	
Salesmen's Traveling Expenses	2,354.00	
Advances to Salesmen	450.00	
Office Salaries	8,630.00	
Legal Expense	540.00	
Stationery and Printing	1,200.00	
Postage	190.00	
Interest	315.00	
Miscellaneous Selling Expense	1,180.00	
	$387,561.00	$387,561.00

Additional information to be considered:

Inventories, December 31, 1917:

Raw Materials	$21,000.00
Goods in Process	7,000.00
Metal Boats Finished	13,000.00
Marine Supplies	8,000.00

Accrued Items:

Interest on Bonds Payable, 1 year at 5%	$2,000.00
Interest on Notes Payable	40.00
Interest on Notes Receivable	75,00
Taxes (estimated)	100.00

Unexpired insurance $100.

Provide for Reserve for depreciation on: buildings, 5% on original value; machinery and tools, 10% on diminishing value; automobile trucks, 20% on diminishing value. Also provide a 2% reserve for bad debts. Write off depreciation of 10% on the original cost of furniture and fixtures. Patents expire 14 years from January 1, 1917. One-half of advertising is to be carried to the next period.

Distribute as follows:

Item	Mfg.	Selling	P. L.
Insurance	3/4	1/4	0
Depreciation Auto Trucks	1/2	1/2	0
Taxes	3/4	0	1/4

From the trial balance and the additional information prepare:

(a) Income statement.

(b) Balance sheet.

(c) Journal entries to record the additional information and close the ledger.

Consignments, Commissions, Joint Venture

7. December 1, 1917, a New York merchant ships goods of the value of $5,000 on consignment to a commission merchant at Rio de Janeiro, insuring them in the Atlantic Mutual against loss or damage in transit and prepaying freight and insurance amounting to $250. On arrival the goods are found to be in a partially damaged condition and the loss is adjusted at $1,000, the certificates for which the consignee transmits to the consignor together with an account sales for $3,000, dated March 1, 1918, and a final account sales for $2,000, dated April 1, 1918. A draft on New York for $4,300 accompanied this final account, being the balance due after deducting duty paid and commission earned.

Give expression to these transactions on the books of the consignor.

8. On November 15, 1917, Isaac Cohen & Co., Ltd. sent for sale on their account a consignment of goods valued at $5,000 to John Stimson & Sons, factors of Boston; sale to be on a 5% basis with 1% additional for guaranty of collection of accounts. Prepaid freight amounted to $25.40. December 26, an account sales from Stimson & Sons showed sales of $5,775.20, and expenses in connection therewith, exclusive of commission and guaranty, of $42.25. The net proceeds were placed to Cohen & Co.'s credit, subject to sight draft.

(a) Show the alternative treatment of all the accounts affected on Cohen & Co.'s books in order either to show the profit or loss on this consignment, or to include the profit or loss with their regular sales.

(b) Stimson & Sons' fiscal year ended November 30. On November 25 they had sold one-fourth of the Cohen & Co. consignment for $1,500 and had incurred the expenses of $42.25 mentioned above but applicable to the whole consignment. Show Stimson & Son's accounts affected properly closed.

(c) If Cohen & Co.'s fiscal year ends on November 30, what entries would be needed to make the record in accord with the additional data of question (b) above?

9. A, B & Co. and C, D & Co. enter a joint adventure to ship machinery to New Zealand. C, D & Co., October 5, 1917, handed A, B & Co. $600 in cash and granted them their acceptance at 6 months for $1,500. A, B & Co. were to provide balance of cash required, to manage the venture, to receive a commission of 2% on amount of invoice for machinery. Profits of venture to be divided equally.

On October 6, 1917, A, B & Co. paid J, K & Co. for machinery $2,500, and on the same date discounted acceptance of C, D & Co. for $1,500, paying $30 for discount thereon. On the following day A, B & Co. paid $210 for freight and $30 for insurance. On March 25, 1918, A, B & Co. received from New Zealand to account of proceeds of machinery a draft payable in London for $1,600, out of which, April 8, 1918, they paid $1,500 to retire bills for that amount.

On August 8, 1918, A, B & Co. received from New Zealand a draft for $1,550, being balance of proceeds for machinery, after deducting agent's commission charges and duty. They thereupon closed the accounts and sent C, D & Co. check for balance due to them.

Make up an account showing result of venture, also C, D & Co.'s account with A, B & Co. Do not regard interest.

10. A B, a commission merchant, doing business on a 5% basis, hands you the following abstract of his ledger, showing his transactions for the year.

Furnish A B's capital account, showing his original investment; also a balance sheet and a detailed cash account.

Sales	$45,000.00	$60,000.00
Freight	2,100.00	1,400.00
Claims and Allowance on Settled Account only	600.00	1,500.00
Expense	900.00	
Customers' Accounts	60,000.00	45,000.00
Creditors' Accounts	37,950.00	39,850.00
Cash	59,000.00	40,950.00
Discounts Lost	400.00	
	$205,950.00	$188,700.00

11. A and B, commission merchants, suspect their cashier of embezzlement. From the following data determine whether or not their suspicions are well founded, and produce a balance sheet and profit and loss statement to prove or disprove the suspicion.

Sales		$42,000.00
Cash Receipts, Customers	$42,000.00	
Freight	4,240.00	2,480.00
Duty	2,120.00	1,240.00
Dock Charges	212.00	124.00
Custom House Charges	90.00	45.00
Interest (account sales at 6%)		248.00
Commission (5% on sales)		1,240.00
Office Expense	2,000.00	
Documentary Advances	20,000.00	12,000.00
Acceptances against Shipments	12,000.00	20,000.00

Analysis of account sales ledger debits, duty $875, freight $1,560, dock charges $70, custom house charges $40.

Analysis by Comparison

12. The trading accounts of a company covering two years are herewith submitted.

Analyze the accounts and make a report to the company showing the reasons for the difference in results.

1916

Merchandise Inventory, January 1, 1916	$150,000.00
Merchandise Purchases	633,000.00
Merchandise Sales, Travelers	600,000.00
Merchandise Sales, Domestic	150,000.00
Merchandise Sales, Cash	10,000.00
Commissions Paid Travelers	30,000.00
Salaries Paid Travelers	30,000.00
Salaries, Domestic Sales	15,000.00
Rental	5,000.00
Stationery, etc	3,000.00
Expense	22,000.00
Interest	4,000.00
Inventory, January 1, 1917	125,000.00

1917

Merchandise Inventory, January 1, 1917	$125,000.00
Merchandise Purchases	600,000.00
Merchandise Sales, Travelers	600,000.00
Merchandise Sales, Domestic	150,000.00
Merchandise Sales, cash	10,000.00
Commissions Paid Travelers	30,000.00
Salaries Paid Travelers	10,000.00
Salaries, Domestic Sales	10,000.00
Rental	5,000.00
Stationery, etc	3,000.00
Expense	15,000.00
Interest	1,000.00
Merchandise Inventory, January 1, 1918	125,000.00

13. A corporation's balance sheets for August, 1918, and September, 1918, were respectively as follows:

August, 1918

Assets

Plant and Equipment	$4,000,000.00	
Furniture	6,000.00	
Tools	3,000.00	
Stable	3,811.28	
Cash	15,250.36	
Material Supplies	30,750.28	
Accounts Receivable	28,920.13	
Unexpired Insurance	510.29	
Total		$4,088,242.34

Liabilities

Capital Stock	$2,500,000.00	
Bonds	1,350,000.00	
Accounts Payable	31,336.28	
Bills Payable	26,240.12	
Accrued Taxes	3,500.00	
Accrued Interest	5,625.00	
Profit and Loss	171,540.94	
Total		$4,088,242.34

September, 1918

Assets

Plant and Equipment	$4,012,310.21	
Furniture	6,205.58	
Tools	3,218.86	
Stable	4,009.37	
Cash	8,328.29	
Material Supplies	39,280.17	
Accounts Receivable	32,321.83	
Unexpired Insurance	832.12	
Total		$4,106,506.43

Liabilities

Capital Stock	$2,500,000.00	
Bonds	1,362,000.00	
Accounts Payable	33,445.59	
Bills Payable	18,240.12	
Accrued Taxes	4,000.00	
Accrued Interest	11,250.00	
Profit and Loss	177,570.72	
Total		$4,106,506.43

Analyze the differences in the corresponding accounts for the period and show disposition of increased resources.

14. The board of directors of the X, Y, Z Company removed their manager on April 30, 1918, on the general suspicion that his books misrepresented the true financial condition of the business. Prepare a statement showing the nature and the probable extent of the misrepresentation, also an approximate statement of income and profit and loss for the four months ending April 30, 1918, and a balance sheet as of April 30, 1918.

The following is a trial balance taken from the books April 30, 1918:

Capital Stock		$75,000.00
Fixtures	$10,000.00	
Inventory, January 1, 1918	128,600.00	

Cash	15,450.00	
Accounts Receivable	24,600.00	
Accounts Payable		39,000.00
Loans Payable		10,000.00
Sales		51,000.00
Purchases	40,700.00	
Salaries, Salesmen	2,200.00	
Advertising	1,650.00	
Salaries, Office	1,100.00	
Rent	400.00	
Interest	200.00	
Insurance, January 1 to December 31, 1918	999.00	
Stationery and Printing	105.00	
Reserve for Depreciation of Fixtures		2,710.00
Surplus, January 1, 1918		48,294.00
	$226,004.00	$226,004.00

An analysis of the Purchases and Sales accounts revealed the following: purchases, year 1915, $122,000; sales, year 1915, $153,750; inventory, January 1, 1915, $101,000; purchases, year 1916, $123,000; sales, year 1916, $153,170; inventory, January 1, 1916, $100,000; purchases, year 1917, $121,000; sales, year 1917, $154,722; inventory, January 1, 1917, $102,000.

