REPORT

of

COMMITTEE ON THESIS

The undersigned, acting as a Committee of the Graduate School, have read the accompanying thesis submitted by Jens Peter Jensen for the degree of Master of Arts. They approve it as a thesis meeting the requirements of the Graduate School of the University of Minnesota and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts.

Minneapolis, Minnesota

May 1917

Chairman

REPORT

of

COMMITTEE ON EXAMINATION

This is to certify that we the undersigned, as a Committee of the Graduate School, have given Jens Peter Jensen final oral examination for the degree of Master of Arts. We recommend that the degree of Master of Arts be conferred upon the candidate.

Minneapolis, Minnesota

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COOPERATIVE MARKETING OF LIVESTOCK IN UNITED STATES WITH SPECIAL REFERENCE TO THE DISTRIBUTION OF RETURNS AND COSTS

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A THESIS SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL

OF THE UNIVERSITY OF MINNESOTA

BY

Jens Peter Jensen

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INTRODUCTION.

The present thesis is primarily a study of the methods employed by cooperative associations marketing livestock in the United States, in distributing the returns and costs of marketing the stock to the producers thereof. It has seemed useful in this connection to show briefly the origin and the extent of the cooperative livestock marketing associations and the general factors in the marketing situation as they affect the main subject. These are helpful in the discussion and understanding of the methods and practices in use as well as their relative convenience and equitableness.

That an intensive study was desirable in this field was first brought to the attention of the writer when in the fall of 1915 as assistant to Dr. Durand, Chief of the Division of Research in Agricultural Economics of the Department of Agriculture of the University of Minnesota, he was engaged in collecting and preparing for publication data from a number of livestock shipping associations of the state of Minnesota. A law of 1913 requires annual reports from all cooperative associations in the state to be submitted to the Division of Research in Agricultural Economics. While far from all of the associations have complied with the law, it has been possible to get reports sufficiently numerous and comprehensive to provide the basis for fairly accurate estimates as to the number of associations in the state and as to the volume of their business. Concerning their business practices, the principles according to which, and the methods by means of which they charge expenses upon stock and distribute net receipts, however, the reports gave little information, except as to show that diversity prevailed and that many of the principles and methods in use were unjust.

On these matters, on account of the diversity of the practices, the questionnaire method of collecting information could not be effectively employed. Accordingly, during the summer of 1916, some thirty associations in the various counties of the state of Minnesota were visited and studied. The managers for the most part were glad to exhibit their files and explain their systems. A large number of associations in Minnesota and a few other states were reached by means of direct correspondence, and numerous private dealers were interviewed. The marketing process was observed both at the local yard and at the central market, the Union Stock Yards in South St. Paul. The reports furnished by a large number of the associations for the four years 1913-16 were studied to show the development of the associations.

In studying the situation outside of Minnesota only a few associations in the adjoining states were visited or otherwise reached directly. The several bulletins of the Office of Markets and Rural Organization of the Federal Department of Agriculture at Washington, D.C., indicate that the situation in the adjoining and other states, where associations are found, does not differ essentially from that within the state. Since the associations had their origin in Minnesota and spread to other states and since the movement is a recent one, the conclusions drawn are doubtless generally valid for all of the United States.

There is, naturally enough, very little literature upon the subject, and such as does exist issues from a single source, namely, the Federal Office of Markets and Rural Organization. Three bulletins have been issued from that office, namely, Bulletin No. 718

entitled Cooperative Livestock Shipping Associations, April 10,1916; Bulletin No.403, A System of Accounts for Livestock Shipping Associations, Sept.21,1916, by Humphrey and Kerr; Report No.113, The Meat Situation in the United States, Part V being Methods and Costs of Marketing Livestock and Meats, Oct.7,1916, by Hall, Simpson and Doty. These publications will be referred to in the later discussion as Bulletin 718, Bulletin 403, and Report 113, respectively. The data contained in Bulletin 156 of the Minnesota Experiment Station by E.Dana Durand have been freely used without acknowledgments as the writer assisted in preparing that bulletin.

The problem of the distribution of returns and expenses is peculiar to and arises with the development of cooperative shipping associations. When the local private dealer buys the stock from the producer, the bargain made with the buyer settles what the producer shall receive for his stock. The dealer has no anxiety concerning the justice of the proceeds of sales made by any producer to him. But when the shippers do not consider that their stock is sold until it reaches the central market, that it is there sold in lots with the stock of other shippers, and must be made to bear its proportionate share of the various items in the cost of marketing, there comes into existence the double problem of equity and convenience in the distribution both of expenses and net proceeds. The methods used, the principles underlying, and the factors affecting this distribution of returns and costs constitute the main problem of the present study.

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CHAPTER I

ORIGIN AND EXTENT

Cooperative marketing of livestock in the United States, such as it is known is the shipping associations of today, dates from the year 1908. Doubtless previous to that year there was considerable "clubbing together" by feeders of stock, who succeeded in this way in getting carload rates for less than carload lots of their own stock. The practice is still carried on in many sections of the country where a comparatively few neighbors in aggregate produce stock enough to ship in carload lots only in this way. However, it is too loosely established to be dignified with the name of an organization. Moreover, it is not well adapted to the needs of producers of livestock who produce and market stock irregularly and in small quantities, or who are scattered over considerable territory. Such practices demand, therefore, scarcely more than this passing notice, especially since they are probably not very widely found.

In 1908 the County Farmers Club of Meeker County, Minnesota, organized itself into a livestock shipping association and began shipping stock out of Litchfield. In the state of Minnesota, on January 1,1917, there were reported to the Division of Research in Agricultural Economics at the University Farm,St.Paul,Minn., approximately 300 associations. Doubtless some existed which had not been reported, since they are so readily and simply organized. The number in operation in other states cannot be stated accurately. Recently the Office of Markets and Rural Organization of the Department of Agriculture gave the number as approximately 500[(1)]; six

(1) Bulletin 718, April 10,1916.

months later the number was placed at 750 (1). That these figures are both too small may be judged from the fact that while in Bulletin 403 Minnesota was credited with 215 associations, there were actually reported to exist almost 300 at the time the bulletin was issued. Reports of newly formed associations in Minnesota are continually coming in to the Division of Research. It is not worth while to guess at the number, but the number given above was too small at the time, and is much more so now. Only five associations in Minnesota have been reported as having permanently discontinued business, and then in most cases because rival associations had been organized in more advantageous local markets. Map I indicates the location of the associations in the state of Minnesota which were known to exist up to January 1,1917.

The amount of stock which is shipped cooperatively in the different states can be estimated only in a very rough way. Table I, of which the data are obtained from Report No.113, shows the proportion of the different species which were shipped cooperatively in the respective states according to the estimates of the regular and special correspondents of the Bureau of Crop Estimates. As authentic detailed reports are available for the state of Minnesota only, the following statistical paragraphs apply to that state only, except where otherwise stated. It is believed that the figures for Minnesota reflect substantially the situation in the other states shown in the table.

Detailed and comparable reports from 88 associations show that in 1915 they shipped 5,377 cars of stock which brought,f.o.b.

(1) Bulletin 403, October 7,1916.

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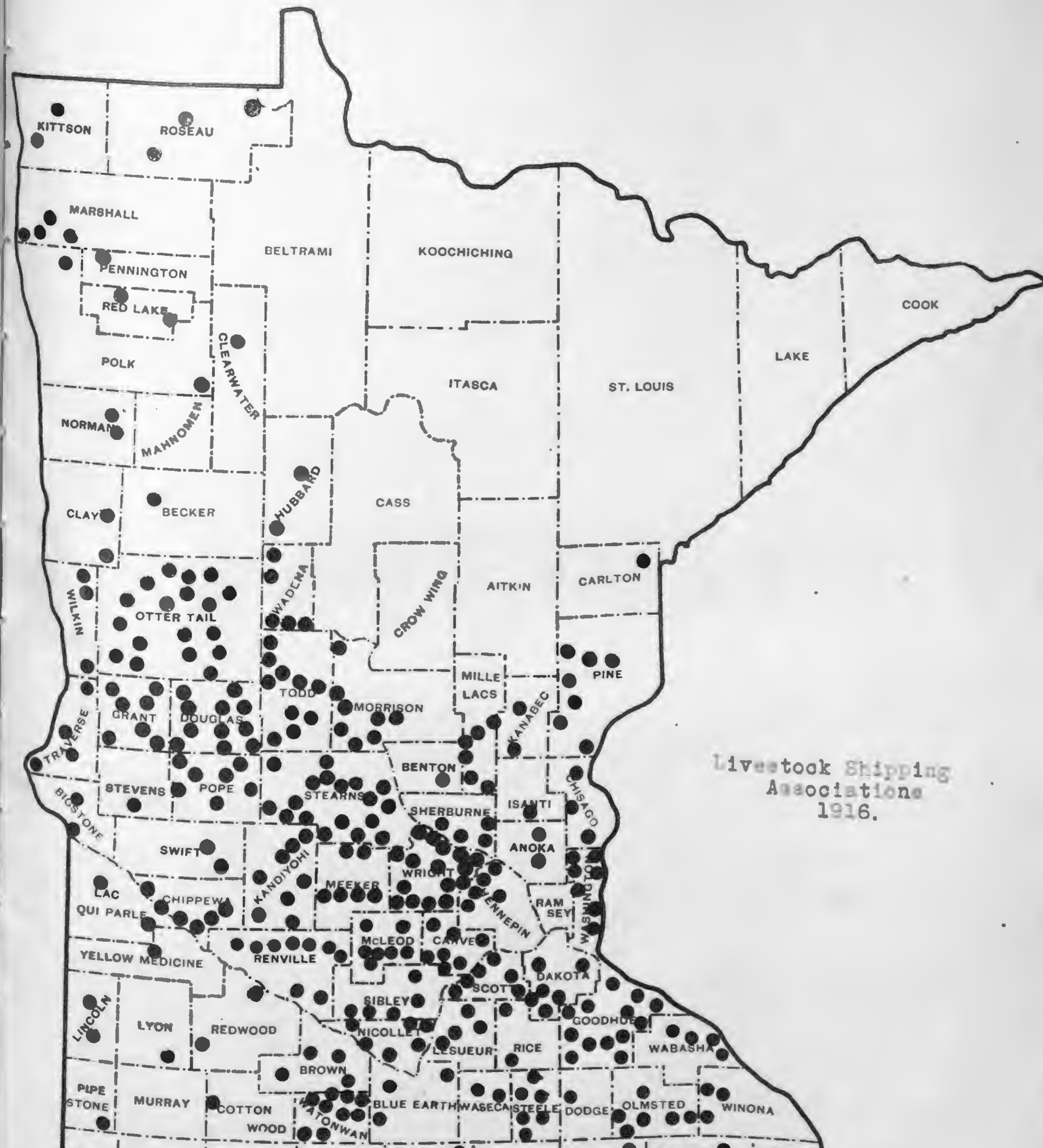

Livestock Shipping
Associations
1916.

shipping point, $5,885,702, or $1,095 per car, and about $1,080 per car net to shippers. This amounts to an average of 63 cars and $68,040 per association. There are no means to determine exactly how large the volume of business transacted by all the associations in the state was. Since, on the whole, the larger and more successful associations have probably reported more fully and comprehensively, it is unlikely that the additional volume is quite in proportion to the number that did not report. The following paragraph supports the estimate of approximately 13,500 cars shipped by the 300 associations, which at $1,080 per car would amount to $14,580,000.

The total receipts at the Union Stockyards of South St.Paul for 1915 was 58,890 cars, as stated in the annual report of the Stockyards Company. A considerable part of this originated outside the state of Minnesota. But nearly all of the stock shipped out of the southern portion of Minnesota was consigned to other markets than South St.Paul. Probably the stock received at SouthSt.Paul but originating outside of the state approximates in amount that part which originated in the state but was shipped to outside markets. Then the 13,500 cars would be approximately 23 per cent of the total receipts. This corresponds fairly closely to the estimates for Minnesota shown in Table I. It should be remembered that the receipts of calves and sheep are small in absolute amounts, and do not affect the proportion seriously.

Two factors have contributed to this increase in the volume of business, namely, the increase in the number of the associations and the growth of the volume of business of the individual associations. It is possible, thanks to the avail-

Table I.

Proportion of Stock Marketed by Shipping Associations.

From Report No. 113 U.S. Department of Agriculture, Meat Situation in the United States.
No other state reported any stock marketed cooperatively.

State	Cattle	Calves	Hogs	Sheep
Arkansas	4.6	5.6	3.2	4.4
California	4.7	5.3	5.3	6.9
Colorado	1.1	--	5.6	--
Idaho	5.0	--	14.2	--
Illinois	1.3	1.0	.2	.2
Indiana	5.3	5.9	5.7	6.2
Iowa	5.3	6.2	5.4	4.1
Kansas	4.1	3.5	6.0	.7
Kentucky	1.2	1.3	1.0	1.3
Michigan	1.4	--	--	--
Minnesota	23.5	14.3	24.0	16.1
Mississippi	4.7	--	--	--
Missouri	1.6	2.4	1.9	3.6
Nebraska	6.9	13.0	13.9	8.1
North Dakota	3.0	--	3.7	.9
Ohio	1.8	1.8	3.2	2.3
Oklahoma	3.1	6.1	3.6	14.3
Oregon	--	--	5.6	7.1
Pennsylvania	.1	--	.1	--
South Dakota	9.4	.5	8.0	9.7
Tennessee	1.7	1.0	.9	5.2
Virginia	.3	--	--	--
Washington	2.1	--	1.4	--
West Virginia	2.9	--	--	--
Wisconsin	8.9	10.8	10.6	10.6

ability of numerous reports to the Division of Research covering four years of business and giving details as to the time of organization of many of the associations, to determine approximately to what extent each of these two factors is responsible.

Of the 300 associations known to be in operation on January 1,1917, 138 have indicated the year in which they were organized, and the results are shown in Table II. The fourth column shows the number of associations which probably existed in each year, as obtained by distributing the remaining 162 associations proportionately among the nine years.

As to the other factor, the growth in volume of business of the individual associations, an idea, probably nearly correct, may be secured from reports of 38 associations whose items on the point of their volume of business are complete and comparable for the years 1913-15. The results are shown in Table III below.

Table II.
Year of organization of 138 livestock shipping associations, which reported, and the probable number of associations in operation in each of the years specified.

Year	New Associations organized	Total number existing as reported	Number probably existing (163 associations distributed proportionately)
1908	1	1	1
1909	0	1	1
1910	5	6	12
1911	12	18	38
1912	19	37	79
1913	27	64	138
1914	44	108	234
1915	19	127	275
1916	11	138	300

Table III.
Increase in volume of business of 32 livestock shipping associations during the three years 1913-15.

