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SIDELINE MERCHANDISING OPERATIONS OF ELEVATORS AFFILIATED WITH THE FARMERS UNION GRAIN TERMINAL ASSOCIATION ST. PAUL, MINNESOTA

By

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For many years cooperative elevators in the States of Minnesota, North and South Dakota, and Montana, have handled varying quantities of farm and farm home supplies as a side line to their grain marketing and storage operations. In general, these elevators have looked upon side line business as incidental to their grain operations, with the result that they have devoted little special attention to developing their purchasing service for farmers. As this business has gradually grown, its significance has been increasingly recognized, not only as a worth-while service to farmers, but as a means of strengthening the economic position of the cooperative elevators as marketing agencies.

Note: - Appreciation is herewith expressed to Miss Jane Scearce for her statistical assistance on this manuscript; to Harry E. Ratcliffe, Agricultural Economist of the Grain Section, Cooperative Research and Service Division; to the officers of the Farmers' Union Grain Terminal Association and the managers of the elevator associations who furnished essential data.

Because of the increasing importance of side-line operations in this area, the management of the Farmers' Union Grain Terminal Association of St. Paul, Minn., requested the Cooperative Research and Service Division to make a study of the side-line merchandising operations of its affiliated local elevator associations so that suggestions could be offered which might assist in the sound conduct and development of this type of business. The desirability of a study of this type has increased with the coming of the war, since wartime conditions require that all agricultural merchandising agencies operate with the maximum economy.

To provide data for this study, a short schedule was prepared by the Cooperative Research and Service Division, in cooperation with the management of the Farmers' Union Grain Terminal Association, to obtain special information from member-elevator associations on their side-line operations. These schedules were sent out to member-associations by the field service department of the F.U.G.T.A. in January 1941, but the completed schedules were mailed by the member-elevators directly to the Cooperative Research and Service Division of the Farm Credit Administration, Washington, D. C. The location of the 296 elevators served by the F.U.G.T.A. at that time, as well as the location of the 155 elevators which returned schedules, are shown in figure 1. Although it had been hoped that schedules could be obtained from all the elevators served by the F.U.G.T.A., it is believed that the elevators which returned schedules are fairly representative of the entire group, subject to the qualification that the replies probably included a higher-than-average proportion of those handling an appreciable volume of supplies.

There was considerable variation in the completeness with which the elevators provided the information called for in the schedules. About one hundred of the returned schedules were fairly complete, while the rest provided incomplete information on one or more questions. It is probably true that those elevators which provided complete replies represented a fairly large proportion of the elevators which are particularly interested in side-line operations.

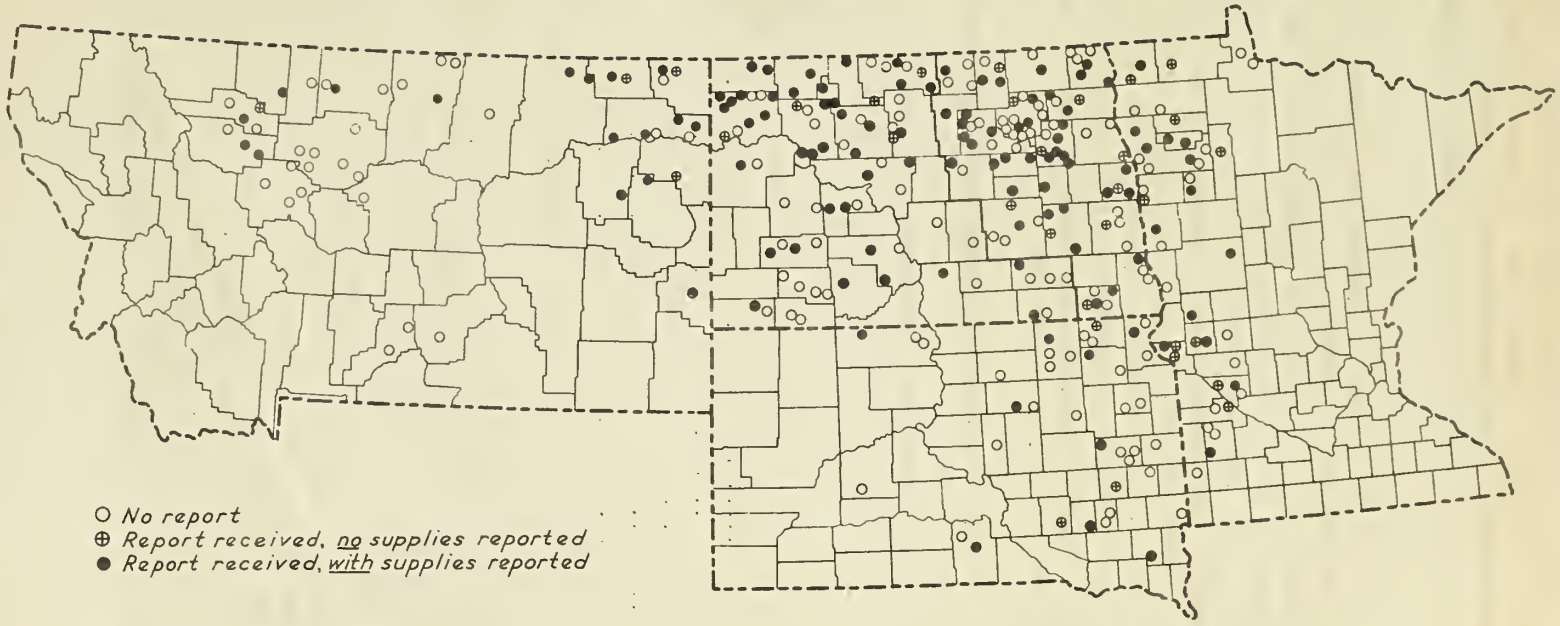
ECONOMIC BACKGROUND

The general agricultural character of the territory served by the F.U.G.T.A. is shown in figure 2. A comparison of this figure with figure 1 shows that most of the F.U.G.T.A. elevators are located in the three dominant wheat and small-grain farming districts.

Further information on the agriculture of this region, based on 1940 Census data, is shown by figures 3, 4, and 5. Figure 3 shows the number of farms in Minnesota, North Dakota, South Dakota, and Montana,

FIGURE 1

LOCAL ELEVATOR ACCOUNTS OF F.U.G.T.A., 1941



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while figure 4 shows the average size of farms in these States. A comparison of these two charts shows that in much of the area served by the F.U.G.T.A., particularly in Montana and the western Dakotas, large farms predominate, with the result that the density of farms is comparatively low.

Figure 5, based on table 1, shows the average value per farm of land and buildings and of implements and machinery for this same territory. This figure shows that on an average per farm basis there is little more invested in land and buildings for the relatively large farms of Montana than for the smaller farms of eastern North Dakota and the western counties of Minnesota. However, a smaller amount per farm was invested in land and buildings in western North Dakota and in South Dakota than in the other sections. The average per farm investment in implements and equipment was somewhat higher in the more intensively farmed area of western Minnesota and eastern North Dakota than in the other parts of the F.U.G.T.A. territory.

TABLE 1. Average value of land and buildings, and of implements and machinery in 1940[1]

ITEM	AVERAGE VALUE OF LAND AND BUILDINGS	AVERAGE VALUE OF IMPLEMENTS AND MACHINERY
Western Minnesota	$7,961	$1,283
Eastern North Dakota	7,743	1,353
Western North Dakota	5,273	996
Montana	8,373	1,113
South Dakota	6,976	902

[1] *U. S. Bur. Cens., 16th Census, 1940, Agriculture, 1st ser.*

In general, the area served by the F.U.G.T.A. elevators has been adversely affected by a series of drought years and comparatively low farm prices which have tended to reduce the value of farm property. Table 2 shows how the average per farm value of land and buildings and of implements and machinery, as reported in the Census for these four States, has changed from 1930 to 1940. It is of particular interest that the decline in the per farm value of land and buildings was much greater than the decline in per farm value of implements and machinery. As a result, the value of implements and machinery as a percentage of the value of land and buildings increased in all four States. This suggests that farmers have continued to buy machinery and equipment in order to produce most economically in the face of declining farm land values.

TABLE 2. Average per farm value of land and buildings and of implements and machinery in Minnesota, North Dakota, Montana, and South Dakota, 1930 and 1940; and average per farm value of implements and machinery as a percentage of average per farm value of land and buildings.

