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Washington, D. C. ▼ August 8, 1923

ACCOUNTING RECORDS AND BUSINESS METHODS FOR LIVE-STOCK SHIPPING ASSOCIATIONS

By

FRANK ROBOTKA

Assistant, Iowa Agricultural Experiment Station, and Collaborator, Bureau of Agricultural Economics

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The cooperative marketing of live stock has experienced a more phenomenal growth than perhaps any other form of cooperative endeavor. Using Iowa as an illustration, the oldest association in the State was organized in 1904. Of all the associations in existence in the State in 1920, about 3 per cent were organized before 1910, only 8 per cent before 1915, and less than 25 per cent before 1918. About 75 per cent of the associations in existence in December, 1920, were organized during the years 1919 and 1920.[2]

Even though the history of the movement in other States differs in some respects from that in Iowa, by far the greatest development for the country as a whole has taken place within the past five years.

This rapid growth has brought to the front a number of problems, most of which may be traced directly or indirectly to small volume of business, inexperienced management and in some localities to competition among the associations. As a result there is a wide difference in the cost of shipping between the most efficient and the least efficient associations. The choice of markets is also important,

[1] Manuscript for this publication was prepared in collaboration with the Iowa State College of Agriculture and Mechanic Arts and is also published as Accounting Records for Live Stock Shipping Associations, by Frank Robotka. Iowa Agr. Exp. Sta. Bul. No. 209.

[2] Cooperative Live-Stock Shipping in Iowa in 1920, by E. C. Nourse and C. W. Hammans, Iowa Agr. Exp. Sta. Bul. No. 200.

especially in the Middle West, where in some cases associations are accessible to several markets.

The solution of many of these problems depends upon the management having a thorough knowledge of the relative advantages of different methods of handling live stock and operating the association, the relative costs of shipping to different markets, the relative merits of different methods of selling and weighing live stock, and the extent to which these factors influence the rate of shrinkage or loss due to dead and crippled animals.

The question of what business policy shall be pursued in connection with these and other problems can be answered intelligently only when the details regarding the different shipments are summarized and the results analyzed. Reliable figures which can be used for this purpose too frequently have not been preserved by shipping associations. In fact, bookkeeping has been neglected more among shipping associations than in most other types of farmers' organizations. Perhaps the chief reason for this situation is that it is a relatively simple matter to organize a shipping association. A group of farmers may meet in the morning, elect a board of directors and a set of officers, hire a manager and begin business the same day. The details of management and record keeping are usually left to be worked out as the necessity arises.

Another explanation for the frequent neglect of record keeping is to be found in the fact that each sale—that is, each shipment—is often treated as if it were a completed fiscal period. The entire proceeds are either paid out or reserved at the time of settlement and the shipment is considered a closed incident. Other causes are the small average annual income received by the managers, the lack of standardization of business practices, and the frequent changes of managers and directors. The fact that many associations also handle feed and other farm supplies, often on credit, has done much to complicate the situation.

The adoption of a simple but adequate system of records by the associations generally would be a long step in the direction of raising the standards of efficiency of operation, of building up the volume of business and of inspiring loyalty on the part of the members and confidence on the part of the community generally. Furthermore, it would lay the foundation for successful cooperation among the associations. The association which fails to meet any one of these essential conditions is not likely to be in a position to render the kind of service which the community has a right to expect of it.

The system of records and accounts recommended in this bulletin is based on the methods used by shipping associations in different parts of the country which experience has demonstrated are sound and practical. Its operation in a number of States has already demonstrated its adaptability under a wide range of conditions and methods of operation.[3]

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[3] Some of the forms as presented are revisions of forms found in actual use, and others, particularly the shipment summary record and the cash journal, are original with the author. Final revisions were made at a series of conferences on shipping association business practices and accounting held in Chicago during the summer of 1921 under the auspices of the Illinois Agricultural Association, at which conferences the underlying principles involved and the forms themselves, substantially as here presented, were approved. In addition to the author, the following men took an active part in the discussions of the accounting records: S. W. Doty and F. G. Ketner, of Ohio, Ralph Loomis and T. D. Morse, of Missouri, and F. M. Simpson, of Illinois

The system is specifically designed to meet the needs of associations which make the shipping of live stock their main or only business. This includes associations which, in addition to shipping live stock, occasionally buy feed and other farm supplies which are unloaded directly from the car and paid for on delivery. Farmers' elevators or produce and supply associations which have a warehouse and carry a stock of supplies and which also ship live stock need only to add to their general ledger the special accounts necessary to handle the live-stock business. Such cash books and journals as may be in use also receive the entries for the live-stock transactions. However, all of the detail records and the shipment summary record herein recommended for shipping associations may be used with equal advantage by these other types of associations. Neither the cash journal nor the classification of accounts proposed in this system is designed or recommended for a mercantile or general produce business.

The purpose of each form and the method of using it is explained on the following pages.

WHAT FORMS ARE NEEDED?

A system of records, to be adequate, must provide for the keeping of two principal classes of records: The detail records or working papers, and the permanent records.

The detail records are needed to give evidence of the business transacted and to furnish the authority and data needed in making entries in the permanent records. As they contain the original calculations and figures they should be preserved carefully and filed conveniently for ready reference and verification in cases of dispute. Unless they are available when an audit is being made it is practically impossible to prove the accuracy of the books. The detail records which are included as part of the system and which experience has shown are necessary are:

Form No. 1. Scale ticket.
Form No. 2. Manifest.
Form No. 3. Prorating sheet.
Form No. 4. Member's statement and check voucher.
Form No. 5. Shipment record envelope.

The permanent records are provided for the purpose of preserving the information contained in the detail records and classifying it so as to make it useful to the management, first, in determining the business standing and explaining changes made in it during a fiscal period; and, second, in deciding what changes should be made in the choice of markets, methods of handling the live stock, and in the business methods generally. The forms provided are:

Form No. 6. Shipment summary record.
Form No. 7. Cash journal.

To illustrate the use of each of these forms an imaginary shipment, No. 111, will be followed through the records.

SCALE TICKET.

A memorandum should be made on the scale ticket (Form No. 1) showing how the animals were marked and the number and weight of each kind and grade of live stock delivered by each shipper. The

shipment number, date, and the name and address of the shipper should also be recorded. The home weight should be obtained separately for each grade of animals. Notations regarding the condition of the animals should be made on the ticket whenever there is reason to suspect that the animals have been fed excessively, or when there is a question as to whether certain ones may be subject to dock-

CO-OPERATIVE WEIGH TICKET

Shipment No. 111 Nov 1 1921

J Smith

P. O. Brookridge Ia. R. F. D. #2

KIND	No. Head	Home Wt.	Marks
Butchers, 1	30	6380	I Neck
Butchers, 2			
Packers	4	1290	I Neck
Stags			
Boars			
Pigs			
Crip. Busts			
Steers			
Cows			
Heifers			
Bulls			
Calves			
Lambs			
Ewes			
Yearlings Wethers			
Bucks			

14

..... Manager

FIG. 1.—Scale ticket (Form No. 1).

age or be sold subject to inspection. The original copy of the ticket should be given to the shipper and the carbon copy retained in the office.

MANIFEST.

A summary of the scale tickets for all the live stock included in the shipment should then be made on the manifest (Form No. 2) as shown in Figure 2. This form is also issued in duplicate, one copy being sent to the commission firm and the other retained in the office.

MANIFEST

OF LIVE STOCK SHIPPED BY

Shipping Assn. Form No. 2

Brookbridge Coop. Shpg Assn, Brookbridge

Shipment No. 111

Consigned to Cooperative Commission Co., Chicago

Date Shipped Nov. 1, 1921

Mail Account

Sales to Jno. Clark, Mgr. Brookbridge

Railroad C. & N.W.

Send Money to Same

Car Nos. D.C. 14980

Handling Instructions Weigh Packers separately; sell according to best judgment

Loaded 8:00 ~~A.M.~~ P.M.

HOME EXPENSES

Manager's Commission $

Insurance Fund - - - - $

Operating Expense - - $

$

$

Do not pooate

$

Total $

OWNERS	HOGS								MARKS	CATTLE						SHEEP				
	Butchers 1	Butchers 2	Packers	Stags	Boars	Pigs	Crips. Busts	Home Weight		Steers	Cows	Heifers	Bulls	Calves	Home Weight	Lambs	Ewes	Yrlgs. Wthrs.	Bucks	Home Weight
J. Smith	30							6380	I Neck											
"			4					1790	I "											
Bill Adams		25						7800	I Buck											
			2					615	I "											
	30	25	6					16085												

FIG. 2.—Manifest (Form No. 2).

Full instructions should be given regarding the disposition of the returns, prorating, and the method of handling the live stock. If the commission firm is to prorate the home expenses also, the rates or amounts of the different items should be recorded in the blanks provided for this purpose in the upper right-hand corner of the form. Much confusion in prorating can be avoided by filling out the manifest carefully and completely.

This completes the record work involved in receiving the live stock and loading it into the car. The results of the sale are necessary before the next step can be taken, which consists of prorating the returns.

PRORATING SHEET.

It is assumed that for shipment No. 111 the manager is to do the prorating. The manifest and the account sales received from the commission firm furnish all the information needed in connection with the distribution of the returns. It is assumed that the account sales shown on this page was received as a result of the sale of the live stock included in shipment No. 111. Figure 3 represents the prorating sheet (Form No. 3) as it appears after the returns have been prorated. The steps followed in arriving at the figures given on the prorating sheet are presented on pages 38, 39, 40.

[Account Sales for shipment No. 111.]

COOPERATIVE COMMISSION CO., UNION STOCK YARDS, CHICAGO, Nov. 2, 1921.

Sold for the Account of the Brookridge Cooperative Shipping Association, Brookridge, Iowa.

Buyer.	Head.	Kind.	Weight.	Mark.	Dockage. Sows.	Dockage. Stags.	Price.	Amount.
Armour	30	Hogs	6,315	I. R. S.			10.00	$631.50
Swift	25	do	7,720	I Back			9.80	756.56
Armour	6	Packers	1,870	4 I. R. S. 2 I Back.			9.00	168.30
			15,905					1,556.36

I. C. 14980, 17,000 pounds @ 40¢	$68.00	Freight	$73.04
Switching	3.00	Yardage 61, @ 12¢	7.32
War tax	2.04	Insurance	.07
Total	73.04	Feed—5 bu. corn	5.00
		Inspection	.20
		Commission	18.00 103.63
		Net proceeds	1,452.73

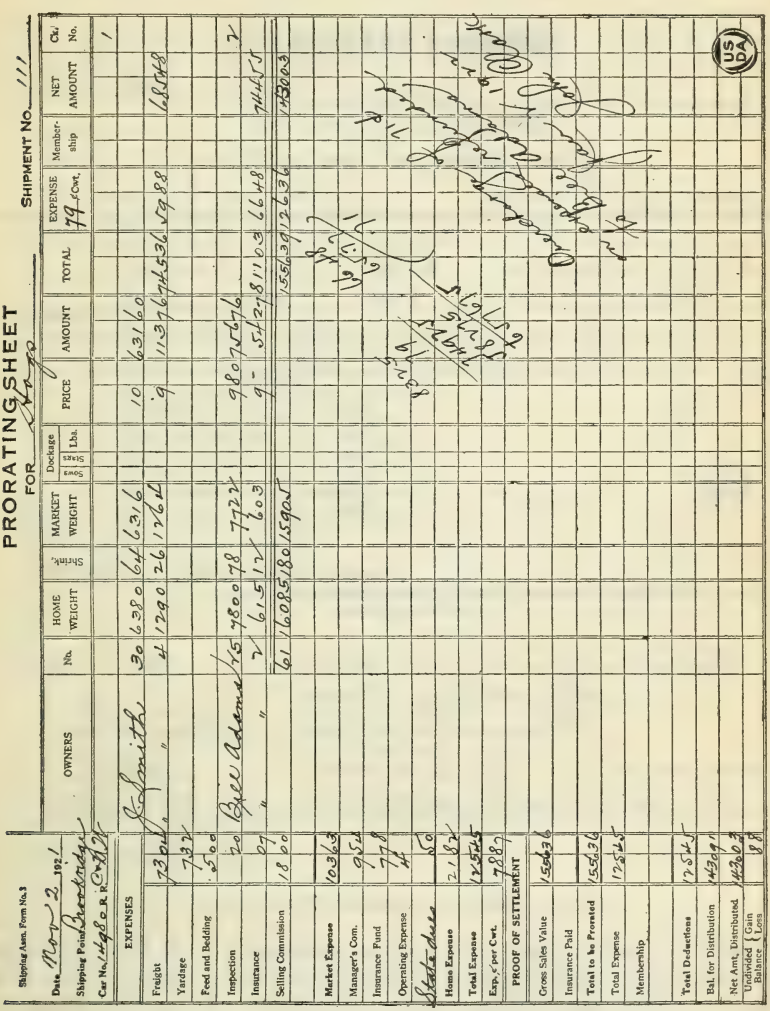
NOTE.—It will be noted that the weights shown here vary from those used in making up the prorate sheet (fig. 3). For explanation see note on page 39.

MEMBER'S STATEMENT.

When the calculations on the prorating sheet have been verified, statements and checks may be issued to the shippers. Form No. 4 is designed to be used for this purpose. The member's statement shows the details of the settlement with each shipper as calculated on the prorating sheet. The vouchers are issued in duplicate and are numbered consecutively. The statement bears the same number as the attached check, which number is inserted in the "check number"

column on the prorating sheet as the checks are issued. The original copy is given to the shipper and the carbon copy is retained in the office. (See Fig. 4.)

In those cases where the association uses an ordinary check form separate from the member's statement, the member's statement without the attached check may be used. This statement (Fig. 5) is made in duplicate and bears the same number as the check issued in payment. The check number is entered in the "check number" column on the prorating sheet. The original copy together with the check is given to the shipper and the carbon copy is retained in the office.



PRORATING SHEET FOR Nov 20

SHIPMENT No. 111

Shipping Assn. Form No. 3

Date Nov 2 1921

Shipping Point Greenbrier

Car No. 148 Ock 32

	OWNERS	No.	HOME WEIGHT	Shrink	MARKET WEIGHT	Dockage Sows	Dockage Stags	Dockage Lbs.	PRICE	AMOUNT	TOTAL	EXPENSE 74 Cwt.	Membership	NET AMOUNT	Ck. No.
	Smith	30	6380	64	6316				10	63160					1
	"	41	12900	26	12674				9	1137067.36		79.88		1287.48	
	Green Adams	75	78000	78	7722					98075.76					2
	"	7	6512	603					9	5872.81	103.66	48		744.55	
	"	61	108518	1590							1556.39	12.36		1530.03	
	Market Expense		103.63												
	Manager's Com.		95.24												
	Insurance Fund		77.8												
	Operating Expense		45												
	State dues		50												
	Home Expense		2.182												
	Total Expense		125.25												
	Exp. ¢ per Cwt.		7.08												
	PROOF OF SETTLEMENT														
	Gross Sales Value		1556.36												
	Insurance Paid														
	Total to be Prorated		1556.36												
	Total Expense		125.25												
	Membership														
	Total Deductions		125.25												
	Bal. for Distribution		1431.11												
	Net Amt. Distributed		1430.03												
	Undivided Gain / Balance Loss		1.08												

Fig. 3.—Prorating sheet for shipment No. 111 (Form No. 3).

SHIPMENT RECORD ENVELOPE.

The purposes of the shipment record envelope are: (1) To provide a convenient means of filing for ready reference all the papers

concerning each shipment; (2) to facilitate the classification of the debits and credits arising as a result of each settlement.

After the statements and checks have been issued, the blanks on the envelope should be filled out as indicated in Figure 6. The amount to be inserted opposite "Proceeds for live stock: Sold at market" will be the net proceeds as shown on the account sales. All of the other items will be obtained from the prorating sheet.