Item	1913	1915	Increase: Number	Increase: Per Cent
Number cars shipped	1,078	1,850	772	71.7
Animals shipped	74,012	120,141	46,129	62.3
Cattle	8,950	21,536	12,586	140.6
Calves	8,443	10,079	1,636	19.4
Cattle and calves	17,393	31,615	14,222	81.8
Hogs	52,196	84,105	31,909	61.1
Sheep	4,423	4,421	-2	--
Paid Shippers (Doll.)	1,288,092	2,095,529	807,437	62.7

It is noteworthy that, as far as the shipping of sheep is concerned, there has been practically no change, while for cattle the increase in number of heads shipped is 140.6 per cent. If cattle and calves be taken together, the increase has been smaller, namely, 81.8 per cent. The fact that the percentage of increase in the total number of animals shipped, practically equals the percentage of increase in the amount paid shippers, and that these are both considerably less than the percentage of increase in cars shipped would seem to indicate that smaller cars are being used. This in turn probably indicates that a large number of small associations are now operating, whose shipments tend to be smaller and which, therefore, demand smaller cars in order to ship economically. This possibly explains away a part of the difference between the percentages of increase in cattle and calves, since the smaller associations can rarely, if ever, ship any large proportion of calves in any shipment, and on that account often do not keep separate record of the calves shipped.

It is significant that the 32 associations discussed above do not show a single case of decrease in the volume of business during the three years. The smallest increase was 7.1 and the largest 1600 per cent. The few cases of such immense gain are of associations which were new in 1913. The more normal increase of the remaining associations is due partly to an increase in the production of livestock and partly to the fact that the associations have largely displaced the local dealer. Table IV shows the 23 associations grouped according to the rate of increase in the volume of their business.

Table IV.

Distribution of 22 associations according to the rate of increase in volume of business, 1913-15.

Rate of increase, per cent.	Number of associations.
Less than 25	3
25 - 50	4
50 - 75	3
75 -100	2
100 -200	5
200 and over	5

No such figures are available for any other state. It is certain that the development of cooperative shipping associations has been both more recent and less rapid in the other states. Table I indicates that Minnesota leads all the states in the percentage of livestock marketed cooperatively. Minnesota probably also leads in the absolute amount thus marketed; but her lead in that respect, if she has it, is certainly much less conspicuous. The states of Iowa, Kansas, Missouri all lead Minnesota in absolute amount of livestock produced, and have also considerable percentages shipped cooperatively; none of the remaining states would show even approximately as large a percentage of their livestock marketed cooperatively.

Table I is of interest also in showing in part the geographical distribution of the associations. The first observation is that they are most concentrated in the corn belt states, and, more especially, in the states of Wisconsin, Minnesota, and the Dakotas, which four do not properly belong in the corn belt.

They are found less densely in a few southern states, as Arkansas and a small number of western and Pacific states. To some extent, therefore, the importance of the associations tends to vary directly with the intensity of livestock production. This is to be expected, since it usually takes an interest of some importance to band a group of individuals into effective association.

It will also be noticed that in the states of Minnesota and Wisconsin, well known mixed farming states, but not typically beef or hog states, the associations are more numerous than elsewhere. This fact points to the conclusion that the associations are especially useful where small producers market small lots of stock irregularly rather than where large feeders predominate. This is seen much better from Map I of the associations within the state of Minnesota. In the origin and center of the association movement, Meeker and adjoining counties, the agriculture is typically of the mixed farming kind. In the southwestern part of the state which resembles in its industry the corn belt states, the associations are relatively few. Large producers are able to market their own stock advantageously, and thus obviate the necessity for the associations. The best field for the associations and the field in which they fill the greatest needs is evidently in localities where a sufficient volume of stock is shipped to produce a common interest of considerable strength, and especially where there are not very many large shippers.

It is in these same communities, more than in any other part of the United States, that the various kinds of agricultural cooperative organizations antecedent to the shipping associations have been most numerous. Unquestionably this fact, the previous existence of numerous other cooperative organizations such as creameries, stores, elevators, breeding and cow-testing associations, and clubs of various kinds, has been a facilitating circumstance of the first rank. The pioneer shipping association at Litchfield was the outgrowth of a county farmers' club, and the same is true for many others. Numerous livestock shipping associations are still virtually departments of some local cooperative elevator, creamery, store, or club, the management having simply adopted the additional rules and by-laws necessary for the new business venture, employed a manager, and assumed supervision and audit of his work. In other such cases the cooperative shipping of livestock originated in this way but has since been delegated to separate organizations as it was thought better to have a separate board of directors for each department. Even where shipping associations were from the first organized as such, it would be difficult to overestimate the value of them of the practice and spirit of cooperation among farmers developed in managing and patronizing the local cooperative elevator, creamery, store, or club. Quite often the separate boards of the several cooperative organizations are composed largely of the same persons.

County agents, agricultural instructors in high schools, as well as regular and special agents from the Extension Division of the Universities have also been active in the organization of shipping associations where market situations have made them desirable. In certain sections of the country many have been organized by the American Society of Equity. Probably other similar societies have likewise had some share in the promotion of a large number. In many cases local bankers and business men have been active in the formation, management, and operation of shipping associations.

CHAPTER II

FUNCTION AND ORGANIZATION.

For the most part the associations consign their stock to commission firms in the central livestock markets. In this they resemble the local stock buyer, whose economic functions in the marketing process they have assumed. It may, therefore, be useful in making clear the functions of the associations, to show in general the economic functions of the local marketing agency, whether a private dealer or an association, and also the modifications due to the assumption by the associations of the functions which were until recently performed chiefly by the private dealer. The order in which these functions appear is not necessarily that of their relative importance.

1. To assemble the stock into quantities large enough for shipment at advantageous rates. This means in carlots and in straight cars as far as possible. Generally the private local dealer found it necessary to scour the country for stock, often in competition with and covering the tracks of a number of other buyers. The process was cumbersome and wasteful and did not enlist the cooperation of the producers. The associations eliminate a large part of this waste by having the stock delivered to one manager instead of divided among several buyers, as was frequently the case.

2. To sort the stock by species and by grade for the most economic shipment and sale. The local dealer does this by buying one species or grade at the time or, more frequently, by holding stock over from one shipment to another. The association cannot

so well restrict any shipment to any particular species or grade; but usually the association can ship out all the stock which it used to take several buyers to handle. This means for the most part more than one car in each shipment, and often straight cars.

3. To select the most advantageous market, where a choice exists between central markets, or to choose between sale to the local butcher or packer and sale in the central market. This function has been assumed by the associations and delegated to the manager, sometimes in conjunction with the board of directors. Perhaps in this respect there is little difference between the efficiency of the two forms of marketing agency. Self interest on the part of the local dealer may be presumed to be the most effective motivation possible. The manager of a large association, on the other hand, gives his whole time to the work and should become an expert in the marketing situation, since he handles probably a volume of business considerably larger than that of the average private dealer.

4. To finance the marketing process. The dealer pays the producers on delivery of the stock. On the average, and disregarding present high prices, not much over $1,000 is necessary for each car shipped per week, either in cash or credit. The associations have practically obviated the burden of this function, the members agreeing among themselves to wait for the proceeds from their stock until the returns from the central market are received by the manager and can be distributed by him. Instead of having to pay interest on necessary working capital, the associations at times receive interest on their daily balances in the local bank. If they do not receive the compensation in the form of interest,

they frequently receive what amounts to the same thing in the form of service performed by the banker in keeping the books or prorating the returns and expenses of the association free of charge. While economically speaking, we cannot say that the function has been eliminated, we may probably say with truth that it has been placed where it is exercised with the least possible burden.

5. To assume the risk and losses due to injury or death of stock in transit or in the yards. Most of the associations provide for such emergencies by retaining a small charge for a protection fund, which is charged on all stock shipped, and by accepting unhealthy stock at owner's risk only.

6. To assume the shrinkage of stock in transit. The associations, as far as practicable, make each shipper bear the shrinkage on his own stock. The effect is to stop much unwise "filling" of stock.

7. To assume the losses and gains due to oscillations in the price received. The associations have attempted in various ways to avoid the consequences of extreme changes in the central market price, but not with any great deal of success, and it still is the strongest argument against shipping through the associations, that the stock may strike a very low market.

8. To act as an advisor to his customers on when and how to market their stock. As his financial interests are directly involved, the private dealer is probably less well adapted to this function than is the manager of the association, whose interests are less directly, if at all, in conflict with his patrons.

9. To distribute the returns among the producers. The dealer naturally buys for as little as he can, and the ability of

the producer to bargain with the dealer determines largely the justice of the distribution. For stock shipped through the association the shipper is paid, subject to numerous qualifications, the price of sale in the central market less the charges levied for expenses and protection.

It is with this last function that the present thesis is primarily concerned. Yet the cost of the necessary labor, the losses and shrinkage, the fluctuations in prices and costs of materials must all be considered in determining the principles upon which to distribute the various items of the marketing costs.

To perform these functions of the marketing process several different organizations have been formed. Of these, only those which are properly marketing organizations will be considered. Cooperative packing plants, of which at least four are now in operation and several more projected, are properly manufacturing plants. They buy their stock from their customers, members and non-members, at prices based upon accepted central market quotations for the respective grades of stock, and in that respect do not differ from any other buyer, in the local or central markets, except in so far as they propose to pay dividends on a patronage basis. They must market their finished products, it is true, but so must the large packers. The marketing of both occurs at a different stage in the productive process from that of the shipping associations proper.

In case of the cooperative packing plant there is no problem of distribution of returns and expenses similar to that of the shipping associations. The packing plant receives its supply of stock either from the local producers or from more distant shippers. In the former case the producers market directly to the plant, at the quoted rates, and there is no problem of distribution of expenses at all, and only a problem of distribution of net proceeds in so far as the producer is shareholder or expects to receive a patronage dividend.

If shipped from a distance, the stock may come from large producers or dealers, who ship their own stock in carload lots. Their relation to the plant is much the same as that of the producer who delivers directly to the plant, except that they must probably bear at least a part of the cost of transportation and necessary feed for the stock in transit. Or the supply may come partly from shipping stations organized by and operated under the supervision of the manager of the packing plant. Returns are then rendered to the shippers separately on the basis of the established quotations. The packing plant established such facilities by means of which the shippers may ship in carload lots, but otherwise deals with them individually, and the problem of distribution of proceeds and expense does not arise except in the distribution of the simple patronage dividend, to members and non-members, as the case may be. In the third place, the stock may be shipped to the packing plant from a regular shipping association. In such case the packing plant stands in the same relation to the shipping association as any other purchaser of stock in the central market, except in so far as the association may be a shareholder in the plant and expect patronage dividend which it must distribute on some accepted basis to its members. The shipping association as such still has its own peculiar problem of distribution practically unaffected by its membership in or patronage of the cooperative packing plant.

The typical livestock shipping association is a simple organization of a number of shippers of livestock, which employs a manager to market their stock collectively and distribute the net proceeds to the shippers according to such regulations and rules as they may adopt. So far very few of the regular associations have found it necessary to incorporate. Of the 91 associations in the state of Minnesota reporting on that point for 1915, 23 were incorporated and 68 were not. Of the 23 incorporated associations the majority were not separate organizations, but were for the most part shipping departments in some other cooperative organization, as the local creamery, elevator, or store. These usually have need of working capital, part of which they deem it best to secure by issuing capital stock. The associations which are not affiliated with other cooperative organizations usually have no need of capital since they do not pay on delivery for the stock shipped; they are therefore usually unincorporated. A number of associations such as Zumbrota, Pine Island, and Janesville, all of Minnesota, do, however, buy the stock outright, for which they need working capital; and they are, therefore, incorporated, for the most part under the cooperative incorporation law.

The regular associations have the traditional officers of president, vice-president, secretary, and treasurer. The secretary and the treasurer are frequently bonded; if premiums are to be paid this is done by the associations. Either the secretary or the treasurer is often the local banker, who then performs a part of the bookkeeping and statistical work. In some instances the treasurer has nothing to do but to keep a duplicate record of the account kept in the bank or by the manager; in such cases that office could well be dispensed with. The secretary at times acts as an immediate auditor of the accounts of the manager for each shipment of stock. Except for these and possibly a few other variations, the functions of these officers are those traditionally belonging to the respective offices.

There is always a board of directors. The chief duties of the board is to secure a good manager, where the manager is not elected by the members of the association at the annual meeting, and to determine questions of policy, as to the market to which stock shall be shipped, the methods of prorating and making returns, the amount and form of the protection fund charge, etc. At times this board is unnecessarily large. There seems to be no reason why seven members in addition to the regular officers should be assembled for the monthly or quarterly meetings, and draw pay for such service. Certainly, for their most important function, that of auditing the books of the manager of the association at their regular and annual meetings, a smaller and more select committee could work to better advantage. Some boards delegate this function to a smaller committee of two or three men.

The manager, whether elected or appointed by the board of directors, is usually bonded, the association paying for the bond where such is furnished by others than some local person. He is easily the most important official of the association. It falls to his lot to handle the stock physically and in most instances to determine jointly with the board of directors, and sometimes according to his own discretion, the policies of marketing. It is also his task to make the returns to the shippers for stock shipped, and often to determine the methods and principles according to which such returns shall be made. The compensation of the manager as well as that of the other officials will be discussed in a later chapter.

In some associations a special auditing committee audits the books previous to the annual meeting. External audits are frequently provided for such associations as are locals of the American Society of Equity. An extra official, a bookkeeper, is often employed on part time, in associations where the manager does not wish or is not competent to prorate the returns.

Such in general are the associations. There are numerous variants from this type. First among them may be mentioned the improperly called "Buyers Associations" already referred to. Since they are few in number, they will be discussed here somewhat in detail, in so far as they have special problems, and will be referred to later only occasionally. The basal distinction, although this has been somewhat modified in the case of the association at Janesville, is that the buyers' associations pay cash for the stock on delivery, while very few, if any, of the shipping associations do so. The delay incurred in waiting for the returns until they arrive from the central market has in most places caused but little inconvenience. The disposition of the shipper is the determining factor in this matter. In a few places, not over half a dozen in the state of Minnesota, it was deemed wise to organize in such a manner that payments could be made for stock on delivery. This necessitated working capital, which was provided by the issue of shares of negotiable membership, and in most instances, it meant incorporation.

In such cases the manager receives, weighs, grades, and issues checks for the stock delivered. The price paid is usually a fixed figure below the quotation at the central market for the grade of stock delivered. The association assumes cost of marketing and the risk due to fluctuations in price and to losses and shrinkage. Out of the net profit is sometimes, though not always, paid a preferred stock dividend, or interest on shares of, say, five per cent. Provision is made for subsequent payment of patronage dividend, based upon the weight of stock shipped, but usually to stockholders only. In practice, no considerable patronage dividend has been declared, the profit being generally slight and so far usually retained as surplus capital.

In these associations the manager is paid a salary or receives a certain sum per car and usually gives all his time to the business of the association. Shippers are not required to sell their stock to the association; they are given the privilege of shipment with separate sale and returns for a fixed and uniform charge per hundredweight. Some stock is actually shipped in this way, but by far the larger share is sold regularly to the association.

The real test of an organization is, of course, that it shall work effectively. Judged by the volume of business per association, this class of associations is certainly successful, for the average number of cars shipped by the three associations in Minnesota whose reports on that point are available, was 153 for 1915, the smallest number in any association in the group being 83 cars, which is considerably above 60 cars, the average for all the 90 associations reporting on that point.

