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CO-OPERATIVE EGG AND POULTRY ASSEMBLING UNITS IN MINNESOTA

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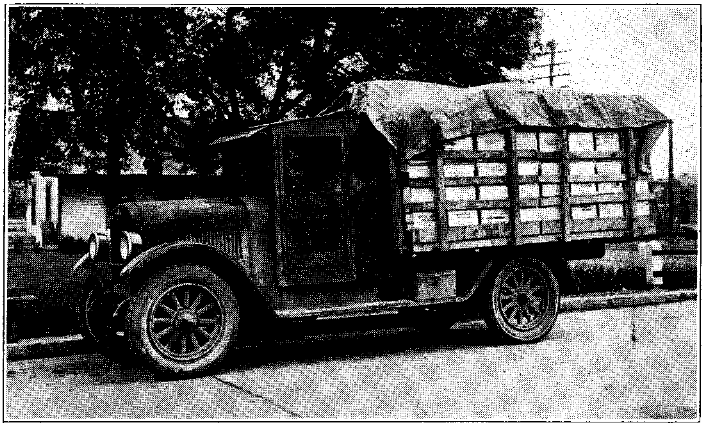

UNIVERSITY FARM, ST. PAUL

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ILLUSTRATIONS

CO-OPERATIVE EGG AND POULTRY ASSEMBLING UNITS IN MINNESOTA

H. B. Price and G. W. Sprague

Local co-operative egg and poultry assembling units, like many other types of marketing agencies, have widely varying achievements. The purpose of this study is primarily to discover the factors affecting their efficiency, to determine the relative importance of the factors, and to point out, wherever possible, how greater efficiency may be secured.

Costs of operation are the principal measures of efficiency used. Service, chiefly because it is so intangible, is used as a measure of efficiency only so far as data on quality of eggs marketed are concerned. Prices paid to members for eggs and poultry, another standard by which efficiency is sometimes measured, are not analyzed, because the method of analysis is quite different from that of costs and service and most of the price data available for such a study are not comparable.

SOURCE OF DATA

The information for this study was obtained chiefly from local co-operative egg and poultry assembling units in Minnesota by field representatives of the Division of Agricultural Economics. Officers of the overhead organization of these units assisted in planning the study and interpreting the data obtained. Data were collected for the calendar year 1925, that being the last fiscal year for many local units at the time the survey was made. Four of the thirteen assembling units included operated only during the last eight months of the period, because they were recently organized. The authors do not believe that this makes the results of the business of the four associations incomparable with the other associations in most respects so far as this study is concerned. The data of their business have therefore been included and a notation made wherever the shorter period of operating affects comparisons and conclusions.

Information available does not permit as detailed analysis as is desirable, partly because of the variation in systems of records but chiefly because of incomplete records of the different assembling units. In all cases sufficient data were secured to point out why costs vary and to make the study useful to the co-operating associations, and at the same time to present a method of analyzing the problem for overhead co-operative associations and others interested in helping locals.

PRODUCTION OF EGGS AND POULTRY IN MINNESOTA

Egg and poultry production is an important side-line enterprise for most Minnesota farmers, and it is becoming increasingly important as a source of income. According to the United States census over 76 million dozen eggs were produced in Minnesota in 1924, and over 20 million chickens were raised. This was an increase of approximately 25 per cent in eggs produced, and 35 per cent in chickens raised since 1919. The value of eggs produced in 1924 was nearly 21 million dollars; and the value of chickens raised, nearly 14 million dollars.

The production of eggs and poultry and its importance in the farm business varies among the different sections of the state. Figures 1 and 2 show that there are three areas of production. Most of what is commonly known as the cut-over region of northeastern Minne-

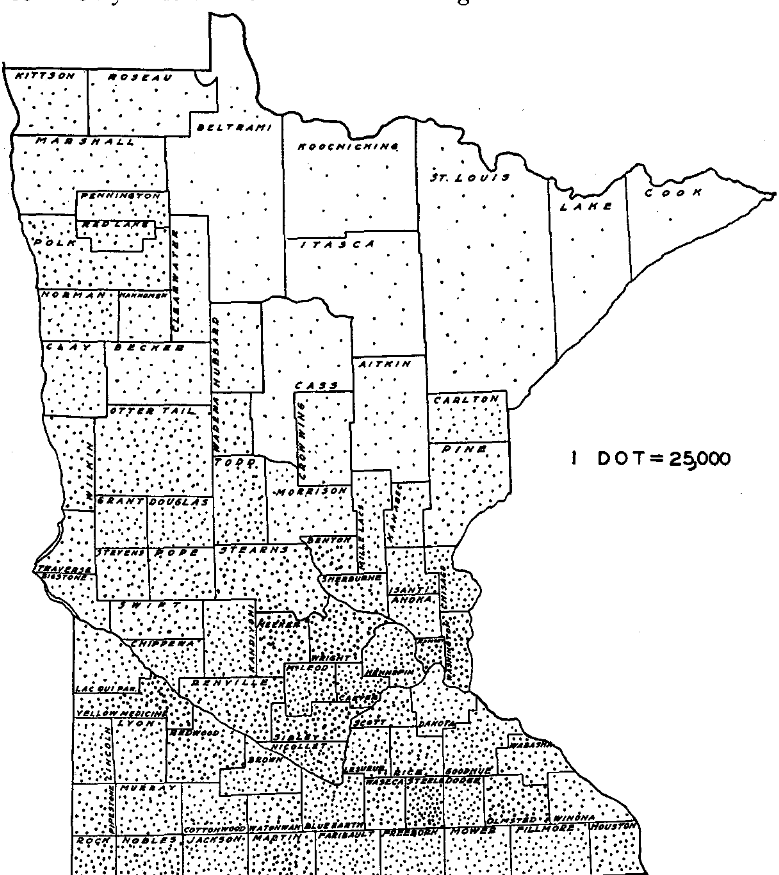

Fig. 1. Egg Production in Minnesota, 1924

sota constitutes the area of sparse production. The second area includes the Red River Valley district and extends eastward into the western part of the cut-over districts and southward approximately to the corn belt. It includes much of the commercial potato growing area and may be said to have Bigstone, Swift, Kandiyohi, Stearns, Mille Lacs, Benton, Kanabec, and Pine as the southern tier of counties. The third is the area of most dense production. It includes, roughly, the corn and oats sections and the territory immediately northeast and west of the Twin Cities.

The relative importance of eggs and poultry as a source of income varies between farms and between areas. The average size of the farm flocks and hence the egg production is smallest in the northeastern area and largest in the southern area, altho, as indicated in Table I, there is considerable variation between representative counties in the different areas. On the other hand, eggs and poultry are a more important source of income in the northeastern area than in either of the other areas. This conclusion is substantiated by the studies of the Division of Farm Management and by persons familiar with the poultry industry.

TABLE I

PRODUCTION OF EGGS AND CHICKENS PER ACRE AND PER FARM BY REPRESENTATIVE COUNTIES IN MINNESOTA IN 1924*

	Production per acre		Production per farm	
County	Eggs, doz.	Chickens	Eggs, doz.	Chickens
Lake	2.8	0.4	211	30
Aitken	2.6	.8	211	95
Beltrami	1.2	.3	144	30
Average	2.2	0.5	188	52
Polk	1.4	.3	323	73
Ottertail	2.1	.5	341	80
Kandiyohi	2.5	.7	356	120
Crow Wing	2.3	.4	329	61
Pine	3.1	.7	315	70
Average	2.3	0.5	353	81
Lincoln	2.9	0.8	586	158
Renville	3.0	0.9	578	172
Wright	4.0	1.2	391	113
Dakota	2.7	0.9	359	115
Blue Earth	3.6	1.2	511	162
Olmsted	3.4	0.8	558	128
Average	3.3	0.9	497	141

* Calculated from U. S. Census, 1925.

Perhaps of even greater significance to co-operative marketing is the variation in production and marketing of poultry products, particularly between areas. Egg and poultry production is much more commercialized in the northeastern area than in the other sections;

and a much larger proportion of the poultry feed is purchased than in areas that produce surplus grain. The result is that in northeastern Minnesota the tendency is to give more attention to producing and marketing a product of high quality than in the other areas.