15. Robert Adams and William Stevens are equal partners. On the night of July 3, their stock and fixtures were destroyed by fire. A trial balance, which Adams had at his home, showed the following condition of the ledger at the close of business, June 30:

Robert Adams	$600,00	$7,450.00
William Stevens	600.00	7,450.00
Cash	3,309.00	
Fixtures	1,500.00	
Merchandise Purchases	32,600.00	
Merchandise Sales		24,800.00
Notes Receivable	1,000.00	
Notes Payable		2,000.00
Interest	120.00	50.00
Expense	780.00	
Customers	4,500.00	
Creditors		3,259.00
	$45,009.00	$45,009.00

The property is fully covered by insurance. The insurance company, for the purpose of estimating the value of the merchandise destroyed has agreed to allow 35% as the average gross gain on the sales, and to pay 66 2/3% on the value of the fixtures as shown by the ledger.

On the basis of this agreement, state the result of the business and the capital of each partner.

STATEMENT OF AFFAIRS

16. C. C. Carter and A. D. Walker were unable to meet their obligations. From the books of the firm and additional information you ascertained the following:

Real Estate (estimated to produce $18,000; subject to a mortgage of $12,000)	$20,000.00
Notes Receivable	6,000.00
Expense	7,820.00
Furniture and Fixtures (estimated to produce $2,700)	3,500.00
D. L. & W. Stock (estimated to produce $12,000 pledged with fully secured creditors)	14,000.00
Horse and Wagon (estimated to produce $500)	700.00
Other Securities (pledged with partially secured creditors)	3,000.00
Accounts Receivable (good $3,000; doubtful $1,800, but estimated to produce $1,440; bad $600)	5,400.00
Notes Payable	2,000.00
Creditors, Unsecured	18,000.00
Creditors, Partially Secured	8,000.00
Creditors, Fully Secured	10,000.00
Wages, Salaries and Taxes, preferred by law	560.00
Carter, Capital	15,000.00
Walker, Capital	5,000.00
Carter, Drawings (debit)	3,050.00
Walker, Drawings (debit)	1,000.00
Cash	870.00
Sundry Losses	5,220.00

Prepare statement of affairs and deficiency account as of September 30, 1918.

17. On December 1, 1918, the following particulars are furnished of the position of John Mapleton, insolvent: factory equipment cost $15,000, estimated to realize $10,000; stock of finished goods $10,000, estimated worth $7,500; material and supplies $2,500, estimated worth $1,000; furniture and fixtures $900, estimated worth $200; investments valued at $25,275, of which $15,000 is held by bankers as security for loan of $12,000; accounts receivable $6,250, of which $2,500 are good, $1,250 bad, and $2,500 estimated to realize $1,500; cash $575, of which $25 represents petty expense items not charged up, and $50 an I O U of a former employee which is worthless; accounts payable $28,500; bills payable $25,000, of which $12,000 is due bankers; wages due $500; rent due and past due $1,000; capital on January 1, 1918, as shown by the books, $15,000; loss by sale of investment May 1, 1918, $5,000; loss in trading account January 1, 1918, to December 1, 1918, $3,500; drawings charged personal account of John Mapleton $1,000.

Make up a statement of affairs and a deficiency account as on December 1, 1918.

18. John Thompson exhibits the following balance sheet of his business dated June 30, 1918:

Cash	$750	Sundry creditors	$6,000
Book debts	9,500	Bills Payable	7,500
Stock on hand	6,500	Bank (overdraft)	3,000
Fixtures, etc.	1,750	Balance	2,000
Total	$18,500	Total	$18,500

On questioning Thompson it was found that he had omitted the following from his balance sheet: $250 owing for rent; $75 owing for taxes; $2,500 borrowed at 5% from his wife three years ago, no payment having been made on account of either principal or interest; a draft for $500 accepted by a firm without consideration, falling due in 30 days. His private and household debts amounted to $600.

The item entered on his balance sheet as cash included his personal I O U's for $600.

Of the book debts about $3,500 might be considered bad and the rest good. The stock was good except $1,000, which would not produce more than $100. The fixtures, if sold, would not realize more than $250. The only other assets were household furniture worth about $1,250 and residence valued at $7,500, subject to a first mortgage for $5,000 at 4%, and also a second mortgage held by his bank as security for overdraft.

Prepare a statement of affairs and deficiency account.

19. June 30, 1918, as a result of careless management, the firm of Howard, Mason & Co. finds itself in a critical financial condition.

The following trial balance shows the accounts as they appear on the books after closing the ledger.

POST CLOSING TRIAL BALANCE, JUNE 30, 1918

Land	$10,000.00	
Buildings	42,000.00	
Reserve for Depreciation, Buildings		$6,000.00
Delivery Equipment	7,000.00	
Reserve for Depreciation, Equipment		1,500.00
Furniture and Fixtures	4,200.00	
Good-Will	5,000.00	
Cash	2,316.00	
F. D. Co. Stock	4,000.00	
Accounts Receivable	16,000.00	
Reserve for Bad Debts		1,996.00
Notes Receivable	9,400.00	
Notes Receivable Discounted		3,800.00
Merchandise Inventory, Bags, June 30, 1918	4,780.00	
Merchandise Inventory, Trunks, June 30, 1918	8,910.00	

Mortgage Payable		25,000.00
Accounts Payable		21,000.00
Notes Payable		12,000.00
Thomas J. Howard, Loan		6,000.00
Thomas J. Howard, Capital		15,000.00
Thomas J. Howard, Drawing	1,700.00	
Joseph Mason, Loan		4,000.00
Joseph Mason, Capital		9,000.00
Joseph Mason, Drawing	1,000.00	
John H. Bartlett, Loan		3,000.00
John H. Bartlett, Capital		6,000.00
Accrued Interest, Mortgage		1,500.00
Accrued Interest, Notes Payable		300.00
Accrued Interest, Notes Receivable	150.00	
Prepaid Insurance	60.00	
Taxes Accrued		300.00
Accrued Labor		200.00
Miscellaneous Office Supplies	80.00	
	$116,596.00	$116,596.00

There is dissatisfaction among the partners and they finally agree to dissolve partnership. Preparatory to dissolving they appraise the assets and rank the liabilities on a liquidating basis.

It has been found that the buildings had been damaged by fire to the extent of $3,000 but that no adjustment had been made in the buildings account. The delivery equipment is estimated to produce $4,800. Furniture and fixtures have a value of $3,600. The land has increased in value $6,000.

Of the notes payable, $5,000 has been partially secured by all the F. D. Co. Stock, which is expected to yield 80% of its book value. Collateral in the form of good notes receivable of $4,500 has been given to creditors whose claims amount to $3,700.

Among the cash there are I O U's in the amount of $180 that cannot be considered as worth more than $50. The accounts receivable are classified as worthless $3,000; doubtful $2,000, which are expected to produce $1,400; the balance are good. Both inventories of merchandise were reduced by 10%.

The accrued taxes and labor are claims preferred by law. Prepaid insurance, miscellaneous office supplies, and good-will were assumed to have no value in case of liquidation.

From the information at hand:

(a) Prepare a statement of affairs showing the financial condition of the partnership in anticipation of liquidation.

(b) Prepare a statement accounting for the impairment of capital.

Realization and Liquidation

20. It has been mutually agreed that Joseph Mason shall act as liquidating partner with full authority to sell all property, pay all debts and distribute liquidating dividends among the partners. Mason's fee as liquidator shall be 5% commission on the converted value of all the assets and is to be paid at each dividend date.

Interest is to be allowed on the loan accounts, and profits and losses are to be shared 1/2 by Howe, and 1/4 each by Mason and Bartlett, during the period of liquidation.

Settlements are to be made on the last day of each month.

Based on the post-closing trial balance in the preceding problem and the information given below:

(a) Prepare a working sheet which will present the information in convenient form for preparing the statements incidental to liquidation.

(b) Show the partners' loan accounts properly closed for each period.

(c) Set up the partners' capital accounts, and balance them after the payment of each liquidating dividend.

During the month ended July 31, 1918, delivery equipment having a book value of $3,300 was sold for $3,000 in cash; accounts receivable in the amount of $4,000 were collected and $980 in bad debts were charged off. A sale of the land and buildings granted the use of the premises during the liquidation. The land was sold for $17,000 and the buildings for $31,500, the mortgage (with accrued interest to July 3) being assumed by the purchaser as part payment. The partially secured creditors accepted the F. D. Co. Stock held as collateral at 90% of its book value and the balance of their claim was paid in cash. Incidental expenses of $350 and the liquidating fees were paid in cash. From the goods in the inventories there were sold bags of a book value of $1,200 for $1,120, and trunks, book value $2,530, for $2,280. There was paid to holders of unsecured notes payable $2,000 and interest of $100. The accrued labor was paid and $10,000 in unsecured accounts payable were settled. The balance of the cash was applied in paying off partners' loans and capital as a liquidating dividend.

