OFFICE OF NATIONAL RECOVERY ADMINISTRATION

DIVISION OF REVIEW

EARNINGS OF FISHERMEN AND OF FISHING CRAFT

Appendix to

THE FISHERY INDUSTRY AND THE FISHERY CODES

By

John R. Arnold

WORK MATERIALS NO. 31
(Appendix)

Industry Studies Section
January, 1936

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F O R E W O R D

This report on "The Earnings of Fishermen and of Fishing Craft" was prepared by John R. Arnold of the Industry Studies Section, M. D. Vincent in charge.

This is the first study of the subject to be attempted. It was undertaken originally in connection with the minimum wage provisions of the NRA Fishery Code. It is now made an Appendix to Work Materials No. 31 on "The Fishery Industry and the Fishery Codes", in the writing of which it served as an important source of statistical information. The study will be found of interest to the Fishing Industry and to investigators in the fields of industry and labor.

The report has been made possible by extensive cooperation on the part of the Industry. The information called for by the questionnaire sent out was supplied by the owners of more than five hundred fishing vessels; and the recipients of many supplementary inquiries, with the rarest of exceptions, gave the best assistance in their power. The study is also under heavy obligations to the staff of the Bureau of Fisheries of the Department of Commerce--especially to the Division of Fishery Industries and the Alaska Division in the Washington Office, and to the statistical and technological field force.

A pioneer study of so complex a subject must necessarily be somewhat provisional. Its publication will, it is hoped, invite comment from the Industry and encourage further investigation by other agencies.

At the back of this report will be found a brief statement of the studies undertaken by the Division of Review.

L. C. Marshall,
Director, Division of Review.

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EARNINGS OF FISHERMEN

AND OF

FISHING CRAFT

EARNINGS OF FISHERMEN AND OF FISHING CRAFT

CHAPTER I

THE SCOPE AND METHODS OF THE STUDY

SOURCES OF INFORMATION

This study of the earnings of fishermen and of fishing craft was originally undertaken in connection with the minimum wage provisions of the N.R.A. Fishery Code, approved by the President on February 20, 1934. The main body of the data was obtained by means of a questionnaire sent out in August, 1934, to recorded owners of fishing vessels of five net tons and over. This is the schedule referred to in the tables that will be introduced as the report proceeds as the "N.R.A. questionnaire on earnings in the fishing industry."

The difficulties of this inquiry, which was the first of its kind to be attempted, were considerable. The questionnaire, however, produced what are believed to be representative samples of information for most of the important vessel fisheries; and only in the case of a few subdivisions were the returns, for various reasons, less satisfactory. Steps were later taken to fill these gaps by special inquiries, which are listed in Chapter XV. The data obtained by means of these supplementary studies were consolidated with the returns to the original questionnaire, and are incorporated in the tables.

LIMITATION OF ORIGINAL STUDY TO VESSELS

For reasons explained in Chapter XV the original survey was confined to the earnings of fishermen on vessels- that is on craft of five net tons or more- and did not cover earnings in the boat and shore fisheries, which work with craft of less than five tons or without any floating equipment. Later, however, it was found practicable to gather figures of a somewhat different sort for representative boat fisheries. These data are presented and discussed in Chapter XIV.

RETURNS TO THE QUESTIONNAIRE

The basic questionnaire brought in returns for 894 vessels in active use for commercial fishing in 1933. The special conditions of the industry, however, caused a considerable proportion of these schedules to be unusable. In the end material relating to 502 of these vessels was taken as the sample to be analysed. Subsequently, through the medium of the supplementary studies above mentioned, comparable information with regard to 65 additional vessels was obtained from other sources, making the number included in the final sample 567. Data relating to a group of 23 additional menhaden vessels in the South Atlantic States were received too late to be incorporated in the body of the report, but are summarized in Appendix I

DEFINITION OF THE INDUSTRY

The study deals only with the fisheries in the popular sense of the industry that catches or collects fish and other aquatic products. The processing and the wholesale distribution of such products, though covered by the N R A.Fishery Code, have been disregarded for present purposes.

THE YEARS REPRESENTED

Since the study was initiated in the summer of 1934 the original questionnaire called for 1933 data. In the case of vessels working on shares, however, which constitute 75 per cent of the total, it has been possible, by the use of subsidiary data on the prices of fish and shellfish and of the supplies consumed, and on the terms of the share agreements in use, to convert these 1933 figures into estimates for 1934 and also for 1929, which are believed to approximate the actual results of those years. Precisely corresponding estimates could not be made in the case of vessels that work on wages; but some information has been obtained with respect to the earnings of the latter and of the labor employed on them in 1934.

MERITS AND DEFECTS OF THE SCHEDULE

Both the original questionnaire and the supplementary schedules by which were obtained the information for converting the 1933 returns to the basis of other years and the special data for the boat and shore fisheries are reproduced in Appendix II. They are there accompanied by comments on the adequacy and effectiveness of the inquiries, and on the arrangement of the forms. Since these were the first schedules known to have been prepared for obtaining information with regard to the earnings of fishermen and of fishing craft, it is felt that a record should be made of the experience gained from their use as a guide for similar projects in the future.

THE GEOGRAPHICAL AREAS

In classifying the data geographically the United States has been divided into six areas:

New England
Middle Atlantic
South
Great Lakes
California
Northwest and Alaska

The Middle Atlantic area comprises the states of New York, Pennsylvania, New Jersey and Delaware except the lake shores of the first two named, which are included in the Great Lakes area. No returns to the questionnaire were received from Maryland, and it is consequently convenient to make the break between the Middle Atlantic area and the South at that point. The only fishing vessels in Maryland of five net tons or over are small oyster dredges, and the Chesapeake region has been a difficult one from which to obtain data of the kind called for

by the study.

The South, as the term is used for present purposes, includes all the seacoast States from Virginia to Texas. The Pacific Northwest - that is, the States of Oregon and Washington - has been combined with Alaska, because the fisheries of the latter are so largely carried on by vessels working out of Puget Sound that it is possible to distinguish them from the Washington fisheries only by an arbitrary line. Such a line is drawn by the Bureau of Fisheries for the purpose of its own publications; but its method is not applicable to the present data.

The breakdown of the country into areas which is employed by the Bureau of Fisheries is slightly different from that just described. The States of Maryland and Virginia are grouped in a separate Chesapeake area. Washington and Oregon are consolidated into a Pacific area with California; and Alaska is treated separately. Where the Bureau's figures are compared with data obtained in connection with the study they have been reclassified accordingly. In some of the tables, however, the Bureau's own classification is used.

The Bureau of Fisheries has collected data with regard to one area - the Mississippi River and its tributaries - which was not covered by the original study. Not only has but one survey of this region been made in recent years - for 1931 - but its fisheries are now carried on entirely by boats of less than five tons. In discussing the boat and shore fisheries in Chapter XIV, however, consideration has been given to the Mississippi River fisheries.

Except where otherwise stated the name "United States" in this report includes Alaska but excludes the Mississippi River area.

THE "FISHERIES"

The six areas above listed have been subdivided for the purposes of the study into "fisheries". The latter word is here used in a technical sense to mean a group of vessels or boats engaged regularly during a substantial part of each year in taking fish or shellfish of one species, or of a group of related or associated species, within well-defined waters.

A list of these fisheries is given in Table I. Along with the name of each appear the principal species of fish or shellfish.

TABLE I

VESSEL FISHERIES COVERED BY THE STUDY, WITH PRINCIPAL SPECIES CAUGHT AND TYPES OF GEAR EMPLOYED, AND PERIODS OF NORMAL SEASONAL OPERATION, BY AREA AND FISHERY

Area and Fishery	Principal Species	Principal Types of Gear	Period of Normal Seasonal Operation
NEW ENGLAND			
Groundfish	Cod, haddock, cusk, hake, pollock, halibut, flounder	Line trawls; otter trawls	Year round
Mackerel a/	Mackerel	Purse seines	April-November
	Squeteague, sea bass, scup	Otter trawls	December-April
Oyster	Oysters	Dredges	Year round b/
Scallop	Scallops	Dredges	Year round
Miscellaneous	Flounder, haddock	Otter trawls	Year round
	Swordfish	Harpoons	July-September
MIDDLE ATLANTIC			
Oyster	Oysters	Dredges	Year round b/
Scallop	Scallops	Dredges	Year round
Pound net	Squeteague, scup butterfish whiting	Pound nets	Year round
Miscellaneous	Flounder	Otter trawls	Year round
SOUTH			
Red snapper	Red snapper and grouper	Hand lines	November-May
Oyster	Oysters	Dredges	Year round b/
Shrimp	Shrimp	Otter trawls	Year round
Menhaden	Menhaden	Purse seines	North Carolina-Virginia: July-November Florida: April-December

TABLE I (Cont'd)

Area and Fishery	Principal Species	Principal Types of Gear	Period of Normal Seasonal Operation
SOUTH (Continued)			
Miscellaneous	Squeteague, flounder, scup, sea bass, mullet, kingfish	Haul Seines; gill nets	Year round c/
GREAT LAKES			
Lake Erie	Pike, perch, carp, sauger, sheepshead, whitefish, sucker mullet	Shoal gill nets; pound nets; trap nets	Year round d/
Lakes Huron and Michigan	Whitefish, lake herring, lake trout, perch, suckers, mullet, carp, pike, chub	Shoal gill nets; pound nets, trap nets	Year round d/
CALIFORNIA			
Tuna e/	Tuna	Hand lines	Year round
Tuna and Sardine e/	Tuna	Purse seines; hand lines; lampara nets	Year round
	Sardine	Purse seines; lampara nets	November-April
	Mackerel	Lampara nets; hand lines	Year Round
Sardine, Monterey	Sardine	Purse seines; lampara nets	August - February
Sardine, Southern California	Sardine	Purse seines	November-April
Paranzella	Flounder, grayfish, rockfishes, skate, halibut, ling-cod	Paranzella nets	Year round
Alaska cod	Cod	Hand lines	April-August
Miscellaneous	Barracuda, flounder, rockfishes, salmon, sea bass, shad, halibut, sablefish, smelt	Set and hand lines; gill nets	Year round c/

TABLE I (Cont'd)

Area and Fishery	Principal Species	Principal Types of Gear	Period of Normal Seasonal operation
CALIFORNIA (Continued)			
	Abalone	Abalone outfits	Legal season, subject to variation
NORTHWEST AND ALASKA			
Halibut	Halibut, sablefish, ling-cod, rockfishes	Line trawls	March-November
Salmon	Salmon	Traps; purse seines; gill nets; troll lines	Washington and Oregon: May-November Alaska: June - August
Alaska herring	Herring	Purse seines	June-September
Alaska Cod	Cod	Hand lines	April-August
Miscellaneous	Shrimp	Beam trawls	March-October
	Flounders, halibut, sablefish, ling-cod, rockfish, shad, smelt, steelhead, trout	Trawl and set lines; pound nets; beam trawls	Year round c/

a/ The figures for 10 of the 14 vessels in the mackerel fishery, which are included in the tables in this report, cover the operations of the mackerel fishing season only, and not the winter trawling operations.

b/ Oysters are dredged for the consuming market in the North Atlantic area from September to April only; but many of the vessels and a considerable proportion of their crews are employed during the summer also in transplanting, starfishing and other subsidiary work.

c/ The season varies for the different species and types of gear, but the vessels concerned tend to operate in some way throughout the year.

d/ Subject to interruptions of varying length in the winter. These are due partly to the presence of ice on the lakes, and partly to legal restrictions in the interest of conservation.

e/ The tuna vessels for which reports were received fell into two very distinct groups, one consisting of large vessels engaged in the tuna fishery only, and the other of smaller vessels engaged in both the

TABLE I
(Continued)

tuna and the Southern California sardine fishery. The classification in the table has been adopted to keep the data for these groups separate for present purposes. It does not reflect a practice of the industry.

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that it produces, the principal types of fishing gear that it employs, and the approximate duration of the season during which its operations are normally carried on. In some cases a group of vessels constituting a fishery in the sense just defined devotes itself to the catching of different species of fish, sometimes with distinct types of gear, at different seasons. Important distinctions of this kind are shown as subheads in Table I. The groups listed as "Miscellaneous" in the table tend each to include several minor fisheries. This is particularly true in the South and in California.

In one instance- that of the groundfishery of New England - a systematic distinction has been drawn in the size of the vessels engaged, the data for those of less than 50 net tons being shown separately from the data for those of 50 tons and over. This segregation has been made because it nearly coincides with an important distinction in ownership. All but three of the 49 vessels of 50 tons and over in the sample for this fishery consists of fleets operated by large corporations, while those of less than 50 tons are owned singly or in small groups by individuals or partnerships or occasionally by small corporations.

The exclusion from Table I of some familiar fishery products is explained by the fact that they are wholly or mainly taken by boats or from the shore and not by vessels. This applies to the bulk of the catch of lobsters, crabs, clams, mussels and sponges, of almost all river fish and of some marine species like smelt.

The Bureau of Fisheries uses the term "fishery" in a sense slightly different from the foregoing, though perhaps more correct from a technical standpoint. In this usage the emphasis is put on a type of gear rather than on a group of vessels. The result is, of course, that a vessel is often included in more than one fishery, and this produces duplication which would be difficult to handle in connection with a study like the present.

CHAPTER II

THE NUMBER AND TYPES OF FISHING CRAFT AND THEIR OWNERSHIP AND COMMAND

This chapter discusses the number and types of the craft engaged in the fisheries of the United States and their owner-ship and command. The data to be considered relate mainly to the fisheries as a whole and not to the sample obtained for the purpose of the present study. These figures have been drawn from publications and unpublished records of the Bureaus of Fisheries and of the Census.

SOURCES OF INFORMATION

The bulk of the data gathered by the Bureau of Fisheries appears in its annual report, Fishery Industries of the United States. Before the appearance of this each year the most important tables are published in separate advance bulletins. The latter series, however, includes some material which is not reproduced in the annual publication.

The Bureau of the Census, under authority of a special act of Congress, made a complete survey of the fisheries for the year 1908. This was published in 1911 as a Special Report under the title Fisheries of the United States 1908. The Censuses of Water Transportation of 1916 and 1926 also contain data of which use has been made. The Censuses of Population since 1870 have included incomplete but approximately comparable figures on the number of persons engaged in the fisheries.

SCOPE OF THE BUREAU OF FISHERIES DATA

The Bureau of Fisheries made countrywide surveys of fishing craft, their crews, and their catch for each year from 1929 to 1932, except that the Mississippi River area was covered only for 1931. The survey for 1933 omitted the South Atlantic and Gulf and the Great Lakes areas, so that the figures for the latter for that year in several tables have had to be estimated.

At the time of writing 1934 data had been assembled by the Bureau only for Alaska and for fragments of some other areas. The 1934 figures referred to in the report are consequently estimates, but have a substantial basis in unpublished material.

Surveys made by the Bureau of Fisheries for years prior to 1929 covered only portions of the country at a time.

VESSELS AND BOATS

The Bureau of Fisheries classifies fishing craft into vessels and boats. The former, as already stated, are those of five net tons and over, and the latter the small craft which do not have to be documented and rated for tonnage under the navigation laws. It is believed, however, that in practice an appreciable number of fishing vessels of more than five net tons escape documentation. Wherever

the term "vessel" or "boat" is employed in this report it should be understood as following the usage just indicated. Where reference to vessels or boats indifferently is meant the term "craft" is substituted.

The vessel and boat fisheries do not account for the whole output of the industry, since substantial quantities of aquatic products are taken from the shore, without the use of any floating equipment.

SPORT AND TRANSPORTING VESSELS

There are two kinds of vessels or boats connected with the fisheries which are not classified by the Bureau as fishing craft. The first includes those used for sport only, and the second those employed for transportation and other auxiliary uses, subsidiary to commercial fishing.

No enumeration seems ever to be made of the craft used only for sport fishing. They are fairly numerous in parts of the country, especially Florida and southern California. Within the last few years the depressed market for fishery products has caused some vessels and boats formerly used for commercial fishing to be devoted to this purpose. In some instances vessels and boats used primarily for sport compete with the local commercial craft by more or less frequent sales of their catches. During the depression this was the cause of hard feeling in the places where the practice is commonest.

There are several types of vessels or boats used for transportation purposes. Many such craft, under the name of "buy boats", "run boats", "pick-up boats" or "tenders", operate between wholesale establishments or processing plants and fishing craft which are working offshore. They may be owned by the shore establishments or may be independent enterprises. They are not often owned by the fishermen themselves. Small power vessels are at times used for towing fleets of dories, skiffs or rowboats to fishing grounds, and in such cases are classed with these transporting craft.

In Alaska the locations of the plants that process almost the whole of the catch is such as to make necessary the use of a large number of tenders and other transporting craft. The Bureau of Fisheries, moreover, puts the vessels and boats employed in connection with salmon traps in Alaska in the transporting classification.

Many craft used by oyster cultivating companies for transplanting, starfishing, dredging seed oysters, etc., are also included in this category.

During the Depression some vessels and boats formerly used for commercial fishing have been transferred to transportation and allied services, as they have to sport fishing.

Except where otherwise stated vessels and boats used for sport or transportation have been excluded from the present study.

THE NUMBER OF FISHING CRAFT

Table II shows, by area, the number of vessels engaged in the

fisheries from 1929 to 1933, with their net tonnage. Table III shows for the same years the number of fishing boats.

Table II indicates that from 1929 to 1933 there was a decline of 16 or 17 per cent in the number of vessels engaged in the fisheries of the country. Table III shows that the number of fishing boats in use declined about 18 percent from 1929 to 1932. There was no further change of consequence in 1933. In some fisheries the latter was the low year of the depression with respect to consumer demand and the prices paid to fishermen, while in others 1932 was the worst. Taken together, the changes just mentioned seem to indicate a tendency in 1933, and perhaps a little earlier, to substitute boats for vessels as being cheaper to operate under depression conditions.

TABLE II

NUMBER AND NET TONNAGE OF ALL FISHING VESSELS a/, By Area, 1929-1933

Area	1933	1932	1931	1930	1929
New England					
Vessels	595	620	706	718	731
Net Tons	19,528	21,025	26,116	27,666	26,430
Middle Atlantic					
Vessels	407	415	525	575	583
Net Tons	9,164	8,210	8,953	11,244	11,699
Chesapeake					
Vessels	287	322	320	391	406
Net Tons	6,321	5,794	6,108	7,370	7,339
South Atlantic and Gulf					
Vessels	470b/	512	603	670	614
Net Tons	7,385 b/	7,487	9,487	10,645	10,349
Pacific					
Vessels	929	937	940	863	799
Net Tons	27,155	26,432	26,134	24,931	21,362
Great Lakes					
Vessels	459b/	498	505	467	500
Net Tons	5,967b/	6,419	6,585	6,100	6,700
Alaska					
Vessels	507	446	582	690	734
Net Tons	7,587	6,364	8,416	12,225	12,609
United States and Alaska					
Vessels	3,654	3,750	4,181	4,374	4,367
Net Tons	83,007	81,737	91,799	100,181	96,488

Source: Bureau of Fisheries, Fishery Industries of the United States.
a/ Five net tons and over.
b/ Estimated by the author.

TABLE III

NUMBER OF ALL FISHING BOATS a/, BY AREA,

1929 - 1933

Area	1933	1932	1931	1930	1929
New England	8,400	8,395	8,874	8,787	11,617
Middle Atlantic	3,870	3,639	3,882	4,050	4,396
Chesapeake	13,429	14,230	14,099	13,820	13,415
South Atlantic and Gulf	12,849b/	12,849	14,437	14,515	17,541
Pacific	6,547	6,029	6,749	7,556	7,659
Great Lakes	3,159b/	3,159	3,236	3,879	3,479
Alaska	4,218	4,138	4,960	5,253	5,420
Total of Above Areas	52,472	52,439	56,237	57,860	63,527
Mississippi River	c/	c/	14,546	c/	c/
United States and Alaska	-	-	70,783	-	-

Source: Bureau of Fisheries, Fishery Industries of the United States.

a/ Under five net tons.

b/ 1933 figure not available; it is believed not to vary materially from the year preceding.

c/ Data available for 1931 only. The fishing craft of this area are now all under five net tons.

It may be that the figures for 1934, when they become available, will show a reversal of this tendency. But the cost of operating the larger types of fishing vessels is a serious problem under present conditions, and may continue to be so even in the face of a considerable rise in prices above today's level. For this reason the advantage of the smaller and more cheaply operated boat may continue to show itself in the relative numbers of the two classes.

LONG TIME VARIATION IN THE NUMBER OF VESSELS

To compare the number of vessels in use in the fisheries over a longer period than the past five or six years it is necessary to include those employed for transportation purposes as well as fishing vessels in the strict sense, since the Censuses of Water Transportation have not segregated the two. A comparison on this basis, by area, is made in Table IV.

Vessels which are used for sport fishing only are classified under the navigation laws as yachts, and are apparently not included in the Census totals.

On the Atlantic and Gulf coasts the proportion of transporting vessels hardly changed from 1908 to 1929. In the case of the Great Lakes, however, allowance has to be made for a relative increase in that item, and in the case of the Pacific coast for a corresponding decrease.

TABLE IV

NUMBER AND NET TONNAGE OF ALL VESSELS IN USE IN THE FISHERIES, BY AREA, 1908 - 1933 a/

Area	1933	1931	1930	1929	1926	1916	1908
Atlantic and Gulf Coasts							
Vessels	2,508	2,907	3,152	3,172	2,388	3,757	6,285
Net tons	51,564	60,219	67,272	67,577	56,832 b/	70,387 b/	107,167
Pacific Coast (Including Alaska)							
Vessels	1,832	2,027	2,139	2,074	2,288	933	550
Net tons	66,409	80,061	88,904	88,435	92,499 b/	20,323 b/	78,692
Great Lakes							
Vessels	468	514	489	536	558	619	319
Net tons	6,087	6,705	6,542	7,284	6,424 b/	6,877 b/	4,499
United States and Alaska							
Vessels	4,808	5,448	5,780	5,782	5,234	5,309	7,154
Net tons	124,060	146,985	162,718	163,296	155,755 b/	97,587 b/	190,358

SOURCES: Bureau of Fisheries, Fishery Industries of the United States; Bureau of the Census, Fisheries of the United States, 1908 and Water Transportation, 1926.

a/ Includes both fishing vessels and those used for transportation purposes incidental to fishing, the figures for which were not segregated in the Water Transportation Censuses of 1916 and 1926. Data are not available for transporting vessels in 1932.

b/ Reduced one-third from the original figure for gross tonnage

Table IV shows that by no means all the decline in the number of vessels in use in the fisheries during the past thirty years has been due to the depression. Between the Census of Water Transportation of 1926 and the Bureau of Fisheries' survey of 1929, indeed, the figures indicate an increase of 10 or 12 per cent; but from the Fisheries Census of 1908 to the earlier Water Transportation Census of 1916 there was a drop of 28 per cent. From 1916 to 1926 the number was about stationary. This, however, was because a heavy increase on the Pacific coast offset a decrease of not far from the same amount in the Atlantic and Gulf coasts.

The net decline in the number of vessels in use on the Atlantic and Gulf coasts from 1908 to 1929 was just under 50 per cent. The number in the fisheries of the Great Lakes, on the other hand, increased more than two-thirds during this period, and the number on the Pacific coast nearly quadrupled; but these areas did not then account for large enough proportions of the total to permit the gains registered in them to offset the greater part of the loss in the East and South. There were four principal causes for the heavy decline in the number of vessels on the Atlantic and Gulf coasts:

(1) There was an extensive drop in the output of oysters in all or nearly all the producing States. From 1908 to 1929 this falling off amounted to 69 per cent in Connecticut, to 42 percent in New York, to 59 per cent in Maryland, to 14 per cent in Virginia, to 58 per cent in South Carolina, to 82 per cent in Georgia, and to 59 per cent in Florida, The causes varied in different parts of the country. Pollution of the cultivated beds near large cities, popular fear of such pollution where it may not really have occurred, the depletion of natural beds, relatively high prices to the consumer, and the closing of many old-fashioned oystersbars under prohibition, all played a part. As a result this one devision of the industry accounted for more than half the gross decline in the number of fishing vessels on the Atlantic and Gulf coasts from 1908 to 1929.

(2) The transition from sail to power propulsion, which is discussed later in the chapter, made it possible to maintain a given or even a larger catch with a smaller number of vessels, because of the reduced time spent en route between ports and fishing grounds.

(3) There was a heavy decline in the demand for salt fish, both for domestic consumption and for export. This tended to eliminate vessels operating from minor ports which were not favorably situated to distribute fresh fish. The effect was particularly marked in Massachusetts and Maine.

(4) There was a pronounced improvement in the efficiency of fishing gear, especially through the introduction of the otter trawl. The effect of this change in increasing the productivity per man is commented on in Chapter III; but there was a more or less parallel effect in raising the productivity per vessel, and consequently in reducing the number of vessels required to maintain a given or even a larger catch. *

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*This summary of the causes of the long-time decline in the number of fishing vessels is largely based on material contributed by O. E. Sette, Bureau of Fisheries, Cambridge, Mass.

Since the mid-1920's the number of fishing vessels on the Atlantic and Gulf coasts has remained quite stable, except for the decline due immediately to the depression.

Table IV also makes plain the extent to which the fishing fleets of the Pacific coast and of Alaska are creations of the past thirty years. The number of vessels increased by 70 per cent from 1908 to 1916, and then considerably more than doubled from the latter year to 1926. As the proportion of transporting vessels on this coast was at the same time decreasing, the expansion in the number of fishing vessels proper was even greater than these figures imply. Since 1926 the change on the Pacific coast has been comparatively slight.

The vessel fishing fleet of the Great Lakes was much increased during the years just before the war. The number in use in 1929 was 12 or 15 per cent below that of 1916; but since 1929 the change has been relatively small.

RELATIVE NUMBERS OF VESSELS AND BOATS

Table II and III make it plain that the number of boats in use in the fisheries of the United States enormously exceeds the number of vessels. From the standpoint of the value of the catch, of course, the discrepancy becomes much reduced, since the capacity or efficiency of the average fishing vessel is ten or twelve times that of the average boat. Still, the true importance of the boat and shore fisheries, especially in certain areas and departments, is substantially greater than might be inferred by those whose familiarity is chiefly with, for instance, the large scale fisheries of New England or of California.

THE SIZE OF FISHING VESSELS

The tonnage of fishing vessels varies all the way from the legal minimum of five net tons to a maximum of six or seven hundred. Vessels of the latter size are few, but those of a hundred to three hundred net tons are relatively numerous in the groundfish fleet of New England, in the menhaden and red snapper fisheries of the South Atlantic and Gulf Coasts, and in the tuna fishery of southern California.

The only accessible data on the relative numbers of fishing vessels of various tonnages, other than those obtained for the purposes of the present study, were published by the Bureau of Fisheries for 1929, and in connection with the Census of Water Transportation of 1926. The former breakdown covers only vessels on the Atlantic and Gulf coasts; but as the average tonnage of the latter does not appear to differ substantially from that of the country at large, the resulting proportions of vessels of various sizes are probably representative. These figures are shown in Table V.

There has been so little change in the average tonnage of the fishing vessels in use since 1929 that the data in Table V may be regarded as usable for present purposes.

The size breakdown of the Census of Water Transportation of 1926 was based on gross tonnage, and is therefore difficult to compare with that

either of the Bureau of Fisheries or of the present study. The returns showed vessels of less than 50 gross tons as accounting for 86 per cent of the total number. This is equivalent to about 33 1/3 tons net; so that the proportion may be regarded as checking roughly with the 81.4 per cent of vessels of 30 tons and less shown by Table V.

The sample vessels for which data have been obtained in connection with the present study have been broken down into four tonnage classes of 5 to 14, 15, to 29, 30 to 49, and 50 tons and over, respectively. It would have been advantageous to split the latter class into two at the line of 80 or 90 tons; but the advisability of this did not become apparent at a sufficiently early stage to take the step.

TABLE V
DISTRIBUTION OF ALL FISHING VESSELS ON THE ATLANTIC AND GULF COASTS, BY NET TONNAGE, 1929

Net Tons	Per Cent of Total Number	Cumulative Per Cent
5 to 10	46.2	46.2
11 to 20	27.7	73.9
21 to 30	7.5	81.4
31 to 40	2.9	84.3
41 to 50	2.9	87.2
51 to 60	3.3	90.5
61 to 70	2.7	93.2
71 to 90	1.8	95.0
91 to 120	2.3	97.3
121 to 160	.8	98.1
161 to 200	1.0	99.1
201 and over	.9	100.0
Total	100.0	-

Source: Compiled from data in Bureau of Fisheries, Fishery Industries OF THE UNITED STATES, 1930.

Table VI shows, along with other relationships which will be commented on later, the value of the 1933 catch per net ton for the sample vessels of each of the four tonnage classes just specified. These averages indicate strongly that the gross productivity of fishing vessels does not increase proportionately with their size.

TYPES OF FISHING GEAR

The Bureau of Fisheries makes an elaborate classification of fishing craft according to the types of gear or fishing apparatus employed. These figures have been extensively used for subsidiary calculations in connection with the present study. The type of gear used with each vessel was asked for on the original questionnaire, and was in most cases reported. But since a classification of gear tends to correspond with a classification by fisheries, it has seemed sufficient to indicate the principal types used in Table I, without tabulating the questionnaire data on the subject.

THE OWNERSHIP OF FISHING CRAFT

A large majority of fishing craft are owned by individuals or by partnerships; and the latter are, in a high proportion of cases, composed of relatives or of neighbors.

Ownership by corporations is naturally more frequent in the case of vessels than of boats. Most of the larger vessels in the New England groundfish and the Southern red snapper fleets, and all those in the paranzella fleet of California are owned by fish wholesaling corporations. The vessels engaged in fishing the pound nets along the New Jersey coast also fall largely in this class. The salmon canning companies operating in Alaska own some of the vessels that supply their establishments, and the menhaden processing concerns of the South Atlantic coast own almost all of theirs.

With these exceptions, however, the number of fishing vessels owned by corporations is comparatively small, and the companies themselves are local and unimportant. Even the larger vessels in the California tuna fishery, which are often of more than two hundred tons burden, which may go two thousand miles from their home ports to carry on their work, and which may cost individually well over $100,000, are nearly all owned by their captains or by groups of men among their crews. The tuna canning companies, however, and also the sardine canneries and reduction plants of California, have sometimes assisted in financing, on a mortgage basis, the purchase of vessels expected to supply them with raw material.

The only specific figures available on the ownership of fishing vessels by corporations - those of the Census of Water Transportation of 1926 - are given in Table VII. The inclusion of transporting vessels in this table raises somewhat the proportion owned by corporations, particularly in the case of Alaska. The high percentage in the latter Territory is due primarily, however, to the domination of its fisheries by the salmon canning industry. The high proportion of corporation-owned vessels on the Gulf coast reflects the situation in the red snapper fishery and in the fleets supplying the shrimp canneries.

TABLE VI

AVERAGE VALUE OF CATCH PER VESSEL, PER TON AND PER MAN FOR SAMPLE a/ VESSELS, BY TONNAGE CLASS AND BY AREA AND FISHERY, 1933.

	Value of Catch		
	Per Vessel	Per Ton	Per Man b/
TONNAGE CLASS:			
Under 15 tons	$5,161	$550	$1,383
15 to 29 tons	11,143	528	1,600
30 to 49 tons	12,876	348	1,463
50 tons and over	26,887	226	1,532
Average	13,492	299	1,515
AREA AND FISHERY:			
New England			
Groundfish	32,709	307	2,054
Mackerel	8,646	196	716
Oyster	26,095	323	3,340
Miscellaneous	9,075	626	1,830
Average	24,362	313	1,992
Middle Atlantic			
Oyster	15,085	677	3,168
Scallop	17,684	717	2,526
Pound net	6,872	1,066	1,145
Miscellaneous	6,804	321	1,094
Average	10,868	552	1,892
South			
Red Snapper	5,280	118	660
Menhaden	12,473	121	353
Shrimp and oyster	4,114	372	1,327
Miscellaneous	8,621	354	892
Average	6,902	147	536
Great Lakes			
Lake Erie	7,877	290	1,358
Lakes Huron and Michigan	5,036	309	1,187
Average	5,261	306	1,205

(Continued)

TABLE VI

(Continued)

	Value of Catch		
	Per Vessel	Per Ton	Per Man b/
California			
Tuna	$44,105	$40	$3,663
Tuna and sardine	19,489	397	1,886
Sardine, Monterey	9,238	513	840
Sardine, Southern California	12,019	546	1,265
Paranzella net	21,620	1,382	4,036
Alaska cod	20,615	50	535
Miscellaneous	3,128	280	569
Average	24,589	391	2,379
Northwest and Alaska			
Halibut	11,718	444	1,739
Salmon	3,471	207	666
Alaska herring	7,610	274	1,095
Alaska cod	29,053	64	732
Miscellaneous	6,404	114	1,144
Average	8,012	249	1,197
Average, United States and Alaska	13,492	299	1,515

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ Based on the total number of persons in the crews, irrespective of the mode of compensation.

TABLE VII

PROPORTION OF ALL VESSELS IN THE FISHERIES a/ WHICH WERE OWNED BY CORPORATIONS, BY AREA, 1926

Area	Percentage of Vessels owned by Corporations
Atlantic Coast	16.0
Gulf Coast	34.1
Pacific Coast	29.9
Alaska	53.6
Great Lakes	9.7
United States and Alaska	28.3 b/

Source: Computed from data in Bureau of the Census, Water Transportation, 1926

a/ Includes both fishing vessels and those used for transportation purposes incidental to the fisheries.

b/ Excluding Alaska, the percentage of corporation-owned vessels was 20.3.

OWNERSHIP BY WHOLESALE DEALERS

In the South the smaller fishing vessels and boats are to a considerable extent owned by wholesale houses other than canners. Elsewhere, and particularly in the case of the smaller craft, such ownership is much less common; and in some parts of the country it is nearly or quite unknown. It is impossible to say with any certainty what the proportion is for the United States at large, but it probably does not exceed 10 per cent. That such ownership by wholesalers is particularly common in the South seems to have been due to the fact that many fishermen in that section are engaged in the industry casually only, and that a large proportion have lacked resources for the purchase of their own equipment.

OWNERSHIP AND COMMAND

Of the fishing craft not owned by wholesalers or processors a good many are naturally, for one reason or another, not operated by their owners. The proportion, however, in the case of which the owner commands his own vessel is large. A survey in Florida in the summer of 1934 indicated that about 95 per cent of the craft belonging to persons not wholesalers for which reports were received were commanded by their owners. There is no detailed information with regard to the corresponding situation in other parts of the country; but it is probably safe to say that in the case of 90 per cent of the fishing craft of the United States not the property of wholesalers or processors the owner and the captain is the same person. The other ten per cent, however, is made up of relatively large vessels.

The original questionnaire did not call for information respecting the status of the owners of the sample vessels as wholesalers, processors, captains, or others; and except where such owners were obviously corporations no exact information is available on the subject. It seems probable that between 50 and 60 per cent of these vessels were commanded by owners or part owners. For the vessel fisheries at large, however, the proportion is higher.

SINGLE AND MULTIPLE OWNERSHIP.

A substantial majority of all fishing vessels are owned singly. The largest fleet owned by one company for which reports were received in connection with the study consisted in 1933 of 20 active vessels. This concern was located in New England. The returns for that area also covered a fleet of 11 vessels, another of nine, and a fourth of seven. Two companies in the South reported on fleets of 15 and 11 red snapper vessels, respectively. Another Southern concern reported on a total of 13 vessels, engaged partly in the red snapper and partly in the shrimp fishery.

Apart from these relatively large fleets there are comparatively few cases of the multiple ownership of more than four or five fishing vessels, and not a great many of the latter. Table VIII summarizes all cases of the kind for which information has been obtained as a result of the present survey.

TABLE VIII

FLEETS OF SAMPLE a/ FISHING VESSELS WHICH WERE REPORTED AS OWNED BY SINGLE PERSONS, FIRMS OR CORPORATIONS, BY AREA AND SIZE, 1933

Number of Vessels in Each Fleet	Number of Fleets						
	New England	Middle Atlantic	South	Great Lakes	California	Northwest and Alaska	United States and Alaska
2	5	3	4	4	-	5	21
3	1	3	1	-	1	-	6
4	1	1	8	-	2	2	14
5	1	1	-	-	1	1	4
6	-	-	-	-	-	1	1
7	1	-	-	-	-	-	1
9	1	-	-	-	-	-	1
11	1	-	1	-	-	-	2
13	-	-	1	-	-	-	1
15	-	-	1	-	-	-	1
20	1	-	-	-	-	-	1
Total	12	8	16	4	4	9	53

Source: Returns to N. R. A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purpose of the study.

The total number of vessels in the 53 fleets under the ownership of single persons or firms which appear in the table is 228, or 40 per cent of all the vessels included in the sample. This must be a good deal in excess of the proportion owned in such fleets in the vessel fisheries as a whole, since the study brought in returns for a disproportionately large sample of the vessels belonging to the chief corporations in the few fisheries in which such enterprises are predominant.

In some of the instances of multiple ownership shown in Table VII the vessels operated in 1933 did not include all those owned by the companies or persons in question. The year covered by the questionnaire was a period of such unremunerative prices that a good many fishing vessels were not put into commission; and this tended to apply especially to the larger ones, which are relatively expensive to operate.

THE OUTPUT OF FISHING CRAFT

The fishing industry is one of small units. This fact is brought out in Table IX, which shows the average value of the catch of all fishing craft per vessel or boat for the years 1929 to 1933.

Even in 1929 the average for all vessels and boats failed to reach $3,000 in any area. In the Chesapeake and the South Atlantic and Gulf States, in that year of great economic activity and relatively high prices, it was only a little over $800. In 1933 the average did not reach $2,000 for any area, and for the Chesapeake States it sank below $400.

Table VI, to which reference has already been made, gives figures similar to those in Table IX for the value of output per unit in the case of the craft included in the sample. Since the latter consists exclusively of vessels, and since it is rather heavily weighted with the larger tonnages, the averages in Table VI are considerably higher than those for all fishing craft. Yet even in New England and in California, where the proportion of larger vessels in the fisheries is highest, the average value of the catch per vessel was under $25,000. The 1933 catch of highest value for any individual vessel for which a report was received was a little under $80,000.

MODES OF PROPULSION OF FISHING VESSELS

All the chief types of vessels and boats with respect to the mode of propulsion are represented in the fisheries. The number of each type and the change that has taken place in its relative importance over the past 30 years are shown in Table X. For the same reason as in the case of Table IV the vessel figures include transporting craft, as well as fishing vessels in the strict sense.

Table X shows that in the case of vessels motor power (Diesel oil, fuel oil or gasoline) has of late years completely replaced hand propulsion, and that to a considerable extent it has replaced steam and sail power. The proportion of steam vessels in the total has been under four per cent of recent years, as compared with nine per cent in 1916. The proportion of sailing vessels has been about six per cent recently, as compared with 33 per cent in 1916 and 61 per cent in 1908.

TABLE IX

AVERAGE VALUE OF CATCH OF ALL FISHING CRAFT, BY AREA,
1929 - 1933

Area	1933	1932	1931	1930	1929
New England	$1,499	$1,553	$2,102	$2,892	$2,354
Middle Atlantic	1,125	1,148	2,093	2,825	2,839
Chesapeake	369	406	515	807	833
South Atlantic and Gulf	585 a/	481	537	729	821
Great Lakes	1,291 a/	1,185	1,612	1,392	1,796
Pacific	1,871	1,361	1,757	2,740	2,960
Alaska	1,938	1,541	1,812	2,146	2,776
Average of Above Areas	1,049	926	1,232	1,687	1,747
Mississippi River	b/	b/	199	b/	b/
Average, United States and Alaska	-	-	1,032	-	-

Source: Computed from data in Bureau of Fisheries, Fishery Industries of the United States.

a/ Estimated by the author.

b/ Not available.