Shipping Association Form No. 4

MEMBER'S STATEMENT

Shipment No. 111 Brookridge Cooperative Shipping Assn. No. 94

Brookridge Iowa, Nov 2 1921

Account of J. Smith P.O. Blank, Iowa R.F.D. 2

No.	Kind	Shrinkage Gain	Market Weight	Dock	Price		Amount		TOTAL	
30	Good butchers	64	6316		10		631	60		
4	Pkrs	16	1764		9		113	76	745	36

REMARKS:

EXPENSES						
Species	Rate		Amount			
Hogs	0	79	59	88		
Cattle						
Calves						
Sheep						
					59	88

Attached find Check for Balance due $685.48

Please ask about anything not understood. Complete statement of each shipment is on file.

(Tear Off Before Depositing)

Brookridge Cooperative Shipping Assn. No. 94

Brookridge Iowa, Nov 2 1921

Pay to the order of J. Smith $685.48/100

Six Hundred Eighty Five and 48/100 DOLLARS

J. Clark
Manager

FIG. 4.—Member's statement (Form No. 4).

It will be noted that the "home statement" on the shipment record envelope is also a proof of settlement, but it differs from that on the prorating sheet in that it is a statement of the disposition of the *net* amount of money remitted by the commission firm after deducting the expenses, rather than of the *gross* market value as on the prorating sheet.

Each shipment should be assigned a serial number, which should be entered in the upper right-hand corner of the envelope.

All papers pertaining to the shipment should be filed in the envelope, including the carbon copies of the scale tickets, a carbon copy

of the manifest, a copy of the bill of lading, the account sales, the prorating sheet, carbon copies of the members' statements, and any other correspondence or papers pertaining to the shipment.

After settlement has been made summaries for the shipment should be recorded in the shipment summary record and the cash journal, as illustrated on the following pages.

SHIPMENT SUMMARY RECORD.

The shipment summary record is provided for the purpose of bringing together the useful information of a statistical nature regarding each shipment of live stock.

Shipping Association Form No. 4 – A

MEMBER'S STATEMENT

Nº 95

Shipment No.....

.....192.....

Account of ..... P.O. ..... R.F.D. .....

No.	Kind	Shrinkage Gain	Market Weight	Dock	Price		Amount		TOTAL	

REMARKS:

EXPENSES						
Species	Rate		Amount			
Hogs						
Cattle						
Calves						
Sheep						

Attached find Check No. for Balance due $.....

Please ask about anything not understood. Complete statement of each shipment is on file.

FIG. 5.—Member's statement (Form No. 4–A).

The column headings and the sample entries on the form in Figure 7 indicate what facts are to be recorded on this form and the method of recording them. A summary of each shipment should be entered immediately after settlement has been made.

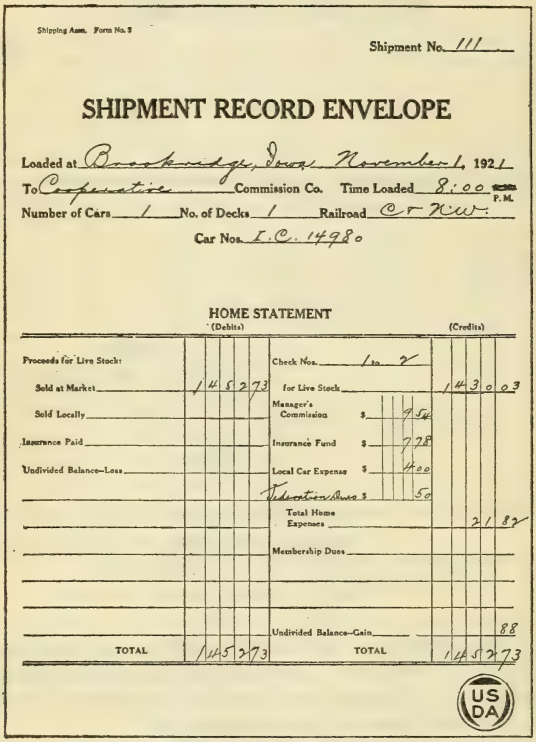
The figures for shipments No. 111 and No. 112 were taken directly from the manifests and the account sales illustrated in connection with the discussion of these shipments. (See page 41 for discussion of shipment No. 112.) The summaries consist of the *actual* weights, shrinkage, gross and net sales values, expenses, and home net value, rather than the prorated figures. The amount to be entered in the "home net" column is not the amount actually paid shippers, but it is the net value of the stock after all expenses have been deducted. The amount actually paid shippers is the home net value plus insurance paid for losses and plus or minus the small amount arising from dropping or adding fractions. The undivided balance and the

insurance paid are the only items taken directly from the prorating sheet.

Separate summaries for hogs, cattle, calves, and sheep should be made on separate sheets of the shipment summary records. The summaries for the live stock shipped in mixed cars may be entered on the same sheets with those for the live stock in straight car shipments. Each summary should be totaled monthly and the totals to date brought down immediately below the monthly totals.

THE CASH JOURNAL.

The cash journal (Form No. 7) serves two very important purposes: (1) It provides a history showing day by day all cash receipts



Shipping Assn. Form No. 5

Shipment No. 111

SHIPMENT RECORD ENVELOPE

Loaded at Brookings, Iowa November 1, 1921

To Cooperative Commission Co. Time Loaded 8:00 P.M.

Number of Cars 1 No. of Decks 1 Railroad C & NW.

Car Nos. I.C. 14980

HOME STATEMENT

(Debits)		(Credits)	
Proceeds for Live Stock:		Check Nos. 1 to 7	
Sold at Market	1452 73	for Live Stock	1430 03
Sold Locally		Manager's Commission $	9 56
Insurance Paid		Insurance Fund $	7 78
Undivided Balance—Loss		Local Car Expense $	4 00
		Federation Dues $	50
		Total Home Expenses	21 82
		Membership Dues	
		Undivided Balance—Gain	88
TOTAL	1452 73	TOTAL	1452 73

FIG. 6.—Shipment record envelope (Form No. 5).

and disbursements and other business transacted; (2) it classifies and summarizes the results of these transactions according to the accounts affected, thus making it a simple matter to determine the condition of any particular account or of the business as a whole.

The form (see Fig. 8) provides for recording the date and explanation of each transaction, and the number of the check issued, if any. The remainder of the form is divided into 11 pairs of columns. One pair of columns (a debit and a credit column) is to be used for each account.

(RIGHT-HAND PAGE)

ORD

CLAIMS MEMORANDA								
NATURE OF LOSS	AMOUNT CLAIMED		COLLECTION FEE		NET AMOUNT COLLECTED	DATE RECEIVED		
	1007	20	200	50	789.96			
Damaged in wreck	25	75	3	00	22.75	Dec	5	
Killed in transit rough handling	19	44						
Owners risk								
Rough handling	13	25						
Owners risk								
No claim filed								
6 hours delay 20¢ drop in mkt	180	29						
1 last; 2 crep. unloading	30	40						
	269	13						
	1276	33						

US DA

IG. 7.—Ship

(LEFT-HAND PAGE)

SHIPMENT SUMMARY RECORD

(RIGHT-HAND PAGE)

SHIPMENT SUMMARY RECORD

Hogs

Date		Commission Company	Shipment No.	No. Decks: Strs & Cwt	No. Decks: Bd	No. Head	No. Shippers	Market Weight	Shrinkage: Total Lbs.	Shrinkage: Lbs Cwt	Dockage: Sows	Dockage: Stags	Gross Proceeds	Freight and Market Expenses: Freight	Yardage	Feed	Insp. Insur. Etc.	Commission	Market Net
Nov	1	Totals Forward		110		792	675	200900	17536	0.84	6360	953	183406.30	8547.95	4.88	10297.0	9.6	170965.03
	2	Cooper Com Co Chicago	111	1		61	2	15950	180	1.12			15566.36	734.8	7.32	5.00	27.18.00	14837.73
	3	" "	112		1	51	2	13320	171	1.27	40	70	12172.2	674.2	6.24	6.25	20.13.97	11123.12
	5	"	113	1		80	2	17800	165	0.92	80	70	15500.00	731.3	8.40	9.00	27.18.00	14421.20
	8	"	114	1		73	3	16300	160	0.97	40		15240.05	731.3	8.76	5.50	27.18.00	14189.39
	10	Cooper Com Co	115	1		88	10	17770	210	1.17			15390.00	731.9	10.56	8.75	27.18.00	14523.23
	12	" "	116	1		74	8	16320	75	0.46	120		14054.41	731.3	8.88	8.75	27.18.00	13296.38
	14	Cooper Com Co	117	1		77	4	19800	200	1.00	40		18854.54	842.3	9.24	7.50	27.18.00	17663.30
	16		118	1		70	7	16030	150	0.93			14696.66	731.3	8.40	11.88	27.18.00	13579.96
	18	" " "	119	2		166	19	41140	450	1.08		70	36273.33	1726.4	19.2	13.20	54.36.00	33855.75
	21	" " "	120		1	50	10	15510	50	0.32			10875.58	358.9	6.00	6.00	20.15.00	10217.37
	23	" " "	122	1		105	5	15390	165	0.89	80		17048.0	776.6	12.48	8.80	27.18.00	15857.57
		Totals for Nov		10	2	845	72	201349	1976	0.98	400	210	185464.91	8919.69	105.48	90.63.3	10.268.97	172794.04
		Totals to date		120	2	3815	747	2271439	19512	0.81	6760	1163	2197321	96216	3688.97	73.32	80.39.57	1882407

Cattle

Date		Commission Company	Shipment No.	No. Decks: Strs & Cwt	No. Decks: Bd	No. Head	No. Shippers	Market Weight	Shrinkage: Total Lbs.	Shrinkage: Lbs Cwt	Dockage: Sows	Dockage: Stags	Gross Proceeds	Freight and Market Expenses: Freight	Yardage	Feed	Insp. Insur. Etc.	Commission	Market Net
Nov	3	Cooper Com Co Chicago	112		1	5	2	5250	120	2.22			3550	262.2	1.50	75	07.4.03	2889.3
	21		120		1	11	2	11980	300	2.44			4367.5	547.4	3.55	1.25	07.8.00	3682.4
	27		121	1		37	6	30180	660	2.14			16246.7	1284.5	12.08	12.25	07.34.10	14397.2
	29	Northwestern Cattle Co	122	2		70	10	40180	1180	2.94			24159.9	1807.5	22.55	14.25	11.52.00	21445.60
		Totals		3	2	123	20	93620	2260	2.36			47922.1	3706	39.68	28.50	35.97.03	42347

Date		Home Expense: Manager's Commission	Insurance	Local Car Expense	State Ass'n Dues	Total Expense per Cwt.	Membership	Home Net	Undivided Balance: Loss	Gain	Losses: Dead	Crippled	Insurance Paid	Claims Memoranda: Date Filed	Nature of Loss	Amount Claimed	Collection Fee	Net Amount Collected	Date Received
Nov	1	70.09	10.35	5.78	60.55.00	75.16	18.00	167208.29	8.96	12.47	97	12	102.50			100.00	2.00	98.00	
	2	9.54	7.78	4.00	50	78.87		14301.91		.88									
	3	8.00	6.08	2.53	36	83.29	2.00	11104.16	25		1	1	25.75	Nov 5	Damaged in unloading	25.76	3.00	22.76	Dec 5
	5	11.70	10.24	5.78	50	77.07		14121.78	16		1			Nov 7	Rough handling Killed in transit	19.46			
	8	11.41	9.76	5.11	50	81.24		13963.63		1.25									
	10	17.77	8.89	8.00	50	83.12		13323.07	1.12			1			Runners not				
	12	16.32	8.16	6.50	50	86.10		12640.90	16			4	13.25	Nov 15	Rough handling	13.25			
	14	19.80	7.72	6.15	50	77.48		17332.13		.90		1	—		Runner sick				
	16	16.03	8.02	5.85	50	78.63		13272.56		.70		1	1.50		No Claim Filed				
	18	41.14	20.57	9.00	1.00	75.79		33150.94		.82	6	2	172.06	21	6 Down Delay 2 Dec dep in Mkt	180.20			
	21	8.56	4.28	3.50	25	96.71		10041.80		.24									
	23	18.39	7.36	—	50	78.01		15616.36	17			12	30.40	Dec 2	Injured in transit	30.40			
		179.86	98.84	55.41	5661	80.86	2.00	169382.32	1.86	4.88	97	12	262.40			210.13			
		2348.95	1133.89	634.01	6061	78.30	2.00	1844461	10.82	17.35	106	12	1280.10			1276.33			

Date		Home Expense: Manager's Commission	Insurance	Local Car Expense	State Ass'n Dues	Total Expense per Cwt.	Membership	Home Net	Undivided Balance: Loss	Gain	Losses: Dead	Crippled	Insurance Paid	Claims Memoranda: Date Filed	Nature of Loss	Amount Claimed	Collection Fee	Net Amount Collected	Date Received
Cattle		2.11	1.58	.98	14	70.80		2781.2		.11									
		11.98	5.99	1.00	25	73.23		3402.02		.90									
		30.18	12.08	—	50	76.11		13496.96	.70										
		46.18	18.47	10.90	1.00	74.87		20605.05		.46									
		90.45	38.12	12.88	1.89	74.83		40915.15	.70	1.47									

FIG. 7.—Shipment summary record (Form No. 6).

...ness		LOSS & GAIN		NET WORTH	
...ered		GEN'L EXPENSE	INCOME	DECREASES	INCREASES
CR.		DR.	CR.	DR.	CR.
300	00		18 00		400 00
		2 50			
		5 00			
			—		
		16 00			
		4 00			
		37 50			
			2 00		
300	00	65 00	20 00		400 00
			40 00		
100	00				
		2 00			
				5 00	
		50 00			
			196 82		
			7 30		
		147 12			147 12
500	00	264 12	264 12	5 00	547 12
500	00	—	—		5 00
500	00	—	—		542 12

Fig. 8.—Cash

(LEFT-HAND PAGE) (RIGHT-HAND PAGE)

CASH

DATE		EXPLANATIONS	CR NO	BANK DEPOSITS DR	BANK CHECKS CR	LIVE STOCK SETTLEMENTS DR	LIVE STOCK NET PROCEEDS CR	MGR'S COMMISSION PAYMENTS DR	MGR'S COMMISSION DEDUCTIONS CR	INSURANCE FUND PAYMENTS DR	INSURANCE FUND DEDUCTIONS CR
1		Totals Forward as per minutes of Dec 31		17265 49	17207 94	170965 03	170965 03	2070 09	2070 09	1226 00	2025 51
2		Jones Feed Store, 8 lbs bran for sick cow	101		4 00						
3	2	Corporation Com'n Crossing Sign		1452 73			1452 73				
4	2	Fred Bell Telephone Co Nov bill	102		2 50						
5		Eureka Pty Co Acct Book Tags $24	103		10 00						
6	3	Settlement for Shipment #111	1-2		1430 03	1452 73			9 56		7 78
7	3	John Smith Mgr Com Sup #111	104		9 54			9 54			
8	3	State Vinkle Bird Nov 20 Ins #400	105		21 60						
9	5	Smith Hardware Co. Supp for Ship	106		1 00						
10	5	Thomas Elevator Co. Bran	107		20 00						
11	6	Corporation Com'n Crossing Sign		1406 05			1406 05				
12		Indiana Pty Co. Commission	108		4 00						
13		National Livestock Commission Co.	109		37 50						
14		Settlement Shipment #112	3-4		1408 07	1406 05			10 11	25 75	7 66
15	21	Office Equipment & Mch Co	110		250 00						
16	30	Summary of Shipments #113-#122	5-30	18654 75	8766 33	18654 75	18654 75	249 66	249 66	236 65	121 52
		Totals		194169 02	42325 44	192478 56	192478 56	2329 29	2339 40	1488 40	2162 47
17 Dec	1	Cash membership fee (minutes)		40 00							
18	2	John Charles Moore Com Sup #112	111		10 11			10 11			
19	5	C & N.W. Ry Proceeds of Claims		25 75							25 75
20	6	Stephen Stable, Attorney's fee claim	112		3 00					3 00	
21	6	State Bank Loan for 3 mos		100 00							
22	9	Indiana Oil Co 10 gals gasoline	113		2 00						
23	15	J. Andrews, returned Stock Certificate	114		5 00						
24	3	State Tax due for 1920-1921	115		62 50						
		Fiscal Year's adjustments									
25	31	Depreciation on equipment									
26	31	Transfer from Insurance Fund								196 82	
27	31	Undivided Balance closed to net worth									
28	31	Loss & Gain c/d to net worth									
		Totals		194331 77	194315 15	192478 56	192478 56	2339 40	2339 40	1688 22	2188 22
		Subtractions		194315 15							1688 22
1922		Balance Carried Forward		19 62							500 00
29 Jan	2	Bill Adams, refund of Shipment #111 discharge	116		71						

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	LOCAL CAR EXPENSE PAYMENTS DR	LOCAL CAR EXPENSE DEDUCTIONS CR	FEDERATION DUES PAID OUT DR	FEDERATION DUES COLLECTED CR	UNDIVIDED BALANCE LOSSES DR	UNDIVIDED BALANCE GAINS CR	Equipment Purchases DR	Inventory Decrease CR	Indebtedness Paid DR	Indebtedness Incurred CR	LOSS & GAIN GEN'L EXPENSE DR	LOSS & GAIN INCOME CR	NET WORTH DECREASES DR	NET WORTH INCREASES CR
	578 60	578 60		55 00	8 96	12 47	1020 00			300 00		18 00		400 20
	4 00													
											2 50			
							5 00				5 00			
		4 00		50		88								
									200 00		16 00			
	100													
	20 00													
											4 00			
											37 50			
		3 50		50	14							2 00		
							250 00							
	60 79	60 79		6 50	2 31	5 36								
	664 39	646 89		62 50	11 41	18 71	1255 00		200 00	300 00	65 00	20 00		400 00
												40 00		
										100 00				
											2 00			
													5 00	
			62 50											
								50 00			50 00			
												196 82		
					7 30							7 30		
											147 12			147 12
	664 39	646 89	62 50	62 50	18 71	18 71	1255 00	50 00	200 00	400 00	264 12	264 12	5 00	547 12
	646 89	—	—	—	—	—	50 00			200 00	—	—		500
	17 50	—	—	—	—	—	1205 00			200 00	—	—		542 12
					71									

Fig. 8.—Cash journal (Form No. 7).