The next month the delivery equipment was sold for $1,850. Furniture and fixtures having a book value of $2,100 were sold for $1,700. Of the I O U's $70 was collected; the balance proved worthless. The notes receivable as collateral in the hands of fully secured creditors were settled in full and our equity was paid to us in cash, also accrued interest of $120. Bags having a book value of $2,500 were sold for $2,100, and trunks at book $3,700 brought $3,200. Mason accepted $4,200 in settlement of $5,000 in accounts receivable.

Legal fees of $150; sundry expenses of $460; all the existing debts and the liquidating fees were paid in cash. The cash remaining was distributed as a liquidating dividend.

In the course of the last month the remaining furniture and fixtures were sold for $1,900. The good-will went to the same purchaser for $1,000 additional.

The prepaid insurance is without value. Office supplies yielded $20. The notes receivable, together with the balance of accrued interest were collected in full. There was lost in bad debts $740. The bags were sold at a 10% reduction. The partners divided the trunks among themselves one-third to each, taking them at book value.

Sundry expenses of $340 and the liquidating fees were paid in cash, after which the cash on hand was distributed.

Note: Converted value means the value at which any asset is disposed of, whether for cash or in the cancellation of any claim.

21. Show on the books of the firm of Howard, Mason & Co. all the entries necessary to carry into effect the liquidation of the business under the conditions set forth in the foregoing problem.

22. The firm of Norton & Brown decided to liquidate at a time when their condition, as shown by the balance sheet given below, was still solvent.

Balance Sheet, March 31, 1918

Assets		*Liabilities*	
Plant and Equipment...	$20,000.00	Notes Payable.........	$6,000.00
Office Furniture........	2,000.00	Accounts Payable......	17,000.00
Inventory, Material....	12,000.00	Norton, Loans.........	5,000.00
Notes Receivable.......	5,000.00	Brown, Loans..........	3,000.00
Accounts Receivable....	29,000.00	Norton, Capital........	25,000.00
Cash.................	3,000.00	Brown, Capital.........	15,000.00
	$71,000.00		$71,000.00

Profits and losses were shared three-fourths by Norton and one-fourth by Brown. Interest was allowed on the loan accounts but not on the capital accounts. At the end of the first month, April 30, it was found that material inventoried at $5,000 had produced $3,600; accounts receivable to the amount of $15,000 had been collected in cash and $2,800 in bad debts charged off; notes receivable collected in cash $2,000; expenses of $600 had been paid in cash; equipment valued at $4,000 produced $3,000. Interest on partner's loan accounts was not entered this month.

During the month ended May 31, office furniture valued at $1,600 was sold for $1,000. Material costing $4,000 produced $3,200 and the balance of material was divided equally between the partners at cost. Plant equipment listed at $6,000 was sold for $6,200. A $200 note proved worthless and was charged off. Accounts receivable to the amount of $6,065 and notes receivable of $2,000 were collected in cash. Bad debts charged off $435. Expenses paid in cash $300. Interest was credited on Norton's loan account $40 and Brown's loan account $25.

Arrange your solution to show:

(a) Your method of obtaining the proper cash distribution.

(b) A statement showing each partner's capital and loan at the end of each month, or a detailed capital and loan account for each partner with a balance entered in each account each month.

(c) A balance sheet at the close of the second month.

23. Walter Hopkins, while perfectly solvent and doing a profitable manufacturing business, had so tied up his capital in plant and materials that he was on the point of suspending for want of funds to pay for labor, and his creditors were preparing to commence legal proceedings to enforce a settlement. The condition of his affairs at this time was as follows:

BALANCE SHEET

Assets		*Liabilities*	
Plant	$25,198.00	Creditors	$20,230.00
Cash	212.00	Capital	50,000.00
Materials, Raw and Partly Finished	40,400.00	Surplus	4,900.00
Finished Goods	6,070.00		
Accounts Receivable	3,250.00		
	$75,130.00		$75,130.00

At a meeting of creditors he said that while his plant was entirely efficient, it was all of special character and would realize on forced sale only the value of scrap, that the unfinished goods would require the employment of skill and processes known to him only, and that while forced suspension would yield to his creditors not over 50%, it would ruin him absolutely.

The creditors decided to advance him a loan of $5,000 to continue operations and allow him additional credit for materials and expenses. A trustee was appointed to see that the proceeds were used solely for recuperation of the business.

The subsequent operations under the supervision of the trustee were as follows:

Purchases on book account, charged to materials $5,100, to expense $12,100; sales on book account $57,802; losses on bad debts $300; cash receipts (loan from creditors) $5,000; settlement from debtors $58,100; cash payments for labor $12,500, for expense $4,350; for plant $600; creditors $42,030; Walter Hopkins' personal drawings $3,000.

There remained raw materials $4,000, finished goods $22,388.

Prepare:

(a) Realization and liquidation account.

(b) Trustee's cash account.

(c) Balance sheet of the estate as restored to Walter Hopkins.

24. X, Y, and Z, foundrymen, unable to meet their obligations, suspended payment January 1, 1918, and appointed a trustee to realize and liquidate for the benefit of their creditors. The books showed the following assets and liabilities:

Assets

Land and Buildings	$125,000.00	
Machinery and Tools	75,000.00	
Furniture and Fixtures	10,000.00	
Materials and Supplies	95,000.00	
Bills Receivable	15,000.00	
Accounts Receivable	115,000.00	
Cash	450.00	
Total Assets		$435,450.00

Liabilities

Mortgage on Foundry Premises	$100,000.00	
Bills Payable	135,000.00	
Accounts Payable	105,000.00	
Interest Accrued on Mortgage	1,250.00	
Taxes Accrued (estimated)	835.00	
Capital	93,365.00	
Total Liabilities		$435,450.00

The trustee's cash receipts and payments during the year 1918 were as follows:

Receipts

Bills Receivable (outstanding January 1, 1918)	$15,000.00	
Accounts Receivable (outstanding January 1, 1918)	106,500.00	
Cash Sales	5,435.00	
Bills Receivable (contracted during year 1918)	13,500.00	
Accounts Receivable (contracted during year 1918)	212,000.00	
Total Receipts		$352,435.00

Payments

Bills Payable	$25,000.00	
Accounts Payable	35,000.00	
Interest on Mortgage (one year at 5%)	5,000.00	
Taxes for the year 1917	865.00	
Purchases of Materials and Supplies	98,000.00	
Labor	135,000.00	
General Expenses	45,000.00	
Interest on Bills Payable (to September 30, 1918, at 5%)	2,800.00	
Total Payments		$346,665.00

Other transactions were as follows:

Sales on Credit		$335,000.00
Bad Debts Written Off:		
Accounts prior to January 1, 1918	$8,000.00	
Accounts subsequent to January 1, 1918	2,000.00	10,000.00
Discounts and Allowances to Customers:		
Accounts prior to January 1, 1918	$500.00	
Accounts subsequent to January 1, 1918	300.00	800.00
Notes Received from Customers		20,000.00
Notes Given to Creditors ($110,000 being renewals)		180,000.00
Inventory of Materials and Supplies, December 31, 1918, amounted to		92,000.00

The trust terminated at the end of the year and the business was turned back to the owners.

Prepare realization and liquidation account; also a balance sheet showing the financial condition of the business at the termination of the trust. Accrued taxes for the year in the usual manner, i.e., on the basis of the charge for previous year.

Branches

25. The trial balance of Jones & Smith, Chicago branch, shows December 31, 1918, the following:

Home Office		$2,000.00
Due from Customers	$2,500.00	
Cash on Hand	1,000.00	
Expenses	1,900.00	
Merchandise		3,400.00
	$5,400.00	$5,400.00

Inventory $1,000.

Draft the necessary journal entries to close the accounts on the branch books, and the entries to be made in the home office to make the books agree.

26. A branch office business was started at the first of the year, the head office advancing $5,000 cash. During the first year merchandise was shipped to branch, invoiced at $75,000.

An auditor checking up the business at the close of the year finds the following: Merchandise sales were $60,000, with selling price of goods 20% advance on invoice. Proper vouchers were on file duly receipted for following payments: rebates and allowances on damaged goods $1,500; salaries and other expenses $4,500; freights $2,500.

The books also showed: remittances to head office $35,000; uncollected accounts $15,000. The balance of the sales having been realized in cash, less rebates and allowances as noted.

The cash on hand and inventory of unsold goods, together with the foregoing records, properly accounts for everything.

Prepare statement, such as an auditor would make in reporting to the head office, balancing the business of the branch house.

27. The condition of the Atlantic Co. at the close of business December 31, 1918, is reported by them as follows:

Assets		*Liabilities*	
Real Estate	$150,000.00	Capital Stock	$500,000.00
Machinery	200,000.00	Mortgage on Real Estate	100,000.00
Cash	24,500.40	Accounts Payable	67,000.00
Accounts Receivable	320,800.50	Notes Payable	100,000.00
Merchandise	375,480.70	Surplus	200,000.00
		Profit and Loss	103,781.60
	$1,070,781.60		$1,070,781.60

The company has a branch to which it sells its goods at 20% over inventory prices and carries this account, together with other branch assets, as a receivable. The statement of the branch on the same date was:

Assets		*Liabilities*	
Fixtures	$6,205.79	Atlantic Co.	$25,033.43
Cash	1,107,55		
Accounts Receivable	12,478.14		
Merchandise at price billed to Branch	5,241.95		
	$25,033.43		$25,033.43

(a) What was the inventoried value of the branch merchandise?
(b) Prepare a corrected statement of the Atlantic Co.