STATE	AVERAGE PER FARM VALUE OF LAND AND BUILDINGS		PERCENTAGE OF CHANGE	AVERAGE PER FARM OF IMPLEMENTS AND MACHINERY		PERCENTAGE OF CHANGE	AVERAGE PER FARM VALUE OF IMPLEMENTS AND MACHINERY AS PERCENTAGE OF AVERAGE VALUE OF LAND AND BUILDINGS	
	1930	1940		1930	1940		1930	1940
	Dollars		*Percent*	*Dollars*		*Percent*		
Minnesota.....	11,471	7,312	-36.3	1,040	1,069	-2.8	9.1	14.6
North Dakota..	12,199	6,628	-45.7	1,596	1,140	-28.6	13.1	17.2
Montana.....	11,109	8,373	-24.6	1,395	1,133	-18.8	12.6	13.5
South Dakota..	15,455	6,976	-54.9	1,357	902	-33.5	8.8	12.9

Source: Compiled from statistics of the U. S. Bureau of the Census.

Information on the major supply expenditures of farms in the four States served by the F.U.G.T.A. for 1939, which totaled almost 180 million dollars, as shown by Census data, is given in table 3. In order of importance they ranged as follows:

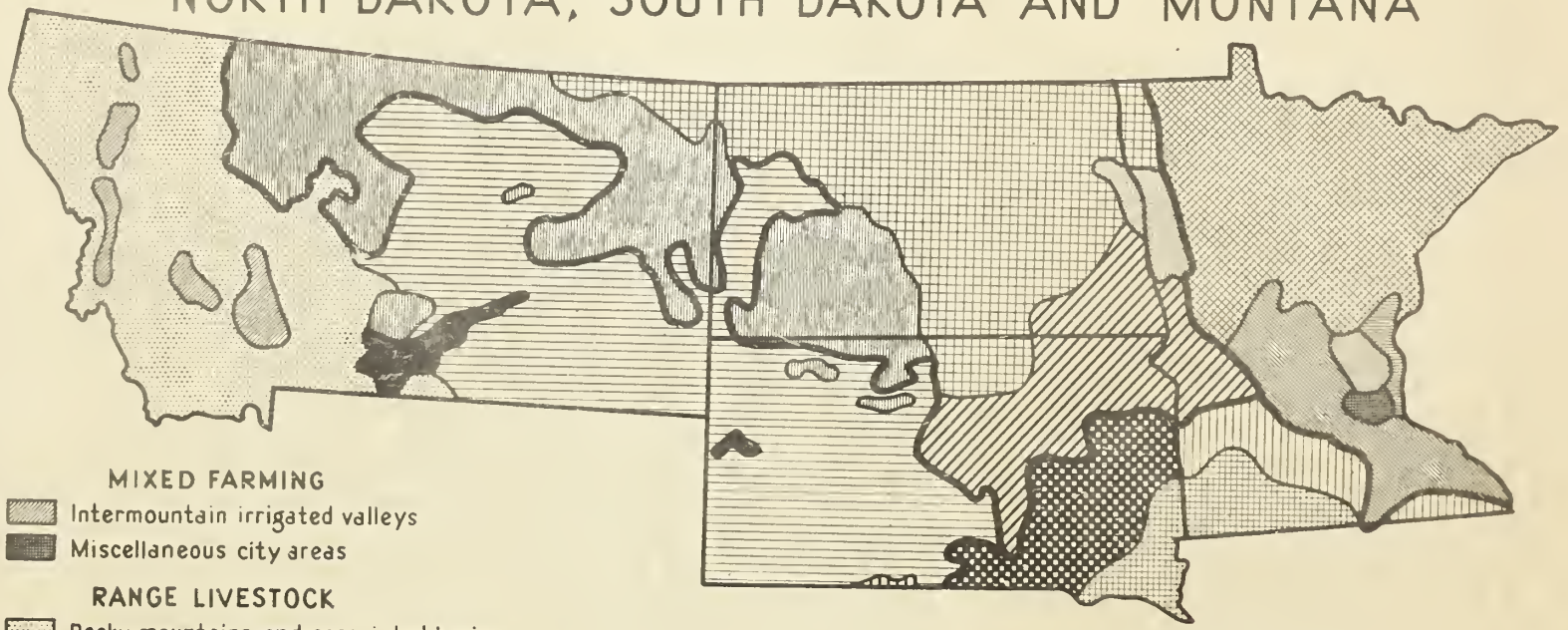
(1) Implements and machinery, etc.
(2) Gasoline, etc.
(3) Feed
(4) Building materials, etc.
(5) Commercial fertilizer

Table 4 shows the percentage of farms in each State which reported the expenditures shown in table 3. It is significant that about four-fifths of the farms reported the purchase of gasoline while three-fifths reported the purchase of feed; less than half reported the purchase of implements, etc., and building materials, etc. Commercial fertilizer purchases were relatively unimportant, less than 3 percent of the farms reported such expenditures. This table shows that there is no significant variation in the percentage of farms in each State reporting these various expenditures, except in the case of feed, which was most commonly purchased in Minnesota.

Table 5 shows the amounts of these expenditures per reporting farm. It will be noted that they vary considerably among the four States. For illustration, the average reported expenditure for feed was $145 in Minnesota and $210 in Montana, while the average reported expenditure for gasoline was $141 in Minnesota and $213 in Montana.

FIGURE 2

REGIONALIZED TYPES OF FARMING IN MINNESOTA, NORTH DAKOTA, SOUTH DAKOTA AND MONTANA



MIXED FARMING
- Intermountain irrigated valleys
- Miscellaneous city areas

RANGE LIVESTOCK
- Rocky mountains and associated basins
- Northern great plains
- Sandhills of Nebraska

WHEAT AND SMALL GRAINS
- Wheat and range livestock
- Wheat and general farming
- Specialized wheat and small grain

DAIRY
- Lake States — Subregion A.
- Lake States — Subregion B.
- Lake States — Subregion C.

CORN BELT
- Western transition
- Northern livestock-dairy
- Central intensive feeding

SPECIAL CROPS
- Sugar beets
- Potatoes

Adapted from map, "Regionalized Types of Farming in the U.S.," B.A.E. - U.S.D.A.

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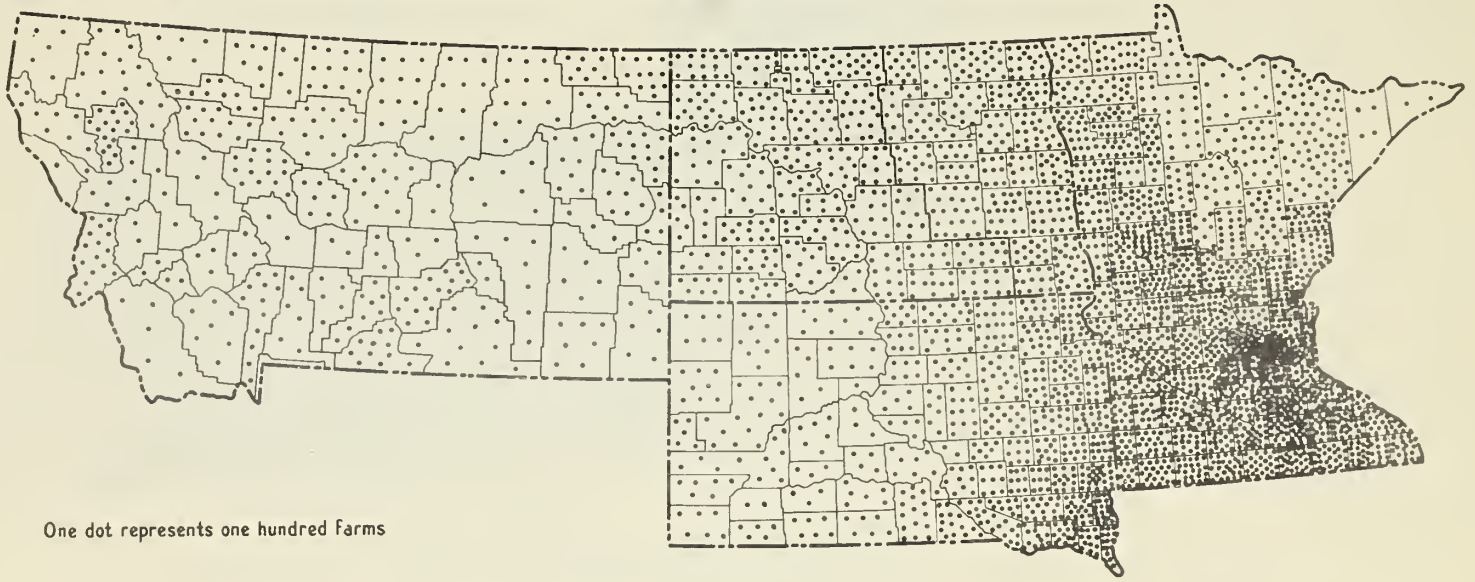
FIGURE 3