TABLE X

NUMBER OF ALL VESSELS AND BOATS IN USE IN THE FISHERIES, BY MODE OF PROPULSION, 1908-1933 a/ b/

Type of Craft and Mode of Propulsion	1933 e/	1931	1930	1929	1926	1916	1908
Vessels a/							
Steam	199	205	258	276	335	487)	
Motor	4,337	4,861	4,987	4,939	4,042	2,980)	2,725
Sail	272	382	535	567	404	1,738	4,246
Other	-	-	-	-	453	104	183
Boats a/ b/							
Motor c/	26,837	29,695	30,840	31,617	b/	b/	10,944
Other d/	25,635	26,542	27,020	31,910	b/	b/	61,328
All Craft f/							
Vessels	4,808	5,448	5,780	5,782	5,234	5,309	7,154
Boats	52,472	56,237	57,860	63,527	b/	b/	72,272

Sources: Bureau of Fisheries, Fishery Industries of the United States; Bureau of the Census, Fisheries of the United States, 1908 and Water Transportation, 1926.

a/ The vessel data include transporting vessels. The boat data do not, but the number of transporting boats is too small to affect the comparisons materially. Data are not available for transporting vessels in 1932.

b/ No data for boats were collected by the Water Transportation Censuses of 1916 and 1926.

c/ Includes steam boats. The proportion has probably been small in recent years, but was substantial in 1908 and 1916.

d/ Includes sailboats. The latter accounted for a third of the class in 1908. The proportion in recent years is not known, but has probably been much smaller.

e/ Partly estimated by the author.

f/ Excluding the Mississippi River Area.

The decline, both absolute and relative, in the use of steam vessels in the fisheries has been due to their high cost, from the standpoint both of original investment and of operation. The process has been accelerated by the increased importance of the fisheries of the Pacific coast, where coal is expensive, while fuel oil has of late years been plentiful and cheap.

The steam fishing vessels that now remain in use are concentrated disproportionately in the New England groundfishery, in the Virginia menhaden fishery, and on the Great Lakes. In the first two of these cases the steam vessels are owned by old established companies which have heavy investments in them. On the Great Lakes the steam vessels are of a special type known as "tugs", though they are not used for towing. This area has easy access to a cheap coal supply, and steam vessels of the sort mentioned may be suited to local conditions. Their continued use, however, has not improbably been a factor in the bad situation on the Lakes with respect to the financial return to fishing vessel owners.

The use of the larger steam vessels in the New England groundfishery is associated with low individual crew earnings. The relationship has not yet been studied carefully; but it seems probable that the cost of operating these vessels has been a factor in repressing the compensation of the mass of the workers.

The use of sailing vessels has of recent years been concentrated chiefly in the Middle Atlantic, the Chesapeake and the South Atlantic and Gulf areas, where they are almost all small oyster dredges.* The Alaska cod fishery, however, still employs a small number of larger sailing ships - the largest craft, indeed, now operated in the industry.

IDLE FISHING VESSELS

The Censuses of Water Transportation of 1916 and 1926 reported the numbers of active and idle fishing vessels. The proportion idle in 1916 was 12.5 per cent of the total, while in 1926 it was 13.2 per cent. Since these were both years of considerable activity in the industry, something like this percentage of idle vessels would appear to be a normal phenomenon. The proportion would apparently have to rise at least above 15 per cent to afford a definite indication of depression.

It may be assumed that the vessels which are thus idle in times of normal fishing activity are mostly the oldest and least seaworthy that are kept on the register at all. A large proportion of them should probably be considered, for practical purposes, as no longer part of the industry's equipment.

There are no data on idle vessels in recent years to compare with those of the Water Transportation Censuses. Something can be inferred,

*These vessels usually have auxiliary motors for going to and from oyster grounds; but those operating on public beds in the Chesapeake area are required by Maryland and Virginia State law, as a conservation measure, to use sails while actually dredging.

however, from the fact that the number of fishing vessels in use declined from 1929 to 1933 by about 700. If it is assumed that all these should be included with the vessels idle in 1933, and if the percentage idle in 1929 was about that of 1926 and 1916, the proportion in 1933 must have been approximately 27 per cent. This exaggerates somewhat the effect of the depression, however, since some of the decrease from 1929 to 1933 represented vessels which were lost and not replaced, or which had become too unseaworthy to be kept on the register.

It is safe to assume that in 1934 there was some reduction in the percentage of idle fishing vessels as compared with 1933. The change was probably not large, but it is impossible to do more than guess at its amount.

CHAPTER III

THE PERSONNEL AND OCCUPATIONS OF THE FISHERIES

DEFINITIONS OF "CREW" AND "FISHERMAN"

The word "crew", as used in this report, covers all persons who take part in the working of a fishing vessel or boat, including the captain, even when the latter is also the owner.

The term "fisherman" is here used, as in the publications of the Bureau of Fisheries, to include all persons engaged in commercial fishing operations, irrespective of their precise duties. With reference to fishing vessels or boats it means the same as "crew member". In the industry at large, however, the class of fishermen includes many persons who are engaged in taking fishery products from the shore, and who use craft of any kind only in a limited and subsidiary way.

Where reference is made in this report to the subordinate members of fishing crews who have no special rank or occupation, the term "ordinary fisherman" is used. This includes such classifications as "sailors", "seamen", "deckhands" and "helpers".

NUMBER OF FISHERMEN

Table XI shows the number of fishermen in the United States and Alaska, by area, for the years 1929 to 1933, inclusive.

TABLE XI

NUMBER OF ALL FISHERMEN, ON VESSELS AND ON BOATS AND ASHORE, BY AREA, 1929-1933 a/

Area	1933	1932	1931	1930	1929
New England					
On vessels	5,049	5,142	5,880	6,192	6,199
On boats and ashore	12,024	11,330	12,008	10,885	10,961
Total	17,073	16,472	17,888	17,077	17,160
Middle Atlantic					
On vessels	2,442	2,862	3,925	4,665	4,787
On boats and ashore	6,138	5,508	5,679	5,940	5,704
Total	8,580	8,370	9,604	10,605	10,491
Chesapeake					
On vessels	2,125	2,056	2,106	2,579	2,586
On boats and ashore	18,017	18,890	18,583	16,812	15,884
Total	20,142	20,946	20,689	19,391	18,470
South Atlantic and Gulf					
On vessels	2,211b/	2,409	2,895	3,454	3,298
On boats and ashore	19,916b/	19,151	20,827	20,136	23,345
Total	22,127	21,560	23,722	23,590	26,643
Pacific					
On vessels	6,512	6,132	6,454	6,165	5,822
On boats and ashore	12,204	11,750	12,781	13,409	14,170
Total	18,716	17,882	19,235	19,574	19,992
Great Lakes					
On vessels	1,570b/	1,705	1,697	1,660	1,769
On boats and ashore	5,370b/	5,227	5,142	5,320	5,390
Total	6,940	6,932	6,839	6,980	7,159
Total of above areas					
On vessels	19,909	20,306	22,957	24,715	24,461
On boats and ashore	73,669	71,856	75,020	72,502	75,454
Total	93,578	92,162	97,977	97,217	99,915

(Continued)

TABLE XI

(Continued)

Area	1933	1932	1931	1930	1929
Alaska					
On vessels	2,062c/	d/	d/	d/	d/
On boats and ashore	6,594c/	d/	d/	c/	c/
Total	8,656	8,069	8,914	10,189	10,921
Total of above areas					
On vessels	21,971	-	-	-	-
On boats and ashore	80,263	-	-	-	-
Total	102,234	100,221	106,891	107,406	110,836
Mississippi River					
On boats and ashore	e/	e/	15,884	e/	e/
United States and Alaska	-	-	122,775	-	-

Source: Bureau of Fisheries, Fishery Industries of the United States.

a/ Exclusive of shore workers whose compensation is not paid by individual craft - e. g., the office staffs and dockyard and beach crews of corporations operating fishing fleets.

b/ Estimated by the author.

c/ Segregation of vessel and boat crews estimated by the author.

d/ Segregation of vessel and boat fishermen in Alaska not computed.

e/ Not available.

The number shown by the table declined over the four years from 1929 to 1932 by not quite ten per cent. In 1933 there was a small recovery in comparison with the year preceding. This depression decline in employment, with respect both to its extent and its duration, was extremely moderate in comparison with the corresponding drop in many other industries. In general, the serious effect of the depression on workers in the fisheries appears in the figures for their income, and not in those for the volume of employment.

NUMBERS OF VESSEL AND BOAT FISHERMEN

The Bureau of Fisheries does not publish separate figures for vessel and boat fishermen in Alaska; and for the purposes of the present study an estimated segregation has been made for 1933 only. Outside of Alaska the number of vessel fishermen declined from 1929 to 1933 by nearly 21 per cent. With Alaska included the falling off was probably a little less than this.

The number of boat and shore fishermen of the United States proper declined from 1929 to 1933 by only two and a half per cent. With Alaska included the decrease was larger than this, but considerably less than in the case of the vessel fisheries.

Table XII compares the number of vessel fisherman over a longer period, from 1908 to 1933. As in the corresponding case of Table IV it has been necessary to include transporting vessels, as well as fishing vessels in the strict sense.

The trend in the number of vessel fishermen over the past 30 years has been so nearly the same as the trend in the number of vessels in use, that with some changes in detail the comments on Table IV may be applied here.

THE LONG-TIME TREND IN PERSONNEL

A still longer view of the volume of employment of the fisheries is furnished by the occupation returns of the Censuses of Population since 1870. Table XIII shows the number of persons at each of these Censuses who reported the occupation of fisherman or oysterman.

There is a large discrepancy between the 1930 figure in Table XIII and the total number of persons engaged in the industry in that year as shown by Table XI. This difference is due mainly to the omission from the Census classification of (1) most persons with whom fishing is a casual occupation only; (2) many who have special duties on fishing craft and who were consequently classified by occupation as engineers, cooks, radio operators, etc; and (3) members of fishing crews who reported themselves under such indefinite designations as seamen, sailors and deckhands.

TABLE XII

NUMBER OF PERSONS COMPOSING THE CREWS OF ALL VESSELS IN THE FISHERIES, BY AREA, 1908 - 1933 a/

Area	1933	1931	1930	1929	1926	1916	1908
Atlantic and Gulf Coasts	13,416	16,401	18,646	18,596	15,155	19,326	32,592
Pacific Coast (Including Alaska)	10,102	10,519	10,659	10,109	10,109	4,900	2,613
Great Lakes	1,589	1,716	1,736	1,847	2,240	1,809	1,572
United States and Alaska	25,107	28,636	30,891	31,102	27,504	26,035	36,777

Sources: Bureau of Fisheries, Fishery Industries of the United States, and Bureau of the Census, Fisheries of the United States, 1908 and Water Transportation, 1926.

a/ Includes both fishing vessels and those used for transportation purposes incidental to fishing, the figures for which were not segregated in the Water Transportation Censuses of 1916 and 1926. Data are not available for transporting vessels in 1932.

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TABLE XIII.

NUMBER OF PERSONS REPORTING THE OCCUPATION OF FISHERMAN OR OYSTERMAN IN CONNECTION WITH THE CENSUSES OF POPULATION, IN THE UNITED STATES PROPER AND IN ALSSKA, 1870-1930

Year	Number of Fishermen and Oystermen	
	United States Proper a/	Alaska
1930	73,280	4,775
1920	52,836	3,643
1910	68,275	3,519
1900	68,945	4,563
1890	60,162	b/
1880	41,352	b/
1870	27,106	b/

Source: Bureau of the Census, Censuses of Population.

a/ Including the Mississippi River area.

b/ Not available

Allowing for the omission of these groups, the figures for the United States proper in Table XIII appear to be comparable, at any rate from 1870 to 1920; and for those years the series may be taken as indicating the true trend.

These Census returns show a rapid increase in the number of persons engaged in the fisheries up to the turn of the century. From 1900 to 1910 the number was about stationary, this being a period of developments with respect to living costs which were unfavorable to an increased demand for fishery products.

The decline in employment from 1910 to 1920 corresponds roughly with the falling off in the number of vessels and boats in use during that period. The latter, however, fails to reflect the increase in the number of fishermen in 1930 as compared with 1910, which appears on the face of the Census figures. It seems probable that the 1930 Census resulted in the classification of a somewhat larger proportion of the personnel of the industry as fishermen, instead of concealing them under other designations, and that there was no actual increase.

THE PRODUCTIVITY OF FISHERY LABOR

Table XIV shows the value of the total catch of the fisheries, by area, for each year from 1929 to 1933, per person engaged. In 1929 this average failed to reach $1,700 in any area. For the Great Lakes it was under $1,000, for the Chesapeake area a little over $600, and for the South Atlantic and Gulf area about $550. In 1933 an average of $1,000 per man was slightly exceeded in Alaska only. For the South Atlantic and Gulf area the 1933 average was under $400, and for the Chesapeake area only about $250. Such figures for gross output per man obviously put low maximum limits on the earnings of the mass of persons in the industry.*

The third column of Table VI, to which reference has already been made in another connection, shows in a similar way the dollar output per man in 1933 for the vessels for which data have been obtained in connection with the present study. As these averages relate to vessels only, and to a group rather heavily weighted with the larger tonnages, they are higher than those in Table XIV. Yet even so the gross output per man did not reach $2,400 for any area. On the Great Lakes it was only $1,205, and in the South only $536.

Countrywide data for the catch of the fisheries, on which to base a long-time comparison of the productivity of labor, are available only at considerable intervals. Table XV, however, shows that since the early years of the century there has been a very substantial increase in the quantity output - about 44 percent from 1908 to the average of 1929-1934. When this is compared with the decrease of 16 percent in the number of Fishermen over the same period, it becomes plain that there must have been a substantial improvement in the productivity of the labor concerned.

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* Since the number of fishermen on which these averages are based include casual workers, the reference is to earnings from the fishing industry, and not to the total earnings of the persons concerned. The distinction, however, does not much affect the conclusions suggested by the table.

TABLE XIV

AVERAGE VALUE OF CATCH PER MAN, ALL FISHING CRAFT, BY AREA, 1929-1933

Area	1933	1932	1931	1930	1929
New England	$790	$850	$1,126	$1,610	$1,694
Middle Atlantic	561	556	959	1,232	1,348
Chesapeake	251	282	359	592	627
South Atlantic and Gulf	352 a/	298	341	469	559
Great Lakes	286 a/	625	1,033	867	948
Pacific	747	530	702	1,178	1,252
Alaska	1,058	877	1,127	1,252	1,564
Average of Above Areas	576	518	696	977	1,070
Mississippi River	b/	b/	182	b/	b/
Average, United States and Alaska	-	-	630	-	-

Source: Computed from data in Bureau of Fisheries, Fishing Industries of the United States.

a/ Estimated by the author.

b/ Not available.

TABLE XV

QUANTITY AND VALUE OF THE CATCH OF THE FISHERIES, 1902-1904, 1908 and 1929-1934
(In thousands)

Year	Catch of the Fisheries	
	Quantity (pounds)	Value
Average, 1929-1934 a/	3,043,269	$87,559
1908	2,111,267	57,389
1902-1904 b/c/	2,080,775	60,936

Sources: Data for 1929-1932 and 1933 in part from Bureau of Fisheries, Fishery Industries of the United States; for 1902-1904 and 1908 from Bureau of the Census, Fisheries of the United States, 1908.

a/ Average of six years; 1933 partly and 1934 wholly estimated by the author.

b/ The data for some areas were obtained as of 1902, for some as of 1903, and for some as of 1904.

c/ Quantity and value of Alaska catch estimated.

This improvement has been the result mainly of the substitution of motor craft for sailing vessels and rowboats and of the introduction or adoption on an extended scale of more efficient types of fishing gear. When Kipling wrote his classical description of life on the Gloucester groundfish fleet on the Newfoundland banks in 1897, the typical unit was a schooner whose crew fished mostly with handlines from dories. Now all the vessels of that fleet are power-propelled, and all but a negligible fraction of the catch is taken with the labor-saving line trawl or otter trawl.

The use of these more efficient types of fishing gear has created problems of waste and depletion, which fall outside the scope of the present study, but which should not be ignored in considering the productivity and displacement of fishing labor and their effects.

REGULAR AND CASUAL FISHERMEN

For the boat and shore fisheries of the Atlantic and Gulf coasts and the Great Lakes the Bureau of Fisheries compiles separate data for regular and for casual fishermen. The latter, who are much less important in the vessel fisheries, are those with whom fishing is a secondary occupation. The numbers of these two classes, so far as reported, are shown for the years 1929 to 1933 in Table XVI.

This table indicates that the proportion of regular workers in the boat and shore fisheries declined considerably from 1929 to 1933 in New England and in the Middle Atlantic and Great Lakes areas. These sections contain many large industrial cities, all of which during the depression had much unemployment. The falling off in the proportion of regular fishermen is believed, consequently, to reflect a tendency for unemployed persons to take to part-time fishing in the lack of other means of making a living.

TABLE XVI

NUMBER OF REGULAR AND CASUAL FISHERMEN ON BOATS AND ASHORE, ATLANTIC AND GULF COASTS AND THE GREAT LAKES, 1929 - 1933

Area	1933 Number of Men	1933 Per Cent of Total	1932 Number of Men	1932 Per Cent of Total	1931 Number of Men	1931 Per Cent of Total	1930 Number of Men	1930 Per Cent of Total	1929 Number of Men	1929 Per Cent of Total
New England										
Regular	7,308	60.8	7,287	64.3	8,021	66.8	7,961	73.1	9,330	85.1
Casual	4,716	39.2	4,043	35.7	3,987	33.2	2,924	26.9	1,631	14.9
Total	12,024	100.0	11,330	100.0	12,008	100.0	10,885	100.0	10,961	100.0
Middle Atlantic										
Regular	2,497	40.7	2,147	39.0	2,913	51.3	3,180	53.5	2,756	48.3
Casual	3,641	59.3	3,361	61.0	2,766	48.7	2,760	46.5	2,948	51.7
Total	6,138	100.0	5,508	100.0	5,679	100.0	5,940	100.0	5,704	100.0
Chesapeake										
Regular	12,632	70.1	12,241	64.8	13,286	71.5	10,635d/	63.3d/	7,063d/	44.5d/
Casual	5,385	29.9	6,649	35.2	5,297	28.5	6,177d/	36.7d/	8,821d/	55.5d/
Total	18,017	100.0	18,890	100.0	18,583	100.0	16,812	100.0	15,884	100.0
South Atlantic and Gulf										
Regular	a/	-	14,060	73.4	16,012	76.9	15,965	79.3	17,235	73.8
Casual	a/	-	5,091	26.6	4,815	23.1	4,171	20.7	6,110	26.2
Total	19,916 b/	100.0	19,151	100.0	20,827	100.0	20,136	100.0	23,345	100.0
Great Lakes										
Regular	a/	-	3,059	58.5	3,674	71.5	3,703	69.6	4,531	84.1
Casual	a/	-	2,168	41.5	1,468	28.5	1,617	30.4	859	15.9
Total	5,370 b/	100.0	5,227	100.0	5,142	100.0	5,320	100.0	5,390	100.0
Total of Above Areas c/										
Regular	a/	-	38,794	64.5	43,906	70.5	41,444	70.1	40,915	66.8
Casual	a/	-	21,312	35.5	18,333	29.5	17,649	29.9	20,369	33.2
Grand Total	61,465	100.0	60,106	100.0	62,239	100.0	59,093	100.0	61,284	100.0

Source: Bureau of Fisheries, Fishery Industries of the United States.

a/ The data on the basis of which the numbers of fishermen in the South Atlantic and Gulf and in the Great Lakes in 1933 have been estimated do not make possible a reliable segregation of regular and casual workers.

b/ Estimated by the author.

c/ In the returns for the Pacific and Alaska areas regular and casual fishermen are not segregated.

d/ The apparent sharp increase in the proportion of regular fishermen in the Chesapeake area from 1929 to 1930 is believed to be due to an error in the 1929 data which cannot now be traced.

The Chesapeake and the South Atlantic and Gulf areas, on the other hand, show approximately stationary proportions of regular and casual fishermen in recent years. These States, or at least the parts of them in which fishing is mainly carried on, are non-industrial, and have had less absolute unemployment during the past few years than have New England or the Middle Atlantic or the Great Lakes States.

The casual fishermen of the eastern United States, who are included in the figures published by the Bureau of Fisheries, tend to be found in larger proportions on the Great Lakes, in the Chesapeake Bay area and on the South Atlantic and Gulf coasts. They are largely small farmers or farm laborers; and the fact that some important fisheries of the South and the oyster fishery of Chesapeake Bay are most active during the winter facilitates a combination of the two callings.

In the Northeastern States the principal fisheries, when not pursued more or less the year around, tend to be concentrated in the summer and early fall. The season when the least fishing is being carried on in that section is also, in great part, a slack time in industrial activity; and in any case comparatively few industrial establishments are so located as to make it easy for fishermen to work in them. In New England and on the Middle Atlantic coast commercial fishing is to some extent combined with employment in the summer resort trades; but here again there is a tendency to conflict.

The lack of figures for the number of casual fishermen on the Pacific coast is a result primarily of the manner in which the data for that part of the country are obtained by the Bureau of Fisheries. There are reasons for thinking, however, that the proportion on the Pacific coast of the United States proper is actually not large. The fisheries of that area are to a great extent carried on in deep water and for the large-scale supply of canneries and reduction plants; and this type of enterprise is not easily undertaken by the casual worker. In these States, moreover, the agricultural population - the class from which casual fishermen in other parts of the country are mainly drawn - is for the most part not settled immediately on the seacoast.

The salmon fishermen of the Columbia River, however, may represent a partial exception to these statements, and there is a special situation in Alaska. Fishing is not as a rule the sole occupation either of the men brought to the Territory from the United States proper for the salmon canning season or of the local residents, whether white or native. The term "casual", however, hardly describes their fishing operations. It would be more correct to speak of a seasonal alternation or series of occupations.

Casual fishermen, by definition, obtain the greater part of their income from sources other than fishing. Since workers of this class are much less numerous on vessels, the question of their income from other employments was of secondary interest only in connection with the original study. The extent, however, to which the income of regular fishermen, including those on vessels, may be drawn from sources other than fishing is of some importance, especially as the present data are for a depression year. This subject will be touched on again in Chapter IX.

NON-MIGRATORY CHARACTER AND LOW TURNOVER OF PERSONNEL

The foregoing discussion of the combination of fishing with other employments suggests that there is little tendency for any class of fishermen to migrate * for the purpose of obtaining supplementary income. Until the depression of the 1930's became acute fishermen, as a class, were fairly well adjusted to programs of work that kept them busy at their own calling most of the year; and when market conditions cut down heavily the periods during which it paid them to engage in fishing, other employment also became hard to obtain. Fishing on any but the smallest scale requires some investment, and in many cases a relatively heavy one. As a result the industry has tended to select a type that does not take kindly to inter-industry migration.

These same conditions have combined to account for what is believed to be the very low turnover in the personnel of the fishing industry. Fishermen constitute an essentially conservative class, which sticks to its own mode of earning a living, to its own enterprises and to its own social groups. In the older parts of the country young people have drifted away from fishing communities during the last generation or two; but those who have once started in the business tend to remain in it. For this reason the average age of fishermen is believed to be high; and this accentuates their reluctance to change their calling or to migrate in search of employment outside the industry.

DISTINCTIONS OF SEX, RACE AND NATIONAL ORIGIN

Some fishing craft are owned by women, and in such cases the business may be managed by them. The working personnel is practically all male, though the Census of 1908 reported two or three hundred females.

The personnel of the fisheries of New England, of the northern Middle Atlantic States and of the Great Lakes is all white and largely of long settled Anglo-Saxon stock, though with a considerable admisture of Italians, Portuguese and Scandinavians. The same is true in the main of the South, although here and there considerable numbers of Negroes are found. The Fishermen on the menhaden vessels of the South Atlantic coast are mainly colored; and many Negroes operate or are employed on oyster craft in that section. The fishing crews of the Pacific Northwest include a very large proportion of Norwegians, with some Finns, Icelanders, Italians and Japanese. In the fisheries of California there are some Norwegians and a good many Japanese, but the crews of that State are overwhelmingly Italians, Jugoslavs from the Adriatic coast, or Portuguese. About two-thirds of the local residents engaged in the fisheries of Alaska are Indians or Eskimos. The remainder are white settlers, and largely Norwegian, Icelandic or Finnish by nationality.

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* This refers only to migrations for the purpose of supplementing earnings from fishing by participation in other industries, expecially under unusual economic stress. Seasonal migrations for the purpose of engaging in different fisheries at different times are common phenomena.

SIZE OF FISHING CREWS

The crew of a fishing vessel or boat may number anything from one man to a maximum of about 40. Crews in excess of 30 are very exceptional, and those exceeding 20 are confined to the goundfish fleet of New England, to the menhaden fleet of the South Atlantic coast, and to the vessels in the Alaska cod fishery that work out of San Francisco and Puget Sound. The average crew of a vessel is seven or eight strong, while the average to a boat is only one and a half.

The Bureau of Fisheries does not classify fishing craft according to the size of their crews, and such a breakdown can be made only in the form of an estimate. Something of this kind, however, had to be undertaken in connection with the present study as a basis for distinguishing employees from employers.

The results indicate that about seven and a half per cent of all fishing vessels in 1933 were operated by one person or by two or three part owners, who employed no additional workers. Of the personnel of the boat fisheries about 53 per cent operated one-man boats, about 43 per cent two-man boats, and only four per cent boats with crews of three or more. The sponge-diving boats of Florida, each of which uses seven or eight men, are almost the only ones having crews of more than four.

EMPLOYERS, EMPLOYEES AND INDEPENDENT OPERATORS

On the basis of this estimated breakdown by size of crew it is possible to segregate the personnel of the industry roughly into the three classes of independent operators of one-man and partnership units, employers and employees. The first and second of these groups taken together constitute, of course, the entrepreneurs of the industry. The results of this segregation are shown in Table XVII.

TABLE XVII

ESTIMATED CLASSIFICATION OF ALL FISHERMEN BY EMPLOYMENT STATUS, 1933

Employment Status	On Vessels		On Boats and Ashore		On All Fishing Craft	
	Number	Per Cent of Total	Number	Per Cent of Total	Number	Per Cent of Total
Employers	2,925	13.3	17,417	21.7	20,342	19.9
Employees	18,646	84.9	21,430	26.7	40,076	39.2
Operators of one-man and partnership units, with no employees	400	1.8	41,416	51.6	41,816	40.9
Total	21,971	100.0	80,263	100.0	102,234	100.0

Source: Totals from Bureau of Fisheries, Fishery Industries of the United States.

For the purposes of this table all fishermen who are not owners or part owners of the craft on which they work have been taken as employees, irrespective of their manner in which their compensation is determined. In the case of those who work on shares, however, and especially of share fishermen on the smaller vessels and on boats, there is room for argument as to the propriety of the term employee. The point is further discussed in Chapter V, in connection with the modes of determining fishermens' compensation.

Table XVII indicates that while the employees of the fisheries, when the term is used in the broadest possible sense, constitute a substantial body of workers, they account for less than half the total personnel. In the vessel fisheries, however, the proportion of employees is much higher. Less than two per cent of the total vessel personnel appear to be operators of one-man or partnership units with no employees, and only 13 or 14 per cent are to be classified as employers. In the boat and shore fisheries only about 27 per cent of the total are employees in any sense.

The total number of persons who may be classed as entrepreneurs constitute about 15 per cent of those engaged in the vessel fisheries, about 73 per cent of the personnel of the boat and shore fisheries, and about 61 per cent of the grand total. This proportion of entrepreneurs, even in the vessel fisheries, is high enough to affect greatly the economic and social conditions of the industry.

The returns of the Census of 1908, the only data available for comparison with the estimates in Table XVII, put the proportion of employees in the vessel fisheries at 87 per cent of the total personnel, as compared with 85 per cent in the table; at 36 as compared with 27 per cent in the boat and shore fisheries; and at 48 as compared with 39 per cent in the industry at large.

It is evident either that the conception of an employee in the boat and shore fisheries which was adopted for Census purposes was somewhat different from the one assumed in connection with the present study, or that the proportion of employees in that division of the industry has declined during the past quarter century. In view of the close correspondence of the two sets of data in the case of the vessel fisheries the latter appears the more likely explanation. It seems possible that, with the increase in the investment in inshore fishing enterprises made necessary by the advent of the motor boat and of increasingly efficient and elaborate types of gear, there has been an appreciable tendency to substitute operation by partners for operation by single owners with hired helpers, while the number of men to a boat has remained about the same.

DISTINCTIONS OF RANK AND OCCUPATION

The crew of every fishing craft which consists of more than two or three persons may be said to include a captain. In a large proportion of cases the latter, as already remarked, is also the owner. But on fishing craft with crews of only two or three men the duties

and authority implied by the position of captain become simplified out of recognition, if they can be said to exist at all.

Specialized occupations other than that of captain begin to exist, as a rule, only when the crew of a fishing vessel consists of as many as six or seven men. The ranks of next most frequent appearance are those of cook and of engineer. The crew of a vessel that makes trips of any considerable duration usually includes a cook, who is an important and relatively well-paid personage. The ranks of mate, pilot and assistant engineer are largely confined to steam vessels.

Radio operators are employed on many of the large vessels of the New England groundfish fleet and on some of the California tuna vessels; but otherwise they are rare. The 40 radio operators reported in connection with the present study probably account for a substantial majority of the class. The San Francisco vessels which work in pairs with the gear known as paranzella nets have the special ranks of "boss fisherman" and "second boss fisherman". The former, who have complete control of the fishing operations as distinguished from the navigation, outrank the captains and receive higher pay.

On the menhaden and some of the red snapper vessels of the South Atlantic and Gulf coasts, and occasionally in other instances, there is a petty officer, roughly corresponding to a boatswain or quartermaster on a merchant vessel, who is known as the "striker" or "first hand". The former name is also used in a somewhat different sense in other branches of the industry.

SHORE WORKERS

In general, the personnel reported in connection with the present study included only the crews that actually worked the vessels and gear for which data was obtained. In the case of the wage vessels, however, a few "shore hands" were included. All but one of these were employed in connection with vessels on the Great Lakes. The principal duties of such a shore worker are to care for whatever plant the vessel owner employing him may maintain at the port out of which he operates, and to assist in packing and shipping the catch.

No cases were reported in which owners of vessels working on shares, other than corporations which combine the operation of fishing fleets with wholesale or processing businesses, maintained regular employees on shore. If such a thing occurs it is not common. The reported operating expense of some share vessels probably included wages paid to casual shore labor, to assist in unloading the catch, etc. This, however, is a minor matter.

The office, wharf and dockyard forces maintained by the corporations that combine fishing with wholesale or processing business were not included in the scope of the present study.

The Census of 1908 reported under the head of "shoresmen" 10,590 persons. Nearly three-quarters of these, however, were in

Alaska, and must have represented mainly the beach crews of the salmon canneries. Whether these latter should be regarded as part of the personnel of the fishing industry is a matter of definition. They are in any case on the borderline of the class.

Of the 2,850 shoremen reported by the Census of 1908 for the United Stated proper more than one-third, probably, were accounted for by the oyster cultivating establishments of the North Atlantic coast. This again is a borderline group. It is not altogether easy to account even for the remaining two-thirds of the 2,850. The operators of the larger fleets do employ, on a limited scale, shore workers whose time is given wholly or mainly to the fishing business; but because of the uncertainties of classification just mentioned it is hardly worth while to attempt to estimate their present number.

Table XVIII summarizes the best estimates that can be made, with the information now available, of the total numbers of men in the more important ranks and occupations on fishing vessels.

In the case of fishing boats, except in so far as they can be said to have captains, there is little or no distinction of rank or occupation.

TABLE XVIII

ESTIMATED NUMBER OF PERSONS IN EACH RANK OR OCCUPATION ON ALL FISHING VESSELS, 1933

Rank or Occupation	Number of Men	Per Cent of Total
Captains	3,650	16.6
Mates	175	.8
Engineers and Assistant Engineers	2,150	9.8
Firemen	575	2.6
Radio Operators	50	.2
Cooks	1,950	8.9
Ordinary Fishermen	13,200	60.0
Others a/	250	1.1
Total	22,000	100.0

Source: Estimated from returns to N. R. A. questionnaire on earnings in the fishing industry and Bureau of Fisheries, Fishing Industries of the United States.

a/ Includes boss fishermen, pilots, strikers, first hands and other minor classifications.

CHAPTER IV

THE PRODUCTION OF THE FISHERIES

SOURCES OF INFORMATION

As has already been stated the Bureau of Fisheries made countrywide surveys of the production of the industry for the years 1929, 1930, 1931 and 1932. For 1933 the survey omitted the South Atlantic and Gulf and the Great Lakes areas. Previous complete surveys were made in connection with regular decennial Censusses or, in 1908, by the Census Bureau as a special project.

QUANTITY AND VALUE OF THE CATCH

Table XIX shows the quantity and value of fishery products of all species landed in the United States, by area, from 1929 to 1933.

This table brings out clearly the effect of the depression on the output of the fisheries. From 1929 to 1933 the quantity landed fell off by 19 per cent, while the value of the catch to the fishermen was cut in half. The trouble, evidently, has lain in the prices paid for the product much more than in the drop in the quantity demand.

This latter statement applies, moreover, to all sections of the country individually except the Great Lakes, whose catch has brought relatively high prices and has been sold in considerable part, under very special conditions, to the Jewish trade in New York City. In the Middle Atlantic and Chesapeake areas the price decline from 1929 to 1933 was exceptionally heavy, while the falling off in the quantity of the catch was only moderate.

When all due emphasis has been put on the predominance of the price factor, however, the importance of the drop in the quantity demand for fishery products during the depression should not be underestimated. For a large class of basic foodstuffs it must be called heavy. Its causes need to be studied more than they have been; but the strongest influence was the sharp concurrent decline in the price of meat, the most directly competing class of commodities.

The data in Table XIX merit study in the present connection, because of the close relationship between the changes from year to year in the landed value of fishery products and in the earnings of the 75 per cent of the personnel of the industry who work on shares. This relationship is further discussed in Chapter XII.

TABLE XIX

QUANTITY, VALUE AND AVERAGE PRICE PER POUND OF THE CATCH OF THE FISHERIES, BY AREA, 1929 - 1933

Area	1933 a/			1932			1931			1930			1929		
	Quantity (Thousands of lbs.)	Value (Thousands)	Average Price Per Pound (Cents)	Quantity (Thousands of lbs.)	Value (Thousands)	Average Price Per Pound (Cents)	Quantity (Thousands of lbs.)	Value (Thousands)	Average Price Per Pound (Cents)	Quantity (Thousands of lbs.)	Value (Thousands)	Average Price Per Pound (Cents)	Quantity (Thousands of lbs.)	Value (Thousands)	Average Price Per Pound (Cents)
New England	499,936	$13,486	2.7	480,521	$14,001	2.9	540,298	$20,141	3.7	701,351	$27,493	3.9	694,286	$29,072	4.2
Middle Atlantic	169,753	4,811	2.8	141,221	4,654	3.3	164,899	9,211	5.6	193,868	13,064	6.7	190,773	14,138	7.4
Chesapeake	272,380	5,061	1.9	359,007	5,905	1.6	293,271	7,428	2.5	316,393	11,472	3.6	274,674	11,581	4.2
South Atlantic and Gulf	335,000 b/	6,938 b/	2.1	299,917	6,428	2.1	289,309	8,082	2.8	417,759	11,065	2.6	535,395	14,904	2.8
Great Lakes	65,000 b/	4,671 b/	7.2	83,744	4,332	5.2	91,727	6,029	6.6	94,948	6,050	6.4	85,389	6,788	7.9
Pacific	860,161	13,988	1.6	560,828	9,484	1.7	597,306	13,512	2.3	833,388	23,064	2.8	1,034,434	25,038	2.4
Alaska	627,395	9,089	1.4	606,520	7,062	1.2	598,125	10,043	1.7	620,702	12,756	2.1	651,423	17,084	2.6
Total of above areas	2,829,625	58,044	2.1	2,531,758	51,866	2.0	2,574,935	74,446	2.9	3,178,409	104,964	3.3	3,466,374	118,605	3.4
Mississippi River	c/	c/	c/	c/	c/	c/	82,382	2,898	3.5	c/	c/	c/	c/	c/	c/
United States & Alaska	-	-	-	-	-	-	2,657,317	77,344	2.9	-	-	-	-	-	-

Source: Bureau of Fisheries, Fishery Industries of the United States.

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a/ Preliminary figures.
b/ Estimated by the author.
c/ Not available.

PRODUCTION OF THE FISHERIES IN 1934

At the time this report was written no production data for 1934 had been compiled by the Bureau of Fisheries except for Alaska. A good deal of the preliminary data, however, had been assembled; and on the basis of this and from a variety of supplementary information estimates have been made of the value of the catch of the various fisheries in 1934.

These were needed primarily in connection with the estimates of crew and vessel earnings in that year, which are presented in Chapter XII. They are hardly precise enough to tabulate in detail. They indicate, however, a total landed value of fishery products for the United States, excluding the Mississippi area, of about $77,000,000 or, including that area, of $79,300,000. The total corresponding to the part of the industry covered by the original study - that is, excluding the catch of cannery-owned or operated craft and gear in Alaska - may be put at $69,500,000. Of this latter figure the catch of the vessel fisheries accounted for about $33,500,000.

These estimates indicate an increase in the value of the total catch of about 33 per cent over 1933 or, if the catch with Alaska cannery craft and gear is excluded, of about 34 per cent.

THE LONG-TIME TREND OF PRODUCTION

The data available for a long time comparison of the quantity and value of the catch of the fisheries of the United States have been presented in another connection in Table XV. It would appear that the increase in living costs which characterized the first two decades of the century was unfavorable to the development of the demand for fishery products, which tend to be relatively expensive in a time of rising prices, and which are not regarded by a large part of the population as necessities.

From 1920 to 1930, however, conditions were much more favorable. The productivity of the fisheries per man and per unit of gear continued to improve, purchasing power was in the main rising, and the radius over which fresh fish and shellfish could be shipped from the principal ports of landing was materially extended, as a result of improved methods of preparing and packing and of better transportation facilities.

OUTPUT OF THE VESSEL AND OF THE BOAT AND SHORE FISHERIES

The Bureau of Fisheries has not tabulated the production data resulting from its countrywide surveys for the years 1929 to 1933 for the vessel and the boat and shore fisheries separately. In connection with the present study, however, it has been necessary to break down the 1933 data with reference to this distinction. Table XX shows the results of the segregation.

In the case of Alaska there appears in this table a complication, which requires explanation. The salmon canning industry, which

TABLE XX

ESTIMATED SEGREGATION OF THE VALUE OF THE CATCH OF THE VESSEL AND OF THE BOAT AND SHORE FISHERIES, BY AREA, 1933

Product of craft and gear other than (1) those owned or operated by salmon canneries in Alaska, and (2) other salmon traps in Alaska.

Area	Vessel Catch		Boat and Shore Catch		Total Catch	
	Value	Per cent of Total	Value	Per cent of Total	Value	Per cent of Total
New England	$6,933,606	51.4	$6,551,944	48.6	$13,485,550	100.0
Middle Atlantic	2,705,598	41.3	3,839,312	58.7	6,544,910	100.0
South	2,331,285	22.7	7,933,371	77.3	10,264,656	100.0
Great Lakes	1,392,082	29.8	3,279,334	70.2	4,671,416	100.0
California	5,717,190	80.6	1,377,067	19.4	7,094,257	100.0
Northwest and Alaska	5,597,970	57.7	4,107,085	42.3	9,705,055	100.0
United States & Alaska	24,677,731	47.7	27,088,113	52.3	51,765,844	100.0

Product of craft and gear owned or operated by salmon canneries in Alaska	Value of Catch	Per cent of Total
Vessels	$ 312,983	5.4
Boats and ashore	2,590,804	44.7
Traps	2,892,196	49.9
Total	5,795,983	100.0
Product of salmon traps in Alaska not owned or operated by canneries.	$ 481,681	

Recapitulation:

	Value of catch	Per cent of Total
Vessels	$24,990,714	43.1
Boats and ashore	29,678,917	51.1
Traps a/	3,373,877	5.8
Grand Total, United States and Alaska	58,043,508	100.0

SOURCE: Area totals, except for the South and the Great Lakes, which are estimates by the author, from Bureau of Fisheries, Fishery Industries of the United States (preliminary figures).

a/ Salmon traps in Alaska only. The catch of other traps or pound nets is included with that of the vessels or boats that clear them.

consumes much the greater part of the Alaska catch, had an N.R.A. code separate from that of the rest of the fisheries. Moreover, the catch of salmon with craft or gear owned or operated by Alaska canneries is reported with reference to the land establishments and not the vessels or boats employed.