OPERATING THE CASH JOURNAL.

The operation of the cash journal is best illustrated by examples. Figure 9 shows how the following receipts of cash should be recorded. The numbers in parentheses correspond to the number of the illustrative transactions on pages 48 to 50.

(3) November 2. Received check for $1,452.73 from Cooperative Commission Co., representing proceeds of shipment No. 111.

(17) December 1. Received $40 in cash, representing membership fees paid by 40 new members.

(21) December 6. Borrowed $100 at the State Bank and gave a 90-day note bearing 7 per cent interest.

In transaction (3) live stock was exchanged for cash; in transaction (17) the privileges of membership were exchanged for cash; in transaction (21) an obligation to pay $100 in 90 days was exchanged for cash. In each case the bank account is debited with the amount of cash received and deposited, and in each case that account which produced or parted with the value exchanged for the cash is credited.[4]

Entries for the following cash disbursements are shown in figure 10.

(2) November 1. Paid the Jones Feed Store for 8 bushels of corn for shipment No. 111; check No. 101 for $4.

(5) November 2. Paid Eureka Printing Co. for cash journal binder, $5 and stationery $5; check No. 103 for $10.

(8) November 4. Paid note at State Bank for $200 with interest $16; check No. 105 for $216.

(18) December 2. Paid John Clark, manager, commission on shipment No. 112; check No. 111, for $10.11.

In recording the disbursements the procedure is similar to that involved in recording the receipts, except that in this case the bank account is *credited* and the accounts representing the value received in exchange are *debited*. In transaction (2) the local car expense account is debited with the value (corn) received for the $4 cash expended. In transaction (5) personal property and office supplies were received; the cash journal binder, being a permanent piece of equipment, is debited to the yard and office equipment account, but the stationery, which will be used up in a relatively short time, is debited to general expense. In transaction (8) an obligation to pay was received (canceled) to the extent of $200, hence the debit to the indebtedness account. Interest expense was incurred to the extent of $16, which is debited to general expense under loss and gain. In transaction (18) expense was incurred for manager's services, hence the debit to the manager's commission account.

It should be noted that each transaction is entered on a separate line and that at least two accounts are affected. It will also be noted that the debits and credits arising from each transaction are equal.

Every transaction is an exchange of equivalent values, something of value is received and something of equal value is exchanged for it. According to a simple rule, an account is debited when value of the particular kind it represents is received, and it is credited when the same kind of value is parted with.

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[4] As membership fees are usually used for general expenses, they are recorded in the loss and gain account as income. For exceptions, see discussion of "Loss and gain" account on page 20.

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	DATE 1921		EXPLANATIONS	CK. No.	BANK DEPOSITS DR.	BANK CHECKS CR.	LIVE STOCK SETTLEMENTS DR.	LIVE STOCK NET PROCEEDS CR.	INDEBTEDNESS PAID DR.	INDEBTEDNESS INCURRED CR.	LOSS & GAIN GEN'L EXPENSE DR.	LOSS & GAIN INCOME CR.
(3)	Nov	2	Coop Corn Co. proceeds Shpt #11		1452 73			1452 73				
(17)	Dec	1	Membership fees (See minutes of Nov 30th)		40 00							40 00
(34)		6	State Bank, loan 3 mos. @ 7%		100 00					100 00		

FIG. 9.—Cash journal, showing method of recording cash receipts.

LEFT-HAND PAGE

CASH

	DATE 1921	EXPLANATIONS	CK No.	BANK DEPOSITS DR.	BANK CHECKS CR.	LIVE STOCK SETTLEMENTS DR.	LIVE STOCK NET PROCEEDS CR.	MGR'S COMMISSION PAYMENTS DR.	MGR'S COMMISSION DEDUCTIONS CR.	INSURANCE FUND PAYMENTS DR.	INSURANCE FUND DEDUCTIONS CR.
(2)	Nov 1	Jones Feed Store, 8 hu Com. Shpt. #111	101		4 00						
(5)	"	Eureka Pty Co Acct Book $5.00 Ft. $5.00	103		10 00						
(8)	"	State Bank, paid note $200 Int $16.00	105		216 00						
(18)	Dec 2	John Clark, Mgr. Com Shpt #112	111		10 11			10 11			

RIGHT-HAND PAGE

JOURNAL

	LOCAL CAR EXPENSE PAYMENTS DR.	LOCAL CAR EXPENSE DEDUCTIONS CR.	FEDERATION DUES PAID OUT DR.	FEDERATION DUES COLLECTED CR.	UNDIVIDED BALANCE LOSSES DR.	UNDIVIDED BALANCE GAINS CR.	EQUIPMENT PURCHASES DR.	EQUIPMENT INVENTORY DECREASES CR.	INDEBTEDNESS PAID DR.	INDEBTEDNESS INCURRED CR.	LOSS & GAIN GEN'L EXPENSE DR.	LOSS & GAIN INCOME CR.	NET WORTH DECREASES DR.	NET WORTH INCREASES CR.
	4 00													
							5 00				5 00			
									200 00		16 00			

Fig. 10.—Cash journal, showing method of recording cash disbursements.

CASH JOURNAL

DATE		EXPLANATIONS	CK NO	BANK DEPOSITS DR.	BANK CHECKS CR.	LIVE STOCK SETTLEMENTS DR.	LIVE STOCK NET PROCEEDS CR.	MANAGER'S COMMISSION PAID DR.	MANAGER'S COMMISSION DEDUCTED CR.	INSURANCE RESERVE LOSSES PAID DR.	INSURANCE RESERVE DEDUCTED CR.	LOCAL CAR EXPENSE PAID DR.	LOCAL CAR EXPENSE DEDUCTED CR.	FEDERATION DUES PAID OUT DR.	FEDERATION DUES COLLECTED CR.	UNDIVIDED BALANCE LOSS DR.	UNDIVIDED BALANCE GAIN CR.
1921 Nov	2	Coop Com. Co. Proceeds Sept #111		1452.73			1452.73										
	3	Settlement for Sept #111	1-2		1430.03	1152.73			7.54		7.78		4.00		.50		.88

Fig. 11.—Cash journal, showing entry for settlement with shippers.

When settlement is made for a shipment of live stock several accounts are affected. The debit and credits arising from shipment No. 111 are as follows (see Fig. 6):

DEBITS.		CREDITS.	
Account.	Amount.	Account.	Amount.
Live stock	$1,452.73	Bank	$1,430.03
		Manager's commission	9.54
		Insurance fund	7.78
		Local car expense	4.00
		Dues-State federation	.50
		Undivided balance-gain	.88
	1,452.73		1,452.73

The entry to be made in the cash journal would appear as shown in Figure 11. For the sake of clearness, the entry for the receipt of the proceeds is also recorded. The two entries, however, represent two separate and distinct transactions.

The Live-stock account is debited, indicating that the gross amount due shippers from the sale of live stock has been distributed. The manager's commission account, the insurance fund account, the local car expense account, and the federation dues account are each *credited* with the amount deducted for each specific purpose. The amount paid by checks is credited to the bank account. As complete distribution was not made, the undivided balance account is credited with the 88 cents not distributed.

TRANSACTIONS WHICH DO NOT INVOLVE THE CASH ACCOUNT.

In the illustrations given above, cash was either received or disbursed in each transaction. Although this is the case in the large majority of transactions, it is occasionally necessary to record transactions in which cash is neither received nor paid out. For illustrations see transactions (25) to (28) on page 50 and entries for these transactions dated December 31 in Figure 8.

ILLUSTRATIVE TRANSACTIONS.

In order to illustrate further the operation of the cash journal, the business of an imaginary shipping association for the months of November and December, 1921, together with a summary of the previous 10 months' business is recorded on the cash journal pages illustrated in Figure 8. (A list of these transactions is given on pages 47 to 51.) It will be noted that the first entry records the accumulated debits and credits in the accounts resulting from the business transacted previous to November 1, 1921.[5] This entry is then followed by the entries for the business transacted during November.

[5]As the management is responsible for the condition of the business as revealed by the books, the manager or secretary should insist that the statement upon which the opening entry is based be approved by the board of directors. If the books of a previous secretary or manager are taken over they should first be approved by the board of directors. The books should be examined by an auditing committee at intervals of from one to three months, and a thorough audit by a skilled accountant should be made each year, or each time a change in management is made. Strict adherence to this rule would not only be a protection to the management and to the membership but it would tend to keep those responsible for the affairs of the association in intimate contact with the business.

At the end of the month, the totals of all the columns are brought down on the same line and are carried forward to the end of the year. However, in preparing the statement of resources and liabilities at the end of each month, the balances in the different accounts should be determined and only these used. (See statement of resources and liabilities for November 31, 1921, on p. 49.)

INFORMATION NEEDED TO DETERMINE THE BUSINESS STANDING.

The records of many associations go no further than the prorating sheet, and information as to their business standing or the condition of their different accounts is not available. It is necessary, if proper accounting is to be done, that the results of the individual shipments be accumulated until the final reckoning at the end of the fiscal period, or oftener. As the estimates for insurance and overhead expenses are often intentionally made high or low, this final reckoning will reveal the excess or deficiency of such estimates and bring to light other items which may have been overlooked. Proper disposition can then be made of the excess reserved, or provision made for taking care of the deficiency.

Furthermore, every association transacts some business which has reference to no particular shipment. Equipment is bought, claims are collected, money is borrowed or a note paid, office supplies are purchased, the premium on the manager's bond is paid, or farm supplies are shipped in. These transactions affect the standing of the business just as much as those which relate directly to specific shipments.

All of the business transacted, whether it affects cash or property, debts, reserves, expenses, net worth, or what not, should therefore be brought together and classified according to the accounts affected. Only when this is done will the association be able at all times to answer the question, "How do we stand?" with any degree of assurance that it is answered correctly.

The business standing of an individual or a business concern is revealed by the statement of resources and liabilities. In the case of a farmer purchasing a farm for $50,000 and paying $30,000 in cash and giving mortgage notes for $20,000, the statement of resources and liabilities would appear as follows:

Resources.		*Liabilities.*	
Farm	$50,000	Notes payable	$20,000
		Net worth	
		Owner's investment	30,000
	50,000		50,000

This statement shows, first, that the farm business, as a unit in itself distinct from the owner, is in the possession of property valued at $50,000. In the second place, the statement shows the kinds and the amounts of the different equities in the business. Note holders have a prior claim of $20,000 against the undivided property of the farm business. The remaining $30,000 represents the owner's equity.

If the owner had invested $40,000 instead of $30,000, the other items (value of farm and the indebtedness) remaining the same, the owner's claim against the business would be worth only 75 cents on the dollar, as there would be only $30,000 left after paying the note

holders, who have a prior claim. The farm business in this case might be thrown into bankruptcy by the creditors. On the other hand, if the property was valued at $60,000, the other items remaining the same, there would be $40,000 left after paying off the note holders. In this case, each dollar of the owner's investment would be worth 133⅓ cents, and the financial condition of the farm would be considered very favorable.

A similar procedure is followed in determining whether or not any other kind of business concern is worth 100 cents on the dollar. An illustrative statement representing the affairs of an imaginary shipping association is presented below.

STATEMENT OF RESOURCES AND LIABILITIES OF THE BROOKRIDGE COOPERATIVE SHIPPING ASSOCIATION, NOVEMBER 1, 1921.

Resources.			
Cash		$576.02	
Yard and office equipment		1,000.00	
			$1,576.02
Liabilities.			
Notes payable	$300.00		
Federation dues	55.00		
Insurance fund	799.51		
Undivided balance	3.51		
		1,158.02	
Net worth.			
Capital stock	400.00		
Surplus (undivided profits)	18.00		
		418.00	1,576.02

It will be noted that the resources consist of cash and equipment amounting to $1,576.02; the liabilities amount to $1,158.02, consisting of outstanding notes, dues owed to a State association, the reserve for insurance and the undivided balance. The resources exceed the liabilities by $418, which amount represents the net worth of the association. As only $400 was put into the business originally, the difference of $18 represents surplus profits left in the business.

It will also be noted from this statement that the investment in the business came from stockholders, rather than from an individual owner, as in the case of the farm business. An association which is not incorporated is regarded as a partnership, in which case all of the members would be joint owners.

Each of the subdivisions in the statement shown above represents a separate account in the cash journal; in fact, it is from the accounts in this book that the information for such statements is obtained.

The accounts which a particular association needs depend upon the character of the business, if any, which it combines with live-stock shipping. Ordinarily all shipping associations need the following accounts:

1. Bank.
2. Live stock.
3. Manager's commission.
4. Insurance fund.
5. Local car expense.
6. Undivided balance.
7. Loss and gain.
8. Net worth.

Other accounts which are frequently needed are:

9. Federation dues (State or district federation).
10. Yard and office equipment.
11. Indebtedness (or notes payable).
12. Merchandise.

Each of these accounts is described and illustrated fully on the following pages.

DESCRIPTION OF THE ACCOUNTS.

THE BANK ACCOUNT.

It is good practice to handle all funds through the bank. All receipts of cash from whatever source will accordingly be entered in the "deposits" (debit) column and as checks are issued the amounts will be entered in the "checks" (credit) column. A debit balance indicates the amount of available funds in the bank and is an asset. A credit balance indicates an overdraft and is a liability.

Debit:	Credit:
(1) With the available balance of cash in the bank as shown by the balance sheet at the time of opening the books.	(1) With an overdraft, if any, at time of opening the books.
(2) With all checks, drafts, and currency received from live stock and other sources, as well as proceeds of notes given for loans, as these items are deposited.	(2) With the amounts of all checks drawn. The checks issued to shippers will be entered in total for each shipment.

All cash should be recorded in one bank account in the cash journal, even though the cash is divided into different funds at the bank or is carried in more than one bank. Where it is desired to divide the business between two banks it is preferable to change banks once or twice a year rather than to carry funds in both banks at the same time.

LIVE STOCK.

Debit:	Credit:
(1) With net proceeds prorated at the time of the settlement for each shipment.	(1) With the net proceeds received from commission firms for live stock shipped.
(2) With the purchase price of live stock purchased outright.	(2) With the amounts received for live stock sold locally.