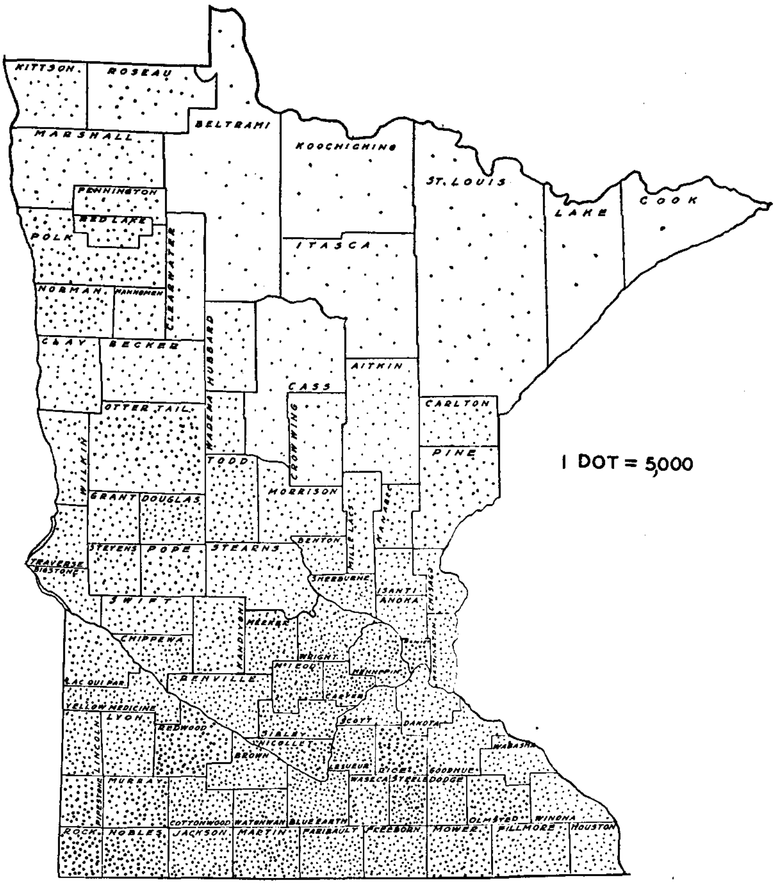

Fig. 2. Poultry Production in Minnesota, 1924

MARKETING ORGANIZATION

The channels of trade for Minnesota eggs and poultry may be said to be direct and indirect, depending upon whether the products are sold by producers directly to consumers or pass through intermediary marketing agencies.

Direct marketing is practiced chiefly by producers who live within driving distance, by auto, of the Twin Cities and Duluth. Some direct sales to consumers are made in the smaller cities and towns, and the parcel post and railway express are used to a limited extent.

However, the high costs of transportation, collection, and maintenance of market outlets make this method of sale uneconomical for most Minnesota poultry and egg producers. Some eggs are sold at public markets and at roadside markets, generally as a side line to fruits and vegetables, and therefore are only a small proportion of the total. Such sales are typical of localities where producers and consumers are not separated by long distances.

The bulk of these products is sold by producers to middlemen. Small quantities of both are sold direct to retailers in the large cities but most of them are sold in the local market. Here several outlets are generally available, chief among which are country stores, hucksters, creameries, and produce merchants. The itinerant carlot buyer is also an important outlet for live poultry. The country store is by far the most important outlet, particularly for eggs. The continuous market which the store provides and the better prices that it pays by reason of the payment in merchandise, give the country store important advantages in competing with other agencies for poultry products.

Eggs and poultry commonly pass from these local agencies to dealers who are more centrally located for assembling into carlot quantities for reshipment. The chief function of these dealers is to assemble produce for economical shipment. They generally sort, grade, and pack eggs and frequently, because of large volume, are able to sell carlot quantities of the same grade and package. Live poultry is likewise generally sorted, graded, and fed, and occasionally dressed before being marketed. These dealers are commonly called packers because of their activities. They not uncommonly buy other farm products also, particularly cream.

The packers' principal outlets are the large egg and poultry consuming centers of the country—Chicago and New York City being the chief markets for Minnesota products. Both eggs and poultry are often sold outright to wholesale receivers and jobbers altho some sales are made on a consignment basis. Live poultry is generally sold to wholesale dealers who specialize in dressing and preparing it for market. During the surplus egg producing season of April and May, when Minnesota eggs are being put into cold storage, considerable quantities are sold direct to jobbers in the smaller consuming centers of the New England and Middle Atlantic states. Such eggs are frequently stored by these dealers, as by others, at intermediate points that have storage-in-transit privileges.

Many exceptions might be given to this brief sketch of the usual channels of trade. Mention should be made, however, of the tendency of retail outlets, particularly the chain grocery store systems, to go around the wholesale receivers and jobbers in the central markets and to buy, especially eggs, direct from packers and other first-hand receivers from whom eggs of desired grade and quality can be bought in carlot quantities. This development in the chain store method of distributing food products has also been important in furthering the standardization of poultry products, because of the large quantities which they purchase and the attention given to branding and advertising their products.

PROBLEMS OF LOCAL EGG AND POULTRY MARKETING

The local market has an important place in the poultry industry, particularly in determining the quality marketed and the kind of product produced for market. Specifically, some of the important marketing problems are as follows:

Control of Quality

The principal weakness of the egg and poultry marketing system is its failure to control quality. Eggs are commonly bought on a case-count basis. Little regard is given to quality when buying poultry, whether live or dressed. Moreover, handling methods are not conducive to the preservation of quality. Inadequate storing facilities for eggs and bad methods of feeding and handling live poultry are responsible for much loss in quality. Creameries and occasionally produce merchants have better facilities for handling eggs than other local dealers, but they handle only a small proportion of the total number marketed. Paying on the basis of quality has been tried in isolated instances, but has generally been discontinued because business is lost and costs of operation increase when competitors refuse to buy on the same basis.

Standardization of Production

Marketing is inefficient and costly because of the great variation in type and quality of poultry products. Better standardization of breeds, better methods of selection and feeding, better methods of handling, and the like are necessary to overcome this weakness. Local buyers are making little headway with this problem.

Price Policy

The extent of competition for poultry products varies between local markets. Prices for similar grade and quality in towns similarly located differ widely. It is extremely difficult to determine to what extent monopoly practice exists among buyers, and unfair advantage is taken of farmers. Perhaps there is more competition and fair dealing than many farmers admit.

It is obvious, however, that producers of farm products are generally at a disadvantage in selling eggs and poultry. They sell them in small units. They frequently do not know at what prices other sales are made. They do not know market conditions. They do not have sufficient information to interpret market reports. They are somewhat confused about prices when eggs and poultry are given in exchange for groceries and merchandise. They have few opportunities to form agreements with other producers, hence the need for collective bargaining.

Elimination of Competitive Wastes

The large number of dealers handling poultry products, particularly eggs, in the local market, prevents the development of specialization so necessary to skill in marketing. Moreover, much social loss results from duplication of marketing facilities; and deterioration in quality from inadequate facilities and inefficient methods of handling.

CO-OPERATIVE ORGANIZATION

Two points should be given primary consideration in establishing co-opera ive egg and poultry marketing units: (1) the volume of business should be large enough for economical operation and transportation; (2) the organization should be so set up as to improve and standardize the quality of eggs and poultry received.

The present co-operative assembling units in Minnesota, the first of which were incorporated in 1923, were organized to secure these two objectives. District commodity associations including producers in many communities, were created in this new experiment in co-operative marketing. This departure from the usual type of local community organization was made in order to obtain sufficient volume to support an association whose chief business is to market eggs and poultry. Previous experience with community egg circles showed that they were generally too small to be operated economically. On the other hand, little improvement in quality of product delivered by farmers was realized when eggs were marketed by creameries and other co-operative associations that handled them as a side line. The amount of territory in a district varies, as indicated in Figure 3, and depends chiefly upon the density of production and the character of the roads. The size as well as the shape of the areas also frequently depends somewhat upon the central assembling point, selected for its freight rate and other shipping advantages. There were fourteen associations in Minnesota in 1926.

As a part of the plan to improve the quality of poultry products, eggs and poultry are delivered to the association at a creamery, store, elevator, farm home, or some other agency designated by the association. These agencies, commonly called stations, are selected for convenience of delivery by farmers, economy of assembling by the association, and their facilities for handling the products. Eggs and poultry are then assembled at a central point by association trucks which collect regularly, and generally on schedule. All sorting, grading, packing, and crating is done at the association plant. The local stations are merely assembly points from which each farmer's eggs and poultry are delivered in the identical packages in which they are received. Thus the sorting, grading, and packing are more likely to be done by competent persons.

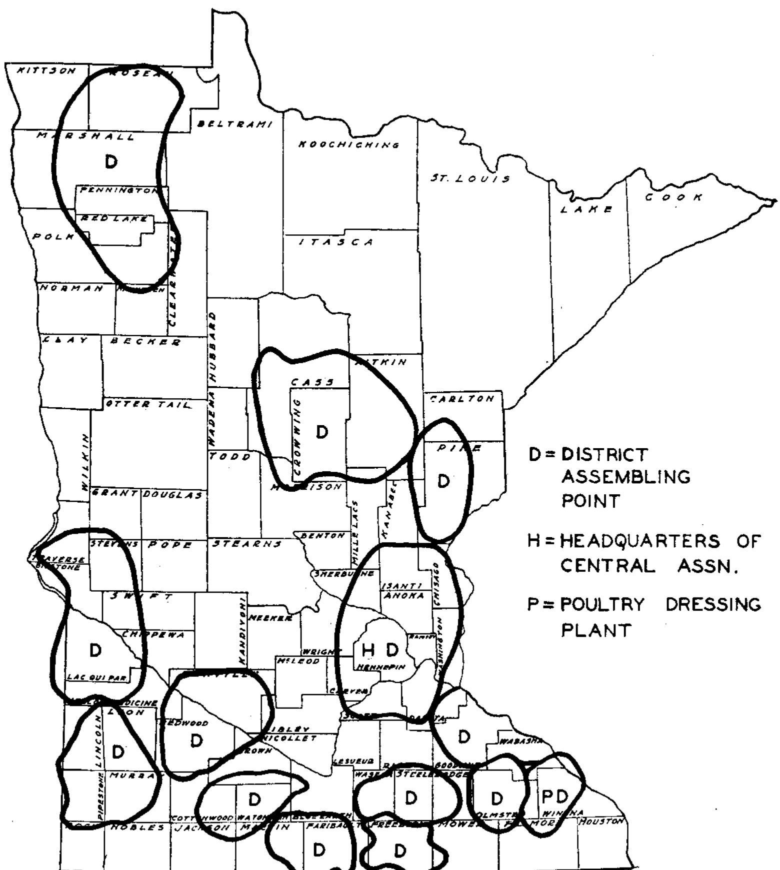

Fig 3. Location of 14 Co-operative Egg and Poultry Assembling Units in Minnesota, 1926

Members agree to gather eggs daily and to deliver them to the association once a week during the winter and three times a week in the summer. Both eggs and poultry are pooled according to grade and quality and the pools are semi-monthly. Settlement is made with members three weeks after a pool is closed. Only actual marketing expense, and reserves not to exceed one cent per pound of poultry and dozen of eggs are deducted in paying patrons.