In respect to cost of marketing, it is not possible to make comparison between the buying and shipping associations, although the buying associations should have lower expenses per hundredweight, chiefly because they happen to have a larger volume of business. Their cost would tend to be higher, on the other hand, because they must pay interest on the working capital, while in associations where shippers wait for returns, this is not necessary, owing to the fact that the farmers, not being able to cash the checks for the stock on the day of delivery, often permit considerable time to elapse before presenting them for payment.

In respect to facility of operation, the buying associations are probably at least as favorably situated as the shipping associations. The former must keep a patronage ledger and a share record; on the other hand, they do not need to pro-rate returns to individual shippers for each shipment.

In one respect their organization is doubtless superior. It is a practice of some importance in numerous associations to sell locally a considerable part of the stock delivered; the association in such cases functions as a convenient and efficient local exchange for the farmers, the local butchers, and other consumers. In one instance at Pine Island, Minnesota, a buyers' association has carried the idea of a local exchange to the extent of renting a pasture and holding stock, at times, for a higher price at the central market and meanwhile for possible local exchange. It would be more difficult in a shipping association where the shippers wait for returns on each shipment to pro-rate the returns equitably under such conditions. A shipping association with no capital is not well adopted to hold stock for any reason, although it can easily enough take care of local exchange of stock.

When a producer has sold his stock to the association, he has no interest in what becomes of it, except in so far as he is a stockholder and will share the patronage dividend, in which case he is desirous of as high a final price as possible to increase the profit available for dividends, and to that end he is willing to trust the manager. But in a shipping association the shipper, who delivers his stock for shipment and finds it has been sold locally, is apt to believe that if it had been shipped it would have brought a higher price even if at a stable market this would not have been the case; on a rising market the shipper is apt to lose by local sale, while on a falling market he is apt to gain, and on a stable market he may do either to a slight degree; in the two latter cases the practice may easily cause dissatisfaction, and has done so in some instances.

The practice of local exchange is valuable for several reasons, and endeavors have been made to adjust it to the satisfaction of all shippers. There seems to be no good reason why, if the proper means can be employed, the association should not perform the function of a local stock exchange, rather than have the stock shipped to the central market and back again at a heavy extra expense of freight, double commission, and other charges; for rather than pay such charges, the purchaser will try to scour the country or buy from a local middleman, which is exactly the economically wasteful form of exchange the associations were established to avoid.

To that end several methods have been used by the shipping associations. One is to have the manager grade the stock and charge the local purchaser the market price for that grade of stock. Another is for the manager to arrange with the shipper definitely for permission to sell locally certain stock for which there may be local demand, and for the terms on which the shipper is willing to have his stock sold locally. Sometimes the manager is forbidden to sell any stock locally except with the specific consent of the shipper. In most cases, however, it is necessary to rely upon the discretion of the manager. In the buyers' association no such problem appears.

It has been objected that such buying associations are not cooperative, a charge which, as far as the organization as such is concerned, seems not to be well founded; for it is precisely in this way that the really cooperative elevators are organized. The real reason why there are so few of the buyers' associations compared with the large number of shipping associations is probably the fact that the shippers prefer the wider competition of the central market to the discretion of the local manager in fixing grades and prices for stock shipped. Perhaps another reason is that the commission man in the distant central market does not know and cannot discriminate against the stock of any individual shipper. The local manager usually does know all the shippers, and it is feared that, even if the judgment of the local manager be as efficient as the competition in the central market, he is not entirely disinterested. In Pine Island this very situation has given rise to a competing cooperative shipping association, an undesirable condition, since it lessens the volume of business of both and thereby increases their cost of marketing.

Another variant may be found among such cooperative organizations as engage in marketing of livestock as a sideline. A considerable number of elevators, a few stores and creameries are found in this group. They buy the stock on basis of weight and grade, and handle it otherwise as any other of their various sidelines. They buy the stock outright. Except in so far as the organization thus engaged is cooperative and usually handles the stock of the shareholders and, therefore, is not likely to retain any unnecessarily large margin, and may hold out the promise of patronage dividend to the shippers, it does not differ in principle from the local dealer. The problem of distribution which arises out of the marketing stock by such associations is far different from that of the shipping associations and resembles those of the respective organizations, notably that of the elevators, of which they are constituent parts. It is not believed that these associations have a large future before them as marketing agencies; they are not well adapted to meet determined competition of private individual buyers; where the shippers have the requisite loyalty to the cooperative methods of marketing, they will soon adopt the superior form of the separately organized and operated shipping association.

A third variant may be considered consisting of the shipping departments organized in the various parts of the state in the cooperative elevators, creameries, stores, and clubs. These departments are virtually shipping associations, except in so far as their board of directors have charge of other previously organized departments in the organization. For this reason such departments may have to bear a lessened overhead expense, while in other respects their problem of distribution is for the most part identical with that of the regular shipping association, and they are herein considered as such.

Perhaps a fourth variant may be thought of as a group of arrangements made in various parts of the country by some person or organization with the local shippers to handle the stock for some specified commission, say fifty cents per hundredweight. The arrangements vary widely in the amount of the commission paid, and also in the proportion of the marketing expenses which the local commission man must assume. There is nothing particularly cooperative in this arrangement except that there usually exists an informal understanding to the effect that an association for cooperative shipping would be organized, should the commission form of shipping prove unsatisfactory.

In 1913 a Central Livestock Shipping Association, a federation of the individual associations in the state of Minnesota was organized. It was to have educational and advisory functions. The attempt was not very successful, perhaps because the functions were too varied and indefinite. In February, 1917, the association was revived. The aim now seems to be to secure collective action in the endeavors to get better service by the railroads and in the stockyards. It is yet too early to speak regarding its success.

In some instances where there are several shipping points in the territory of an association, a shipping department is maintained, the accounts and funds of each department being kept separately, and a manager employed for each point. Doubtless some economy is effected in overhead expense, such as compensation of directors, secretary and treasurer, correspondence and rent (where such is paid for any purpose), because one board has charge of what is otherwise virtually two or more associations. It is doubtless true that in such instances the shippers at the subsidiary shipping points are sufficiently benefited by the shorter distance of hauling or driving to more than offset the advantage they would derive in more economical shipping on account of a larger volume of business at the central shipping point.

Cases exist where one manager is employed jointly by two associations shipping from different points. As good managers are often difficult to get, and as the work of the manager in smaller associations does not demand all his time, this would seem to be an excellent practice, which should result in economy for all concerned and in greater efficiency of the manager.

The practice of organizing several associations in the same local market with separate managements and competing with each other, is not economically justifiable. The smaller the volume of business, the greater on the average the cost of shipping per hundredweight. There probably are nearly a dozen places in the state of Minnesota where two or more associations operate in competition with each other in the same local market. This multiplies unnecessarily the number of directors and managers employed and decreases the efficiency of all the competing associations.

It is one of the virtues of the shipping association, that owing to the fact that it needs no capital or elaborate procedure of incorporation and does not carry any liability, it can be easily organized and modified. This ease does, however, become a detriment when it facilitates so extensively the organization of competing associations in the same territory. The time worn "Competition is the life of trade" has little if any application in this instance.

CHAPTER III.

FACTORS AFFECTING COOPERATIVE MARKETING OF LIVESTOCK.

Certain factors affect the marketing process and especially the distribution of returns and expenses in the shipping associations. A brief consideration of these factors will assist in making clear the problems which face the manager and the board of directors of any association marketing livestock cooperatively. They may be roughly grouped as follows: (1) characteristics of the product marketed; (2) nature of production; (3) the market situation; (4) the labor situation; (5) characteristics and amount of the various items in the marketing cost. The first two of these factors will be discussed in this chapter.

1. Perhaps the most striking characteristics of the various species of livestock, as distinguished from other farm products, is the retention of their identity throughout the marketing process, at least so far as this process is a concern of the producer. The units are too large to be handled in bulk as is done in case of grain; there is no local mixing or manufacturing process as with grains or dairy products. Poultry comes nearest to being sold, as is livestock, in identical units of irregular quality and varying weights. For the four species of livestock only is it attempted by cooperative marketing associations to render returns to the shippers on the basis of the actual proceeds from sale in the central market of any given unit less its apportioned or actual expenses of marketing.

Cattle are practically always sold and weighed separately in the central market. Hogs are generally, and calves and sheep nearly always, sorted, sold and weighed in lots; yet in some cases they are marked and sold individually. For the most part, however, the units of these species are not considered large enough to be handled individually with sufficient convenience. The question naturally arises in this connection to what extent it is possible and wise to try to render the identical returns to the shipper for individual units of any or of all the species. This question does not arise in connection with the local private dealer who has no interest in calculating or even in knowing the exact proceeds from any particular animal; he cares primarily for the net profit on the shipment and does not insist upon having his stock sorted, sold and weighed, each animal by itself, in the central market. Yet if this is not done in case of stock marketed through the associations, the accountant must find some other basis upon which to distribute to each shipper his due share of the total net receipts.

A second characteristic of livestock which makes the individual basis for rendering returns to shippers more desirable, and at the same time more difficult, is that none of the species can be satisfactorily standardized, and that, since they cannot be sold by grade or handled by sample, they must be sold by inspection. In the central market a number of general classes have become quite generally recognized, chiefly on the basis of the use to which the animals are put. Thus for cattle, "beef steers", "butcher bulls", "stockers", "feeders", and "canners" indicate the most important classes. Within each of these classes, however, the prices may vary, on a given day and in a given lot, considerably; a variation within a class being sometimes as large as 100 per cent on the base of the lowest price quoted. Usually the commission men sort out the animals within each class into three to five sub-classes, ranging, in case of cattle, from best or "prime" to the poorest or "common". The spread between any two such sub-classes or grades is often $1.00 to $2.00 or more. Since all the animals sorted into one of these groups are usually sold for the same price, there is necessarily some injustice done to those shippers whose stock is better than the average, and some undeserved gain to those who have stock in each lot below the average in quality. The private dealer absorbed these variations, and in the long run gained by not insisting upon too minute sorting and individual sales. But the individual shipper who markets only a few head of stock each year is not in a good position to assume such variations; he is likely to complain if he has been to any extent underpaid for his stock, but would perhaps not always be willing to have any sum deducted from the sale price, when his stock in quality is at the lowest margin of a lot. Competition of private dealers have compelled some associations to make adjustment in case of such sales, usually by giving the manager authority to alter the selling price in the returns made to shippers. Most of the associations, however, have not deemed it wise to give the manager such discretionary power, but rely on the law of chance to even up in the long run the inequalities in the proceeds from sales.

A third characteristic is that the stock must be marketed alive and in healthy condition. This involves certain expenses for feed in transit and in the yard, and calls for considerable precaution in loading. The necessary expenses must be equitably distributed. Furthermore, with the best of care injury to stock in transit or in the yards will occur. Losses involved must be spread, at least over all of the shipment in which they occur, and preferably over a longer period and a larger number of shipments. The problem is aggravated by the fact that the various species are not equally susceptible to losses, hogs and cattle generally sustaining the heaviest proportion of losses. Moreover, the susceptibility varies with seasonal and daily changes in climate, with distance from the central market, the skill and care in handling the stock, and possibly with other circumstances. The Bureau of Animal Industry of the United States Department of Agriculture recently conducted an investigation for the purpose of determining the losses on livestock in transit. By actual count for a period of two years at the stockyards of Chicago, the dead stock removed from cars was found to be 0.04 per cent of the receipts of cattle; 0.61 per cent of the calves; 0.19 per cent of the sheep; and 0.41 per cent of the hogs.(1) This takes no account of stock which was sold at reduced prices because of injuries sustained.

For certain losses the railroads make settlement of claims. But the valuation they accept is usually considerably below the actual value, so that a partial loss is usually sustained and must be distributed by the association. In 1913-14, 27 railroads reported to the Office of Markets and Rural Organization that they paid claims amounting to $1,245,477.81 or 4.81 per cent of the revenue on this class of business.(2) The losses vary, as do also the

(1) Report 113, page 35.

(2) Ibid, 34.

claims paid, according to the efficiency of the respective railroads in handling stock. In a report for the year 1914 to the Office of Markets and Rural Organization two of the principal livestock carrying railroads show the following widely differing efficiency, as reflected in the average claims paid per car of livestock hauled: (1)

Table V.

Railroad	Cattle	Hogs	Sheep	Horses and Mules	All Kinds
Railroad No.1	$0.64	$0.37	$0.55	$3.14	$0.81
Railroad No.2	2.20	1.34	1.78	7.73	2.07

This does not include all the losses, for the railroads do not pay for all of them; and they do not always pay full value. Delay and uncertainty of payment of claims, together with partial payments complicate the process of distributing returns and costs. The buyer used to absorb these losses; the association must spread them so that they do not fall appreciably upon the shipper whose stock happens to be injured or killed. The association does not, however, assume the loss on stock which is held to be in unhealthy condition at time of delivery. Such stock is always, in theory at least, accepted and shipped at owners' risk.

A fourth characteristic of livestock is that in the marketing process there is usually considerable shrinkage in weight. No figures are available giving amount of shrinkage for the various species, covering any long time or extensive territory. An investigation by the Bureau of Animal Industry of the United States

(1) Report 113, page 35.

Department of Agriculture (1) showed that the average shrinkage varied from 2.05 per cent in the case of mixed silage-fed cattle in transit less than 34 hours to 7 per cent in case of mixed range cattle in transit over 72 hours. The figures were based upon live weight at origin and "filled" weight at market. The shrinkage varies with the kind of stock and the time in transit; probably also with the changes in climate and the care given.

The association at Litchfield, Minnesota, in 1915, showed the following figures for average shrinkage on all species shipped: cattle, .97 per cent; hogs, .97 per cent; calves, 3.37 per cent; and sheep, 3.48 per cent. The time in transit from Litchfield to South St.Paul, including the time in cars at the market is always less than 18 hours. The simple average of the average shrinkage reported from a large number of associations in the state of Minnesota for 1915 was for cattle, 2.86 per cent; hogs, 1.77 per cent; calves, 3.71 per cent; and sheep, 4.06 per cent.

The significance of these figures is not their absolute amount, which would probably apply actually to very few, if any, associations. It is rather in the fact that the shrinkage on the different species differs to a considerable extent, so that for many associations considerable injustice might result if the shrinkage were pro-rated from the same average on all the species. The problem generally for the association is to make each animal bear its own shrinkage. At times the shrinkage, perhaps due to the disposition of the animal, is very heavy on cattle, and some associations have assumed such shrinkage in part as a loss. There is an

(1) Ward, W.F. The Shrinkage in Weight of Beef Cattle in Transit, U.S.Department of Agriculture, Bulletin No.25,1913, pp. 73,74.

element of justice in this practice since against such heavy shrinkage there is no offsetting gain. However, the practice is not very common and should be carefully guarded, for obvious reasons.

In case of cattle it is not difficult to let each animal bear its own shrinkage, for they are usually weighed separately, if not always sold separately. But for calves, hogs, and sheep which are usually sold and weighed in lots, it is necessary to prorate the shrinkage on the basis of the home weight. If extra heavy "filling" is suspected, such animals are often weighed and sold separately at the central market, thus bearing justly the extra heavy shrinkage resulting, and perhaps being subject to a penalty in the form of a lower price on account of the separate sale or lower weight due to the separate weighing since the yard scales register only multiples of five or ten. Some managers, and among them some who have been highly successful, such as those of Litchfield and Hutchinson, Minnesota, make allowances in the shrinkage for differences in the distance stock is conveyed to the local yard, on the theory that the shrinkage incurred already will vary directly with the distance hauled or driven. The theory is probably valid enough, but the difficulty is in the practice of it. In fact it is rare that any manager except such as possess the absolute confidence of the shippers is permitted to alter the apportioned selling weight in making returns to shippers.