A credit balance in this acount usually represent proceeds which have not yet been prorated to shippers and is a liability. However, if live stock is bought outright the account will show a gain if the credits exceed the debits, and a loss if the debits exceed the credits. At the end of the fiscal year any such gain or loss will be closed to the loss and gain account.

MANAGER'S COMMISSION.

Debit:	Credit:
(1) With amounts of salary or commission as payments are made.	(1) With commission earned at the time settlement is made for shipment of live stock.
(2) With amounts paid manager in reimbursement of amounts advanced by him for association expenses.	(2) With amounts advanced by manager for association expenses at the time the advances were made.

Where the manager is paid on the commission basis, the account will balance if he has been paid in full. A credit balance represents the amount of unpaid commission due the manager. If the manager is paid on a salary basis, the debit balance will represent the amount of expense due to manager's salary, which will be closed to the loss and gain account at the end of the year.

INSURANCE FUND.

Debit:	Credit:
(1) With payments to shippers for losses.	(1) With amount deducted from the proceeds of each shipment as the insurance charge.
(2) With payments of attorney's fees for collecting claims when such fees are paid by an association check.	(2) With amounts received in settlement of railroad claims.

The insurance fund account will usually show an excess of credits over debits, in which case the balance indicates that more has been reserved than actually paid because of losses.

Such a credit balance is a liability from the point of view of the association, as it represents deductions from returns due members in excess of the needs for insurance purposes. In a sense, this excess is held in trust for the members and in case of dissolution would be prorated back to them.

As the financial strength of an association depends to a considerable extent upon its ability to meet ordinary losses promptly without borrowing, it is important that a conservative credit balance be maintained in the insurance fund account. After a balance of several hundred to a thousand dollars (depending on the volume of business and other conditions) has been accumulated, the charge for insurance should be reduced to a point which will maintain the desired balance in the fund. The practice of some associations of drawing on the insurance fund for overhead and miscellaneous expenses is not to be commended, as the protection to members is likely to be impaired by an undue drain on this account. Where the membership fees are not adequate, special provision should be made for meeting overhead expenses. This may be done either by making a separate deduction from the proceeds of shipments for this purpose or, when a lump deduction is made for all purposes in general, by dividing the total deduction into two parts, one to be specifically reserved for insurance purposes and the other for overhead expenses. In order to avoid the possibility of using the insurance funds for purchases of equipment or otherwise rendering it unavailable for the payment of losses, some associations set aside the cash reserved for insurance in a separate deposit account in the bank, or even invest part of it in securities of a readily salable sort.

LOCAL CAR EXPENSE.

Debit:	Credit:
(1) With amounts paid for feed, bedding, partitions and other materials used in preparing cars for shipment.	(1) With deductions from proceeds from sales of live stock to cover any expense incurred in preparing cars for shipment, including local feed, bedding, partitions, rope, nails, etc.

The local car expense account will balance provided the deductions from returns exactly equal the expenses incurred in preparing cars for shipment. It happens sometimes, however, that supplies, such as feed, bedding, or lumber for partitions, are bought in quantities and charged against the shipments for which they are used. In such cases, the "payments" (debits) at a given time will exceed the "deductions" (credits) and the balance will represent the value of unused supplies on hand.

UNDIVIDED BALANCE.

Debit:	Credit:
(1) With losses on shipments when more is distributed than the actual balance available for distribution.	(1) With gains on shipments when less is distributed than the actual balance available for distribution.

Much time is often wasted in attempting to distribute returns to the cent. In calculating the shrinkage and expenses it is much more practicable to use rates figured to the nearest whole number or convenient fraction. Furthermore, when carloads of mixed grades are sold for a flat sum, it is necessary to "price the car up and down" according to grades when making returns to members. In all of the above cases the amount prorated may differ slightly from the actual returns. The difference is to be carried in the undivided balance account. Some of the older associations have adopted a flat rate of expense based on past experience which is applied on all shipments of a given species of livestock over a considerable period. In such cases gains or losses occurring on individual shipments will also be entered in this account. At the end of the year the net balance should be closed to loss and gain or otherwise disposed of as decided by the board of directors.

LOSS AND GAIN.

Debit:	Credit:
(1) With general expense, such as postage, stationery, telephone, premium on manager's bond, interest paid, taxes and similar items.	(1) With deductions from proceeds from shipments of live stock to cover overhead expenses.
(2) With losses suffered in handling supplies or buying live stock.	(2) With membership fees.[6]
(3) With the balance in the undivided balance account at the end of the year when the overpayments exceed the underpayments.	(3) With extra charges made for handling stock for nonmembers.
(4) With the net gain at the end of the fiscal year when it is distributed in accordance with board action.	(4) With profits resulting from handling supplies or buying live stock.
	(5) With the balance in the undivided balance account at the end of the year when the underpayments exceed the overpayments.
	(6) With net loss at the end of the fiscal year when it is transferred to the net worth account.

The expenses of the ordinary shipping association fall into two classes, namely: Expenses incurred in preparing cars for shipment, which are not borne by the association but charged to the shippers and deducted from their returns; and, expenses which are not chargeable against any particular carload, that is, the overhead expenses, such as telephone, stationery and printing, advertising, interest on borrowed money, premium on manager's bond, and similar items. All such overhead expenses and any other items not charged to shippers and deducted from returns should be entered under "general expense" in the loss and gain account. The income from which such expenses are met will be entered under "income" in this account. This income will usually consist of membership dues,[7] in some cases supplemented by a special charge against shipments for this purpose. At the end of the fiscal year, after the necessary adjustments have been made, the loss and gain account will show either a net gain or a net loss, which should then be carried to the net worth account, or otherwise distributed as decided by the board of directors.

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[6] See note on page 11.

[7] If the law under which the association is incorporated regards membership fees as capital contributions the same as capital stock, the amounts so collected should be credited to the net worth account as they represent the members' equity in the business. The same procedure should be followed even though the association is not incorporated, when more than a nominal fee is collected for the purpose of purchasing and installing scales, equipping yards or for other similar purposes.

NET WORTH.

Debit:	Credit:
(1) With the excess of liabilities over assets at the time of opening the books.	(1) With the par value of shares of stock outstanding at the time of opening the books.
(2) With the par value of shares of stock retired, or memberships redeemed where such memberships are redeemable.	(2) With the excess of assets over liabilities at the time of opening the books.
(3) With the net loss transferred from the loss and gain account at the end of the fiscal year.	(3) With the par value of additional shares of stock sold.
	(4) With the membership fees paid in, in case of associations incorporated under laws which hold memberships redeemable.
	(5) With net profits transferred from the loss and gain account at the end of the year.

It seldom occurs that the total resources of a concern exactly equal the total liabilities. If the resources at the time of opening the books exceed the liabilities, a free surplus exists. This balance represents the proprietors' (members' or stockholders') equity or interest in the business and will be entered on the credit side of the net worth account. Sales of shares of capital stock, if any, will also be entered in this column. However, if the liabilities or debts exceed the resources, the balance will represent the amount by which the association is unable to meet its obligations 100 cents on the dollar. The balance in this case will be entered in the debit column. At the end of the fiscal year the stockholders' or members' equity will be increased or decreased by the amount of the net gain or net loss shown by the loss and gain account.

In addition to the above, the following accounts are frequently needed.

FEDERATION DUES.

Debit:	Credit:
(1) With payments of current dues to State or district federation on account of membership in such federations.	(1) With deductions from proceeds of the sale of live stock for federation dues.

Associations which are members of a State or district federation of shipping associations, whose membership fees are collected out of the proceeds of shipments, will need a federation dues account. Any excess of the total collected over the amount paid out will represent the amount due the federation at any given time.

YARD AND OFFICE EQUIPMENT.

Debit:	Credit:
(1) With the value of equipment at the time of opening the books.	(1) With cost value of property sold or otherwise disposed of.
(2) With the purchase price of additional equipemnt bought.	(2) With estimated depreciation at the end of the fiscal year.
(3) With the freight and installation costs of equipment.	

Space is provided for two additional accounts. Associations which have invested money in yard and office equipment should use one pair of these columns for keeping track of such property.

INDEBTEDNESS.

Debit:	Credit:
(1) With payments made in settlement of outstanding obligations.	(1) With the amount of outstanding obligations at the time of opening the books.
	(2) With subsequent obligations incurred because of money borrowed or supplies purchased on account.

Where indebtedness is incurred an account should be opened with indebtedness or accounts payable, which will be credited with any obligation incurred and debited when it is paid.

MERCHANDISE.

Debit:	Credit:
(1) With the invoice price of supplies bought.	(1) With amounts received for supplies whether collected in advance or on delivery of supplies.
(2) With freight and other direct handling charges, such as extra labor, etc.	

If supplies of any kind are handled, an account should be opened with merchandise, which will be debited with the purchase price, freight, and any other direct costs incidental to the handling of such merchandise. The account will be credited with sales. When all of the merchandise has been sold the account will show either a gain or a loss, which should be transferred to the profit and loss account or prorated back to members at the end of the year.

If a larger number of accounts is needed than space is provided for in the cash journal, a short sheet providing space for six to eight accounts may be inserted between the left-hand and the right-hand pages of the journal. However, where the number of accounts needed is relatively large, a ledger should be used and the form of the cash journal modified accordingly.

ADVANCES TO SHIPPERS.

Some associations regularly make advances to shippers, if requested, at the time of the delivery of live stock. Where this is done, one of the blank pairs of columns in the cash journal should be headed "advances." All advance checks should be recorded in the cash journal as all other checks are recorded, and the amounts charged to the advances account. Deductions for advances will then be made on the prorating sheet, the amount being entered, with an appropriate notation, in the membership column. The advances deducted in making settlement will appear as one of the deductions on the credit side of the home statement on the shipment record envelope. The advances account will be credited when the entry for the settlement is made in the cash journal. As advances do not affect the value of live stock or the expenses of shipping, no record of the advances need be made in the shipment summary record.

SALES SUBJECT TO INSPECTION.

Separate returns are usually rendered to cover animals sold subject to inspection, even though the terminal weight of such animals has been included in determining the expense rate on the remainder of the shipment. A separate prorating sheet should be filled out when the returns for such animals are received, and a separate entry made in the cash journal simialr to that made for regular settlements. All the papers concerned in such sales should be pinned together and filed in the envelope with the other papers for the shipment.

When animals sold subject to inspection are condemned it sometimes happens that their tankage value does not cover the expenses. In such cases, the shipper owes the association the difference. As

no debit will consequently appear in the live-stock account, when the cash journal entry is made the advances account should be debited for the amount due from the shipper when such amounts are collected either in cash or by deduction from a subsequent shipment, the advances account will be credited.

THE NEED OF PERMANENT RECORDS.

Even when ordinary care is taken to file and preserve the papers containing information regarding the business transacted, it seems to be the general experience that sooner or later many or all of the papers are mislaid or destroyed. Unless the data they contain have been recorded in permanent book form, the association is unable to show what business has been done in the past or to verify the details of transactions.

RECORDS AS A PROTECTION TO MANAGERS, DIRECTORS, AND OTHERS.

Embarrassing situations traceable to this lack of records develop frequently. In a recent instance a question arose as to whether or not the funds of the association had been properly accounted for. Neither the secretary nor the manager had preserved a permanent record of the shipments made or other business done. As a result the association was unable to prove that the funds had not been properly accounted for, and the manager was unable to prove that he was free from blame. The fact that it was the practice to "check out" each shipment completely did not save the situation. Many an honest manager or officer has found himself in an exceedingly embarrassing position because of his failure to keep the few books needed to enable him to prove conclusively that his record is clear. Fidelity insurance companies usually require that proper records be kept as a condition to bonding officials responsible for the funds of an association.

In view of the responsibility which rests upon the manager and the board of directors in such matters, they should, for their mutual protection, insist that a complete, permanent record be made of all business transacted, that this record be kept in the same manner from year to year, irrespective of changes in the management. Furthermore, all accounts of sales and other details supporting records and working sheets should be preserved so as to make possible a verification of the entries made in the shipment summary record and the cash journal. Only when kept in this way will the records adequately serve as a protection to the manager, the directors, and the members, and be a reliable guide in determining business policies.

RECORDS AS A GUIDE TO MANAGEMENT.

Mismanagement is one of the most frequent causes of failures in business generally. The remedy for a large number of the cases of mismanagement is to substitute facts for guesswork in the determination of business policies. The judicious use of the figures covering the business from the time the association is organized eliminates much of the guesswork. For this purpose summaries are needed showing the values, numbers, weights, shrinkage, itemized expenses, losses, and other information resulting from the sale of live stock. These data are also needed in calculating averages which throw light on the relative economy of different methods of handling stock, the relative

advantages or disadvantages of shipping to different markets, and in directing the attention of the management to variations in the rates of expenses, losses and shrinkage, with a view to ascertaining the causes of such variations and reducing these costs to a minimum. Each manager believes he is doing the best that can be done, until he learns that others have obtained better results than he. If all managers kept the essential figures in a uniform manner it would be a simpler matter to compare notes and ascertain "how it was done."

The relatively small amount of time required to keep these records will be found to have been well spent when information is desired regarding the results of operations. The time required in the preparation of the annual report can be reduced to the few moments needed in copying the desired totals from the records.

The value of these figures for publicity purposes is frequently overlooked. Many associations obtain valuable publicity by submitting their monthly and annual reports to the local papers to the county agents, to federations of cooperative live-stock shippers and by mailing mimeographed copies to the members.

MONTHLY AND ANNUAL REPORTS.

Illustrations of the different schedules which a satisfactory report should include will be found on the following pages. These schedules consist of the following:

A. Financial statements.
  1. Statement of resources and liabilities.
  2. Statement of income and expenses.

B. Statement of results of shipping.
  1. Volume and value of live stock handled.
  2. Analysis of expenses and deductions.
  3. Analysis of shrinkage.
  4. Analysis of losses.

C. Report of money handled.
  1. Cash receipts and disbursements.
  2. Bank reconciliation.
  3. Analysis of undivided balance account.
  4. Analysis of insurance fund account.

ANNUAL REPORT OF THE BROOKRIDGE COOPERATIVE SHIPPING ASSOCIATION FOR THE FISCAL YEAR ENDING DECEMBER 31, 1921.

A. FINANCIAL STATEMENTS.

A 1.—*Statement of resources and liabilities.*

Resources.			*Liabilities.*	
Cash in bank		$19.62	Notes payable	$200.00
Prepared expenses (feed)		17.50	Insurance fund	500.00
Equipment	$1,255			700.00
Less depreciation	50		*Net worth.*	
		1,205.00	Capital stock paid in	395.00
		1,242.12	Surplus beginning of year	$000.00
			Net profits this year	147.12
			Total surplus	147.12
				1,242.12

A 2.—*Statement of income and expenses.*

Net proceeds received for live stock		$192,478.56
Railroad claims collected, gross		1,016.21
Total		193,494.77
Net amount paid shippers for undamaged stock	$188,230.46	
Losses paid	1,287.90	
Total paid shippers	189,518.36	
Add increase carried forward in insurance fund held for benefit of shippers	500.00	
Total accruing to shippers		190,018.36
Balance available for expenses		3,476.41
Add cash membership fees received		40.00
Total gross income		3,516.41

Expenses.

Manager's commission		$2,339.40	
Local car expenses		646.89	
Attorney's fees		203.50	
State federation dues		62.50	
Total		3,252.29	
Premium on manager's bond	$37.50		
Interest	16.00		
Depreciation	50.00		
Printing and stationery	9.00		
Telephone	2.50		
Miscellaneous	2.00	117.00	
Total for all expenses			3,369.29
Net profit carried to surplus			147.12

B. STATEMENT OF RESULTS OF SHIPPING.

B 1.—*Volume and value of live stock handled.*

Kind of live stock.	Number of carloads.		Number of head.	
	This year.	Last year.	This year.	Last year.
Hogs	120	92	8,815	6,610
Cattle	3	7	123	288
Mixed	2	5	.....	.....
Total	125	104	.....	.....

	Hogs.	Cattle.
Gross sales value	$201,973.21	$4,792.21
Added out of insurance fund	1,287.90	
Total	203,261.11	4,792.21
Total expenses and deductions	17,833.13	701.83
Paid shippers [8]	185,427.98	4,090.38

[8] Home net value less gain in undivided balance plus insurance paid.