All associations are similarly organized under the Minnesota Special Co-operative Marketing Act of 1923. Their by-laws provide for five-year membership contracts that are revokable by either members or association at the end of the second year, and yearly thereafter. Members agree to market all eggs and poultry through the association. Violation of contract by members is punishable by a fine of 5 cents per dozen eggs, $1 for each dozen chickens, and $3 for each dozen turkeys sold contrary to the agreement. Some produce is marketed for non-members.

In 1924 the then existing associations organized the Minnesota Co-operative Egg and Poultry Exchange, later renamed Lake Region Co-operative Egg and Poultry Exchange. This is a non-stock co-operative association. It is the exclusive sales agent of the assembling associations for all eggs and poultry marketed by them outside of their local market. It also assists the member associations with their problems of organization and operation. As a part of its selling program, the association determines the specifications for the grades of eggs and poultry marketed by it, adopts trade brands, and develops market outlets. All eggs and poultry marketed by the association are pooled according to grade and quality, and the pooling period corresponds to the pooling period of its members. Member associations agree to market eggs and poultry through the central association for five years, altho they may withdraw at the end of the third year, or any year thereafter. Penalties for violation of this contract by an assembling unit are similar to those provided for in the contract between assembling units and farmers. All assembling units organized since the incorporation of the central exchange have become members of it. During the present season (1926-27) the central association is operating three poultry feeding and dressing stations for member associations.

COSTS OF OPERATION

The three major classes of costs of an egg and poultry assembling unit are: plant operation, assembling, and general costs.

In this study "costs" include actual cash outlay and depreciation, except for associations that own their plant, in which cases interest on the investment in plant is included with cash outlay and depreciation after proper adjustment is made for interest paid. The total costs of operating units that own their own plant, therefore vary from the total cost found in the operating statements of the associations. Other adjustments, particularly feed costs, which are frequently considered a deduction from income but in this study are treated as costs, produce similar differences. This method of classification is necessary in order to make the data comparable.

The complete costs of operating are included in this study for only ten out of the fourteen assembling units, because the data for one association were incomplete and for the other three were not comparable—one association having a side-line business equal in value of sales to the egg and poultry business, and two associations having maintained city sales departments to sell eggs and poultry locally. Data for these four associations are therefore only occasionally referred to. They are used only where they are comparable with similar data of other associations.

Costs are here expressed as a percentage of the average cost. This is an unusual method of stating costs, yet, as the object of the study is primarily to point out the comparative efficiency of assembling units this method is fully as satisfactory as actual costs.

Both eggs and poultry are major enterprises of assembling units. The pounds of poultry are approximately half the number of dozens of eggs marketed, and the peaks of the movements come at different times of the year, the eggs in the spring and the poultry in the fall. However, no attempt is made to determine the costs of marketing eggs and poultry separately, partly because too many arbitrary divisions would be necessary. Dozens of eggs and pounds of poultry are therefore combined to obtain unit costs.

Costs of Plant Operation

Plant costs are incurred for labor, building, equipment, poultry feed, plant supplies, and miscellaneous items.

Labor.—The principal item of plant expense is labor. This includes the salaries of foremen, candlers, and general utility men. The cost of labor, as given for ten associations in Table II, ranged from 52 to 165 per cent of the average cost of this item, or 0.8 cent per dozen eggs and pound of poultry. These wide variations in efficiency may be partly explained by differences in wage rates but chiefly by variations in the amount of labor hired. Ten associations out of twelve, for example, hire foremen at salaries ranging from $1200 to $1560. Another association employed a utility man at $1300, and the largest association employed a receiving clerk at $624 in addition to a foreman.

Candlers are employed on different bases. Six associations paid them a straight wage with the understanding that the men should candle about 20 cases per day and the women about 15. The range in wages for this group was from $19 to $25 per week, with $20 as the most common wage. Six other associations paid candlers on an output basis. One association paid a wage based on what the candler could earn at 20 cents per case and the wage was paid whether the candler candled eggs or built cases. Another paid 20 cents per case for the candling only. A third paid $20 per week for an output of 21 cases per day and corrected the wage for the actual amount of candling done.

TABLE II

EXPENSE OF PLANT OPERATION IN PERCENTAGE OF AVERAGE COST PER DOZEN AND POUND

Unit No.	Labor	Building	Depreciation	Feed	Plant supplies	Misc. expense	Total expense
1	99	33	52	15	87	*	80
2	118	84	52	57	35	16	102
3	52	59	103	*	†	16	48
4	74	136	52	*	†	*	73
5	72	136	103	261	†	*	90
6	106	111	‡	15	†	146	98
7	134	84	52	101	87	179	129
8	72	110	‡	*	†	*	101
9	108	189	154	101	†	32	116
10	165	58	232	150	191	211	163
Average	100	100	100	100	100	100	100

* Figure can not be isolated.
† Included in general supplies.
‡ Included in office depreciation.

Three associations hired women candlers. One association employed only women, at 11½ cents per case. Two others employed men as candling foremen and paid the women $11 and $13 per week. Women have been very satisfactory at these associations as egg candlers. One of the reasons why more women are not employed at these lower rates instead of men is because they can not be used to as good advantage to build cases and do odd jobs around the plant.

The amount of labor employed in the plant varies widely between units. Probably the chief reason is because managers spend different amounts of time in the plant. This affects labor costs in two ways: (1) the manager's presence is a wholesome influence on the morale of the labor force; (2) he does part of the work that would otherwise be done by employees. It is sometimes said that this is a substitution of high priced labor for cheap labor and therefore uneconomical.

For these reasons practically all managers spend some time candling eggs, receiving produce, building egg cases, and doing other work around the plant, but the amount of time thus spent varies widely. Some managers look upon their work as supervision of the office and plant, and field service. Others consider the work with members as of little consequence and hence do much work in the plant, particularly at periods of small volume, in addition to supervising the business. Still others, notably one or two of the most efficient managers, spend much time in the plant during the busy part of the day and visit members during slack hours or in the evening. These managers are obviously efficient. They not only secure the support of members but they also generally manage associations with the lowest plant costs. Such are the managers of Units 3 and 5. These associations not only have low plant costs but they are among the smaller associations in point of volume. The managers of Units 6 and 9 also spend much time in the plant and thus keep their total labor cost at a very low figure, but the cost per unit of their associations is high because of a very small volume of business.

It is impossible to determine from these data how much time a manager can spend in the plant without neglecting his other duties. It depends upon how the office is organized and the accessibility of the members. Keeping in touch with members is an important part of a manager's work, particularly in such a co-operative organization as an egg and poultry assembling unit where the members do not come into contact with the association and its management when delivering produce. This means that the manager in such small organizations as these we are discussing and which can not employ special field service, must visit the members to keep them informed of the progress and program of the association. Associations with a large or scattered membership can not expect their managers to give as much time to plant and office as those with a small mmbership or with members located in a relativly small area.

Available evidence does indicate, however, that some managers do not perform as much labor in the plant as they should during the periodic seasons of small receipts. Others neglect the field service, either because they consider such work of little value or because they place greater emphasis on efficient operation. Still others, as previously pointed out, try both to reduce costs by performing much plant and office labor, and to give a field service by working long hours. Unreasonably long hours can not be ordinarily expected, and men who will fill a manager's position in such a manner at the salaries offered are rare. On the other hand, the brief experience of the associations included in this study shows conclusively that good managers who will give unstintingly of their time and effort are well worth the salaries paid them.

The policy of associations in adjusting the labor supply to the amount of business is another important factor affecting the labor costs of assembling units. Associations have had widely different success, small associations seemingly succeeding better than large ones. Two associations with the largest business, for example, report having employed the same number of persons in the winter when receipts were light as in the spring when receipts were heaviest. Other associations report varying numbers of persons employed, two of the smallest associations indicating that during the period of low production of eggs, in January and February, only three persons were employed—the manager, a bookkeeper, and a truck driver. During the busy season they employed six or seven persons.