It is also the practice, as far as possible, to let each animal carry its own dockage. Dockage is a deduction in weight made according to trade custom for piggy sows or stags, usually 40 pounds for the former and 80 pounds for the latter. Such animals must bear their own shrinkage in addition to their dockage, and also their share of all marketing expenses on the basis of their gross home weight. This practice, it is readily seen, falls rather heavily on small animals. Occasionally cases arise in the local yard in which it is not possible to determine whether an animal will be docked in the central market or not. Such animals are usually marked and, if docked, made to bear the deduction. If, however, the identity of an animal docked in the central market but not at home, is lost, the association must assume the deduction as a loss.

The whole cost of loss, and sometimes of dockage, is one which the local private dealer used to carry, and for the carrying of which he perhaps has not been given due credit. Numerous associations compare the margins which the dealer was wont to retain with the present marketing cost of the association, and count the difference all gain, although considerable deductions for shrinkage have already been made from the home weight. Reference to the percentages of shrinkage quoted above (1) will readily show that such conclusions have no basis in fact.

2. The second factor affecting cooperative marketing of livestock is the nature of production. Possibly in this respect the most important characteristic of production is its intensity relative to local consumption. Where all the livestock marketable for meat purposes is consumed locally, there is little, if any, need for cooperative action and none for shipping agencies; much less is there such need where a considerable proportion of the consumption of meat is imported. This is particularly true in the New England and Middle Atlantic states where the large cities and

(1) Supra p.33.

industrial centers cause a heavy consumption and consequent heavy importation of meat stuffs. The opposite situation exists in the remainder of the United States, but it is especially pronounced in the Southern, Mountain, and Pacific states. Table VI shows for the six geographic divisions of the United States the percentage of towns in which less than 50 per cent, and those in which more than 50 per cent, of the total consumption of fresh beef was killed locally.

Table VI.

Percentage of towns in which specified per cent of the total consumption of fresh meat was killed locally.(1)

Section	Less than 50 per cent	More than 50 per cent
New England	88	12
Middle Atlantic States	53	47
Southern States	5	95
Central States	16	84
Western States	10.5	89.5
Mountain and Pacific States	7	93

Shipping associations have not been organized in the first two sections of Table VI because, in general, there has been no need for them. In nearly all the rest of the country some few at least of the associations have been organized to dispose of a part of the surplus livestock production, as may be seen from a glance at Table I above. But in the remaining four sections they have

(1) United States Commissioner of Corporations. Special report on the Beef Industry, 1905, pp. 70-75.

not been organized and spread with equal facility. It is in the socalled cornbelt states, but especially in Wisconsin, Minnesota, Iowa, Nebraska, the Dakotas and Montana that associations have flourished. It is plain that the greater the intensity of the production relative to consumption, the more do the associations fill a need.

The fact that in Minnesota and Wisconsin shipping associations have been more numerous than elsewhere, although these states are not known primarily as cattle or hog producing states, would suggest that the size of business of the individual producer and the extent to which livestock production is general in the locality also play some part. Large feeders and finishers have full carloads of finished stock of even grade to ship; they are usually sufficiently favorably situated to secure advantages in shipping and marketing, and could not be helped very much by the association. The small producer with only a few head of stock of irregular quality to market at irregular times is especially served by the association, in that it enables him through an economical agency to take advantage of the more general demand and wider competition of the central markets. It seems that the associations function best where a considerable amount of livestock of irregular quality is produced as joint products in a moderately intensive dairy farming region. Such is the region of its origin in Litchfield, and such is the whole region of central and Southeastern Minnesota and Southwestern Wisconsin. This is borne out by a study of the conditions within the state of Minnesota itself. The whole Southwestern part of this state resembles the cornbelt states in this that the large feeders and finishers predominate, and the shipping associations are conspicuously absent in that part.

The intensity of the production affects the associations in several respects. First, in a general way through the volume of business it transacts. Up to a certain point, which has perhaps not been reached in any association so far, economical operation is facilitated by large volume of business. But an association cannot extend over a large territory, for driving or hauling stock to the local market may easily entail prohibitive expenses and losses. Consequently intensity of production is the only means by which a large volume of business may be reached. In this connection it might be noticed that in the shipping associations the per unit overhead expense is never large, yet large enough to appear with considerable effect in the per unit marketing cost of small associations.

More specifically, a large and regular volume of business decreases the freight charges by enabling the associations to ship for the most part full capacity cars and straight cars. It is especially important that the cars shipped shall be loaded to full capacity. The railroads for the most part make minimum charges for a given sized car for each species of stock. If the association is unable to load the car to this minimum capacity, there is a loss due to unused shipping privileges. In one shipment of one car the shipping association at Biscay, Minnesota, which shipped about 40 cars during 1916, paid for unused shipping privileges to the extent of $8.00, or over 40 per cent of the total freight charge. Smaller losses from this cause are frequent in this and similarly sized associations, while the larger neighboring associations at Glencoe, Hutchinson, and Litchfield rarely suffer appreciable losses in this way.

Most of the associations provide in their bylaws that the manager shall be notified of the wishes of any shipper to ship, and of the kind and amount to be shipped, obviously for the purpose of preventing losses from unused shipping privileges. In practice this provision is for the most part a dead letter. The larger associations fix certain days of the week on which stock is received for shipment, relying, and more often than not with good success, upon experience and the law of averages as bases for adjusting the orders for cars to the quantity of stock to be shipped. The members of the smaller associations chafe under and rebel against the requirements, unnecessary with their larger neighbors, of having to list stock for shipment with the manager. Very few of the associations have facilities for holding over stock from one day of shipment to another. Besides, if done, holding over would add considerable difficulty to the already knotty problem of distribution of returns and expenses.

To elaborate further upon these statements there is given in the following tables VII and VIII, statistical figures for 93 associations in Minnesota for the year 1915, both as to number of cars shipped and net receipts. The largest number of cars shipped by any association was 231 and the smallest number reported was 3. In point of net receipts f.o.b. shipping point, the difference is, of course, greater still, the largest being $275,460 and the smallest $3,515. But there are few at either extreme. Most of the associations ship out either all or the major portion of the livestock produced in its territory, and that usually amounts to less than 200 but more than 3 cars. Most of the associations ship between 20 and 100 cars with net returns of $25,000 to $100,000.

Table VII.

Ninety-three associations arranged according to number of cars shipped.

Class, according to number of cars shipped	Number
Up to 25	21
25 - 50	27
50 - 75	23
75 -100	9
100 -125	6
125 -150	2
150 -175	2
175 -200	2
Over 200	1

Table VIII.

Ninety-one associations arranged according to net receipts f.o.b. shipping point.

Class, according to net receipts (dollars)	Number of Associations
Less than $25,000	9
25,000 - 50,000	28
50,000 - 75,000	25
75,000 - 100,000	11
100,000 - 125,000	8
135,000 - 150,000	2
150,000 - 175,000	1
175,000 - 200,000	3
200,000 and over	3

Straight or Mixed Cars.

It is also of considerable importance to the associations that they shall be able to ship as much as possible of their stock in straight cars, that is, in cars containing only one species of animals. In mixed cars extra partitions are necessary; the freight rate is, in most cases, based upon the species having the highest rate; it is not possible always to load the cars to full minimum capacity; accidents and losses are more likely to occur in mixed than straight cars; and the commission at the central market is usually higher on mixed lots. The competent manager always tries to ship straight cars as much as possible.

Table IX show the proportion of straight and mixed cars shipped in 1916 by 42 Minnesota associations whose reports made this information available. It will be seen that of 1,875 cars shipped, 954, or 51 per cent were mixed cars. Of the remaining 921 straight cars 273, or 15 per cent, cattle and calves; 634, or 33.7 per cent, hogs; and only 14 or .3 per cent were sheep. It would be a matter of considerable economy to the associations if they could reduce the proportion of mixed cars shipped.

Table IX.

Proportion of mixed and straight cars shipped by 42 associations.

Kinds of Cars	Number of Cars	Per cent
Total	1,875	100
Mixed	954	51
Cattle and Calves	273	15
Hogs	634	33.7
Sheep	14	.3

Probably the most effective factor in fixing the proportion of straight and mixed cars of any association is its volume of business. Where more than one car is shipped every week, it is usually possible to arrange largely to ship straight cars. Where, however, only one or less than one car, on the average, per week is shipped, it is very difficult not to get all mixed cars. Table X shows, for the same 42 associations as in the previous table, that the associations which have to ship a large proportion mixed cars have on the average a much smaller volume of business than those which ship mostly or entirely straight cars. Thus the four associations shipping straight cars entirely have an average volume of business of 90 cars, while the 14 shipping entirely mixed cars, have an average volume of business of 33 cars.

Table X.

Volume of business of 43 selected associations classified according to proportion of straight and mixed cars shipped.

Class of Association	Number of associations	Average number of cars shipped
Entire group	43	45
Shipping all straight cars	4	90
" over half " "	12	55
" " " mixed cars	13	34
" all mixed cars	14	33

It is not a matter of volume of business only, however. There are several associations shipping only 25 cars each year which succeed in making over half of their shipments in straight cars. They sometimes have different shipping days for the different species of animals. This, of course, involves extra loyalty on the part of the shippers in being willing to hold the stock until a straight carload can be made up.

The intensity of the production of a single species facilitates for some of the associations, the shipment of straight cars. Yet all species except sheep are usually produced in the same community. This is particularly true in Minnesota and

Wisconsin. For the year 1915, 75 associations of Minnesota have given in detail the number of animals shipped by them, namely, the totals for 51,239 head of cattle, 13,730 calves, 213,279 hogs, and 10,679 sheep. It is probable that a number of calves have been included in the figure for cattle. In calculating percentages cattle and calves are, therefore, grouped together and constitute 22.5 per cent of the total number of animals, while hogs constitute 73.8 per cent and sheep only 3.7 per cent. In order to have capacity cars and straight cars, it is especially desirable that there be considerable intensity in production where all of the species are produced. It is also a matter of some importance whether large or small animals are produced. If small stock is shipped principally, the number of shippers will probably be greater than if large and finished stuff preponderated. This increases the necessity for considerable nicety in the distribution of costs and net proceeds. Moreover, smaller animals, at least within each species, are relatively more costly to ship since certain charges are fixed per head.

CHAPTER IV.

FACTORS AFFECTING COOPERATIVE MARKETING OF LIVESTOCK, (Continued)

3. As the third factor affecting the cooperative marketing of livestock we may group together the various agents, organizations, trade customs and practices which have developed all along the marketing process. There are three general ways of disposing of surplus livestock. It may be sent to the central market on the hoof where it enters into the more conspicuous commerce and manufacture of the nation in the large public stockyards and packing plants. It may be disposed of to local butchers and packers, chiefly for local consumption. Or it may be killed and prepared for market on the farm. It is because of the existence and efficient functioning of the established agencies and trade practices that the associations are enabled to perform their function, although they tend to displace some of the less efficient of both.

The local agencies in the marketing process may be named, approximately in the order of their importance, as follows:(1)

(1) The local dealer who handles stock more or less as a regular business, shipping to central markets, or at times, feeding stations. This is easily the most prominent method of local marketing for all species. In 18 states 50 per cent or more of the total cattle produced are marketed through this class of middlemen. In only 2 states is the quantity of cattle thus disposed of less than 10 per cent of the total. The same, though less conspicuously, is true for the other species. It is upon this kind of local marketing that the shipping associations have made the greatest inroads, because the local dealer and the association both function best in

(1) See Report 113, pp. 9-14.

states producing a considerable surplus above the local consumption.

(2) Local butchers and packers buying locally from the producers or local dealers, chiefly for local consumption. This method is common in some states and ranks first in a number of others whose production of livestock is small and insufficient for the local consumption of meat. It is especially important for veal calves. Naturally this method has been less affected by the associations because in the states where it predominates, there is but little local surplus production.

(3) Owners shipping in carload lots, individually or by clubbing together, to the commission men in the central markets or, often, to feeding stations. In only one state, Wyoming, are more than 50 per cent of all species marketed direct by the owners. This method is most common for sheep, owing to the nature of the production of that species, largely on ranches in the sheep producing states.

(4) Producers shipping farm slaughtered meat in the carcas to wholesale receivers in the larger cities, sometimes through the agency of a local dealer. The effect of the associations upon this and the following methods is probably slight, and nothing definite concerning it is known.

(5) Producers or local dealers shipping farm cured meat and sausage to the larger centers of consumption, as in the previous class. No veal calves and no sheep are thus marketed, also very few cattle, but a considerable number of hogs.

(6) Shipping associations.

(7) Packers' agents buying for shipment to the larger

packing plants or, to a large degree, to the smaller plants in the various parts of the country, buying usually direct from the producers, but at times from the local dealers of the shipping associations.

(8) Local packers buying direct from producers.

Doubtless the shipping associations have encroached upon all of these agencies to some extent. It is certain, however, that more than any other, has the local dealer been displaced by them. The reason is not that the dealers on the whole, were making too large profits as such, but rather that they were part of an inefficient competitive system of marketing which was frequently wasteful and unjust. It is a peculiar characteristic of the trade in livestock that but little fixed capital or credit is required; potential competition is always being made actual; frequently numerous persons in each community, at any rate generally too many, are dabbling in livestock. While this condition effectively prevents monopoly on a large scale in the local handling of livestock, it calls into existence some of the undesirable features of competition. The duplication of effort in collecting the stock at the local yard, namely the scouring of the same country by several buyers, makes the local end of the process too expensive. There were not lacking complaints of local combinations and price manipulations as well as of dishonest weighing. The most important accomplishment of the associations, although not in most cases their avowed object, has been to facilitate and make more efficient the local end of the marketing process.

The local butchers and packers, at least in Minnesota, are giving up the former general practice of soliciting stock directly from the producers. For the most part they buy directly from the dealers or associations. Primarily the associations did not function as local exchanges of livestock, but the local butcher in most cases, where associations operate, now finds it more economical to select the required amount of stock at the local yard on the regular shipping days than to traverse the country for his supply, and he is usually willing to pay a price sufficiently high to assure the shipper that sale in the central market would not be more profitable, even with a modicum of a rise in the market quotations. Some associations forbid the manager to make home sales of this sort on the theory that delivery to the local yard indicates a desire on the part of the shipper to take advantage of the wider demand and competition in the central market. In others the manager is allowed to use his discretion without any restriction, while in still others some arrangement must be made by the shipper in question, as over the telephone, before the manager may make such sales. It is not only the butchers who thus get their supply; farmers and breeders of livestock frequently come to select, on the regular shipping days, such animals as they need.