These two conditions made it impracticable to survey this branch of the industry by means of the original questionnaire. In Table XX, consequently, the catch of salmon with cannery equipment is separated from the main tabulation of the vessel and boat catch. To complete the latter segregation, however, the Alaska cannery item has been broken down by estimate into a vessel, a boat and a trap catch. The latter is shown separately because of its relative importance, and also because the workers employed in connection with these traps are not classified as fishermen in the Bureau of Fisheries' reports.

The men who operate the Alaska cannery craft and gear are conveniently referred to as "employee" fishermen, to distinguish them from the "independents" who take the remainder of the salmon consumed by the industry. Information regarding the latter class only was gathered by means of the original questionnaire; but data have subsequently been obtained from other sources with respect to the earnings of the employee fishermen and the trapmen. These latter are discussed in Chapter XIII.

In the United States proper the craft and men employed in connection with traps (usually called pound nets on the Atlantic and Gulf coasts) are included in the Bureau of Fisheries' tabulations of fishing vessels or boats and of fishermen.

Table XX shows that about 43 per cent of the total value of the catch of the fisheries of the country is accounted for by vessels, although the latter constitute only six and a half per cent of the total craft. When the catch of the craft and gear owned or operated by salmon canneries in Alaska is excluded the proportion taken by vessels rises to 47 or 48 per cent.

The variations in the percentage of the vessel catch in the different areas are the result of local conditions. The fisheries which make the largest scale shipments over the widest radiuses show high percentages, and vice versa. California has chiefly deep water fisheries, in which the possibility of using small craft is limited. The fisheries of the Great Lakes are on a modest scale, and are carried on in large part in comparatively shallow waters. The small scale of the fisheries of the South results largely from the general economic conditions and the distribution of the population of that area. In New England and in the Northwest and Alaska as a whole the proportion of the vessel catch is a little above the average for the country at large. In Alaska itself, however, for special reasons, the proportion is small.

In 1908 the vessel fisheries of the United States proper accounted for 43.5 per cent of the total dollar volume of production. No segregation was made for the value of the Alaska catch, the inclusion of which would have lowered the percentage a little. These figures indicate that the proportion of the total catch accounted for by the vessel

fisheries has not changed materially during the past twenty-five years. Any decrease that might have resulted from the fact that the number of vessels in use has declined more than the number of boats has apparently been offset by the greater relative improvement in the efficiency of the vessel gear.

CHAPTER V

THE COMPENSATION OF FISHING CREWS

VARIETY OF MODES OF PAYMENT

There is more variety in the methods whereby the crews of fishing craft are compensated than in the corresponding arrangements in ordinary industrial plants. Compensation both by straight wages on a time basis and by piece rates exists. In the marine fisheries, however, much the most common plan is to pay each member of a crew by a share in the value of the catch. The compensation received by individual fishermen, in such cases, becomes dependent primarily on the quantity of fish caught and on the unit price received for them, and secondarily on the items deducted from the gross revenue before arriving at the crew's share. The latter is, in all but a very small proportion of cases, a residual sum.

FISHING LAYS

The arrangement whereby the value of the catch of a fishing craft working on shares is distributed among the persons and interests concerned is known as a "lay."

A share fisherman may receive a wage or a bonus on a time or percentage basis in addition to or in lieu of a share in a lay. Such a person ordinarily has exceptional responsibility, as in the case of a captain, mate or pilot, or is engaged in specialized work, like that of an engineer, fireman, radio operator or cook.

THE PAYMENT OF STRAIGHT WAGES

Straight wages on a time basis in the vessel fisheries are confined chiefly to the following cases:

(1) The crews of most oyster dredges.

(2) The crews of the craft used in connection with pound nets on the coast of New Jersey.

(3) The crews of the menhaden vessels operating out of Reedville, Virginia. This was the home port of approximately a third of the vessels actively engaged in this fishery in 1933. The menhaden vessels working out of Middle Atlantic ports north of Virginia operate in some cases on wages and in others on shares. On the coast south of Virginia a modified share system which will be described more fully later on is the commonest arrangement.

(4) The crews of the paranzella vessels working out of San Francisco.

(5) On the Great Lakes, and especially on the upper lakes (Huron, Michigan and Superior), a straight time wage appears to be commoner than a lay. Of the vessels on the Lakes for which reports were obtained for the purposes of the study 67 per cent, with 63 per cent of the men and 62 per cent of the value of the catch, were working in 1933 on wages.

This sample is not very large, but there is no positive evidence that it does not reflect the situation roughly.

(6) The crews of one important trawling fleet working out of Norfolk, Virginia, are compensated on a wage basis. The method is also used on some shrimp vessels on the Gulf coast and in Alaska, and in other occasional instances.

PAYMENT AT PIECE RATES

Compensation at piece rates (that is, so much for every fish caught by the individual worker) is the universal basic method in the case of the employee fisherman of salmon canneries in Alaska. These piece rates may be accompanied, however, by the payment of fixed sums, in some cases known as "run money". For reasons already explained these recipients of piece payments were not covered by the study in its original form; but information obtained with regard to them at a later stage is discussed in Chapter XIII.

The only other vessels whose crews are compensated on a straight piece basis are those in the Alaska cod fishery, working out of Puget Sound and San Francisco. The number of these vessels is small, and reports were obtained for all those operating in 1933. They are, however, the largest craft in the industry, and employ a relatively substantial number of men.

INTERMEDIATE SYSTEMS OF PAYMENT

The compensation of fishing crews on a straight piece basis shades off into systems intermediate between a piece payment, a wage and a share. Such a type of remuneration appears in the case of many menhaden vessels working off the coast of North Carolina, Georgia and Florida, in the shrimp fishery of the Gulf coast, and in the Alaska herring fishery. In all these cases the catch is used by processing establishments which own or charter the vessels, but buy the catch from the crews at prices fixed in advance.

The proceeds of such a sale may be shared among the fishermen concerned as an independent transaction, and the terms of the distribution may not be affected by the unit price. In other cases, however, as on some menhaden vessels - the processing establishment pays the fishermen individually, but on a sliding scale of so much per thousand fish caught by the whole crew, according to the rank or occupation of each man. Data with regard to earnings on some vessels of this latter class were obtained in connection with the study, but too late to be incorporated in the main tables. The figures, however, are summarized in Appendix I.

RELATIVE IMPORTANCE OF THE VARIOUS MODES OF COMPENSATION

The relative importance of these modes of compensation can only be figured on the basis of the foregoing description and of the data in connection with the present study. Estimates of the kind, which are probably near the truth, are shown in Table XXI.

These proportions are in any case not fixed, as there has been some tendency for fishing craft to shift from a share to a wage basis and vice versa, in the hope that the altered arrangement will be more satisfactory to the owners or the crews. Such changes were especially common on the Great Lakes during the Depression; but they have occurred elsewhere as well.

TABLE XXI

ESTIMATED PROPORTIONS OF ALL FISHING VESSELS, OF ALL VESSEL FISHERMEN, AND OF THE TOTAL VALUE OF THE CATCH, OF VESSELS USING VARIOUS MODES OF COMPENSATING THEIR CREWS

Mode of Compensation	Per cent of Total Number of Vessels	Per cent of Total Number of Men	Per cent of Total Value of Catch
Share	79	72	74
Wage	19	25	24
Piece-rate a/	2	3	2
Total	100	100	100

Source: Estimated from returns to N. R. A. questionnaire on earnings in the fishing industry.

In the main the compensation of fishermen on a wage basis is confined to particular fisheries, where conditions vary more or less decidedly from the norm of the industry. There seems to be no marked general tendency to substitute the wage system for lay agreements.

REASONS FOR THE PREDOMINANCE OF THE SHARE SYSTEM

The predominance of the share system in the compensation of the fishermen is customarily explained by the need providing them with a special incentive, in view of the dangers and hardships to which they are exposed and the laboriousness of their work. In some instances in which, in the earlier days of the operation of large steam fishing vessels by corporations, attempts were made to substitute straight wages for lays, it is claimed that the men ceased to be willing to make the exertions or to run the risks necessary to recover fishing gear in bad weather. There is no doubt some truth in this explanation; but the continuing predominance of share operation is probably due also, to a considerable extent, to the influence of habit and tradition on a very conservative class.

a/ Includes piece-rate vessels owned or operated by salmon canneries in Alaska, which were not covered by original questionnaire. The proportions represented by piece-rate vessels in this table are, therefore, larger than those indicated in Tables XXIV to XXVII.

EFFECTS OF THE SHARE SYSTEM

The fisheries in which compensation by shares is the rule constitute nowadays the only large group of industrial enterprises in the United States to use such a method. The variations in earnings which result, and the extent to which such compensation causes the return to the mass of workers to depend directly on fluctuations in commodity prices, have important effects on the status and on the mental attitude of those concerned.

To some economists the fact that the earnings of share fishermen are thus dependent on the volume of sales and of operating expense of the enterprises with which they work means that they are properly entrepreneurs, and not employees at all. The legal attitude, on the other hand, has been the reverse of this. In the early part of the ninteenth century a series of court decisions, relating chiefly to vessels of the New England whaling fleet, established the doctrine that share fishermen who do not participate in the actual sale of the catch are employees in the same sense as wage earners in a factory. It is claimed that a desire to insure to such workers the benefits of wage earners' liens, and of other legal privileges which they would not normally enjoy if they were regarded as participating in the entrepreneurial risk, lay back of these decisions.

The actual status of share fishermen varies a good deal with the size of the vessel and with the area and the fishery concerned. In the case of the large corporation-owned vessels in the New England groundfishery and the red snapper fishery of the South their position, as understood by all concerned, undoubtedly approximates that of employees in the ordinary sense.

To a very considerable extent, however, the legal doctrine just mentioned is not only opposed to economic theory, but is unrealistic as well. A large proportion of fishermen working on shares, and especially those composing the crews of the smaller craft, do not really regard themselves as employees. The difference is a matter partly of mental attitude and partly of interests and responsibilities inconsistent with a strict employee status.

Crew members may have interests in fishing gear when they do not own a vessel or boat itself; and there are instances where the investment in gear is greater than that in the hull. In the case of some California tuna vessels a group of the crew are jointly responsible for the loan with which the vessel was built, and are jointly engaged in repaying it. In some instances, where no such money interest in the vessel or its equipment exists, it is at least claimed that the fishermen are customarily consulted with respect to the operation of the vessels, the sale of the catch, or the purchase of supplies.

One disadvantage of the entrepreneur, to which share fishermen have been subject in a large number of cases, especially during the depression, is that of being forced to wait for the liquidation of their shares, when the purchaser of the catch has been unable to make payment in cash or within the period originally stipulated. Such workers certainly cannot be said to have enjoyed effectively the benefits of an employee status.

On the whole it is hard to avoid the conclusion that the real position of share fishermen is neither that of employees nor of entrepreneurs, but something intermediate between the two.

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CHAPTER VI

THE OPERATION OF FISHING VESSELS ON SHARES

THE GROSS STOCK

When a fishing vessel is operated on a lay or share basis the proceeds of the sale of the catch constitute the "gross stock" from which the expense of operation is paid and the shares of the vessel and of the crew are derived. In some instances the net proceeds, after deducting consignee's commissions and transportation charges on products not sold at the point of landing, are regarded as the gross stock for these purposes.

THE PRINCIPAL FACTORS IN A LAY

The principal items into which the gross stock is subdivided in the settlement of a lay or share enterprise are as follows:

(a) The operating or trip expense, which may in its turn consist of either or both of:

1. Joint expense, which is deducted from the gross stock before taking out the share due the vessel, or the crew, and is consequently a charge on the vessel or its owner and the crew jointly.

2. Crew expense, which is taken out after deducting the share due the vessel, and is therefore a charge against the crew alone.

(b) The vessel share, which corresponds in many respects to the gross income from operation or the gross profit of an ordinary industrial business.

(c) The crew share, which in 96 or 97 per cent of all cases is the residue after deducting the preceding items from the gross stock, while in three or four per cent it is an agreed percentage of the gross. It corresponds to the wage volume of the production department of an industrial business.

The amount remaining after deducting the first item or items to be taken out of the gross stock, particularly the joint expense, may be referred to as the "net stock".

The following specimen operating statement or "settlement of a lay" shows how these items are taken out in an illustrative case. The figures are of course imaginary, and the form of the statement may vary considerably in detail. Commissions and transportation charges are often lacking, and all operating expense may be a joint charge, or a charge on the crew along. There is a wide possible variation in the proportions of the various items in individual cases.

SPECIMEN OPERATING STATEMENT OF A FISHING VESSEL WORKING ON A LAY

GROSS STOCK before Commission & Transportation Charges		$12,000
Less: Consignee's Commission	$1,500	
Transportation Charges	500	2,000
GROSS STOCK after Commission & Transportation Charges		$10,000
Less: Joint Expense		1,000
NET STOCK for Vessel and Crew		$9,000
VESSEL SHARE		3,500
NET STOCK for Crew		$5,500
Less: Crew Expense		2,000
CREW SHARE		$3,500

OPERATING EXPENSE

The operating of a fishing vessel is made up of some or all of the following items, - food for the crew while out of port, ice or salt, barrels, baskets, boxes or other containers for the catch, bait, coal, fuel oil or gasoline for the engine, and lubricants and other engine supplies.

Whether any of these is included in the operating expense of a given craft depends on circumstances. Vessels that go out only for a day at a time do not as a rule provide food for their crews: and in some cases where longer trips are taken the maintenance of the mess is regarded as an affair of the crew as distinguished from the vessel, and the cost is not recorded as part of the latter's operating expense.

Salt is now a comparatively unimportant item, and many fishing vessels do not carry ice, even when they might well do so to keep their catch in good condition. Some products are loaded in bulk, so that no containers are needed.

Whether bait has to be purchased depends on the kind used and on the gear. Practically all fishing craft of vessel size except two or three hundred sailing vessels include in their operating expense substantial items for coal, diesel or fuel oil or gasoline, and of lubricants.

Wages paid to the crews of share vessels in lieu of or in addition to shares are usually regarded as operating expense, and are charged to the crew alone and not to the vessel. Percentage bonuses paid to captains, however, are as a rule paid out of the vessel share.

OVERHEAD OR OWNER'S EXPENSE

In contrast with the operating or trip expense, the overhead or owner's expense on a fishing vessel is a charge against the vessel share. This includes, in addition to the captain's bonus just mentioned, the following - the repair and upkeep of the hull, engine and gear, marine and sometimes employer's liability insurance, and State or local taxes on the vessel, its gear or its catch. Since so large a majority of fishing enterprises are unincorporated, Federal income tax does not usually appear as an item of expense. Taxes on members of a fishing crew as individuals, such as the fishermen's licenses required in some States, may or may not be taken into account in settling a lay.

A special item which is often charged against the vessel share is the loss that would theoretically be borne by the crew in a case where the proceeds of a trip are not sufficient to cover the operating expense and the normal vessel share. Such a charge is called "a broken trip."

Depreciation on fishing craft and their gear, in the minority of cases where it is formally written off at all, is a part of the owner's expense.

Replacements of fishing gear that normally lasts less than a year, and often piecemeal replacements of more durable gear that would, under standard accounting rules, be covered by depreciation reserves, are treated as current overhead expense.

The foregoing description shows that in the main the logical distinction between the items included in operating expense and charged to the crew of a fishing vessel or to the crew and the owner jointly, and those included in owner's or overhead expense and charged to the vessel share, is maintained in practice in the vessel fisheries. Exceptions to this statement occur chiefly among small vessels particularly those in the salmon fishery of Washington and Oregon and on the Great Lakes. In these cases all expenses are paid indifferently by the owner out of the vessel share. The net result not infrequently seems unfair to the owner as against the rest of the crew, consisting often of a single person.

CHARACTERISTICS OF FISHING LAYS

The rules determining the shares received by the owner and the crew of a fishing vessel constitute the lay or share agreement under which it operates. Nearly all fishing lays are matters of tradition or of custom: and written agreements exist only in the case of fleets owned by corporations, and in the few instances where a lay takes the form of a contract with a fishermen's union. Minor variations in the terms of these agreements have been made frequently by individual owners and crews especially in recent years of depression. But the main provisions of the more important lays have scarcely been changed within the last generation, or even since the eighteenth century. These agreements constitute the most informal and at the same time the most stable class of economic relationships existing in the United States.

FACTORS GOVERNING THE EARNINGS OF CREWS

The net compensation received by the crew of a share fishing vessel is governed chiefly by the following variables: (1) the quantity of the catch; (2) The unit price received for it; (3) the amount of the operating expense; (4) the proportions of joint and crew expense; and (5) the ratio of the vessel share to the gross of the net stock. The variations in these factors depend on the type of the vessel and the gear, on the size of the crew, on the length of the trips taken, on the species caught and the mode of preserving them, and on the waters in which fishing is carried on.

CLASSIFICATION OF THE LAYS IN USE

The number of lays in use is considerable, especially in the areas and fisheries which employ chiefly craft. No systematic compilation of the terms of existing agreements has ever been made; but in the questionnaire sent out in connection with the present study a statment of the chief items in the settlement of the lay in use on each reporting vessel in 1933, and also a copy of the agreement, were asked for.

The information submitted as a result was very unsystematic; but it has proved sufficient to identify with fair certainty the agreements in use in 1933 on 93 per cent of the vessels for which usable returns were made. From this material the classification of lays in Table XXII has been worked out.

Since this classification of lays is, to the best of the writer's knowledge, the first ever attempted, it is subject to correction in the light of further information. In its present form, however, it probably represents the situation with fair accuracy.

To reduce the complexity of Table XXII a further geographical breakdown, with the names of the lays where reported, has been transferred to Appendix III.

The use of a name for a lay appears to be confined to the older fisheries of the North Atlantic coast. The statements with regard to such names in the Appendix III are for the most part derived from the questionnaires. It is not certain, however, that these names are in general use even in the fisheries to which they were there attached. It may be also that these same lays are known by other names which did not happen to be reported.

The percentage of the gross or net stock which constitutes the vessel or the crew share under the terms of a given lay may vary somewhat in individual cases. In making up Table XXII the rule has been followed of classifying a vessel as using, for instance, a "fifty-fifty" lay if the proportions were anywhere between 45 and 55 per cent of the base. The effect of such variations on the conclusions drawn from the classification is slight; and the nature of the data in any case makes unlikely an exact check with the specifications of a lay.

TABLE XXII
CLASSIFICATION OF LAYS OR SHARE AGREEMENTS IN USE ON SAMPLE a/ FISHING VESSELS , 1933 b/

Terms of Lay	Number of Vessels	Number of Men	Value of Catch
I Crew share a fixed percentage of the gross Stock			
(1) 20 or 25 per cent	4	14	$ 9,905
(2) 50 per cent	9	54	69,015
Total (1)	13	68	78,920
II Crew share the residual item:			
A-Vessel share a fixed percentage of the gross stock			
(1) Under 20 per cent	6	28	12,780
(2) 20 per cent	25	102	131,506
(3) 25 per cent	16	117	78,953
(4) 30 Or 33 1/3 per cent	9	61	90,733
(5) 40 per cent	21	188	382,830
Total (II-A)	77	496	696,802
B- Vessel share a fixed percentage of net stock			
(1) Joint expense included replacement of lost gear only			
(a) Vessel share 20 per cent	51	422	751,361
(2) Joint expense included bait only			
(a) Vessel share 20 to 40 per cent	23	207	144,660
(3) Joint expense 50 to 75 per cent of total operating expense c/-			
(a) Vessel share 25 per cent	8	153	149,827
(b) Vessel share 50 per cent	42	707	1,653,760
Total (II-B-3)	50	360	1,803,587

Continued

TABLE XXII
(Continued)

Terms of Lay	Number of Vessels	Number of Men	Value of Catch
4. All operating expense joint			
(a) Vessel share 20 per cent or less	6	33	$13,625
(b) Vessel share 30 or 33 1/3 percent	35	225	274,260
(c) Vessel share 40 per cent	25	174	416,158
(d) Vessel share 50 per cent	41	404	1,016,161
Total (II-B-4)	107	836	1,720,204
Total (11-B)	231	2,315	4,419,312
C-All operating expense joint and vessel received a fixed number of shares in the net stock			
(1) One share	15	58	39,059
(2) Two shares	5	38	20,780
(3) Three but less than four shares	5	46	27,329
(4) Four but less than five shares	7	58	48,231
(5) Six or seven shares	14	151	186,434
Total (II-C)	46	351	321,833
Total, where crew share was the residual item (II)	354	3,162	5,438,447
Grand total, Sample a/ share vessels for which information was supplied sufficient to indicate terms of lay	367	3,230	5,517,367
Sample a/ share vessels not included in above tabulation d/	27	201	197,023
Grand Total e/	394	3,431	5,714,390

(Continued)

TABLE XXII
(Continued)

Source: Returns to N. R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ For a breakdown of these groups by area and fishery, with the names of the various lays where reported, see Appendix III.

c/ Regularly includes fuel and lubricants and often ice, salt and bait, but not food or wages.

d/ Includes one vessel in the New England groundfishery, which in 1933 was experimenting with a modified share arrangement that does not fit into the foregoing classification, and 26 vessels for which the information furnished was insufficient to determine the lays in use. The latter group includes one vessel in the Middle Atlantic miscellaneous fishery; one in the shrimp fishery of the South; five in the Great Lakes area; three in California (one tuna and two tuna and sardine vessels); and 16 in the Northwest and Alaska area (four in the halibut and 12 in the salmon fishery).

e/ These grand totals are the sums of: (1) in all areas except the Great Lakes, the corresponding totals for share vessels reporting operating expense (Table XXIX); (2) in the Great Lakes area, the corresponding totals for all share vessels (Table XXVII).

Table XXII, which is based on the terms of the lays in use with only incidental reference to their geographical distribution, does not show specifically the effect that these types of agreements have in practice on the earnings of vessels and their crews in the various areas and fisheries. In Table XXIII, consequently, the same data are analyzed from the latter point of view.

A high ratio to gross stock of operating expense or of vessel share, or of both, in the case of any fishery in this table will be found as a rule, though not invariably, to imply low earnings per man. The same tendency will appear where a high proportion of the operating expense is charged to the crew alone instead of to the crew and the vessel jointly, as shown in the right hand section of the table, unless the ratio of the vessel share to the gross is reduced as an offset. This latter adjustment appears in the case of the Northwest and Alaska halibut fishery. Where two or more of these conditions combine, the effect on the proportion of the gross which goes to the mass of the fishermen, and as a rule on the earnings per man as well, is still more adverse.

TABLE XXIII

PRINCIPAL FACTORS GOVERNING THE BASIC EARNINGS OF THE CREWS OF SHARE VESSELS INCLUDED IN THE SAMPLE a/, BY AREA AND FISHERY, 1933.

Area and Fishery	Percentage of Value of Catch			Proportion of Men on Vessels, According to Per Cent of Operating Expense Charged to Crew Alone (Per cent of operating expense:)					
	Operating Expense	Vessel Share	Crew Share	None	0.1 to 24.9	25.0 to 49.9	50.0 to 74.9	75.0 to 99.9	All
				(Per Cent of Number of Men)					
New England									
Groundfish									
Vessels under 50 tons	27.8	35.4	37.9	13.5	3.8	34.6	18.0	30.1	-
Vessels of 50 tons and over	39.0	41.0	21.5	-	-	2.5	73.1	20.2	4.2
Total, Groundfish	37.2	40.1	24.1	1.7	0.5	6.6	66.1	21.5	3.6
Mackerel	30.0	33.1	37.2	82.3	-	9.5	4.1	-	4.1
Miscellaneous	32.9	30.7	36.5	38.1	11.5	8.0	-	23.0	19.4
Total, New England	36.5	39.0	25.8	15.0	1.4	7.1	52.6	18.9	5.0
Middle Atlantic									
Scallop	21.5	34.3	44.4	47.6	-	-	-	35.7	16.7
Miscellaneous	29.8	26.0	43.5	53.6	23.6	-	-	-	22.8
Total	26.3	29.4	43.9	52.2	18.1	-	-	8.2	21.5
South									
Red snapper	41.3	32.7	26.7	6.4	-	-	-	69.9	23.7
Shrimp	28.0	18.7	53.4	58.3	16.7	25.0	-	-	-
Miscellaneous	17.4	46.4	37.1	35.6	64.4	-	-	-	-
Total	34.3	35.9	30.7	14.4	0.5	0.8	-	52.4	31.9
Great Lakes									
Lakes Huron and Michigan	19.5	28.6	52.6	58.5	41.5	-	-	-	-
California									
Tuna	30.2	34.6	35.0	45.3	37.7	3.5	9.7	3.8	-
Tuna and sardine	18.7	28.4	51.5	83.1	8.0	8.9	-	-	-
Sardine, Monterey	7.5	32.7	59.9	100.0	-	-	-	-	-
Sardine, Southern Calif.	11.3	32.9	56.2	78.7	-	21.3	-	-	-
Miscellaneous	17.9	12.4	68.7	100.0	-	-	-	-	-
Total	26.0	33.2	40.5	68.7	19.7	5.1	4.7	1.8	-
Northwest and Alaska									
Halibut	30.3	20.3	49.4	14.7	-	-	4.8	80.5	-
Salmon	22.6	27.9	49.5	65.3	8.1	5.3	17.3	2.8	1.2
Miscellaneous	9.4	40.5	50.1	20.0	-	-	-	-	80.0
Total	27.7	22.8	49.5	35.2	3.2	2.1	9.5	46.1	3.9
United States and Alaska	31.4	33.7	35.4	32.1	5.8	4.3	23.8	25.5	8.5

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Source: Computations from returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

Where the deductions for operating expense and for vessel share are relatively small, the effect on the crew share and on crew earnings is, by contrast, normally favorable.

More detailed illustrations of the effect in practice of the various types of share agreement, as classified in Table XXII and XXIII, on the earnings of the crews subject to them will be furnished by the questionnaire data to be discussed in the next chapter.

ESTIMATES OF CREW EARNINGS ON SHARE VESSELS

The foregoing explanation shows how it is possible to estimate the earnings of the crew of a share vessel in a given fishery or area from one year to another, provided that any important changes in the other factors of the situation, from the base year to the one for which an estimate is to be made, are known. Such changes can be determined if the following information is available: the value of the catch; the principal commodities and services accounting for the operating expense; the unit prices of these latter; and the changes, if any, in the mode of charging the operating expense, and in the relationship of the vessel share to the gross or the net stock. As already remarked, substantial changes of the latter sort have been rare.

THE ESTIMATES FOR 1934 AND 1929

The original questionnaire was sent out before the expiration of 1934; and for the sake of simplicity as well it seemed desirable to confine the information asked for to a single year. Later, however, it was felt advisable to supplement the 1933 data with estimates of crew and vessel earnings for 1934 and for 1929, worked out by the method just outlined. These estimates are presented and discussed in Chapter XII.

CHAPTER VII

THE EARNINGS OF FISHERMEN ON SHARE VESSELS

THE BASIC DATA

The preceding chapter has defined the items into which the proceeds of the sale of the catch or the gross stock of a fishing vessel that works on share are divided. The present one discusses the data for these items that have been collected in connection with the study. It considers their relation to one another and the extent to which they vary, in individual areas and fisheries, from the apparent norms of the industry. These basic data are set forth in Tables XXIV to XXIX.

In these tables various ratios and averages are shown not only for each fishery, but also for the large geographical areas and for the country as a whole. These derived figures must be compared with one another and conclusions must be drawn from them with due reference to the remarks, in various chapters of the report, on the effect of the disproportionate representation in the sample of individual fisheries and of vessels of the larger tonnages, and in the light of Tables XLV, XLVII and LVI, which show some of these averages weighted to offset the distortion.

On the whole, however, the effect of such weighing, though much more than negligible, does not alter fundamentally the conclusions suggested by the crude data.

CLASSIFICATION BY TONNAGE AND ITS SIGNIFICANCE

Table XXIV shows by tonnage classes and Table XXV by area and fishery the average tonnage and average crew of all vessels for which usuable returns were received. These figures are chiefly for reference and do not require much comment.

As might be expected, the average crew tends to increase with the tonnage of a vessel, though not proportionately. Vessels of less than 15 tons show an average crew of 3.7 men and of .40 men per ton. Vessels of 15 to 29 tons show an average crew of 7.0 men, but only .33 men per ton. Vessels of 30 to 49 tons show an average crew of 8.8 men, but .24 men per ton. Finally, vessels of 50 tons and over show an average crew of 17.6 men, but only .15 men per ton.

TABLE XXIV

NUMBER OF VESSELS, AVERAGE TONNAGE, NUMBER OF FISHERMEN AND AVERAGE CREW FOR ALL VESSELS INCLUDED IN THE SAMPLE a/, BY MODE OF COMPENSATION AND BY TONNAGE CLASS, 1933.

Mode of Compensation and Tonnage Class	Number of Vessels	Average Tonnage	Number of Men	Average Crew
Share Vessels				
Under 15 tons	131	9.4	491	4
15 to 29 tons	109	21.2	804	7
30 to 49 tons	72	37.0	658	9
50 tons and over	118	106.1	1,694	14
Total	430	43.6	3,647	9
Wage Vessels				
Under 15 tons	62	9.3	229	4
15 to 29 tons	35	20.8	199	6
30 to 49 tons	9	37.0	55	6
50 tons and over	26	117.9	725	28
Total b/	132 b/	35.6	1,208 b/	9
Piece-rate Vessels				
50 tons and over	5	434.0	196	39
All Vessels				
Under 15 tons	193	9.4	720	4
15 to 29 tons	144	21.1	1,003	7
30 to 49 tons	81	37.0	713	9
50 tons and over	149	119.5	2,615	18
Grand total	567	45.2	5,051	9

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

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a/ Vessels for which usable data were obtained as a basis for the study.
b/ The disagreement between these totals for wage vessels and the totals of Tables XXXIII, XXXVIII and XXXIX is explained in the text.

TABLE XXV

NUMBER OF VESSELS, AVERAGE TONNAGE, NUMBER OF FISHERMEN AND AVERAGE CREW, FOR ALL VESSELS INCLUDED IN THE SAMPLE a/, BY MODE OF COMPENSATION AND BY AREA AND FISHERY, 1933

Mode of Compensation and Area and Fishery	Number of Vessels	Average Tonnage	Number of Men	Average Crew
Share Vessels				
New England				
Groundfish				
Vessels under 50 tons	18	21.3	133	7
Vessels of 50 tons and over	49	133.0	934	19
Total, Groundfish	67	106.6	1,067	16
Mackerel	14	44.1	169	12
Miscellaneous	24	14.5	119	5
Total, New England	105	77.2	1,355	13
Middle Atlantic				
Scallop	6	24.7	42	7
Miscellaneous	23	21.2	143	6
Total	29	21.9	185	6
South				
Red snapper	37	44.6	296	8
Shrimp	11	11.4	24	2
Miscellaneous	9	24.3	87	10
Total	57	35.0	407	7
Great Lakes				
Lake Erie	5	27.0	39	8
Lakes Huron and Michigan	16	18.4	73	5
Total	21	20.5	102	5
California				
Tuna	24	110.3	289	12
Tuna and sardine	12	49.1	124	10
Sardine, Monterey	10	18.0	110	11
Sardine, Southern California	6	28.7	57	10
Miscellaneous	6	11.2	33	6
Total	58	63.0	613	11

(Continued)

TABLE XXC
(Continued)

Mode of Compensation and Area and Fishery	Number of Vessels	Average Tonnage	Number of Men	Average Crew
Share Vessels (Continued)				
Northwest and Alaska				
Halibut	69	26.4	465	7
Salmon	65	16.8	339	5
Alaska herring	19	27.8	132	7
Miscellaneous	7	71.6	49	7
Total	160	24.7	985	6
Share Vessels, United States and Alaska	430	43.6	3,647	9
Wage Vessels				
New England				
Oyster	16	80.9	125	8
Middle Atlantic				
Oyster	21	22.3	100	5
Pound net	9	6.4	54	6
Total	30	17.5	154	5
South				
Menhaden	18	103.1	636	35
Oyster and shrimp	9	10.5	38	4
Total	27	73.3	674	25
Great Lakes				
Lakes Huron and Michigan	43	15.5	173	4
California				
Paranzella net	14	15.6	75	5
Northwest and Alaska				
Miscellaneous	3	19.7	7	2
Wage Vessels United States and Alaska b/	132 b/	35.6	1,208 b/	9
Piece-rate Vessels				
California				
Alaska cod	2	412.0	77	39
Northwest and Alaska				
Alaska cod	3	448.7	119	40
United States and Alaska	5	434.0	196	39

TABLE XXV
(Continued)

Mode of Compensation and Area and Fishery	Number of Vessels	Average Tonnage	Number of Men	Average Crew
All Vessels: Recapitulation by Area				
New England	121	77.7	1,480	12
Middle Atlantic	59	19.7	389	6
South	84	47.0	1,081	13
Great Lakes	83	14.9	375	4
California	72	63.5	765	10
Northwest and Alaska	166	32.2	1,111	7
United States and Alaska	567	45.2	5,051	9

SOURCE: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained as a basis for the study.

b/ The disagreement between these totals for wage vessels and the totals of Tables XXXIII, XXXVIII and XXXIX is explained in the text.

From the standpoint of labor costs, therefore, it would appear that fishing vessels become somewhat cheaper to operate with increase in size, though with respect to other costs the reverse is believed to be generally true. Under these circumstances it would seem normal for the compensation of labor to present a somewhat lower proportion of the gross in the case of large vessels, when compared with the smaller ones.

The average crews of shore and of wage vessels are not closely comparable. The reason for this will become clear later in dealing with average earnings in the case of the two classes.

Tables XXVI and XXVII, like Tables XIV and XV, cover all vessels for which usable data have been obtained. Table XXVI shows by tonnage class and Table XXVII by area and fishery the tonnage, the number of men, the value of the catch and the crew earnings from shares and wages of these vessels.

Of the total value of the 1933 catch of the vessels included in the sample, which amounted approximately to $7,500,000, 14 per cent was accounted for by vessels of less than 15 tons; 21 per cent by vessels of 15 to 29 tons; 14 per cent by vessels of 30 to 49 tons; and 52 per cent by vessels of 50 tons and over. There are no compiled data for the industry at large with which this breakdown can be compared.

TABLE XXVI

VALUE OF CATCH AND EARNINGS OF CREWS, WITH NUMBER OF MEN AND EARNINGS PER MAN, FOR ALL VESSELS INCLUDED IN THE SAMPLE a/, BY MODE OF COMPENSATION AND BY TONNAGE CLASS, 1933.

Mode of Compensation and Tonnage Class	Number of Vessels	Number of Men					Value of catch	Crew Earnings				Earnings per Man				Percentage of Value of Catch	
		Total	On Shares		On Wages in Lieu of Shares	Owners not on shares or wages		Total b/	From Shares	From Additional Wages	From Wages Only	From Shares and Wages b/	From Shares	From Additional Wages	From Wages Only	Total Crew Earnings	Earnings from Shares
			Total	Receiving Additional Wages													
Share Vessels																	
Under 15 tons	131	491	475	19	5	11	$ 540,292	$ 236,906	$ 232,415	$ 1,951	$ 2,540	$ 494	$ 489	$ 98	$ 508	43.8	43.0
15 to 29 tons	109	804	789	31	8	7	1,038,599	501,061	494,235	5,213	1,613	629	626	168	202	48.2	47.6
30 to 49 tons	72	658	649	16	6	3	923,582	456,322	447,594	5,146	3,582	697	690	322	597	49.4	48.5
50 tons and over	118	1,694	1,551	178 c/	143	-	3,425,737	1,109,440	990,997	42,640	75,803	655	639	240	530	32.4	28.9
Total	430	3,647	3,464	244 c/	162	21	5,928,210	2,303,729	2,165,241	54,950	83,538	635	625	225	516	38.9	36.5
Wage Vessels																	
Under 15 tons	62	229	-	-	204	25	455,778	138,496	-	-	138,496	679	-	-	679	30.4	-
15 to 29 tons	35	199	-	-	191	8	565,979	174,593	-	-	174,593	914	-	-	914	30.8	-
30 to 49 tons	9	55	-	-	48	7	119,402	42,436	-	-	42,436	884	-	-	884	35.5	-
50 tons and over	26	725	-	-	725	-	452,086	206,012	-	-	206,012	284	-	-	284	45.6	-
Total d/	132 d/	1,208 d/	-	-	1,168 d/	40 d/	1,593,245 d/	561,537 d/	-	-	561,537 d/	481 d/	-	-	481 d/	35.2	-
Piece-rate Vessels																	
50 tons and over	5	196	-	-	196	-	128,387	86,429	-	-	86,429	441	-	-	441	67.3	-
All Vessels																	
Under 15 tons	193	720	475	20	209	36	996,070	375,402	232,415	1,951	141,036	549	489	98	675	37.7	23.3
15 to 29 tons	144	1,003	789	31	199	15	1,604,578	675,654	494,235	5,213	176,206	684	626	168	885	42.1	30.8
30 to 49 tons	81	713	649	16	54	10	1,042,984	498,758	447,594	5,146	46,018	709	690	322	852	47.8	42.9
50 tons and over	149	2,615	1,551	178 c/	1,064	-	4,006,210	1,401,881	990,997	42,640	368,244	536	639	240	346	35.0	24.7
Grand Total	567	5,051	3,464	244 c/	1,526	61	7,649,842	2,951,695	2,165,241	54,950	731,504	591	625	225	479	38.6	28.3

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained as a basis for the study.
b/ Exoluding percentage bonuses charged to vessel share or operating expense.
c/ Two men on a New England groundfish vessel of more than 50 tons who were reported as receiving additional wages, but without a statement of the amount paid, have been excluded from this figure.
d/ The disagreement between these totals for wage vessels and the totals of Tables XXXIII, XXXVIII and XXXIX is explained in the text.