Another and equally important aspect of this problem is the speed with which the labor supply is adjusted to changes in volume. Associations undoubtedly handle this problem with various degrees of efficiency, altho no data can be presented to substantiate the conclusion, partly because labor is employed in such relatively large units, and partly because managers differ as to when more or less labor is needed. The piece rate system of paying for labor simplifies the problem, but it can probably never be a solution.

Other employees, particularly truck drivers, are sometimes expected to work in the plant when not occupied at their regular tasks. Plant labor costs are seldom reduced much by such an arrangement, however, because the assembling and other necessary trucking generally fully occupies the time of the truck driver, especially during the seasons of heaviest receipts.

The care with which eggs are graded and packed also affects the labor requirement. An occasional manager adopts the mistaken policy of grading eggs carelessly in order to reduce costs. Efficiency should be commended at all times, but co-operative egg marketing associations can not afford to sacrifice a standardized, high quality product for the small economies that can be realized by such a program.

Differences in volume explain some of the variations in total costs of labor but they do not account for much variation in unit costs. The effect upon labor costs of variations in volume could be brought out more clearly if the portion of the manager's salary corresponding to the amount of time he spends in the plant could be calculated and included in the costs of plant labor. Such calculation was impossible in this study because of inadequate information. However, available evidence indicates that variations in volume are relatively much less important in explaining labor costs than the other factors mentioned.

Building.—This expense is chiefly for rental as only three associations owned the buildings in which they were located. The range in expense is from 33 to 189 per cent of the average expense, 0.16 cent per pound and dozen.

Buildings of great variety from the standpoint of construction and convenience in shipping or getting business, are used by egg and poultry associations. Those of every association included in this study, with one exception, were constructed for some other purpose than marketing eggs and poultry. They were originally used as a planing mill, warehouse, livery stable, laundry, tannery, brewery, creamery, elevator, or store. Their suitability for use as a produce house, therefore, varies widely, and the rental varies somewhat accordingly, altho the wide variation in the number of buildings available, the demand for them, and the bargaining power of different managers in buying buildings are other important causes for variations in cost. A general criticism of such buildings is their lack of refrigeration. This frequently results in loss in quality and occasionally in the extra expense of regrading. Only two associations out of thirteen had refrigerators and two had improvised ice boxes. This objection is being gradually overcome, as associations are installing refrigerators.

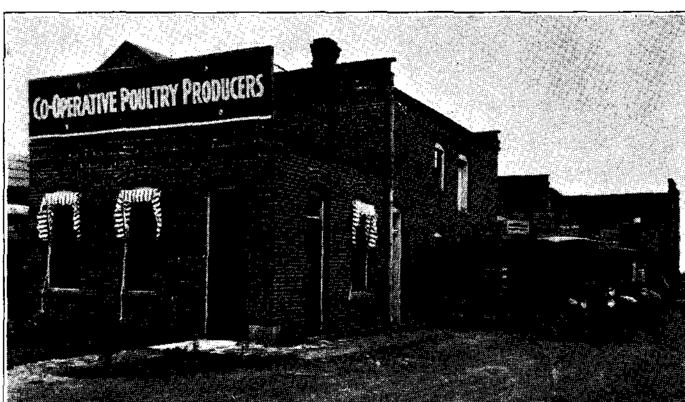

Fig. 4. One Type of Building Used by Egg and Poultry Assembling Units

Location of plant is also an important factor affecting efficiency and cost of operation. The ideal location has trackage facilities and is convenient for patrons, but sites possessing both these characteristics can not always be secured at a reasonable rental. Therefore choice must frequently be made between locations with poor trackage and convenience for attracting trade and those that permit direct loading into railroad cars but are situated in inconspicuous places. As between these two types of locations, associations generally select the former. Seven associations out of thirteen visited had no trackage. These ranked, from the standpoint of convenience to patrons, from "good" to "excellent" while those of the six associations with trackage ranked only from "poor" to "good."

Associations without trackage generally have the lowest building costs per dozen eggs and pound of poultry. They are also among the largest associations from the standpoint of volume. Rents of several of these associations were also extraordinarily low because nearly obsolete buildings on relatively low-priced sites were used. One association occupied a building on a low-priced but favorable site outside the city on the principal highway. Volume of business and selection of a low-priced building are probably more important than trackage in explaining the low building costs of these units.

The average building costs of associations that own their plants are approximately the same as those of associations that rent them. Associations that own their plants in every instance have trackage facilities which may slightly reduce the handling and drayage costs, altho this is doubtful. On the other hand, they do not have quite as good locations for getting business as those that rent. Two of the locations were good and one was poor. Whether an assembling unit ought to own or lease its building, therefore, depends not so much upon cost as upon the financial condition of the organization. Non-stock co-operative associations generally can not afford to own their own buildings, particularly during the development period, because the marketing program is likely to be interfered with by unduly restricted working capital. Another factor of minor importance is the possibility that the association may wish to move its headquarters to another city, as one association included in this study has done, and buildings frequently can not be sold quickly except at a sacrifice.

Equipment.—Equipment expense includes depreciation, which is the principal equipment cost. The usual range in this item of expense is comparatively large. Data are not available for two associations. The cost is unusually low for one association, and exceptionally high for two associations. The wide range in this item is partly due to variation in the rate of depreciation charged, altho it is chiefly due to differences in value of equipment. The most common rate of depreciation is 1½ per cent monthly, altho higher and lower rates were used, the range being from 1 to 2 per cent.

The investment in batteries, scales, candlers' benches, and grading apparatus, the principal equipment used, varies widely between different associations, depending upon the amount of equipment purchased and the price paid for it. Some of these variations are undoubtedly justified by differences in volume of business and in methods of handling and marketing. On the other hand, in some cases economies might have been effected by better adjustment of the equipment used to the volume of business and by greater care in its selection. It is interesting to note in this connection that one association with a high equipment cost has reduced the number of its batteries from 20 to 6 since this study was made without making any important changes in its methods of handling and marketing poultry.

Poultry feed.—Assembling units use widely different amounts of poultry feed, partly because they market in different ways and partly because they feed differently. For example, some units ship out live poultry as rapidly as received and feed only a small ration. Other units feed a large ration hoping, the managers maintain, to avoid heavy shrinkage. Still other associations accumulate poultry until carload quantities can be marketed, and more feed is necessary. Some associations, therefore, have a much larger figure for this item of expense than others. It is not the purpose of this study to discuss the relative merits of these different methods except as they affect costs. Perhaps the larger costs of feeding are partly, if not wholly, compensated for by the price received or by lower transportation costs. However, more complete information must be obtained before this item can be fully analyzed.

Plant supplies.—Brooms and sweeping compound, nails and small tools for making egg cases, light bulbs and lamps for candling, report blanks, and similar supplies are included in this item. The records of six associations were not sufficiently complete to secure figures. Those available show that managers are not equally successful in keeping this expense at a minimum, altho part of the difference in efficiency of handling this part of the business, as indicated in Table II, is due to variations in the classification of expenses between assembling units.

Miscellaneous plant expense.—Loss of egg cases and poultry crates, ice for refrigeration, and switching and demurrage are the principal miscellaneous items. Other expenses are sometimes included, as in the case of Unit 10, which incurred considerable additional expense in taking over part of the volume of another assembling unit. The miscellaneous expense of Unit 7 is large because of the heavy loss of members' egg cases. Many members who obtained cases never returned either to pay for the cases or to deliver eggs.

Miscellaneous plant expense could not be obtained for four associations because of their accounting systems. In these cases it is reasonable to assume that it is included in micellaneous expense in Table V.

Costs of Assembling

Truck drivers' salaries, truck depreciation, truck hire, station commissions, and miscellaneous expense are included in this item of cost.

Assembling costs are approximately one-third of the total costs of operating co-operative egg and poultry assembling units. It is therefore important that the assembling service be well organized. Many factors affect the efficiency of the service. The set-up of the service, the character of the roads, the density of egg and poultry production, and the location of members are the outstanding reasons for a range of 85 per cent of the average cost per dozen and pound between the associations included in this analysis (see Table III).

TABLE III

EXPENSE OF ASSEMBLING EGGS AND POULTRY IN PERCENTAGE OF AVERAGE COST PER POUND AND DOZEN

Unit No.	Truck driver's salary	Truck depreciation	Truck hire	Station commission	Miscellaneous expense	Total assembling costs
1	48	40	123	127	42	77
2	73	98	...	101	76	67
3	90	139	21	52	107	82
4	131	129	...	101	91	89
5	66	49	223	25	91	86
6	87	118	21	101	112	86
7	66	49	122	278	76	133
8	194	*	*	25	*	152
9	145	139	...	25	203	115
10	100	139	90	165	102	113
Average	100	100	100	100	100	100

* Data not available.

Truck driver's salary.—Assembling is done mostly by truck. Only rarely does the condition of the roads make the use of horse-drawn vehicles necessary. Loading and unloading of trucks is done by the drivers. Practically all labor expense of assembling is therefore the truck driver's salary.