Sinking Fund

28. A corporation issues 10-year bonds to the amount of $50,000, securing same by a mortgage on its property, which is placed in the hands of a trust company.

The trust deed provides for the establishment of a sinking fund to retire the bonds at maturity and that equal annual payments be made on the first of January in each year. Give the amount of this annual payment, interest compounded at 6%.

29. The United Manufacturing Co., on January 1, 1918, placed in service a piece of machinery which would depreciate, according to its chief engineer, at the rate of 15% per annum. The original cost of this machinery was $84,000 and the board of directors agreed to set aside annually a sinking fund which, together with interest thereon, will amount to the original cost at the end of the prospective life of the machinery.

This sinking fund is to be deposited with a trust company on December 31 of each year, and a proportionate amount at the end of the last partial year of the life of the machine. Interest is to be credited by the trust company at each of these dates at the rate of 4% per annum.

Show how the amount of the annual sinking fund payments may be arrived at, and prepare a detailed statement for the board of directors proving that the amount so obtained is correct.

Consolidations, Mergers, and Reorganizations

30. Three manufacturers, each having an independent business and wishing to effect a consolidation of their respective interests, organize the United States Manufacturing Corporation, with an authorized capital stock of $1,500,000, consisting of 7,500 shares of preferred stock and 7,500 shares of common stock, of $100 each. They sell to the new company all of their real estate, buildings, machinery, tools, fixtures, merchandise, and supplies, in consideration of $1,500,000, and agree to accept in payment $750,000 of preferred and $750,000 of common stock of the United States Manufacturing Corporation at par. The vendors donate to the treasury of the company $150,000 of preferred stock and $150,000 of common stock to provide for working capital. The company sells $100,000 of its preferred stock in the treasury for 80% cash, giving a bonus to the purchaser of 20% in common stock.

For the purpose of raising additional funds for improvements and additions to plants, the company mortgages its real estate and buildings, as security for an issue of bonds amounting to $250,000. These bonds the company sells to bankers at 90%, giving as a bonus 10% of preferred stock and 20% of common stock.

Draft entries to express correctly the above transaction on the books of the corporation, and prepare a statement of assets and liabilities of the company.

31. It is proposed to organize a corporation for the purpose of acquiring the stock and controlling three existing corporations, A, B, and C, two of which latter, A and B, have been in operation for five and three years, respectively, while C has been newly organized. The assets and liabilities of the several existing companies and the dividends paid are as follows·

Assets

	A	B	C
Plant	$400,000.00	$300,000.00	
Material	295,000.00	425,000.00	
Cash	40,000.00	15,000.00	$500,000.00
	$735,000.00	$740,000.00	$500,000.00

Liabilities

	A	B	C
Capital	$100,000.00	$300,000.00	$500,000.00
Surplus	60,000.00	40,000.00	
6% Bond at 5 years	500,000.00	300,000.00	
Current Liabilities	75,000.00	100,000.00	
	$735,000.00	$740,000.00	$500,000.00

Dividends Paid

	A	B
	$120,000.00	$30,000.00

For the purpose of the issuance of stock in the new company to the holders of stock in the three existing companies, it is proposed to capitalize the latter upon the following basis:

Money assets at double their value; plant at 80% of book values; material at 70% of book values; annual net earnings at 8%; and the liabilities at par.

The new company will be organized with a capital stock of $2,200,000, all of which is to be used in acquiring the stock of the existing companies.

(a) What amount of stock in the new company are the owners of the stock in each of the existing companies entitled to receive?

(b) Give a short criticism attacking the above basis of stock allotment and submit a more equitable basis.

32. The Smith Brewing Co. with $1,000,000 capital stock, the Young Brewing Co. with $500,000 capital stock, and the Star Brewery with $400,000 capital stock, agree to consolidate as the Universal Brewing Corporation, the new company to buy all the properties of the old companies at a valuation to be fixed by appraisal, payment therefor to be made in full-paid stock of the new company, the old companies to pay off their own indebtedness.

The appraised values of the old companies are as follows:

	Real Estate and Buildings	Plant	Cash	Bills Receivable	Horses, Wagons and Harness	Office Furniture	Total
Smith	$680,000	$390,000	$15,000	$10,000	$4,000	$1,000	$1,100,000
Young	327,000	160,000	3,000	6,000	3,000	1,000	500,000
Star	126,000	71,000	1,000		1,500	500	200,000
Total Appraised Value							$1,800,000

On this valuation, the Universal Brewing Corporation issued $2,000,000 of stock, shares $100 each, which was divided pro rata among the old companies on the basis of their appraised value, no fractional shares of stock to be issued, odd amounts to be paid old companies in cash.

Give journal entries necessary to set up property accounts and credit old companies with their pro rata on books of the new company.

At the time of the consolidation the ledger accounts of the Star Brewery were as follows:

Real Estate and Buildings	$250,000.00	Capital Stock	$400,000.00
Plant	247,000.00	Bills Payable	50,000.00
Cash	1,000.00	Accounts Payable	51,000.00
Horses, Wagons, and Harness	1,800.00		
Office Furniture	1,200.00		
	$501,000.00		$501,000.00

Make the proper journal entries to liquidate in stock of the new company the liabilities other than capital stock, to apportion the remaining stock and cash, and to close the books of the Star Brewery.

33. The Elton Manufacturing Co. and the Star Manufacturing Co. were engaged in manufacturing the same kind of goods. To avoid the losses due to competition, the two companies decided to combine their plants into one corporation under the name of the Union Manufacturing Co. and finally agreed upon the following plan for the merger:

The assets received from, and the liabilities assumed for, the separate companies were taken at the values given in the respective balance sheets, subject to the following adjustments: the buildings, machinery, and patents at 90% of their stated value; delivery equipment, and furniture and fixtures at 80% of their value. A reserve of 2% on accounts receivable was established by the Star Manufacturing Co.

ELTON MANUFACTURING CO.

BALANCE SHEET, JUNE 30, 1918

Land	$10,000.00	Accounts Payable	$30,000.00
Buildings	60,000.00	Mortgage Payable	14,000,00
Machinery and Tools	30,000.00	Accrued Wages	1,500.00
Delivery Equipment	3,500.00	Reserve for Bad Debts	1,500.00
Furniture and Fixtures	1,500.00	Stock, Capital	100,000.00
Inventory, Materials	10,000.00	Surplus	10,000.00
Finished Goods	2,500.00		
Accounts Receivable	35,000.00		
Unexpired Insurance	500.00		
Cash	4,000.00		
	$157,000.00		$157,000.00

STAR MANUFACTURING CO.

BALANCE SHEET, JUNE 30, 1918

Machinery and Tools. .	$35,000.00	Accounts Payable.	$30,000.00
Motor Trucks.	4,000.00	Notes Payable.	19,000.00
Patents.	6,000.00	Capital Stock	50,000.00
Furniture and Fixtures.	500.00	Surplus.	11,000.00
Inventory, Materials, etc.	8,000.00		
Finished Goods.	5,000.00		
Accounts Receivable . . .	50,000.00		
Cash	1,500.00		
	$110,000.00		$110,000.00

After making the adjustments and allowing interest at 6% on the invested capital, the excess earnings were capitalized on a basis of 10% to obtain the amount of the good-will.

Average net profits for a period of three years: Elton Manufacturing Co. $17,000; Star Manufacturing Co. $10,800.

The Union Manufacturing Co. was capitalized at an amount equal to the net assets (after adjustments) and the good-will of the two merged companies.

(a) Find the capitalization of the Union Manufacturing Co. and the amount of preferred and common stock allotted to each of the merged companies.

(b) Write the journal entries to open the books of the Union Manufacturing Co.

(c) Prepare the balance sheet for the Union Manufacturing Co.

(d) Write the closing journal entries for the Star Manufacturing Co.

34. The following is abstracted from an agreement of merger and consolidation made December 31, 1917, between the Pennsylvania Tool Co., party of the first part, and the Keystone Tool Co., party of the second part. Said parties of both parts being corporations duly organized and existing under the laws of the State of Pennsylvania, by this agreement merge and consolidate into a single corporation.

The name of the corporation hereby formed by said consolidation shall be the Pennsylvania Tool Co.

The amount of capital stock of the new corporation is $100,000, all of which shall be common stock divided into 1,000 shares of a par value of $100. The manner of distributing capital stock shall be as follows:

The capital stock of the Pennsylvania Tool Co., party of the first part, shall be exchangeable for capital stock of the new corporation, share for share, and the balance of the capital stock of the new corporation hereby formed shall be distributed to the stockholders of the Keystone Tool Co., in proportion to their present holdings.

The Pennsylvania Tool Co., party of the first part, was incorporated shortly before the date of the merger, and had transacted no business other than the

issuance of ten shares of capital stock, $100 each, for which payment of $1,000 had been received, and which was on hand in the treasury of the company on the date of the merger, and directly after the merger transferred to the bank deposit account of the consolidated company and credited to an account called "Suspense."