TABLE XXVII

VALUE OF CATCH AND EARNINGS OF CREWS, WITH NUMBER OF MEN AND EARNINGS PER MAN, FOR ALL VESSELS INCLUDED IN THE SAMPLE a/, BY MODE OF COMPENSATION AND BY AREA AND FISHERY, 1933

Mode of Compensation and Area and Fishery	Number of vessels	Number of Men					Value of catch	Crew earnings				Earnings per Man				Percentage of Value of catch	
		Total	On Shares		On wages in lieu of shares	Owners not on shares or wages		Total b/	From shares	From additional wages	From wages only	From shares and wages b/	From shares	From additional wages	From Wages Only	Total Crew Earnings	Earnings from Shares
			Total	Receiving additional wages													
Share Vessels																	
New England																	
Groundfish																	
Vessels under 50 tons	18	133	132	89	1	-	$ 349,473	$ 137,995	$ 132,376	$ 4,059	$ 1,560	$ 1,038	$ 1,003	$ 135	$ 1,560	39.5	37.9
Vessels of 50 tons and over	49	934	806	173	128 g/	-	1,842,070	500,538	397,946	40,301	62,291	536	494	233	487	27.2	21.6
Total, Groundfish	67	1,067	938	262	129 c/	-	2,191,543	638,533	530,322	44,360	63,851	598	565	219	495	29.1	24.2
Mackerel	14	169	169	22	-	-	121,047	50,869	44,988	5,681	-	300 h/	266 h/	258 h/	-	41.9	37.2
Miscellaneous	24	119	118	6	1	-	217,742	80,728	79,602	1,050	76	678	675	175	76	37.1	36.6
Total, New England	105	1,355	1,225	230	130 g/	-	2,530,332	769,930	654,912	51,091	63,927	568	535	221	492	30.8	25.9
Middle Atlantic																	
Scallop	6	42	42	-	-	-	106,108	47,073	47,073	-	-	1,121	1,121	-	-	44.4	44.4
Miscellaneous	23	143	142	5	-	2	156,493	69,113	68,133	980	-	490	483	196	-	44.2	43.5
Total	29	185	183	5	-	2	262,601	116,186	115,206	980	-	635	630	196	-	44.2	43.9
South																	
Red snapper	37	296	292	2	4	-	195,368	54,455 g/	52,135 g/	120 g/	2,200 g/	184 g/	179 g/	60 g/	550 g/	27.9	26.7
Shrimp	11	24	24	-	-	-	26,838	13,798	13,798	-	-	575	575	-	-	51.4	51.4
Miscellaneous	9	87	87	-	-	-	77,587	29,125	29,125	-	-	331	335	-	-	37.1	37.5
Total	57	407	403	2	4	-	299,793	97,378	95,058	120	2,200	239	236	60	550	32.4	31.7
Great Lakes																	
Lake Erie	5	29	29	-	-	-	39,385	19,746	19,746	-	-	681	681	-	-	50.1	50.4
Lakes Huron and Michigan	16	73	60	2	10	3	87,059	47,508	44,184	420	2,904	679	736	210	290	54.6	50.8
Total	21	102	89	2	10	3	126,444	67,254	63,930	420	2,904	679	718	210	290	53.2	50.6
California																	
Tuna	24	289	274	2	15	-	1,058,529	384,500 f/	370,063 f/	985	13,512	1,330 f/	1,351 f/	463	901	36.3	35.0
Tuna and sardine	12	124	124	3	-	-	233,867	121,970 f/	120,556 f/	1,414	-	984 f/	972 f/	471	-	52.2	51.5
Sardine, Monterey	10	110	110	-	-	-	92,380	55,311	55,311	-	-	503	503	-	-	59.9	59.9
Sardine, Southern Calif.	6	57	56	-	-	1	72,114	40,996	40,996	-	-	732	732	-	-	56.8	56.8
Miscellaneous	6	33	33	-	-	-	18,766	12,899	12,899	-	-	391	391	-	-	68.7	68.7
Total	58	613	597	5	15	1	1,475,656	615,676	599,825	2,339	13,512	1,006	1,005	468	901	41.7	40.6
Northwest and Alaska																	
Halibut	69	465	465	-	-	-	808,558	398,371	398,371	-	-	857	857	-	-	49.3	49.3
Salmon	65	339	321	-	3	15	225,657	111,820	110,825	-	995	345	345	-	332	49.6	49.1
Alaska herring	19	132	132	-	-	-	144,660	100,772	100,772	-	-	763	763	-	-	69.7	69.7
Miscellaneous	7	49	49	-	-	-	54,509	26,342	26,342	-	-	538	538	-	-	48.3	48.3
Total	160	985	967	-	3	15	1,233,384	637,305	636,310	-	995	657	658	-	332	51.7	51.6
Share Vessels, United States and Alaska	430	3,647	3,464	244	162 g/	21	5,928,210	2,303,729	2,165,241	54,950	83,538	635	625	225	516	38.9	36.5
Wage Vessels																	
New England																	
Oyster	16	125	-	-	124	1	417,518	88,127	-	-	88,127	711	-	-	711	21.1	-
Middle Atlantic																	
Oyster	21	100	-	-	96	4	316,780	70,773	-	-	70,773	737	-	-	737	22.3	-
Pound net	9	54	-	-	54	-	61,852	36,839	-	-	36,839	682	-	-	682	59.6	-
Total	30	154	-	-	150	4	378,632	107,612	-	-	107,612	717	-	-	717	28.4	-
South																	
Menhaden	18	636	-	-	636	-	224,519	143,255	-	-	143,255	225	-	-	225	63.8	-
Oyster and shrimp	9	38	-	-	34	4	55,447	19,801	-	-	19,801	582	-	-	582	35.7	-
Total	27	674	-	-	670	4	279,966	163,056	-	-	163,056	243	-	-	243	58.2	-
Great Lakes																	
Lakes Huron and Michigan	42	173	-	-	142	31	205,000	94,901	-	-	94,901	668	-	-	668	46.3	-
California																	
Paranzella net	14	75	-	-	75	-	302,679	104,166	-	-	104,166	1,389	-	-	1,389	34.4	-
Northwest and Alaska																	
Miscellaneous	3	7	-	-	7	-	9,450	3,675	-	-	3,675	525	-	-	525	38.9	-
Wage Vessels, United States and Alaska g/	132 g/	1,208 g/	-	-	1,168 g/	40 g/	1,593,245 g/	561,537 g/	-	-	561,537 g/	481 g/	-	-	481 g/	35.2	-
Piece-rate Vessels																	
California																	
Alaska cod	2	77	-	-	77	-	41,229	28,313	-	-	28,313	368	-	-	$ 368	68.7	-
Northwest and Alaska																	
Alaska cod	3	119	-	-	119	-	87,158	58,116	-	-	58,116	488	-	-	488	66.7	-
United States and Alaska	5	196	-	-	196	-	128,387	86,429	-	-	86,429	441	-	-	441	67.3	-
All Vessels: Recapitulation by area																	
New England	121	1,480	1,225	230	254 g/	1	2,947,850	858,057	654,912	51,091	152,054	580	535	221	599	29.1	22.0
Middle Atlantic	59	339	183	5	150	6	641,253	223,798	115,206	980	107,612	672	630	196	717	34.9	18.0
South	84	1,081	403	2	674	4	579,759	260,434	95,058	120	165,256	242	236	60	245	44.9	16.4
Great Lakes	63	275	89	2	152	34	331,444	162,155	63,930	420	97,805	673	718	210	643	48.9	19.3
California	74	765	597	5	167	1	1,819,564	748,155	599,825	2,339	145,991	979	1,005	468	874	41.1	33.0
Northwest and Alaska	166	1,111	967	-	129	15	1,329,992	699,096	636,310	-	62,786	639	658	-	487	52.6	47.8
United States and Alaska	567	5,051	3,464	244	1,526 g/	61	7,649,842	2,951,695	2,165,241	54,950	731,504	591	625	225	479	38.6	28.3

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained as a basis for the present study.
b/ Excluding percentage bonuses charged to gross stock or vessel share.
c/ Two men on a New England groundfish vessel of more than 50 tons who were reported as receiving additional wages, but without a statement of the amount paid, have been excluded from this figure.
d/ The extra half shares allotted to most mates, engineers and first hands on red snapper vessels, in lieu of additional wages, are included in the crew share and not in the additional wage item.
e/ These wages were reported as at the rate of $50 per trip. The item in the table assumes the maximum probable number of trips during the year, and may be somewhat higher than the amount actually paid.
f/ Including extra shares or half shares allotted to four captains in lieu of bonuses charged to the vessel share or the operating expense.
g/ The disagreement between these totals for wage vessels and the totals of Tables XXIIII, XXIVIII and IXIII is explained in the text.
h/ The data for 10 of the 14 vessels in the mackerel fishery covered only the mackerel season proper, and not the winter participation in the Southern trawl fishery (see Table I). The latter was the more profitable part of the operation of these vessels in 1933, and because of the omission the average earnings per man shown above should be raised about 75 per cent for comparison with the other fisheries.

Table VI has already shown that the value of the average catch of the sample vessels increased steadily with their size. For vessels of less than 15 tons this average was $5,161; for those of 15 to 29 tons it was $11,143; for those of 30 to 49 tons, $12,876; and for those of 50 tons and over, $26,887.

The value of the catch per crew member varied comparatively little with the size of a vessel.

The figures for total earnings in Tables XXVI and XXVII represent the whole labor cost of the vessels concerned, except that in the case of those working on shares they do not include the percentage bonuses which are frequently paid, chiefly to the captains. Data for these latter payments are presented and discussed in Chapter X.

Table XXVI shows that earnings per man tended to increase with the size of vessels up to 50 tons. Individual earnings for those of 50 tons and over, however, showed a falling off in this respect. This class is heavily weighted with the corporation-owned vessels in the New England groundfishery and in the red snapper fishery of the South.

MISSING DATA FOR OPERATING EXPENSE AND THEIR SIGNIFICANCE

In the case of some share vessels for which the value of the catch and the earnings of the crews were reported no data for vessel share or for operating expense were given. This accounts for the differences between Tables XXIV to XXVII and Tables XXVIII and XXIX. The latter show vessel share and operating expense, in addition to the number of men, the value of the catch and crew earnings, but cover a somewhat smaller number of vessels than Tables XXIV to XXVII.

Failure to report vessel share or operating expense was due in a few cases to oversight. Most of the instances in which these items were not returned however, were concentrated in a few fisheries in which special conditions made it difficult to supply figures comparable with those for the rest of the industry. This applies particularly to the Alaska herring fishery and to a company in the South which operated both red snapper and shrimp vessels, and which was unable to segregate completely the figures for the two.

Except in these special cases it makes little difference whether the data for gross stock and crew earnings in Tables XXVI and XXVII or those in Tables XXVIII and XXIX are used, as far as the representativeness of the samples are concerned.

For reasons to be explained later operating expense was not generally reported for vessels working on wages. Tables XXVIII and XXIX, therefore, include data for shore vessels only.

The remainder of this chapter deals in more detail with the share vessel data in Tables XXVII and XXIX.

TABLE XXVIII

VALUE OF CATCH, OPERATING EXPENSE, AND VESSEL AND CREW SHARES, FOR SAMPLE a/ SHARE VESSELS FOR WHICH OPERATING EXPENSE WAS REPORTED, BY TONNAGE CLASS, 1933.

Tonnage Class	Number of vessels	Average Tonnage	Number of Men	Average Crew	Value of Catch	Operating Expense	Vessel Share	Crew Share b/	Percentage of value of catch: Operating Expense	Vessel Share	Crew Share b/	Operating expense and vessel and crew share
Share Vessels												
Under 15 tons	112	8.9	420	4	$ 459,441	$ 164,119	$ 112,609	$ 184,718	35.7	24.5	40.2	100.4
15 to 29 tons	98	20.8	738	8	947,118	222,543	285,582	443,483	23.5	30.2	46.8	100.5
30 to 49 tons	51	37.5	575	9	845,520	214,181	234,587	394,966	25.3	27.8	46.7	99.8
50 tons and over	114	105.7	1,649	15	3,397,674	1,171,638	1,270,728	978,984	34.5	37.4	28.8	100.7
Total, share vessels reporting operating expense	385	45.1	3,382	9	5,649,753	1,772,481	1,903,676	2,002,170	31.4	33.7	35.4	100.5
Share vessels not reporting operating expense	45	31.0	265	6	278,457	-	50,310	163,071	-	-	-	-
All share vessels included in sample a/	430	43.6	3,647	9	5,928,210	1,772,481	1,953,986	2,165,241	-	-	-	-

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

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a/ Vessels for which usable data were obtained for the purposes of the study.
b/ Including the extra shares paid in lieu of additional wages or percentage bonuses on most red snapper and on certain tuna, and tuna and sardine vessels.

TABLE XXIX

VALUE OF CATCH, OPERATING EXPENSE AND VESSEL AND CREW SHARES, FOR SAMPLE[a] SHARE VESSELS FOR WHICH OPERATING EXPENSE WAS REPORTED, BY AREA AND FISHERY, 1933.

Area and Fishery	Number of vessels	Average Tonnage	Total Number of Men	Average Crew	Value of Catch	Operating expense	Vessel share	Crew share [a]	Percentage of value of catch: Operating Expense	Vessel Share	Crew Share [b]	Operating expense and vessel and crew shares
Vessels working on shares												
New England												
Groundfish												
Vessels under 50 tons	18	21.3	133	7	$ 349,473	$ 97,115	$ 123,765	$ 132,376	27.8	35.4	37.9	101.1
Vessels of 50 tons and over	48	139.5	915	19	1,828,070	713,779	749,457	392,170	39.0	41.0	21.5	101.5
Total, Groundfish	66	107.3	1,048	16	2,177,543	810,894	873,222	524,546	37.2	40.1	24.1	101.4
Mackerel	14	44.1	169	12	121,047	36,294	40,066	44,988	30.0	33.1	37.2	100.3
Miscellaneous	23	14.7	113	5	216,701	71,222	66,549	79,082	32.9	30.7	36.5	100.1
Total, New England	103	78.0	1,330	13	2,515,291	918,410	979,837	648,616	36.5	39.0	25.8	101.3
Middle Atlantic												
Scallop	6	24.7	42	7	106,108	22,764	36,404	47,073	21.5	34.3	44.4	100.2
Miscellaneous	22	21.6	140	6	150,493	44,773	39,085	65,523	29.8	26.0	43.5	99.3
Total	28	22.3	182	7	256,601	67,537	75,489	112,596	26.3	29.4	43.9	99.6
South												
Red snapper	37	44.6	296	8	195,368	80,784	63,968	52,135 [b]	41.3	32.7	26.7 [b]	100.7
Shrimp	5	62.0	12	2	11,169	3,126	2,091	5,964	28.0	18.7	53.4	100.1
Miscellaneous	9	24.3	87	10	77,587	13,485	35,962	29,125	17.4	46.4	37.1	100.9
Total	51	37.3	395	8	284,124	97,395	102,021	87,224	34.3	35.9	30.7	100.9
Great Lakes												
Lakes Huron and Michigan	12	14.2	53	4	61,807	12,079	17,677	32,510	19.5	28.6	52.6	100.7
California												
Tuna	24	110.3	289	12	1,058,529	319,782	366,759	370,063 [b]	30.2	34.6	35.0 [b]	99.8
Tuna and Sardine	12	49.1	124	10	233,867	43,643	66,484	120,556 [b]	18.7	28.4	51.5 [b]	98.6
Sardine, Monterey	10	18.0	110	11	92,380	6,900	30,169	55,311	7.5	32.7	59.9	100.1
Sardine, Southern Calif.	5	29.4	47	9	57,924	6,552	19,034	32,538	11.3	32.9	56.2	100.4
Miscellaneous	6	11.2	33	6	18,766	3,355	2,324	12,899	17.9	12.4	68.7	99.0
Total	57	63.7	603	11	1,461,466	380,232	484,770	591,367	26.0	33.2	40.5	99.7
Northwest and Alaska												
Halibut	68	26.6	461	7	802,583	243,086	162,761	396,871	30.3	20.3	49.4	100.0
Salmon	60	17.1	323	5	216,595	48,922	60,356	107,287	22.6	27.9	49.5	100.0
Miscellaneous	6	28.8	35	6	51,286	4,820	20,765	25,699	9.4	40.5	50.1	100.0
Total	134	22.5	819	6	1,070,464	296,828	243,882	529,857	27.7	22.8	49.5	100.0
Grand Total, share vessels for which operating expense was reported	385	45.1	3,382	9	5,649,753	1,772,481	1,903,676	2,002,170	31.4	33.7	35.4	100.5
Sample[a] share vessels for which operating expense was not reported	45	31.0	265	6	278,457	-	50,310	163,071	-	-	-	-
Grand Total, sample[a] share vessels	430	43.6	3,647	9	5,928,210	1,772,481	1,953,986	2,165,241	-	-	-	-

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

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a/ Vessels for which usable data were obtained for the purposes of the study.
b/ Including the extra shares paid in lieu of additional wages or percentage bonuses on most red snapper and on certain tuna, and tuna and sardine, vessels.

COMPARISON OF OPERATING EXPENSE AND OF VESSEL AND CREW SHARES

Table XXIX shows that in 1933 each of the three items of operating expense, vessel share and crew share came near to representing one-third of the gross of the sample share vessels. This approximate equality of the main financial factors in share operation, which seems to be maintained without substantial change from year to year, furnishes a convenient basis for comparing the results in the various areas and fisheries.

The tables show no fisheries in which operating expense in 1933 materially exceeded one-third of the gross. If such a case had occurred the result would have been abnormally unfavorable with respect to the earnings of either the vessel or the crew, or both. There were a number of fisheries - chiefly among the smaller ones - where operating expense was materially less than one-third. This was notably the case with the scallop fishery of the Middle Atlantic area, on the Great Lakes, in the sardine fisheries of California, and in some of the miscellaneous minor fisheries. In none of these cases was the proportion of the gross accounted for by the vessel share particularly large. The proportion representing the earnings of the crews, therefore, was relatively high; and since the number of men required to operate the gear that these vessels employ is not large, the individual earnings of their workers were relatively good for the areas concerned and for the year.

Even though the percentage of the gross stock of a share vessel required for operating expense is not high, the earnings of the crew may be adversely affected by the proportions charged to the vessel and the crew jointly and to the latter alone, as shown in Table XXIII. Again, even where the percentage of operating expense charged to the crew alone is not particularly large, the percentage of the crew's earnings will be reduced if the vessel share represents a high proportion of the gross or the net. Where the average crew share in a fishery in 1933 was much below the normal third of the gross, the fact was associated in some cases with the first of these conditions, in some with the second, and in some with the two combined.

The most striking cases of a low proportion of crew share in 1933 were supplied by the vessels of 50 tons and over in the New England groundfishery and by the red snapper fishery of the South. In both these instances the proportion of operating expense charged to the crew alone is high. In the New England groundfishery the proportion of the gross represented by the vessel share is also rather large. In the red snapper fishery the latter proportion is low, but the ratio of operating expense to the gross in 1933 was particularly high.

THE DATA FOR INDIVIDUAL CREW SHARES

In Table XXVII there is also shown for each area and fishery the average share per individual crew member. The general rule is that the members of the crew of a lay vessel are allotted one share each, and that any whose duties or responsibilities are considered as entitling them to additional or higher compensation receive it in the form of a wage or bonus. For this reason the figures for average individual shares

in Table XXVII come very near to representing the actual average earnings of the ordinary fishermen on the vessels in question, and of the other members of their crews who did not receive special compensation.

There is, however, a little difference between the two averages. In the case of a few California tuna and sardine vessels the crew share includes an extra share or half share paid to the captain, or occasionally to the mate or engineer, in lieu of a percentage bonus. In the case of most of the red snapper vessels, the crew share includes extra half shares paid to the mate, the engineer and the first hand or striker. As a result the actual earnings of ordinary fishermen and of others not receiving special compensation average a little smaller than the individual shares shown in Table XXVII. But except in the red snapper fishery the difference is not of consequence.

A comparison of the ratios borne by the total crew share in the various fisheries to the value of the catch, as shown in Table XXVII, with the average share per men indicates a tendency to a correlation. Both the New England groundfishery and the red snapper fishery of the South, particularly the latter, showed low individual earnings as well as low propertions of crew share.

There are, however, exceptions to this relationship. The crews of the New England mackerel vessels in 1933 received a normal share of the gross, but because of low prices for their product realized comparatively small individual earnings. Their total earnings for the year, however, averaged 75 per cent higher than indicated in Table XXVII, since in the case of ten of the vessels in the sample for the mackerel fishery the shares realized from the winter trawling operations in the South were not included in the data. Since the prices received for this trawl catch were relatively much better in 1933 than were those received for mackerel, the excluded shares are believed to have represented about half the earnings for the year of the crews of these ten vessels.

In the Monterey sardine fishery in California, and in the salmon fishery of the Pacific Northwest also, normal ratios of crew share to gross stock were combined in 1933 with absolutely low earnings per man, though the discrepancy was less extreme than in the case of the mackerel fishery.

THE FACTOR OF FOOD COST

In comparing these average shares per man allowance has to be made for the fact that the cost of food for the crews while out of port has been deducted from the gross stock before arriving at the crew share shown in Tables XXVII and XXIX in some cases and not in others. On the Great Lakes, in the shrimp ffishery of the south and in the salmon troll fishery of Washington and Oregon the vessels represented by the sample are not out as a rule for more than a day at a time, and the men ordinarily supply their own food. In the Monterey sardine and the Alaska herring fisheries, and

in other occasional instances, the amount of the crew share shown in the tables was arrived at before deducting the cost of the mess.

In all these cases, consequently, the individual shares shown in Table XXVII are somewhat higher than they should be for strict comparison with the corresponding figures for the share vessel fisheries of New England and Middle Atlantic area, for the California tuna fishery, for the Pacific halibut fishery, and for some others.

No data are at present available for adjusting the individual share figures accurately to offset this difference. It does not appear, however, that if the cost of food, where it has not already been deducted, could be specifically allowed for, the correction would affect materially the principal comparisons which are suggested by Table XXVII as it stands.

WAGES IN ADDITION TO OR IN LIEU OF SHARES

The earnings of the crews of share vessels which have thus far been discussed are those from shares in a lay only. These represent in nearly all instances the sole earnings of at least 70 per cent, and in a large proportion of cases of 80 to 100 per cent, of such crews. To arrive, however, at figures for the total compensation of labor comparable to those ordinarily given for other industries, it is necessary to take into account the wages paid on some of these vessels in addition to or in lieu of shares. The gross earnings from shares and wages taken together, consequently, are also shown in Tables XXVI and XXVII. The addition of these wage items does not, however, change the ratio of crew earnings to gross stock in any case enough to necessitate further comment.

The distribution of wage payments on share vessels by area and fishery, and their relation to the gross stock and the crew share of the specific groups of vessels on which they are paid, are shown in further detail in Tables XXX, XXXI, and XXXII. These make it plain that such payments are concentrated heavily in New England - primarily in the groundfish fleet and secondarily in the mackerel fishery - and to a smaller extent in the tuna fishery of California. Elsewhere the practice of paying wages to the crews of share vessels is occasional only.

When the share vessels that pay their crews partly in the form of wages are taken by themselves, the proportion of their total labor cost represented by the wage item of course becomes much more substantial than appears in Table XXVII. Of the total crew compensation shown in Table XXXII ten per cent is accounted for by payments of wages in lieu of shares, and six per cent by payments of wages in addition to shares. But even when the share vessels on which wages are paid are thus segregated, 84 per cent of the total compensation paid their crews in 1933 was in the form of shares.

The compensation in addition to shares which is shown in Tables XXX and XXXII includes only that which is paid at fixed rates, and which may therefore be classified as wages in the ordinary sense.

TABLE XXX

RECIPIENTS OF WAGES IN ADDITION TO SHARES ON SAMPLE a/ SHARE VESSELS, WITH THE VALUE OF THE CATCH, THE CREW SHARE AND THE VOLUME OF ADDITIONAL WAGES, BY AREA AND FISHERY, 1933.

Area and fishery	Number of vessels	Average tonnage	Total number of men b/	Number of Men on Shares: Total b/	Number of Men on Shares: Receiving additional wages	Value of Catch	Crew Share	Volume of Additional Wages
New England Groundfish								
Vessels under 50 tons	8	20.1	72	72	29	$ 112,184	$ 37,837	$ 4,059
Vessels of 50 tons and over	48	139.5	915	787	173	1,828,070	392,170	40,301
Total, groundfish	56 f/	122.5	987 f/	859 f/	202 e/	1,940,254	430,007	44,360
Mackerel	11	42.8	136	136	22	90,410	32,876	5,681
Miscellaneous	3	15.3	25	25	6	29,374	12,503	1,050
Total, New England	70 f/	105.4	1,148 f/	1,020 f/	230 e/	2,060,038	480,786	51,091
Middle Atlantic, South, and Great Lakes c/	5	28.8	51	51	9	43,649 e/	17,812	1,520 e/
California Tuna, and Tuna and sardines d/	3	92.3	35	34	5	117,264 e/	39,555	2,339 e/
United States and Alaska	78 f/	100.0	1,234 f/	1,105 f/	244 f/	2,220,951 e/	538,153	54,950 e/

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ The difference between the figures in these columns are accounted for by men working on wages only, who are not shown on this table.

c/ This group includes two vessels, averaging 49 tons each, with 29 men, in the Middle Atlantic miscellaneous fishery, two averaging 13 tons each, with 15 men, in the red snapper fishery of the South, and one of 20 tons, with 7 men, in the Lakes Huron and Michigan area, consolidated to avoid disclosing individual financial data.

d/ This group includes two tuna vessels, averaging 113 tons each, with 25 men, and one tuna and sardine vessel of 51 tons, with 10 men, consolidated to avoid disclosing individual financial data.

e/ The extra shares or half shares paid to most mates, engineers and first hands on red snapper vessels and on four tuna, or tuna and sardine, vessels are included in the item of crew share and excluded from the item of additional wages.

9680 f/ Excludes a cook and an engineer on a New England groundfish vessel of more than 50 tons, for whom the rates and amount of the wages paid in 1933 were not reported on the schedule.

TABLE XXXI

RECIPIENTS OF WAGES IN LIEU OF SHARES ON SAMPLE[a] SHARE VESSELS, WITH THE VALUE OF THE CATCH, THE CREW SHARE AND THE VOLUME OF WAGES, BY AREA AND FISHERY, 1933.

Area and Fishery	Number of Vessels	Average Tonnage	Number of Men		Value of Catch	Crew Share	Wages in Lieu of Shares
			Total	Receiving Wages in Lieu of Shares			
New England							
Groundfish and Miscellaneous b/	37	152.4	660	130	$ 1,523,205	$ 310,706	$63,927
South							
Red snapper	2	40.0	18	4	17,965	4,392	2,200
Great Lakes							
Lakes Huron and Michigan	4	16.5	22	10	21,284	12,195	2,904
California							
Tuna	9	131.3	118	15	489,954	165,648	13,512
Northwest and Alaska	3	23.0	24	3	16,031	8,065	995
United States & Alaska	55	127.9	842	162	2,068,439	501,006	83,538

SOURCE: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ Includes one vessel of 5 tons, with 5 men, in the miscellaneous fishery, and one of 10 tons, with 8 men, in the group of groundfish vessels under 50 tons, consolidated to avoid disclosing individual financial data. The others are all groundfish vessels of 50 tons or more.

TABLE XXXII

ALL RECIPIENTS OF WAGES ON SAMPLE a/ SHARE VESSELS, WITH THE VALUE OF THE CATCH, THE CREW SHARE AND THE TOTAL VOLUME OF WAGES, BY AREA AND FISHERY, 1933.

Area and Fishery	Number of Vessels	Average Tonnage	Number of Men: Total b/	On Shares	Receiving Additional Wages	Receiving Wages in Lieu of Shares	Value of Catch	Crew Share	Additional Wages	Wages in Lieu of Shares	Total Compensation of Crew f/	Percentage of Value of Catch: Crew Share	Total Compensation of Crew f/
New England													
Groundfish													
Vessels under 50 tons	9	19.0	80	79	29	1	$ 127,877	$ 43,949	$ 4,059	$ 1,560	$ 49,568	34.4	38.8
Vessels of 50 tons and over	48	139.5	915	787	173	128	1,828,070	392,170	40,301	62,291	492,638	21.5	26.9
Total, Groundfish	57	120.5	995	866	202	129	1,955,947	436,119	44,360	63,851	542,206	22.3	27.7
Mackerel	12	45.2	146	146	22	-	104,896	39,297	5,681	-	44,978	37.5	42.9
Miscellaneous c/	4	12.7	30	29	6	1	30,535	13,217	1,050	76	14,343	43.3	47.0
Total, New England	73	102.2	1,171	1,041	230	130	2,091,378	488,633	51,091	63,927	601,527	23.4	28.8
Middle Atlantic & South d/	6	34.0	62	56	7	4	53,771	18,378 g/	1,100 g/	2,200	21,678	34.2	40.3
Great Lakes													
Lakes Huron & Michigan	5	17.2	29	19	2	10	29,127	16,021	420	2,904	19,345	55.0	66.4
California													
Tuna, and tuna & sardines e/	11	32.7	140	125	5	15	552,925	186,151 g/	2,339 g/	13,512	202,002	33.7	36.5
Northwest and Alaska													
Salmon	3	23.0	24	21	-	3	16,031	8,065	-	995	9,060	50.3	56.5
United States & Alaska	98	93.7	1,426	1,264	244	162	2,743,232	717,248 g/	54,950 g/	83,538	853,612	26.1	31.1

Source: Returns to N.R.A. questionnaires on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.
b/ The figures in this column are the total numbers of men on share vessels, i.e., those working on shares plus those receiving wages in lieu of shares.
c/ This group includes four vessels, averaging 12.7 tons each, with 30 men, in the miscellaneous fishery, consolidated to avoid disclosing individual financial data.
d/ This group includes two vessels, averaging 49 tons each, with 29 men, in the Middle Atlantic miscellaneous fishery, and four vessels, averaging 26.5 tons each, with 33 men, in the red snapper fishery of the South, consolidated to avoid disclosing individual financial data.
e/ This group includes ten vessels, averaging 130.9 tons each, with 130 men, in the tuna fishery, and one vessel of 51 tons, with 10 men, in the tuna and sardine fishery, consolidated to avoid disclosing individual financial data.
f/ Excluding percentage bonuses charged to vessel share or operating expense.
g/ The extra shares or half shares paid to most mates, engineers and first hands on red snapper vessels and on four tuna, or tuna and sardine, vessels are included in the item of crew share and excluded from the item of additional wages.

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The extra shares or half shares paid to most mates, engineers and first hands of red snapper vessels, and on some California tuna and sardine vessels, are not shown in these tables, but are included in the crew share items of Tables XXVI to XXIX.

CHAPTER VIII

EARNINGS ON WAGE AND ON PIECE-RATE VESSELS

COMPARISON OF SHARE AND WAGE EARNINGS

The data on operating expense and on crew earnings which were discussed in the preceding chapter were those for share vessels only. Tables XXIV, to XXVII, however, also include data for the sample vessels working on wages and on piece rates.

The crude average earnings per man on share and on wage vessels in 1933, as shown by Table XXVII, do not differ materially. The comparison of the two classes, however, is not as simple as this fact might appear to indicate.

In the case of the Great Lakes the approximate equality of average earnings per man on share and on wage vessels seems to reflect the direct competition of the two classes, which take the same species for the same markets. The available evidence indicates that the average in this area were also about equal in 1934, and it is probable that the same was true in 1929.

The fact, however, that in 1933 the crude average earnings per man in the wage vessel fisheries elsewhere than on the Great Lakes differed so little from the average for share vessels is an accidental condition due to the composition of the sample and peculiar to that year. These fisheries do not constitute anything like a homogeneous group, and the average earnings of the fishermen engaged in them is much affected by the proportions accounted for by the specialized oyster and menhaden industries.

Moreover, the decline in average earnings on wage vessels from 1929 to 1933 was certainly much less than the corresponding decline in the case of share vessels, although not much detailed information is available on the subject at the moment.(*)

In 1929 and again in 1934, consequently, the average earnings of wage vessel crews were in general below those of share workers. This is probably a normal condition, for which it is easy to see reasons. The average for wage vessels, however, is a good deal affected by the rates paid to the crews of menhaden vessels in the South, who are largely colored. The paranzell net fishery of San Francisco, indeed, pays high wages; but it does not employ emough men to affect the average correspondingly.

(*) The weighted average increase from 1933 to 1934 in a group of specimen weekly wage rates was only about six per cent; but allowance ought probably to be made also for recovery in the average number of weeks worked.

RELATION OF WAGES TO VALUE OF CATCH

The wage vessels included in the sample show, on an average, about the same ratio of total crew earnings to value of catch as the share vessels. There are, however, pronounced differences in the various wage fisheries. In the oyster fishery this ratio is very low. This is because in the North Atlantic area, from which the data for oyster vessels obtained in connection with the study were mainly received, the production comes entirely from privately owned or leased and artificially propagated beds. The industry in that region, consequently, has analogies with farming and with stock raising as much as with fishing; and the labor required for its primary production constitutes a considerably smaller element in its total cost than in the case of the fishing industry proper. In the Middle Atlantic pound net fishery, on the other hand, in the menhaden fishery, and to a less pronounced degree on the wage vessels of the Great Lakes, the ratio of wage payments to gross operating revenue in 1933 was high.

LACK OF EXPENSE DATA FOR WAGE VESSELS

The fact that operating expense data were not obtained for wage vessels in connection with the present study was largely, in the first instance, an accidental result of the form of the questionnaire. In any event, however, the problem of obtaining such information is different from that arising in the case of share vessels.

Since the earnings of share fishermen usually depend on the amount taken out for operating expense and for vessel share, it has been assumed that they were entitled to be informed regarding the various items; and some degree of publicity with respect to the finances of share vessels has therefore been usual. But efforts to obtain data on expenses and on owners' profits or losses in the case of vessels that do not work on shares meet with the same difficulties as in the case of ordinary industrial enterprises. A systematic attempt to assemble financial data with regard to wage vessels, therefore, would have to be handled in a manner somewhat different from that found adequate in connection with the present study.

VESSELS WORKING ON PIECE RATES

The data in Tables XXVI and XXVII with regard to the earnings of the crews of vessels working on piece rates do not call for much comment. The group is small and very homogeneous. The fishing is done with hand lines from dories, and the proportion of the value of the catch accounted for by wages is high - approximately two-thirds of the total. In this case, however, the compensation reported includes the wages of the dress gangs. The work of the latter, which clean and salt down the catch on board, is not strictly part of the fishing operations.

The crews of these vessels are relatively large and the price of the single species of fish that they bring in has been low. For these reasons the average individual earnings in 1933 were not high, and were particularly low for the Pacific coast.

CHAPTER IX

OTHER CONSIDERATIONS RELATING TO FISHERMEN'S EARNINGS

GEOGRAPHICAL VARIATIONS

The recapitulation by area which constitutes the last section of Table XXVII provides crude data for a comparison of the average earnings of fishermen in 1933 in various parts of the United States. As pointed out at the beginning of Chapter VII, however, such a comparison is affected by the variation in the percentages of the total numbers of vessels and of men, which are accounted for by the questionnaire samples for individual fisheries. The extent of this variation is indicated in Table LIV. To make it possible to allow for its effect Table LVI shows an adjusted figure for the average earnings per man for each area and for the United States and Alaska, arrived at by weighting the crude averages for the various fisheries in Table XXVII by the approximate total number of men engaged in each.

The changes in these averages and in their relation to one another which result from the weighting do not affect fundamentally the main conclusions suggested by the crude figures. They are significant enough, however, to make it preferable to base an analysis on the weighted data.

The New England average ($680 per man for the year (1933) is not far from the 1933 mean of $655 for the country as a whole. The figure for the groundfishery ($869) is considerably changed from the crude average because the latter was overweighted with corporation-owned vessels showing low crew shares.

The weighted average for the Middle Atlantic area ($690) is almost the same as that for New England. The figure for the South ($338) would be the lowest in any case; but the state of the red snapper fishery made the discrepancy particularly great in 1933.

Average earnings in the fisheries of the Great Lakes $598) were ten per cent below the mean for the country at large. The high average for California ($919) is due partly to the fact that the tuna fishery, and in a less degree the sardine fisheries of southern California, were in 1933 among the few relatively profitable ones, and partly to the wages paid on the San Francisco paranzella vessels. In the case of the Northwest and Alaska earnings in the halibut and herring fisheries were relatively good, but the average was pulled below the level of the Northeastern areas and of the country as a whole by the low return to the salmon fishermen. The salmon fishery sample, it must be remembered, does not include cannery owned or operated craft and gear in Alaska, which are discussed separately in Chapter XIII.

PERIODS OF ACTUAL EMPLOYMENT

The information obtained as to the portions of 1933 during which the

TABLE XXXIII

NUMBER OF WAGE EARNERS ON SAMPLE[a] WAGE VESSELS, WITH AVERAGE WEEKS OF EMPLOYMENT AND AVERAGE ANNUAL AND WEEKLY EARNINGS, BY RANK OR OCCUPATION AND BY AREA AND FISHERY, 1933.

Rank or Occupation	New England: Oyster				Middle Atlantic: Oyster				Middle Atlantic: Pound Net			
	Number of Men	Weeks Worked	Average Earnings Annual	Weekly	Number of Men	Weeks Worked	Average Earnings Annual	Weekly	Number of Men	Weeks Worked	Average Earnings Annual	Weekly
Captains	12	45.8	$1,683	$36.75	6	49.2	$2,037	$41.40	9	34.0	$1,056	$31.06
Mates	2	25.5	459	18.00	-	-	-	-	-	-	-	-
Pilots	2	30.0	824	27.47	-	-	-	-	-	-	-	-
Engineers	6	44.8	1,350	30.13	4	50.5	1,418	28.08	2	30.0	750	25.00
Assistant Engineers	2	25.0	689	27.56	-	-	-	-	-	-	-	-
Cooks	5	30.6	646	21.11	-	-	-	-	-	-	-	-
Firemen	4	25.5	459	18.00	-	-	-	-	-	-	-	-
Fishermen	79	29.2	465	15.92	44	24.6	498	20.24	42	30.3	599	19.77
Shore hands	-	-	-	-	-	-	-	-	1	31.0	672	21.68
Total	112	31.6	661	20.92	54	29.3	737	25.15	54	30.9	682	22.07

	South: Shrimp and Oyster				South: Menhaden				Great Lakes: Lakes Huron and Michigan			
	Number of Men	Weeks Worked	Average Earnings Annual	Weekly	Number of Men	Weeks Worked	Average Earnings Annual	Weekly	Number of Men	Weeks Worked	Average Earnings Annual	Weekly
Captains	1	20.0	$ 400	$20.00	18	19.1	$ 792	$41.49	16	39.4	$1,139	$28.91
Mates	1	20.0	120	6.00	18	19.1	441	23.09	-	-	-	-
Pilots	-	-	-	-	18	19.1	386	20.19	-	-	-	-
Engineers	-	-	-	-	18	19.1	474	24.81	12	41.8	940	22.49
Assistant Engineers	-	-	-	-	18	19.1	309	16.15	-	-	-	-
Strikers	-	-	-	-	18	19.1	264	13.85	-	-	-	-
Cooks	1	20.0	100	5.00	18	19.1	298	15.58	-	-	-	-
Firemen	-	-	-	-	42	19.1	176	9.23	-	-	-	-
Fishermen	8	29.3	342	11.67	468	19.1	176	9.23	102	33.0	552	16.73
Shore hands	-	-	-	-	-	-	-	-	12	44.0	762	17.32
Total	11	26.7	305	11.42	636	19.1	225	11.79	142	35.4	668	18.87

	California: Paranzella Net				Northwest and Alaska: Miscellaneous				United States: All Wage Vessel Fisheries			
	Number of Men	Weeks Worked	Average Earnings Annual	Weekly	Number of Men	Weeks Worked	Average Earnings Annual	Weekly	Number of Men	Weeks Worked	Average Earnings Annual	Weekly
Captains	14	52.0	$1,774	$34.12	3	27.3	$ 595	$21.79	79	37.4	$1,284	$34.33
Boss Fishermen	7	52.0	2,057	39.56	-	-	-	-	7	52.0	2,057	39.56
2nd Boss Fishermen	4	52.0	1,410	27.12	-	-	-	-	4	52.0	1,410	27.12
Mates	-	-	-	-	-	-	-	-	21	19.8	427	21.57
Pilots	-	-	-	-	-	-	-	-	20	20.2	429	21.24
Engineers	14	52.0	1,513	29.10	1	39.0	585	15.00	57	37.6	997	26.52
Assistant Engineers	-	-	-	-	-	-	-	-	20	19.7	347	17.61
Strikers	-	-	-	-	-	-	-	-	18	19.1	264	13.82
Cooks	-	-	-	-	-	-	-	-	24	21.5	362	16.84
Firemen	-	-	-	-	-	-	-	-	46	19.6	201	10.26
Fishermen	36	52.0	1,058	20.35	3	27.7	435	15.70	782	24.5	338	13.80
Shore hands	-	-	-	-	-	-	-	-	13	43.0	755	17.56
Total	75	52.0	1,389	26.71	7	29.1	525	18.04	1,091 b/	26.0	456 b/	17.62 b/

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

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a/ Vessels for which usable data were obtained for the purposes of the study.
b/ The discrepancy between these figures and the corresponding totals for wage vessels in Tables XXIV to XXVII is explained in the text.

crews of the sample vessels were actively employed and actually earning is incomplete. A specific statement of the number of weeks of employment was asked for in connection with wage vessels but not, by oversight, in the case of those working on shares.

The data regarding the number of weeks of operation of wage vessels appear in Table XXXIII.* The average for the class is only 26 weeks or half the year.

SEASONAL VARIATION IN ACTIVE EMPLOYMENT

The statements with regard to normal seasons of operation in Table I, when taken with the figures for the value of the 1933 catch of the various fisheries in Table LIV, suggest a seasonal movement in active employment in the industry at large with its peak in the late summer or early fall and its low point in mid-winter. Appendix III shows a provisional series of monthly index numbers for this movement.**

Though there is no positive reason for supposing that this index as it stands does not represent the situation with approximate correctness, the data which were available as a basis for it were very incomplete. For many parts of the industry such figures hardly exist; and those that do need further analysis. The fact that the index is a composite of data for 1934 and 1929 only, however, is not necessarily of importance. The seasonal movement of employment in individual fisheries is subject to sharp fluctuations of a random nature; but it is not likely that the corresponding movement in the industry at large has undergone much change, either random or secular, since 1929.

Since the seasonality of employment in the fishing industry at large is a composite of highly varying movements in individual fisheries, with winter activity in some partly offsetting summer and fall activity in others, the practical significance of an overall index for the whole industry is open to doubt - except perhaps as a factor in measuring the seasonal movement of industrial employment in general. It was for this latter purpose that the index in Appendix IV was computed.