Assembling units spend approximately from 1/8 to 1/2 cent per dozen and pound for the truck driver's labor, according as the salary rate and the utilization of labor varies. The range in salaries is from $80 to $105 per month, $90 being the most common rate. Difference in utilization of labor can not be measured so completely, altho Table IV shows that the number of assembling routes varies from three to four for two associations with similar volume. The number of stations served per route by two other associations with the same volume similarly varies from nine to sixteen.

Variations in receipts, slow changes in the highway system, and the trends of production make the adjustment of the supply of assembling labor to the volume of business an ever-present problem. Managers handle it in various ways, suited to local situations. The outstanding methods are: (1) to discharge part of the drivers during periods of low production, (2) to hire trucks with drivers to do the extra trucking during periods of large production or when eggs must be collected more frequently than usual, and (3) to use drivers in the plant when not needed for trucking, as in periods of low production or after a day's trucking is done.

TABLE IV

ANALYSIS OF TRUCK OPERATION OF 12 ASSEMBLING UNITS

Unit	Number of trucks	Routes per truck	Stations per route	Miles per route	Units of product per mile of route
1	2	2	11	140	3172
2	2	2	10	60	6066
3	1	4	13	260	1667
4	2	2	9	90	3672
5	2	2.5	13	175	1452
6	1	3	18	120	2667
7	2	3	29	216	1137
8	3	2.3	14	267	765
9	1	3	15	210	1224
10	2	3	16	195	2304
11	2	2	10	130	954
12	1	3	22	200	640

Large associations can deal with the problem more easily than small ones because it is generally more convenient to discharge drivers than to make a place for them in the plant organization. For example, several associations marketing small volumes and operating only one truck frequently do no assembling on two or three days per week during the winter months after the poultry marketing is completed, the number of days depending upon the frequency of assembling. Full-time employment often can not be provided for truck drivers during such periods, yet they must generally be employed at full-time rates. On the other hand, associations that can most completely utilize the truck driver's time in assembling during the fall and winter months, frequently find it uneconomical to use another truck and driver in the spring and summer months during the peak of egg production, when assembling must be done more often. This means that assembling units, particularly those with small volumes, altho to some extent also the larger units, should seriously consider extending the market area to new territory or withdrawing from some of the present territory in order to secure the lowest assembling costs.

Another aspect of the same problem is so organizing assembling routes as to secure the maximum use of labor. This requires planning routes in such a way as to (1) avoid extra trips for less than full loads, which generally necessitates the hiring of extra trucks; (2) avoid retracing routes, (3) secure the largest possible loads, and (4) occupy a full day, unless the truck and driver can be used to advantage in loading out cars, or the driver can be used in the plant. Associations with a large volume or with a scattered membership generally get more hours use per day of laborers and trucks than small associations with a compact membership. The truck routes for such associations vary from approximately 150 to 250 miles, whereas routes for associations with small volume and a restricted trade area are considerably shorter. However, assembling units with scattered members tend to have the highest labor and total assembling costs because of the relatively small loads of produce collected for each mile covered.

The number of stations per route, which varies from nine to twenty-nine between the associations studied, is also a factor affecting the efficiency of labor because of the time required for starting and stopping. This also affects the cost of operating the truck, partly because of the larger amount of oil and gasoline used in frequent stopping and starting, but more especially because the larger number of receiving stations generally indicates that a large percentage are farm homes. These cause much retracing of routes because they are often located off the main highway. Where convenience and cost of delivery by members are important considerations in determining the location and number of receiving stations, the volume per station tends to be low and the assembling cost tends to be high.

Truck depreciation.—Truck depreciation costs are affected chiefly by the rate of depreciation and the value of the truck. The character of highways used is only a minor factor because most of the highways are improved. The most common rates of depreciation are 4½ and 5 per cent monthly, altho two or three associations allow much lower rates. Indeed, the rates of these associations are frequently so low as to create among members a false impression of the actual cost. Some variation is to be expected in the rate of depreciation due to difference in kind of trucks used and in their care and use, but the short life of this expensive equipment makes it imperative that sufficiently high rates of depreciation be calculated that new equipment may be provided when the old is worn out.

The number and kind of trucks also affect the cost of depreciation. Some associations use high priced trucks, believing that the low depreciation, less expensive up-keep, and longer life, make them, in the long run, less expensive than trucks in which the investment is not so large. Some associations own all trucks used while others hire them.

Truck hire.—Trucks are hired chiefly to provide additional trucks and drivers needed for assembling during the peak of receipts. The cost of investment and up-keep of owned trucks is thereby avoided and the labor problem can be more easily handled. On the other hand, costs may increase unless the relative costs of the owned and hired trucks are calculated carefully and the policy involving the lowest cost is adopted. For example, it will be noted in Table III that the four associations having a large amount of truck hire are among those having the highest trucking costs.[1] Moreover, this conclusion is further substantiated when trucking costs of the associations having different trucking policies are compared, after making due allowance for variations in such factors as volume and trade territory.

Station commissions.—Receiving stations are paid for getting eggs and poultry from association patrons and delivering them to truck drivers. They are generally paid ⅛ cent or ¼ cent per dozen and pound, altho occasionally the rate is based upon the number of cases of eggs and crates of poultry handled. Total commissions paid should therefore tend to vary directly with volume. Expense per dozen and pound is not the same for all associations, as given in Table III, because: (1) rates vary, as already indicated; (2) members' cases and crates are not always completely filled; (3) stations are paid for handling feed purchases for members and the amount differs; and (4) some associations obviously have included too little expense in this item and others have included too much.

Miscellaneous.—Of all the miscellaneous expenses incurred in operating a truck, including the cost of gasoline and oil, repairs, garage rent, and license, the cost of gasoline and oil is the largest. None of these expenses are large, however, and no important economies can be effected for any single item. Yet the total is large enough to bear careful study by managers and boards of directors.

General Expense

Several items of expense of egg and poultry assembling units are not incurred wholly by plant operation or assembling, and can not be accurately distributed between the two parts of the business.

Manager's salary.—Manager's salary is the principal expenditure in this group. It ranges from \$1200 to \$2500, the most common being \$1800 and \$2400. When expressed as a percentage of the average cost per dozen and pound, in Table X, the range is from 59 to 139.

The manager has such a wide variety of duties, of which some affect costs and some do not, that his salary is not a true measure of efficiency. Some managers spend much time in visiting members

[1] Station commissions must be omitted from total costs in making this comparison. The high cost of Unit 8 is in considerable measure due to sparse production in its trade territory.

and soliciting new business to the exclusion of work in the plant, and give little attention to the office. The salary and total costs for such associations are necessarily higher than for organizations whose managers emphasize economical plant organization and office management and who give practically no consideration to educational service for members, as is the case in a few assembling units. It would not be correct to say that the managers having the low cost are the most efficient, as the superior product or the larger volume resulting from the field service would, at least in part, compensate for the additional cost of the service.

Probably the most efficient manager devotes some time to both plant operation and educational service. The amount of time given to each depends largely upon local conditions, including the age of the association and the character of the membership. However, several managers have discovered that some time spent in the plant, particularly in candling eggs, not only improves the morale of the plant labor and reduces costs, but provides the manager with information that is valuable in working with patrons. The associations whose managers are distributing their time in this manner seem to be the most prosperous.

The highest salary in this group of assembling units is paid to the manager whose association is eighth in point of volume but third in total costs per dozen and pound. Yet the amount of time devoted to field service corresponds favorably with other associations. This is an instance of the rare selection of a manager with the unusual capacity for hard work, for meeting members, and for organizing the operations of the assembling unit. Such a manager is almost certain to be worthy of his hire.

Office salaries.—The variation in office salaries is notable. The outlay of one association is only $786. At this association the manager also spends much of his time in the plant. At the other extreme is an office salary of over $2000. This includes the wages of a bookkeeper, a stenographer, and a second stenographer part of the time. The principal work of the office force is to prepare statements and checks at the end of each pool. The wide variations given in Table V indicate that several managers could probably have effected substantial economies in office salaries. Other associations had a well organized office force. In some instances the record keeping was handicapped by insufficient clerical assistance.

TABLE V

GENERAL EXPENSE OF EGG AND POULTRY ASSEMBLING UNITS IN PERCENTAGE OF AVERAGE COST PER DOZEN AND POUND

Local No.	Manager's salary	Office salaries	Interest	Bond and insurance	Telephone, light, heat	Office supplies	Office depreciation	Manager's expense	Miscellaneous expense	Total
1	63	59	28	100	113	72	90	*	82	69
2	65	83	21	125	62	83	45	50	19	67
3	162	115	114	125	100	83	0	*	70	120
4	94	104	114	50	113	114	90	*	51	98
5	102	139	57	50	37	62	90	*	51	94
6	110	83	114	150	74	145	45	*	38	95
7	71	87	28	75	88	52	45	100	06	65
8	102	111	99	*	*	*	*	*	*	89
9	152	115	340	125	*	227	90	*	323	173
10	79	104	85	100	213	62	505	150	260	130
Average	100	100	100	100	100	100	100	100	100	100

* Data not available. Included in total.