The Keystone Tool Co. had for a number of years been actively engaged in business. Its fiscal year ended September 30, 1917, at which time an inventory was taken and its accounts had been properly closed. At the date of the merger the following trial balance was drawn from the books:

Cash	$20,000.00	
Accounts Receivable	15,000.00	
Merchandise Inventory, September 30, 1917	130,000.00	
Merchandise Purchased	250,000.00	
Expenses	25,000.00	
Accounts Payable		$10,000.00
Sales		300,000.00
Capital Stock		30,000.00
Undivided Profits Balance, September 30, 1917		100,000.00
	$440,000.00	$440,000.00

The account books of this concern were not closed at the date of the merger and no inventory was taken, although the exchange of capital stock was effected and also all business after December 31, 1917, was transacted under the name of the Pennsylvania Tool Co., and it was not until March 31, 1918, that an accountant was asked to state the accounts of the new company from the date of the consolidation.

At March 31, 1918, before the accountant had commenced his work, an inventory was taken which showed the value of merchandise on hand as at that date, to be $216,250, and the following trial balance was abstracted from the books:

Trial Balance, March 31, 1918

Cash	$26,000.00	
Accounts Receivable	10,000.00	
Merchandise Inventory, September 30, 1917	130,000.00	
Merchandise Purchased	600,000.00	
Expenses	60,000.00	
Accounts Payable		$10,000.00
Sales		685,000.00
Suspense		1,000.00
Capital Stock		30,000.00
Undivided Profits		100,000.00
	$826,000.00	$826,000.00

Prepare:

(a) Balance sheet of the consolidated company as at March 31, 1918.

(b) Profit and loss account arranged to show the profits of the consolidated company for the three months ended March 31.

(c) Profit and loss account of the Keystone Tool Co. for the three months ended December 31.

(d) Statement showing the disposition of profits taken over by the new company.

(e) State what basis you make use of in determining the approximate value of merchandise on hand at December 31.

Miscellaneous

35. A manufacturer is desirous of selling his business, and furnishes a statement showing the condition of affairs for the past five years as follows:

Amount of Sales averaging per year	$800,000.00
Wages Paid " " "	200,000.00
Expenses Paid " " "	80,000.00
Raw Material Purchased " "	350,000.00
Supplies on Hand at present time	40,000.00
Machinery in use at commencement of the five years	150,000.00
(50% of the above amount has been in use for 10 years previous, and all additions made at cost prices, and nothing marked off for depreciation.)	
Carried at present at	$225,000.00
(All repairs have been charged to expense.)	
Real Estate valued at	200,000.00

What report would you make as to a fair valuation of this business? Explain fully your reasons for same.

36. The factory of an automobile company assembles its cars only on receipt of orders from the main office. A summary of the factory operations for a certain period is as follows:

Parts Purchased	$162,500.00
Parts Manufactured (material cost)	562,500.00
Productive Labor (125% of material)	703,125.00
Factory Expense	1,128,000.00
Cost of Cars:	
Parts Purchased, Consumed	137,500.00
Parts Manufactured (material cost)	187,500.00
Productive Labor (145% of material)	471,250.00
Factory Expense	565,500.00
Material on Hand, Unmanufactured	500,000.00

Prepare a technical trial balance of the cost ledger and an inventory of the stock room.

37. John Doe commenced business with a cash capital of $15,000. At the close of his fiscal period the ledger accounts were: accounts receivable $4,312.50; merchandise debit balance $5,062.50; accounts payable $5,375; expense $900. Doe's total loss was $2,775.

Prepare a statement of assets and liabilities and the profit or loss.

38. John Adams lost his stock of merchandise May 1, 1918, through a flood in the Mississippi River.

Adams applied to the local Mutual Flood Insurance Society for reimbursements, claiming a loss of $5,886.35 on merchandise stock. From the following data ascertain his merchandise inventory:

Net profits May 1, 1918, $4,452.91; drawings $1,598; legal expenses $17.50; interest debit $313; advertising $14; commissions debit $961.01; insurance $196.23; sales $81,688.04; inventory, December, 1917, $1,568.62; purchases $55,415.82; labor, productive $19,499.58; telephone $416.06; sundry factory expenses $3,201.92; repairs $16; surplus May 1, 1918, $2,854.91.

39. The directors of a manufacturing company, before the closing and auditing of the books for the half-year ending December 31, declared out of the net earnings of the company a dividend for the half-year of 4% on the preferred stock of $100,000 and 3% on the common stock of $100,000. There has been brought forward from the last half-year, an undivided balance of profit of $4,000, and after the audit of the books the trial balance is found to be as follows:

Trial Balance, December 31

Real Estate and Building	$32,500.00
Plant and Machinery	40,000.00
Patents and Good-Will	80,000.00
Inventory, July 1	29,000.00
Purchases	82,500.00
Labor	88,000.00
Coal	6,000.00
Salaries, General	11,000.00
Salaries, Management	5,000.00
Insurance	875.00
Allowances	6,250.00
Freight	1,500.00
Discount and Interest	750.00
Cash in Bank	8,000.00
Investments	15,500.00
Miscellaneous Expense	4,300.00
Book Debts	42,000.00

Preferred Stock in Treasury	5,000.00	
Repairs	1,000.00	
Preferred Stock		100,000.00
Common Stock		100,000.00
Sales		219,175.00
Notes Payable		26,000.00
Accounts Payable		14,000.00
	$459,175.00	$459,175.00

Stock on hand $26,500.

From the above prepare profit and loss and income statement and balance sheet, giving effect in accounts to depreciation at the rate of 7½% a year, on plant and machinery, and making an allowance of 5% on the book debts to provide for bad debts; also create a liability in the balance sheet for dividend as stated.

40. Wm. Bates commenced business June 1, 1917, with a capital consisting of cash $60,000, and a building and lot worth $85,000, subject to a mortgage of $25,000, dated June 1, 1917, bearing interest at 6%.

One year later, June 1, 1918, an abstract of his books disclosed the following accounts: purchases $78,000; sales $85,000; sinking fund $8,000; cash drawings $6,000; goods returned to creditors $5,000; expenses paid in cash $9,000; profit and loss, debit $3,500; contingent fund $3,000; due to creditors $49,000; reserve for bad debts $4,250; due from customers $32,620; discounts allowed customers on accounts paid $755; returned sales $4,520; discounts on accounts paid to creditors $650. No goods were sold to creditors or purchased from customers. Unsold goods June 1, 1918, $9,500.

From the above data, prepare a trial balance, income statement, and balance sheet.

Note: Two items affecting accounts in the trial balance are missing and must be supplied.

41. In taking off a trial balance a bookkeeper finds that his debit footings exceed the credit by $131.56, which he carried to a suspense account. Later, he discovers that a purchase amounting to $417.50 has been debited to a creditor as $192.94; that $312.50 for depreciation of furniture has not been posted to depreciation account; that $500 withdrawn by the proprietor has been charged against wages account; that a discount of $76.13 allowed to a customer has been credited to him as $71.13, and that the total of sales returned was footed $5 short. Give detailed entries showing how you would remedy these errors, and starting with the original difference prepare a supplemental trial balance showing whether the books balance or not.

42. A and B are partners owning two retail stores, one in Paterson and the other in Newark. They agree to dissolve partnership as of July 1, 1918. The two stores are valued July 1, 1918, as follows: Paterson $4,573.50; Newark $3,600. On this basis B contemplates purchasing A's interest. On being

furnished with the following data, B requests you to inform him if the inventory of the Paterson store, January 1, 1918, was correct as A claims:

Value of alleged Inventory, January 1, 1918, in the Paterson store	$3,800.00
Purchases for both stores, January to July, paid for	5,128.80
Due to Creditors on account of both stores, July 1	1,500.00
Cash Sales, Newark store	1,875.00
Cash Sales, Paterson store	3,105.00
Purchases, Paterson store, January to July	3,326.00
Profits 50% of Sales	

Prepare a statement proving whether or not the inventory of the Paterson store, January 1, 1918, was correct as stated.

43. On paper ruled as for a stock ledger, make entry of the following stock transactions of William Henderson, closing the account as of October 31, 1918, and carrying down the balance:

100 shares (par value $100) originally issued, full paid at par to William Henderson by certificate No 5. August 16, 1918.

William Henderson sells 50 shares of the original 100 to Charles Gibbons at $120, September 14, 1918, receiving certificate No. 37 for shares retained.

October 28, 1918, William Henderson purchases from John Hogan 25 shares at $115 and receives certificate No. 78.

44. Stockholders of the Deep Canal Company donated 400 shares of stock of a par value of $100 per share for the purpose of providing working capital.

Three hundred shares of the treasury stock were sold by agents at 90. A commission of 10% and expenses of $516 was allowed the agents for selling. The 300 shares of treasury stock were sold on the instalment plan, 10% down and 10% a month for the balance. Certificates of stock not to be issued until paid in full.

Six months later you are to enter the total amount of cash paid on instalments, excluding the initial payment which was made at the time of subscription.

At the end of eight months 100 subscribers defaulted on their subscription contracts. Their subscriptions were canceled and the payments they had made declared forfeited.