NUMBER OF FARMS IN MINNESOTA, NORTH DAKOTA, SOUTH DAKOTA AND MONTANA, 1941



One dot represents one hundred farms

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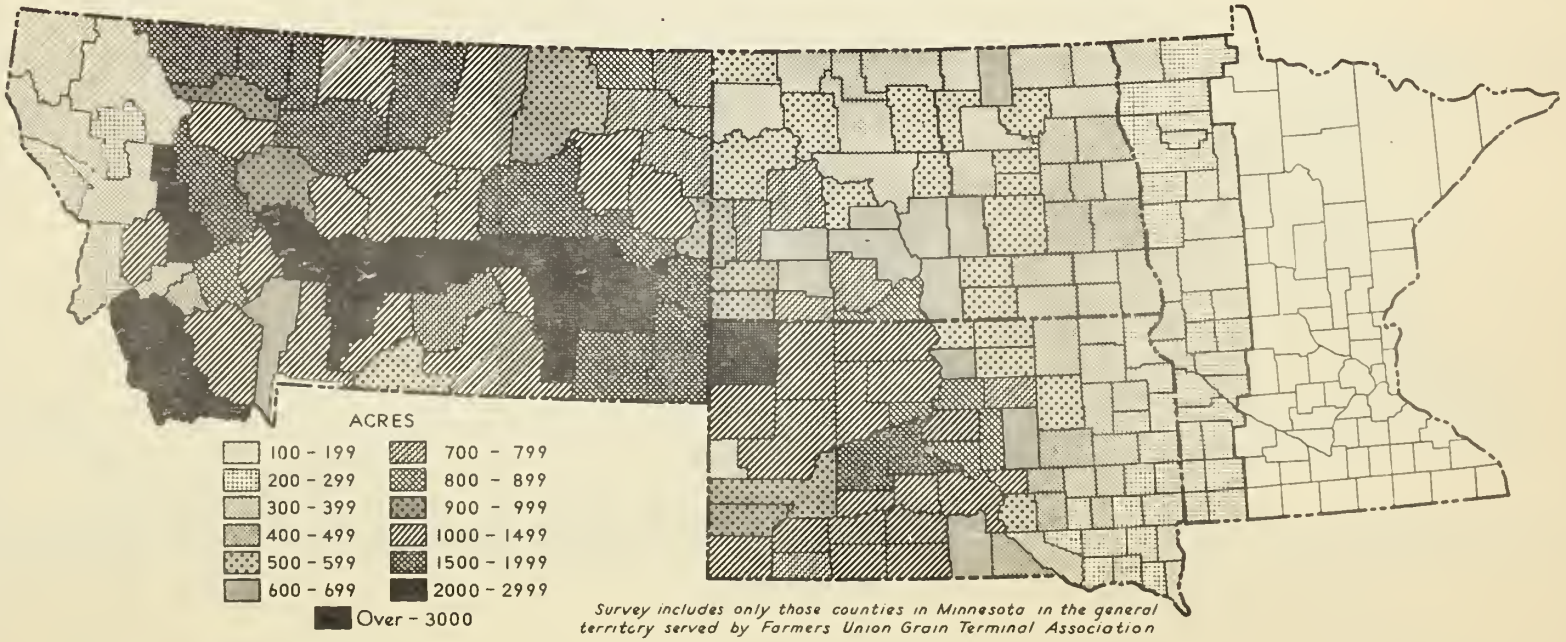
FIGURE 4

AVERAGE SIZE OF FARMS IN MINNESOTA, NORTH DAKOTA, SOUTH DAKOTA AND MONTANA, 1940



Survey includes only those counties in Minnesota in the general territory served by Farmers Union Grain Terminal Association

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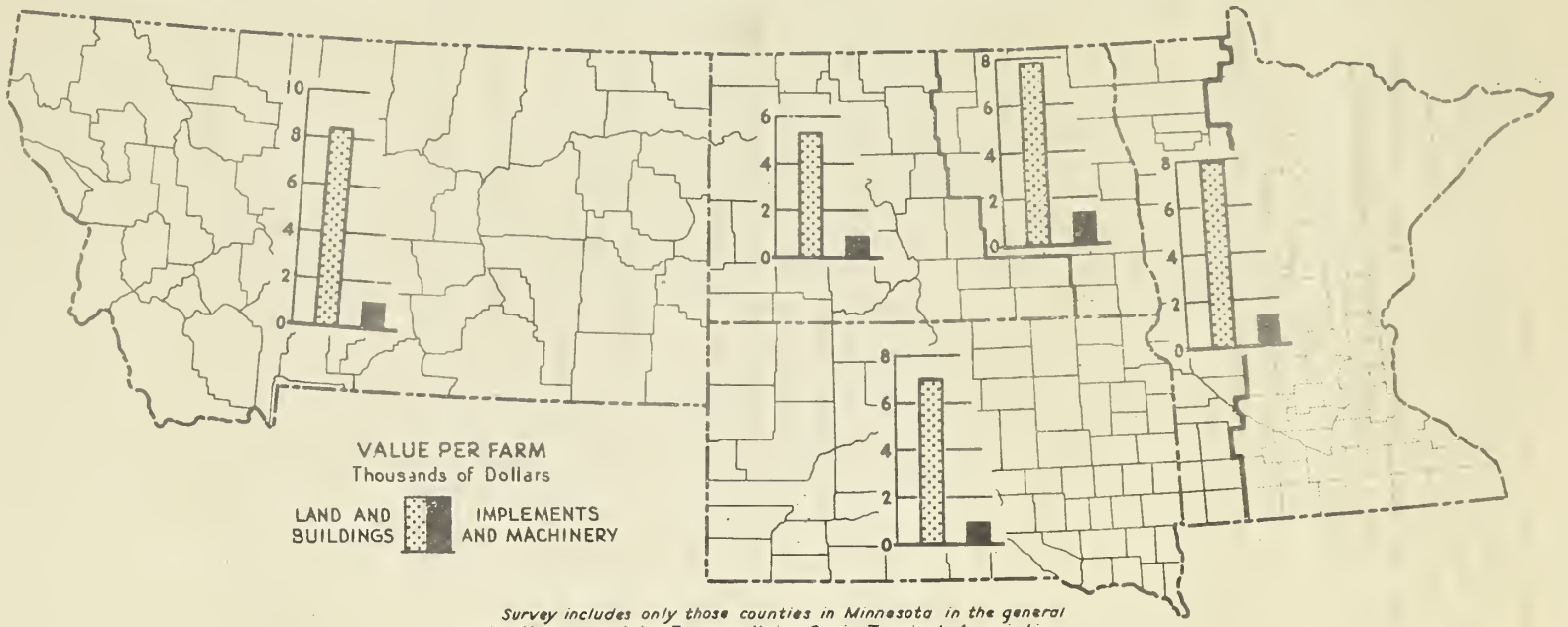
FIGURE 5

AVERAGE VALUE PER FARM OF LAND AND BUILDINGS, AND IMPLEMENTS AND MACHINERY IN MINNESOTA, NORTH DAKOTA, SOUTH DAKOTA AND MONTANA, 1940



Survey includes only those counties in Minnesota in the general territory served by Farmers Union Grain Terminal Association

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Table 6 shows that total expenditures for feed in the four States fell from $43,190,521 in 1929 to $34,772,432 in 1939. When, however, 1939 values are shown in terms of 1929 feed purchasing power, as shown by feed price index numbers, there was an actual increase of approximately 21 percent in the quantity of feed purchased. Table 6 shows that the proportion of farms reporting feed expenditures increased from 51.6 in 1929 to 58.2 in 1939.

TABLE 3. Reported Farm Expenditures for Feed, Implements, etc., Gasoline, etc., Building Materials, etc., and Commercial Fertilizer in Minnesota, North Dakota, Montana, and South Dakota, 1939[1]

	FOUR STATES	MINNESOTA	NORTH DAKOTA	MONTANA	SOUTH DAKOTA
Feed	$34,772,432	$13,308,566	$8,500,141	$4,035,577	$7,948,148
Implements, machinery, etc.[2]	70,132,193	34,257,904	14,171,204	9,300,477	12,402,613
Gasoline, etc.	48,837,906	22,320,700	11,928,007	6,539,751	8,879,348
Building materials, etc.[3]	24,407,782	15,401,901	3,146,900	2,719,519	3,140,562
Commercial fertilizer	752,726	491,667	68,226	154,476	18,255
Total for specified expenditures	179,762,944	91,775,739	32,899,480	22,909,800	32,278,926

[1] *Data from U. S. Bur. Cen., 16th Census, 1940, Agriculture, 2d ser.*

[2] *Including expenditures for automobiles, tractors, and trucks.*

[3] *Including lumber, roofing materials, hardware, cement, paint, fencing materials, etc., for use on the farm.*

TABLE 4. Percentage of all Farms which Reported Purchases of Feed, Implements, etc., Gasoline, etc., Building Materials, etc., and Commercial Fertilizer in Minnesota, North Dakota, Montana, and South Dakota, 1939[1]