Several problems arise out of this practice. First, perhaps, is the question as to how much of the expenses for the shipment of which they are a part such animals shall be made to bear. Usually only such items as are involved locally are charged on stock thus sold; the items of freight, commission, and other central market expenses cannot properly be charged against such stock. Another problem or set of problems arises from the practice current in some places of conducting the local business of stock on credit. This involves questions of extra bookkeeping, for which there is little available skill and toleration in many associations, and of losses from bad debts, as well as loss of interest. The tendency, fortunately, is for most of the associations to insist upon cash payments.

In associations where shipment to local packing plants, or sale to agents of packers result in lessening the number of items of marketing expenses, the distribution of expenses is complicated to a considerable degree, especially where the plant or the agent does not take all of the stock handled by the association, or does not pay for all the shipments on the same basis, or patronage dividends are expected. Moreover, in such cases it is difficult to find a basis for making returns to individual shippers, since the stock is not sold at its merit in a market with a large demand and wide competition, but must be graded and paid for according to the discretion of the manager or the received at the plant.

It was a fairly common practice for the local dealer and the butcher to buy the stock from the producer, without weighing and for a lump sum. Many stock producers, for the most part erroneously, consider themselves expert judges on the weight of stock. Perhaps the associations have performed a good service by hastening the discontinuance of this practice. One reason, doubtless, why the practice of purchasing without weighing has persisted so long is that it made possible immediate payment for the stock.

This insistence upon immediate payment is attested to in many different ways. It was due to this chiefly that the socalled buyers' associations discussed in a previous chapter, were organized and still are maintained. Another device employed to secure payment on delivery in some of the early associations was to give the shipper an initial check for, say, 80 per cent of the probable value of the stock, and then pay the additional amount at the convenience of the manager or bookkeeper. This, however, involved a great deal of extra labor of a sort not usually abundant with the association, and led to procrastination and confusion. No instance in Minnesota is known where this is done at the present time.

A very different expression of this same desire for payment on delivery is found in such cases as the shipping association at Svea, Minnesota, where the shippers insisted that the association or the manager buy the stock outright. It was only after a considerable period of education that they were willing to market in regular shipping association fashion. Meanwhile a fund of nearly $1500 had accumulated, because the manager, who was also in partial charge of the cooperative store at Svea, had not retained for himself the margins allowed him by the shippers, but had permitted them to accumulate to the credit of the association. Doubtless the accumulation of this fund and the opportunities for a share in it operated to assure the shippers of the safety of the shipping association's methods. In some other associations this practice of allowing the manager to buy stock and ship as one of the shippers has degenerated into a mere speculation on the part of the manager; unquestionably it should be discouraged in most associations.

The problems growing out of the central market situation manifest themselves, chiefly in the amount and nature of the expenses. And since these are to be treated in the following chapter, it is only necessary to enumerate here the various agencies and their functions. The railroads carrying the stock to the central market provide stock cars and, for the most part, stock trains on fast time to the natural central markets. It is not relevant here to discuss the satisfaction which the service gives, except in so far as inefficient transportation results in losses which complicate the distribution of returns, and in delays of shipment due to shortage of cars which, of course, is a species of inefficiency. The railroads also undertake to guarantee safe delivery, as common carriers, under specified and varying conditions. Usually they make a small charge for insurance against fire, generally 10 cents per car.

The terminal railroads make connections with the stockyards for those roads which do not have such connection. For this a charge of $2.00 to $2.50 is made per car. The stockyards company receives, unloads, and provides pens and feed for the stock. For the pens a fixed yardage charge per head is made, while for feed a liberal charge per bushel of grain or bale of roughage is made. Scales for weighing animals sold, or weighing service is usually furnished free by the stockyards company, although in some markets a weighing fee is charged per head of stock weighed.

The commission man is the expert agent of the association, as he is of practically every shipper to the central market. He sorts the stock according to grades, as already described, sells it at his own discretion or after consultation with the manager of the association accompanying the stock, and provides bills of sales.

In rare cases he provides, in addition, bills of sale for each individual animal or lot of animals of each shipper. More often, though not generally, he pro-rates the central market expenses on each head or lot of stock according to weight, regardless of species or value, and sometimes also an estimate of the local expenses furnished for each car or for each hundredweight by the manager. For these services he charges commissions to be described later; special commissions are charged whenever extra service are furnished as shown above. The regular selling commission is fixed by the livestock exchange of which he must usually be a member. The character and amount of the service is also similarly fixed. To pro-rate expenses gratis would be construed as a rebate; the usual charge for this service is from one-half to one cent per hundredweight. The returns are also made by the commission man and the drafts in payment of stock sold are made payable by him and not by the real buyers of the stock, from whom he collects in turn.

The nature of the demand in the central market does not concern us here, except in so far as the presence of many different kinds of buyers, as well as of speculators, provide just the kind of a demand on the basis of which the shipper is willing to consign his stock to a market from which he cannot in practice withdraw it. Far from being unimportant, this demand is the sine qua non of the shipping associations, at least in their present form.

4. A fourth factor, the local labor situation, yet remains to be discussed in this chapter. The labor involved in executing the economic functions enumerated in a previous chapter may well be grouped into four classes. There is, first, the physical labor of handling and caring for the stock, which frequently includes the

the task of accompanying the shipment to market for the purpose of over-seeing the marketing process. Secondly, the net proceeds from the sales must be distributed to shippers according to accepted methods, and any sinking fund or surplus retained. There is no way to eliminate these two kinds of labor; their necessity is so apparent. This is not always true with the two remaining classes, which are frequently shirked or left undone, and with not uncertain results. Third, records of financial, statistical, and general matters must be kept and audited. Fourth, on the basis of such records as are kept and from the knowledge of the manager and others keeping in touch with the marketing situation must be determined the best market and method of marketing, the methods and principles to be used in the distribution of expenses and proceeds, the retention and use of the surplus, kinds and amount of fees, conditions of membership, and other matters of policy.

The variety of combinations in which these several items of labor may be distributed among the manager, the board of directors, the traditional officers, the members in the annual meeting, or employees outside of the association is by no means small. It is made larger by the fact that the qualities essential in a good manager are not frequently found in an available person, at the compensation the association is willing to give. Only the typical arrangement with the most important variations can be given here.

The three most important duties of the board of directors are: (1) To employ a competent manager to whom can be entrusted the burden of the necessary labor, although in some instances the selection is made by the members at the annual meeting; (2) to audit the task of accompanying the shipment to market for the purpose of over-seeing the marketing process. Secondly, the net proceeds from the sales must be distributed to shippers according to accepted methods, and any sinking fund or surplus retained. There is no way to eliminate these two kinds of labor; their necessity is so apparent. This is not always true with the two remaining classes, which are frequently shirked or left undone, and with not uncertain results. Third, records of financial, statistical, and general matters must be kept and audited. Fourth, on the basis of such records as are kept and from the knowledge of the manager and others keeping in touch with the marketing situation must be determined the best market and method of marketing, the methods and principles to be used in the distribution of expenses and proceeds, the retention and use of the surplus, kinds and amount of fees, conditions of membership, and other matters of policy.

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The three most important duties of the board of directors are: (1) To employ a competent manager to whom can be entrusted the burden of the necessary labor, although in some instances the selection is made by the members at the annual meeting; (2) to audit his accounts and generally supervise his work, although many associations provide for different audits; (3) to determine with the expert aid of the manager such questions of administration and business practice as are not subject to the authority of the annual meeting.

Of the traditional officers the treasurer is usually the least important. The fact that probably all associations keep a balance with the local bank largely obviates the necessity for such an office, unless, as frequently happens, the banker be the incumbent thereof. If the treasurer, not being the banker, perform any function at all, he usually does so in needless duplication of the accounting that must be done by the manager and the bank, and need not be done elsewhere. The duties of the other officers of the association are not peculiarly different from those incumbent upon them in other similar organizations, and do not need to be elaborated here. Quite often, however, the extra-official function is assigned to one of the regular officers, most frequently the secretary, of making an immediate audit of the accounts of the manager for each shipment, so that any possible errors may be corrected with the next shipment.

The manager is easily the most important official in the association. He must not only be a good judge and caretaker of stock, have considerable managerial ability, and be a capable student of the market, but he must also possess the confidence of the shippers. It is distinctly for the interest of the association that he shall also be able to act as accountant because, since he deals with the stock directly, no one else can adjust individual differences as well.

But these qualities are rarely found in the same man, and, where thus found, command considerable compensation. Consequently the whole work is generally adjusted to fit the arrangements which can be made most felicitously with the manager. The best arrangement is found where, as in the Litchfield, Minnesota, and other successful associations, the manager performs all of the functions suggested above. This makes it possible to pay him a salary attractive enough to induce him to give all his time to the association, which is desirable because he can then attain considerable skill in handling stock, in distributing returns and expenses, and can, furthermore, become a competent advisor to the shippers as to how and when to market their stock.

In many instances, however, the manager either cannot or does not wish to act as accountant. This part of the work must then be done elsewhere. One way of solving the problem is to have the commission man pro-rate the expenses and net returns. A statement of the home expenses to be pro-rated on each shipment is then usually forwarded with each car. In some cases, e. g. the association at Preston, Minnesota, the commission man even issues separate bills of sale to each owner, but this is not the general practice.

Another expedient is to have the prorating done and books kept by some local person other than the manager. At times a professional bookkeeper is employed and paid for part time. Sometimes the banker, or an employee of the bank handling the business of the association does a part or all of the accounting free, his compensation being freedom from paying interest on the daily balances, as is done in some instances where no extra accounting work is done by the bank.

Generally the manager is a farmer who has had experience in handling livestock. Frequently he is a former independent stock buyer, who has generally been able to enter into the spirit of co-operation. At times he is the cashier in the local bank, in which case he nearly, if not quite, always acts as accountant. In some other instances he is a local business man who gives part time to the work.

There are perhaps several reasons why the work of accounting so frequently is done in the bank. The bank is often the only place in a country town where labor saving calculating machinery is efficiently employed. In a few cases the manager has bought, on his own account, an adding machine, typewriter and other useful office equipment; especially is this the case where he acts at the same time as secretary or accountant for some other cooperative organization, such as the local creamery. In some instances, where several cooperative activities are carried on more or less by the same management, such equipment is provided and used by all of them.

Usually the board of directors constitute or appoint an internal auditing committee, which audits the records of the manager or bookkeeper once each month or for some other convenient period, in many cases three months. But, too often, no efficient audit is made. External audits are made oftentimes in case of the shipping associations which are locals of the American Society of Equity. In most cases the external audit is doubtless more expert than the internal audit; on the other hand, the internal audit can be made any time the directors meet; it should and does have some value in familiarizing the auditors, and indirectly the shippers, with the business and management of the association.

CHAPTER V.

FACTORS AFFECTING COOPERATIVE MARKETING OF LIVESTOCK, (Continued)

8. In the analysis of returns for livestock marketed through the association the chief item is the draft or check which the commission man sends out or delivers in person to the manager of the association for each shipment. Its face value is the net receipts for all the stock in the shipment which may consist of several cars, as shown in the itemized account sales which the commission man forwards with the draft. These account sales of which one is given, as Exhibit A, on the following page shows the identification marks, weight, price, and gross proceeds of each animal in the shipment, although since calves, hogs, and sheep are often sold and weighed in lots, only the total weight of each lot is shown. The account sales also show the gross receipts for all the animals in the shipment. From this sum is deducted the total terminal market expenses, composed of several items each of which is also shown. They, together with such memoranda as the manager may have made for his own use at the local yard or at the terminal market, constitute the basis of all the records and calculations of the association, at least for stock shipped to the terminal market.

The draft or check is deposited at the local bank to the credit of the check account against which the manager draws in payment of stock and local expenses. To the credit of this account there are placed several other items of minor importance which may be briefly noted. If local sales are made for cash or credit, the proceeds are similarly deposited. Occasionally there

GILBERT A. WOOD, President. WM. E. CARSON, Vice Pres't. HENRY WEILLER, Sec'y & Treas.

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CARSON, WOOD & WEILLER

INCORPORATED

LIVE STOCK COMMISSION.

UNION STOCK YARDS.

TRADE MARK REGISTERED CARSON, WOOD & WEILLER INC.

TELEPHONES: N.W. CONCORD 20 TRI STATE 7155

SOUTH ST. PAUL, MINN. January 5 1915

Sold for account of Hutchinson Farmers Coop. Shipping Ass'n, Hutchinson, Minn.

Exhibit A

BUYER	CATTLE		HOGS	SHEEP	WEIGHT	STAGS	SOWS	LBS.	PRICE.	AMOUNT.	TOTAL.
Swift			57		21180	1	1	100	6.95	1465.06	
			64		14420	2		160	6.95	991.07	
	38	cfs.			5000				8.50	425.00	
	22	"			3500				7.00	245.00	
	2	"			320		28		6.50	20.80	
	13	"			1280				5.75	73.60	
[illegible]	6	"			(1200)				2.00	12.00	
	1	Cow			1200		7		4.40	52.80	
[illegible]	1	"			730		8		4.75	34.67	
Swift	1	"			820		10		4.00	32.80	
[illegible]	1	"			860		23		4.75	40.85	
Swift	1	"			1010		14		4.55	45.93	
[illegible]	1	"			1030		16		4.25	45.93	
[illegible]	2	(10-1 yr.)	Estimated		1100		9		-	50.00	
	2	(" ")			1100		11		-	42.50	
	1	Cow			1000		4		-	55.00	
	1	"			1000		12			52.50	
											3696.56

CAR NO.	WEIGHT	RATE	CHARGES.
5161	22350	10½	23.54
5521	20900	11¼	22.88
5612	15000	11¼	17.10

TRANSFER CHARGE FROM ST. PAUL (PER CAR $2.50) 7.50

FEED ON ROAD

STOP TO FINISH LOADING

TOTAL RAILROAD CHARGES (38 cfs.) [illegible]

PLEASE WRITE FOR EXPLANATION IF NECESSARY. (13 cfs.) [illegible]

FREIGHT, (Including all Railroad Charges)	71.97	
YARDAGE	28.55	
HAY, 2 BALES-AVG'E LBS.	1.60	
CORN, 11 BUSHELS	11.00	
BEDDING, 4	2.40	
TOTAL PAID U.S. YARDS CO.	115.50	
INSPECTION ON HOGS,	.30	
COMMISSIONS,	29.00	
FIRE INS. 10 Cents Per Car	.30	
TOTAL EXPENSE.		145.10
NET PROCEEDS		3546.45

are refunds of overcharges for freight. In some associations where the bank pays interest on daily balances, as in the association at Hutchinson, Minnesota, an annual credit from this source is made. Claims against the railroad for damaged stock are deposited as they arrive, which is ordinarily later than the main draft, and generally too late to be deposited for the particular shipment in which the damage was incurred. The same may be said of the delayed payments for stock sold subject to inspection, and of refunds due to errors occasionally occurring in the returns from the commission men. A few associations charge a commission for the shipment of stock of non-members which remains to the credit of the association. Many associations have membership fees, initial or annual or both; and in a few cases there are the paid up shares or membership fees of incorporated associations.