The balance of all subscription accounts except those canceled by default have been paid in full and stock certificates therefor duly issued.

(a) Write all the necessary journal entries.

(b) Construct a suitable instalment book and record in it the above transactions.

APPENDIX D

REVIEW QUESTIONS

Chapter I

1. Name the two general classes of corporations, and subclassify each.
2. Discuss briefly the working organization of the stock corporation.
3. Name the different classes of stock and discuss each briefly.
4. What is meant by watered stock?
5. How, on the balance sheet, would you show discount on stock? Premium on stock?
6. What are the correct journal entries covering the receipt of treasury stock, and its sale at a discount? At a premium?
7. To what uses is donated surplus restricted?
8. What is bonus stock, and when may it be issued?
9. What kind of an expense does bonus stock constitute when given with an issue of bonds which would otherwise be sold at a discount?
10. When treasury stock is purchased by the issuing company at a discount, how would the transaction appear on the ledger? How if bought at a premium?
11. Contrast the redemption at a premium of a preferred stock issue, with the purchase of treasury stock at a premium.
12. What is meant by stock of no par value? Explain fully.
13. How is the issue of no par value stock handled on the books?
14. Name and discuss those records peculiar to the corporation.
15. Of what value to the accountant are the records kept in the minute book?

Chapter II

1. In what way are the purchasing activities of a manufacturing concern more complex than those of a concern selling stock-in-trade?
2. Why is the old purchase journal inadequate to meet the needs of the manufacturing concern? In what way, however, can it be improved to meet these needs?
3. Discuss the development of the voucher register, showing its improvement over the purchase journal.
4. What is a voucher?
5. State the essential characteristics of a formal voucher.
6. Describe in detail the operation of a voucher system.
7. What are the advantages of the voucher check?
8. What are "treasurer's numbers," and why are they sometimes put on vouchers?

9. In what way does the use of the voucher register eliminate much of the work that is usually done on the cash book?
10. How is it possible, when using the voucher system, to keep a record of the volume of business done with each creditor?
11. How is the general ledger account, Vouchers Payable, proven?
12. State the steps that must be taken when substituting the voucher system for the old journal method of handling purchases.
13. Explain two methods of treating purchases returns and allowances on the voucher register. Which method is the most satisfactory for a concern doing a large volume of business?
14. Explain in detail the methods of handling the following items on the voucher register: (a) Partial payments on vouchers. (b) Payment by means of a note payable. (c) Cash discounts on purchases.
15. Enumerate the advantages claimed for the voucher system. The disadvantages.

Chapter III

1. In what respect does factory accounting differ from financial accounting?
2. What three main elements enter into the manufacture of a product? Discuss each.
3. For what special purposes are cost records kept?
4. What is meant by raw materials from the manufacturer's viewpoint?
5. Describe the two methods used in accounting foı material cost. Which method is preferable for the large concern?
6. How would you classify labor for factory accounting?
7. Explain the use of the time card.
8. Describe the general content of a pay-roll.
9. Why and how should the pay-roll be safeguarded?
10. How are the workmen paid from the pay-roll?
11. How is distribution of the pay-roll made? Distribution of accrued wages?
12. Name a few items which enter into overhead expenses.
13. What constitutes the real difficulty in accounting for factory expense or overhead?
14. Why is a common basis of distribution of expense usually unsatisfactory?
15. What relation has a manufacturing statement to a profit and loss statement?

Chapter IV

1. Discuss the growing importance of the balance sheet in its relations to the business world.
2. What relation is there between the trial balance and the balance sheet? Between the post-closing trial balance and the balance sheet?
3. What is the purpose of the balance sheet? What uses may it serve?
4. Differentiate between the English and the American or Continental form of balance sheet.

5. How is the origin of the English form of balance sheet explained?
6. What is the "Statement of Receipts and Expenditures on Capital Account?"
7. Name and criticize a few of the balance sheet titles met with.
8. What is the purpose in classifying the items appearing in the different sections of a balance sheet?
9. What controlling principle usually governs the order of these sections and the items within each section?
10. Give an outline of the group arrangement of the balance sheet.
11. State and describe the two methods of arranging the three main classes of balance sheet items. Which method is usually preferred?
12. How is a valuation account usually shown on the balance sheet? Give examples.
13. Tell what you know of the statutory requirements governing the frequency of financial statements of both financial and public service corporations.
14. What are the reasons for having a condensed balance sheet? What precautions must be taken when condensing a balance sheet?
15. Enumerate several of the purposes which a balance sheet may serve.

Chapter V

1. What points demand consideration before an accountant can definitely arrive at the content of a balance sheet?
2. State the chief purpose for valuing the assets of public utilities.
3. Give a few principles involved in the valuation of property for the purpose of sale or purchase.
4. Name three kinds of valuations relating chiefly to the commercial balance sheet.
5. What principles are involved in the valuation of a going concern?
6. What is meant by cost value?
7. Give a few sources of data as to value.
8. What is an "experience figure" in connection with an appraisal?
9. What is the most usual basis for values which are shown in the commercial balance sheet.
10. Define and explain: (a) Capital expenditures. (b) Revenue expenditures. (c) Capital receipts. (d) Capital expense.
11. Do the expenses of organization constitute capital or revenue expenditures?
12. Define and discuss: (a) Maintenance. (b) Replacements. (c) Renewals. (d) Repairs.
13. When should a renewal be considered an expenditure on capital account?
14. Describe the best method of handling expenses involved in making "cost cutting" changes.
15. How may expenditures for assets subject to depreciation be considered as deferred charges to operations?

16. The cost of repairs upon second-hand equipment, immediately after purchase, constitutes what kind of an expenditure?
17. Name a few construction costs which may justly be considered as capital expenditures.
18. Upon what is the distinction between capital and revenue expenditures often based?
19. Name the three general heads under which the assets may be classed on the balance sheet.
20. What are the principles of valuation for the assets appearing under each group?
21. Are the principles of valuation applicable to liability items?
22. Would you say that a balance sheet is a statement of fact, or merely an opinion based on experience? Why?

Chapter VI

1. Define depreciation and show why the depreciation factor demands consideration.
2. Distinguish between "absolute or actual" and "theoretical" depreciation.
3. Define "accounting" depreciation.
4. What is meant by complete depreciation? Incomplete?
5. How can a consideration of complete depreciation be of value?
6. What is the relation of individual depreciation to composite depreciation?
7. What is meant by "normal" or "average" value in connection with composite depreciation?
8. Define "deferred maintenance," "accrued depreciation."
9. What is the attitude of the law in regard to depreciation?
10. Give a clear distinction between repairs and renewals.
11. What relation is there between the reserve for depreciation and the productive efficiency of the plant?
12. Explain how the efficiency of the unit bears a different relation to depreciation than does that of the plant as a whole. Give an example.
13. Is it correct to allow fluctuations in market value to influence the charges to depreciations?
14. Give a clear distinction between depreciation and depletion.

Chapter VII

1. Give a complete outline showing the cause of depreciation as related to: (a) Tangible property. (b) Intangible property.
2. In what ways is age a distinct cause of depreciation? Wear and tear?
3. Explain "functional" depreciation.
4. What two main factors or compelling forces may bring about inadequacy?
5. Name and discuss each of the forces of internal origin which may bring about inadequacy. Those of external origin.
6. Discuss obsolescence as a cause of functional depreciation.
7. Do the courts recognize obsolescence as a factor of depreciation?
8. Name the various items comprising contingent depreciation.

9. When must provision be made for the depreciation of intangible property, or rights?
10. What constitutes the effective depreciation for any given asset?

Chapter VIII

1. State the real purpose of the depreciation charge as viewed first from the standpoint of the balance sheet, and second from that of the profit and loss statement.
2. Among what items of expense do accountants include depreciation charges?
3. What two methods of distributing depreciation charges over several fiscal periods are possible?
4. Show how the factor of idle time would affect the charges of depreciation for different fiscal periods.
5. What three views must an accountant always consider when making the depreciation charge?
6. Have there been any successful efforts to standardize depreciation rates?
7. Of what importance are local conditions in determining an individual depreciation rate?
8. Name the important normal and contingent factors which must be taken into account in determining the depreciation rate.
9. Upon which of these factors must the rate be based at the time of installation?
10. Upon what considerations is the normal rate based?
11. What influence has the policy as to repairs upon the normal rate?
12. Explain the three methods of handling repairs and renewals on the books.

Chapter IX

1. What are the usual factors which enter into the calculation of depreciation charges under most methods?
2. Name and subclassify the four general methods of calculating depreciation charges.
3. Explain and give the essential characteristics of each of the methods used for estimating depreciation.
4. What is meant by condition per cent?

Chapter X

1. Name the causes of depreciation as viewed from the aspect of time. As viewed from the aspect of service.
2. What is the ideal basis for distributing the depreciation charge?
3. Discuss the advantages and disadvantages of the various depreciation methods as outlined in Chapter IX, and state the conditions under which each method might work to advantage.
4. Should stability of income on the investment be considered in commercial valuations?