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* Table XXXIII does not cover quite as large a number of men or quite the same volume of wages as appear in the sections for wage vessels in Tables XXIV to XXVII. This is due to two items. In the first place, the data for oyster vessels which were obtained from returns to the questionnaire sent out by the Code Executive Committee of the Fresh Oyster Industry in the fall of 1934 did not permit their inclusion in a breakdown by rank or occupation. This accounts for the omission from Table XXXIII of 77 men who received a total of $61,544 in wages. In the second place, as indicated on Table XXVII, the crews of wage vessels include a group of owners not receiving wages who do not belong in Table XXXIII, since the latter is a breakdown of wage earners only. This accounts for the omission from the table of 40 men. The two omissions together account for the differences of 117 men and of $61,544 in wages between the totals for wage vessels in Table XXVII and the totals of Table XXXIII. Tables XXXVIII and XXXIX show the same omissions.

** Computed by the American Federation of Labor on the basis of suggestions from the author.

INCOME FROM SOURCES OTHER THAN FISHING

The fact that the period of actual employment of vessel crews in 1933 appears to have been so short raises in a more acute form than would otherwise have been the case the question as to what extent, if any, the modest individual earnings shown for 1933 in Table XXVII were supplemented by income from other sources. No information on this point was asked for on the original schedule; and it is much to be desired that further inquiries be made. It must be said, however, that the evidence of the receipt of such additional income in material amounts or in the case of substantial groups of vessel fishermen is exceedingly slight. The reasons for this have been discussed in Chapter III.

THE TOTAL VOLUME OF EARNINGS

When the data with regard to the earnings of vessel fishermen in 1933, which have been presented in this chapter and the two preceding, are corrected for the variation in the size of the samples for individual fisheries, they imply a total volume of compensation for the year of about $10,361,500. This represents 41.5 per cent of the estimated value of the 1933 vessel catch.

The Census of 1908 collected the sole previous figures available for comparison with the foregoing. The compensation of the crews of fishing vessels in that year was reported as aggregating $8,230,000. The value of the vessel catch was $22,150,000; and of this the compensation of the crews represented 37.2 per cent. These figures exclude Alaska, for which the volume of crew compensation was not reported. If figures for Alaska had been included the ratio of such compensation to the value of the catch in 1908 would have been raised a little.

This comparison indicates a close check between the ratio for the present survey and the Census of a quarter of a century ago. The fact that the two do agree so well reflects of course, the general stability of the industry's organization, and above all the rarity of substantial changes in the terms of the lays or share agreements that govern the compensation paid to 75 per cent of the personnel.

The estimates for the individual crew shares earned in 1934 and in 1929, which will be presented and discussed in Chapter XII, indicate that the percentage of the value of the share vessel catch represented by the compensation of their crews tends to be materially higher in years of relatively large catches and high prices like 1934 and 1929, than in a year like 1933. For the vessel fisheries at large, however, this tendency appears to be offset to a great extent by the concurrent changes in the earnings of the crews of wage vessels. The compensation of all vessel crews in 1933, as stated above, was about 41.5 per cent of the value of the catch. In 1929 the proportion probably did not reach 45 per cent.

CHAPTER X

THE EARNINGS OF RANKS AND OCCUPATIONS

The data thus far discussed have dealt with the average earnings of all workers on the vessels covered by the tables. Where figures for wages paid to individuals in addition to or in lieu of shares have been given they have not been broken down with respect to specific ranks or occupations.

THE COMPENSATION OF CAPTAINS

In going on to consider in detail the earnings of the latter it is natural to deal first with the compensation of captains. On share vessels the rule is that the commander either receives merely the same share as other members of the crew, or that he gets in addition a percentage of the value of the catch or of the vessel share, which is usually referred to as his bonus. In cases where a captain has received only one share the explanation is normally either that the gross revenue has not permitted an additional payment, or that he, being himself the owner of the vessel, has received as his extra compensation whatever net profit has remained from the vessel share.

The captain of a fishing vessel who is also the owner therefore, may receive three items of compensation in his various capacities: (1) his basic share in the lay; (2) a percentage bonus for his services as commander; and (3) the net profit, if any, accruing from the vessel share, in return for his investment in the enterprise.

The bonuses paid in 1933 to the captains of vessels for which reports were obtained in connection with the present study, and in a very few instances to other officers, are summarized in Table XXXIV.

From this table it appears that bonuses were reported for 158 out of 399 share vessels for which the amount of the vessel share was reported, or about 40 per cent. In the case of 104 vessels no statement on the subject was made; but from supplementary inquiries it seems highly probable that no bonus was paid or credited in those instances. The vessels whose captains received a bonus tended to be the larger ones, as appears from the figures for average tonnage in the second column of Table XXXIV. As a result this group accounted for 54 per cent of the crews and of the gross stock of the 399 vessels, as against 40 per cent of the vessels by number.

TABLE XXXIV

PERCENTAGE BONUSES IN ADDITION TO SHARES PAID TO MEMBERS OF SAMPLE a/ SHARE VESSEL CREWS, WITH NUMBER OF VESSELS, NUMBER OF MEN, VALUE OF CATCH, AND VESSEL AND CREW SHARES, BY AREA, 1933

Area	Number of Vessels b/	Average Tonnage	Total Number of Men	Average Crew	Number of Men on Shares	Value of Catch	Vessel Share	Crew Share	Average Share per Man	Volume of Bonuses	Average Bonus per Recipient b/	Average Total Compensation of Recipients of Bonuses
New England												
Bonus paid	71	102.6	1,119	16	990	$2,165,292	$ 867,721	$512,167	$ 518	$105,007	$ 1,480	$ 1,998
No Bonus paid	25	24.8	178	7	177	277,370	90,920	106,535	602	-	-	-
No Statement Regarding Bonus c/	8	17.9	39	5	39	73,670	21,716	30,434	780	-	-	-
Total	104	77.4	1,336	13	1,206	2,516,332	980,357	649,136	539	-	-	-
Middle Atlantic												
Bonus paid	11	35.4	90	8	89	164,465	51,504	72,134	811	8,039	731	1,542
No Bonus paid	12	13.8	68	6	67	66,411	17,584	30,108	449	-	-	-
No Statement Regarding Bonus c/	6	13.3	27	5	27	31,725	7,901	12,964	480	-	-	-
Total	29	21.9	185	6	183	262,601	76,989	115,206	630	-	-	-
South												
Bonus paid	38	47.0	338	9	334	249,472	94,393	68,502	205	17,874	470	675
No Bonus paid	4	12.3	14	4	14	6,364	1,576	3,577	256	-	-	-
No Statement Regarding Bonus c/	15	10.7	55	4	55	43,957	13,886	22,979	418	-	-	-
Total	57	35.0	407	7	403	299,793	109,855	95,058	236	-	-	-
Great Lakes												
Bonus paid	1 b/	10.0	6	6	6	6,479	2,851	3,628	605	388	194 b/	799
No Bonus paid	6	29.2	38	6	29	52,868	28,479	22,359	771	-	-	-
No Statement Regarding Bonus c/	5	26.4	26	5	26	33,725	17,136	16,466	633	-	-	-
Total	12	26.4	70	6	61	93,072	48,466	42,453	696	-	-	-
California												
Bonus paid	6	69.2	68	11	63	155,796	44,034	69,287	1,100	5,361	894	1,994
No Bonus paid	19	54.9	180	10	179	402,962	130,332	177,897	994	-	-	-
No Statement Regarding Bonus c/	33	66.5	365	11	355	916,898	314,213	352,641	993	-	-	-
Total	58	62.8	613	11	597	1,475,656	488,579	599,825	1,015	-	-	-
Northwest and Alaska												
Bonus paid	31	33.2	251	8	248	376,721	80,404	188,366	760	13,471	435	1,195
No Bonus paid	71	25.4	454	6	444	546,245	124,801	272,957	610	-	-	-
No Statement Regarding Bonus c/	37	15.1	144	4	139	162,038	44,535	73,837	535	-	-	-
Total	139	24.4	849	6	831	1,085,004	249,740	534,160	642	-	-	-
United States & Alaska												
Bonus paid	158 b/	69.1	1,872	58	1,730	3,118,225	1,140,907	914,084	529	150,200	945 b/	1,474
No Bonus paid	137	28.2	932	39	910	1,352,220	393,692	612,433	672	-	-	-
No Statement Regarding Bonus c/	104	31.4	656	34	641	1,262,013	419,387	509,321	796	-	-	-
Grand Total	399	45.2	3,460	9	3,281	5,732,458	1,953,986	2,035,838	620	-	-	-

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ The number of recipients of bonuses was the same as the number of vessels except in the Great Lakes area, where bonuses were paid to two men (a mate and an engineer) on one vessel. The total number of recipients was therefore 159, on 158 vessels, and comprises 156 captains, two mates and one engineer.

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c/ It is believed that with possible rare exceptions no bonus was paid in these cases.

The average bonus paid to all persons (156 captains, two mates and one engineer), who received such additional compensation in 1933, was $945, as against $529 for the average basic share in the lay on the same vessels. Consequently, while the average income of captains as a class was by no means large, a considerable group was relatively well paid. The average share of captains who did not receive a bonus, however, was considerably larger than the average basic share of those who did receive one. This was because so large a proportion of those to whom bonuses were paid were on New England groundfish and on red snapper vessels with low individual crew shares.

Exceptions to the rule that compensation paid to the captain of a fishing vessel in addition to his basic share in a lay takes the form of a percentage of the gross stock or of the vessel share are rare. The questionnaire, however, did result in reports of two instances in which captains in 1933 received fixed sums in addition to their shares. These payments have been classified as wages and are included in the wage columns of Tables XXVI and XXVII. In the case of a few California tuna and sardine vessels, moreover, the captain received an extra share or half share in the lay in lieu of a bonus.

The bonuses received by persons other than captains which are included in Table XXXIV amounted to $620. They were paid to three men on two vessels - one in the Middle Atlantic miscellaneous fishery and the other on Lake Michigan.

The bonuses shown in Table XXXIV represent 7.7 per cent of the corresponding vessel share. It is commonly stated that the normal captain's bonus is ten per cent of the vessel share; and in any but a year of acute depression that proportion would very likely have appeared in the returns. In most of the reported cases the bonuses were actually charged against the vessel share; but there were a few instances in which they were taken out of the gross stock as items of joint operating expense.

It was intended that only bonuses which were actually paid should be entered on the schedules. In some of the cases, however, in which the vessel share was insufficient to cover current overhead - and these were numerous in 1933 - the reported bonuses may have been merely credited to those earning them. The probable number of such instances, however, is reduced by the fact that a large proportion of the vessels for which bonuses were reported were owned by wholesaling or processing corporations, which may have been in a position to make the payments from reserves.

The fact that the bonuses reported for 1933 represented only 7.7 per cent of the corresponding vessel share, as against a typical 10 per cent, suggests that in years of normal industrial activity the proportion of vessels whose captains received bonuses would be appreciably in excess of the 40 per cent shown on Table XXXIV.

RECIPIENTS OF WAGES IN ADDITION TO SHARES

Tables XXXV and XXXVl show in detail the numbers of men on share vessels in the various ranks or occupations, other than that of captain, who received wages in addition to shares. In some cases the amount of wages paid to workers of this class was not reported on the schedules; and for this reason Table XXXVl, which gives figures for wage volume, does not cover quite as many persons as Table XXXV, which gives only the numbers of men receiving additional wages.

Of the total of 244 persons to whom such wages were paid the rank or occupation of seven was not specified on the schedules. Of the remainder 222 were classified as captains, mates, engineers, assistant engineers, radio operators, cooks, first hands or firemen. The remaining 15 consisted of the crews of two vessels of less than 50 tons in the New England groundfishery, all members of which received a wage payment in addition to their shares. In one case this was given as a sort of bonus; in the other it was specified as a payment for the extra heavy work of reeling in the nets.

These tables show that engineers and cooks are by far the largest of the occupational groups remunerated by the payment of wages in addition to shares. Table XXXVl brings out the relatively good wages which cooks receive on fishing vessels, and emphasizes the importance attached to this ordinarily humble occupation.

The individual wages specified in Table XXXVl are those paid in addition to shares only. The average total compensation of the workers concerned can be arrived at by adding to any of these figures the average individual share for the same fishery, from the data in Table XXX. The latter shows, for example, 859 men on shares in the New England groundfishery, with an aggregate crew share of $430,007. This gives an average share for the year of $501; which, added to the average annual wage of $189 per man for the same fishery in Table XXXVl, indicates average total earnings in 1933 for the men who received additional wages of $690. For all fishermen on this sample group of vessels the average total earnings were $19,816 (last column but one of Table XXXVl) divided by 859 plus $501, or $524.

OCCUPATIONS AND COMPENSATION OF WAGE EARNERS ON SHARE VESSELS

Table XXXVll gives details by rank or occupation with regard to the total and average wages paid in lieu of shares on share vessels. Table XXXlll, which gives similar data for the wages paid on wage vessels, has already been mentioned in another connection. The data in these tables differ from those in Table XXXVl in that they represent the total compensation of the workers concerned.

The average weekly wage paid in 1933 to all wage earners on wage vessels included in the sample was $17.62. The average earnings of this class for the year were $458. The average earnings for the year for workers receiving wages in lieu of shares on share vessels were $516. The composition of the two samples, however, is quite different, and caution should be used in drawing conclusions from the discrepency in earnings that they show. The average weeks of employment

TABLE XXXV

RECIPIENTS OF WAGES IN ADDITION TO SHARES ON SAMPLE a/ SHARE VESSELS, BY RANK OR OCCUPATION AND BY AREA AND FISHERY, 1933

Area and Fishery	Number of Vessels	Number of Men Receiving Wages in Addition to Shares: Captains	Mates	Engineers and Assistant Engineers	Radio Operators	Cooks	Firemen	First Hands	General b/	Occupation not Specified	All Ranks or Occupations
New England											
Groundfish											
Vessels under 50 tons	8	-	-	6	-	6	-	-	15	2	29
Vessels of 50 tons or over	48	-	37	85	1	47	3	-	-	-	173e/
Total, Groundfish	56	-	37	91	1	53	3	-	15	2	202e/
Mackerel	11	-	-	11	-	11	-	-	-	-	22
Miscellaneous	3	-	-	2	-	2	-	-	-	2	6
Total, New England	70	-	37	104	1	66	3	-	15	4	230e/
Middle Atlantic, South and Great Lakes c/	5	2	1	4	-	1	-	1	-	-	9
California Tuna, and Tuna and Sardine d/	3	-	-	1	-	1	-	-	-	3	5
United States and Alaska	78	2	38	109	1	68	3	1	15	7	244e/

(Continued)

TABLE XXXV

(Continued)

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ This group includes all members of the crews of two vessels, among whom a wage in addition to their shares was distributed, without distinction of occupation.

c/ This group includes two vessels averaging 49 tons each, with 29 men, in the Middle Atlantic miscellaneous fishery, two averaging 13 tons each, with 15 men, in the red snapper fishery of the South, and one of 20 tons, with 7 men, in the Lakes Huron and Michigan area, consolidated to avoid disclosing individual financial data.

d/ This group includes two tuna vessels averaging 113 tons each, with 25 men, and one tuna and sardine vessel of 51 tons, with 10 men, consolidated to avoid disclosing individual financial data.

e/ This figure excludes a cook and an engineer on a New England groundfish vessel of more than 50 tons, for whom the rate and amount of the wages paid were not stated in the schedule.

TABLE XIIVI

RECIPIENTS OF WAGES IN ADDITION TO SHARES ON SAMPLE a/ SHARE VESSELS, WITH VOLUME OF WAGES AND AVERAGE PER MAN, BY RANK OR OCCUPATION AND BY AREA AND FISHERY, 1933.

Area and Fishery	Number of Vessels	Grand Total Number of Men	Total Number of Men on Shares	Recipients of wages in addition to shares: Captains — Number of Men	Captains — Volume of Additional Wages	Captains — Average Annual Wage	Mates — Number of Men	Mates — Volume of Additional Wages	Mates — Average Annual Wage	Chief Engineers — Number of Men	Chief Engineers — Volume of Additional Wages	Chief Engineers — Average Annual Wage	Assistant Engineers — Number of Men	Assistant Engineers — Volume of Additional Wages	Assistant Engineers — Average Annual Wage	Radio Operators — Number of Men	Radio Operators — Volume of Additional Wages	Radio Operators — Average Annual Wage	Cooks — Number of Men	Cooks — Volume of Additional Wages	Cooks — Average Annual Wage	Firemen — Number of Men	Firemen — Volume of Additional Wages	Firemen — Average Annual Wage	First Hands — Number of Men	First Hands — Volume of Additional Wages	First Hands — Average Annual Wage	All Ranks or Occupations — Number of Men	All Ranks or Occupations — Volume of Additional Wages	All Ranks or Occupations — Average Annual Wage
New England Groundfish Vessels under 50 tons	6	57	57	-	-	-	-	-	-	5	$ 660	$ 132	1	$ 260	$ 260	-	-	-	6	$ 872	$ 145	-	-	-	-	-	-	12	$ 1,792	$ 149
Vessels of 50 tons and over	28	555	507	-	-	-	17	$ 2,381	$ 140	27	6,259	232	18	2,077	115	1	$ 28	$ 28	27	7,193	266	3	$ 86	$ 29	-	-	-	93	18,024	194
Total, Groundfish	34 d/	612 d/	564 d/	-	-	-	17	2,381	140	32 d/	6,919	216	19	2,337	123	1	28	28	33 d/	8,065	244	3	86	29	-	-	-	105	19,816	189
Mackerel	11	136	136	-	-	-	-	-	-	11	1,687	153	-	-	-	-	-	-	11	1,688	153	-	-	-	-	-	-	22	3,375	153
Miscellaneous	2	16	16	-	-	-	-	-	-	2	121	60	-	-	-	-	-	-	2	165	83	-	-	-	-	-	-	4	286	72
Total, New England	47 d/	764 d/	716 d/	-	-	-	17	2,381	140	45 d/	8,727	194	19	2,337	123	1	28	28	46 d/	9,918	216	3	86	29	-	-	-	131	23,477	179
Middle Atlantic Miscellaneous	2	29	29	1	$ 200	$ 200	1	200	200	1	242	242	-	-	-	-	-	-	1	242	242	-	-	-	1	96	96	5	980	196
South Red snapper a/	2	15	15	-	-	-	-	-	-	2 b/	120 b/	60 b/	-	-	-	-	-	-	b/	b/	b/	-	-	-	b/	b/	b/	2 b/	120 b/	60 b/
Great Lakes Lake Huron & Michigan	1	7	7	1	210	210	-	-	-	1	210	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	420	210
California Tuna	2	25	24	-	-	-	-	-	-	1	430	430	-	-	-	-	-	-	1	495	495	-	-	-	-	-	-	2	925	463
United States & Alaska	54	840	791	2	410	410	18	2,581	143	50	9,729	203	19	2,337	123	1	28	28	48	10,655	232	3	86	29	1	96	96	142	25,922	183
Share Vessels for which additional wages were not reported by rank or occupation	24	394	314	-	-	-	20	-	-	20	-	-	20	-	-	-	-	-	20	-	-	-	-	-	-	-	-	102 b/	-	-
Grand total, share vessels showing payment of additional wages	78	1,234	1,105	2			38	-	-	70 c/	-	-	39	-	-	1	-	-	68 c/	-	-	3	-	-	1	-	-	244 b/ c/	-	-

Source: Returns to R.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.
b/ Does not include the cooks, engineers and first hands on red snapper vessels who received extra compensation in the form of additional half shares. There were rather more than 100 such persons on the vessels included in the sample. Their extra compensation averaged about $90 apiece, and reached an aggregate of $9,500 to $10,000 for the year.
c/ Includes 15 men receiving additional wages distributed among all members of the crews of 3 groundfish vessels of less than 50 tons in New England, without distinction of occupation, and 7 men on 3 vessels in the miscellaneous fishery of New England, and on one tuna and sardine vessel in California, whose occupations were not reported. These do not appear elsewhere in the table.
d/ Excludes a cook and an engineer on a New England groundfish vessel more than 50 tons, for whom the rates and amount of the wages paid in 1933 were not reported on the schedule.

TABLE XXXVII

RECIPIENTS OF WAGES IN LIEU OF SHARES ON SAMPLE a/ SHARE VESSELS, WITH VOLUME OF WAGES AND AVERAGE PER MAN, BY RANK OR OCCUPATION AND BY AREA AND FISHERY, 1933/

Area and Fishery	Number of Vessels	Total Number of Men	Cooks			Engineers			Firemen			Radio Operators			Ordinary Fishermen			All Ranks or Occupations		
			Number	Volume of Wages	Average Earnings per Man for the Year	Number	Volume of Wages	Average Earnings per Man for the Year	Number	Volume of Wages	Average Earnings per Man for the Year	Number	Volume of Wages	Average Earnings per Man for the Year	Number	Volume of Wages	Average Earnings per Man for the Year	Number	Volume of Wages	Average Earnings per Man for the Year
New England Groundfish and Miscellaneous b/	37	660	-	-	-	1	$1,560	$1,560	93	$36,063	$388	35	$26,228	$749	1	$ 76	$ 76	130	$63,927	$ 492
South Red snapper	2	18	-	-	-	-	-	-	-	-	-	-	-	-	4	2,200	550	4	2,200	550
Great Lakes Lakes Huron and Michigan	4	22	-	-	-	-	-	-	-	-	-	-	-	-	10	2,904	290	10	2,904	290
California Tuna	9	118	9	$8,746	$972	1	350	350	-	-	-	5	4,416	883	-	-	-	15	13,512	901
Northwest & Alaska Salmon	3	24	3	995	332	-	-	-	-	-	-	-	-	-	-	-	-	3	995	332
United States and Alaska	55	842	12	9,741	817	2	1,910	955	93	36,063	388	40	30,644	766	15	5,180	345	162	83,538	516

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ Includes one man on a vessel of 5 tons, with 5 men, in the Miscellaneous fishery, and one man on a vessel of 10 tons, with 8 men, in the Groundfishery, consolidated to avoid disclosing individual financial data. The remaining men were all on groundfish vessels of 50 tons or more.

TABLE XXXVIII

DISTRIBUTION OF WAGE EARNERS ON SAMPLE a/ WAGE VESSELS ACCORDING TO AVERAGE WEEKLY EARNINGS, BY AREA, 1933

Area	Average Weekly Earnings						
	Under $10.00	$10.00 to $19.99	$20.00 to $29.99	$30.00 to 39.99	$40.00 to $49.99	$50.00 and over	Total b/
	Number of Men						
New England	22	56	18	10	4	2	112
Middle Atlantic	-	36	59	9	3	1	108
South	513	61	55	10	8	-	647
Great Lakes	8	89	30	12	3	-	142
California	-	15	33	21	6	-	75
Northwest and Alaska	-	3	4	-	-	-	7
United States and Alaska	543	260	199	62	24	3	1,091
Percentages of total represented by wage classifications	49.3	23.8	18.2	5.7	2.2	0.3	100.0

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.
a/ Vessels for which usable data were obtained for the purpose of the study.
b/ The discrepancy between these figures and the corresponding totals for wage vessels in Tables XXIV to XXVII is explained in the text.

TABLE XXXIX

DISTRIBUTION OF WAGE EARNERS ON SAMPLE a/ WAGE VESSELS ACCORDING TO AVERAGE WEEKLY EARNINGS, BY RANK OR OCCUPATION, 1933.

Rank or Occupation	Average Weekly Earnings						
	Under $10.00	$10.00 to $19.99	$20.00 to $29.99	$30.00 to $39.99	$40.00 to $49.99	$50.00 and over	Total b/
	Number of Men						
Captain	-	6	15	36	19	3	79
Boss fisherman	-	-	-	3	4	-	7
2nd boss fishermen	-	-	4	-	-	-	4
Mates	1	2	18	-	-	-	21
Pilots	-	-	19	1	-	-	20
Engineers	-	7	33	16	1	-	57
Assistant Engineers	-	18	1	1	-	-	20
Strikers	-	18	-	-	-	-	13
Cooks	1	21	2	-	-	-	24
Firemen	42	4	-	-	-	-	46
Fishermen	499	176	103	4	-	-	782
Shore hands	-	8	4	1	-	-	13
Total	543	260	199	62	24	3	1,091
Percentages of total men represented by wage classifications	49.8	23.8	18.2	5.7	2.2	0.3	100.0

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.
a/ Vessels for which usable data were obtained for the purposes of the study.
b/ The discrepancy between these figures and the corresponding totals for wage vessels in Tables XXIV to XXVII is explained in the text.

TABLE XL

AVERAGE TOTAL COMPENSATION FOR THE YEAR OF THE PRINCIPAL RANKS OR OCCUPATIONS ON SHARE AND WAGE VESSELS INCLUDED IN THE SAMPLE a/, 1933

Rank or Occupation a/	Share Vessels			Wage Vessels		Share and Wage Vessels	
	Average Total Compensation per Man a/	Number of Men a/	Approximate Per Cent Receiving "Special" Compensation a/	Average Total Compensation per Man	Number of Men	Average Total Compensation per Man	Number of Men
Captains	$ 1,470 b/	160	40	$ 1,284 c/	79	$ 1,408 c/	239
Boss fishermen d/	-	-	-	1,822	11	1,822	11
Mates	913	17	60	427	21	645	38
Pilots	-	-	-	429	20	429	20
Chief engineers	511 e/	89	30	997	57	701	146
Assistant engineers	944 e/	19		347	20	638	39
Radio operators	250	41	100	-	-	250	41
Cooks	577	97	30	362	24	534	121
Firemen	378	96	100	201	46	321	142
First hands or strikers	263	38	100	264	18	263	56
Others a/	625 a/	3,090 a/	-	338	782	567	3,872
Total	673	3,647	-	455	1,078 f/	623	4,725

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.
b/ In the case of share vessels, only those of each rank or occupation who received "special" compensation (i.e., compensation other than the single share of an ordinary fisherman, such as a wage, a share and a wage, or a share and a bonus) are classified specifically in this table, as captains, boss fishermen, etc. The remainder, all of whom, so far as known, received only the single share of an ordinary fisherman, are included with "Others."
c/ Includes the compensation of captains in their capacity as commanders only (share and bonus, or occasionally share and wage). When a captain also owns his vessel any compensation in the latter capacity is additional, in the form of net profit from the vessel share.
d/ Including second boss fishermen.
e/ See text for explanation of this anomaly.
f/ This differs from the corresponding totals in Tables XXXIII, XXXVIII and XXXIX in excluding 13 shore hands.

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In the case of share vessels the figures for each rank or occupation in Table XL cover only those who received total compensation above that of ordinary fishermen on the same vessel, the remainder being lumped with "Others". The proportion of each rank or occupation included in the first of these categories is indicated in the third column of the table. The latter means that 40 per cent of the captains, for instance, on the share vessels included in the sample, received compensation in excess of that of ordinary fishermen on the same vessels - that is, in excess of a single share in the lay. The other 60 per cent received merely a share - except, of course, that the large proportion who were themselves owners of their vessels got also whatever net profit accrued from the vessel share.

On wage vessels, as in ordinary industrial plants, all ranks or occupations are normally remunerated outright on schedules of single rates considered appropriate to the duties, responsibilities, or personal competence of those who fill them. In interpreting the figures for wage vessels in Table XL, therefore, the complications just mentioned in connection with the share vessel data do not arise.

While, as remarked above, the figures for average compensation in this table are shown on bases as nearly the same as possible, caution needs to be used in comparing one or two of them. Assistant engineers on share vessels, for instance, are shown as receiving a materially larger average compensation than engineers proper. This is explained by the fact that the limited number of assistant engineers reported in connection with the study were all on relatively large vessels in New England, and were probably all regularly qualified men; while the group of engineers proper includes many of a semi-professional type, who were employed on smaller vessels and in fisheries where the level of compensation is comparatively low.

CHAPTER XI

OWNERS' EXPENSE AND NET RETURN AND THE CAPITALIZATION OF THE FISHERIES

THE DATA ON OWNER'S EXPENSE

When the present study was planned some importance was attached to the question whether, in case the earnings of fishermen in 1933 should be shown to have run below an accepted living standard, the financial position of the owners of the craft on which they worked would, in any considerable proportion of cases, make possible an upward adjustment of their compensation. In the original questionnaire, consequently, information was asked for not merely with regard to the principal items entering into the settlement of the various lays, but also with respect to the vessel owners' - that is, the overhead - expense. The difference between the latter item and the vessel share should represent the net profit or net loss of an enterprise.

Apart from the light which the data obtained as a result of this inquiry threw on the possibility of adjusting the compensation of vessel crews, they proved sufficiently complete and consistent to be used as a basis for a preliminary general discussion of the earnings of fishing vessels considered as economic enterprises, and of the return on their owners' investment. To such a discussion the present chapter is devoted.

Usable figures for owners' expense were submitted in the case of 339 out of the 430 share vessels included in the final sample, or 79 per cent. In size and in the average value of their catch these 339 were adequately representative of the whole class. Failure to supply this information in other cases seems to have been due in part to lack of records and in part to a misunderstanding of what was desired.

RELIABILITY OF THE OWNER'S EXPENSE DATA

The reported items of owner's expense have been examined with considerable care, with a view to ascertaining whether they show signs either of exaggeration or of the reverse. Some of them, though a decided minority, are unquestionably rough approximations. No case has been found, however, where a statement of owners' expense appears impossibly large.

There are a good many instances where this item seems very small and may be incomplete. It is quite possible, however, to keep overhead expense on a small fishing vessel within very moderate limits during a considerable period of bad business. Repairs and overhauling may be kept down to the indispensable minimum, and the owner and crew may do a large part of the work themselves. If the waters in which the vessel fishes are not particularly dangerous, and if reasonably good fortune is encountered, this policy may be followed without disastrous results for a number of years.

Marine insurance has ceased, during the depression, to be carried on many fishing vessels, the rates being regarded as prohibitive. The

burden of taxation varies greatly in different States and localities, but in most instances is not heavy. Interest payments are seldom of consequence, except in the cases - fairly numerous in the tuna and sardine fisheries of California - where money has been loaned to build vessels by the canning concerns that expect to purchase their catch.

PRACTICE WITH RESPECT TO DEPRECIATION

In one respect the reported items of owners' expense are known definitely not to be comparable. Of the 339 vessels for which such a figure was given the inclusion of a write-off for depreciation was reported in the case of only 86, or 25 per cent. In the main, however, the omission of such a write-off was not due to carelessness, but reflected the actual accounting procedure of the owners concerned. The practice of formally allowing for depreciation on individually owned fishing vessels, and especially on the smaller ones, is undoubtedly exceptional.

THE ESTIMATED WRITE-OFFS FOR DEPRECIATION

If the proportions of vessels showing net profit and net loss in 1933, and the amount of the latter items, were to be arrived at on an approximately comparable basis, it was necessary to make an allowance for depreciation in cases where it had not already been written off. To do this there were obtained from the field staff of the Bureau of Fisheries and from other persons having expert acquaintance with the industry data from which a normal write-off on a typical vessel in each important fishery could be calculated.

TREATMENT OF REPLACEMENTS OF GEAR

The questionnaire contained no specific instructions with respect to the classification of replacements of fishing gear as current owner's expense or as new investment. In making the estimates of the write-offs for depreciation just mentioned the rule was followed of treating the replacement of gear that normally lasts more than one year as new investment. Where, on the other hand, a type of gear ordinarily has to be replaced at least once a year, it has been assumed that the cost of so doing is included in the reported figures for current owner's expense. So far as the schedules throw any light on the matter they indicate that this is what was done.

The data for owners' expense, with certain other information for the vessels to which they relate, and with added estimates of the normal write-off for depreciation where such an item was not already included, are shown in Table XLI.

FIXED CAPITAL OF THE FISHERIES

Before going on to analyze the situation indicated by this table it will be well to discuss briefly the capitalization of the fisheries. The fixed investment may be classified into the following items: (a) fishing craft and their immediate non-expendible equipment; (b) fishing gear; and (c) shore plant. In connection with the present study data have been gathered with reference only to the investment in fishing vessels and their gear.

TABLE XLI

OWNERS' OR OVERHEAD EXPENSE REPORTED FOR SAMPLE a/ SHARE VESSELS, WITH NUMBER OF MEN, VALUE OF CATCH AND VESSEL AND CREW SHARES, CLASSIFIED AS SHOWING INCLUSION OR EXCLUSION OF DEPRECIATION AND NET PROFIT OR NET LOSS, BY AREA, 1933.

Area	Number of Vessels	Average Tonnage	Total Number of Men	Value of Catch	Vessel Share	Owner's Expense	Crew Share	Net Profit (+) or Loss (-)	Estimated Write-off for Depreciation b/
New England									
Owner's expense:									
Includes Depreciation									
Showing profit	3	86.3	36	$192,186	$90,387	$77,520	$64,468	+ $12,867	-
Showing loss	35	119.6	584	1,081,646	463,163	981,934	227,963	- 518,771	-
Total	38	116.9	620	1,273,832	553,550	1,059,454	292,431	- 505,904	-
Excludes Depreciation									
Showing profit	39	52.1	344	864,454	332,118	220,788	242,255	+ 111,330	$207,207
Showing loss	8	83.1	89	66,894	21,476	32,521	18,901	- 11,045	42,504
Total	47	57.4	433	931,348	353,594	253,309	261,156	+ 100,285	249,711
Total, New England	85	84.0	1,053	2,205,180	907,144	1,312,763	553,587	- 405,619	-
Middle Atlantic									
Owner's expense:									
Includes Depreciation									
Showing profit	-	-	-	-	-	-	-	-	-
Showing loss	1	28.0	11	3,694	911	1,758	1,103	- 847	-
Total	1	28.0	11	3,694	911	1,758	1,103	- 847	-
Excludes Depreciation									
Showing profit	19	24.1	121	201,085	60,539	45,835	89,987	+ 14,704	34,846
Showing loss	4	20.3	27	27,169	7,311	9,504	9,673	- 2,193	7,336
Total	23	23.4	148	228,254	67,850	55,339	99,660	+ 12,511	42,182
Total, Middle Atlantic	24	23.6	159	231,948	68,761	57,097	100,763	+ 11,664	-
South									
Owner's expense:									
Includes Depreciation									
Showing profit	-	-	-	-	-	-	-	-	-
Showing loss	22	37.5	170	122,103	35,323	60,533	32,534	- 25,210	-
Total	22	37.5	170	122,103	35,323	60,533	32,534	- 25,210	-
Excludes Depreciation									
Showing profit	13	41.2	127	105,534	39,434	30,605	31,162	+ 8,829	7,228
Showing loss	7	36.7	60	27,703	6,511	11,371	6,217	- 4,860	3,892
Total	20	39.6	187	133,237	45,945	41,976	37,379	+ 3,969	11,120
Total, South	42	39.2	357	255,340	81,268	102,509	69,913	- 21,241	-
Great Lakes									
Owner's expense:									
Excludes Depreciation									
Showing profit	9	30.2	55	76,578	40,494	33,133	33,654	+ 7,361	28,458
Showing loss	3	13.3	16	18,918	5,513	7,832	11,315	- 2,319	9,486
Total	12	28.0	71	95,496	46,007	40,965	44,969	+ 5,042	37,944
Total, Great Lakes	12	28.0	71	95,496	46,007	40,965	44,969	+ 5,042	-
California									
Owner's expense:									
Includes Depreciation									
Showing profit	14	98.9	159	627,988	217,508	123,946	223,796	+ 93,562	-
Showing loss	4	106.8	48	140,697	46,104	60,458	41,899	- 14,354	-
Total	18	100.6	207	768,685	263,612	184,404	265,695	+ 79,208	-
Excludes Depreciation									
Showing profit	27	40.4	273	478,389	127,624	78,520	220,693	+ 49,104	161,271
Showing loss	9	59.4	97	155,217	41,143	53,639	76,615	- 12,496	53,757
Total	36	45.2	370	633,606	168,767	132,159	297,308	+ 36,608	215,028
Total, California	54	63.6	577	1,402,291	432,379	316,563	563,003	+ 115,816	-
Northwest and Alaska									
Owner's expense:									
Includes Depreciation									
Showing profit	7	32.9	45	76,907	26,142	22,921	40,649	+ 3,221	-
Showing loss	-	-	-	-	-	-	-	-	-
Total	7	32.9	45	76,907	26,142	22,921	40,649	+ 3,221	-
Excludes Depreciation									
Showing profit	94	26.1	593	55,126	199,179	107,935	420,731	+ 91,244	171,362
Showing loss	21	37.0	145	103,460	22,931	28,608	62,750	- 5,677	38,283
Total	115	28.1	738	158,586	222,110	136,543	483,481	+ 85,567	209,645
Total, Northwest and Alaska	122	28.4	783	235,493	248,252	159,464	524,130	+ 88,788	-
Recapitulation, United States and Alaska									
Owner's expense									
Includes Depreciation									
Showing profit	24	78.0	240	897,081	334,037	224,387	328,913	+ 109,650	-
Showing loss	62	88.7	813	1,348,140	545,501	1,104,683	303,499	- 559,182	-
Total	86	85.7	1,053	2,245,221	879,538	1,329,070	632,412	- 449,532	-
Excludes Depreciation									
Showing profit	201	34.0	1,513	1,781,166	799,388	516,816	1,038,482	+ 282,572	610,372
Showing loss	52	45.9	434	399,361	104,885	143,475	185,471	- 38,590	155,258
Total	253	36.5	1,947	2,180,527	904,273	660,291	1,223,953	+ 243,982	765,630
Grand Total, share vessels for which owner's expense was reported	339	48.9	3,000	4,425,748	1,783,811	1,989,361	1,856,365	- 205,550	-
Sample a/ Share Vessels for which owner's expense was not reported	91	23.7	647	1,502,462	170,175	-	308,876	+ 170,175	-
Grand Total, sample a/ share vessels	430	43.6	3,647	5,928,210	1,953,986	1,989,361	2,165,241	- 35,375	-

Source: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.
b/ Where not already included in owner's expense.

Table XLII presents estimates of the original cost of the vessels and the fishing gear used at the present time, of the annual write-off for depreciation as computed for typical vessels, and of the cost of replacing gear whose normal life is not more than a year.

Table XLIII gives a percentage distribution of the only data known to have been collected with regard to the age of vessels in use in the fisheries. They are taken from the report of the Census of Water Transportation of 1926. The average age shown by the table is a trifle under 15 years. These figures are nearly ten years old, and the age distribution must change somewhat from time to time. It seems likely that in 1929 the average was a little less than in 1926, while at present, probably, it is appreciably more. For rough computations, however, it is near enough correct to assume an average age of 15 years.

The supplementary questionnaire by means of which the data for estimating the normal write-offs for depreciation in Tables XLI and XLII were obtained asked for the approximate years of life of a typical vessel in each important fishery. These data yield an average of about 19 years for the hulls, ten years for the engines, 16 years for the hulls and engines together, and two and a half years for the fishing gear.

TABLE XLII

ESTIMATED ORIGINAL COST OF ALL FISHING VESSELS IN USE IN 1933, WITH THE NORMAL ANNUAL WRITE-OFF FOR DEPRECIATION AND THE NORMAL ANNUAL COST OF REPLACING FISHING GEAR, BY AREA

(In thousands)

Area	Original Cost		Normal Annual Write-off For Depreciation b/	Normal Annual Cost of Replacing Gear c/
	Hull and Engine a/	All Fishing Gear		
New England	$48,938	$1,699	$2,864	$1,745
Middle Atlantic	12,804	1,124	835	2,644
South	9,430	739	1,518	207
Great Lakes	4,597	4,794	1,565	---
California	16,014	1,254	1,972	692
Northwest & Alaska	14,937	1,646	1,897	349
United States & Alaska	106,720	11,256	10,651	5,637

Source: Returns to N.R.A. questionnaires on earnings in the fishing industry.

a/ Includes equipment other than fishing gear.

b/ Includes depreciation on hull, engine and equipment other than fishing gear, and on gear having a normal life of more than a year.

c/ Covers only gear having a normal life of a year or less.