	FOUR STATES	MINNESOTA	NORTH DAKOTA	MONTANA	SOUTH DAKOTA
	Percent				
Feed	58.2	67.8	41.7	46.0	56.3
Implements, etc.	46.2	47.5	49.5	40.0	45.9
Gasoline, etc.	79.7	80.3	88.0	78.7	78.3
Building materials, etc	47.5	50.9	47.7	43.7	40.2
Commercial fertilizer	2.7	3.6	0.9	6.0	0.3

[1] *Data from U. S. Bur. Cen., 16th Census, 1940, Agriculture, 2d ser.*

TABLE 5. Amount of Expenditures per Reporting Farm for Feed, Implements, etc., Gasoline, etc., Building Materials, etc., and Commercial Fertilizer in Minnesota, North Dakota, Montana, and South Dakota, 1939[1]

	FOUR STATES	MINNESOTA	NORTH DAKOTA	MONTANA	SOUTH DAKOTA
	Dollars				
Feed	155	145	116	210	192
Implements, etc.	389	365	387	556	373
Gasoline, etc.	162	141	194	213	157
Building materials, etc.	133	153	89	149	108
Commercial fertilizer	75	69	97	74	5

[1] *Data from U. S. Bur. Cen., 16th Census, 1940, Agriculture, 2d ser.*

TABLE 6. Changes in "Reported Farm Expenditures for Feed" from 1929[1] to 1939[2] in Minnesota, North Dakota, Montana, and South Dakota

STATE	VALUE OF REPORTED EXPENDITURES		PERCENTAGE OF FARMS REPORTING EXPENDITURES		EXPENDITURES PER REPORTING FARM	
	1929	1939	1929	1939	1929	1939
	Dollars		*Percent*		*Dollars*	
Minnesota	19,878,966	12,303,596	61.8	67.6	173	145
North Dakota	4,206,745	3,590,141	36.3	41.7	149	116
Montana	6,871,994	4,035,577	43.6	46.0	382	210
South Dakota	12,435,826	7,643,148	48.7	56.3	307	192
Total 4 States.	43,190,521	34,772,432	51.6	58.2	213	155

[1] *Data from U. S. Bur. Cen., 15th Census, 1930, Agriculture, V. 2, parts 1 and 3.*
[2] *Data from U. S. Bur. Cen., 16th Census, 1940, Agriculture, 2d ser.*

Extent of Cooperative Purchasing by Farmers in Minnesota, North Dakota, Montana, and South Dakota

As shown in table 7, the percentage of farms reporting cooperative purchasing in Minnesota, North Dakota, Montana, and South Dakota grew considerably in the years from 1929 to 1939. It will be noted that in Minnesota 45.5 percent of all farms reported some cooperative purchasing. In no other State in the Nation was the percentage of farms reporting cooperative purchasing so high.

TABLE 7. Percentage of farms reporting cooperative purchases[1].

STATE	1929	1939
	Percent	
Minnesota	21.4	45.5
North Dakota	14.2	25.8
Montana	6.4	22.4
South Dakota	13.4	23.5
Four States	16.5	35.1

[1] *Compiled from statistics of the U. S. Bureau of the Census.*

Unfortunately, the Census did not provide information on the dollar volume of cooperative purchasing in these four States. According to the Banks for Cooperatives survey for 1936, however, the extent of such cooperative purchasing in that year for the four States was $37,304,000, as shown in table 8. Petroleum products headed the list of farm supplies purchased cooperatively, followed by coal, and feed and flour. A comparison of the figures in table 8 with the expenditures of farmers for certain supplies shown in table 3 indicates that only a fraction of the supplies now purchased by farmers are obtained cooperatively.

NUMBER OF MEMBERS AND PATRONS SERVED

Totals of 14,793 members and 21,737 patrons were reported by 116 of the F.U.G.T.A. elevators, which gave this information as shown in table 9. Of the patrons, 12,714 were members and 9,023 were nonmembers. Some of the nonmember patrons were, however, in the process of becoming members through application of patronage dividends to purchase of a share of membership stock.

The average number of members for the territory as a whole was 127, while the average number of patrons was 187. However, there was much variation in the average number of members and patrons for the several States served by the F.U.G.T.A. The average number of members in Minnesota was 156 and the average number of patrons 228, while in eastern North Dakota the average number of members was 116 and the average number of patrons 158. In Montana the average number of members was 112, and the average number of patrons 180.

For the 116 elevators combined, 85.9 percent of the members were patrons. The highest percentage of members who were patrons was found in Montana with 90.2, while the lowest percentage was found in South Dakota with 82. The percentage of patrons who were members ranged from 40 percent for South Dakota to 82 percent for western North Dakota. The low percentage shown for South Dakota can be partially explained by the

TABLE 8. Number of farmers' cooperatives handling supplies, and sales of supplies for associations operating primarily at country points - Minnesota, North Dakota, South Dakota, and Montana, 1936

SUPPLIES	MINNESOTA		NORTH DAKOTA		SOUTH DAKOTA		MONTANA		FOUR STATES	
	CO-OPS	SALES	CO-OPS	SALES	CO-OPS	SALES	CO-OPS	SALES	CO-OPS	SALES
	Number	*Dollars thousands*	*Number*	*Dollars thousands*	*Number*	*Dollars thousands*	*Number*	*Dollars thousands*	*Number*	*Dollars thousands*
Petroleum products	207	9,153	166	4,607	66	2,589	94	2,805	533	19,159
Feed and flour	389	3,490	145	982	72	404	39	350	645	5,226
Coal	239	2,160	232	1,466	179	1,665	19	87	675	5,378
Implements and machinery	61	582	13	54	11	177	5	103	90	916
Seeds	75	324	59	99	11	24	12	36	157	483
Building materials	11	283	10	63	13	289	(1)	12	34	647
Binder twine	119	333	111	252	59	116	-	-	289	701
Consumers goods	51	671	15	96	13	154	3	82	82	1,003
Unclassified	-	2,381	-	391	-	828	-	191	-	3,791
Totals		19,382		8,010		6,246		3,666		37,304

Source: Data from Hyre, F. M., Powell, W., and others, F.C.A. Bul. 26, and "A Statistical Handbook of Farmers' Cooperatives," 334 pp., 1938. See pp. 119, 122, 131, and 138.

[1] *Less than 3.*

TABLE 9. Total and Average Number of Members and Patrons of 116 Farmers' Union Grain Terminal Association Elevators, 1941

STATE	NUMBER OF ELEVATORS REPORTING	TOTAL NUMBER OF -				AVERAGE NUMBER OF -				PERCENTAGE OF -	
		MEMBERS	PATRONS			MEMBERS	PATRONS			MEMBERS WHO WERE PATRONS	PATRONS WHO WERE MEMBERS
			MEMBERS	NONMEMBERS	TOTAL		MEMBERS	NONMEMBERS	TOTAL		
										Percent	
Minnesota.....	20	3,131	2,754	1,799	4,533	156	138	90	228	88.0	60.0
North Dakota											
(Eastern).....	38	4,398	3,720	2,293	6,013	116	98	60	158	85.6	61.9
(Western).....	32	4,322	3,680	2,252	5,932	135	115	70	185	85.1	62.0
Montana.....	16	1,797	1,621	1,269	2,890	112	101	79	180	90.2	56.1
South Dakota.....	10	1,145	939	1,410	2,349	114	94	141	235	82.0	40.0
All States.....	116	14,793	12,714	9,023	21,737	127	110	78	187	85.9	58.5

Source: Compiled from data supplied by the associations.

fact that many elevators in this State have been organized, or reorganized, recently, with the result that patrons are in the process of acquiring membership through the application of patronage dividend payments on shares of stock.

CHARACTER OF PURCHASING OPERATIONS

Table 10 shows total and average grain and supply sales for 106 F.U.G.T.A. elevators which reported such information. Altogether these elevators had combined grain sales of $8,131,963 and combined supply sales of $864,610. On the average, therefore, grain sales amounted to $76,716 and supply sales to $8,157. The average elevator had about 187 patrons; therefore, the estimated average value of grain marketed for each patron was slightly in excess or $400 while the average quantity of supplies sold to each patron amounted to less than $50. Since the average farm supply expenditure for farmers in this area amounts to several hundred dollars a year, it is clear that only a fraction of the supplies purchased has been obtained through the elevators.

Seventy-seven of these elevators reported a combined net income of $239,633, or an average net income of $3,112. Nineteen of these elevators had a total grinding income of $26,459, or an average of $1,392. The total net income reported for all of these 106 elevators amounted to 2.7 percent of their total sales. The average net income for the 77 elevators that reported net income represented 3.7 percent of the average combined grain and supply sales for the 106 elevators.