Chapter XI

1. What are the two methods of booking depreciation in the ledger? Which method is preferable?
2. Explain and criticize the two methods of handling the depreciation reserve account at the time of the renewal of parts or replacement of the asset.
3. Why are subsidiary records necessary in accounting for a group of assets which are subject to depreciation?
4. Upon what basis are plant assets usually grouped?
5. Name the five headings under which a record of each plant unit should be kept.
6. Discuss the importance of a periodic revision of depreciation rates. Upon what does the frequency of such a revision depend?
7. What is meant by the rate of composite depreciation?
8. Explain, by assuming data from which to work, the two methods of estimating the composite life of a group of assets, and also their composite rate of depreciation.
9. What does a depreciation reserve on the balance sheet show as to the management's policy in treating plant properties?
10. Upon studying the depreciation reserve account for successive periods, what conclusions might be drawn in the case of: (a) A fluctuating reserve? (b) An increasing reserve? (c) A decreasing reserve?
11. Should the depreciation reserve ever serve as a means of financing the replacement of plant equipment?
12. Name the three courses which the management might pursue in financing plant replacements.
13. Explain the secret reserve. Is the policy of carrying a secret reserve advisable? What is the result of carrying too low a reserve?
14. Name the various causes of the appreciation in value of an asset.
15. When is one justified in offsetting depreciation with appreciation?
16. What effect might an over- or under-charge for depreciation have upon the stockholders of the corporation?

Chapter XII

1. Discuss some of the items often considered as cash, and give reasons why many of them should not be included in that account.
2. Explain fully the customary method of receiving stamps as cash payments.
3. Discuss the impropriety of accepting and listing I O U's and due bills as cash.
4. How should the disposition of the various cash funds be shown when listing the cash items?
5. What rate of exchange should be used by the home office in valuing cash held in a foreign branch?
6. What is the important problem in valuing accounts and notes receivable?
7. Why is the title "accounts receivable" objectionable?

8. How may large losses from bad debts be avoided?
9. What relation does the percentage of loss from bad debts bear to the term of credit granted?
10. Explain how customers' accounts are analyzed as a basis for estimating bad debts. When is such an analysis of value?
11. What three bases are used in estimating the percentage of bad debts? Give a criticism of each base.
12. What allowance should be made for discounts and collection costs when valuing the trade debtor's accounts?
13. What is the common practice in providing for loss on bad notes receivable?
14. How should non-interest-bearing notes be valued?
15. What items should be included under the title of "notes receivable"?

Chapter XIII

1. Define the term "stock-in-trade."
2. What is the most conservative basis upon which to value stock-in-trade? Criticize other bases of valuation which may be used.
3. Explain the use of balance sheet footnotes to indicate the market value of stock-in-trade.
4. What is the proper basis of valuation for depreciated stock-in-trade?
5. Discuss all of the items that may go to make up the cost of stock-in-trade.
6. How may items of cost, which are not directly attributable to any one department, be equitably distributed?
7. Discuss some of the problems met in valuing inventories.
8. In the case of a manufacturing concern, discuss the valuation of the following inventories: (a) Finished goods. (b) Raw materials. (c) Goods in process. (d) Uncompleted contracts. (e) Scrap.
9. State the two rules to be observed when taking a physical inventory and discuss their application.
10. How may a perpetual inventory be kept?
11. Is a physical inventory necessary when a perpetual inventory is kept?

Chapter XIV

1. What is the usual basis upon which temporary investments should be valued?
2. What are the advantages in the use of the "Reserve for Investment Fluctuations" account?
3. Explain the method of valuing stock rights.
4. How are temporary investment costs handled on the books?
5. Discuss the principles governing the valuation of bonds purchased at either a discount or a premium for temporary account.
6. What kind of an asset is unissued stock?
7. Differentiate between the valuation of unissued stock and that of treasury stock.
8. Give a summary of the principles of valuation of temporary investment assets.

9. Define and give a few examples of accrued income.
10. Explain the cash method of handling accruals and tell why it is inadequate.
11. Explain the "accrual method."
12. On what basis should accrued items be valued, and how should they be classed on the balance sheet?
13. Discuss and illustrate the methods of accounting for accrued income.
14. Define and give examples of prepaid expense items.
15. On what basis should they be valued, and how should they be shown on the balance sheet?

Chapter XV

1. State the characteristics of permanent investments.
2. In what three ways may a permanent or fixed investment be effected so as to act as an aid in the operation of any business?
3. What is the chief problem in valuing those investments which aid operation?
4. When may the "consolidated balance sheet" be used to advantage by holding companies?
5. Discuss the factors involved in valuing claims against subsidiary concerns on account of advances.
6. Under what conditions would it be advisable to value partial or minor holdings at cost?
7. On what basis should investments producing no income be valued?
8. Explain the influence of interest rates upon the valuation of bonds.
9. Describe the nature of bond discount and of bond premium.
10. Explain the two methods of recording bond investments.
11. What data must necessarily be known in order to calculate the periodic amortization of bond discount or premium?
12. Derive the formula for the present worth of a given sum at compound interest.
13. Derive the formulas for the sum and present worth of an annuity.
14. Explain the three methods for valuing bonds.
15. On what basis should sinking funds be valued?
16. On what basis should investments in land be valued?

Chapter XVI

1. What principles are particularly applicable to the valuation of equipment assets?
2. Distinguish clearly between real and personal property.
3. Why is it necessary to keep separate records of machinery and tools?
4. Describe the operation of the machine account where subsidiary records are kept.
5. What is the valuation formula for machinery?
6. Is there any necessity for a periodic revision of the depreciation rate?
7. State the advantages of keeping a life history of units of machinery in the subsidiary records.

8. What effect has the standardization of methods of operation and of use of machinery and tools upon the rates of depreciation of these assets?
9. Enumerate a few points that demand consideration in the calculation of the depreciation rate for a machine subject to abnormal operation.
10. When should scrap material be disposed of?
11. Due to the possibility of losing small tools, what precautions must be taken in accounting for this class of assets?
12. Why is depreciation often ignored when estimating the value of tools?
13. Upon what basis should tools made in the home factory be valued?
14. When might it be proper to capitalize expenditures made for the rearrangement of machinery within the plant?
15. Will the capitalization of this expense affect profits considered over the life of the asset?
16. State the basis for valuing: (a) Furniture and fixtures. (b) Delivery equipment. (c) Carriers and containers. (d) Patterns, molds, electrotypes, etc.
17. Show the entries necessary to book the disposal of an asset subject to depreciation.

Chapter XVII

1. What objection is there to the account title "real estate"?
2. What items enter into the cost of buildings?
3. What is the basis for valuing: (a) Buildings? (b) Betterments on leased buildings?
4. What considerations must be taken into account in applying depreciation to buildings?
5. What is the basis for valuing land used for operations?
6. What account should be taken of depreciation and appreciation of land?
7. How should the carrying costs of land held for investment be treated?
8. State fully the points to be considered in handling and valuing donated land.
9. Where land is stock-in-trade, what objection is there to loading the loss suffered on the sale of some portions onto the carrying value of the unsold portions?
10. Distinguish between depletion and depreciation.
11. How is periodic depletion calculated? Explain fully.
12. Discuss fully the valuation of leaseholds.

Chapter XVIII

1. Discuss the valuation of patents: (a) When purchased. (b) When developed within the plant. (c) Patents purchased but not used.
2. What elements of depreciation are effective on patents? In what way?
3. What items enter into the cost of patents?
4. How may the life of basic patents be indefinitely extended?
5. What is the basis of valuation for: (a) Copyrights? (b) Trade secrets? (c) Trade-marks?

6. Discuss the commercial valuation of franchises as distinguished from the valuation allowed by public service boards.
7. How should organization expenses be handled and valued?
8. Define good-will and state its characteristics. What is its essence?
9. When may good-will be shown on the books? Discuss the several cases.
10. State and explain three ways of valuing good-will.
11. Is good-will subject to depreciation? Discuss.
12. What objection is there to using good-will to absorb the water in watered stock?

Chapter XIX

1. State the general problem of valuation as applied to liabilities.
2. How should the liabilities be classified?
3. What considerations must be taken into account to make sure that all liabilities are shown on the balance sheet?
4. How should current liabilities be classified?
5. What different classes of items may be included under the head, accounts payable? Under trade creditors?
6. What classes of items are listed under accrued expenses?
7. In what sense is deferred income a liability?
8. Name six different classes of contingent liabilities and show how they should be treated: (a) On the balance sheet. (b) On the books.

Chapter XX

1. What is the basis of separation of fixed from current liabilities?
2. From a financial standpoint, what is the purpose of the incurrence of fixed liabilities?
3. Distinguish between a corporation bond and an ordinary mortgage or bond and mortgage.
4. What financial considerations are involved in the determination of the advisability of a bond issue?
5. State fully the methods of accounting for a bond issue.
6. Explain fully the entries necessary to record properly bond interest, including the amortization of premium or discount.
7. How should unissued bonds be treated on the balance sheet?
8. How should notes payable secured by real estate mortgage be shown on the balance sheet?
9. How would you treat the securities pledged as collateral for a bond or note issue?
10. What are short-term securities and under what conditions are they issued?

Chapter XXI

1. What problem is involved in the valuation of capital stock?
2. Define the different kinds of value of stocks.
3. What is watered stock? Illustrate.