B 2.—*Analysis of expenses and deductions.*

		Hogs.		Cattle.
Freight, switching, war tax		$9,429.16		$390.16
Feed		971.73		28.50
Yardage		1,055.88		39.68
Selling commission		2,239.57		99.03
Inspection and insurance		32.80		.35
Total freight and terminal expenses		13,729.14		557.72
Manager's commission		2,248.95		90.45
Deducted for insurance		1,133.89		38.12
Local car expense		634.01		12.88
State federation dues		60.61		1.89
Membership fees deducted		20.00		
Undivided balance:				
Gains	$17.35		1.47	
Losses	10.82	6.53	.70	.77
Total home deductions		4,103.99		144.11
Total all expenses and deductions		17,833.13		701.83

B 3.—*Analysis of shrinkage.*

		Hogs.	Cattle.
Home weight	pounds	2,290,951	95,880
Market weight	do	2,271,439	93,620
Shrinkage	do	19,512	2,260
Shrinkage, per 100 pounds	do	0.852	2.4
Average value of shrinkage, per 100 pounds, market weight, cents		[1] 7.034	[1] 10.6

B 4.—*Analysis of losses.*

Number of dead		106
Number of cripples		142
Total damaged		248
Losses paid		$1,287.90
Claims collected, gross	$1,016.21	
Less collection fees	203.50	
Net amount of claims collected		812.71
Net losses		475.19
Net losses, per 100 pounds market weight, cents		2.09
Net losses of sales value, per cent		0.235

C. REPORT OF MONEYS HANDLED.

C 1.—*Cash receipts and disbursements.*

Receipts.

Cash balance Jan. 1, 1921			
Received for live stock:			
Hogs	$188,244.07		
Cattle	4,234.49		
Total		$192,478.56	
Capital stock sold		400.00	
Membership fees, cash		40.00	
Borrowed at bank		400.00	
Claims collected		1,016.21	
Total receipts			$194,334.77

[1] For method of calculation, see footnote on p. 39.

Disbursements.

Net value of live stock:				
Hogs		$184,166.61		
Cattle		4,091.15		
Total		188,257.76		
Less:				
Membership fees	$20.00			
Undivided balance	7.30	27.30		
Paid shippers for undamaged live stock		188,230.46		
Losses paid		1,287.90		
Total paid shippers			$189,518.36	
Scales and scale house			1,000.00	
Adding machine			250.00	
Account book			5.00	
Manager's commission			2,339.40	
Feed, bedding, etc			664.39	
Attorney's fees, collecting claims			203.50	
State federation dues			62.50	
Paid for certificate of capital stock			5.00	
Paid note at State bank			200.00	
Premium on manager's bond			37.50	
Printing and stationery			9.00	
Interest			16.00	
Telephone			2.50	
Miscellaneous expenses			2.00	
Total disbursements				$194,315.15
Balance				19.62

C 2.—*Bank reconciliation.*

Balance as per bank statement		$102.12
Less outstanding checks as follows:		
No. 107	$20.00	
No. 115	62.50	82.50
Balance on our books		19.62

C 3.—*Analysis of undivided balance.*

Balance Jan. 1, 1921		$000.00
Gains on shipments, 1921	$18.71	
Losses on shipments, 1921	11.41	
Excess on gains over losses	7.30	
Transferred to loss and gain	7.30	
Carried forward		000.00

C 4.—*Analysis of insurance fund account.*

Balance Jan. 1, 1921		$000.00
Deducted during 1921:		
Hogs	$1,133.89	
Cattle	38.12	
Total deducted	1,172.01	
Add claims collected	1,016.21	
Total credits	2,188.22	

Losses paid:			
Hogs	$1,287.90		
Cattle	000.00		
Total losses paid	1,287.90		
Attorney's fees	203.50		
Total debits		$1,491.40	
Credit balance		696.82	
Deduct amount transferred to loss and gain		196.82	
Net increase carried forward			$500.00
Total carried forward			500.00

ANALYZING THE BUSINESS.

If the information contained in the records and reports is to be utilized to the fullest extent in determining business policies, it must be analyzed and reduced to terms which will serve as measures of efficiency. The most successful association is the one which, first, receives the highest price obtainable for each class and grade of live stock, and, second, pays the shipper the largest proportion of each dollar of gross sales, considering the services performed.

The analysis presented in Table 1 is based on the actual results obtained by three Iowa shipping associations in shipping hogs in 1921. It will be noted that even these associations, selected at random from the same territory, show wide differences in expenses, shrinkage, and losses. The extent to which these differences are justified must be determined by the management of each association in the light of its local conditions and other factors. It is not the purpose here to attempt to explain these differences, but rather to emphasize the fact that only by keeping adequate records and analyzing the results will the leaks in the marketing of live stock be revealed and their causes eliminated.

TABLE 1.—*Comparison of the results obtained by three Iowa associations in shipping, 1921.*

	Association A.	Association B.	Association C.
Numbers of straight carloads shipped	120	140	144
Markets to which shipped	X	X & Y	X & Z
	Cents per 100 lbs.[1]	*Cents per 100 lbs.*[1]	*Cents per 100 lbs.*[1]
Freight, switching, war tax	41.5	34.0	38.5
Feed	4.3	2.6	3.1
Yardage	4.6	2.7	3.8
Selling commission	9.9	7.4	8.8
Insurance, inspection	0.1	0.1	0.1
Total freight and terminal expenses	60.4	46.8	54.3
Manager's commission	9.9	6.8	5.7
Local car expense	2.8	1.9	2.3
Insurance charge	5.0	6.0	5.0
Federation dues	0.3	0.3	0.3
Undivided balance and membership fees	0.1	0.2	0.0
Total home expenses and deductions	18.1	15.2	13.3
Total all expenses and deductions	78.5	62.0	67.6
Less undivided balance, insurance fund balance, and membership fees	3.0	2.9	0.3
Net shipping expenses	75.5	59.1	67.3

[1] Based on market weight.

TABLE 1.—*Comparison of the results obtained by three Iowa shipping associations in shipping, 1921*—Continued.

	Association A.	Association B.	Association C.
	Cents per 100 lbs.	*Cents per 100 lbs.*	*Cents per 100 lbs.*
Cost of shrinkage [2]	7.03	9.75	12.25
Total of net expense and cost of shrinkage	82.53	68.85	79.55
General expenses, not included in above	0.5	0.70	0.30
Insurance fund charge	5.0	6.0	5.0
Losses paid	5.7	5.7	2.0
Claims collected, net	3.6	2.1	0.0
Net losses	2.1	3.6	2.0
Per cent of gross sales value paid shippers	91.8	94.2	93.0
Average price paid shippers per 100 pounds, dollars	8.16	8.48	9.10

[2] Calculated as follows, i. e., for hogs:

Paid shippers for hogs (Statement B 1)	$185,427.98
Add excess of insurance fund charge over losses paid, including net amount of claims collected	658.70
Add undivided balance—gain	6.53
Total	186,093.21
Deduct proportionate share of general expenses not deducted in determining amount paid shippers above	112.32
Net value of hogs	185,980.89

$185,980.89÷2,271,439 (market weight)=8.188¢=net value of hogs per lb.; 19,512 pounds of shrinkage, at 8.188¢=$1,597.64=Total cost of shrinkage; $1,597.64÷2,271,439 (market weight)=7.034¢=Cost of shrinkage per 100 lbs.

WHO SHOULD KEEP THE BOOKS?

The question frequently arises as to whether the manager or one of the officers should keep the records. Although local conditions will to a considerable extent decide this question in each case, it will ordinarily be found more convenient and satisfactory if the books are kept at the place of business or some other place where they are accessible to the members and the management. Inasmuch as practically all the business contacts with members and others are made by the manager, he is most frequently called upon to answer questions regarding the business, and, therefore, has occasion most frequently to refer to the books. Furthermore, the manager of the association is in a position of leadership, and the directors and members look to him to take the initiative in determining the business policies. Unless he has the figures regarding the business conveniently available for constant reference and analysis, he is in very much the same position as the pilot without a compass

It is not, of course, always possible in practice to make ideal arrangements regarding the clerical work. In fact, the manager who understands the handling and marketing of live stock and who is also qualified or adapted to do clerical work is the exception rather than the rule. The disbursement of the funds and the bookkeeping is therefore frequently done by some other officer of the association, usually the secretary, or the local bank. In some cases, the manager attends to the prorating and issues the checks for live stock and the secretary-treasurer issues the checks for the home expenses. The chief disadvantage of the latter plan is that all of the records are seldom, if ever, available at one place or at one time.

The prime considerations to be kept in mind are: (1) Safeguarding the funds which can be accomplished by bonding those responsi-

ble for the funds, by monthly audits by an auditing committee, and annual audits by a qualified, disinterested accountant; (2) having all of the records accessible at one place, preferably at the place of business, or at the bank; (3) having the records kept up to date and according to approved methods. If neither the manager nor the secretary is qualified to do the clerical work some one who is qualified can usually be induced to assume this responsibility. Economy in the matter of keeping the records is usually dearly bought.

Whether the manager or the secretary keeps the books, or whether the work is delegated to hired help, it is highly desirable that both the manager and one or more members of the board of directors possess a sufficient knowledge of accounting so that they can intelligently judge the results obtained and the method of obtaining them, and can supervise the work when delegated to hired help.

MARKETING METHODS.

The foregoing discussion of forms, accounts, and procedure is based on certain conclusions reached after an extensive study of cooperative live stock marketing methods. In view of the many different methods used in handling the business at home as well as at the markets, this discussion of records and accounts would be incomplete unless supplemented by an analysis of the business practices. Moreover, only by free and thorough discussions of the different methods used will real progress be made in standardizing the practices and in eliminating those methods which are unsound and uneconomical.

TERMINAL MARKET METHODS.

The chief objective of the cooperative live stock shipping movement is to obtain for the shipper the actual market value of his particular kind and quality of live stock, less the actual cost of marketing it. The extent to which this ideal will be realized depends upon the prevailing methods of selling and weighing the live stock at the central markets and handling it at home, and upon the mehods used in prorating. A clear understanding of the methods of handling the live stock at the terminal markets is necessary if real progress is to be made in realizing this ideal.

The prevailing method of handling hogs seems to be to sell and weigh by grades and to prorate the shrinkage either on the entire load or separately on the bulk of the load and on the throwouts and packers. On some markets a considerable number of hogs are sold as straight carloads, the salesman pricing the animals in each individual lot on their merits and prorating the shrinkage either on the entire load or separately on the bulk of the load and on the throwouts. Less frequently loads are sold according to marks, unless it happens that given lots fall into specific grades which are sold to different buyers. In such cases the shrinkage is ascertainable separately for each lot and may be charged to the individual owners as it actually occurs.

Much the same methods are used in handling calves and sheep, except that selling and weighing by grades prevail to a greater extent than in the case of hogs. The grading frequently consists merely of culling out the off grades and selling the bulk of the load as a separate lot.

Cattle are generally sold and weighed by ownership, each owner being charged with the actual shrinkage on his animals. However, when the cattle in a load run fairly uniform as to grade and quality, they may be sold as one lot. Even in such cases individual weights are usually obtained.

The same methods do not predominate to the same degree on all the markets. The practice of selling and weighing by grades prevails to a greater extent on some markets than on others, depending partly on custom, the adequacy of the handling facilities, the practices of packer, order and other buyers, the volume of cooperative shipments, and partly on the custom and attitude of the salesmen of commission firms. Whether or not a market is receiving shipments from territory in which cooperative shipping is of recent origin also has its influence. It may be said, however, that on all markets the commission firms which solicit cooperative shipments (and most of them now do so) attempt in so far as it is possible to carry out the instructions of the managers with respect to selling, weighing, and prorating.

Naturally the manager of a shipping association is vitally concerned in having the live stock handled in such a way as to net the shipper the largest possible return. In order that the manager may attain this end what shall be his instructions to the commission firm regarding methods of weighing and selling? The following discussion of the relative merits of the different methods should aid him in deciding this question in the light of the conditions under which he is operating.

The question seems to resolve itself into three main problems: (1) Selling the live stock so as to obtain the largest gross amount possible; (2) weighing so as to reduce the shrinkage to the minimum; (3) selling and weighing in such a way as to make possible a fair division of the total returns and the shrinkage among the different shippers.

SELLING METHODS.

Selling each owner's live stock separately is usually impracticable, except in the case of cattle. More time and labor is required to handle a load under this method and it is more difficult to find buyers who are willing to take the time and trouble to make their purchases piecemeal. More sorting is required, resulting in more shrinkage, and the number of drafts on the scales is increased. The net return is more likely than not to be disappointing to the shippers.

The chief advantage claimed by many shippers for this method is that it materially reduces the shrinkage, but it is doubtful if this is the case. The chief objection is that when the animals are not of uniform grade and quality, the pricing of the load according to grades is based on the salesman's opinion rather than on actual sales which, unless arrived at conscientiously, may result in an unfair distribution of the returns among the shippers. This objection can, however, be overcome to a considerable extent, if not entirely, by home grading by a competent manager.

The main disadvantages of selling by ownership might be avoided by selling the carload as a unit for a flat sum. Some salesmen maintain that more can usually be obtained for a straight carload than for a load which is divided into several lots according to ownership.

It is reasonable that buyers prefer to buy in larger units than the individual lots of live stock in a typical cooperative shipment. It is even claimed that it is often possible to "work off" inferior animals to better advantage by this method than by grading the load; in other words, to "make the good hogs sell the poor ones." The extent to which careful buyers can be imposed upon to this extent is a question.

Selling according to quality or grade predominates on many of the important markets and is without doubt the most desirable method, especially where the animals in the load represent a considerable range in quality and where the spread in the market price for the different grades is wide. Each shipper's animals then actually sell on their merits, as nearly as this ideal can practically be approached. Excessive shrinkage is avoided, and buyers, not being compelled to take undesirable animals in order to get the desirable ones, are inclined to bid more nearly what each grade is actually worth. More than this, no manager can hope to obtain for his shippers. Where a shipping association has a sufficient volume of business, this sorting can be done at the shipping point and only animals of one grade loaded in a car.

WEIGHING.

The methods used in weighing the animals are of at least as much concern to the manager of a shipping association as the methods of selling. He is concerned not only in keeping the shrinkage down to the minimum, but also in dividing the total shrinkage on a fair basis among the different shippers.

As each group of animals sold at a given price must be weighed separately, it follows that the method of sale determines to a large extent the method of weighing. The weighing problem resolves itself into the question of the merits of dividing shrinkage according to ownership or of prorating it uniformly on some fair basis.

Weighing by marks.—The advantage claimed for the method of weighing by marks is that the actual shrinkage incurred on each lot can be definitely ascertained and charged to the individual shipper. This is always desirable in the case of cattle, as the shrinkage differs widely on account of the wide differences in the quality and condition of the animals and on account of different methods of feeding and handling the cattle. These differences are of less significance in the case of calves. Wide differences often occur in the shrinkage of different lots of hogs and sheep. Hogs or sheep coming from green pastures will shrink more than those coming from the feed lot. Animals driven or hauled different distances to the shipping point often show considerable differences in shrinkage. One of the problems of the manager is to single out the shipper who feeds heavily before delivering his live stock. Weighing by ownership is the most effective method of doing this. Managers frequently request separate weights only on lots which they suspect have been filled before delivery.

The chief disadvantage of weighing by marks is that excessive shrinkage usually results. Extra shrinkage resulting from weighing according to marks has been reported as high as several hundred pounds in some cases. Naturally this difference will vary with the

number of lots in the load. This difference in shrinkage is due to loss of fill, respiration, and to the fact that yard scales usually register weights in 10-pound intervals. Another objection which is made to this method of weighing is that more facilities and labor are required at the yards, which eventually must be reflected in higher yardage and commission rates. The premium often paid by order buyers, who are usually eager to get their cars loaded promptly for shipment east, is sometimes lost to cooperative shippers because of the delay occasioned by weighing by marks. Altogether, this method of weighing does not make for economy in live-stock marketing.