Table 10 also shows that there was considerable State variation in the proportion of supply sales to total sales. In Montana and western North Dakota the value of supply sales represented only 5.7 percent and 7.8 percent of the total sales while in Minnesota, eastern North Dakota and South Dakota supply sales represented respectively 12 percent, 14 percent, and 15.3 percent of total sales. The average net income as a percentage of average combined grain and supply sales ranged from 2.3 percent in Minnesota to 4.5 in western North Dakota. This variation was not directly related to the size of grain or supply sales although the regions where the elevators had the highest net income as a percentage of average sales had relatively large average grain sales. The relationship of size of supply sales to net income is discussed on page 34.

Size of Supply Sales

Table 11 classifies 122 elevators which reported the size of their supply sales. This table shows that the average value of supply sales for these elevators was $8,070. It is significant that only 55 of the 122 elevators, or 45 percent, had supply sales of more than $5,000, although their sales represented 83 percent of the total supply sales reported. To express this differently, 67 of the 122, or 55 percent of

TABLE 10. Total and Average Value of Grain and Supply Sales, Grinding Income and Net Income of 106 Farmers' Union Grain Terminal Association Elevators, 1939-40

STATE	SALES			SUPPLY SALES AS A PERCENTAGE OF TOTAL SALES	GRINDING INCOME	NET INCOME	INCOME AS A PERCENTAGE OF SALES
	GRAIN	SUPPLY	TOTAL				
	Dollars			*Percent*	*Dollars*		*Percent*
All elevators:							
Total.....	8,131,963	864,610	8,996,573	9.6	26,459	239,233	2.7
Average.....	76,716	8,157	84,873		1,392	3,112	3.7
Number reporting	(106)	(106)	(106)		(19)	(77)	-
Minnesota:							
Total.....	806,279	110,153	916,432	12.0	4,755	15,692	1.7
Average.....	67,190	9,179	76,369		2,378	1,743	2.3
Number reporting	(12)	(12)	(12)		(2)	(9)	-
North Dakota (Eastern):							
Total.....	2,126,664	346,105	2,472,769	14.0	6,468	47,974	1.9
Average.....	62,549	10,179	72,728		924	1,999	2.7
Number reporting	(34)	(34)	(34)		(7)	(24)	-
North Dakota (Western):							
Total.....	2,682,189	227,246	2,909,435	7.8	10,118	89,954	3.1
Average.....	76,634	6,493	83,127		1,445	3,748	4.5
Number reporting	(35)	(35)	(35)		(7)	(24)	-
Montana:							
Total.....	2,276,160	137,612	2,413,772	5.7	2,430	79,977	3.3
Average.....	119,798	7,243	127,041		2,430	4,998	3.9
Number reporting	(19)	(19)	(19)		(1)	(16)	-
South Dakota:							
Total.....	240,671	43,494	284,165	15.3	2,688	6,036	2.1
Average.....	40,112	7,249	47,361		1,344	1,509	3.2
Number reporting	(6)	(6)	(6)		(2)	(4)	-

the elevators had supply sales each of less than $5,000, and together their supply sales represented only 17 percent of all supply sales reported.

This table shows that a large percentage of the elevators in western North Dakota and Montana had supply sales of less than $5,000. In Minnesota, eastern North Dakota, and South Dakota the majority of the elevators which reported supply sales had supply sales of more than $5,000.

TABLE 11. 122 Farmers Union Grain Terminal Association Elevators classified according to size of supply sales, 1939-40

SUPPLY SALES	ALL ELEVATORS			MINNESOTA			NORTH DAKOTA - EASTERN		
	ELE-VATORS	TOTAL AMOUNT REPRE-SENTED	AVERAGE AMOUNT REPRE-SENTED	ELE-VATORS	TOTAL AMOUNT REPRE-SENTED	AVERAGE AMOUNT REPRE-SENTED	ELE-VATORS	TOTAL AMOUNT REPRE-SENTED	AVERAGE AMOUNT REPRE-SENTED
	Number	*Dollars*		*Number*	*Dollars*		*Number*	*Dollars*	
Under $1,000	13	5,271	402	2	828	414	1	11	11
$1,001-3,000	27	54,102	2,004	2	3,142	1,571	6	12,947	2,158
3,001-5,000	27	106,531	3,946	-	-	-	11	45,144	4,104
Under $5,000	67	165,904	2,476	4	3,970	993	18	58,102	3,228
$5,001-10,000	26	178,704	6,873	6	40,609	6,768	11	76,630	6,966
10,001-25,000	22	322,334	14,652	4	55,309	13,827	10	149,605	14,961
25,001-50,000	4	138,809	34,702	1	29,440	29,440	2	82,944	41,472
Over $50,000	3	178,739	59,580	-	-	-	1	52,260	52,260
Over $5,000	55	818,586	14,993	11	125,358	11,296	24	361,439	15,080
All elevators reporting supply sales	122	984,490	8,070	15	129,328	8,622	42	419,541	9,989
Cont'd									Cont'd
	NORTH DAKOTA - WESTERN			MONTANA			SOUTH DAKOTA		
Under $1,000	3	1,491	497	5	2,034	407	2	907	404
$1,001-3,000	12	23,721	1,977	6	11,727	1,955	1	2,565	2,565
3,001-5,000	12	46,243	3,854	3	11,331	3,797	1	3,753	3,753
Under $5,000	27	71,455	2,646	14	25,152	1,797	4	7,225	1,814
$5,001-10,000	8	56,446	7,056	-	-	-	1	5,019	5,019
10,001-25,000	3	45,503	15,168	1	22,569	22,569	4	49,348	12,337
25,001-50,000	-	-	-	1	26,425	26,425	-	-	-
Over $50,000	1	61,388	61,388	1	65,091	65,091	-	-	-
Over $5,000	12	163,337	13,611	3	114,085	38,028	5	54,367	10,873
All elevators reporting supply sales	39	234,792	6,020	17	139,237	8,190	9	61,592	6,844

Supplies Handled

The major items of supplies handled by 122 F.U.G.T.A. elevators which reported itemized supply sales are shown in table 12. It will be observed that 87 percent of the supplies for all elevators combined comprised coal, petroleum products, twine, seed, feed, and flour, while 7 percent of the supplies shown under the heading, "Miscellaneous," included various other farm equipment and supply items. The remaining 6 percent of the supply sales reported were not classified

by commodity. Table 12 also shows that there was considerable variation in the percentage of various supplies handled by the elevators in the several States. For example, coal represented a high percentage of classified supply sales in South Dakota and in eastern North Dakota, while in Montana and western North Dakota petroleum products represented the bulk of supply sales. The degree of variation between States in the supplies handled by the elevators is apparent in figure 6 which shows the percentage breakdown of supplies which could be classified. [1]

Elevators Handling Specified Supply Items

Table 13 shows the number of elevators which handled certain farm supply items. Of the 133 elevators which provided such information, 96, or 73 percent, handled feed; 94, or 71 percent, handled coal; 91, or 68 percent, handled twine; 86, or 65 percent, handled seeds; 71, or 53 percent, handled flour; and 58, or 44 percent, handled salt. A smaller number of elevators reported the handling of other farm supply items such as fence materials, farm machinery, paint, and wire. Table 13 shows that many elevators at present handle only a few supply items, but that many different supply items are handled by one or more elevators in the group.

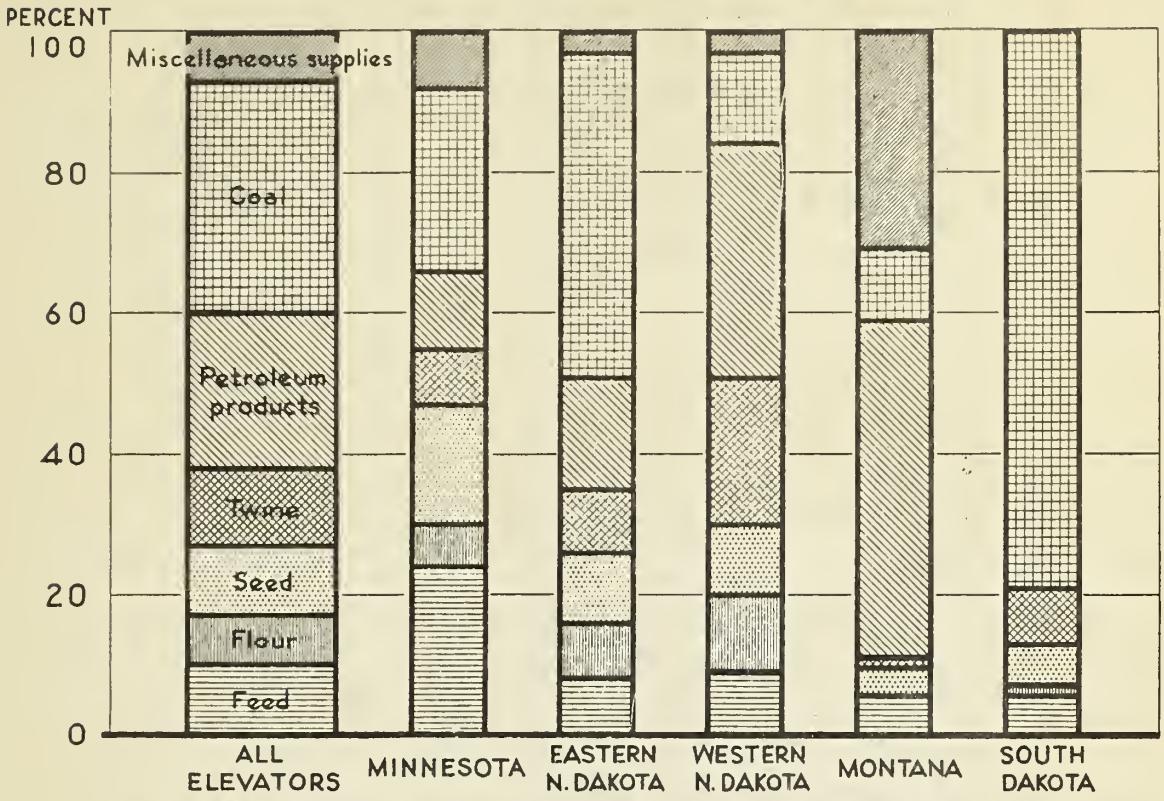
Elevators Interested in Handling Additional Supplies