TABLE XLIII

DISTRIBUTION OF ALL VESSELS IN USE IN THE FISHERIES, BY AGE a/, 1926

Years	Per cent of Total Number of Vessels	Cumulative Per cent
One or less	9.6	9.6
2 to 6	16.1	25.7
7 to 11	22.3	48.0
12 to 16	18.4	66.4
17 to 21	10.2	76.6
22 to 26	9.0	85.6
27 to 31	3.9	89.5
32 to 36	3.2	92.7
37 to 41	2.5	95.2
42 to 46	2.4	97.6
47 to 56	1.9	99.5
More than 56	0.5	100.0
Total	100.0	--

Source: Computed from data in Bureau of the Census, Census of Water Transportation, 1926.

a/ Includes both fishing vessels and those used for transportation purposes incidental to the fisheries.

A comparison of the first of these figures with the average age of 15 years for all vessels indicates that at any given time, under present day conditions, from 75 to 80 per cent of the cost of the industry's plant and equipment would have been written off, if regular allowances for depreciation had been made in accordance with standard accounting practice. Actually, the original fixed investment has not been written down to anything like this extent.

Applying the percentage just given to the data in Table XLII, the book value of fishing vessels in recent years, with their engines and equipment other than fishing gear, may be placed, on a standard accounting basis, at approximately $22,251,000.

There is no corresponding information as to the age of the fishing gear in use. But since the average life of such equipment is short, and since much of it has to be replaced several times a year, it is probably fair to put its current value at about one-third its cost. This would give a provisional estimate of investment in vessel gear in recent years of about $3,752,000.

The efforts made in connection with the study to find out what if any deflation there had been since 1929 in owner's expense on fishing vessels did not cover the cost of replacements of gear. The best available information, however, indicates that there had not been much change.

WORKING CAPITAL OF THE FISHERIES

No data for the working capital of fishing enterprises have been collected in connection with the present study; but a brief discussion will clarify the matter, as it bears on the return to vessel owners.

There is an extreme variation in the rapidity of the turnover of working capital in various fisheries. In the case of those whose product leaves the primary producer's hands in a fresh state, however, this item of of investment is a minor one, The working capital of such enterprises is limited to the money tied up in the expendible supplies, chiefly food, engine fuel, bait and ice, required for single trips. The period of tie-up may be anywhere from one day to a maximum of three or four weeks - with the average, probably, well under a week. Vessels which go out only for a day at a time have as a rule no investment in food, and frequently none in ice; and many use no bait. In a great many cases, therefore, it may be said that working capital is restricted to the investment in engine fuel and accessories.

A radically different situation exists in the case of enterprises whose owners themselves put their catch into a nonperishable form. Most of these fisheries are highly seasonal, and the tie-up of working capital often represents a large part of the value of a whole season's catch. This situation exists in the case of nearly two-thirds of the catch of salmon for canning, of almost the whole of the menhaden catch, and of a substantial part of the shrimp and oyster catch used by the canneries of the Gulf coast. It does not exist to any considerable extent,hhowever, in the sardine fisheries either of New England or of California, or in the tuna or mackerel fisheries of the latter State, where the owners of the fishing craft are rarely processors.

In the cases where a heavy tie-up of working capital exists fishing constitutes merely one department of what are primarily processing or manufacturing businesses, and their catches are not normally sold in a fresh state. It is not easy, therefore, to segregate the part of the working capital chargeable to the fishing operations.

THE 1908 CENSUS DATA ON INVESTMENT

The last previous data to be collected with regard to the capitalization of the fisheries were those of the Census of 1908. They are summarized in Table XLIV. These figures appear to be complete except that they do not include the working outfit of fishing boats or either outfit or cash capital for Alaska.

The only item in this table which can be compared with data on current capitalization gathered in connection with the present study is that for the value of fishing vessels. The Census figure was $11,454,000; the current estimate is $22,251,000.

These two valuations are for years a quarter century apart, and could not, therefore, be expected to agree closely. The simplest way of verifying them is to compare the ratios they bear to the value of the vessel production of the corresponding years.

TABLE XLIV

CAPITALIZATION OF THE FISHERIES AS REPORTED BY THE CENSUS OF 1908
(In thousands)

Capital item	Amount of Capital	
Fixed capital		
Fishing craft		
Vessels	$11,454	
Boats	7,356 a/	
Total	18,810	
Transporting vessels	4,960 b/	
Fishing gear		
Vessels	1,917 c/	
Boats and ashore	6,984 c/	
Total	8,901	
Shore and accessory property	11,781 d/	
Total, fixed capital		$44,452
Working capital		
Outfit e/		
Fishing vessels	3,567	
Transporting vessels.	441	
Total, outfit	4,008 e/	
Cash f/	2,442	
Total, working capital		6,450
Grand total.		50,902
Recapitulation		
Hulls, equipment, gear and outfit		
Vessel fisheries	16,938	
Boat and shore fisheries	14,340	
Transporting trades	5,401	
Total	36,679	
Other capital	14,223	
Grand total		350,902

Source: Bureau of the Census, Fisheries of the United States, 1908.

a/ Includes a small proportion of transporting boats.

b/ The item for Alaska, accounting for nearly half this figure, is heavily weighted with the value of the large vessels used for bringing cannery workers and supplies to and from the Territory.

c/ Totals of State items adjusted slightly to fit the grand total for the United States, as there is a discrepancy in the published figures which cannot now be corrected.

d/ A large proportion of this item represents shore property of salmon canning companies in Alaska and of oyster cultivating companies in the North Atlantic area. The relevance of much of it to a statement of the capitalization of the fisheries is open to question. Because of this the segregation of the item between the vessel and the boat and shore fisheries has little significance, and is omitted from the table.

(Source Continued)

e/ "Outfit" is the Census term for operating supplies, such as provisions, ice, salt, bait and engine fuel and accessories. The value of non-expendible equipment, such as dories, tools, anchors and rigging, is included with that of vessels and boats as fixed capital. The Census figure for the value of outfit is incomplete, as the item was not reported for Alaska or for boats in the United States proper.

f/ For the United States proper only; not reported for Alaska. Probably includes accounts receivable and other non-physical working assets.

The value of the 1908 vessel catch, excluding Alaska, was $22,150,000. The corresponding reported value of fishing vessels represents 50.9 percent of this figure.

The ratio which the fixed investment of an industry bears to the value of the product fluctuates with the degree of productive activity, since the book valuation of fixed assets changes with relative slowness. In the case of the fishing industry the ratio for 1929 - a year of very active business - should normally be lower than that for 1908, while the ratio for 1931, 1932 or 1933, which were depression years, should be a good deal higher.

Actually, the recent value of fishing vessels, as estimated above, is 43.2 percent of the value of the 1929 vessel catch, in comparison with 50.9 percent for 1908. The ratio for 1931 is 66.2 percent. That for 1930 is 48.8 percent, and that for the average of the three years 1929 to 1931 is 51.1 percent, or very nearly the same as the ratio for 1908.

These figures show strikingly little change in the relationship of the value of fishing vessels to the value of their catch, from that of twenty-five years ago. This would be expected from the generally stable character of the industry, and tends strongly to indicate that the independent figures for the investment in fishing vessels in 1908 and in recent years are approximately comparable, and that they may be taken as confirming one another.

The data for the capitalization of industry which used to be collected by the Census represented, as a rule, averages of individual practices with respect to book valuation. In the case of the fisheries, however, where the formal assignment of any book value to assets is somewhat exceptional, the returns to the 1908 Census more probably represented the assumed sales values of the vessels in the open market, which is normally active enough to make such a basis of reporting possible. If so, the values reported to the Census were arrived at by much the same procedure as the estimated valuation which has been worked out for recent years.

The Census of 1908 put the value of vessel fishing gear at $1,910,000. This was approximately 17 percent of the value of the vessels themselves in use in that year, and 8.6 percent of the value of the vessel catch.

The original cost of the vessel gear in use in recent years has been estimated as $11,256,000, and its average life at about two and a half years. There are no data on the age of this equipment by means of which its present value can be figured from the original cost. But if it is assumed that the former is about one-third of the latter, the present value would bear approximately the same ratios as in 1908 to the current value of the vessels themselves and to the average value of the vessel catch in 1929 - 1931. Such an assumption with regard to the present investment in vessel fishing gear seems reasonable enough to be adopted tentatively.

There are no recent data with which to compare the items in Table XLIV for the value of shore and accessory property and for working capital. The former is a very substantial figure. More than half of it, however, is assigned to Alaska, where it must be accounted for by some portion of the plant of the salmon canneries; and a great part of the remainder evidently represents the establishments of the North Atlantic oyster-cultivating companies. The rest of the item for the United States proper must consist chiefly of the shore property of the minority of incorporated enterprises in places like Boston, Gloucester, Pensacola, and San Francisco, which combine wholesale or processing business with the operation of fishing fleets. There is a good deal of doubt as to how much of any of these items is really part of the investment in the fishing industry proper.

The remarks that have been made with regard to the working capital of the fisheries suggest that that item is not very large in comparison with the fixed investment. The omissions from the 1908 Census data for capitalization, of course, mean that the 87 percent of fixed capital shown by Table XLIV is somewhat too high. But it seems clear that, even after allowance for this error, the proportion is very much above the corresponding one for manufacturing industry at large, where only about half the total investment is fixed. The higher percentage of fixed assets in the case of the fisheries affects their financial picture materially.

PROFIT AND LOSS IN 1933

Returning to Table XLI, it appears that on the 339 share vessels for which owner's expense in 1933 was returned in connection with the present study there was realized, in the aggregate, a net loss of $1,017,933, as against a total vessel share or gross profit of $1,783,811. This amounted to an average net loss of $3,191 per vessel.

For 225 of the 339 vessels a net profit in 1933 was reported. In the case of 201 out of the 225, however, this profit was taken before depreciation. The profit amounted in the aggregate to $392,222, out of a total vessel share of $1,133,425. This was an average of $1,743 per vessel.

The addition, however, to the owner's expense for the 201 vessels just mentioned of an estimated write-off for depreciation has the effect of converting the net profit on the 225 vessels into a net

loss of $218,150, or an average of $970 per vessel. Individually, of course, some of these vessels continued to show a profit after adding the write-off.

The addition of the estimates for depreciation also has the effect of converting the net profit originally reported into a net loss in all areas individually except the South, where a very small profit remains after adding the write-off. The final loss is relatively heavy in all the other areas except California, where the vessels for which owner's expense was reported come not far from breaking even after depreciation.

CONCLUSIONS SUGGESTED BY THE DATA ON OWNER'S EXPENSE

The primary purpose of the study thus far has been to bring out as clearly and accurately as possible the facts relating to the earnings in 1933 of vessel fishermen and of the craft on which they work, rather than to evaluate them. It is impossible to deny that the picture is a pretty dismal one; but, before generalizing too broadly on the results for that year it will be well to take into account the estimates for 1929 and 1934 which are to be presented in the next chapter.

Since most fishing enterprises are unincorporated, it was difficult or impossible to obtain by questionnaire information as to the financial reserves of vessel owners, by resorting to which upward adjustments in the compensation of the crews of their vessels might have been made during the acute phase of the depression. In general it seems safe to say that such reserves were small or non-existent. In the main, moreover, this was true of the corporate enterprises as well; though in the case of the latter it would be desirable to make an examination of the more complete figures which presumably exist, before arriving at a final judgment.

CHAPTER XII

THE EARNINGS OF FISHERMEN AND OF VESSELS IN 1934

And 1929

When the collection of data for the purposes of the present study was begun 1933 was the last calendar year for which reports could be asked. As the work progressed, however, the completion of another year made it desirable to use the returns to the questionnaire as a basis for estimating the corresponding earnings of fishermen and of fishing vessels in 1934. This was particularly the case because there had been in the course of the latter year a substantial recovery in the quantity and in the average landed price of fishery products. In the case of vessels working on shares this recovery would, of course, produce automatically some degree of improvement in the earnings of their crews. At the same time, since estimates for 1934 were to be made, it was felt that interest would attach also to corresponding figures for the pre-depression and high price year 1929.

MODE OF MAKING ESTIMATES FOR 1934 and 1929

The discussion of the share system in Chapter VI has made it plain that, when the terms of the lay in use on a fishing vessel, the value of its catch, and the operating expense incurred on it in a given year are known, the amount of the vessel and crew shares can be determined.

In the present case the amount of operating expense and the terms of the lays in use on the vessels included in the sample were known for 1933. There was reason to think that with occasional qualifications the share agreements were the same in 1934 and in 1929. As a precaution, however, the supplementary schedule asked whether there had been in each fishery, between those years, any change in the lays to affect materially the relation of the vessel and crew chares to one another and to the gross stock. For practical purposes the replies were negative, though a few instances were reported in which the relative frequency of two lays had changed sufficiently between 1929 and 1934 to call attention to the fact. The tendency to the substitution of the "Italian" for the American" lay* in the Atlantic macherel fishery furnishes an example.

The value of the catch of the various fisheries in 1929 was obtained from publications of the Bureau of Fisheries in the same manner as those for 1933. The estimates of the value of the 1934 catch which were made primarily for the present purpose have been referred to in Chapter IV.

The operating expense of a fishing vessel fluctuates independently of the value of the catch and of the terms of the lays in use. This expense can, however, be estimated with tolerable accuracy for a given fishery from one year to another, provided that the changes in the prices of a few commodities, and the relative importance of the latter in accounting for the total operating expense in the base year, are known.

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*See Table XXII and Appendix III.

These commodities are coal, fuel oil, gasoline, lubricants, foodstuffs, ice and salt.* In a few instances the rates of wages paid in addition to or in lieu of shares have also to be taken into account.

Data for these items were obtained for the important fisheries covered by the study through the medium of the supplementary schedule to which reference has been made, and were then used to arrive at estimates of operating expense in 1934 and in 1929.

With these expense items and the estimates of the value of the catch in those years as a basis, the information derived from the returns to the main questionnaire with regard to the lays in use was applied to obtain figures for the average 1934 and 1929 vessel and crew shares. It must be emphasized again that the resulting figures are estimates. In the main, however, they have been found consistent with one another and with the other data with which there has been occasion to compare them; and there is probably no serious risk in using them as they stand.

INDIVIDUAL CREW SHARES IN 1934 and 1929

Comparisons of the average crew share per man in 1934 and in 1929, which result from these estimates, appear with the corresponding base figures for 1933 in Table XLV.

The decline in the average crew share per man from 1929 to 1933 in the country at large was 57 per cent. The corresponding decline in the average annual compensation of wage earners in manufacturing industry over the same period was 34 per cent. It is plain, therefore, that a sharp deflation in the prices of fish and shellfish, such as took place from 1929 to 1933, is drastically unfavorable to the earnings of the share workers concerned.

On the other hand, the price recovery which developed from 1933 to 1934, though very partial when considered with reference to the 1929 level, had unquestionably a greater effect in restoring workers' earnings than did the concurrent price increases in the case of manufacturing industries. The increase in average crew share per man from 1933 to 1934 for the whole country was 51 per cent; and the level in the latter year was about 35 per cent below that of 1929, instead of 57 per cent as in 1933.

The workers in most branches of the fishing industry benefited substantially from this recovery. The percentage of improvement was comparatively small in a few cases; but these were nearly all fisheries in which the average crew share in 1929 had been relatively high. A single instance of an apparently unfavorable development from 1933 to 1934 in a fishery in which the average crew share had been absolutely low in 1929 occurred in the red snapper fishery of the South.

CHANGES IN CREW SHARE AND IN VALUE OF CATCH

Even if the fact had not been specifically pointed out, the desc-

*Bait is sometimes an item of consequence, but it is rarely practicable to obtain a record of cost or prices.

TABLE XLV

ESTIMATED AVERAGE SHARE PER SHARE FISHERMAN ON SAMPLE a/ VESSELS, CRUDE AND WEIGHTED ACCORDING TO THE TOTAL NUMBER OF MEN IN EACH FISHERY, 1934 AND 1929 COMPARED WITH 1933, BY AREA AND FISHERY

Area and Fishery	Average Share per Man 1934	Percentage of Increase (+) or Decrease (-) 1933 to 1934	Average Share per Man 1933	Percentage of Increase (+) or Decrease (-) 1929 to 1933	Average Share per Man 1929	Percentage of Increase (+) or Decrease (-) 1929 to 1934
New England						
Groundfish	$ 926	+ 63.9	$ 565	- 62.4	$ 1,504	- 38.4
Mackerel	309 b/	+ 16.2	266 b/	- 71.2 b/	923 b/	- 66.5 b/
Miscellaneous	955	+ 41.5	675	- 79.6	3,309	- 71.1
Average						
Crude	844	+ 57.8	535	- 65.9	1,571	- 46.3
Weighted	1,016	+ 43.5	708	- 66.9	2,142	- 52.6
Middle Atlantic						
Scallop	1,123	+ .2	1,121	- 46.3	2,086	- 46.2
Miscellaneous	470	- 2.7	483	- 74.2	1,874	- 74.9
Average						
Crude	627	- .5	630	- 67.5	1,937	- 67.5
Weighted	597	- 1.8	608	- 68.3	1,915	- 68.8
South						
Red snapper	168	- 6.1	179	- 69.6	588	- 71.4
Shrimp	1,142	+ 98.6	575	- 66.6	1,724	- 33.8
Miscellaneous	458	+ 36.7	335	- 80.1	1,681	- 72.8
Average						
Crude	276	+ 16.9	236	- 75.1	948	- 70.9
Weighted	785	+ 80.9	434	- 68.9	1,395	- 43.7
Great Lakes						
Lake Erie	1,041	+ 52.9	681	- 26.0	920	+ 13.2 d/
Lakes Huron and Michigan	913	+ 24.1	736	- 39.1	1,209	- 24.5
Average						
Crude	1,039	+ 44.7	718	- 36.2	1,125	- 7.6
Weighted	937	+ 29.1	726	- 37.9	1,155	- 18.9
California						
Tuna	2,410	+ 78.4	1,351	- 24.6	1,792	+ 34.5
Tuna and Sardine	2,021	+ 124.9 c/	898	- 67.6	2,782	- 27.4
Sardine, Monterey	1,202	+ 139.0 c/	503	- 19.5	625	+ 92.3 c/
Miscellaneous	621	+ 58.8	391	- 30.1	559	+ 11.1 d/
Average						
Crude	1,873	+ 86.4	1,005	- 35.9	1,567	+ 19.5
Weighted	1,625	+ 76.1	923	- 28.1	1,284	+ 12.7
Northwest and Alaska						
Halibut	973	+ 13.5	857	- 53.1	1,827	- 46.7
Salmon	450	+ 30.4	345	- 48.4	668	- 32.6
Alaska Herring	938	+ 22.9	763	- 38.9	1,243	- 24.8
Miscellaneous	708	+ 31.6	538	- 68.1	1,687	- 58.0
Average						
Crude	796	+ 21.0	658	- 52.2	1,376	- 42.2
Weighted	723	+ 19.5	605	- 53.0	1,287	- 43.8
United States and Alaska						
Average						
Crude	947	+ 51.5	625	- 57.4	1,467	- 35.4
Weighted	1,035	+ 47.9	700	- 52.7	1,479	- 30.0

Source: Computed from returns to N.R.A. questionnaires on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ As explained in footnote (h) on Table XXVII and in the text (Chapter VII) these average earnings per man in the mackerel fishery cover only part of the year in the case of 10 of the 14 vessels in the sample. The deficiency is greater in 1933, and probably also in 1934, than in 1929; and the percentages of decrease shown in the table are consequently somewhat exaggerated.

c/ These large increases in crew share per man, which in the case of the Monterey sardine fishery raised the 1934 figure to nearly double that for 1929, were the result of a disproportionate recovery in the sardine reduction industry.

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d/ These cases in which average crew share per man in 1934 exceeded that of 1929 may be the result of the small size and peculiar composition of the samplee.

cription of the share system in Chapter VI would have made it obvious that a relationship exists between the fluctuations from year to year in the value of the catch in any fishery or area, and in the shares received by the men engaged in it. The nature of this relationship is brought out in detail in Table XLVI.

This table shows that from 1929 to 1933 the decline in the average operating expense of fishing vessels was a good deal less than the decline in the prices of fishery products. It was therefore to be expected that the drop in the average crew share would be somewhat sharper than the corresponding decline in the value of the catch. The degree to which this is true, however, varies considerably in the different parts of the country. In the Middle Atlantic area, as in the United States at large, the decline in the average crew share per man from 1929 to 1933 was only a little greater than the drop in the value of the catch. On the Great Lakes and in California the falling off in the former was practically the same as the relatively moderate decline in the latter. In the three remaining areas, however, the drop in individual crew share was very decidedly greater than the decline in the value of the catch.

TABLE XLVI

RELATION OF CHANGE IN AVERAGE CREW SHARE PER MAN TO CHANGE IN AVERAGE VALUE OF CATCH PER VESSEL, FOR SAMPLE a/ SHARE VESSELS, BY AREA, FROM 1929 to 1933

Area	Decrease(-) or Increase(-) from 1929 to 1933			Percentage of Fishermen on Vessels on Which 50 Per cent or More of Operating Expense is Charged to Crew Alone, 1933	Percentage of Value of Catch Represented by Vessel Share, 1933
	In Average share per Man	In Value of Catch per Vessel	In Operating Expense per Vessel		
	(Per cent)	(Per cent)	(Per cent)		
New England	-65.9	-49.4	-19.3	76.5	39.0
Middle Atlantic	-67.5	-62.5	-20.5	29.7	29.4
South	-75.1	-57.6	-21.9	84.3	35.9
Great Lakes	-36.2	-36.5	- 5.8	b/	28.6
California	-35.9	-37.4	+ 5.9	6.5	33.2
Northwest and Alaska	-52.2	-43.5	-19.0	59.5	22.8
United States and Alaska	-57.4	-53.3	-13.9	57.8	33.7

Source: Computed from returns to N.R.A. questionnaires on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ So large a proportion of operating expense in the case of vessels on the Great Lakes is charged to the owners alone that a percentage in this column would not be comparable with those for other areas.

An inspection of the data in the third column of Table XLVI leaves little or no doubt that these differences are due primarily to the extent of the change in the expense of operation in the various cases. On the Great Lakes and in California operating expense changed very little from 1929 to 1933, while in all the other areas there was a drop of about 20 per cent. The difference was due mainly to the extent to which the expense in a given area included the cost of food. The prices of foodstuffs dropped sharply from 1929 to 1933, while those of petroleum products, which constitute collectively the largest single item of the operating expense of fishing vessels, remained stable or even increased.

The relationship between the change in the average crew share per man and the change in the value of the catch, however, would appear to be affected also by the proportion of operating expense which is customarily charged to the crews alone, as distinct from the crews and the owners jointly. This appears from the fourth column of Table XLVI. In New England, in the South and in the Northwest and Alaska, where the decline in individual share earnings from 1929 to 1933 was very decidedly greater than the decline in the value of the catch this proportion is high. In the Middle Atlantic area, where the discrepancy between the two changes was comparatively small, the proportion of operating expense charged to crews alone is much lower. In California, where there was no discrepancy of consequence, the latter proportion is still smaller.

For the sake of making the comparisons in Table XLVI complete, percentages indicating the relative amount of the vessel share have been added in the last column. It would appear, however, that this latter factor is of secondary importance. It is true that in New England and the South, where the decline in individual crew share was very sharp in comparison with the decline in the value of the catch, the ratio of the vessel share to the gross is high; while in the Middle Atlantic area and on the Great Lakes, where the discrepancy was smaller, the percentage accounted for by the vessel share is low. In California, moreover, both the discrepancy between the change in the average crew share and in the value of the catch, and the percentage represented by the vessel share, are intermediate. In the Northwest and Alaska, however, the very moderate percentage represented by the vessel share in the halibut fishery causes the correlation to fail.

To sum up, when a decline develops in the value of the fishery catch, a concurrent drop in the average earning of share fishermen is to be expected. Whether this decline tends, however, to be sharper than the decline in the value of the catch, as it did from 1929 to 1933, or not, would depend on the degree of change in operating expense over the same period and on the terms of the lays in use.

The estimates of individual crew earnings in 1934 which are given in Table SLV show, as might have been expected, that a relationship analogous to the one just discussed, exists when there has been a rise in the value of the fishery catch.

The estimate of the 1934 production which was given in Chapter IV indicates an increase of about 33 per cent over 1933. During the same period the average increase in operating expense was small - less than five per cent. This being the case, the increase in the average crew share per man from 1933 to 1934 should apparently have exceeded the increase in the value of the catch to a considerably greater degree than the decrease in the former exceeded the decrease in the latter from 1929 to 1933.

The data in Table XLV bear out this expectation. They indicate that the increase in the average individual crew share from 1933 to 1934 for the country as a whole was about 51 per cent, as against the estimated increase of 33 per cent in the value of the catch.

The estimate of the value of the 1934 catch just referred to, which is the only one available at present, is too tentative to justify a detailed comparison with the corresponding improvement in the average share per man over 1933, area by area. It seems safe to assume, however, that the recovery in the individual share was particularly pronounced, relatively to the recovery in the value of the catch, in New England, the South and the Northwest and Alaska. In California and on the Great Lakes the improvement in crew share per man was probably about the same as the improvement in the value of the catch; while in the Middle Atlantic area the former exceeded the latter to a comparatively small extent.

RETURN TO VESSEL OWNERS IN 1934 AND 1929

Similar estimates which have been made of average vessel share in 1934 and 1929 are shown, by area, in Table XLVII, compared with the corresponding questionnaire data for 1933. In order to give a rough idea of the effect of the changes thus shown on the net return to vessel owners, an effort was made to obtain, through the medium of the supplementary schedule, data on the relationship which the principal items of owners' expense incurred in 1934 bore to those of 1929. The questions on this point were difficult to draft and probably not very easy to answer; and the returns were only moderately satisfactory. They did, however, adequately confirm the previously existing impression that these items of owners' or overhead expense have been very inelastic, even under the drastically varying conditions of the past ten years.

The net change in overhead cost during this period appears, in fact, to have been so small that it is believed sufficient to show a single column for it in Table XLVII, applicable to all three years for which figures for average vessel share are given. These data for overhead include the normal write-offs for depreciation described in the preceding chapter.

The table also shows the average vessel share and average overhead for the geographical areas and for the country at large after weighting by the approximate total number of vessels engaged in each fishery.

TABLE XLVII

AVERAGE VESSEL SHARE AND ESTIMATED AVERAGE OWNER'S OR OVERHEAD EXPENSE, PER SAMPLE a/ SHARE VESSEL, CRUDE AND WEIGHTED ACCORDING TO THE TOTAL NUMBER OF VESSELS IN EACH FISHERY, 1934 AND 1929 COMPARED WITH 1933, BY AREA

Area	Average Vessel Share per Vessel			Average Owner's Expense per Vessel b/ c/
	1934	1933	1929	
New England:				
Crude	16,594	13,956	27,636	23,769
Weighted	7,590	7,270	14,395	15,764
Middle Atlantic:				
Crude	3,091	2,865	7,958	3,753
Weighted	2,811	2,779	7,720	3,888
South:				
Crude	1,921	1,935	4,850	2,636
Weighted	1,309	1,444	3,308	2,220
Great Lakes:				
Crude	3,020	2,231	3,133	3,414
Weighted	2,200	1,782	2,280	3,708
California:				
Crude	15,349	8,007	12,852	9,100
Weighted	14,110	7,172	11,511	7,185
Northwest and Alaska: e/				
Crude	2,259	2,035	4,646	2,794
Weighted	1,783	1,755	4,007	2,228
United States and Alaska:				
Crude	6,674	4,940	9,479	8,189
Weighted	5,611	4,332	8,315	7,448

Source: Computed from returns to N.R.A. questionnaires on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ Including write-off for depreciation on vessel and fishing gear.

c/ These figures apply without material change to 1929, 1933 and 1934.

d/ This apparent average loss in New England in 1929 is discussed in the text, Chapter XII.

e/ Excluding the Alaska herring fishery, the conditions of which make it difficult to figure vessel share on a basis comparable with the remainder of the industry.

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It has not seemed advisable, in Table XLVII, to attempt to compute profit or loss specifically; but in a general way the differences between the figures for average vessel share and those for overhead are believed to indicate correctly the situation with respect to the net return of fishing vessel owners over the years specified.

The following comments are based on the weighted data. They indicate a failure in 1933, on an average, to cover owners' or overhead expense after depreciation, in all sections of the country except California. In the latter State in that year the vessel fisheries approximately broke even.

The same was true in 1934, even after a considerable recovery in the prices of fish and shellfish, again with the exception of California, and with the qualification that in the Northwest and Alaska the average loss was not large. In the case of California in 1934 there was a very pronounced spurt in the sardine reduction industry; most of the other fisheries of the State continued to show a loss.

In 1929 a net profit was realized by vessel owners, on an average, in all areas, with the exception, on the face of the estimates, of a small loss in New England. Even there a profit is indicated in 1929 for all fisheries except the miscellaneous group, which includes a relatively large number of vessels and consequently affects substantially the weighted averagees in Table XLVII. The sample for this group, on the basis of the number of vessels, was not very large; and it may be that the loss which it indicates for 1929 was not really representative. If so, a profit may well have been actually realized, on an average, by New England vessels in that year, though it cannot have been a large one.

For the fishing industry as a whole to show an appreciable net profit again, there will have to be a recovery in the value of the catch of about 20 percent over the level attained in 1934 - unless, of course, the fixed investment should be drastically reduced by scrapping the least profitable vessels or otherwise. Even with a 20 percent price increase there would still be a loss, on an average, in New England and the South, and probably on the Great Lakes.

WAGES IN 1934 AND IN 1929

The procedure used in arriving at the estimates for 1934 and 1929 in Tables XLV and XLVII applies, of course, only to vessels working on shares. The plan of presenting figures for those years was not formed early enough to include in the original questionnaire a specific request for data on the wages paid in 1929.

Subsequently some information was obtained with regard to the rates paid in the principal wage vessel fisheries in 1934, as compared with 1933. These figures have been discussed in Chapter VIII; and as a result it has been pointed out that the earnings of wage fishermen were far less elastic during the depression years than were those of share workers. It is safe to assume that, with the recovery in the prices of fish and shellfish which developed from 1933 to 1934, the increase in labor cost for the owners of wage vessels was materially less than the corresponding increase for the owners of share vessels. In part, no doubt, the increase in the former case was merely deferred as a result of the accepted tendency of wage adjustments to lag behind the movement of commodity prices.

In general, however, the position of the owners of wage vessels with respect to labor cost was improved in 1934 as compared with 1933, while the reverse was the case with owners of share vessels. Looking backward, these remarks apply also, with minor qualifications to 1929 as compared with 1933.

CHAPTER XIII

THE EARNINGS OF EMPLOYEE FISHERMEN AND TRAPMEN IN THE SALMON CANNING INDUSTRY

SCOPE OF THE DATA

In a preceding chapter it has been pointed out that the original body of data gathered in connection with the present study did not cover the so-called "employee" fishermen of salmon canneries in Alaska. The present chapter will present the information with regard to the earnings of this class which was obtained subsequently from other sources. As a matter of convenience it will also deal with the men employed by these same concerns in connection with salmon traps.

The estimated value of the salmon caught in 1933 by employee fishermen and trapmen has been given in Table XX as $5,795,983. This is 77 per cent of the value of the whole Alaska salmon catch in that year, and 64 per cent of the total value of the fishery catch of the Territory.

SOURCES OF INFORMATION

The information available at present with regard to the earnings of employee fishermen in Alaska is derived from two special inquiries. One of these covered canneries which accounted for about 97 per cent of the salmon pack for the 1934 season only. The other obtained data for the years 1933 and 1929 as well, but covered only 41 or 42 per cent of the 1934 pack, and still smaller proportions in the case of the earlier years. These smaller samples, moreover, were overweighted with the establishments of a few large companies. The figures given in this chapter are estimates for the whole industry, based on a combination of the two sets of data.

INCLUSION OF BOAT AND SHORE FISHERMEN

A high proportion of salmon fishermen in Alaska, and of canning company employees especially, work on boats or from the shore and not on vessels. The inquiries just mentioned covered this class as well as the vessel fishermen - the boat and shore workers, indeed, constituting the bulk of the samples. For this reason the data on earnings in this chapter are comparable with those thus far presented, and particularly with the figures that have been given for the Northwest and Alaska salmon fishery, only with considerable qualification.

NUMBER OF FISHERMEN AND TRAPMEN

The total number of fishermen engaged in supplying the salmon canneries in Alaska in 1934 was 6,227, and in 1933, 5,398. To these, for the purpose of comparison with the data for the United States proper which have been given in earlier chapters of this report, there should be added the men employed in connection with salmon traps. In the case of Alaska these are not included in the Bureau of

Fisheries' figures for fishermen. The number of men employed in connection with cannery-owned or operated traps in 1934 appears to have been in the neighborhood of 500. This does not include the men employed in connection with the independent or non-cannery traps, with regard to whose number no information seems to be available. If known, however, the latter item would not increase the total volume of employment already indicated materially.

The number of employee fishermen in Alaska in 1934 may be put, approximately, at 4,576. This was 73½ per cent of the total number of fishermen engaged in supplying the salmon canning industry. The corresponding number in 1935 is difficult to estimate, but appears to have been only a little lower - perhaps 4,500.

Of the employee fishermen in Alaska in 1934 not quite a half were brought from the United States by the canning companies for the season, 16 per cent were white residents of the Territory, and 35 per cent were natives - Indians or Eskimos. These proportions vary greatly in different parts of Alaska. In the thinly populated Western division practically all the fishermen are employees of the canning companies; and in 1934 60 per cent of these were brought from the United States. In Southeastern Alaska, however, where the bulk of the local population is concentrated, not much over a third were employees in 1934; and of these only two per cent were brought from the United States, while nearly 95 per cent were natives.

PERIOD OF EMPLOYMENT

The work of the fishermen who supply the salmon canneries in Alaska is concentrated in a short season of not more than twelve or thirteen weeks, during the months of June, July and August. Some of those who are brought from the United States may be taken to Alaska early in May and brought back toward the end of September, so that they are absent altogether for about five months; while on the other hand both the fishing season proper and the whole period of absence may be shorter.

Most of these residents of the United States proper, among the employee fishermen, and also of the white residents of Alaska, normally have other employment during the remainder of the year; but no detailed information with regard to the latter has been obtained in connection with the study.

The earnings of the native employee fishermen during the cannery season probably represent, in many cases, their only money income. These men are still, in large part, pursuing their primitive community life, with comparatively little change.

METHOD OF COMPENSATION

For the actual work of fishing employee fishermen in Alaska are compensated at a piece rate of so much per fish caught. For work at the canneries before and after the fishing season proper, and on the vessels while traveling to and from the Territory, they receive

extra compensation on a time basis. In the Bristol Bay district of Western Alaska the latter is called "run money". Elsewhere it seems to have no special name, but amounts to the same thing, The work remunerated by these additional time payments includes the overhauling of fishing craft and gear and the handling of cargo.

AVERAGE EARNINGS OF EMPLOYEE FISHERMEN

The following figures for the earnings of employee fishermen, so far as known, include run money and other time payments, as well as the basic, compensation per piece.

The results of the inquiries above mentioned indicate that the average earnings of employee fishermen from the salmon canning industry amounted in 1934 to $747 for the season, and in 1933 to $518. One of the questionnaires brought in some data on earnings in 1929. The sample, however, is small, and there is some doubt as to the representativeness of the figures for earnings. It does not, consequently, seem advisable to include them here.

The earnings of employee fishermen are materially higher in Western Alaska than in other parts of the Territory, and higher in Central Alaska than in the Southeastern division. This is largely a consequence of the relative scale of the fishing operations concerned; but it is also associated with the percentages of employee fishermen brought from the United States, and with the proportions of whites and of natives.

For these same reasons the average earnings of employee fishermen are considerably larger in the case of the canneries operated by big companies than in those of the smaller establishments. In the Bristol Bay district, where the fishermen are practically all employees and all work for large concerns, the average in 1934 was about $1,073 for the five months or less during which the men were absent from the United States. For 1933 the equivalent figure would appear to have been about $750. Cases of individual employee fishermen who earn $2,000 in the course of a season under favorable circumstances are said to have been not uncommon.

EARNINGS OF TRAPMEN

The returns to the questionnaire above mentioned indicate that the average earnings of the men employed in connection with salmon cannery traps were about $400 for the season in 1934 and $325 in 1933. These are monthly wages, not piece payments. There are no data for the earnings of workers employed in connection with the independent traps.

SPECIAL CONDITIONS OF THE WORK

In drawing conclusions from these figures for employee fishermen's earnings the special conditions of the work must be borne in mind. All the men brought from the United States proper and most of those employed in the Territory receive board and quarters in addition to the above-stated money compensation. In 1934 the cost of board per man ran

$100 or a little less for the season in Southeastern Alaska, and $110 to $120 in the more remote sections.

Employee fishermen also, as a rule, receive some free medical service, and those brought to Alaska are transported to and fro without charge, providing they remain throughout the season. Their work while actual fishing is in progress is likely to be heavy, with a proportion of very long days; but this is not a continuous state of affairs, and for as much as a third of the whole period of employment the work may not be heavy, with a good deal of free time. It must be remembered that the work, at the longest, lasts less than half the year and also that the employee fishermen class includes a high percentage of natives. For the latter the resulting money income is probably to be looked on as really substantial.

The cost of the fishing licenses and the amount of the school tax, from which the Territory of Alaska derives a good deal of its income, are in many cases paid by the canning companies and deducted from the payments to the fishermen. The figures for earnings given in this chapter are understood to be after all such deductions.

THE VOLUME OF COMPENSATION

The total money compensation paid to employee fishermen in Alaska in 1934 may be estimated at $3,41[illegible],000, and the total paid to trapmen at about $200,000. A corresponding figure for 1933 is not so easy to arrive at, both on account of the less representative character of the data for that year and because the forecast of the value of the pack that was probably used as a basis for setting the piece rates to be paid to employee fishermen at the beginning of the season would appear to have been affected adversely by the panicky state of business in the late winter and early spring. Tentatively, however, the volume of compensation of employee fishermen in 1933 may be put at $2,331,000, and that of trapmen at $130,000.

COMPENSATION OF NON-EMPLOYEE FISHERMEN

One of the two inquiries mentioned above also brought in some data with regard to the earnings of non-employee or independent fishermen in Alaska. There were approximately 1,650 such persons in 1934, but apparently only about 900 in 1933. The reported average earnings for this class were #335 for the 1934 season, and $293 for 1933.

The average earnings for the 1933 season in the Northwest and Alaska salmon fishery as a whole, as indicated by the returns to the main questionnaire sent out in connection with the present study and stated in Table XXVII, were $345. The difference between this figure and the $293 cited in the preceding paragraph reflects the difference in the composition of the two samples. The $345 average covers only the earnings of vessel fishermen, who are all white and who include a substantial proportion of residents of the United States proper. It is, moreover, based in part on the salmon fishery of Washington and Oregon, where the season is longer than it is in Alaska. The average of $293, on the other hand, represents the earnings of a group of whom

many were boat fishermen, while nearly half were Alaska natives.

There is another complication which has to be taken into account in comparing the stated earnings of the employee and independent fishermen who supply the Alaska salmon canneries. In the case of the latter the figures obtained by means of the main questionnaire were taken after the deduction of the cost of operating the vessels. The employee fishermen, however, have in some cases to pay for the fuel required to operate the craft on which they work. This is because of the difficulty of keeping a check on the use of cannery-owned boats for the employees' private purposes. The extent, however, to which the figures for earnings given above include the cost of engine fuel, as a result of this practice, is at present unknown.

TOTAL COMPENSATION OF ALASKA SALMON CANNERY FISHERMEN

The best estimates that can be made of the total compensation of the fishermen who supply the salmon canneries in Alaska are about $4,169,000 for the 1934 season and about $2,724,000 for that of 1933. The first of these figures is 11.3 per cent of the value of the 1934 pack at pre-season prices, as reported by the Bureau of Fisheries. The 1933 estimate represents a materially smaller percentage of the corresponding value for that year, owing to the apparent underestimate of the value of the pack at the beginning of the season.

Since much the greater part of the salmon used by the canning industry is not sold in the raw, any figure for the value of the whole supply in that condition is somewhat artificial. However, for the purpose of supplying ratios for comparison with those already shown in Table XXVII for other branches of the industry, it may be said that the volume of fishermen's compensation just indicated for 1934 works out at 44.0 per cent of the estimated value of the raw supply, and that for 1933 at 37.9 per cent. These ratios are well in line with those for other fisheries.

CHAPTER XIV

EARNINGS IN THE BOAT AND SHORE FISHERIES

It has already been stated that the present survey as originally planned covered only the vessel fisheries. The reasons for this limitation are explained in Chapter XV. The present chapter presents and discusses the information which has since been obtained with regard to the boat and shore fisheries.