Interest, in this study, is the amount of money paid on borrowed capital. The amount borrowed is affected by the success of the associations in building up their members' reserve. Some of the associations, especially Unit 2, have a large members' reserve, hence the amount they must borrow is low. The second cause for interest expense is the need for capital. Associations that handle a small volume of side lines, and who have educated their members to wait for returns, have small need for borrowed capital. Associations which make cash advances to members (a common practice) and carry large stocks of side lines, must have correspondingly more capital. Associations that have bought their own buildings likewise need extra capital to meet their obligations.

Bond and insurance expense varies between assembling units from 50 to 150 per cent of the average expense. Some associations bond their manager and treasurer up to $25,000; other associations require as little as $5000. The bond that should be paid for at any association depends chiefly upon the volume of business.

Telephone, light, and heat show variations from 37 to 213 per cent of the average for this item. Heat is probably the most variable element and reflects variations in the cost of heating different kinds of buildings of different sizes as well as the amount of heating done. The amount of electricity used varies principally with the volume of business, as it is chiefly used in egg candling. Telephone expense varies with the use managers make of the long distance telephone and the telegraph.

Office supplies are principally stationery, pencils, bookkeeping supplies, check blanks, and accounting forms. In Units 3, 4, 5, and 6 office supplies include also warehouse supplies. This is because warehouse supplies could not be separated in the expense statement of the association. Two of these associations, Units 3 and 5, must have been very economical in the use of supplies. Probably the figures for one of these would have been lowest of all if warehouse supplies could have been separated.

Office depreciation is charged at rates varying from 1 to 2 per cent per month. Variations in this item are therefore caused by differences in the rate of application, and also by the value of the articles depreciated. Unit 10, for example, had only recently bought five new office desks, new files, and a mimeograph machine. Such an elaborate equipment was not necessary at most of the other associations. Of still further significance is the fact that this equipment did not reduce the amount of office help needed.

Manager's expense is incurred whenever the manager has some necessary cash outlay in connection with the discharge of his services.

In most cases this item is included in miscellaneous expense. It is chiefly incurred for field work. Altho it is a small item, it is a valuable index of the amount of educational and organization work done.

Miscellaneous general expense includes items of cost not otherwise classified—directors' fees, taxes, repairs, bad accounts, auditing, cash shortage, postage, usually manager's expense, organization expenses, and subscriptions for the Lake Region Farm Poultry News. It also includes miscellaneous plant costs that can not be classified. This expense at Unit 10 is large because the director's per diem, auditing expense, cash shortage, and unclassified items are large. At Units 9 and 10 it is large because their classification of accounts made it necessary to include so large a part of the total cost as unclassified.

Total Costs

The efficiency of egg and poultry assembling units varies widely, not only in handling individual management problems, already discussed, but in dealing with the problems as a group. Total costs range from 75 to 137 per cent of the average per dozen and pound. Six of the ten units for which comparable data are available have costs of less than 3 cents and three associations have total costs of 2½ cents or less. Members' reserves are not included in these figures because they are a contribution to capital and not a cost of operation.

Discussion up to this point has shown that costs vary because (1) the amounts of labor, management, truck, and other cost elements vary, and (2) the price paid for labor, management, and trucks varies. These are also the principal reasons why total costs vary. There still remain some other factors of lesser importance to be analyzed.

TABLE VI

VOLUME AND COST OF OPERATION

Unit No.	Volume (000 omitted) Eggs (dozen)	Poultry (pounds)	Total	Total costs (per cent of average cost)
1	572	316	888	75
2	503	225	728	79
10	510	202	712	137
4	426	235	661	87
8	305	307	612	111
5	271	237	508	90
7	309	182	491	106
3	251	149	400	84
6	257	63	320	94
9	176	81	257	137
Average	...	...	...	100

Volume.—The quantity of eggs and poultry marketed, as indicated in Table VI, is a relatively unimportant factor affecting total costs. The variation in costs is greater between units marketing the same quantity than between units with different volume. However, there is some relation between volume of business and costs. Associations with large volume tend to have the lowest cost per dozen and pound. The truth of this generalization becomes more evident when the exceptions, such as Unit 10, that are known to have been operated extravagantly, are taken into consideration. Nevertheless, the advantage of a large volume is apparently not so important as to put associations handling 300,000 dozen and pounds annually at a serious disadvantage. The costs of operating Units 3 and 6, altho their volumes are among the lowest, compare very favorably with those of the largest units. No one can say how much smaller the volume may be and still permit relatively low-cost operation. Perhaps the cost would be much larger for associations marketing less than 300,000 dozens and pounds because of the relatively greater importance of such fixed expenses as manager's salary, rent of buildings, and outlay for trucks.

Seasonality of receipts.—Egg and poultry marketing is characterized by big peak loads. Eggs are produced chiefly from March to June. Poultry marketing is heaviest in November and December. Receipts of both eggs and poultry are therefore relatively small from June to October.

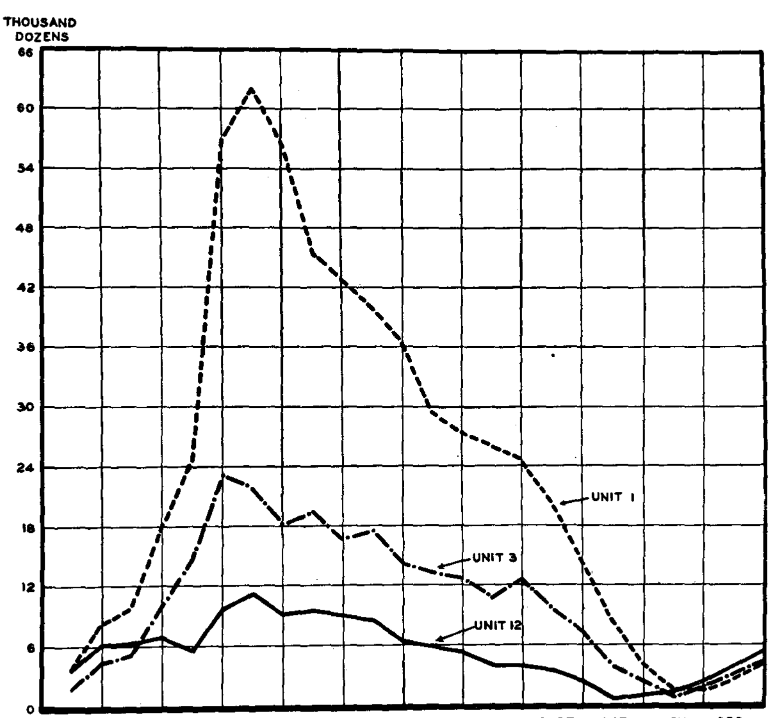

Fig. 5. Semi-monthly Receipts of Eggs of Three Representative Assembling Units

This seasonal variability of receipts undoubtedly affects the cost of marketing, altho other factors are relatively so much more important that it is not indicated clearly. One who has studied the problem realizes, however, that plant, office, manager, trucks, and labor supply can be used more economically when receipts are relatively uniform throughout the year, as illustrated by Unit 12 in Figures 5 and 6, than when large peak loads are marketed, as by Unit 1. These units represent the extremes of variation in receipts, except for those located in districts of heavy turkey production. But even a representative unit, as Unit 3, has sufficient seasonal variation to create a real management problem. The total receipts, as given in Figure 7, vary less than the receipts of either eggs or poultry. This simplifies, altho it by no means solves, the problem of adjustment of the cost elements to the volume, because there are still big peak loads for most associations.

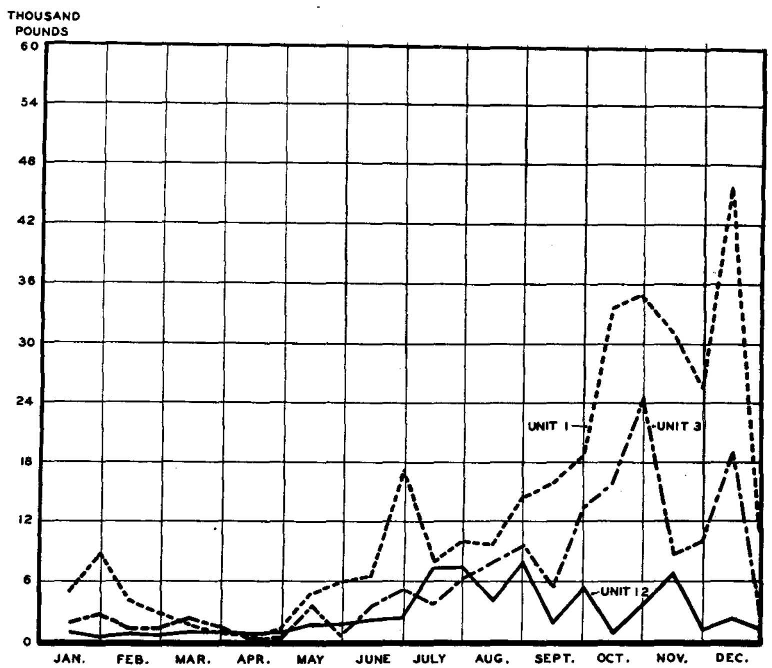

Fig. 6. Semi-monthly Receipts of Poultry of Three Representative Egg and Poultry Assembling Units

All that one can say about seasonality of receipts is (1) that it does affect costs, and (2) it is a more important factor in the management of an association located where the farm flock type of production prevails than for associations situated in districts of greater poultry specialization—where winter egg production is relatively large and where poultry is frequently marketed in the broiler stage during the late summer months.