Weighing by grades.—The disadvantages of weighing by marks may be avoided by weighing by grades. When separate weights are requested on lots which the manager suspects have been filled and when shippers have learned how to handle live stock properly before delivering it at the shipping point, weighing by grades will make possible as nearly correct a distribution of shrinkage as it seems practicable to make.

GRADING AND PRORATING AT HOME.

On most markets, an extra charge of $2 to $6 per carload is made when extra work on account of individual ownership is required. Some of the local packing plants and reload stations, particularly in the Middle West, refuse to handle shipments when such extra work is involved, thus practically closing such markets to cooperative association. This raises the question of the practicability of grading and prorating at home. There is a marked tendency among the older associations to perform this service at home. In some cases, where a local market is the only advantageous outlet for a shipping association, this work has been done by the manager from the beginning.

Sucessful grading at the shipping point requires that the manager be familiar with market grades and keep closely in touch with market conditions. It also requires that there be a fair volume of business. The manager could, of course, remove the basis for the extra charge and such objections as might be made to handling cooperative shipments because of the extra service required, by crediting each shipper with the weight of each grade of live stock delivered and distributing the returns on the basis of his grading. This he could do whether the shipment consisted of one car or several. However, a further advantage, and perhaps a more important one, is to be gained when the volume of business is such that the live stock may be sorted and shipped to market as straight carloads of uniform grades. Not only is the work involved in handling reduced to the minimum, but the stock is placed before the buyers to the best advantage.

In practice, only two things are necessary for the successful working of such a system, viz, a capable and impartial manager, and members who are true cooperators. This last requirement means that (1) the shippers shall ship regularly through the association, so that any slight error in sorting would average out over a series of shipments; (2) that they shall have the cooperative point of view, so that they will be ready to accept that method of doing business which results in greatest economy and best results for all; and (3) all shippers must be so loyal to the organization and their fellow members that

they will give their stock proper treatment prior to shipment, rather than stuffing, salting, or using other devices for securing a fraudulent home weight or an excessive fill at the market.[9]

The question of prorating at home presents somewhat the same problems as grading. No doubt commission firms in most cases are better equipped than the shipping associations to do this work. On the other hand, inasmuch as the alert manager insists on checking the work anyway, he can with but little extra effort make the original calculations. Too frequently, because of the dependence upon the commission firm to do this work, the local management is unaware of the methods used or the problems involved. A critical knowledge of these methods and problems is essential to progress in realizing the ideal of the shipping association, namely, to obtain for each shipper what his live stock is actually worth less the cost of marketing it.

Conditions are gradually becoming more favorable for grading and prorating at home. Managers and officers are acquiring experience, and the development of the local association in many States seems to be in the direction of consolidating the business under fewer and better qualified managers. The work of prorating would be greatly facilitated by the adoption of a uniform system of records and the use of labor-saving devices, such as calculating machnes, computation tables, and suitable printed working forms and permanent records.

PROBLEMS INVOLVED IN PRORATING.

Much of the success of a shipping association depends upon whether the shrinkage and expenses are charged and the returns distributed fairly among the different shippers. Prorating, or the calculation of the returns due the individual shippers, is therefore one of the most important operations to be performed in the management of a shipping association.

Prorating involves the following problems: (1) Distributing shrinkage; (2) distributing the gross amount among the different grades of live stock when a carload of mixed grades is sold for a lump sum; (3) dividing the expense among the different kinds of stock in a mixed car; (4) prorating when a shipment consists of more than one car; (5) distributing the total expenses among the individual shippers according to the live stock shipped by each.

Distributing shrinkage.—The usual practice in distributing shrinkage is to charge cattle with their indivdual shrinkage, which of course, necessitates obtaining individual weights at home as well as at the market. In the case of hogs, calves, and sheep, however, the usual practice is to prorate the total shrinkage on some uniform basis, preferably so much per 100 pounds.

Shrinkage is sometimes prorated on the head basis, which method is equitable only when the animals included are of approximately uniform size and weight. When the shrinkage differs for different grades of animals, as, for instance, between good butcher hogs and packers, the rate for each grade showing a marked difference should be calculated separately. As already noted in the foregoing, any lots of animals which may unduly influence the average shrinkage

[9] Cooperative Live Stock Shipping in Iowa in 1920, by E. G. Nourse and C. W. Hammans, Iowa Agr. Exp. Sta. Bul. No. 200.

should be weighed separately at the market and the owners charged with the actual shrinkage.

Distributing flat sum among different grades in carload.—Where a carload of hogs of mixed grades is sold for a flat sum, the commission firm usually indicates on the account sales the market value of the different animals in the shipment. Where hogs, calves, or sheep are graded locally the proceeds are distributed on the basis of the market quotations prevailing on the day of sale for the different grades.

Dividing the expenses when mixed loads are shipped.—The question of mixed loads is of more importance in some localities than in others. However, nearly all associations ship some mixed loads. Much difference of opinion prevails as to the method to be used in dividing the different items of expense between the species. It is urged by some, for instance, that the extra freight should be charged to the hogs, and by others, to the cattle, calves or sheep. Still others urge that the total expenses should be divided equally among the different kinds of stock on the weight basis.

The problem of dividing the expenses centers mainly about the item of freight. Obviously, it is not fair to members shipping 16,000 pounds of hogs in a load to charge them with the freight burden due to the inclusion of 1,000 or 2,000 pounds of cattle. It would be still more unfair to charge the cattle with the extra burden. Even if the freight were divided equally on the weight basis, it would pay the hog shippers much better to ship their 16,000 pounds in a carload by themselves. The weight basis of division seems to be the only practicable basis. When distribution on this basis puts an undue burden on either group of shippers, the only solution is not to load in such unfavorable proportions. By educational work and progressive leadership on the part of the management the community may be made to see the penalty paid for shipping in unfavorable proportions. It should be clear not only to the management of a shipping association but to the membership as well, that an association shipping under excessive freight burdens due to improper mixing is laboring under a considerable handicap, especially when competing with agencies which may take special care to avoid such burdens.

The division of the other items of expense involves no special difficulties. The yardage charge is divided according to the rate per head actually applying on each species. The cost of corn is charged to the hogs and the cost of hay to the cattle. Inspection applies to hogs only. Fire insurance, because of the smallness of the amount, may be arbitrarily charged to the bulk of the load. The selling commission is a per-head charge and should be divided on that basis. For instance in shipment No. 112, on page 41, the rate applying on hogs was assumed to be 30 cents, or $15.60 for the 52 head; and on cattle, 90 cents per head or $4.50 for the 5 head. The total commission at these rates would be $20.10. If, however, $18 is assumed to be the maximum commission applying on a single car, the proportion chargeable to hogs would be as $15.60 is to $20.10, or 77.6 per cent, and the proportion chargeable to cattle would be as $4.50 is to $20.10, or 22.4 per cent.

The manager's commission and the insurance fund charge for shipment No. 112 would be divided as follows: Manager's commis-

sion, 6 cents per 100 pounds for hogs and 4 cents per 100 pounds for cattle; insurance one-half of 1 per cent of the gross sales value of each kind of stock. (See p. 41.) The local car expenses usually consist chiefly of feed and bedding. Each species should be charged with the feed it receives, and the bedding may be divided on the basis of the space occupied by each species in the car or on the weight basis. Ropes and special crates for vicious animals should be charged to the owners of the animals requiring their use.

Prorating when shipment consists of more than one car.—When several cars of the same kind of live stock are shipped the same day, should the returns, shrinkage, and expenses be averaged, or should each car be prorated as a separate unit? If 25 farmers deliver 200 head of hogs for shipment, the fact that three cars may be required to transport the hogs is and should be of no concern to them. Each patron is entitled to the same price for the same grade of live stock and should be assessed at the same rate of expense as every other patron whose stock was included in the shipment.

In actual practice, however, the solution is not always so simple. When only one grade of hogs is loaded into each of several cars included in a shipment to one market, the expenses can be averaged for the entire shipment, the shrinkage in the case of the hogs can be calculated separately for the good butcher hogs and the packers, and also for the "throwouts" when their shrink is abnormal. In the case of calves and sheep, the rates of shrinkage should be calculated separately for the bulk of the load and the culls or "throwouts," whenever the rates show a marked difference.

As each car in the above case is assumed to contain but one grade of live stock, each grade can be priced to the shippers in accordance with the actual sales. If two or more cars of the same grade sold for different prices the proceeds should be averaged.

Where the shipment consists of several cars of mixed grades it is clear that all shippers should receive the same price of the same grade of stock, even though the animals were distributed among the several cars and might actually have sold for different prices.

An entirely different situation is presented when part of the shipment goes to one market and another part to another market. In this case the shrinkage and expenses should be calculated separately for the cars going to each market. A question arises, however, as to the distribution of the net proceeds. If the manager has misjudged the relative merits of the different markets, he finds himself in an embarrassing position when attempting to explain to a shipper why his stock brought less than that of a neighbor, whose stock happended to be included in a car shipped to another market which turned out to be the highest one that day. If the stock is graded and each grade shipped to the most advantageous market, it might still happen that the lower grade would bring the same or a higher price than the higher grade, and the manager would have the same difficulty in attempting to explain the inconsistency.

In spite of these difficulties, the manager is presumed to have used his best judgment and to have patronized the market offering the best average results for each class and grade of livestock. Each shipment to a different market should therefore be treated as a separate unit. If dissatisfaction results frequently, it means that the manager

misjudges frequently. A thorough knowledge of the different markets, the relative costs of shipping to them, and other factors concerned are essential on the part of the management if the greatest possible success is to be achieved. Some managers shift the responsibility for the choice of markets to the shippers themselves or to the shipper who owns the bulk of the load.

Distributing the total expenses among the shippers.—Little uniformity exists in the methods used in distributing the expenses among the shippers. This is true whether the prorating is done at home or by the sales agency. In the case of some of the older associations, particularly in the Northwest and in some of the Corn-Belt States, all of the expenses are added together and charged to the shipper at so much per 100 pounds. In other cases the attempt of the cooperator to obtain the actual market value of his stock less the actual expenses of marketing, seems to have been interpreted as meaning that the member's statement must show in dollars and cents how much he has contributed toward each of the six to a dozen different items of expense, calculated on two or three different bases. Between these two methods there exists a wide range of variations.

Under the method of prorating illustrated in the following pages all expenses are added together, irrespective of the basis on which charge was made against the shipment as a whole, and divided among the shippers equally on the weight basis. The advantages of this method are:

(1) The work involved in prorating is reduced to the minimum, as only one calculation is necessary in determining the amount of expenses to be charged each shipper, compared with the large number of calculations involved in the detailed method of prorating. The extra work involved in prorating is reflected in the extra charge of $2 to $6 per car made by commission firms for handling cooperative shipments.

(2) The distribution of expenses among the shippers is as fair on the average as is practically possible. Inasmuch as each 100 pounds of livestock in a shipment receives practically the same service, it seems logical to distribute the expenses on the weight basis.[10] Efficiency in marketing calls for handling the shipment in such a manner as will yield the highest possible net price per 100 pounds for the entire shipment, rather than striving for individual accounting of each shipper's stock at any cost.

(3) The single-rate method of prorating conveys to the shipper in an emphatic manner the factors which determine the financial results of the shipment, i. e., the weight and shrinkage, the selling price, the total expenses in dollars and cents, and the rate per 100 pounds. It is believed the educational benefits of cooperative shipping can be realized more fully by presenting the detailed information regarding expenses, etc., in the form of comparatively monthly summaries than by presenting them on the individual member's statement. Variations in expenses, losses, and shrinkage can be explained more satisfactorily when based on more extensive data than a single shipment affords

[10] It is sometimes urged that it is only fair that the expenses should be passed on to the shipper on the same basis as they were actually incurred. Carried out to its logical conclusion, this would necessitate the determination of the amount of feed actually consumed by each lot of live stock separately. It would mean weighing by ownership to determine actual shrinkage by lots. It might even mean that shippers should assume the risk of losses individually.

and the danger of overemphasizing the importance of minor details or drawing conclusions from an extreme instance is reduced.

Whether the expenses are reduced to one rate per 100 pounds or split up into several rates and applied on different bases, present practice seems to favor having each shipment bear its own expenses. There is some tendency, however, particularly among the older associations, to favor a fixed rate of expense applying over a period of time. The chief argument in favor of this method is that it spreads the risk of variations in expenses over a larger number of cars. The variations in the expenses of different shipments are likely to be greater in the case of small associations than large ones because of the greater difficulty in getting enough live stock to make a full load without excessively delaying shipments. Differences as high as 20 cents per 100 pounds are not uncommon. Certainly it is no fault of the shipper when his live stock happens to be included in a shipment which, because of short weight or for other reasons, incurs relatively high expenses. It seems entirely logical to spread this risk over a number of cars, just as the risk of loss due to dead or crippled animals is spread.

Another argument in favor of this method is that the shipper knows beforehand just what it will cost to ship. Furthermore the work involved in prorating is reduced to the minimum.

If the fixed rate is to be applied fairly, however, it must take into consideration differences in the costs of shipping the different species of live stock both in straight and mixed loads, seasonal differences in costs, and differences in the costs of shipping to the different accessible markets. Many associations apply, even on carlot shipments owned by a single shipper, rates which reflect the difference in the amount of service required in handling them.

FILLING OUT THE PRORATING SHEET.

The steps followed in calculating the returns for shipment No. 111, the prorating sheet for which appears in Figure 3 on page 7, are as follows:

1. Insert shipment number, date, shipping point, car number and railway in the spaces provided therefor.

2. Fill in the blanks under "expenses." The freight and terminal expenses will be obtained from the account sales received from the commission company and in this case amount to $103.63.

Assume the home expenses to be as follows:

Manager's commission (6 cents per 100 pounds on market weight of 15,905 pounds)	$9.54
Insurance fund (one-half of 1 per cent of gross market value of $1,556.36)	7.78
Local car expense (8 bushels corn at 50 cents)	4.00
Dues (State association)	.50
Total	21.82

3. Calculate the rate of expense per 100 pounds by dividing the total expense, $125.45, by the market weight, 15,905 pounds (market weight includes dockage, if any), which gives a result of 78.87 cents per 100 pounds.

To avoid the awkward fraction in figuring the expenses, a rate of 79 cents per 100 pounds is used in calculating each shipper's expenses in this illustration.

4. List each owner's delivery of live stock according to the price ranges on the account sales (or if graded at home, according to the home grades) and insert the home weights.

5. Calculate the rates of shrinkage as follows:

Kind.	Home weight.	Market weight.	Shrinkage.		
			Lbs.	Rate.[1]	Rates used in prorating.
				Per cent.	*Per cent.*
Butcher hogs	14,180	14,035	145	1.02	1.00
Packer hogs	1,905	1,870	35	1.84	2.00
Total	16,085	15,905	180	1.119	.....

[1] The rates of shrinkage are obtained by dividing the shrinkage in pounds by the home weight. In actual practice, shrinkage is frequently computed by using even percentage figures, rather than the actual figures. This practice has been followed in the illustrations in this bulletin (1 per cent instead of 1.02 per cent and 2 per cent instead of 1.84 per cent and, as will usually be the case, has resulted in weights being used on the prorate sheet (Fig. 3) which vary slightly from those on the accounts sales (page 7).

6. Calculate each shipper's shrinkage by multiplying the home weight by the rate determined above for each kind of live stock, and prove the shrinkage calculations by comparing the total shrinkage deducted plus the market weight with the total home weight. Where the shrinkage rate used in prorating has been rounded up or down, the total pounds of shrinkage and the total market weight as shown on the prorating sheet may be a few pounds more or less than the actual shrinkage and market weight.