These various items are deposited to the credit of the association's checking account. Some associations set aside certain sums of the general balance as sinking funds, protection funds, or simply as investment funds. For the most part, however, only the one balance is kept, which much facilitates the work of the manager. There are several associations in towns where several banks compete for the business of the association, and this sometimes leads to unique arrangements. Thus at Hutchinson, in order to have the good will of both of the two insistent banks, the board of directors at the order of the annual meeting ordered a balance kept in each bank. Deposits are made alternately in each bank, which necessitates the keeping of two separate check books and balances. The extra work is increased by the fact that this notion is carried so far that the sinking fund is similarly divided, and that the two separate sinking funds are drawn upon in alternating cases of payments for injured stock. Fortunately this situation is rare, and doubtless only temporary in Hutchinson.

In the analysis of marketing expenses and their equitable distribution at least three bases of classification may be kept in mind. The expenses may be grouped into local and terminal market expenses. This is a natural and practical classification. The central market expenses include the freight charges and all the items of cost incurred in the terminal market; the local or home expenses include all those incurred up to the time when the stock is loaded on the cars ready for transportation. Terminal market expenses are deducted by the commission man from the gross proceeds from sales, and are, therefore, not handled at all by the associations except as figures in the distribution of expenses. The home expenses, however, represent real money actually handled by the manager or some other official.

In the second place the expenses may be classified according to the basis on which they shall be charged to the various animals shipped. Certain items as yardage, are charged per head by the stockyards company, and should be so distributed by the manager on the stock for which they were incurred. Other items, as the commission of the local manager are almost invariably charged per hundredweight, and should, therefore, be thus distributed in the returns to the shippers. Still other items, such as feed, ice, salaries of directors, and others are not logically chargeable on either basis, although they are usually apportioned according to weight. Losses strictly speaking are chargeable according to neither number nor weight alone, but according to value, although this basis is rarely used in practice.

The third distinction may be made on the basis of whether or not the expenses are chargeable on any particular shipment or whether they must be apportioned over a longer period of time and a larger number of shipments according to some accepted rule. All the terminal market expenses are directly chargeable to the shipments for which they were incurred. But of certain items of overhead expenses, such as office rent and salary of bookkeeper, the part of the annual cost which is incurred for a given shipment is not directly ascertainable at the time of shipment. Two subdivisons may be made of the apportionable class of expenses as follows: Such items as salaries of directors and bookkeeper, office rent may be called overhead expenses, and the amount of each to be charged to each shipment may be forecast with tolerable certainty. Expenses due to losses from injured or killed stock form a sort of contingent expense in a class by itself, for while it is very easy to determine on which shipments these losses were incurred, the very thing that is sought is to avoid charging them directly on such shipments. In the light of these three bases of classification the various items of expense will be discussed.

(1) Of the terminal market expenses the freight charge is easily the most important item. And of all items it is the most variable, varying almost directly with the distance to the market. In all of the United States except a few sections in the southwest and west, it is charged by the railroads according

to the weight of stock in the car, and in a just and scientific system of distribution of expenses should be so apportioned on the individual head or lot of stock.

The rate differs for the different species. Thus the rate from Hutchinson to South St. Paul in July, 1918, was 11.4 cents per hundredweight for hogs, and only 10.7 cents for cattle. In case of mixed cars the practice is divided between charging the rate for the species predominating in the car and charging the whole carload with the rate for the species having the highest rate.

It is not worth while to attempt to state the total freight charge for any but a single point to a specified central market, as the case of Hutchinson cited above. It may be stated in the per ton-mile cost. Mr. Frank Andrews of the Bureau of Crop Estimates of the United States Department of Agriculture calculated from distances shipped, rates quoted, and receipts from shipment of livestock that the average freight charge for a haul of average length for the three years 1911-1913 was 13.3 cents per hundredweight for the United States as a whole, with different averages for the Eastern, Western, and Southern districts of 10.0, 11.5, and 14.9 cents, respectively.(1)

The rates quoted by the railroads are, however, for minimum carloads only. For cattle, hogs, and sheep the minimum weights quoted in the different sections of the United States and among the different roads are shown in Table XI.(2) For any excess over the minimum weight in the car the charge is the same per hundredweight as for the stated minimum weight, but no reduction

(1) Report 113, pp. 29-31.

(2) Report 113, pp. 30, 31.

Table XI.

Minimum weights of carloads of stock.

Kind of stock and cars	From (Pounds)	To (Pounds)
Cattle	20,000	22,000
Hogs:		
Single decks	16,000	17,000
Double decks	23,000	24,000
Sheep:		
Single decks	12,000	14,000
Double decks	18,000	22,000

is made for less than minimum weights. It is, therefore, of some importance that the association shall be able to ship full cars as much as possible. Since the freight charge is made according to weight and should be so distributed, there is no special difficulty arising from this item of cost.

In addition to the regular freight charge there is usually collected a transfer or switching fee by the terminal railroad company for making connection with the stockyards, amounting usually to from $2.00 to $3.50 per car regardless of weight. This item too can best and probably most justly be distributed according to weight. At times an additional small trackage fee per car is charged, to which the same principle of distribution is applicable.

Yardage in nearly all the terminal markets is charged per head by the stockyards company, and should generally be so distributed locally. It varies for the different species of stock and among the various terminal markets. The usual charges are 25, 10, 8, and 5 cents for cattle, calves, hogs, and sheep, respectively. Above and below these modal figures there are considerable variations among the various stockyards; the maxima are, for the same species, respectively, 45, 25, 8, and 6 cents; the minima, 6, 6, 3, and 2 cents. In a few cases a rate per car is quoted for yardage, usually $10.00 for sheep and $8.00 for other species. Perhaps even in such cases the expense of yardage could most justly be pro-rated according to the number of animals; yet since the weight largely determines how many head can be gotten into a car, weight may be as just a basis as number.

For feed specific charges are made for the quantities used, per bushel for concentrates and per bale or hundredweights for roughage. Generally the stockyards companies furnish this service. The charges are established by trade custom and vary for concentrates from $1.00 to $3.00, with $1.35 per bushel as the modal figure, and for native hay, the usual roughage, from $1.00 to $3.00 with $1.50 per bale the modal figure.(1) It should be noted that the several species do not incur equal proportions of the expenses for feed. Calves incur none at all, cattle and sheep are fed little but roughage, and hogs only concentrates. Properly each species should be charged with that part of the total expense for feed which it actually incurs, and that part only.

A small charge is made by the stockyards company per bale for the actual amount of bedding used. Usually a small charge is made per car, in South St.Paul 10 cents, as a fire insurance premium. For every car of hogs an inspection charge of 15 cents is made. And in a few markets a small weighing charge is made per head of stock weighed. These items are so small that it really

(1) Report 113, p.40.

matters little on what basis they are distributed to the shippers.

The one remaining item of cost in the central market is the charge of the commission firm for receiving, sorting, selling, and rendering returns for the stock. This charge is usually made per head of stock handled, the modal figures being 60, 25, 20, and 10 cents for cattle, calves, hogs, and sheep, respectively. The maxima for the same species, respectively, are $1.00, 35, 35, and 20 cents, and the minima, 50, 10, 10, 10 cents.(1) In markets where a charge per head is made, the item of commission should be distributed on the same basis to the shippers, regardless of weight.

There are, however, several variations from this type of commission charge. In most cases where the charge is made per head, there are maxima and minima quotations for each car of each species. For single deck cars the maximum charge is $20.00 for all species, the minimum $6.00 for cattle and calves and $5.00 for hogs and sheep, and the modal figure, $12.00 for cattle and calves and $8.00 for hogs and sheep. For double deck cars the maximum charges are $36.00 for calves and $30.00 for hogs and sheep, the minimum $10.00 for all species, and the modal figure $18.00 for calves and $12.00 for hogs and sheep.(2) In some markets these car rates are always used; in others only for cars containing the normal number of animals. This is also often done with cars of mixed stock, although the per head rate is most frequently used in such instances. Where the commission is charged by the car, it is perhaps the easiest and probably fairly just method to distribute the item according to

(1) Report 113, pp. 40, 41.

(2) Ibid, p.41.

weight, unless the share of each animal is obtained simply by dividing the total charge by the number of animals in the shipment, against which method there is not much to say, unless there are more than one species in the shipment, in which case that would be very unjust unless the share which each species should bear according to weight were first obtained.

In a few markets still different bases are used for the commission charge. In one market the charge per head is modified according to the value of the animal. In three others it is customary to charge two per cent of the value of the stock sold. And in still another market the charge per head is altered according to the number of animals in each lot (1). Where a specified per cent of the value is charged, the expense should be pro-rated on the same basis locally. The first and third variants noted just above are so rare that it might not be worth while to change any otherwise acceptable basis; although it would be easy enough in these instances to apply locally the basis used in the central market.

If the commission man pro-rates the expenses, and possibly issues separate bills for sale to the several shippers, an additional charge is made according to weight. This item may easily be distributed to the shippers on the same basis.

If use is made of the feeding stations before entering the stock in the central market, the extra charge per head per day must be added to the list, and distributed to the shippers on the same basis. Probably very few, if any, of the associations make use

(1) Report 113, p. 41.

of these stations.

(2) The home expenses are generally smaller in amount, but more miscellaneous in character. They may conveniently be grouped into four classes. The first and the most important of these is that of the compensation of the manager, which generally consists of a commission of a fixed number of cents per hundredweight of stock handled. In Minnesota in 1915 the lowest commission paid, as far as is known, was 3 cents per hundredweight, the highest 10 cents and the modal figure 8 cents. Usually those receiving the highest commissions have agreed to furnish some additional equipment, as a part or all of the feed used locally; and those whose commission is at the lower limit are relieved of a part of the work which ordinarily falls to the lot of the manager, usually the task of distributing returns and expenses. In the latter case some other person, perhaps the commission man or some local bookkeeper must be paid a part of the compensation which would otherwise go to the local manager. Where such a commission on the basis of weight of stock handled is paid, the item should be distributed to the shippers on the same basis.

A number of associations, however, have other methods of paying the local manager. Thus a considerable number pay a specified amount per car, varying with the service given, and from $3.00 to $15.00. In such cases, perhaps the proper basis of distribution of this item would be the weight of the stock in each car, although such a practice would bear heavily on light cars. A few associations pay the manager a fixed salary, in Minnesota for 1915 from $90.00 to $125.00 per month. In such instances the item of manager's compensation passes into another class of home expenses, namely, that of fixed or overhead expenses, to be discussed later, and is perhaps most justly chargeable according to the weight of the stock handled.

The second group of home expenses consists of a miscellaneous group of items incurred locally at the yard or office, such as feed, bedding, ice, partitions, nails, rope, stationery, postage, etc. The most important of these items is that of feed, which in many cases, when long hauls to market are involved, may be very large. In so far as they are incurred for particular species, as corn for hogs, they should be apportioned on the species for which they were incurred; otherwise it would probably be best to distribute such outlays according to weight. Thus ice is always incurred for hogs, and rope for cattle; while partitions and stationery cannot be said to be incurred for any particular species.

The third class of home expenses, strictly speaking, is not a group of expenses at all. It is intended to include the losses due to injury of stock and other causes, for which the association must take the responsibility, and as such is not an expenditure made by the association, but must nevertheless be provided for. The shipper is not willing to assume losses; he would probably rather sell to the local dealer, one of whose functions it was to take care of such risks out of the larger margin which he retained. If the losses be distributed over a longer period, they can be reduced to a fairly uniform percentage of the value of business done; a charge must then be levied sufficient to take care of all losses. But this, as seen in a previous chapter, involves differential rates of charge for the different species, since they are not equally susceptible to injury. The charge levied for protection should properly be levied according to value of the stock, since the losses must be paid on that basis; in practice, however, it is usually levied according to weight, which is the most convenient basis for most of the expenses.

The fourth class, overhead expenses, is not very large. They include the salaries of the directors and other officers, office rent, interest on stock or loans, cost of bonds for bonded officials, as treasurer and manager, etc. They are like losses in that they cannot be charged to any shipment of stock, but must be apportioned according to some accepted rule. They differ , however, from losses in that they can be fairly accurately estimated for any given period. In practice losses and overhead expenses are usually taken care of by the sinking fund or protection fund charge, which is made sufficiently large. The deduction made for protection is charged according to weight, so that the incidence of these two items on the stock is generally according to weight, although strictly speaking, it ought to be according to value of the stock handled.

It should not be forgotten that one large item of the marketing cost does not enter into the calculation of the association any more than it enters into the calculations of the local dealer, namely, the cost of delivery of the stock at the local yard. The disadvantage of a location far away from the local yard appears in the extra cost of delivery and in a lower home weight. But it is not within the scope of the present thesis to elaborate on this point.

While it is not possible to arrive at any average marketing cost for any large section of the country, it is important that the manager should know or be able to know the exact marketing cost of any shipment and the exact cost of the several species in each shipment of his own association. Below, in Exhibit B is given a cost analysis of one shipment made from the records of the association at Hutchinson, Minnesota. The account sales and the local memoranda have furnished the basis for all the entries in the analysis. The distribution of the various items has been made according to the suggestions in the discussion of each item above.

This shipment consisted of two straight cars and one mixed car. When mixed cars are shipped the various items of expense must be apportioned in some accepted manner. Thus, in case of freight, it is probably enough to divide the total cost in proportion to the weights of the several species in the car. For, while it is true that each species, shipped separately in a full straight car, would cost less, it is also true that each species, if shipped separately in a straight partly filled car, would cost more to ship than if shipped in a mixed car.

In the analysis, except for overhead charges, the cost entered is the exact cost of that shipment, and for each of the species in the shipment. The overhead expenses can be tolerably exactly apportioned to each shipment. The loss of one hog has been included, which gives opportunity to call attention to the necessity of letting each species bear its own costs and losses. Thus if the same rate per hundredweight is charged for all the species, the rate will be 34.2 cents for all species if the loss is excluded and 37.3 cents if it is included; with separate rates for each species there would be considerable difference, the rate of cattle being only 33.8 cents, for calves 37.3 cents, and for hogs 35.6 cents including the loss; while the same rates would obtain for cattle and calves, but the smaller rate of 34 cents for hogs if the loss is excluded.

It is the object of the associations to conduct the marketing of the livestock of the shippers as economically and equitably as possible. It is not always plain, however, how much of a charge to levy and how to make it equitable; to distribute both the cost and risk equitably involves the consideration of several circumstances incident to and unavoidable in the marketing of livestock. The following paragraphs of this chapter are largely a summary of conclusions reached in earlier chapters.

First, while all stock not in a healthy condition at time of delivery is always accepted and shipped at the owner's risk, losses due to injury to stock in transit are considerable. The notion that each shipper should receive for each animal shipped exactly what it brought in the central market less its proportionate share of cost of marketing has everywhere been modified to the extent that a charge is made on all stock shipped to cover losses on any stock dead or injured. But all species of livestock are not equally susceptible to injury, hogs showing, practically always, a greater percentage of losses than other species. Also, there is a seasonal fluctuation in the actual ratio of losses to total shipment, the ratio for hogs being especially high in summer on account of the heat. Moreover, at times sows and stags escape dockage at the local yard but are docked at the central market,

Exhibit B.

Cost Analysis. One shipment of livestock from Hutchinson to South St.Paul.