In table 14 managers of 99 elevators listed supply items which they did not then handle but which they felt were desirable to handle. This table shows that many elevator managers felt that it would be desirable to expand their supply lines to include such specific items as fence materials, salt, lumber and building material, flour, feed, posts, poultry equipment, twine, and wire. In order to get further information on the degree of interest that these elevators might have in handling supplies that they were then not handling each manager was asked to express his opinion as to which of such supply items had the greatest sales and service possibilities. On this question, as shown by table 15, the most frequent items mentioned by the 71 managers who furnished such information were lumber and building materials, farm machinery, fence posts, twine, feed, flour and salt. Tables 14 and 15 thus indicate a disposition on the part of many elevator managers to favor the widening of their lines of supply by adding certain supply items.

[1] *The 6 percent of supplies which were not separately classified have not been included in the total.*

FIGURE 6

PERCENTAGE BREAKDOWN OF SUPPLIES DISTRIBUTED BY F.U.G.T.A. ELEVATORS, 1939-40



Coal and petroleum products were principal supplies handled, but types showed much regional variation.

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TABLE 12. Classification of value of supplies sold by reporting Farmers Union Grain Terminal Association elevators, by States, 1939-40

COMMODITY	ALL ELEVATORS		MINNESOTA		NORTH DAKOTA				MONTANA		SOUTH DAKOTA	
					EASTERN		WESTERN					
	Dollars	*Per.*	*Dollars*	*Per.*	*Dollars*	*Per.*	*Dollars*	*Per.*	*Dollars*	*Per.*	*Dollars*	*Per.*
Feed	88,327	9	25,786	20	31,585	8	20,364	9	6,919	5	3,373	6
Flour	68,446	7	7,048	5	33,657	8	26,590	11	428	-	724	1
Seed	91,828	9	18,802	15	42,018	10	22,520	10	5,001	4	3,487	6
Twine	100,304	10	8,158	6	36,822	9	50,120	21	977	1	4,227	7
Petroleum products	206,815	21	11,966	9	64,324	15	76,552	33	53,973	39	-	-
Coal	304,566	31	27,786	22	190,477	45	30,627	13	11,158	8	44,518	72
Miscellaneous	63,752	7	9,127	7	11,661	3	7,638	3	35,214	25	112	-
Unclassified	60,451	6	20,655	16	8,997	2	381	-	25,567	18	4,851	8
Total sales	984,490	100	129,328	100	419,541	100	234,792	100	139,237	100	61,592	100
	Number											
Elevators reporting	122		15		17		42		30		9	

TABLE 13. Analysis of managers' replies to question, "What supplies do you now handle?"

ITEM	ELEVATORS REPORTING						PERCENTAGE OF TOTAL
	MINNESOTA	NORTH DAKOTA		MONTANA	SOUTH DAKOTA	TOTAL	
		EASTERN	WESTERN				
	Number						*Percent*
Anti-freeze	2	3	4	3	1	13	9.8
Batteries	-	2	4	3	-	9	6.8
Brushes and brooms	1	1	-	2	-	4	3.0
Coal	16	42	19	6	10	94	70.7
Dairy equipment	2	1	1	2	-	6	4.5
Disinfectant	4	1	1	3	-	9	6.8
Dusts	1	2	-	1	1	5	3.8
Farm equipment	2	1	1	2	-	6	4.5
Farm machinery	3	2	1	-	-	6	4.5
Feeds	15	30	30	12	9	96	72.2
Fence materials	2	2	3	3	-	10	7.5
Fertilizer	7	3	1	-	-	11	8.3
Flour	10	20	27	8	6	71	53.4
Forks	4	1	-	2	-	7	5.3
Harness and oil	1	2	-	-	-	3	2.3
Hoes	1	1	-	2	-	4	3.0
Insecticides	6	7	3	3	-	19	14.3
Linseed oil	3	2	1	2	-	8	6.0
Lime	2	1	-	-	1	4	3.0
Lumber and building material	1	2	3	2	-	8	6.0
Molasses	5	4	2	-	-	11	8.3
Motor oils	1	5	6	3	1	16	12.0
Nails	1	1	1	2	-	5	3.8
Paint and materials	3	2	1	2	-	8	6.0
Petroleum products	1	4	6	3	1	15	11.3
Plow repairs	2	2	1	2	-	7	5.3
Posts	3	3	2	3	-	11	8.3
Poultry equipment	4	1	2	4	-	11	8.3
Roofing	1	2	3	3	-	9	6.8
Rope, manila	3	1	-	2	-	6	4.5
Salt	14	10	18	8	8	58	43.6
Seeds - field	14	29	28	9	6	86	64.7
Shovels	4	1	-	2	-	7	5.3
Spray materials	2	2	1	3	-	8	6.0
Sugar	-	1	-	-	-	1	0.1
Tires and tubes, etc.	-	2	4	3	-	9	6.8
Twine	15	33	32	6	5	91	68.4
Tools, small	1	-	1	2	-	4	3.0
Wire, barbed and galvanized	1	2	2	1	-	6	4.5
Wool bags, etc.	-	-	-	1	-	1	0.1
Mineral	-	-	-	-	-	-	-
Elevators reporting on above items	22	44	42	14	11	133	100.0

TABLE 14. Analysis of managers' replies to question, "What supplies which you do not now handle are desirable to handle?"

ITEM	ELEVATORS REPORTING						PERCENTAGE OF TOTAL
	MINNESOTA	NORTH DAKOTA		MONTANA	SOUTH DAKOTA	TOTAL	
		EASTERN	WESTERN				
	Number						*Percent*
Anti-freeze	-	4	3	-	-	7	7.1
Batteries	2	3	4	-	-	9	9.1
Brushes and brooms	-	2	2	-	-	4	4.0
Coal	2	-	-	1	1	4	4.0
Dairy equipment	2	1	1	1	-	5	5.1
Disinfectant	3	4	-	3	1	11	11.1
Dusts	1	-	1	2	1	5	5.1
Farm equipment	1	4	3	1	-	9	9.1
Farm machinery	3	4	4	1	2	14	14.1
Feeds	6	6	3	1	2	18	18.2
Fence materials	4	9	4	3	2	22	22.2
Fertilizer	5	6	1	-	1	13	13.1
Flour	4	10	4	1	2	21	21.2
Forks	2	2	3	-	-	7	7.1
Harness and oil	1	-	1	-	-	2	2.0
Hoes	1	1	3	-	-	5	5.1
Insecticides	4	4	1	2	-	11	11.1
Linseed oil	3	4	2	-	-	9	9.1
Lime	-	-	-	1	-	1	1.0
Lumber and building material	2	9	3	3	4	21	21.2
Molasses	1	3	-	1	-	5	5.1
Motor oils	3	3	2	2	-	10	10.1
Nails	1	1	3	-	1	6	6.1
Paint and materials	1	5	4	1	1	12	12.1
Petroleum products	2	3	3	2	2	12	12.1
Plow repairs	2	4	3	-	-	9	9.1
Posts	3	7	5	3	1	19	19.2
Poultry equipment	6	6	3	3	-	18	18.2
Roofing	1	3	2	1	-	7	7.1
Rope, manila	2	2	3	-	-	7	7.1
Salt	3	11	6	1	1	22	22.2
Seeds - field	4	4	1	2	2	13	13.1
Shovels	-	3	2	-	-	5	5.1
Spray materials	2	1	2	1	-	6	6.1
Sugar	-	-	-	-	-	-	-
Tires and tubes, etc.	2	2	4	-	1	9	9.1
Twine	5	6	2	1	3	17	17.2
Tools, small	1	2	2	-	1	6	6.1
Wire, barbed and galvanized	4	8	4	3	-	19	19.2
Wool bags, etc.	-	-	-	-	-	-	-
Mineral	-	-	-	1	-	1	1.1
Elevators reporting on above items	20	31	22	17	9	99	100.0

TABLE 15. Analysis of managers' replies to question, "What supplies not now handled have the greatest sales and service possibilities?"