4. What is the objection to earning capacity as the basis of capitalization?
5. What attitude does the law take towards capitalization?
6. How would you treat stock discount and premium on the books? On the balance sheet?
7. How would you value: (a) Stock issued for property. (b) Treasury stock.
8. How is the redemption or reduction of capital stock handled on the books? Explain fully.
9. How would you value: (a) Dividend stock. (b) Bonus stock.
10. How should unissued and treasury stock be shown on the balance sheet?
11. What is the problem of a preferred stock covered by a redemption contract imposing definite dates of redemption on the company?

Chapter XXII

1. What are profits? Distinguish between the economic, legal, and accounting uses of the term.
2. What two methods are used to determine profits?
3. How are profits related to the problem of valuation?
4. What effect have asset losses on profits? Discuss fully.
5. In what three ways may such losses be treated on the books and balance sheet?
6. How would you treat profit on goods being made for stock?
7. How would you treat profit on long-term contracts?
8. How would you treat profit on goods awaiting delivery?
9. What about profits due to appreciation of assets?
10. How would capital profits be handled?
11. Sum up briefly the considerations governing the determination of profits.

Chapter XXIII

1. Define surplus; margin. What are the sources of margin?
2. Explain the booking of the appropriation of profits.
3. In what different ways is the term reserve used?
4. What is the effect of an under- or over-estimate of valuation reserves?
5. How would you handle expected sales discounts on outstanding accounts?
6. How should expected collection costs be handled?
7. Distinguish between reserves and accrued items.
8. What are contingent reserves?
9. What are proprietorship reserves?
10. In what different ways may secret reserves be created?
11. Give the arguments for and against secret reserves.
12. What are covered reserves?
13. What is meant by earmarking reserves? How may continuity of a reserve policy be secured?
14. Give a logical classification of reserves.
15. Under best practice what should the Surplus account represent?
16. Give the form for the statement of surplus.

Chapter XXIV

1. What are the stockholders' rights as to profits? As to dividends?
2. What control have the directors over profits and dividends?
3. How are dividends declared? May they be revoked?
4. What is the liability of directors as to dividends.
5. In what different ways may dividends be paid? Explain fully.
6. What can be said of the policy of borrowing to pay dividends?
7. What is the problem involved in stock dividends in estate accounting?
8. How are the declaration and payment of dividends booked?
9. What is the relation of capital losses to dividends: (a) From a legal standpoint. (b) From a business standpoint.
10. What are liquidating dividends? How are such dividends handled as related to wasting assets?

Chapter XXV

1. Define a sinking fund and trace its origin.
2. State the problem of the calculation of a sinking fund. Derive the formula.
3. What other basis than the compound interest basis is often used for the accumulation of a sinking fund?
4. Explain fully the relation of the sinking fund to profits.
5. In what four ways may the sinking fund be handled on the balance sheet? Explain the meaning of each.
6. How should the sinking fund assets be shown on the balance sheet?
7. Explain fully the entries needed to book the sinking fund transactions: (a) The origin of the fund. (b) The trustee's periodic report. (c) The redemption of bonds and final disposition of the fund.
8. Discuss fully the relation between the reserve for depreciation and the sinking fund.

Chapter XXVI

1. Is the profit and loss a statement of fact or of opinion? Explain.
2. For what purposes is the periodic profit and loss summary inadequate? Discuss fully.
3. Give the arguments for inclusion of interest as an item of manufacturing cost.
4. Give the arguments against its inclusion. If its inclusion is allowed, how must it be booked?
5. State fully the case of bringing unrealized profits on the books.
6. What distinctive problems arise in closing the books of a corporation? Discuss.
7. How are errors of previous periods to be corrected?

Chapter XXVII

1. Give the various titles used for the profit and loss summary and indicate their special uses, if any.

2. Indicate the subsections, and their content, of the manufacturing section.
3. Indicate the content of the trading section.
4. Indicate the content of the general administrative section.
5. Indicate the content of any other sections and show their uses.
6. State and discuss the different methods of handling some items, such as goods in process, discounts, out-freight, rent, insurance, etc.
7. What purpose does the use of schedules serve?
8. Is the profit and loss the proper place to show all adjustments of surplus?

Chapter XXVIII

1. Under what conditions may a corporation liquidate? Distinguish between actual and legal insolvency.
2. Name and discuss seven causes or conditions resulting in insolvency.
3. Name the methods of liquidation.
4. What are acts of bankruptcy? Discuss.
5. Outline the process of liquidation under bankruptcy.
6. Outline the process of liquidation under voluntary dissolution.
7. Outline the process of liquidation under receivership.
8. What is the status of the several claimants to shares in the assets of a liquidating concern?
9. What are the fundamental principles of accounting involved in accounting for a liquidation?

Chapter XXIX

1. What various kinds of consolidations are there?
2. What is a holding company and how does it operate?
3. Distinguish between a consolidation and a merger.
4. What are some of the problems involved in the valuation of the various companies to a merger or consolidation? Discuss their treatment.
5. In such a valuation, why is it necessary to equalize conditions and what are the conditions which must usually be equalized?
6. In a partnership what particular items must be considered?
7. What is meant by earning capacity?
8. What factors enter into a determination of the amount of capitalization?
9. How may the interests of the various parties to a merger or consolidation be settled?
10. State the method of opening the books of the merger.
11. State the method of closing the books of the merged companies.

Chapter XXX

1. Discuss the branch and agency methods of marketing.
2. Differentiate between the branch and agency.
3. Discuss the problem of control over the branch by the head office.
4. What are the fundamental principles of branch accounting?
5. How may agency accounts be kept?

6. Indicate the method of keeping both the branch books and the branch activities on the head office books where goods are billed by the head office to the branch: (a) At cost price. (b) At some other price than cost.
7. Discuss briefly the handling of branch purchases, sales, and cash in order to secure head office control over them.
8. Discuss fully the periodic summary of results and the adjustments necessary at such a time between the branch and head office books.
9. What reports should the branch make the head office?

Chapter XXXI

1. What problems beyond those of the domestic branch are met in accounting for the foreign branch?
2. What control accounts are usually carried on the head office books?
3. State and explain the principles of the conversion of branch results and their incorporation with the head office results.
4. How are fluctuations of exchange handled? Discuss fully.
5. What peculiarities of regulation over accounts are sometimes met in foreign countries?
6. Explain fully the method of keeping foreign customers' accounts on the head office books and the periodic adjustment of their control account.
7. Explain the similar method of keeping creditors' accounts.

Chapter XXXII

1. What are suspense accounts? Give several examples of different kinds of suspense accounts.
2. In what sense are valuation accounts suspense accounts?
3. What is the suspense ledger? What does its use indicate? What information should such a ledger present?
4. What is the process of hypothecating accounts receivable? What does such a practice usually indicate?
5. Discuss fully the problem of accounting for hypothecated accounts.
6. What advantage has the system of numbering accounts over that of naming them?
7. Show how a numeric-alphabetic system may be constructed.
8. Present a complete schedule of numbered accounts.
9. Explain the insurance contract.
10. How should fire-damaged property be handled in order to base a claim for loss?
11. How is the amount of the liability of the insurance company determined?
12. What is the effect of the coinsurance clause? Illustrate the three cases.
13. How should the records be kept to facilitate adjustment of fire losses?
14. Explain fully the method of booking a fire loss and its adjustment

Chapter XXXIII

1. State some of the uses to which statistics may be put in business.
2. What is the importance of statistics in railroad accounting and management?
3. What kinds of manufacturing data may be presented in statistical form?
4. What kinds of trading data may be presented in statistical form?
5. Discuss the use of graphs in the presentation of statistics.
6. What principles should be observed in graphical presentation?
7. Explain the purpose, content, and operation of private books.
8. What is a journal voucher, its purpose and method of use?
9. Explain the two ways in which income and expenses of buildings owned may be treated and the purposes each method serves.
10. How should the expense of social betterment work be treated?

Chapter XXXIV

1. In what respects is the balance sheet of the holding company deficient and unsatisfactory?
2. Differentiate between the consolidated balance sheet and the holding company's balance sheet.
3. When, in the case of partial ownership of the subsidiaries, does the consolidated balance sheet reflect true condition?
4. State fully how partial ownership may best be shown.
5. How are intercompany accounts handled on the consolidated balance sheet?
6. How are the various inventories valued for the consolidated balance sheet?
7. Explain the manner of showing capital stock on the consolidated balance sheet.
8. Explain the manner of showing surplus (or deficit) on the consolidated balance sheet.
9. Explain how the consolidated profit and loss summary should be drawn up. How does it differ from the holding company's profit and loss summary?

Chapter XXXV

1. Distinguish between assignee, receiver, and trustee, and state their respective duties.
2. What accounts should a receiver in equity keep? What reports should he make to the court?
3. What initial statements are presented to the court in: (a) Voluntary bankruptcy proceedings? (b) In involuntary bankruptcy?
4. What reports does the court require of the trustee? How often?
5. What is a liquidating dividend?
6. In a case of bankruptcy what classes of creditors are there?
7. What is the statement of affairs and what information does it attempt to present?
8. What basis of valuation of the assets is used for the statement of affairs?

9. What is the realization and liquidation statement? What purpose does it serve?
10. What theories underlie its make-up?
11. How are cash and valuation reserves best handled?
12. What problem is involved in partnership liquidation by instalments?
13. How should it be solved theoretically? How is it often solved in practice?

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