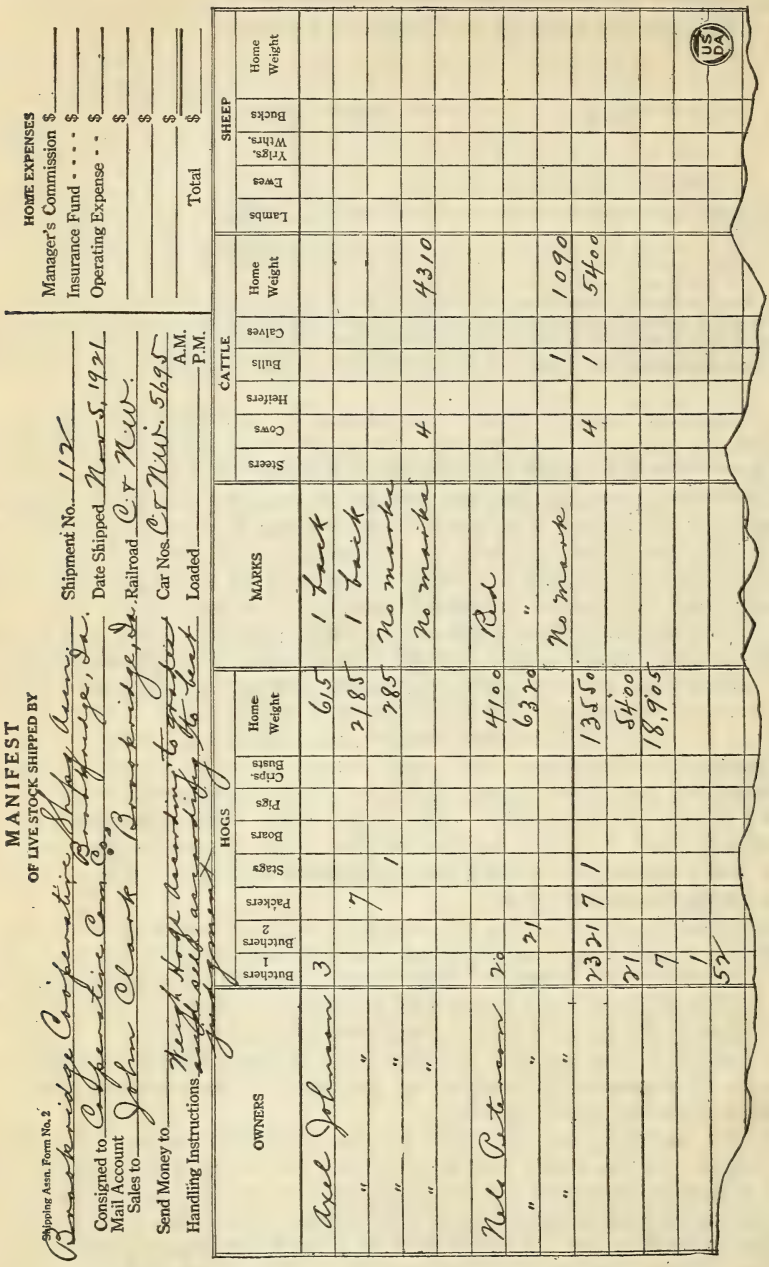
7. Calculate the gross amount due each shipper, using the prices given on the account sales. In the case of dead or crippled animals, the calculations on the prorating sheet are carried through at the prices such animals would have brought undamaged. Any difference in the prorated market weight and the actual weight due to averaging the shrinkage will also result in a slight discrepancy between the calculated gross sales value and the gross sales value shown on the account sales. The gross sales value obtained on the prorating sheet will also be greater than that shown in the account sales when damaged animals are calculated at the price they would have brought undamaged.

8. Calculate the amount of expenses to be deducted from each shipper's returns by multiplying the market weight by the rate obtained under (3) page 7. Here again the total prorated expenses may differ slightly from the actual expenses on account of rounding the expense rate up or down to facilitate calculation.

9. Ascertain the net amount due each shipper and prove the deduction of expenses by comparing the sum of the expenses and net amount with the gross amount.

10. By carrying out the calculations indicated under "proof of settlement" in the lower left-hand corner of the prorating sheet, the total difference between the prorated results and the actual results of the shipment will be determined. The gross sales value will be found on the account sales. To this will be added insurance payments, if any, to obtain the total to be prorated. The total deductions will consist of the total expenses listed on the left-hand margin of the prorating sheet, plus membership fees, if any. Subtracting the total deductions from the total to be prorated will give the balance for

distribution, that is, the amount which could actually have been distributed had shrinkage been calculated exactly to the pound and ex-



Shipping Assn. Form No. 2

MANIFEST
OF LIVE STOCK SHIPPED BY
Rockbridge Co-operative Shipping Assn.

Consigned to Co-operative Com. Co.
Mail Account
Sales to John Clark Brookbridge, Va.

Send Money to West Hyl Banking & Trust Co.
Handling Instructions Instructions accepted by the last judgment

Shipment No. 112
Date Shipped Nov. 5, 1921
Railroad C. & N.W.
Car Nos. C. & N.W. 5695
Loaded A.M. P.M.

HOME EXPENSES
Manager's Commission $
Insurance Fund - - - - $
Operating Expense - - $
$
$
$
Total $

OWNERS	HOGS: Butchers 1	Butchers 2	Packers	Stags	Boars	Pigs	Chips-Busts	Home Weight	MARKS	CATTLE: Steers	Cows	Heifers	Bulls	Calves	Home Weight	SHEEP: Lambs	Ewes	Yrlgs. Wthrs.	Bucks	Home Weight
Axel Johnson	3							615	1 Fack											
" "			7					2185	1 Fack											
" "				1				285	No marks											
" "									No marks		4				4310					
Nels Peterson	20							4100	Red											
" "		21						6320	"											
" "									No marks				1		1090					
	23	21	7	1				13850			4		1		5400					
	21							8400												
	7							18,905												
	1																			
	52																			

FIG. 12.—Manifest for shipment No. 112.

penses to the penny. In the illustration it is found that $1,430.03 was actually distributed, whereas $1,430.91 was available for distribution, hence the undistributed balance-gain of 88 cents.

PRORATING MIXED SHIPMENTS.

The prorating of carloads containing more than one kind of live stock is discussed under prorating on page 36. However, in order to illustrate more fully the procedure involved, and assumed carload referred to as shipment No. 112 containing 13,505 pounds of hogs and 5,400 pounds of cattle is carried through the records in the following pages. Other complications such as reimbursement for dead and crippled animals, dockage, and membership deductions, are also introduced into this shipment.

For the purpose of this illustration, it is assumed that the scale tickets show that live stock was delivered as shown in the manifest illustrated in figure 12.

It is assumed that the account sales shown on this page represents the results of the sale of this shipment.

[Account sales for shipment No. 112.]

COOPERATIVE COMMISSION CO., UNION STOCK YARDS, CHICAGO, NOVEMBER 6, 1922.

Sold for the account of the Brookridge Cooperative Shipping Association, Brookridge, Iowa.

Buyer.	Head.	Kind.	Weight.	Dockage.			Marks.	Price.	Amount.
				Sows.	Stags.	Lbs.			
Swift	22	Hogs	4,465				2-1; 20 No. mk	$10.00	$446.50
Hinkle	1	Dead	200				I [1]($10)	1.00	2.00
Armour	20	Hogs	5,940				No mark	9.50	564.30
Hinkle	1	Crip	310				[1]($9.50)	7.00	21.70
Swift	7	Packers	2,140	1		40	1	8.00	168.00
Cudahy	1	Stag	280		1	70		7.00	14.70
Brennan	3	Cows	3,300					6.00	198.00
Do	1	Cow	930					7.00	65.10
Do	1	Bull	1,050					5.00	52.50
									1,532.80

C. & NW. 5694, 22,000 pounds, @ 40 cents	$88.00	Freight	$93.64
Switching	3.00	Yardage 52, @ 12 cents; 5, @ 30 cents	7.74
War tax	2.64	Insurance	.07
	93.64	Hay, 100 pounds	.75
		Corn, 5 bushels	6.25
		Inspection	.20
		Commission	18.00
			126.65
		Net proceeds	1,406.15

[1] Undamaged value per 100 pounds.

In prorating the returns for this shipment, the shrinkage is first ascertained separately for the butcher and the packer hogs as follows:

Kind.	No.	Home weight.	Market weight.	Shrinkage.	
				Lbs.	Per cent.
Butchers	44	11,035	10,915	120	[1] 1.1087
Packers	7	2,185	2,140	45	[1] 2.06

[1] The shrinkage in pounds, divided by the home weight gives the rate of shrinkage in pounds per 100 pounds or as a percentage of the home weight.

The rate of 1.1 per cent was actually used in calculating the shrinkage of the butcher hogs, but in the case of the packers 2 per cent was used instead of 2.06 per cent. The stag and the cattle were charged with their actual shrinkage.

The expenses are next divided item by item between the hogs and the cattle. The freight and terminal expenses appear on the account sales and the home expenses are assumed to be as follows:

Manager's commission:		
Hogs, 13,335 pounds, terminal weight, at 6 cents 100 pounds	$8.00	
Cattle, 5,280 pounds at 4 cents	2.11	
		$10.11
Insurance fund one-half of 1 per cent of gross sales value		7.66
Local car expense		3.50
State federation dues		.50
Total		21.77

Also deduct membership fees $2 (Johnson $1, Peterson $1).

The division of the expenses is shown in the following table. The total expenses are shown in the first column, the amount chargeable to hogs in the second column and to cattle in the third column. The total expense for each species is then determined and the rate per 100 pounds calculated on the basis of the terminal weights.[12]

Expenses.

Expenses.	Total.	Hogs.	Cattle.
Freight, switching, and war tax	$93.64	$67.42	$26.22
Yardage	7.74	6.24	1.50
Feed	7.00	6.25	.75
Insurance inspection	.27	.20	.07
Selling commission	18.00	13.97	4.03
Total market expense	126.65	94.08	32.57
Manager's commission	10.11	8.00	2.11
Insurance fund	7.66	6.08	1.58
Operating expenses $3.50, dues $0.50	4.00	2.88	1.12
Total home expenses	21.77	16.96	4.81
Total expenses	148.42	111.04	37.38
Rate per 100 pounds ... cents	.....	83.28	70.8

To facilitate the calculation of the expenses to be charged each shipper, the rate for hogs was rounded down to 83 cents and for cattle up to 71 cents.

All data needed in prorating are now before us. A separate prorating sheet is used for each kind of live stock, and after the expenses have been transferred to the prorating sheets the calculations are carried out as explained in prorating shipment No. 111.

Referring to the accompanying prorating sheets for shipment No. 112, (See Figs. 13 and 14) it should be noted that in calculating the returns for the hogs, nothing appears on the prorating sheet to indicate that one hog was dead and another crippled. As these hogs were received in good condition they are to be paid for at the price they would have brought undamaged and the difference is to be charged to the insurance fund account. These animals are therefore included with the undamaged animals in carrying out the calculations. The amount of $25.75 appearing opposite "insurance paid" under proof of settlement includes $18, the difference between the $2 which the dead hog actually brought and the $20 it would

[12] See discussion of method on p. —.

have brought undamaged at $10 per 100 pounds, according to notations made on the account sales by the commission firm. Similarly the loss on the crippled hog amounts to $7.75, making a total of $25.75 for both hogs.

PRORATING SHEET FOR Hogs — SHIPMENT No. 112

Shipping Assn. Form No. 3

Date March 6 192 1

Shipping Point Ida

Car No. GN 58958 R. O. Nat

OWNERS	No.	HOME WEIGHT	Shrink	MARKET WEIGHT	Dockage Lbs.	PRICE	AMOUNT	TOTAL	EXPENSE 23 ¢/Cwt.	Membership	NET AMOUNT	Ch. No.
Axel Johnson	3	615	7	608		10.00	60.80					
" "	7	2185	44	2141	1.40	8.00	168.08					
" "	1	285	5	280	1.70	7.00	14.70	243.58	25.14	1.00	217.44	
Nels Peterson	20	4100	45	4055		10.00	405.50					
"	20	6320	70	6250		9.50	593.75	999.25	85.53	1.00	912.72	
	51	13505	171	13334	1.110			1242.83	110.67	2.00	1130.16	

EXPENSES	
Freight	67.42
Yardage	6.20
Feed and Bedding	6.25
Inspection	20
Insurance	
Selling Commission	13.97
Market Expense	94.08
Manager's Com.	8.00
Insurance Fund	6.08
Operating Expense	2.53
Federation Dues	3.6
Home Expense	16.96
Total Expense	111.04
Exp. ¢ per Cwt.	83.29

PROOF OF SETTLEMENT	
Gross Sales Value	217.20
Insurance Paid	25.75
Total to be Prorated	242.95
Total Expense	111.04
Membership	2.00
Total Deductions	113.04
Bal. for Distribution	129.91
Net Amt. Distributed	130.16
Undivided Bal. Balance { Gain / Loss	0.25

FIG. 13.—Prorating sheet for hogs, shipment No. 112.

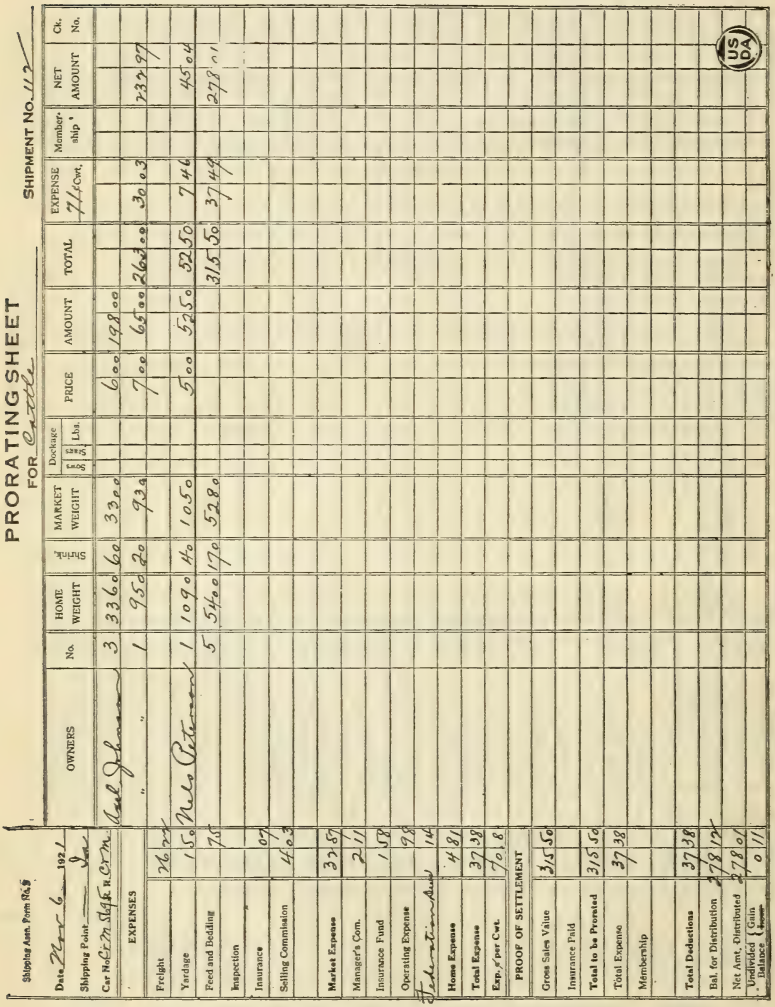
The items of 25 cents, undivided balance-loss on the prorating sheet for hogs, and the 11 cents, undivided balance-gain on the prorating sheet for cattle, may be analyzed as follows:

		Losses.	Gains.
Hogs:			
Actual expense	$111.04		
Expenses prorated	110.67		
Loss		$0.37	
Actual shrinkage on packer hogs	45 lbs.		
Shringage prorated	44 lbs.		
Loss	1 lb. @ 8¢		.08

Hogs—Continued.		Losses.	Gains.
Actual shrinkage on butcher hogs	120 lbs.		
Shrinkage prorated	122 lbs.		
Gain	2 lbs.@10.		$0.20
Total		$0.45	.20
Undivided balance-loss		.20	
		.25	

Cattle:

Actual expenses	$37.38	
Expenses prorated	37.49	
Undivided balance-gain		.11



PRORATING SHEET FOR cattle

SHIPMENT No. 112

Shipping Asn. Form No. 9

Date Nov 6 1921

Shipping Point Sioux City

Car No. C.R.I. & P. Co.