ITEM	ELEVATORS REPORTING						PERCENTAGE OF TOTAL
	MINNESOTA	NORTH DAKOTA		MONTANA	SOUTH DAKOTA	TOTAL	
		EASTERN	WESTERN				
	Number						*Percent*
Anti-freeze	-	-	1	-	-	1	1.4
Batteries	-	-	1	-	-	1	1.4
Brushes and brooms	-	-	1	-	-	1	1.4
Coal	2	-	-	-	1	3	4.1
Dairy equipment	-	-	-	-	-	-	-
Disinfectant	-	-	-	-	-	-	-
Dusts	-	-	-	-	-	-	-
Farm equipment	-	2	2	-	-	4	5.4
Farm machinery	2	3	3	-	2	10	13.5
Feeds	6	3	-	-	-	9	12.2
Fence materials	3	2	1	2	2	10	13.5
Fertilizer	1	2	-	-	-	3	4.1
Flour	1	4	2	-	1	8	10.8
Forks	-	1	1	-	-	2	2.7
Harness and oil	-	-	-	-	-	-	-
Hoes	-	-	1	-	-	1	1.4
Insecticides	-	-	-	-	-	-	-
Linseed oil	1	1	-	-	-	2	2.7
Lime	-	-	-	-	-	-	-
Lumber and building material	2	6	3	3	2	16	21.6
Molasses	-	-	-	-	-	-	-
Motor oils	1	1	-	1	-	3	4.1
Nails	-	-	1	-	-	1	1.4
Paint and materials	-	2	1	-	1	4	5.4
Petroleum products	1	1	1	1	2	6	8.1
Plow repairs	-	1	1	-	-	2	2.7
Posts	1	3	3	1	-	8	10.8
Poultry equipment	1	-	-	-	-	1	1.4
Roofing	1	-	1	1	-	3	4.1
Rope, manila	-	1	-	-	-	1	1.4
Salt	3	4	1	-	-	8	10.8
Seeds - field	-	4	-	1	1	6	8.1
Shovels	-	-	1	-	-	1	1.4
Spray materials	-	-	1	-	-	1	1.4
Sugar	-	-	-	-	-	-	-
Tires and tubes, etc.	-	-	2	-	1	3	4.1
Twine	5	4	-	-	1	10	13.5
Tools, small	-	-	1	-	-	1	1.4
Wire, barbed and galvanized	2	1	1	1	-	5	6.8
Wool bags, etc.	-	-	-	-	-	-	-
Mineral	-	-	-	1	-	1	1.4
Elevators reporting on above items	17	21	14	15	7	74	100.0

Feed Grinding

As shown in table 16, of the 155 F.U.G.T.A. replying elevators, 21 reported a total income from feed-grinding operations of $21,642, or an average income of $1,031. Eleven of these elevators had a feed-grinding income of under $1,000; 7 had an income ranging from $1,000 to $2,000; while 3 had a feed-grinding income of more than $2,000.

TABLE 16. Feed grinding income reported by 21 F.U.G.T.A. elevators, 1939-40

ITEM	ELEVATORS REPLYING	TOTAL	AVERAGE
	Number	*Dollars*	
Under $1,000	11	4,424	402
$1,000-2,000	7	9,577	1,368
Over $2,000	3	7,641	2,547
Total	21	21,642	1,031

Table 17 shows the location of those elevators reporting grinding income and the average grinding income reported for the elevators in each State.

TABLE 17. Feed grinding income reported by F.U.G.T.A. elevators, distributed by States, 1939-40

ITEM	ELEVATORS REPLYING	SALES	AVERAGE PER ASSOCIATION
	Number	*Dollars*	
Minnesota	4	7,599	1,900
Eastern North Dakota	7	6,468	924
Western North Dakota	7	3,770	539
South Dakota	2	1,375	688
Montana	1	2,430	2,430
Total	21	21,642	1,031

In addition to elevators which reported grinding income, several more elevators reported grinding, but did not report grinding income. It is also of interest that a number of elevators indicated that they planned to provide grinding service in the near future.

Most of the elevators which reported grinding income were of the opinion that definite benefits were derived from grinding

service. In the words of the elevator managers, these benefits were as follows:

Minnesota:

"Decided savings to farmer because he can use cheap home-grown grains in mixing his feeds and mashes instead of buying commercial feeds and paying for extra costs of handling and profits."

"Furnish a drawing for our trade. Mill gives a local point near home where this service can be gotten."

"Keeps customers for grain business."

"Farmer and elevator both profit by this service. We increase volume of our business and operate on less margin."

Eastern North Dakota:

"Better feed at less cost to customer."

"Better feed at bigger savings to customer and more margin for us. Farmers use our grains and add concentrates."

"Service to community at cost."

"Helps pay the overhead."

Western North Dakota:

"Holds the patrons together."

"Draws grain trade and makes us a nice income."

"Enables us to work off our grain and screenings."

"Service to community, keeps patrons coming back, besides making a profit from this operation."

"Custom grinding. Also makes additional sales of grain ground."

Montana:

"Pays extra help."

Since the experience of these elevators in providing a grinding service has been favorable on the whole, it can be anticipated that this type of supply service will be offered by other F.U.G.T.A. elevators gradually.

Buying Connections

The F.U.C.T.A. elevators have obtained their supplies from a wide number of private and cooperative sources. This is shown in figures 7, 8, 9, 10, and 11, which have been prepared to show the principal location of sources of supplies for the elevators which reported such information. These charts suggest that the elevators have largely established their buying connections by trial and error methods taking into account cost of transportation, reputation of the supplying firm, the persuasiveness of its salesmen, the suitability of its product, the degree of satisfaction with past services, and similar factors.

It will be observed that many elevators obtain their supplies nearby while others go considerable distances. However, the figures show that there is some tendency for elevators to concentrate their purchases for various supplies at certain centers; for example, feed and flour at Grand Forks, Minot, and Williston; coal at Twin Cities, Duluth, Superior, Minot, Noonan, Roundup, and Billings; twine at Twin Cities, Bismarck, Minot, and Williston; seed at Fargo, Devils Lake, Minot, Williston, and Dickinson. These figures, therefore, suggest that while these elevators are accustomed to buy their supplies from relatively nearby trading centers, they might reduce the cost of transportation through a better coordination of their buying.

INFLUENCE OF SUPPLY OPERATIONS ON NET INCOME

Unfortunately, for the purpose of this study, the accounting records of the F.U.C.T.A. elevators do not make it possible to determine accurately the proportion of net income directly attributable to the handling of supplies. In most cases, because of the small volume of supplies handled, the elevators have not departmentalized their operations nor made any serious attempts to allocate costs among their grain marketing, service, or supply operations.

In general, these elevators have been in position to provide supply services with little additional expense for special facilities or personnel, with the result that any revenue from side line operations has been looked upon as a supplemental or by-product revenue. Such side line supply operations have thus been looked upon as a way of increasing the net revenue for the operations as a whole and for this reason it has not been considered important to determine the extent of the separate net revenue contributed by the supply operations. In fact, many elevators have measured the importance of side lines to their operations by the extent to which gross margins on side lines could meet the general operating expenses of the elevator.