	Total	Cattle*	Calves	Hogs	Sheep
Number of cars	3				
Number of stock	354	10	93	151	
Home weight (pounds	57,939	10,002	11,576	36,361	
Market weight "	56,750	9,850	11,300	35,600	
Shrinkage "	1,189	152	276	761	
Shrinkage (per cent)	2.1	1.5	2.4	2.1	
Gross return (dollars)	3,696.55	464.03	776.40	2,456.13	
Net return "	3,480.86	431.93	733.28	2,332.18	
Expenses: Terminal-					
Freight (dollars	71.97	12.13	13.91	45.93	
Yardage "	28.55	2.99	11.12	14.44	
Feed "	12.60	1.60		11.00	
Bedding "	2.40	.28	1.00	1.12	
Insurance "	.30	.04	.06	.20	
Inspection "	.30			.30	
Commission "	29.00	5.00	7.00	17.00	
Total terminal "	145.12	22.04	33.09	89.99	
Local-					
Commission(dollars)	34.05	5.91	6.78	21.36	
Miscellaneous "	14.60	3.40	2.30	8.90	
Losses "	16.92			16.92	
Overhead "	5.00	.75	.95	3.30	
Total local "	70.57	10.06	10.03	50.48	
Grand Total "	215.69	32.10	43.12	140.47	
Cost per hundred-weight (cents)	37.2	32.1	37.2	38.6	
Cost per hundred-weight not including losses (cents)	34.3	32.1	37.2	34.0	

*Includes some calves shipped with their dams.

and in case the identity of the animal is not maintained, it is necessary to consider such dockage as a loss.

Second, the actual cost per hundredweight of marketing stock is not the same for all species. The freight rate is higher for hogs than for cattle. Large animals are relatively cheaper to ship than small, as some of the charges are made per head regardless of weight. Capacity loads cannot easily be had of calves or sheep. Commission and other charges differ. More feed is usually given to hogs, which species only also needs ice in summer.

Third, there are seasonal and other fluctuations in the cost of the same species. Especially is this due to variations in the price of feed, as for hogs which are hauled over long distances to, say Chicago market, and must be fed considerable quantities of corn in the local yard or in the car.

Fourth, there is a seasonal fluctuation in the volume of business of each association. The larger the volume of business, the more economically can it be conducted as shown elsewhere.

Fifth, prices are constantly oscillating in the central market. Stock once on the market must be sold, and the owner is subject to these fluctuations, if the stock is shipped by the association. Some associations have attempted to spread such fluctuations as would tend to cause dissatisfaction to the shipper; but the general practice is to let each shipper take the actual price received in the market.

Sixth, the practice, according to trade custom in the central market of selling stock in lots necessitates the apportionment of returns and expenses as well as shrinkage on the basis of the home weight, and at the same time accentuates the demand for some alteration of the price to suit the condition.

Seventh, most of the associations must ship some mixed cars and some straight. Straight car shipments are more economical for several reasons, and there is an element of unfairness in charging shippers a higher rate simply because their stock happens to have been shipped in a mixed car.

Eighth, the distance to the central market affects most of the items in the cost, but not all in the same proportion. Freight increases almost proportionately; other items, such as yardage and overhead expenses hardly increase at all with distance. Shrinkage, expenses for feed, and losses are increased irregularly and disproportionately. If this circumstance does nothing else, it largely vitiates comparisons with other associations of costs per hundredweight of marketing.

Ninth, not all of these items are charged against each shipment. Thus on stock shipped to South St.Paul over two railroads which run into the stockyards, there is usually no switching charge; charges for inspection and corn apply only, but hay never, to hogs; and in cases of hogs shipped to local plants, as Winona, Austin, or Albert Lea, there are no commission, yardage, switching, inspection or feed charges, and the freight is usually paid by the purchaser, so that there is, in such shipments, no central market expense at all.

CHAPTER VI.

METHODS AND PRINCIPLES OF DISTRIBUTION.

It is not difficult, as seen in the previous analysis, to obtain the actual cost for each shipment, and for each species in a given shipment, on the convenient basis of weight. Yet it is probably safe to say that very few, if any, charges have ever been made on the basis of an accurate analysis; they have nearly always been based upon estimates and according to diverse principles. Three obvious explanations of this condition suggest themselves.

First, there was no general understanding of, and certainly no general agreement according to which the distribution of returns and the pro-rating of expenses should be made.

Second, methods of applying such principles as were understood and agreed upon had to be worked out through actual experience; the methods used, as will be seen below, were often arbitrary, crude and unjust.

Third, expert accountants or bookkeepers are not generally found among the class of men from which have come the largest number of the managers of the associations; most of the managers are farmers, and farmers are proverbially unaccustomed to and not very tolerant of the keeping of accounts.

(1) The primitive criterion in pro-rating returns to shippers of livestock through the associations was the idea that for each animal, or for each lot of animals belonging to any one owner, there should be paid the exact proceeds from sale in the central market, less the proportionate share of the total expenses

of the shipment of which the animal or lot was a part. Probably little, if any, stock has been shipped absolutely on that basis. It has been found necessary to spread out certain fluctuations in the returns and costs; and the irregularity in the extent to which these fluctuations have been spread has led to the development of several different systems of calculating returns.

First, and most conspicuously, it was necessary to spread the fluctuations in the returns due to losses from injury or death of stock, on such stock as was accepted for shipment at the local yard subject to the risk of the association. To this end a charge, variously named a sinking fund charge, a protection fund charge, insurance, and possibly otherwise has been made on all the stock shipped. It was justly found objectionable in some associations to spread this charge evenly on all species, and differential rates have consequently been charged on the different species in a number of associations, and should be done in all of them.

The most common form of this charge is a specified number of cents per hundredweight. A study of the reports of the Division of Research in Agricultural Economics of the Minnesota Experiment Station for the three years 1914-18 shows that the most common charge is 2 cents per hundredweight, the smallest ½ cent, and the largest 12 cents. It is evident that where a charge is levied for the protection fund as high as 12 cents per hundredweight, it takes care of other items in the cost of marketing as well as losses; in a few such cases it is known to defray all home expenses except feed. In some instances an additional charge, usually about 3 cents per hundredweight, is made on the stock of non-members shipping through the association. The question whether or not such a charge shall be levied is one of expediency; but there is an element of justice in it since the non-members escape the payment of membership or initial fees, as well as whatever risk there may be in the collective undertaking.

Two other forms of the protection fund occur, though less frequently. Instead of a specified sum per hundredweight there may be retained a fixed percentage of the selling price of the stock. Theoretically, this is the most just method of distributing the burden of the losses, for the losses are in proportion to the value of the stock rather than measured by the weight alone. But, in practice it is inconvenient because it is for the most part the only item, except possibly the miscellaneous items of overhead or fixed expenses, which is properly distributable on that basis. The charge, in such cases, varies, according to the reports cited above[(1)], from one fifth of one per cent of the value of the stock to 2 per cent.

The one remaining method is the most unjust and unscientific of all of them, and is fortunately rarely used. It is really no method at all, but consists only in retaining for the protection fund a specified sum per car, the amount varying, according to the reports cited above, from $2.00 to $5.00 per car. It is unjust because it disregards all of the criteria according to which a just distribution might be made. The differences in size of cars, in value among the several species and within each one of the species, and susceptibility to injury, are all left out

(1) Supra p. 75.

of consideration.

A very peculiar practice, by which the sinking fund is derived, exists in the association at Meriden, Minnesota, according to a statement of the manager, Mr. Fred Fette. Any excess, in price and weight, over the multiple of 10 next below or equal to the actual price and weight is retained by the association, and the overrun resulting is sufficient to take care of all losses. For shippers having large and frequent shipments the law of averages probably establishes justice among the shippers though not among species of stock. The practice exacts a larger percentage of the proceeds from the smaller and cheaper stuff than from the larger and dearer. It is an unscientific, though plainly a convenient practice. There are other variants and similarly odd practices in various places, but they need not be given here.

Generally the charges are too high for the proceeds to be used up in the losses actually incurred. Consequently, a surplus is often accumulated, a circumstance occurring frequently where the protection fund is made to cover other items than losses. In some associations, after a desirable surplus has been reached, the rates are lowered to the point that will approximately maintain such a surplus; in others a remedy is attempted by simply intermittently refraining from making any charge, a method that is obviously unscientific and unjust.

To some extent it has also been attempted to spread the fluctuations in shrinkage, dockage, and even of price. Cattle are usually weighed separately, and each head of stock may, therefore, readily be made to bear its own shrinkage; yet in case of a very heavy shrinkage, due perhaps to the indisposition of the animal and amounting sometimes to considerably over 100 pounds, a part of this loss has been assumed as a loss by the association. The other three species are for the most part sold in lots, and the net weight to be used as the basis of returns must be calculated from the home weight. Strictly speaking, each animal, or at least each animal of each species, would then bear a part of the total shrinkage for the shipment, or of the species if the total shrinkage for each species is distinguished. But, especially in case of hogs, the idea of proportionality of shrinkage is not always carried as far as that. Hogs suspected of being unduly "filled" are marked and weighed separately at the central market, or the manager simply notes the condition and deducts a larger percentage for shrinkage on such hogs. The distance to the local market is sometimes considered in distributing shrinkage. Thus an animal hauled or driven a long distance to the local yard is considered partly shrunk when weighed locally, and the shrinkage pro-rated is correspondingly lightened.

Whenever, as occasionally happens, a piggy sow or a stag slips through the local yard undocked and unidentified, and is docked in the central market, such deduction must be assumed by the association as a loss.

These alterations from strict proportionality of returns due to shrinkage and dockage, in so far as they result in losses to be assumed by the associations, do not create a new problem of distribution of losses, but simply increase the total loss to be borne by the association and defrayed by the protection fund.

The spreading of price is not so easy, yet in some instances it is considered imperative. For cattle the actual price received in the market is practically always paid to the shipper. Yet even for cattle there is considerable spread within the lots sold in the central market for the same price. The other three species, especially hogs and calves are frequently sold in lots, two or three lots taking all the hogs in a single shipment, which means that only two or three different prices were paid, although there surely were all sorts of gradations of quality. As appears from the account sales shown elsewhere[1] in this thesis, all of the 151 hogs sold for $6.95 and the four lots of good calves at prices varying from $5.75 to $8.50. Evidently some injustice is done to the owners of the animals at the upper edge of each lot. Yet separate weighing and sales are not judged expedient because contrary to trade customs and inconvenient. Many managers have, therefore, often at the express instructions of the board of directors, tried to base the returns to the shipper on a grade established by the manager with the expert advice of the commission man according to the central market conditions on the day of sale.

It is probable that this method of spreading inequalities in price received has been effective in promoting a juster distribution of the returns wherever the shippers have been content to rely thus upon the discretion of the manager. The difficulty lies in the fact that there is no mechanical rule which the manager can adopt and follow, and that many of them are not capable of exercising sufficient discretion and tact to hold the confidence of the shippers. The practice is permitted only in associations where the managers have shown through experience the required justification

(1) Supra p. 57a.

for confidence.

It will be remembered from the closing paragraphs of the previous chapter that the cost of marketing varies according to numerous possible conditions. As long as the primitive rule, of letting each shipment strictly bear its own cost and not attempting to spread in any degree the inequalities in the cost, was strictly adhered to, the distribution of returns was a comparatively simple matter. All that was necessary was to obtain the total cost for each shipment, and with that as the numerator and the number of hundredweights of stock in the shipment as the denominator the ratio of cost per hundredweight was readily determined. But the injustice and inexpediency of letting each shipment bear strictly all of its own cost and no more, and, still more so, of letting each shipper in the shipment bear the cost of his own stock and no more, soon lead to the modification of the early principle. The method has little to commend it save that it is simple. Yet it is practically still used by some of the associations, especially where it has been found impossible to find a capable manager or bookkeeper. Of the several variations which have developed out of the primitive method there are three which merit our attention as being types, from which there have been and are variations, it is true, but which nevertheless represent the whole general practice. The three methods are given below in as nearly as may be the chronological order in which they appeared.

(2) The first of these typical methods spreads the fluctuations in cost due to seasonal causes, and also those short time oscillations due to differences among and within shipments.

A fixed rate per hundredweight is agreed upon for a certain period or indefinitely as the total charge for all the species in any shipment. This rate may be raised or lowered as the surplus or general cash balance may indicate. It is usually based upon the average cost of the previous business of the association, or in case of new associations, upon estimates from the cost of other associations. It is obtained and modified from time to time by a sort of trial and error process. It has an advantage over the method previously discussed in that it is still simpler, when once the rate is determined; another in that it is definite; and, certainly, a third, in that it is more just.

Several objections are plainly seen, however. In the first place, it is too rigid. Either considerable surplus or deficit must be expected and permitted or the rate must be frequently lowered or raised, especially in a time like the present with rapidly and widely fluctuating prices and costs of marketing. But more than this, the greater justice is more apparent than real, for the reason, especially that no account whatever is taken of the differences in cost among the several species.

(3) It is this shortcoming which the second method is intended to remedy; it is attempted to remedy the unjust spreading of the cost on all the species equally according to weight only by fixing a different and specified rate for each species. Thus the association at Stewartville, Minnesota, which ships all of its stock to Chicago, charges as follows: hogs, 60 cents; sheep, 65 cents; cattle, 45 cents per hundredweight; no calves were ever shipped by this association. In this and other such instances the

rate is derived synthetically from four estimated charges, one for each of the four groups of expenses classified as terminal expenses, the local manager's commission, other home expenses, and the sinking fund, respectively. The local manager's commission, only is the same for all species; the other groups differ as suggested by the differences in the charges for the sinking fund for the different species, which are 2 cents, 4 cents, and 8 cents per hundredweight for cattle, hogs, and sheep, respectively. This shows a desirable, although an inflexible, attempt to distribute the cost of losses according to the actual losses incurred on each species. A statistical itemized record of the expenses for four years back provided the basis of the rate for each species at Stewartville. While this is perhaps the nearest attempt to make an accurate cost analysis, it is readily seen that it must be based upon estimates to a very large extent. Yet the rates thus based upon careful estimates on the basis of statistics of years past are probably very near the actual cost. The relatively high cost for hogs, 60 cents per hundredweight while the rate is only 45 cents for cattle, is explained by the fact that large quantities of corn are fed to the hogs in the local yard and in the car during the 350 mile haul to Chicago. Rapid and wide fluctuations in such items as grain necessitate frequent changes in the rates.

(4) The third method takes cognizance of the difference in the basis of charging the various items of cost. For the items of yardage and terminal commission a fixed charge is made per head of stock shipped; for the other items a fixed or variable charge is

made per hundredweight. This super-rate may be derived synthetically as was the whole rate in case of the association at Stewartville or it may be guessed at and then adjusted by the trial and error process according to the cash balance. This method is used by Mr. Halverson of the Litchfield, Minnesota, association. Table XII shows the rates used during the summer of 1916.

Table XII.

Species of Stock	Terminal Commission (Per head)	Yardage (Per head)	All Other Expenses (Per cwt.)
Cattle	50	35	30
Calves	25	15	28
Hogs	15	8	22
Sheep	35	15	28

Table XIII gives the cost of shipping for the various species of animals as charged by the association at Litchfield for 1913, 1914, 1915, and 1916. Note the difference in cost for the different species and the close uniformity from year to year for the same species.

Table XIII.