Proportion of eggs and poultry to total receipts.—The proportion that eggs and poultry are of the total volume (expressed in dozens of eggs and pounds of poultry) has no effect upon the cost of operating assembling units so far as was discovered in this study. Perhaps the range in variation is too small to obtain significant results, as in eight units out of eleven poultry constitutes from 30 to 37 per cent of the total volume. Nevertheless, this conclusion is further substantiated by the fact that the office, plant, management, and assembling requirements are approximately the same for both eggs and poultry. More labor is required in candling and packing eggs than in handling poultry, but the extra costs are, at least in part, offset by the cost of feeding and dressing poultry. Very little poultry is dressed, however, and the feeding is generally only temporary—either while assembling a carload or before shipping in order to avoid heavy shrinkage.

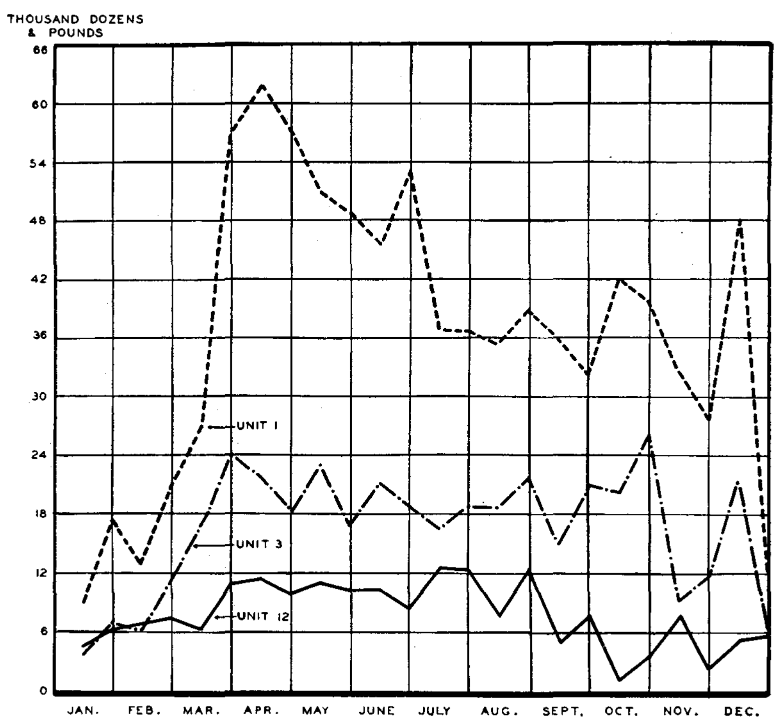

Fig. 7. Semi-monthly Receipts of Eggs and Poultry of Three Representative Egg and Poultry Associations

We can therefore conclude that altho marketing costs are larger for eggs than for poultry, there is no important difference in cost of the two enterprises under present conditions.

Size of members' deliveries.—The utilization of trucks, egg cases, and poultry crates, and the labor of manager, clerks, truck drivers, and, to some extent, plant labor is in part dependent upon the size of members' deliveries, particularly upon the quantity of eggs received in each delivery. Large deliveries permit the best utilization. For this reason a few associations have followed a policy of soliciting only producers with average size and large flocks, believing that cases would contain more eggs, trucks would haul larger loads, there would be less stopping and starting of trucks, plant labor would candle more eggs, and members would deliver more continuously and require less attention from the manager. On the other hand, several associations, probably the majority, have recognized that the decreased efficiency of small deliveries, such as could be controlled by selecting members, is offset by the advantages of larger volume and have adopted the practice of accepting as members any producer of eggs and poultry.

The average number of eggs delivered by patrons differs widely between associations, because the membership policy varies and the average production per farm varies between communities. The average per patron by two-week pools ranged from 28 dozen to 54 dozen for Minnesota associations in 1925.

The size of members' deliveries fluctuates fully as much between pools of individual associations as between assembling units. The smallest deliveries are made during periods of low production. This part of the problem is virtually beyond the control of an assembling unit. About all the management can do, under existing conditions, is to make the best possible adjustment of physical equipment and labor to the volume.

Side lines.—A side line enterprise is generally economical if the facilities required to handle it are already available and not fully utilized. Poultry feed meets this test in the case of egg and poultry assembling units. Trucks and labor are available for unloading and delivering, and warehouse space not used for eggs and poultry is generally available for storing feed in small quantities. The additional cost is therefore small if the commodity is not handled in too large volume. Moreover, it provides another source of income, and it has the advantage of furnishing members a standard poultry feed approved by experts. Feed therefore constitutes the chief side line of Minnesota egg and poultry assembling units.

Other kinds of merchandise may be marketed with similar results. One unit having a very small volume of poultry products has developed a farm supply business which is equal to eggs in amount of sales. This unit is not included in the study, however, because such an enterprise can no longer be considered a side line to the marketing of eggs and poultry, and because costs of the two enterprises can not be separated with sufficient accuracy for economic analysis.

The present tendency is for assembling units to take on additional side lines. How far this development can go without impairing the efficiency of co-operative egg and poultry marketing depends upon local conditions. Two weaknesses of side-line policies should be guarded against, however: (1) losses from sale of side lines for credit should be avoided. Some accounts are almost certain to be uncollectable. Associations have even discovered that losses can not be entirely eliminated by deducting the value of sales from the proceeds of members' pools. Experience has shown that selling for cash is the best policy for a co-operative. (2) The side-line business should bear its share of the costs. This means that when the side lines constitute a small part of the total business they should bear at least the additional costs of operation incurred, and that long before they become a principal enterprise they should bear part of such general expenses as manager's salary and rent of building.

ACCOUNTING

Efficient operation of a co-operative is more dependent upon an understanding of the business by manager, officers, and members than upon any other single factor. This applies particularly to co-operative egg and poultry associations, in which the administration of the business is relatively important. Table VII indicates the minimum amount of information with which members and officers should be satisfied if they expect to detect inefficiencies and to be able to compare results with other associations rendering similar marketing service.

The analysis may be refined by an even more detailed classification of expenses. For example, interest on total investment is preferable to interest on only borrowed capital if the data are to be compared with the costs of other units. Only the out-of-pocket expenses for interest are provided for in the table because they are generally most accessible. However, interest on capital invested can be easily calculated and substituted for interest paid, altho care must be taken to evaluate the assets of different associations in a similar manner. Building expense may be divided between plant and administration, or truck driver's salary distributed between assembling and plant, altho such detailed analysis is probably unnecessary in most cases.

TABLE VII

INFORMATION NEEDED TO DETERMINE EFFICIENCY OF CO-OPERATIVE EGG AND POULTRY ASSEMBLING UNITS

A. Assembling	C. Administration
Truck driver's salary	Manager's salary
Depreciation of truck	Office salaries
Interest on mortgage	Office supplies
Truck hire	Office depreciation
Gasoline and oil	Interest paid on office fixtures
Station commissions	Telegraph, telephone, and postage
Miscellaneous truck expense	Bonds and insurance
B. Plant Operation	Manager's expense
Plant salaries	Miscellaneous expense
Plant supplies	
Light and heat	
Building	
Taxes	
Depreciation	
Interest and mortgage	
Repairs	
Rent	
Miscellaneous plant expense	

Annual or periodic reports of the kind here recommended can be most easily prepared if separate records are kept for each cost item. However, it is not necessary to provide for so large a number of accounts, providing sufficiently detailed information is kept to permit assembling the data for the economic analysis. For example, one account for depreciation is sufficient if the reserve for the different depreciated assets is itemized, or one account for interest paid may furnish all the information needed to distribute this expense. Occasionally the type of accounting forms already adopted does not permit many accounts.

The following classification of expenses is suggested as adequate for such an analysis. It is essentially the classification recommended by the Lake Region Egg and Poultry Association, the principal difference being in the larger number of miscellaneous expense accounts.

Manager's salary	Station rent
Office salaries	Building rent and taxes
Plant salaries	Truck hire
Trucking salaries	Manager's expense
Bond and insurance	Depreciation
Interest paid	Miscellaneous general expense
Office supplies	Miscellaneous assembling expense
Plant supplies	Miscellaneous plant expense
Rent, light, and heat	
Telephone, telegraph, and postage	

Some assembling units need more accounts; others need fewer accounts because of local operating conditions. However, the important consideration in analyzing any business is to have adequate information. The system of accounts is merely a means to that end. If it is impractical to maintain an account for each cost item wanted, then enough supplementary data should be recorded to make an annual or periodic analysis possible. If such information is available, a summary pointing out the efficiency of the business can generally be made without additional expense and on short notice.

LAKE REGION EGG AND POULTRY ASSOCIATION

The Lake Region Egg and Poultry Association, the overhead cooperative organization of Minnesota egg and poultry assembling units, was created to serve its members in the following manner: (1) to sell eggs and poultry, (2) to help standardize and improve the quality of poultry products, (3) to purchase supplies, and (4) to assist member assembling units with organization and operating problems.