DISTINCTION BETWEEN THE BOAT AND THE SHORE FISHERIES

The term "boat and shore" fisheries implies that the part of the industry now under consideration consists of two divisions. The line of demarcation is not very distinct, but in a general way the shore fisheries include those in which no boats are used, or in which the ratio of boats to men is very low. Clam digging, eel spearing and fishing off beaches with haul seines are activities typical of this class.

Since no survey of the fisheries of the Mississippi River and its tributaries has been made for any recent year except 1931, the following statement regarding the boat and shore division of the industry exclude that region. Alaska, however, is included; and the summary, therefore, is complete for the marine and lake fisheries.

Number of Fishing Boats and Boat Fishermen

The number of fishing boats in use in the area just defined declined from 1929 to 1932 by 18 per cent, but in 1933 was approximately the same as in the preceding year - that is, about 52,500. The corresponding number of boat and shore fishermen declined perhaps five per cent from 1929 to 1932, but increased appreciably from the latter year to 1933, when it was approximately 80,250. Of this total approximately 62,800 persons, or 77 per cent, were engaged in the boat fisheries proper, and 7,450 in the shore fisheries. The few hundred men employed in connection with salmon traps in Alaska are excluded.

From 1908 to 1933 the number of boats in use declined by 30 per cent, and the number of boat fishermen by 18 per cent. In 1929 the average number of fishermen per boat was almost exactly the same as in 1908, but in 1933 it had risen by about 15 per cent. This increase was probably due mainly to doubling up in the use of boats to reduce costs under depression conditions.

The proportion of power fishing boats increased greatly from 1908 to 1933 - from 13 to 51 per cent. It would be not unnatural to suppose that this change was a cause of the increase in the average number of men per boat, due to the attention required by the engines. Such, however, does not seem to have been the case. Whether the increase in the number of men per boat which developed from 1929 to 1933 will be maintained, it is impossible at present to say.

The class of casual fisherman, which constitutes about one-

third of the total personnel of the boat and shore section of the industry on the Atlantic and Gulf coasts and the Great Lakes, and a somewhat lower proportion for the country at large, has been described in Chapter III.

EMPLOYEES AND ENTREPRENEURS

It has been pointed out that the proportion of employees as distinguished from entrepreneurs in the boat and shore fisheries is low - about 27 per cent - while the proportion of independent operators of one-man and partnership units with no employees is high - over 50 per cent. The employee status in this branch of the industry, moreover, is modified by special conditions even more than in the fisheries at large.

There can scarcely be said to be any ranks or occupations on fishing boats except that of captain, and even the latter exists only in a qualified sense.

In some of the boat fisheries it is not uncommon for persons who are not owners of the boats on which they work to own shares in the gear; and it is claimed that such men are in many cases consulted with respect to the operation of the boats and the sale of the catch. Where boats fish with nets of the more elaborate types the investment in the gear may be greater than the investment in the craft itself.

Ownership of fishing boats in fleets by single persons or firms occurs; but in this division of the industry, it is not a factor of importance. Such boats are rarely owned by corporations, except where they are operated on the side by wholesaling and processing companies. The latter condition exists in the case of a large number of salmon boats in Alaska and of many owned by wholesalers and processors in the South especially in the shrimp-canning industry and in Florida.

THE VALUE OF THE BOAT AND SHORE CATCH

In 1933 the boat and shore fisheries, including salmon traps in Alaska, accounted for 57 per cent of the total value of the industry's catch, or about $33,053,000. The proportion has changed little in 25 years, but the absolute value of the boat and shore catch declined about 12 per cent from 1908 to 1933. Of the value for the latter year about $26,300,000, or 80 per cent, represented the catch of the boat fisheries proper, about $3,378,000, or 10 per cent, the catch of the shore fisheries, and about $3,374,000 the catch of salmon traps in Alaska. The latter is an item of a special character.

The number of boats and the number of boat fishermen have declined during the twenty-five years so much more than the value of the boat catch that the average of the latter per boat and per man has risen substantially.

The figures for the long-time changes in the equipment, personnel and output of the boat and shore fisheries, which have been discussed in the last few paragraphs, are summarized in Table XLVIII.

TABLE XLVIII

OUTSTANDING DATA FOR THE BOAT AND SHORE FISHERIES, 1933 AND 1929 (1931 a/ IN THE CASE OF THE MISSISSIPPI RIVER AREA) COMPARED WITH 1908

	United States, including Alaska but excluding the Mississippi River Area			Mississippi River Area	
	1933	1929	1908	1931	1908
Value of catch	$33,052,794 b/	$67,486,000 b/	$37,484,000 d/	$2,898,000	$3,125,000e/
Per cent of total catch	56.9	56.9 c/	59.7	100.0	f/
Number of boats	52,472	63,527	75,272	14,546	11,312 g/
Per cent of power boats	51.1	49.8	15.1	30.4	11.8
Value of catch per boat	$630	$1,062	$590	$199	$276
Number of fishermen	80,263	83,776	97,892	15,884	11,570
Value of catch per fisherman	$412	$806	$383	$182	$270
Number of fishermen per boat	1.53	1.32	1.30	1.09	1.02

SOURCE: Computed from data in Bureau of Fisheries, Fishery Industries of the United States, and Bureau of the Census, Fisheries of the United States, 1908.

a/ Recent data for the Mississippi River area are available only for 1931.

b/ Segregation of boat and shore catch estimated by the author.

c/ Percentage accounted for by boat and shore catch taken as the same as in 1933. The difference was in any case small.

d/ Segregation of boat and shore catch estimated for Alaska by the author.

e/ Includes a very small proportion of vessel catch which cannot now be segregated.

f/ Unknown, but only a trifle less than 100.

g/ Includes 35 vessels averaging 8.1 tons net.

BOAT FISHERIES OF THE MISSISSIPPI AREA

While the fisheries of the Mississippi River and its tributaries have been excluded from the foregoing summary, they cannot, in dealing with the boat and shore division of the industry, be ignored entirely. Since the recent data for that area, however, are confined to the year 1931, they are shown in Table XLVIII in separate columns.

The Mississippi River area accounts for only six or seven per cent of the total value of the boat and shore catch, but for 22 or 23 per cent of the boats in use and for 15 or 17 per cent of the fishermen. The value of the catch appears to have fallen off since 1908 by about the same amount as in the case of the other boat fisheries, but the number of boats and of fishermen has increased appreciably. The average value of the catch per boat and per man in this area, therefore, has declined considerably from levels already low. The average of a trifle more than one man per boat has remained practically unchanged.

THE BOAT AND SHORE CATCH BY FISHERY

In Table XLIX the value of the boat and shore catch in 1933 is shown by area and fishery. The latter term is in this case used somewhat arbitrarily, and with a view chiefly to classifying the catch in a manner likely to be informative to the non-specialist. The kinds of fish and shellfish caught could not be used as a sole basis because in some cases, as in the pound net fisheries in general and in the haul seine fisheries of the South, the same men and gear take a great variety of species.

Since the only available data for the catch of the Mississippi area are for 1931 and not 1933, they could not be included in Table XLIX. Nearly 94 per cent of the value of the Mississippi catch in 1931 was made up of half a dozen items: catfish and bullheads (30.3 per cent), buffalofish (23.7 per cent), carp (15.7 per cent), mussel shells (14.6 per cent), and frogs (4.5 per cent). The mussel shells are raw material for the pearl button industry.

(*) For the purposes of the comparison with 1929 and 1908, the data for which cannot be segregated between the boat and the shore fisheries, the averages per boat in Table XLVIII are based on the value of the catch of this division of the industry as a whole, and not on that of the boat fisheries in the strict sense, as in the last paragraph but one of the text.

TABLE XLIX

VALUE OF THE CATCH OF THE BOAT AND SHORT FISHERIES, EXCLUDING THE MISSISSIPPI RIVER AREA, BY AREA AND FISHERY, 1933

Area and fishery	Value of catch
New England	
Groundfish	$2,280,005
Pound net	222,818
Mackerel	388,333
Herring	103,798
Swordfish	196,077
Lobster	1,612,906
Clam	1,029,161
Scallop	418,624
Eel	25,943
Crab	39,766
Miscellaneous	234,513
Total	6,551,944
Middle Atlantic	
Groundfish	365,815
Pound net	643,429
Bluefish	126,308
Shad	89,240
Lobster	168,374
Clam	642,828
Oyster	742,531
Scallop	155,010
Crab	569,693
Eel	51,847
Miscellaneous	284,237
Total	3,839,312
South a/	
Haul seine	508,596
Pound net	1,181,878
Mullet	651,101
Red snapper	205,100
Shad	217,840
Kingfish	120,935
Oyster	1,810,319
Shrimp	1,525,516
Sponge	697,044
Crab	458,389
Clam	133,393
Miscellaneous	423,260
Total	7,933,371

(Continued)

TABLE XLIX

(Continued)

Area and fishery	Value of catch
Great Lakes a/	
Ontario	$39,209
Erie	1,353,354
Huron	1,007,066
Michigan	439,348
Superior	336,066
Other b/	104,291
Total	3,279,334
California	
Hand line	262,669
Gill net	164,356
Sardine	194,766
Salmon	188,941
Tuna	32,476
Flounder	58,721
Crab	256,187
Lobster	74,505
Oyster	30,569
Miscellaneous	113,877
Total	1,377,067
Northwest and Alaska	
Salmon:	
Cannery boats	2,590,804
Independent boats	3,081,825
Traps, Alaska	3,373,877
Total, Salmon	9,046,506
Halibut	355,255
Crab	187,359
Oyster	301,166
Clam	159,198
Miscellaneous	22,282
Total	10,071,766
United States and Alaska	33,052,794

Source: Computed from data in Bureau of Fisheries, Fishery Industries of the United States.

a/ Estimated by the author.

b/ Lake of the Woods, Rainy Lake and Namakan Lake.

SIZE AND GROSS INCOME OF BOAT AND SHORE ENTERPRISES

The value of the average catch per boat in the boat fisheries in 1933 (excluding the Mississippi River area) was $392. The average number of men per boat was 1.36, and the average value of the catch per man was $290. In the shore fisheries the average value per man was $167. The remarks already made with regard to the small size of the typical fishery enterprise, therefore, apply with accentuated force to this division of the industry. The limit placed by these averages of gross earnings on the average net income of the persons concerned is evidently very low.

One or two qualifications, however, have to be borne in mind in interpreting the figures just given. In the first place about a third of all boat and shore fishermen are engaged in the industry on a casual basis only. The available data regarding the proportion of their incomes that these men derive from callings other than fishing are scattered and difficult to summarize; but the average total earnings of the class probably exceeds the net income drawn from the fishing industry by 25 per cent, or rather more.

In the second place the figures for gross revenue given above are averages for the power boat and the sail and rowboat fisheries taken together. It has not thus far been practicable to segregate the value of the catch of the two divisions; but the average value per power boat is much higher than the average per sail or rowboat. The operating expense of the latter is little more than nominal, and a very large proportion of the persons using them engage in fishing on a casual basis only.

SUMMARY OF DATA ON TYPICAL BOAT OPERATIONS

The data obtained by means of the supplementary questionnaire on typical craft in the boat and shore division of the industry are summarized for a number of representative fisheries in Table L.

These figures, which are the first of their kind to be assembled, are somewhat provisional. Further correspondence moreover, for which time has thus far been lacking, is needed to make clear in detail the distribution of the net stock as between the boat owners and the share workers in their employ. From the table as it stands only rough averages of the net earnings of all participants can be inferred.

It seems probable that averages of the data for the various groups of power boats in Table L, weighted with the total numbers of boats in each fishery, would be fairly representative of the motor boat division of the boat and shore fisheries, excluding cannery-owned or operated craft in Alaska, with its 25,000 motor boats and 40,000 fishermen. For the present, however, such general averages should be regarded as tentative only, and it has not seemed advisable to incorporate them in the report.

TABLE L

SUMMARY OF DATA FOR THE OPERATION OF TYPICAL BOATS IN REPRESENTATIVE BOAT FISHERIES a/

Area, Fishery and Gear	Total Number of Boats, 1933: Motor b/	Total Number of Boats, 1933: Other b/c/	Total Number of Men, 1933 b/	Estimated Value of Catch, 1933: Total b/d/ (Thousands)	Estimated Value of Catch, 1933: Average per Boat d/	Number of Men per Boat: Typical Boat e/	Number of Men per Boat: All Boats, 1933 f/	Number of Men per Boat: Typical Boat f/	Original Cost per Typical Boat: Hull	Original Cost per Typical Boat: Engine	Original Cost per Typical Boat: Fishing Gear	Original Cost per Typical Boat: Total
New England:												
Groundfish												
Line Trawl	654	43	1,185	$ 346	$ 1,516	Motor	1.7 e/	4 e/	$ 2,400	$ 240	$ 240	$ 2,880
Mackerel												
Purse seine	23	23	98	82	3,556	Motor	2.1 e/	7 or 8 e/	3,500	900	1,200	5,600
Chesapeake:												
Oyster												
Tongs	4,639	706	9,271	1,309	282	Motor	1.7	2		$1,000 g/	5	1,000 g/
Crab												
Trot line	2,203	175	2,388	488	221	Motor	1.0	1		1,000 g/	5	1,000 g/
Pound net	790	798	2,622	1,216	1,539	Motor	1.7	2 to 5		1,000 g/	300	1,300 g/
South: a/												
Oyster												
Dredge (Gulf Coast)	88	5	334	41	462	Motor	3.6	3	1,200	1,500	225	2,925
Tongs (Gulf Coast)	218	1,359	1,456	256	188	Other k/	.9	1 or more	50	-	8	58
Crab												
Trot line	116	438	612	63	143	Other k/	1.1	1	40	-	5 l/	45
Shrimp												
Trawl												
Atlantic Coast	513	-	1,159	514	1,001	Motor	2.3	3	1,500	2,000	65	3,565
Gulf Coast	973	-	1,946	1,117	1,148	Motor	2.0	2	800	750	50	1,600
Hand line (Gulf Coast)	439	-	1,932	206	235	Motor	1.5	1 or more	100	75	o/	175
	-	844			122	Other k/		1 or more	45	-	o/	55
Haul Seine	356	-	3,048	603	o/	Motor	1.7 r/	10 to 16 r/	900	800	550	2,250
	-	1,401				Other k/			50	-	550	600
Great Lakes: a/ s/	1,624 t/	1,535 t/	5,227 t/	3,500 u/	2,157 u/	Motor	1.7 v/	3 v/	500	500	5,000	6,000
California:												
Salmon												
Troll line	338	-	436	176	521	Motor	1.3	1	1,500	500	25	2,025
Gill net	144	-	477	54	373	Motor	1.6	2	1,200	400	250	1,850
	-	136				Other k/		2	100	-	250	350
Shad												
Gill net	180	8	338	28	155	Motor	1.9	2	1,200	400	250	1,850
Crab												
Trap	266	5	269	245	921	Motor	1.0	1	1,500	500	60	2,060
Lobster												
Trap	134	-	220	75	556	Motor	1.6	1	2,500	800	175	3,475
	-	24				Other k/		1	100	-	100	200
Hand line												
Northern California	158	47	259	w/	w/	Motor	1.3	1 or 2	1,800	700	50	2,550
Southern California	274	-	454	w/	w/	Motor	1.5	3	2,500	1,000	o/	3,500
	-	28				Other k/		1	100	-	o/	100
Washington and Oregon:												
Salmon												
Troll line	560	-	748	487	870	Motor	1.3	1	2,125	1,200	16	3,341
Gill net	2,571	223	3,182	1,159	458	Motor	1.1	1 or 2	750	500	400	1,650
Crab												
Ring net and trap	394	39	438	103	261	Motor	1.0	2 z/	2,000	1,200	85 to 90	3,285

(Continued)

TABLE L (Continued)

SUMMARY OF DATA FOR THE OPERATION OF TYPICAL BOATS IN REPRESENTATIVE BOAT FISHERIES a/

Area, Fishery and Gear	Normal Years of Life of Typical Boat & Equipment: Hull	Engine	Fishing Gear	Age of Typical Hull (years)	Length of Active Fishing Season (months)	Fishing Trips: Normal Length (days)	Number per Year	Number of Days of Active Fishing and Earning in Year	Per Cent of Total Men in Typical: Boats With No Employees	Shore Boats	Wage Boats	Typical Rate Received by Wage Earners	Estimated Annual Operating Expense per Typical Boat	Estimated Annual Cost of Upkeep per Typical Boat	Carriage or Non-carriage of Marine Insurance
New England:															
Groundfish															
Line Trawl	20	10	½	5	12	1 or 2	100	150	-	100	-	-	$ 3,250	$ 500	No
Mackerel															
Purse seine	10	10	2	5	7	2 to 7	30	135	-	100	-	-	1,875	i/	No
Chesapeake:															
Oyster															
Tongs	20	10	h/	i/	5 or 6	1	75	75	-	100	-	-	65	$25 to $50	Rare
Crab															
Trot line	20	10	½ to 2/3	i/	6	1	125	125	100	-	-	-	130	25 to 50	Rare
Pound net	20	10	2½	i/	3	1	75	75	-	-	100	$25 to $30 per mo. i/	65	25 to 50	Rare
South: a/															
Oyster															
Dredge (Gulf Coast)	25	5	h/	9	8	7 to 30	30 to 32	265	10	15	75	$60 per mo.	585	300	No
Tongs (Gulf Coast)	10	-	10	8	8	1	175	175	100 n/	-	n/	60 per mo. n/	i/	2	No
Crab															
Trot line	15	-	½ to 2/3 m/	8	9	1	200	200	100	-	-	-	i/	3	No
Shrimp															
Trawl															
Atlantic Coast	10	10	½	8	12	2	125	250	25	75	-	-	1,920	350	No
Gulf Coast	10	4	½	10	10	6	33 to 35	200	-	100	-	-	2,380	150	No
Hand line (Gulf Coast)	10	4	p/	5	12	1	90	90	100	-	-	-	i/	15	No
	10	-	p/	5	12	1	90	90	100	-	-	-	o/	3	No
Haul seine	20	5	2	15	2	1	45	45	-	25	75	60 per mo.	300	100	No
	15	-	2	10	2	1	45	45	-	25	75		o/	25	No
Great Lakes: a/ s/	12	8	8	i/	5	1	100	100	10	30	60	65 per mo.	840	1,500	No
California:															
Salmon															
Troll line	20	10	1	10	5	1	100	100	100	-	-	-	150	25	No
Gill net	20	10	3	10	2½	1	75	75	60	40	-	-	35	35	No
	10	-	3	8	2½	1	75	75	60	40	-	-	m/	25	No
Shad															
Gill net	20	10	3	10	3	1	50	50	60	40	-	-	35	35	No
Crab															
Trap	i/	i/	1	10	9½	1	200	200	100	-	-	-	200	25	No
Lobster															
Trap	20	10	2	8	6	1	75	75	75	25	-	-	50	75	No
	10	-	2	5	6	1	50	50	75	25	-	-	o/	25	No
Hand line															
Northern California	20	10	1	i/	12	2½	75	185 to 190	-	100	-	-	200	50	No
Southern California	20	10	p/	10	12	1	75	75	67	33	-	-	200	100	Rare
	10	-	p/	5	12	1	75	75	100	-	-	-	o/	25	Rare
Washington and Oregon:															
Salmon															
Troll line	20	20	1	6	5	1 to 6	25 to 125	125 to 150	50	40	10	$10 to $20 per mo. x/	925	350	Yes y/
Gill net	15 to 20	15 to 20	2	10	10	½	80	40	-	100	-	-	36	400	Yes y/
Crab															
Ring net and trap	10	10	3	6	8½	1	160	160	100	-	-	-	1,350	200	Yes y/

Source: Returns to N.R.A. supplementary questionnaire on the boat and shore fisheries, and Bureau of Fisheries, Fishery Industries of the United States.

For explanatory notes see following text pages.

(NOTES TO TABLE L)

GENERAL NOTE: This tabulation of the returns to the N.R.A. supplementary questionnaire on the boat fisheries is provisional. Additional investigation is needed to clarify the interpretation of the data, and to make it practicable to utilize material on some points not covered by Table L as it stands. This applies particularly to the details of the distribution of the net stock of fishing boats between owners and shore workers.

a/ The data in the first five and the seventh columns are for 1933, except in the South and the Great Lakes, where they are for 1932. The remaining data were asked for as of 1934, but for practical purposes are applicable to any of the last four or five years.

b/ The supplementary questionnaire, in most cases, called for data on each fishery in a single specified State or port. To a considerable extent, however, the returns are applicable to other parts of the same areas. The figures in these columns are for the largest groups of States to which it is believed that the questionnaire data can safely be taken as applying, and except where otherwise stated they are for the whole of the areas concerned.

c/ The rowboats included in this classification are to a considerable extent subsidiary to the motor boats, and do not represent independent enterprises.

d/ These figures for total and average value of catch have been segregated by estimate to correspond as nearly as practicable with the types of boat (motor or other) specified in the sixth column. They are comparable with the numbers of boats in the first or the second column, or with both, according to circumstances, but not in all cases with the numbers of men in the third column.

Not only are these value of catch figures for a year of acute depression, but the average values per boat, in a number of cases, represent smaller and less efficient craft than the "typical" boats to which the questionnaire data on costs and expense apply, and are therefore too low for comparison with the latter as they stand. The adjustment of the data for this discrepancy presents problems which cannot be solved without additional information and study.

e/ Kind of boat to which the questionnaire data in the eighth and following columns relate.

f/ The first of these figures for the average number of men per boat in each fishery is based on Bureau of Fisheries data for motor and other boats taken together. They tend to be somewhat below the true averages for the former, and somewhat above the true averages for the latter.

(Continued)

Notes to Table L (continued)

The differences between these and the typical number of men per boat from the questionnaires, in the following column, are in most cases not material. Where they are substantial, however - as in the case of the first two fisheries in the table - the average value of the catch shown in the fifth column is probably particularly low in proportion to the cost and expense figures for the corresponding typical boats.

g/ Round figures; to be used with caution.

h/ Life indefinite.

i/ Not stated in schedule.

j/ In addition to board while actively employed.

k/ Sailboats and rowboats.

l/ Interpolated; not stated in schedule.

m/ Substituted for the statement in the schedule that the life is indefinite.

n/ As they stand these figures are inconsistent. It seems probable that the assignment of 100 per cent of the personnel to boats with no employees is nearly correct, and that the number on wages is not important.

o/ Not stated in schedule, but presumably small, if not negligible.

p/ Not stated in schedule, but unimportant.

q/ Omitted because of uncertainty as to how far the motor and other boats in this fishery work together in the same enterprises.

r/ These averages are not comparable. The second one is probably the number of men to a seine.

s/ Questionnaire data from the single schedule returned from the Great Lakes area. The extent to which these figures are representative of all the motor boat fisheries of the Lakes is uncertain. So far as they can be checked they appear fairly typical.

t/ For all boat fisheries of the Great Lakes.

u/ For all motor boat fisheries of the Great Lakes.

v/ If the first of these averages for men per boat on the Great Lakes were based on motor boats only, the discrepancy would probably disappear.

(Continued)

Notes to Table L
(Continued)

w/ The catch per boat in this fishery is small, but the total value of the boat catch cannot be satisfactorily segregated, with the information at present available, from the much larger vessel catch.

x/ Paid chiefly to boys, who seek the employment largely for the experience and the sport.

y/ Verification of this radical difference from the general practice of the boat fisheries with respect to the carriage of marine insurance would be desirable.

z/ This average can hardly be correct, as all the other data indicate 100 per cent of boats with no employees.

CHAPTER XV

THE RETURNS TO THE QUESTIONNAIRE AND THE SIZE AND NATURE OF THE SAMPLE

So far as the writer is aware this study represents the first attempt to collect comprehensive data on the earnings of fishermen, and the first to make a large scale survey of any phase of the fishing industry by a mail questionnaire and by correspondence.

DIFFICULTIES OF THE PROJECT

When the project was first planned it was realized that the obstacles to its success were formidable. The questionnaire was to be sent to a large number of persons, of whom the great majority had probably never filled out such a form. The education and experience of these persons would tend inevitably to be inadequate for the purpose. The enterprises on which a large proportion of them would be asked to report are small; and because of this exact records would not, in many cases, be available to supply the information desired.

LIMITATION OF THE SURVEY TO VESSELS

In view of these obstacles it was thought best not to attempt too much at the beginning, and for that reason to confine the present survey to vessels of five net tons or more. To have covered the boat and shore fisheries as well would have meant sending out a total of about 70,000 questionnaires. It did not seem probable that the schedule employed, which was complex even for the smaller vessels, could have been used at all for boats.

The original purpose of the study was to obtain information regarding the earnings of the employees of the industry, and in the boat fisheries only a minority of enterprises have such persons in their service. Many of the members of boat crews who can be classified as employees, moreover, deserve that name only in a very modified sense. Finally, the proportion of boats for which no records of operation would be available was believed to be so large as to make it doubtful whether the sample of information obtainable through the medium of a survey by mail would be representative enough to make the attempt worth while.

Subsequently it was found possible to gather some information of interest with regard to the operation of fishing boats. These data have been discussed in Chapter XIV. Really systematic and detailed figures on the boat and shore fisheries and the earnings of their crews, however, can be obtained only by means of field work. A beginning on such a study is now being made by the Bureau of Fisheries as a part of the Federal work relief program.

SEASONAL FACTOR IN THE VOLUME OF RETURNS

Apart from these inevitable difficulties the results of the survey were somewhat affected by the time of year at which the questionnaire was sent out. The vessels in some of the most important fisheries are

very busy during the months of August, September and October; and it was in this season that the schedule was received. This caused special difficulty in the case of small vessels which had no representatives on shore to fill in the form for them. A good many who received the questionnaire attended to it at the end of the season, and replies drifted in as late as the spring of 1935. If this particular difficulty had been realized in time, however, it would probably have been possible, by a systematic follow-up in November or December, to raise the proportion of usable returns appreciably.

Without a radical change in the conditions of the industry, however, a rather low maximum limit on the size of the sample of fishing vessels for which it would be possible to gather data of the kind and in the detail sought by the present study is imposed by the prevalent lack of records.

THE MAILING LIST

When the study was originally planned the names of the fishing vessels in active operation in 1933 were not available. Use was therefore made of the 1932 schedules of the Bureau of Fisheries as a mailing list. It later appeared that, except in Alaska, the number of vessels actively engaged in commercial fishing in 1933 was everywhere somewhat smaller than it had been the year before. To this extent, therefore, the mailing list contained dead names.

The 1932 schedules for the Pacific coast were not on file in Washington. For California a list of the actual schedules was obtained. For the Pacific Northwest and Alaska this could not be done, and use had to be made of a list compiled from other sources. This contained a relatively large number of dead names and duplications.

THE RETURNS TO THE QUESTIONNAIRE

Altogether these lists contained the names of about 4,700 vessels, of which 3,650 are estimated to have been in actual use for commercial fishing in 1933. The total number of vessels for which some return was made was 894, excluding a few with regard to which statements were received in the form of letters, of which no record was kept. Table LI shows in detail the number of vessels for which usable and unusable returns were received, and the reasons for the inclusion of various groups in the latter category.

The returns for the vessels constituting one-man or partnership units with no employees were not used, primarily, because the main purpose of the study was to obtain information on the earnings of employed workers. In dealing with the expenses and income of vessel owners these reports might have been utilized; but the data which they supplied was so incomplete that the effort did not seem worth while.

TABLE LI

NUMBER OF VESSELS FOR WHICH RETURNS WERE MADE TO THE ORIGINAL QUESTIONNAIRE, CLASSIFIED ACCORDING TO THE DISPOSITION OF THE SCHEDULES WITH REFERENCE TO THE SAMPLE a/, AND THE REASONS THEREFOR

Classification		Number of Vessels
Vessels engaged in commercial fishing in 1933:		
Supplying usable data:		
With employees	502 b/	
With no employees	49	
Total		551
Failing to supply usable data:		
Data incomplete or inconsistent	77	
Vessel chartered and data not available to owner	1	
Oyster vessels c/	32 c/	
No records for supplying data	21	
No data on earnings or finances reported, and no reason given for non-completion	32	
Total		163
Total vessels engaged in commercial fishing in 1933		714
Vessels not engaged in commercial fishing in 1933:		
Out of commission	146	
In use for sport fishing only	12	
In use for transportation purposes only	22	
Total		180
Grand Total for which returns were made		894

SOURCE: Returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ This item became the basis of the final sample. The other items in the table were excluded, as explained in the text.

c/ These schedules were returned blank through a misunderstanding as to the scope of the study. Equivalent data were subsequently obtained from another source indicated in Table LII.

The returning of 32 unfilled schedules for oyster vessels was the result of a misunderstanding of the scope of the study. The Bureau of Fisheries includes oyster dredges in its classification of fishing vessels. They belong under that head, however, only in a qualified sense; and the recipients of the schedules just mentioned assumed that their vessels were to be excluded. A fair sample of information regarding this group having been obtained from other sources, the matter was not followed up.

The relatively large number of returns which were not usable because of the incompleteness or internal inconsistency of the data reflects the small average size of a large proportion of fishing enterprises, and the inadequacy of the records that are kept. Such efforts as were made to obtain corrections in schedules of this kind proved more successful than was at first expected; and if this plan had been followed more systematically and from an earlier date the proportion of returns unusable on this account could probably have been reduced considerably.

The vessels reported as in use only for sport fishing or for transportation purposes in 1933 had presumably been engaged in commercial fishing the previous year, but had been transferred to the other employments because of the state of the market for their products.

SUPPLEMENTARY STUDIES AND DATA

For reasons already explained the original questionnaire failed to obtain usable samples of information with regard to several important fisheries. To fill these gaps as far as possible, use was made of part of the returns to a questionnaire sent out in the fall of 1934 by the Code Executive Committee of the Fresh Oyster Industry, on employment, working hours and wages. Besides this, several special inquiries were undertaken with the cooperation of other code administrative bodies and of the Bureau of Fisheries. The nature of these latter, and the numbers of vessels with regard to which information was obtained by means of them and of the original questionnaire, are shown in Table LII. The data for the vessels included there constitute the final sample used for the purposes of the study.

SIZE AND REPRESENTATIVENESS OF THE SAMPLES

The number of vessels covered by this sample and the number of persons in their crews can be compared with totals for each area, but not for each fishery. Such a comparison is made in Table LIII. The value of the catch or the gross stock of the sample vessels, however, can be compared with totals for each fishery as well. This comparison appears in Table LIV.

These tables show that the final sample includes 17 per cent of the vessels operating in the commercial fisheries in the country in 1933, 24 or 25 per cent of their crews, and 33 per cent of the value of their catch.

TABLE LII

NUMBER OF VESSELS IN THE FINAL SAMPLE, a/
BY SOURCE OF DATA

Source	Number of Vessels
Returns to original questionnaire	502
Returns to labor questionnaire of Fresh Oyster Industry	18
Special survey of Atlantic mackerel vessels	10
Special survey of menhaden vessels	18 b/
Special survey of Alaska herring vessels	19
Total included in the final sample a/	567 b/

a/ Vessels for which usable data were obtained as a basis for the study.

b/ Data for 23 additional menhaden vessels, which were received too late to be incorporated in the body of the report, are summarized in Appendix I.

TABLE LIII

NUMBER OF ALL FISHING VESSELS AND VESSEL FISHERMEN COMPARED WITH THE NUMBERS INCLUDED IN THE FINAL SAMPLE a/, WITH AVERAGE TONNAGE AND AVERAGE CREW, BY AREA, 1933

Area	Number of Vessels			Average Tonnage		Number of Vessel Fishermen			Average Crew	
	Total	Sample a/	Size of Sample (Per cent)	Total	Sample a/	Total	Sample a/	Size of Sample (Per cent)	Total	Sample a/
New England	595	121	20.3	32.8	77.7	5,049	1,480	29.3	8.5	12.2
Middle Atlantic	389	59	15.2	19.6	19.7	2,010	339	16.9	5.2	5.7
South	621b/	84	13.5	20.4	47.0	4,114b/	1,081	26.3	6.6	12.9
Great Lakes	418b/	63	15.1	13.6	16.9	1,447b/	275	18.9	3.5	4.3
California	385	74	19.2	38.4	63.5	3,280	765	23.3	8.5	10.3
Northwest and Alaska	953	166	17.4	18.7	32.2	4,733	1,111	23.5	5.0	6.7
Total in fisheries represented in sample	3,361	567	16.9	23.3	45.2	20,633	5,051	24.5	6.1	8.9
In fisheries not represented in sample	293a/	-	-	-	-	1,338	-	-	-	-
Grand Total, United States and Alaska	3,654	-	-	22.5	-	21,971	-	-	6.0	-

SOURCE: Computed from data in Bureau of Fisheries, Fishery Industries of the United States, and from returns to N.R.A. questionnaires on earnings in the fishing industry.

a/ Vessels for which usable data were obtained as a basis for the present study.

b/ Estimated by the author.

c/ Includes 71 vessels owned or operated by salmon canneries and 22 vessels owned or operated by herring salteries and bait plants (other than reduction plants) in Alaska; 5 vessels operated in connection with salmon traps in Washington; 154 oyster vessels in Maryland; and 41 vessels estimated to have been operated on Lakes Ontario and Superior.

TABLE LIV

VALUE OF CATCH OF ALL FISHING VESSELS AND OF SAMPLE a/ VESSELS, BY AREA AND FISHERY, 1933

Area and Fishery	Value of Vessel Catch		Per cent of Total Value Represented by Sample a/
	All Vessels	Sample Vessels a/	
New England			
Groundfish	$5,093,426	$2,191,543	43.0
Mackerel	391,000	121,047	31.0
Oyster	677,116	417,518	61.7
Miscellaneous	772,064	217,742	28.2
Total	6,933,606	2,947,850	42.5
Middle Atlantic			
Oyster (excluding Maryland)	1,347,680	316,780	23.5
Scallop	215,847	106,108	49.2
Pound net	273,190	61,852	22.6
Miscellaneous	664,042	156,493	23.6
Total	2,500,759	649,233	25.6
Not represented by sample			
Oyster (Maryland)	108,306	-	-
Grand Total	2,609,065	-	-
South b/			
Red Snapper	345,661 b/	195,368	56.5
Menhaden	602,687 b/	257,374 c/	42.7
Shrimp and oyster	1,116,963 b/	82,285	7.4 d/
Miscellaneous	362,507 b/	44,732	12.3 d/
Total	2,427,818 b/	579,759	23.9
Great Lakes b/			
Lake Erie	119,874 b/	39,385	32.9
Lakes Huron and Michigan	1,197,720 b/	292,059	24.4
Total	1,317,594 b/	331,444	25.2
Not represented by sample			
Lakes Ontario and Superior	74,488	-	-
Grand Total	1,392,082	-	-

(Continued)

TABLE LIV
(Continued)

Area and Fishery	Value of Vessel Catch		Per cent of Total Value Represented by Sample a/
	All Vessels	Sample Vessels a/	
California			
Tuna	$2,904,390	$1,058,529	36.4
Tuna and sardine, Southern California	925,808	305,981	33.1
Sardine, Monterey	959,690	92,380	9.6 e/
Paranzella net	451,971	302,679	67.0
Alaska cod	53,590	41,229	f/
Miscellaneous	421,741	18,766	4.4 c/
Total	5,717,190	1,819,564	31.8
Northwest and Alaska			
Halibut	1,991,094	808,558	40.6
Salmon (seining and trolling)	1,699,299	225,637	13.3 g/
Alaska herring (for reduction plants)	270,195	144,600	53.5
Alaska cod	106,423	87,158	f/
Miscellaneous	54,477 h/	64,039 h/	i/
Total j/	4,121,488 j/	1,329,992 j/	32.3
Not represented by sample			
Salmon (traps)	1,043,775	-	-
Alaska herring (for salteries and bait plants) h/	74,508	-	-
Discrepancy in value of herring for reduction plants h/	358,199	-	-
Grand Total j/	5,597,970 j/	-	-
Recapitulation:			
Catch of Fisheries:			
Represented by sample	23,018,455	7,649,842	32.2
Not represented by sample	1,301,077	-	-
Discrepancy in value of herring for reduction plants h/	358,199	-	-
United States and Alaska j/	24,677,731 j/	-	-

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(Continued)

TABLE LIV
(Continued)

a/ Vessels for which usable data were obtained as a basis for the study.
b/ Estimated by the author.
c/ Two menhaden vessels working on shares, which are included in the miscellaneous group in Tables XXIV to XXIX, are here, for purposes of comparison, grouped with the menhaden wage vessels in the South.
d/ These fisheries are carried on by small vessels, in many cases only just above the five-ton line. Records are scanty and the response to the questionnaire was poor. The representativeness of the sample is open to some doubt.
e/ This is not a random sample, the 10 vessels which it includes having been selected by a qualified informant on the ground as supplying a fair cross section of the fishery. It is believed therefore, that though it accounts for a relatively small percentage of the total catch, it is not less representative than the other samples.
f/ It is believed that the sample includes all the vessels engaged in this fishery in 1933, and that the difference between the two figures for the value of the catch is due to methods of computation. As the catch is not sold in an unprocessed state the value is in any case artificial.
g/ This fishery includes many small vessels for which the records are unsatisfactory. The sample, however, though it accounts for a relatively small percentage of the total value, includes returns for 65 vessels, and is believed to be sufficiently representative.
h/ The value of the total catch of herring reduction plants in Alaska is based on the average prices reported by the individual companies included in the sample. These prices are considerably lower than that used by the Bureau of Fisheries in arriving at its estimated value of the whole catch. The value of the catch of salteries and bait plants in the table is based, in the lack of other data, on the Bureau price. It is consequently too high in proportion to the item for the reduction plants.
i/ Both the sample and the total values in this case are residual figures, and are not comparable.
j/ Excluding the catch of all salmon traps and of other vessels and gear owned or operated by salmon canneries in Alaska.

There are arguments for measuring the size of the samples on any of these three bases. It is best, probably, to keep all of them in mind.

In making the foregoing statements with regard to the size of the sample, the items specified in Table LIV as not represented at all have been excluded. These latter account for only eight per cent of the total number of fishing vessels, for six per cent of their crews, and for less than six per cent of the value of their catch; and with respect to the country as a whole their inclusion or exclusion does not much affect the size of the sample. In the case of a few individual fisheries, however, the segregation of these items does influence the representation appreciably.

No special steps were taken, for various reasons, to fill the gaps corresponding to these excluded items. The oyster fishery of Maryland - the only vessel fishery in that State - works on a small scale, and the collection of data was hampered by local difficulties connected with the N.R.A. codes. The vessel fishery of Lake Ontario is negligible, and that of Lake Superior is of very secondary importance. The unrepresented Alaska herring plants are for the most part too inaccessible to be reached by the methods of the study.

The samples obtained for the miscellaneous fisheries of the South and of California, for the salmon fishery of Washington and Oregon, and for the shrimp and oyster fisheries of the South are a good deal below the standard of size for the survey as a whole. These all involve many small vessels, which are owned by persons ill equipped to fill out complex questionnaires and for which the records are inadequate. It does not necessarily follow, however, that the samples are not representative. In the case of the salmon fishery of Washington and Oregon in particular no reason is known for supposing that such is the case. The sample of the shrimp and oyster fisheries of the South, however, is especially small, and six of the total of 20 vessels were owned by a single company. No positive reason is known for thinking that these data are unrepresentative; but they need to be used with special caution.

The representation of the Monterey sardine fishery is also small. This is not, however, a random sample, but was selected by a qualified informant on the ground as constituting a fair cross section of the fishery.

TESTS OF THE DATA FOR INTERNAL CONSISTENCY

In view of the limitations on the volume of data obtainable which were imposed by the conditions of the industry it has seemed advisable, besides measuring the size of the samples assembled, to test them further by analyzing certain internal relations of the items called for by the schedule.

(1) The ratio to the value of the catch of operating expense, vessel share and crew share was computed for each share vessel, and the resulting percentages were distributed in frequencies, by area. In every case there resulted a distribution with a well-defined mode, which resembled a normal frequency curve sufficiently to establish likelihood that the data constituted a representative sample. Such peculiarities of distribution as were met with appeared to be adequately accounted for by known conditions.