OWNERS	No.	HOME WEIGHT	Shrink.	MARKET WEIGHT	Dockage Sows	Dockage Lbs.	PRICE	AMOUNT	TOTAL	EXPENSE 7¼ Cwt.	Membership	NET AMOUNT	Ch. No.
Axel Johnson	3	3360	60	3300			6.00	198.00					
"	1	950	20	930			7.00	651.00	2631.00	30.03		2332.97	
"	1	1090	40	1050			5.00	525.0	525.0	7.46		457.04	
	5	5400	170	5280					3156.00	37.49		2789.01	
EXPENSES													
Freight	26.22												
Yardage	1.50												
Feed and Bedding	.75												
Inspection													
Insurance	.07												
Selling Commission	4.03												
Market Expense	32.57												
Manager's Com.	2.11												
Insurance Fund	1.58												
Operating Expense	.98												
Federation Assn.	1.40												
Home Expense	4.81												
Total Expense	37.38												
Exp. per Cwt.	70.18												
PROOF OF SETTLEMENT													
Gross Sales Value	3156.00												
Insurance Paid													
Total to be Prorated	3156.00												
Total Expense	37.38												
Membership													
Total Deductions	37.38												
Bal. for Distribution	2781.62												
Net Amt. Distributed	2780.01												
Undivided Gain Balance Loss	0.11												

FIG. 14.—Prorating sheet for cattle, shipment No. 112.

A member's statement showing the results of the sale of the live stock delivered by Axel Johnson in shipment No. 112 is shown in Figure 15.

The data to appear on the shipment record envelope for shipment No. 112 are shown in Figure 16.

It will be noted that when the undivided balances on both prorating sheets are combined for this shipment, there was a net overpayment of 14 cents, which is obtained by subtracting the underpayment of 11 cents on the cattle sheet from the overpayment of 25 cents on the hog sheet.

Shipping Association Form No. 4

MEMBER'S STATEMENT

Shipment No. 112 — No. 97

Brookbridge Iowa, Nov 6 1927

Account of Axel Johnson P.O. Brookbridge, Ia. R.F.D.

No.	Kind	Shrinkage Gain	Market Weight	Dock	Price		Amount		TOTAL	
3	Good Hogs	7	608		10	00	60	80		
19	Packers	44	2141	40	8	00	168	08		
1	Stag	5	280	70	7	00	14	70	243	58
3	Calves	80	3300		6	00	198	00		
1	Cow		930		7	00	65	00	263	00

REMARKS:

EXPENSES

Species	Rate		Amount			
Hogs		83	25	14	506	58
Cattle		71	30	03		
Calves						
Sheep						
Membership			1	00	56	17

Attached find Check for Balance due $ 450 41

Please ask about anything not understood. Complete statement of each shipment is on file.

(Tear Off Before Depositing)

Brookbridge Cooperative Livestock Shipping Association — No. 97

Brookbridge Iowa, Nov 6 1927

Pay to the order of Axel Johnson $450.41

Four Hundred Fifty and 41/100 DOLLARS

To State Bank, Iowa. John Clark Manager

FIG. 15.—Member's statement showing the results of sale of stock included by Axel Johnson in shipment No. 112.

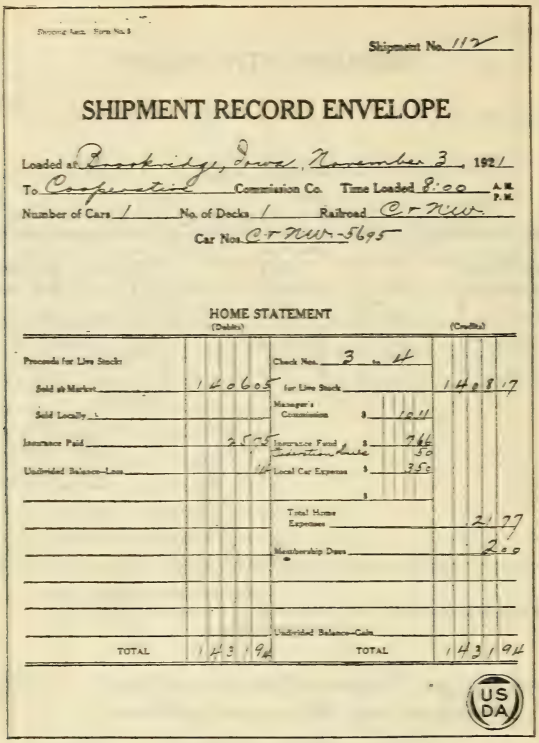
By referring to the illustrative entries in the shipment summary record for shipment No. 112 it will be noted that the data are summarized separately for hogs and cattle. Reference is made to transaction (14), on page 49, for the cash journal entry to be made for the settlement for this shipment.

SHORT WEIGHT AND MIXED CARLOADS.

The following tables [13] are presented to illustrate the effect on the freight cost per 100 pounds of shipping carloads containing less than

[13] Tables prepared by C. W. Crickman, assistant in agricultural economics, Iowa State College.

the minimum weight and of shipping mixed carloads containing hogs and cattle. The figures apply to a standard 36-foot single-deck car and the rates used were 36 cents per 100 pounds for hogs and 34 cents for cattle. Similar tables may be readily constructed for other kinds of live stock, for cars of different capacity, for different minimum weights, and based on different rates.



Shipment No. 112

SHIPMENT RECORD ENVELOPE

Loaded at Brookridge, Iowa, November 3, 1921

To Cooperative Commission Co. Time Loaded 8:00 A.M. P.M.

Number of Cars 1 No. of Decks 1 Railroad C & NW

Car Nos. C & NW-5695

HOME STATEMENT

(Debits)		(Credits)	
Proceeds for Live Stock:		Check Nos. 3 to 4	
Sold at Market	140605	for Live Stock	140817
Sold Locally		Manager's Commission $	1011
Insurance Paid	2.55	Insurance Fund Collection Made $	766 50
Undivided Balance—Loss	14	Local Car Expense $	350
		$	
		Total Home Expenses	2177
		Membership Dues	200
		Undivided Balance—Gain	
TOTAL	143194	TOTAL	143194

US DA

FIG. 16.—Shipment record envelope for shipment No. 112.

TABLE 2.—*Freight cost on short-weight cars.*

Hogs.		Cattle.	
Weight.	Cost per 100 pounds of live stock shipped.	Weight.	Cost per 100 pounds of live stock shipped.
Pounds.	*Cents.*	*Pounds.*	*Cents.*
17,000	36.0	22,000	34.0
16,000	38.2	21,000	35.6
15,000	40.8	20,000	37.4
14,000	43.7	19,000	39.4
13,000	47.1	18,000	41.6
12,000	51.0	17,000	44.0
11,000	55.6	16,000	46.7
10,000	61.2	15,000	49.9

By referring to Table 2 it will be seen that the cost of freight rises rapidly as the weight of live stock loaded falls below the

minimum weight. The matter of getting the proper weight into the car is often a difficult problem for the manager to solve. Even though the member is under contract and delivers the exact number of head of live stock listed, his estimates of the weight are often wide of the mark. The result is a constant swinging from short-weight to overloaded cars. The properly loaded car is, of course, not necessarily the one which contains at least the minimum weight. In fact, experience seems to show that, particularly in the case of hogs, the saving in freight cost resulting from loading to the minimum weight or over it is frequently more than counterbalanced by excessively heavy shrinkage and losses due to dead and crippled animals.

The alternative of shipping a short-weight partly-filled carload of hogs, cattle, or sheep is of course to ship a mixed load.[11] When the manager has a choice, his problem is to decide which is the more economical alternative. Many communities, however, produce live stock in such quantities and in such proportions that the mixed carload is the rule rather than the exception. In this case the manager's problem is to select such proportions of two or more different kinds of live stock as will reduce the freight burden to the minimum.

From observations made, it would seem that this problem is not generally understood, and that relatively little attention is given to an effort to obtain just the right mixture which can be shipped at the lowest costs. It is probable that careful study of the proper load will reflect as large savings to the shippers as can be made in any other way.

ILLUSTRATIVE TRANSACTIONS.

NOTE.—See Figure 8 for cash journal entries for the following transactions.

For the purpose of this illustration, it is assumed that totals have accumulated in the different accounts as indicated below, as a result of the business transacted up to November 1, 1921. This business is assumed to consist of livestock handled as summarized on the first line in the shipment summary record (see p. 9). Eighty shares of capital stock at $5 per share have been sold; $300 have been borrowed at the bank, and $1,000 have been invested in scales and other equipment. The manager has been paid in full and the deductions for local car expenses just equal the amount which has been disbursed for this purpose. The totals which have accumulated are shown in the following trial balance.

Trial balance November 1, 1921.

	Debits.	Credits.
Bank	$172,655.49	$172,079.47
Live stock	170,965.03	170,965.03
Manager's commission	2,070.09	2,070.09
Insurance fund (including railway claims)	1,226.00	2,025.51
Local car expense	578.60	578.60
Federation dues	----------	55.00
Undivided balance	8.96	12.47

[11] The freight on a mixed load of live stock is calculated at the highest rate based on the highest minimum represented by the live stock in the car.

	Debits.	Credits.
Equipment	$1,000.00	
Indebtedness		$300.00
Loss and gain		18.00
Net worth		400.00
Total	348,504.17	348,504.17

The condition of the business affairs is revealed by the following statement of resources and liabilities constructed from the balances in each of the foregoing accounts:

Statement of Resources and Liabilities of the Brookridge Cooperative Shipping Association November 1, 1921.

Resources.		Liabilities.	
Cash	$576.02	Notes payable	$300.00
Equipment	1,000.00	Insurance fund	799.51
		Federation dues	55.00
		Undivided balance	3.51
		Net worth.	
		Capital stock paid in	400.00
		Loss and gain	18.00
Total	1,576.02	Total	1,576.02

November 1.

(1) The board of directors has approved both the trial balance and the statement of resources and liabilities constructed from it. The cash journal will, therefore, be opened by entering in each account therein the accumulated debits and credits given in the foregoing trial balance.

(2) Paid Jones Feed Store for feed for shipment No. 111; check No. 101, for $4.

November 2.

(3) Received from Cooperative Commission Co. proceeds of shipment No. 111, $1,452.73.

(4) Paid Bell Telephone Co. November telephone bill, check No. 102, $2.50.

(5) Paid Eureka Printing Co. for cash journal binder $5 and stationery $5, check No. 103, $10. (The permanent binder should be debited to the yard and office equipment account and the stationery to general expense.)

November 3.

(6) Settlement for shipment No. 111 as per home statement on the shipment record envelope for this shipment.

Accounts debited.		Accounts credited.	
Live stock	$1,452.73	Bank (checks 1–2)	$1,430.03
		Manager's commission	9.54
		Insurance fund	7.78
		Local car expense	4.00
		Federation dues	.50
		Undivided balance–gain	.88
Total	1,452.73	Total	1,452.73

(7) Paid Jno. Clark, manager, commission for shipment No. 111, check No. 104, $9.54.

November 4.

(8) Paid Blank State Bank $200 note with interest $16, check No. 105, $216.

November 5.

(9) Paid Smith Hardware Store for rope for shipment No. 112, check No. 106, $1.

(10) Paid Farmer's Elevator Co. 40 bushels of corn, check No. 107, $20.

November 6.

(11) Received from Cooperative Commission Co., proceeds from shipment No. 112, $1,406.05.

November 7.

(12) Paid Tribune Printing Co. for advertising circulars, check No. 108, $4.

(13) Paid National Surety Co. for premium on manager's bond; check No. 109, $37.50.

(14) Settlement for shipment No. 112. (See shipment record envelope on p. 10 for this shipment).

Accounts debited.		Accounts credited.	
Live stock	$1,406.05	Bank (checks 3–4)	$1,408.17
Insurance fund (losses paid)	25.75	Manager's commission	10.11
Undivided balance loss	.14	Insurance fund	7.66
		Local car expense	3.50
		Federation dues	.50
		Loss and gain (membership fees)	2.00
Total	1,431.94	Total	1,431.94

November 25.

(15) Paid United States Office Equipment Co. for Burroughs adding machine No. 36980, check No. 110, $250.

(16) In order that the cash journal may show the results of all shipments made during November, as recorded in the shipment summary record, shipments No. 113 to No. 122 will, for the purpose of this illustration, be entered in summary form. It will be assumed that the manager's commission and the local car expenses have been paid in full for these shipments. The debits and credits arising from these transactions are as follows:

	Debits.	Credits.
Bank	$18,654.75	$18,760.33
Livestock	18,654.75	18,654.75
Manager's commission	249.66	249.66
Insurance fund	236.65	121.52
Local car expense	60.79	60.79
Federation dues	———	6.50
Undivided balance	2.31	5.36
	37,858.91	37,858.91

Total all columns at the end of the month, entering all of the amounts on the same line. See Figure 8 on page 10*b*. If the debits and credits arising from each transaction have been correctly entered, the sum of the debit totals at the end of the month should equal the sum of the credit totals.

A statement of resources and liabilities based on the balances in the different accounts at the end of November appears as follows:

Statement of resources and liabilities, November 31, 1921.

Resources.		Liabilities.		
Yard and office equipment	$1,255.00	Bank overdraft		$63.52
Prepaid expense (feed)	17.50	Notes payable		100.00
		Due Jno. Clark, manager		10.11
		Insurance fund		674.07
		Federation dues		62.50
		Undivided balance		7.30
		Net worth.		
		Capital stock paid in	$400.00	
		Less loss and gain	45.00	
				355.00
Total	1,272.50	Total		1,272.50

December 1.

(17) Received in cash $40 from 40 new members, as per the minutes of the November 31 meeting of the Board of Directors.

December 2.

(18) Paid John Clark, manager, commission on shipment No. 112, check No. 111, $10.11.

December 5.

(19) Received from C. & NW. Ry. $25.75 in settlement of claim of November 7.

December 6.

(20) Paid Stephen Stone, attorney's fees for collecting claim of November 7, check No. 112, $3.

(21) Borrowed at the State Bank on 3 months note at 7 per cent $100 to cover overdraft.

December 9.

(22) Paid Sinclair Oil Co., for 10 gallons gasoline, check No. 113, $2.

December 15.

(23) Bought of J. Andrews, retiring member, capital stock certificates No. 24, check No. 114, $5.

(24) Paid State federation dues for 1921, 50 cents on 125 cars, check No. 115, $62.50.

Fiscal year adjustments.

(25) The Board of Directors voted to charge off depreciation on the equipment estimated at $50 for the year. (This amount will be credited to the yard and office equipment account and debited to the loss and gain account.)

(26) The credits in the insurance fund account at this point exceed the debits by $696.82. The Board of Directors, it is assumed, decided to carry forward only $500 in this account. Hence the excess of $196.82 will be transferred to loss and gain by debiting the former account and crediting the latter.

(27) The Board of Directors also decided to close the credit balance of $7.30 in the undivided balance account to loss and gain. Debit undivided balance account and credit loss and gain.

Had the credit balances in the two above instances been in excess of the needs of the business, the directors might have voted to refund the excess to the shippers as a patronage dividend. Preferably such refunds should be first credited to indebtedness when the refund is decided upon by the directors, and, subsequently when paid, debited to indebtedness.

Distribution of net income.

The loss and gain account at this point shows a credit balance of $147.12 which represents the excess of all deductions and income over all expenses incurred. As profits can be distributed legally only by action of the Board of Directors, it is assumed the board has voted to carry the balance of $147.12 to surplus.

(28) In accordance with the above action of the Board of Directors debit loss and gain account with the balance of $147.12 and credit same to net worth.

All columns should again be totaled as was done at the end of November. As this marks the end of the fiscal year, the smaller side of each account should be deducted from the larger and only the balance carried forward to the new fiscal year.

Annual report.

Suggestions for the preparation of the annual report will be found on pages 24 to 28, where statements based on the illustrative figures in the accompanying cash journal and shipment summary record will be found.

January 2, 1922.

(29) Bill Adams came to the office and stated that he had been overcharged in the settlement made for shipment No. 111. A recalculation of his expenses, which appear on the prorating sheet in Figure 4 shows the overcharge to be 71 cents. This amount is paid Mr. Adams by check No. 116. Debit undivided balance account.

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