Year	Cost of Shipping, cents per cwt.			
	Cattle	Calves	Hogs	Sheep
1913	27.9	56.6	33.5	47
1914	28.5	55.07	38.8	46
1915	38.5	55.0	32.8	46
1916	28.4	55.7	33.7	49

It will be noted that the proportion among the species in the table above differs from that obtained by the cost analysis above. Mr.Halverson obtains his rates by the synthetic method now to be discussed .

The method last mentioned, with two bases for the distribution of expenses, one according to weight and the other according to the number of stock in each shipment of each species, does not seem to have any considerable advantage over the method discussed just previous to it. They are both very much superior to any other methods used, both to that of a fixed rate for all the species and to that of a rate determined for every shipment. When two bases are used the cost falls more heavily on the light stuff, and more lightly on the heavy stuff than is probably strictly just; for the important charges of terminal commission and yardage are levied according to number; while the method with separate rates for the different species, according to weight only, tends to favor the light stuff and bear heavily on the heavier. Thus the rates charged by Mr.Halverson are probably too heavy and unjust on calves and sheep.

There are several circumstances which tend to obviate the necessity for the double basis for the distribution of costs. In the first place, the terminal commission is for the most part not actually charged per head on account of the minimum and maximum carload rates; in such cases the distribution per head amounts to a discrimination against the lighter stuff, except in so far as the lighter stuff requires more space per hundredweight and thus prevents perhaps economical loading; and if the terminal commission be charged per car, the yardage charge is the only item chargeable according to number. In the second place, when separate rates are made for each species according to weight only, the difference between the heaviest and the lightest animal in a given shipment is usually not very great; and if the animals in a car vary much in size, it often happens that the very small stock can be slipped into the spaces between the big stuff, so that economical loading is facilitated thereby, rather than hindered.

The double basis, moreover, involves considerable calculation since every animal or lot of animals of the same species must be charged with three items of expenses, namely, terminal commission, yardage, and other expenses, and these items must be added to obtain the total. Wherever there is a capable manager who is not disposed to regard this calculation as unnecessary and laborious, it is probably worth while to maintain the double basis; but it is precisely that kind of labor which is scarce in the associations; furthermore, the shippers are not generally disposed to insist upon and in some cases they are not even disposed to tolerate this calculation.

The cost analysis, as shown in the previous chapter, is objected to on the ground that it involves much extra labor which is not necessary for reasonable accuracy. Yet only one analysis is made for each shipment, and the same rate may with justice be applied on all the stock of each species; with a little experience, it probably would involve less labor to make the analysis and the returns on the basis thereof than it does to make the returns on the double basis. And the advantage of the analytic method is that it provides a scientifically accurate cost for each species, while the synthetic method followed rests upon estimates to a very large degree, which is particularly objectionable since continued reliance upon these estimates based upon past costs results in a vicious circle of calculation. The uniformity of the costs per hundredweight of the Litchfield association, as shown in Table XIII, may partly be explained on this ground. In such cases the analysis might well be used to test the justice of the distribution of the costs among the different species.

A somewhat different form of the analysis is found in A System of Accounts for Livestock Shipping Associations (1) promulgated by the Office of Markets and Rural Organization of the United States Department of Agriculture, which is now being installed by agents of the Department in some of the states. In that system, instead of obtaining for each species its total share of each item of cost, and from the sum of these shares obtaining the total charge per hundredweight for each species, as is done in the analysis shown above (2), there is calculated a charge per hundredweight for each item for each species (except that the items of yardage and feed are, for obvious reasons improperly, grouped together), and from these several charges for each species for each item is or may be obtained the total cost per hundredweight for each species. This involves the calculation of the cost per hundredweight for each item for each species, a labor which is additional to that required in the analysis shown in the previous chapter. Moreover, in so far as any use is to be made of these

(1) Bulletin 403.

(2) Supra p. 70.

itemized costs, it is necessary to calculate for each animal or lot of animals the charge for each item of cost, which is probably too laborious a task for the manager of any association to undertake as a permanent method of distribution of returns. Certainly, if there were no prohibitive amount of labor involved, it would be well to show for each animal or each lot of stock, exactly what part of the total charge for shipping was due to each item of cost. But, if the managers object to the analysis as shown in Chapter V on the ground of too much labor being involved, as several of them have done, they are much more sure to object to that of the system of the Office of Markets and Rural Organization, which is considerably more complicated and laborious.

The ideal system has not yet been developed - a system which combines accuracy, convenience, and simplicity; which spreads such short time fluctuations in returns and costs as are due to losses, to certain not properly apportionable shrinkages and dockages, to inevitable injustices in prices on account of selling often according to trade custom in large lots; which pro-rates upon each species its due share of the total cost, and yet allows for differences in cost due to differences in size within each species; which takes cognizance of seasonal and other long time fluctuations in the cost without creating large surpluses or deficits, and yet does not necessitate frequent or sudden fluctuations in the fixed rate. It would seem that a figure for each species based upon some form of a moving average of the cost for each species of every shipment obtained by analysis would answer this purpose. And if the accountants were willing to use the analysis, it would not be hard to determine such a charge.

CHAPTER VII.

MISCELLANEOUS OBSERVATIONS.

1. Forms and blanks used in the distribution of expenses and proceeds. It is not worth while in this study to show in detail all books and papers used in the marketing process, yet a brief reference to the forms most frequently used will illustrate the main tasks involved. The manager upon delivery of the stock at the local yard issues to the shipper a statement of the number, species, and weight of the stock. This statement is issued in duplicate or triplicate and serves the manager for a memorandum and the shipper for a receipt.

The manager then prepares a manifest, either for his own use or for the use of the commission man or for both, on which are usually shown the number, home weight, grade, identification marks, and other desirable notes of each animal or lot, as well as the names of the respective shippers. On this manifest the manager accompanying the stock to the terminal market often makes such notations in regard to price, weight, grade, and shrinkage as will assist him in distributing the expenses and net proceeds according to the accepted principles. Often a separate manifest is made for each species, but if not, the several species are separated and all the stock of each species grouped together for convenience.

From the account sales, as shown in Exhibit A above, and from such memoranda as were made for that purpose, the net proceeds to each shipper must now be calculated. Figure I is adduced to suggest the various steps in the process. Most managers or accountants make use of similar work sheets, partly for the purpose

Figure I - (Work Sheet)

Shipper	Mark	Weight			Price	Amount	Expenses			Net
		Home	Shr.	Terminal			Com.	Ydg.	Other	

Figure II - (Record of Shipment)

Date	Shipment No.	No. of Stock	Weight		Shrinkage		Receipts			Expenses			Losses	
			Home	Terminal	Lbs.	Cwt.	Terminal	Local	Total	Com.	Ydg.	Total	Lbs.	Per cwt.

of listing all the items in table form, and partly for the check it provides on the accuracy of the calculations, previous to writing out the checks to the shippers. Any other forms or books used, such as ledgers, receipts, journals, if any are kept at all, do not differ from those of any other business, and need not be considered here.

2. Statistical Records. A large number, but not all, of the associations have recognized the necessity for or at least the desirability of records in permanent form of the business done. Such records provide a basis for the determination of the methods and rates to be used in the distribution of proceeds and expenses; they make possible reports at any time for any period of the business of the association; they could, if standardized, be used for comparisons between associations; they facilitate the auditor's task; and are probably useful in explaining to dissatisfied or prospective shippers and others interested, the methods used in pro-rating the expenses and net proceeds. While some associations do not have any such records whatever, most of them do keep or attempt to keep record of such items as they have deemed it worth while to register. Several blank books have been published for that purpose, but none giving general satisfaction. In Figures II, III, and IV are given the items which have been generally recorded. The first of these is a record for the cattle; the totals of each shipment are thus recorded; there is one such for each species of stock. The second and third deal similarly with each shipment as a whole, regardless of species. The items for all three parts of Figure I can be taken directly from the cost analysis, which is another argument in favor of the analysis as against the synthetic

Figure III.

Left side leaf.

Record of Shipments.

Date	Number of Shipments	Car Numbers	No. of Cars.	Weight			Receipts		
				Home	Net	Rail-road	Terminal	Home	Total

Figure IV.

Right side leaf.

Expense										Paid Shippers	Sinking Fund	
Market				Home					Total			
Com.	Ydg.	Other	Total	Com.	Mscls.	Over-head	Losses	Total			Forward	Balance

method of pro-rating proceeds and expenses. It will be seen that a balance can be taken for every shipment; the record can, therefore, be used instead of, or as a check upon, the record of the balance in the bank; and it has the advantage of showing in tabular form the balance of the association at any given time.

3. Effects of the Associations. A larger net return for the stock shipped was the avowed object of the originators of the associations. The proposed way to accomplish this object was to eliminate the dealer as a middleman, since he was not considered necessary and obtained for himself a large profit for a needless service. This is even now talked and advertised by many interested in the associations as members and otherwise.

The object of larger net returns for their stock has doubtless been attained to a considerable degree through the associations. There are few persons acquainted with the movement who contend that it has not been financially beneficial to the producers of livestock. But some of the fabulous margins said to have been retained by dealers are doubtless largely fictitious. The difference between the cost of marketing through the associations and the margins retained by the dealers certainly is not as large as is frequently asserted by some of the supporters of the associations.

As previously stated the mistake of counting as gain all of the difference between the accustomed margin of the dealer and the cost of marketing through the associations is frequently made. In the first place, this takes no account of the shrinkage, which was formerly assumed by the dealer but must now be borne by the individual shipper, and which, as seen in the figures of shrinkage above[1], is by no means negligible.

(1) Supra p. 33.

In the second place, this conception disregards the fact that, allowance having been made for shrinkage, we might still reasonably expect some difference between the margin of the dealers and the cost of the associations. For, in one sense, it is true that the associations have not eliminated the middleman. The dealer, it is true, is out of business; but that simply means for the most part that the employees of the associations or the members individually have assumed the economic functions formerly performed by the dealer. The cost of some of the functions thus assumed has been included in the charges made by the associations, such as risk, manager's services, feeding, and several others, but the cost of certain other functions has not been thus included. Thus the members agree to wait for the returns on their stock until they arrive from the terminal sales, thereby obviating the necessity for capital stock; the officers and members perform considerable work gratis in managing and supervising the association; membership fees and dues are often paid, annually, initially, or both. For all of these and possibly several other items no allowance is made in the charge for the stock shipped through the associations; yet the dealer could hardly be expected to disregard them entirely, and they justify some modicum of difference between the dealer's margin and the association's charge in addition to the allowance which must be made for the shrinkage.

Moreover, it should not be lost sight of that some of the items of cost are less to the associations than they were to the dealer. The fact that each shipper usually does, at least at any time can be made to bear the shrinkage on his own stock, has had the wholesome effect of discouraging the questionable "filling" of stock previous to delivery. Indirectly this tends to lessen the losses due to dead animals, since the death of a large number of hogs marketed is due to over-stuffing. Then, also the associations usually have a larger volume of business, which lessens the proportion of certain fixed items of expenses. To offset this the associations, however, have the extra task of distributing expenses and proceeds. The argument in this paragraph, of course, tends only to exonerate the dealer in respect to charges of exorbitant margins. In so far as the cooperative marketing is more efficient it should and doubtless will displace the local dealer, regardless of whether or not the dealer was exorbitant in his charges.

It is not necessary to seek the advantages of the shipping associations where they are not to be found, namely, in fabulously increased net returns. In addition to the more or less moderate increase in net returns there are enough advantages to justify their existence and growth. It is a matter of much importance that these net returns be justly distributed. With all the imperfections in the principles and methods used in the various associations, there is little question but that the net returns are more justly distributed by them than by the dealer. Injustice in the associations are of such a nature that they are likely to be offset by corresponding undeserved gains, as when an overcharge for the sinking fund for cattle will probably be partly or more than offset to the same shipper by an undercharge for hogs for the same fund. With the dealer this is otherwise. It is the producer who is less clever in his bargaining with the dealer, that suffers from the inequalities in the distribution of net returns; and the effect is cumulative, since his bargaining ability is practically the same from one sale to another.

Also, it is a matter of no small import that the cooperative marketing has been conducive to a greater interest in the terminal market and in the entire marketing process. With stock sold to the local dealer the producer has no more interest, but with stock marketed through the association his interest extends to the terminal markets; in fact, the producer becomes interested in the simplification of the whole marketing process; and this bring closer home to the producer his interest in producing such stock as the market demands. It is especially in the local market that there was need for improvement in the marketing process, and it is precisely there that the associations have been active. Very much superior from every angle, call it monopolistic or not, is the system of the associations in which all the shippers willingly cooperate in shipping all their stock through the same channel under the direction of a reasonably competent employee, and with no conflicting interests between buyers and seller, to the competitive system of a number of local dealers duplicating each others' efforts to increase business. The wider competition and more extensive demand in the terminal market provide a much better opportunity for advantageous sales than any local competitive market.

It is chiefly in facilitating the marketing process through cooperation that the beneficial effects of the associations consist. While these effects benefit the individual shipper, they are similarly beneficial to society in general. Quite apart from any social values to which the associations contribute, such as a better community spirit, the ordering and simplification of the marketing process is an unquestionable social benefit.

4. Suggested Improvements. If now it be asked how these benefits already accrued may be increased, it is not difficult to point out needs for improvement, although they cannot here be stated in detail. Since the manager is the most important official of the association, it is obviously desirable that he be a capable person. The tendency to give the position as manager to the person asking the lowest commission, often regardless of his qualifications, is to be decried as unwise. Work may be done well though gratis in some offices of the association, but it will rarely be in that of the manager. It is only with a reasonable compensation that a capable and trustworthy manager can be secured; and it is only to such a manager that the discretionary powers necessary to avoid the injustices unavoidable in any system of distribution of expenses and proceeds rigidly enforced can be safely given.

As previously suggested there is room for improvement in the methods employed in distributing expenses and proceeds. Too many associations still have a fixed rate, the same for all species of stock or, worse still, attempt to make each shipment stand its own cost and that only. Different rates for each of the several species should in any case be adopted, and in certain situations it might prove conducive to greater justice to adopt a double, or even a triple, basis, according to weight, number, and value. A similar suggestion applies to the statistical record discussed above; these are frequently neglected entirely, although they are fundamental in the determination of just methods of distribution.

The practice of using labor saving devices should be encouraged. The task of pro-rating expenses and returns according to any justifiable method is onerous enough under any conditions; but it is more so because the persons entrusted with that work so rarely make use of such labor saving equipment as slide rules, calculating machines, tables, or typewriters, except where the work happens to be done in a bank or other place where such equipment is found.

Finally, an obvious need in many instances is closer cooperation among the shippers themselves. Nearly a dozen instances in the state of Minnesota reported the existance of more than one shipping association serving the same local market. The economic waste involved in this practice is apparent. Quite apart from the destructiveness to the social community interests of such practices, no local market can afford for financial reasons to divide its stock among two or more shipping associations. In the smaller associations it would be beneficial for the shippers to cooperate with the manager in listing stock for shipment and facilitate economical shipping. Doubtless a federation of the shipping associations such as was organized in 1913 and reorganized in February, 1917 (1), could accomplish much in improving the service by the transportation and the stockyards companies, and conceivably also in regulating the supply of stock on the market in order to obtain steadier prices and consequently greater net returns.

(1) Supra p. 85.