(2) The operating expense and the vessel and crew share for each share vessel were added together, and the total compared with the value of the catch. Theoretically this correspondence should be exact, but there are legitimate reasons for many minor discrepancies. In all but a small proportion of cases - perhaps five to ten per cent of the total number of vessels - the sum of the three items varied from the gross stock by not more than five per cent. Cases where the variation was greater than this have been included in the sample only when the figures supplied appeared reliable on other grounds, or when a probable explanation of the excess discrepancy suggested itself. For all share vessels included in the final sample the sum of operating expense, vessel share and crew share varies from the value of the catch by only one-half of one per cent.

REPRESENTATION OF LARGE AND SMALL VESSELS

The fact that the percentages of vessels, of men, and of the dollar output covered by the sample differ materially indicates in itself that the larger vessels are disproportionately represented. It is unlikely that this result could have been avoided. The larger vessels are the ones for which the most complete and consistent records existed, and in the case of which there were most likely to be persons on shore competent to reply to a questionnaire. The owners of such vessels, moreover, tended, on an average to be superior in education and in breadth of experience to the owners of the smaller units.

The extent of this overrepresentation of large vessels by the study is indicated roughly in Table LV. A part of the difference in the proportions of the various tonnage classes which the table shows, however, is due to the discrepancy between the classifications and the areas covered.

TABLE LV

DISTRIBUTION OF SAMPLE VESSELS a/, 1933, AND OF ALL FISHING VESSELS ON THE ATLANTIC AND GULF COASTS, 1929, BY TONNAGE CLASS

Sample Vessels a/		All Fishing Vessels, Atlantic and Gulf Coasts	
Tonnage Class	Per cent of Number of Vessels	Tonnage Class	Per cent of Number of Vessels
Under 15 tons	34.0)	30 tons and under	81.4
15 to 29 tons	25.4)		
30 to 49 tons	14.3	31 to 50 tons	5.8
50 tons and over	26.3	51 tons and over	12.8
Total	100.0	Total	100.0

SOURCES: Computed from data in Bureau of Fisheries, Fishery Industries of the United States, 1930, and returns to N.R.A. questionnaire on earnings in the fishing industry.

a/ Vessels for which usable data were obtained as a basis for the study.

CORRECTION OF DISTORTION BY WEIGHTING

The unequal representation of the various fisheries in the sample, which is shown by Table LIV and the over-representation of large vessels which has just been commented on, are the two things most likely to have a distorting effect on averages and ratios derived from the data which were obtained for the purpose of the study. The former, however, which only affects the derived figures for the large geographical areas and for the country as a whole, is much more important from this standpoint than the latter.

The average tonnages of the sample vessels in individual fisheries do not in most cases vary materially from the tonnages of the corresponding typical vessels reported on the supplementary schedule. Moreover, even where such a variation exists, it need not affect the representativeness of the sample seriously, as long as the terms of the lays in use, the distribution of operating expenses, the length of the fishing season and the species caught were the same, as they would tend to be within a given fishery.*

The distortion due to the unequal size of the samples for the various fisheries, while it does not affect fundamentally the conclusions suggested by the crude averages and ratios for the large areas, and still less those for the United States as a whole, is much more than negligible. Its effect, however, can be corrected for by weighting the averages and ratios in question with the total numbers of vessels or of men in each fishery, or with other appropriate factors. Such a correction, moreover, effects the very large part of the distortion due to the over-representation of large vessels, which results indirectly from the fact that the latter are concentrated in comparatively few fisheries.

It has not been practicable to carry out systematically such a weighting of the area and countrywide averages and ratios in the tables of the report. Tables XLV, XLVII and LVI, however, which have already been commented on, show the effect of weighting the figures for average earnings per man, and for average vessel share and average owner's expense per vessel. The resulting modifications are interesting and by no means negligible; but as remarked above they hardly change fundamentally the conclusions suggested by the crude averages.

(*) The miscellaneous fisheries distinguished for the purposes of the study would be the ones most likely to furnish exceptions to this statement. There is reason to think that the miscellaneous fishery of New England actually does so. Further study of the data would be advisable.

TABLE LVI

AVERAGE TOTAL EARNINGS PER MAN ON SAMPLE a/ SHARE VESSELS, CRUDE AND WEIGHTED ACCORDING TO THE TOTAL NUMBER OF VESSEL FISHERMEN IN EACH FISHERY, BY AREA, 1933

Area	Average Earnings per Man	
	Crude	Weighted
New England	$580	$680
Groundfish b/	598	869
Middle Atlantic	672	690
South	242	338
Great Lakes	673	598
California	979	919
Northwest and Alaska	639	603
United States and Alaska	591	655

SOURCES: Computations from data in N.R.A. questionnaire on earnings in the fishing industry, and in the Bureau of Fisheries, Fishery Industries of the United States.

a/ Vessels for which usable data were obtained for the purposes of the study.

b/ Average of vessels under 50 tons and those of 50 tons and over.

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GENERAL RELIABILITY OF THE DATA

Some consideration has had to be given, of course, not only to the adequacy of the samples from the standpoint of size and of representativeness, but also to the accuracy of the data composing them. Because of the limited experience and facilities of a large proportion of the persons who replied to the questionnaire the schedules inevitably required a good deal of editing. A substantial amount of labor has been devoted to this; and where it has not been possible, by combining all the information that could be obtained with regard to a given vessel from the schedule and from other sources, to arrive at reasonably complete and consistent figures, it has been excluded from the final sample.

Some of the data supplied are admittedly estimates, but where these have appeared internally consistent no reason has been seen for not using them. Here and there gaps have been filled by subtraction.

In general, the impression obtained from the editing and analysis of the original schedules, from a large amount of subsequent correspondence and from many personal interviews, is that a substantial and fairly representative proportion of the owners of fishing vessels in the United States and Alaska have made an honest effort to cooperate in the study by supplying adequate and reliable data, and that in the main and for practical purposes the result has been a success.

A P P E N D I X E S

APPENDIX I

ADDITIONAL DATA ON EARNINGS IN THE MENHADEN FISHERY

The data for the menhaden fishery which appear in the body of the report all relate to the State of Virginia, except that two vessels working on shares have been included in the miscellaneous group of the Middle Atlantic area, and two in the same group in the South. Efforts to obtain fuller information on the menhaden fishery of the South Atlantic coast did not bear fruit until the tabulation of the original returns had been completed. Subsequently, however, reports were received on an additional group of vessels in Georgia and Florida; and these will now be summarized briefly.

Reports were obtained with regard to 23 vessels, owned and operated by five companies. These comprised six vessels of less than 15 net tons, four of 15 to 29 tons, eight of 30 to 49 tons and five of 50 tons or more. Their aggregate capacity was 841 net tons, and their crews totaled 357 men. Rank or occupation was specified in the case of 291 on 17 vessels. These included 17 captains, 17 mates and 17 chief engineers, six pilots, four assistant engineers, one fireman, 13 cooks, six strikers, five boat-keepers, 18 seine setters, and 187 ordinary fishermen.

The 23 vessels operated for an average season of 24.1 weeks in 1933, and 25.8 weeks in 1934. In the former year they caught 58, 112,000 menhaden, valued at $96,204, and in the latter 74,381,000, valued at $123,443.

The owners of these vessels paid for the fish caught at an agreed rate per thousand - 75 cents in the case of three companies, and 87 cents in the remaining instance. These payments were divided among the men on a scale based on rank and responsibility. In a typical case the 75 cents per thousand fish was divided to give ten cents to the captains, six cents to the engineers, four cents each to the cooks, strikers and seine setters, and three to three and a half cents each to the ordinary fishermen. All expenses, including the cost of the crew's food, were borne by the owners.

Complete data on employees' earnings were supplied in the case of only nine of the 23 vessels. These nine had an average capacity of 35.3 tons and an average crew of 12.7 men, as against 36.6. tons and 15.5 men for the larger group. Two of the three companies owning them paid for the catch at the rate of 75 cents, and one at the rate of 87 cents. The average operating season in 1934 was nearly the same as that of the 23 vessels (24.5 weeks), but in 1933 it was shorter (19.4 weeks). In the main the smaller group was fairly representative of the larger.

The 114 men on the nine vessels received a total volume of compensation of $29,522 in 1933, and of $37,793 in 1934. The former figure represented 38.9 per cent of the corresponding value of the catch, and the latter 38.4 per cent. These ratios are quite normal for the fishing industry.

The average wage per man for the season on the nine vessels was approximately $259 in 1933, and $332 in 1934. The average wage per week per man for all ranks or occupations was about $13.50 in both years. For ordinary fishermen, however, the average money wage per week only slightly exceeded $7.00.

The payment of bonuses, in which all members of a crew might share, was formerly common in this fishery, but has been rare of recent years.

APPENDIX II

THE SCHEDULES USED IN CONNECTION WITH THE STUDY

Since the schedules or questionnaires sent out in connection with the present study are believed to have been the first ever drafted for obtaining detailed information with regard to earnings in the fishing industry, it has seemed advisable to append copies of them to the report. They will be found at the end of this Appendix.

Owing to the pioneer and experimental character of these schedules it was found, inevitably, when the returns were edited and tabulated, that changes in the arrangement and the wording would have facilitated the work, and would probably have improved somewhat the volume and quality of the data. Since the forms may be consulted in connection with further investigations on the same subject, it seems advisable to describe these defects briefly here.

A. ORIGINAL QUESTIONNAIRE ON FISHERMEN'S EARNINGS IN 1933

Inquiry I. A question regarding the vessel owner's status as a wholesale dealer, processor or independent fisherman, as a corporation, partnership or individual, and as commander of the vessel or otherwise, should have been added here.

Inquiry II. The instruction should preferably have read, "State the earnings of members of the crew which took the form of time wages (per hour, day, trip, week, month or season), whether those receiving them also had a share in a lay or not. Exclude all earnings from shares and from percentage bonuses." A line should have been provided for stating the total volume of wages paid during the year.

The form of Inquiry II resulted inadvertently in the submission of interesting data with regard to the number of weeks in 1933 during which wage earners were actively earning, while in the case of the much more numerous share fishermen no such information was obtained. A question on the latter point should have been included.

Inquiry III. It is doubtful whether the inclusion of these questions, which were inserted at the request of the Labor Adviser on the N. R. A. Fishery Code, was advisable. They were widely misunderstood, and there was danger that the replies would be affected by bias. As a result, it has not been thought worth while to use them in the present report. In any case the wording of the questions should have been fuller and more precise.

Inquiry IV-1. The definitions of the accounting terms used in this question were not adequate. The distinction between owners and operating or trip expense; the fact that the latter should be the sum of the joint and the crew expense; and the fact that the boat or vessel share should include all shares accruing to the owner under whatever name, and

should be stated before deducting the captain's bonus or any other item of expense, ought to have been made clearer. "Crew share" should have read "Total crew share."

The arrangement of the table under Question I of Inquiry IV to permit the entry of the data for 1933 by individual trips was adopted at the instance of an adviser well acquainted with the industry. The proportion of cases, however, in which those who returned the schedule put their figures in such a form was very small. It would have been better to devote this space to a form for entering the totals for the year only, as an income and expense statement. This would have given more space to write and room for fuller and clearer definitions, and for subtotals calculated to provide a check on the consistency of the figures.

Inquiry IV-2. It would have been desirable to provide a simple method of indicating the relative quantities of two or more species included in the catch.

Inquiry IV-3. The replies to this apparently simple question required a great deal of interpretation and editing. The request for the number of persons on shares only should have been omitted, while those for the numbers on wages only and on wages in addition to shares should have been accompanied by a form for stating the ranks and the rates of wages of those included. These were asked for in Question 5, but the latter was frequently overlooked. "Wages" should have been defined to exclude percentage bonuses.

The use of the ambigous term "average size of the crew" instead of the "usual number of men in the crew" brought its own punishment from a Japanese owner in California, who answered "5 ft. 3 in."

Inquiry IV-4. A standard list of items of both operating and overhead expense should have been given here, with the means of indicating whether each was incurred, and if so, whether it was charged to joint, to crew or to owner's expense. Provision should have been made for stating whether total owner's expense did or did not include a write-off for depreciation on the vessel and gear.

The request to "enclose a copy of your lay agreement" was made for reasons connected with code administration. Such copies as were sent in, however, proved of value in supplementing incomplete or confused data in the body of many schedules.

B. and C. SUPPLEMENTARY SCHEDULES

The two supplementary schedules on the vessel and on the boat and shore fisheries were experiments in obtaining data, which probably could not have been collected at all by broadcast questionnaires, by asking for reports on typical vessels or boats in important fisheries from a limited and selected list of expert informants - chiefly field agents of the Bureau of Fisheries. The results were on the whole very satisfactory, and the method is believed to deserve more consideration than it has received for dealing with comparable situations.

Experience with the earlier supplementary questionnaire on the vessel fisheries (B) indicated that somewhat better results might have been obtained by amplifying and particularizing the inquiries. This was done in the later form (C) for the boat and shore fisheries. The lengthening of the schedule was probably not a serious objection in view of the special qualifications of the correspondents. The later schedule (C) should consequently be taken as indicating the form shown by experience to be more desirable for a questionnaire of this type.

A. ORIGINAL QUESTIONNAIRE ON FISHERMEN'S EARNINGS IN 1933

R-P-29

CONFIDENTIAL GOVERNMENT REPORT

THE NATIONAL RECOVERY ADMINISTRATION
Washington, D. C.
* * * * * * * * *

FISHERMEN'S EARNINGS IN 1933

This report covers boats operating on a lay and also on a wage basis.

In accordance with Sections 3a and 6a of the National Industrial Recovery Act, you are requested and required to fill out the following schedule. Please return the questionnaire in the enclosed envelope (which requires no postage) to the Division of Research and Planning, National Recovery Administration, Washington, D. C. as promptly as possible. The additional schedule is for your files. This report will be available only to sworn employees of the National Recovery Administration, and of other Government Organizations officially interested in the subject matter.

If the person receiving this form owns a fishing boat but does not operate it, he should see that the questionnaire is put in the hands of the Captain or other person who does operate the boat and is responsible for the settlement of the lay.

REPORT ON A SEPARATE FORM FOR EACH BOAT YOU OWN AND OPERATE.

Administrator

THIS IS TO CERTIFY that the information supplied on this form is correct and complete to the best of my knowledge and belief.

Date _____, 1934. Signed _____

INQUIRY I - DESCRIPTION OF BOAT

Code Division of the Fishing Industry _____

1. Name of boat_____ 2. Net tonnage _____ 3. Port from which operated_____

4. Name of owner or owners_____5. Post office address of owner or owners_____

6. Type of fishing gear _____ 8. Does this boat work on a lay or share agreement?_____ (Yes or No)

9. Name of lay, if a name is commonly used _____

INQUIRY II - EARNINGS OF CREWS NOT ON LAY IN 1933

State the earnings of members of fishing crews who did not work on a lay in 1933 but on wages.

Position or rank (Specify)	Wages - 1933		
	Number of each rank	Number of weeks worked	Total wages received
Captain	1		

INQUIRY III - MISCELLANEOUS

1. Is any minimum sum guaranteed to any members of the crew under the lay?_____ If so, for what members of the crew was there such a guarantee in 1933 and in what amounts?_____ Were such guarantee sums deducted from a later settlement?_____ (Yes or No)
2. Who purchases the supplies for the boat?_____ Who receives any rebate or discount given on such purchases?_____
3. Is the catch sold at the current price after landing? _____ (Yes or No)
4. Is a price ever guaranteed before sailing?_____ If so, is the quantity that will be taken specified? _____ (Yes or No) Is it a common practice? _____ (usual or unusual) What is the reason for the practice?_____
5. Is any part of the crew share ever held back to cover unusual or special current or future expenses? _____ (Yes or No) If so, cite instances and the reasons therefor _____

INQUIRY IV - FIGURES OF LAY IN 1933

1. State in the table below the results of the lay for each trip made during 1933 by the boat reported for on this form. If your books permit you to give accurately the total figures for each column for the whole year, you may omit the data by trips and furnish the totals only on the bottom line.

Definitions:

Joint Expense: Include in joint expense all items paid from gross stock prior to allotting boat share or crew share.

Boat or owner's share: Owner's share taken after joint expense paid.

Crew expense: Include all items, if any, taken out after deduction of owner's share but before allotting crew share. Separate this into (1) crew wages (in addition to shares) and (2) all other crew expenses.

Captain's bonus: Any bonus paid to Captain from any share.

Crew share: Share allotted crew after all other expenses paid.

A Trips	B Date of landing	C Principal kinds of fish caught	Number in crew (including captain) receiving			E Sales value of catch (gross stock)	F Expenses						
			Shares only	Wages only	Wages and shares		Joint expense	Boat share	Crew Expense: Crew wages (in addition to share)	Crew Expense: Other Expenses	Crew share	Owner's expense	Captain's bonus
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
TOTALS		X X X	X X X	X X X	X X X								

2. List the principal kinds of fish caught during the year_____

3. State the average size of the crew (including captain)_____ How many of the crew received shares only? _____ Wages only?_____ Wages and shares?_____

4. What were your principal items of expense which you included in the above table under: Joint expense?_____ Crew expense?_____ Owner's expense?_____
(Be sure to state to which expense food, fuel, salt and ice, and captain's bonus were charged.)

5. If any members of the crew received wages in addition to their shares list their rank and weekly wages

PLEASE ENCLOSE A COPY OF YOUR LAY AGREEMENT

B. SUPPLEMENTARY QUESTIONNAIRE ON THE VESSEL FISHERIES

Form R-P-68 Confidential Government Report File No...

NATIONAL RECOVERY ADMINISTRATION
Division of Research and Planning
Washington, D. C.
* * * * * * * * *

Special Report on _____
Area _____

The information requested below is for purposes of supplementing data secured from individual boat-owners in the above fishery in your area. You are requested to fill out a separate questionnaire for each fishery for which you have received a questionnaire.

Your replies will be held strictly confidential. Although answers to many of the questions below can be at best estimates and often matters of opinion, you are asked to furnish your estimates as to the most typical situation in this particular fishery in your area.

Your cooperation in returning this questionnaire properly filled out to the Division of Research and Planning, National Recovery Administration, Washington, D. C. will be greatly appreciated.

Note: All questions refer to the fishery in the area specified above and relate to the year 1934 unless otherwise specified.

Name of respondent _____

Address _____

1.(a) Indicate whether in this fishery in your area each of the following expense items are generally deducted from gross stock before boat share or from net stock after boat share (use "B" for before and "A" for after).

Crew wages or bonuses (other than shares)_____

Food	_____	Bait	_____
Ice	_____	Engine fuel	_____
Salt	_____	Lubricants	_____
Barrels, baskets, boxes, etc.	_____		

(b) Were any of the above items customarily handled otherwise in 1929?(Explain)

_____

2. Estimate the percentage of operating or trip expenses normally accounted for in this fishery in your area by each of the following items:

Item	Per cent of operating or trip expense
Crew wages or bonuses (other than shares).....	_____ %
Food.....	_____
Ice.....	_____
Salt.....	_____
Barrels, baskets, boxes, etc.....	_____
Bait.....	_____
Engine fuel:	
Coal.....	_____
Diesel Oil.....	_____
Gasoline.....	_____
Lubricants.....	_____
Other (specify).....	_____
Total.....	100 %

3. What is the net tonnage and size of the crew of a "typical" vessel in the above fishery in your area?

   Number of tons (net) _____

   Number of crew members (including Captain) _____

4. Estimate the original cost and the number of years' life commonly used in writing off depreciation on this typical vessel:

Item	Estimated original cost	Estimated number of years' life
Hull	$_____	_____ years
Engine	_____	_____ "
Nets	_____	_____ "

5 Estimate the cost per $1,000 of value of each item listed below for this typical vessel in 1929 and in 1934:

Item	Cost per $1,000 value	
	1934	1929
Repair and maintenance (per $1,000 original cost).....	$_____	$_____
Marine insurance (per $1,000 appraised value).....	_____	_____
State and local taxes (per $1,000 assessed value).....	_____	_____

6. Estimate (or secure from a recognized seller of these items) the average price paid by vessel operators for each of the following items in this fishery in your area during the years listed:

Item	1934	1933	1929
Engine fuel:			
Coal (per ton).....	$_____	$_____	$_____
Diesel oil (per gallon).....	_____	_____	_____
Gasoline (per gallon).....	_____	_____	_____
Lubricants (per gallon).....	_____	_____	_____
Ice (per cwt.).....	_____	_____	_____
Salt (per cwt.).....	_____	_____	_____
Bait (per cwt.).....	_____	_____	_____

7. Estimate in the table below the number of vessels which pay their crew members on a wage basis exclusively and the number which pay on a lay basis.

Method of payment	Number of vessels	Total number of crew members on these vessels
On a wage basis exclusively....		
On a lay basis.....		
Totals.....		

8. Have any important changes been widely made since 1929 which have significantly affected the relative shares of the gross stock received by the crew and by the boat owner in this fishery? _____ (yes or no) If yes, indicate on the reverse side the nature of each change, its effect, and the year in which it occurred.

C. SUPPLEMENTARY QUESTIONNAIRE ON THE BOAT AND SHORE FISHERIES

D-B-101 Confidential Government Report File No....

NATIONAL RECOVERY ADMINISTRATION
Industry Reporting Unit, Division of Review,
Washington, D. C.
* * * * * * * * * *

SPECIAL REPORT ON BOAT AND SHORE FISHERIES

Fishery _____ Area _____

The information requested in the questionnaire refers only to boats of less than 5 net tons. All questions refer to the fishery in the area specified above and relate to the year 1934 unless otherwise indicated. A separate report is requested on each fishery.

All replies will be held strictly confidential. Your cooperation in returning this questionnaire properly filled out to the Industry Reporting Unit, Statistics Section (LaSalle Building), National Recovery Administration, Washington, D. C. will be greatly appreciated. The additional copy is for your files.

Name of respondent _____ Date _____

Address _____

Note: In filling out this questionnaire it should be borne in mind that the majority of questions refer to the "typical" situation in this fishery.

1. Description of "typical" power and non-power boats in this fishery in your area.

Descriptive items of typical boat	Power Boat				Non-power Boat (sailing or oar)			
	Number	Unit	Original cost	Normal yrs. of life	Number	Unit	Original cost	Normal yrs. of life
Hull	XX	XX	$		XX	XX	$	
Engine	XX	XX	$		XX	XX	XX	XX
Gear required-one boat:								
Nets								
Dredges								
Pots								
Misc. gear								
_____								
_____								
Age of hull (1934)	_____ years				_____ years			
Men required (Capt. & Crew)	_____ persons				_____ persons			

2. Indicate by circling the proper months, the fishing "season" of this fishery: J. F. M. A. M. J. J. A. S. O. N. D.

3. State the normal length of a trip in this fishery: a. Power boats..... ___ days
b. Non-power boats.... ___ days

4. State the number of trips taken by a typical boat in this fishery during the fishing season: a. Power boats..... 1934 _____ 1933 _____
b. Non-power boats..... 1934 _____ 1933 _____

5. Are boats in this fishery customarily engaged in other fisheries during the off-season in this fishery? _____ If yes, indicate fisheries and relative importance of movement. (yes or no)

Name of other fisheries	Per cent of total boats in this fishery engaged at indicated fisheries when not active in this fishery	
	Power Boats	Non-power Boats
	%	%

6. Estimate the percentage of total boats (of each type) in this fishery which are:

	Power Boats	Non-power Boats
a. Manned by one person.....	_____	_____
b. Manned (crew plus capt.) by two or more persons.....	_____	_____
Total boats in fishery.....	100%	100%

7. Estimate the percentage of the total number of boats manned by two or more persons which operated on each of the following plans:

	Power Boats	Non-power Boats
a. Boats in which members of crew (including captain) are part owners.....		
b. Boats in which members of crew are pd. wages		
c. Boats operating on share or lay basis.....		
Total boats operated by two or more persons	100%	100%

8. Of the total boats in this fishery operating on a share or lay basis estimate the proportion in which:

	Power Boats	Non-power Boats
a. Owner receives part of share alloted to crew.		
b. Owner receives no part of share alloted to crew.....		
Total boats on share or lay basis.....	100%	100%

9. Estimate the rates of wages most commonly paid and the percentage of the total number of workers employed on a wage basis receiving indicated rates.

Most prevalent rates of wages	Unit (per day, week, etc.)	Estimate per cent of total employees (working on wage basis) receiving indicated rates			
		1935	1934	1933	1929
$					
$					
$					
$					
Total employees working on wage basis ...	xxx	100%	100%	100%	100%

10. State the approximate number of weeks for which wages were paid on a typical wage boat in this fishery: 1934 _____ weeks 1933 _____ weeks

11. a. Estimate the proportion of persons engaged in this fishery who received any material addtional money income from occupations other than fishing during 1934? _____ %

b. What proportion of the total money income in a typical case was derived from fishing in 1934? _____ %

12. Indicate by check (✓) in columns 1 and 4, the items which are usually included in the operating or trip expense of a typical power boat and a typical non-power boat; and in columns 2, 3, 5, and 6 indicate the quantity and cost for 1934 of the items so included.

Item	Power Boat			Non-power Boat		
	Items included in operating expenses (✓) Col. 1	Quantity used per trip Col. 2	Cost per trip Col. 3	Items included in operating expenses (✓) Col. 4	Quantity used per trip Col. 5	Cost per trip Col. 6
Food.....		xx	$		xx	$
Bait.....		xx	$		xx	$
Ice.....		cwt.	$		cwt.	$
Engine fuel.....	✓	gal.	$	xx	xx	xx
Lubricating oil.....	✓	qts.	$	xx	xx	xx
_____....						
Total.....	xx	xx		xx	xx	

13. Indicate by check (✓) whether the cost of current replacements of gear are customarily: a. Charged as operating expense..... _____

b. Charged against owners' share or net profit..... _____

14. Indicate the practices in this fishery with regard to State taxes and licenses on boats or persons engaged in fishing. The "Unit" column refers to the Unit base from which the tax is computed - for example, the fisherman's license may be on the Unit basis of "per person", etc.

Items	Check (✓) years in which indicated taxes or licenses were in effect			Cost of indicated taxes or licenses			
	1934	1933	1929	Unit	1934	1933	1929
Boat license.....					$	$	$
Fishermen's license.....					$	$	$
Tax on catch.....					$	$	$
General property boat tax.					$	$	$

15. Give the following information with regard to owners or overhead expense in this fishery in 1934:

Item	Power Boats	Non-power Boats
a. State approximately the minimum annual out-of-pocket cost of up-keep and repair for a typical boat-including supplies used in repair work on boat; nets, etc.	$	$
b. Approximately what percentage of boat owners (of each type) carry marine insurance.	%	%

16. Where a lay or share arrangement is in use in this fishery state whether the captain, when he is also the owner of the boat, takes a share in the general crew share, in addition to whatever he receives from the share alloted to the boat or the net? _____ (yes or no)

17. Check (✓) on the following classifications the type or types of lays commonly used in this fishery, indicating the percentage of the gross or the net stock, or the number of shares, taken by the boat:

Type of lay	Check (✓) type or types of lays commonly used in this fishery	Share taken by boat
A. Crew share a fixed percentage of gross stock....	_____	_____ % gr. stock
B. Crew share the residual item:		
1. Boat share a fixed percentage of gross stock.	_____	_____ % gr. stock
2. Boat share a fixed percentage of net stock:		
a. Joint expense includes replacement of gear only	_____	_____ % net stock
b. Joint expense includes bait only.....	_____	_____ % net stock
c. Joint expense 50 to 75 per cent of total operating expense (regularly includes fuel and lubricants and often ice, salt and bait but not food or wages).....	_____	_____ % net stock
d. All operating expenses joint.....	_____	_____ % net stock
3. All operating expenses joint and boat received a fixed number of shares in the net stock....	_____	_____ no. shares

(Note: The above classification includes all the types of lays used on 400 fishing vessels for which data have been obtained. It is thought that the lays used in the more important boat fisheries will fit into this classification. If there are any which do not appear to fit, describe them on the other side of the sheet.)

18. Have there been any changes in the usual terms of these lays since 1929 of enough importance to affect materially the shares received by the boat owner and by other members of the crew? _____ If so, describe on reverse side of sheet.
(yes or no)

APPENDIX III

BREAKDOWN OF CLASSIFICATION OF LAYS OR SHARE AGREEMENTS (TABLE XXII) BY AREA AND FISHERY, WITH NAME OF LAY WHERE REPORTED

Type of Lay (Table XXII)	Number of vessels by area and fishery, and name of lay
I-1	All in Northwest and Alaska salmon fishery
I-2	All in the Great Lakes Area
II-A-1	Four vessels in the South (red snapper fishery); remainder in the Northwest and Alaska salmon and miscellaneous fisheries.
II-A-2	Eleven vessels in the Northwest and Alaska Area (3 salmon and 8 halibut); remainder in the New England and Middle Atlantic miscellaneous fisheries, in which this is the "Swordfishing" lay.
II-A-3	Ten vessels in the New England and Middle Atlantic areas (groundfish, scallop and miscellaneous fisheries), where this is the "Rip Quarter" or the "Quarter Clear" lay); 2 vessels in the South (red snapper fishery; and 4 in the Northwest and Alaska salmon fishery).
II-A-4	One vessel in the New England miscellaneous fishery and 4 in the Middle Atlantic scallop fishery, where this is the "Third Clear" or "Clean Thirds" lay; 3 vessels in the South (red snapper fishery); and one in the Northwest and Alaska salmon fishery.
II-A-5	Twelve vessels in New England and the Middle Atlantic area (groundfish and miscellaneous fisheries), where this is the "Netting" lay; 4 vessels in the South (one in the red snapper, 2 in the menhaden, and one in the miscellaneous fishery); and 4 vessels in the Northwest and Alaska miscellaneous fishery.
II-B-1-a	Three vessels in the New England Groundfishery, where this is the "Fifths" lay; all the remainder in the Northwest and Alaska halibut fishery.

Type of Lay (Table XXII)	Number of vessels by area and fishery, and name of lay
II-B-2	All in the South (red snapper fishery): the vessel share is 20 per cent in one case and 25 per cent in one other, but otherwise 40 per cent.
II-B-3-a	Six vessels in the New England groundfishery, where this is the "Quarters" lay; and 2 in the Northwest and Alaska (one in the halibut and one in the salmon fishery).
II-B-3-b	All in the New England groundfishery, where this is the "Fifty-fifty" lay.
II-B-4-a	Three vessels in the New England groundfishery; remainder scattered.
II-B-4-b	Two vessels in the New England mackerel fishery, where this is the "Italian" lay; 9 in the New England and Middle Atlantic miscellaneous fisheries, where this is the "Broken Third" or "Broken Thirty" lay; 7 in California (scattered); 4 in the South (one in the shrimp and 3 in the miscellaneous fishery); and 12 in the Northwest and Alaska (2 in the halibut and 10 in the salmon fishery.)
II-B-4-c	Fifteen vessels in New England and the Middle Atlantic area (groundfish, scallop and miscellaneous fisheries), where this is the "Broken Forty" lay; 2 in the South (red snapper fishery); 4 in California (tuna fishery); and 3 in the Northwest and Alaska salmon fishery.
II-B-4-d	Ten vessels in the New England mackerel fishery, where this is the "American" lay; 19 in the California tuna fishery; 5 in the New England and Middle Atlantic miscellaneous fisheries; and 3 in the Northwest and Alaska salmon fishery.
II-C-1	Four vessels in the South, (scattered); 6 in the Great Lakes area; 2 in the California miscellaneous fishery; and 2 in the Northwest and Alaska (one in the halibut and one in the miscellaneous fishery).
II-C-2	Three vessels in the California the tuna and sardine and miscellaneous fisheries; and 2 in the Northwest and Alaska salmon fishery.

Type of Lay (Table XXII)	Number of vessels by area and fishery, and name of lay
II-C-3	One vessel in the sardine fishery of Southern California; remainder in the Northwest and Alaska area (one halibut and 3 salmon vessels).
II-C-4	Two vessels in the California tuna and sardine fishery; and 5 in the Northwest and Alaska Salmon fishery.
II-C-5	All in California (3 vessels in the tuna and sardine fishery; 10 in the Monterey sardine fishery; and one in the sardine fishery of Southern California). In the last case the vessel received 7 shares in the net stock; in all the others 6 shares.

APPENDIX IV

PROVISIONAL INDEX OF MONTHLY VARIATION IN THE NUMBER OF FISHERMEN ACTIVELY ENGAGED IN FISHING AND EARNING SHARES OR WAGES a/

(Average of the 12 months = 100)

Month	Index Number	Month	Index Number
January	71.0	July	110.5
February	76.0	August.	132.5
March	76.5	September	129.5
April	86.5	October	121.0
May	111.5	November	94.5
June	120.0	December	70.5

Source: Prepared by American Federation of Labor on the basis of suggestions from the author.

a/ Based partly on 1929 and partly on 1934 data. There is more or less random change in the seasonal variation in the number of fishermen from one year to another; but in a general way this index is probably representative of any recent year.

OFFICE OF THE NATIONAL RECOVERY ADMINISTRATION
THE DIVISION OF REVIEW

THE WORK OF THE DIVISION OF REVIEW

Executive Order No. 7075, dated June 15, 1935, established the Division of Review of he National Recovery Administration. The pertinent part of the Executive Order reads thus·

> The Division of Review shall assemble, analyze, and report upon the statistical information and records of experience of the operations of the various trades and industries heretofore subject to codes of fair competition, shall study the effects of such codes upon trade, industrial and labor conditions in general, and other related matters, shall make available for the protection and promotion of the public interest an adequate review of the effects of the Administration of Title I of the National Industrial Recovery Act, and the principles and policies put into effect thereunder, and shall otherwise aid the President in carrying out his functions under the said Title.

The study sections set up in the Division of Review covered these areas: industry studies, foreign trade studies, labor studies, trade practice studies, statistical studies, legal studies, administration studies, miscellaneous studies, and the writing of code histories. The materials which were produced by these sections are indicated below.

Except for the Code Histories, all items mentioned below are scheduled to be in mimeographed form by April 1, 1936.

THE CODE HISTORIES

The Code Histories are documented accounts of the formation and administration of the codes. They contain the definition of the industry and the principal products thereof; the classes of members in the industry; the history of code formation including an account of the sponsoring organizations, the conferences, negotiations and hearings which were held, and the activities in connection with obtaining approval of the code; the history of the administration of the code, covering the organization and operation of the code authority, the difficulties encountered in administration, the extent of compliance or non-compliance, and the general success or lack of success of the code; and an analysis of the operation of code provisions dealing with wages, hours, trade practices, and other provisions These and other matters are canvassed not only in terms of the materials to be found in the files, but also in terms of the experiences of the deputies and others concerned with code formation and administration.

The Code Histories, (including histories of certain NRA units or agencies) are not mimeographed. They are to be turned over to the Department of Commerce in typewritten form. All told, approximately eight hundred and fifty (850) histories will be completed. This number includes all of the approved codes and some of the unapproved codes. (In Work Materials No. 18, Contents of Code Histories, will be found the outline which governed the preparation of Code Histories.)

(In the case of all approved codes and also in the case of some codes not carried to final approval, there are in NRA files further materials on industries. Particularly worthy of mention are the Volumes I, II and III which constitute the material officially submitted to the President in support of the recommendation for approval of each code. These volumes

set forth the origination of the code, the sponsoring group, the evidence advanced to support the proposal, the report of the Division of Research and Planning on the industry, the recommendations of the various Advisory Boards, certain types of official correspondence, the transcript of the formal hearing, and other pertinent matter. There is also much official information relating to amendments, interpretations, exemptions, and other rulings. The materials mentioned in this paragraph were of course not a part of the work of the Division of Review.)

THE WORK MATERIALS SERIES

In the work of the Division of Review a considerable number of studies and compilations of data (other than those noted below in the Evidence Studies Series and the Statistical Materials Series) have been made. These are listed below, grouped according to the character of the material. (In Work Materials No. 17, Tentative Outlines and Summaries of Studies in Process, these materials are fully described).

Industry Studies

Automobile Industry, An Economic Survey of
Bituminous Coal Industry under Free Competition and Code Regulation, Economic Survey of
Construction Industry and NRA Construction Codes, the
Electrical Manufacturing Industry, The
Fertilizer Industry, The
Fishery Industry and the Fishery Codes
Fishermen and Fishing Craft, Earnings of
Foreign Trade under the National Industrial Recovery Act
- Part A - Competitive Position of the United States in International Trade 1927-29 through 1934.
- Part B - Section 3 (e) of NIRA and its administration.
- Part C - Imports and Importing under NRA Codes.
- Part D - Exports and Exporting under NRA Codes.

Forest Products Industries, Foreign Trade Study of the
Iron and Steel Industry, The
Knitting Industries, The
Leather and Shoe Industries, The
Lumber and Timber Products Industry, Economic Problems of the
Men's Clothing Industry, The
Millinery Industry, The
Motion Picture Industry, The
Migration of Industry, The: The Shift of Twenty-Five Needle Trades From New York State, 1926 to 1934
National Income, A study of,
Paper Industry, The
Production, Prices, Employment and Payrolls in Industry, Agriculture and Railway Transportation, January 1923, to date
Retail Trades Study, The
Rubber Industry Study, The
Statistical Background of NRA
Textile Industry in the United Kingdom, France, Germany, Italy, and Japan
Textile Yarns and Fabrics
Tobacco Industry, The
Wholesale Trades Study, The
9675.

Trade Practice Studies

Labor Studies

Administrative Studies

Legal Studies

9675.

THE EVIDENCE STUDIES SERIES

The Evidence Studies were originally undertaken to gather material for pending court cases. After the Schechter decision the project was continued in order to assemble data for use in connection with the studies of the Division of Review. The data are particularly concerned with the nature, size and operations of the industry; and with the relation of the industry to interstate commerce. The industries covered by the Evidence Studies account for more than one-half of the total number of workers under codes. The list of these studies follows:

Automobile Manufacturing Industry
Automotive Parts and Equipment Industry
Baking Industry
Boot and Shoe Manufacturing Industry
Bottled Soft Drink Industry
Builders' Supplies Industry
Canning Industry
Chemical Manufacturing Industry
Cigar Manufacturing Industry
Coat and Suit Industry
Construction Industry
Cotton Garment Industry
Dress Manufacturing Industry
Electrical Contracting Industry
Electrical Manufacturing Industry
Fabricated Metal Products Mfg. Industry and Metal Finishing and Metal Coating Industry
Fishery Industry
Furniture Manufacturing Industry
General Contractors Industry
General Contractors Industry
Graphic Arts Industry
Graphic Arts Industry
Gray Iron Foundry Industry
Hosiery Industry
Infant's and Children's Wear Industry
Iron and Steel Industry
Leather Industry
Lumber and Timber Products Industry
Mason Contractors Industry
Men's Clothing Industry
Motion Picture Industry
Motor Vehicle Retailing Trade
Needlework Industry of Puerto Rico
Painting and Paperhanging Industry
Photo Engraving Industry
Plumbing Contracting Industry
Retail Lumber Industry
Retail Trade Industry
Retail Tire and Battery Trade Industry
Rubber Manufacturing Industry
Rubber Tire Manufacturing Industry
Shipbuilding Industry
Silk Textile Industry
Structural Clay Products Industry
Throwing Industry
Trucking Industry
Waste Materials Industry
Wholesale and Retail Food Industry
Waste Materials Industry
Wholesale and Retail Food Industry
Wholesale Fresh Fruit and Vegetable Industry
Wool Textile Industry

THE STATISTICAL MATERIALS SERIES

This series is supplementary to the Evidence Studies Series. The reports include data on establishments, firms, employment, payrolls, wages, hours, production capacities, shipments, sales, consumption, stocks, prices, material costs, failures, exports and imports. They also include notes on the principal qualifications that should be observed in using the data, the technical methods employed, and the applicability of the material to the study of the industries concerned. The following numbers appear in the series:
9675.

Asphalt Shingle and Roofing Industry
Business Furniture
Candy Manufacturing Industry
Carpet and Rug Industry
Cement Industry
Cleaning and Dyeing Trade
Coffee Industry
Copper and Brass Mill Products Industry
Cotton Textile Industry
Electrical Manufacturing Industry
9675.

Fertilizer Industry
Funeral Supply Industry
Glass Container Industry
Ice Manufacturing Industry
Knitted Outerwear Industry
Paint, Varnish, and Lacquer, Mfg. Industry
Plumbing Fixtures Industry
Rayon and Synthetic Yarn Producing Industry
Salt Producing Industry