Sales Policy

The chief function of the organization thus far has been to sell poultry products. Eggs and poultry of all members are pooled by grade and the identity of ownership is lost so far as the selling is concerned. Particular attention is given to developing more direct outlets for poultry products, especially eggs. The best outlet of this kind has proved to be the chain store operators of eastern cities, particularly Boston and neighboring cities, who can buy carlots of eggs of uniform quality regularly. Other outlets were being developed in 1926, particularly large milk distributing companies. In the beginning, buyers were not certain of the reliability of the association, nor were they acquainted with its ability to deliver eggs on grade specifications. Consequently the first year was spent chiefly in getting established in the market and a majority of sales were made by consignment to commission firms. But direct sales to retail outlets are steadily gaining in importance as the association becomes better known for its Lake Region products. Live poultry continues to be sold chiefly to large produce dealers in New York City and Chicago who have facilities for dressing, altho more direct outlets are being gradually developed as the poultry dressing business of the association progresses. Three dressing plants were being operated in 1926 and still others are contemplated.

The principal markets for association eggs and their relative importance are given in Figure 8. It will be noted that Boston, New York City, and Providence are the chief markets. More than 50 per cent of the eggs are marketed in Boston.

Two concentration plants are maintained to assemble eggs for shipping in carloads to eastern markets, one at St. Paul and the other at La Crosse. A large part of the eggs go through these plants at seasons of the year when assembling units can not ship in carlot quantities. The operation of these concentration points creates a complicated problem of adjusting the freight charges between assembling units, so that each assembling unit may maintain its previous relative advantage of location.

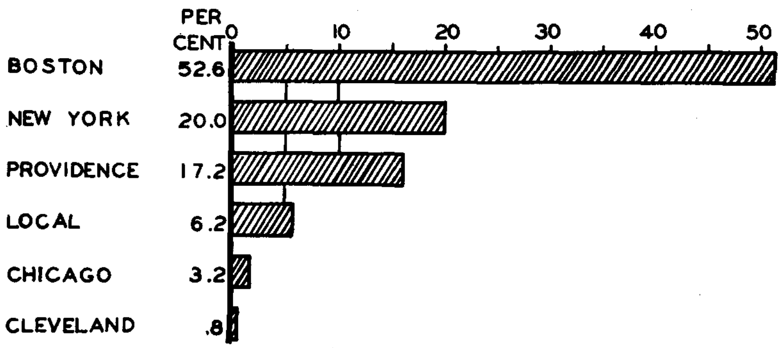

Fig. 8. Relative Importance of Principal Markets for Lake Region Eggs

Total sales of the association were $2,413,000 in 1925. Cost of operation amounted approximately to 1.2 per cent of sales, or less than ½ cent per dozen and pound.

Standardization and Improvement of Quality

Efforts to market a better product have been directed toward securing a product whose quality is both more uniform and superior. Grade and package specifications for eggs suited to the needs of buyers have been adopted and furnished to managers of assembling units with such additional printed information and personal instruction as they need in grading, candling, and packing. Moreover, the grading and packing of each assembling unit is checked. Each unit is given a number which must be stamped on every package marketed. Any complaint of buyers can therefore easily be traced to the offending unit and proper measures taken to secure conformity to grading specifications. Occasional misgrading is necessarily treated leniently because of the difficulties of grading a product whose tests for quality are so dependent upon human judgment. On the other hand, persistent violations of instructions are heavily penalized by assessing an assembling unit the extra expense incurred by the central association in regrading eggs until the grading comes up to standard.

Only a small quantity of dressed poultry is marketed by assembling units. It is generally marketed through the assembling plants where it is graded and packed. The problem of securing uniform grading is therefore not so important or so difficult for poultry as for eggs.

Raising the average quality of eggs by this co-operative marketing system is accomplished by more frequent farm collection and delivery of eggs, previously described, and by a more rapid movement through marketing channels. The policy of the association is to ship and sell eggs and poultry as soon as carloads are assembled. An important exception to this policy is the live poultry that is fed in preparation for market.

The effect of these various efforts upon the quality of eggs has been substantial. For example, Table VIII, giving the distribution of eggs by grades, shows that the quality was considerably higher in 1926 than in 1925. There was 3.6 per cent more of the total dozens of eggs that graded extras, and 1.4 per cent more that graded standards.

TABLE VIII

GRADE DISTRIBUTION OF EGGS MARKETED BY LAKE REGION EGG AND POULTRY EXCHANGE, 1925 AND 1926

Grade	Per cent of total dozens 1925	1926
Extras	52.9	56.5
Standards	23.8	25.2
Medium	16.4	12.8
Dirties and checks	6.9	5.5

These data do not show completely the effect of co-operative marketing in improving quality. We do not know, for example, what eggs graded before the assembling units were organized or the grade of eggs marketed through private agencies. Nor do the figures indicate what part of the improvement in quality in 1926 is due to collecting and delivering eggs and what part is due to the increased consumption of small eggs by the farm family.

The effect of co-operative marketing upon the price realized by farmers for eggs is in part indicated by Table IX, which shows that egg assembling units received from 1.9 cents to 4.4 cents per dozen more for eggs than creameries marketing eggs through the Lake Region Egg and Poultry Association during the five months, April to August, 1926.

These creameries received and bought eggs from farmers in the customary method. They made no effort to have the eggs gathered and delivered regularly. They were shipped to the Lake Region Egg and Poultry Association, pooled according to grade, and paid for on the same basis as eggs received from co-operative assembling units. A comparison of the prices paid by these two types of marketing agencies is therefore a fair measure of the effect of the co-operative method on quality up to the time eggs are delivered to the central association. It fails to include any advantage due to the handling methods of the central exchange or to take into account any superiority in the quality of eggs marketed by creameries over eggs marketed by other local agencies that is due to better storing facilities of creameries and to more frequent deliveries by patrons. It therefore becomes evident, when these facts are taken into consideration, that the data in Table IX understate the price advantage of improvement in quality realized probably by a majority of producers.

TABLE IX

COMPARISON OF PRICES RECEIVED FOR EGGS BY 14 CO-OPERATIVE ASSEMBLING UNITS AND 10 CREAMERIES MARKETING THROUGH LAKE REGION EGG AND POULTRY ASSOCIATION, APRIL TO AUGUST, 1926

Pool period ending	Premiums received by assembling units over creameries	
	Per case	Per dozen (cents)
April 15	$0.63	2.1
April 30	.58	1.9
May 15	.75	2.5
May 31	.88	2.9
June 15	.95	3.2
June 31	.87	2.9
July 15	.70	2.3
July 31	1.22	4.1
August 15	1.20	4.0
August 31	1.32	4.4

It is interesting to note that the effect of the co-operative method upon quality is greatest in periods of high temperature. The premiums received by assembling units, as given in Table IX, were 4.4 cents for the pool ending August 31 and only 1.9 cents for the pool ending April 30.

Supply Department

Poultry feed and plant supplies, including cases, fillers, boxes, and barrels, are the principal supplies purchased. Other side lines, as automobile tires and lubricating oils, are handled on a small scale. Poultry feeds constitute the principal part of the supply business. Their sale is a real service to producers, aside from any saving that may be realized, by providing them with feeds particularly suited to poultry and egg production.

Total sales of supplies were $192,997 in 1925 and $169,227 in 1926. The savings realized were $10,816 and $5084, respectively. Sales were larger in 1925 than in 1926 because office and plant equipment was provided for several assembling units that were organized in 1925.

Assistance with Local Problems

The Lake Region Egg and Poultry Association is gradually extending its activities to include assistance to member local associations in matters pertaining to organization, operation, and membership service as it becomes better established in the central markets and as it makes progress with the standardization and quality improvement program. It has prepared an accounting system and assisted in installing it in several associations. It has helped assembling units with educational work by distributing a monthly house organ, The Lake Region Farm Poultry News, and by giving special assistance where assistance could be used. Advice in matters of general policy is also freely given by officers of the central organization when it is requested.

This is a very important type of service for a co-operative central marketing organization when it is dealing with locals. A local association may analyze its own costs, for example, but it can not compare them with other associations—that is necessarily a function of the central organization. Frequently the local will not try to analyze its business, or if it does the analysis is poor. In such cases, the initiative must come from the central. On the other hand, the burden of responsibility for other local problems should probably be borne chiefly by the local association, and the initiative for work on these problems should come from the local group. Yet the central organization can undoubtedly assist greatly in planning and actually carrying out local campaigns.

The very limited control given the Lake Region Egg and Poultry Association over the management problems of assembling units is an important deterrent to the development of this service. Practically the only authority which the central organization has over local problems is to enforce grade specifications. This means that the initiative to expand the service is dependent largely upon the assembling associations, which are generally less aggressive in this part of the co-operative movement than the central association. Progress will therefore be slow until managers and directors appreciate more fully the assistance that the central association can give in solving local problems. This weakness could be overcome by giving the central greater authority over problems of a local character, altho this seems unnecessary. The same results could probably be secured if the central organization were consulted more freely as to organization, choice of managers, selection of sites, and the like. Only through such co-operation between the different parts of the co-operative marketing system can the greatest progress be realized in developing strong and efficient assembling units.