FIGURE 7

PRINCIPAL FEED BUYING CONNECTIONS OF REPORTING F.U.G.T.A. ELEVATORS, 1941

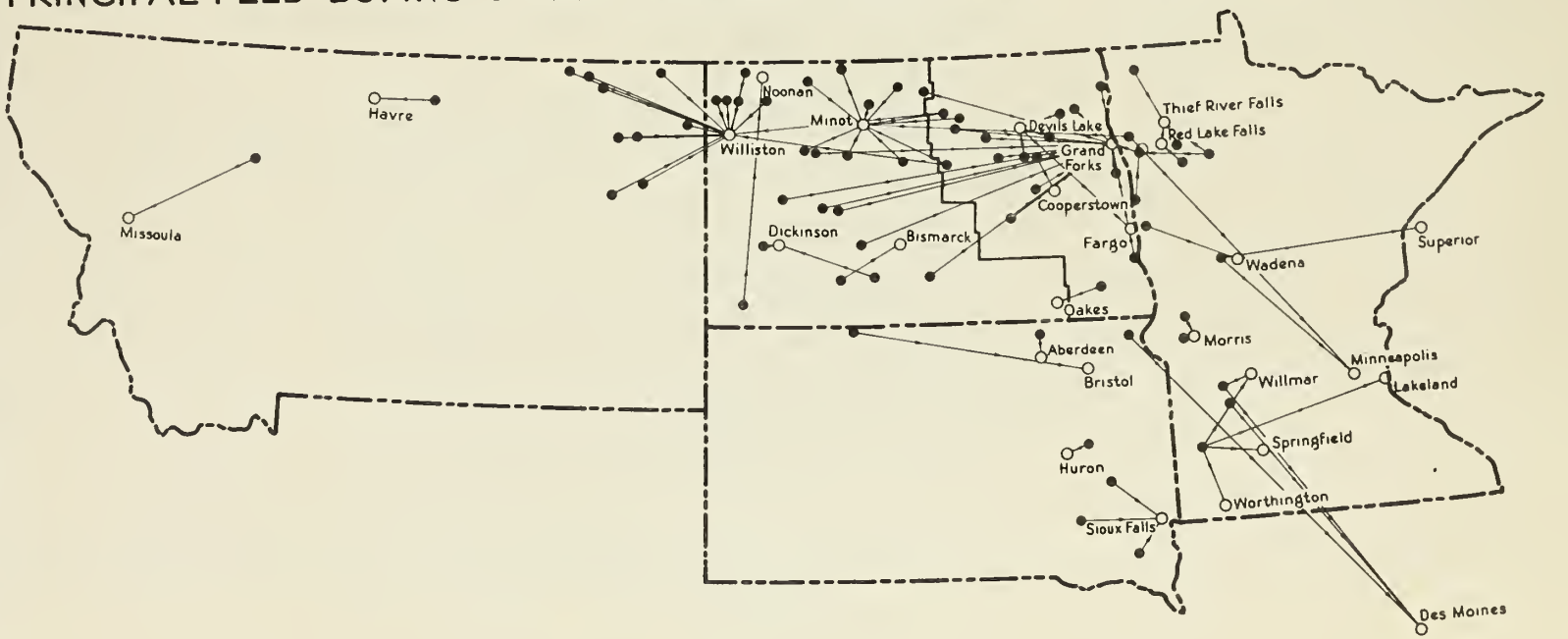

FIGURE 8

PRINCIPAL FLOUR BUYING CONNECTIONS OF REPORTING F.U.G.T.A. ELEVATORS, 1941

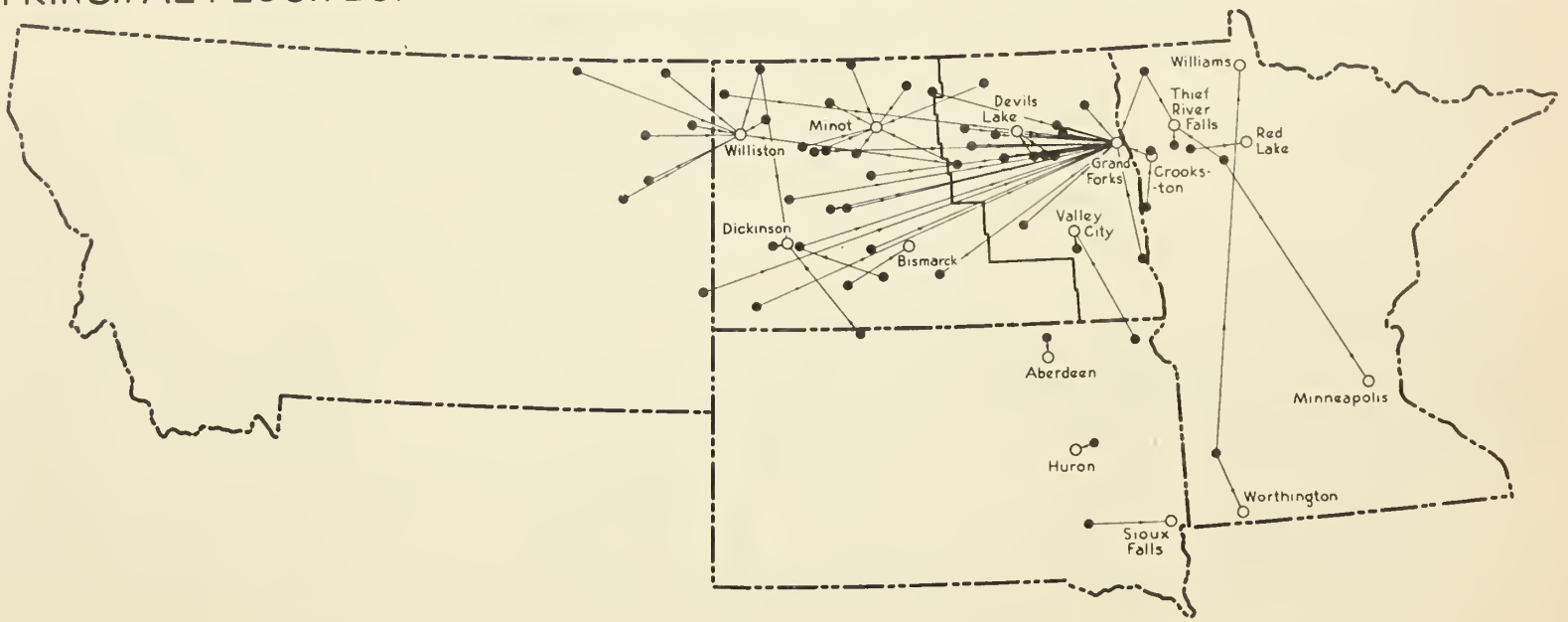

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FIGURE 9

PRINCIPAL COAL BUYING CONNECTIONS OF REPORTING F.U.G.T.A. ELEVATORS, 1941

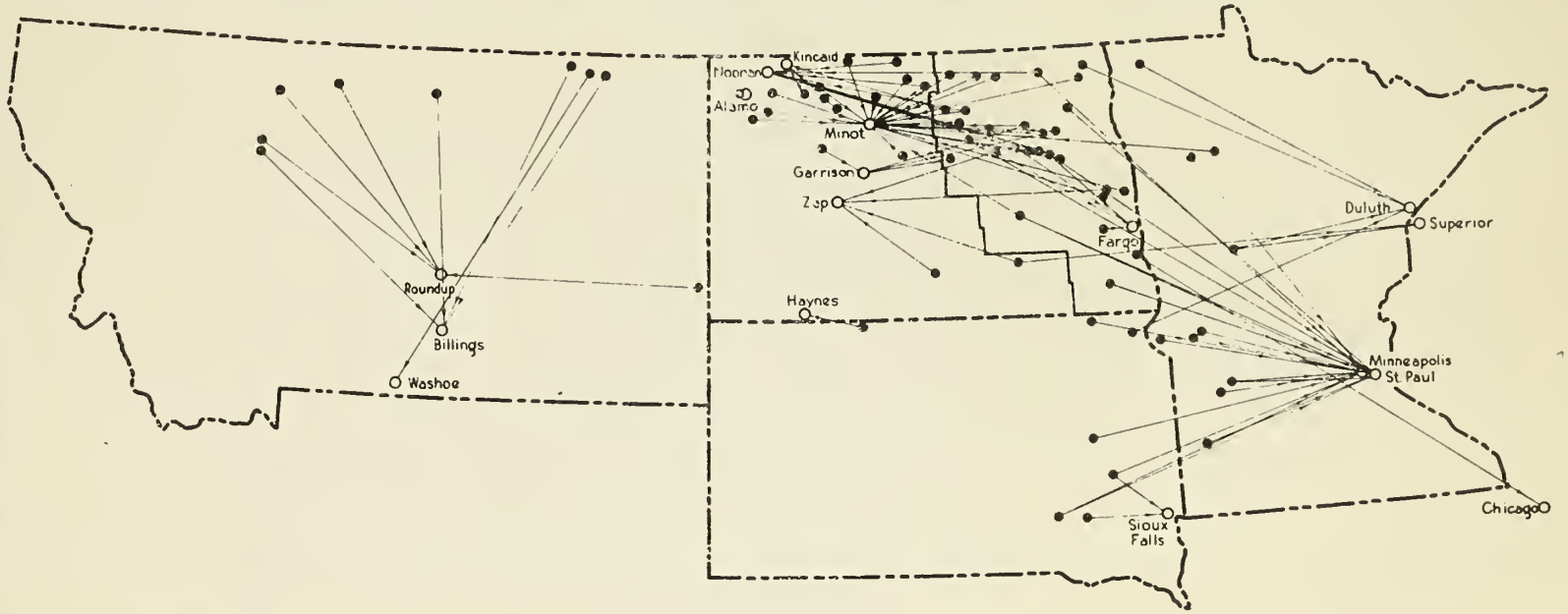

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FIGURE 10

PRINCIPAL SEED BUYING CONNECTIONS OF REPORTING F.U.G.T.A. ELEVATORS, 1941

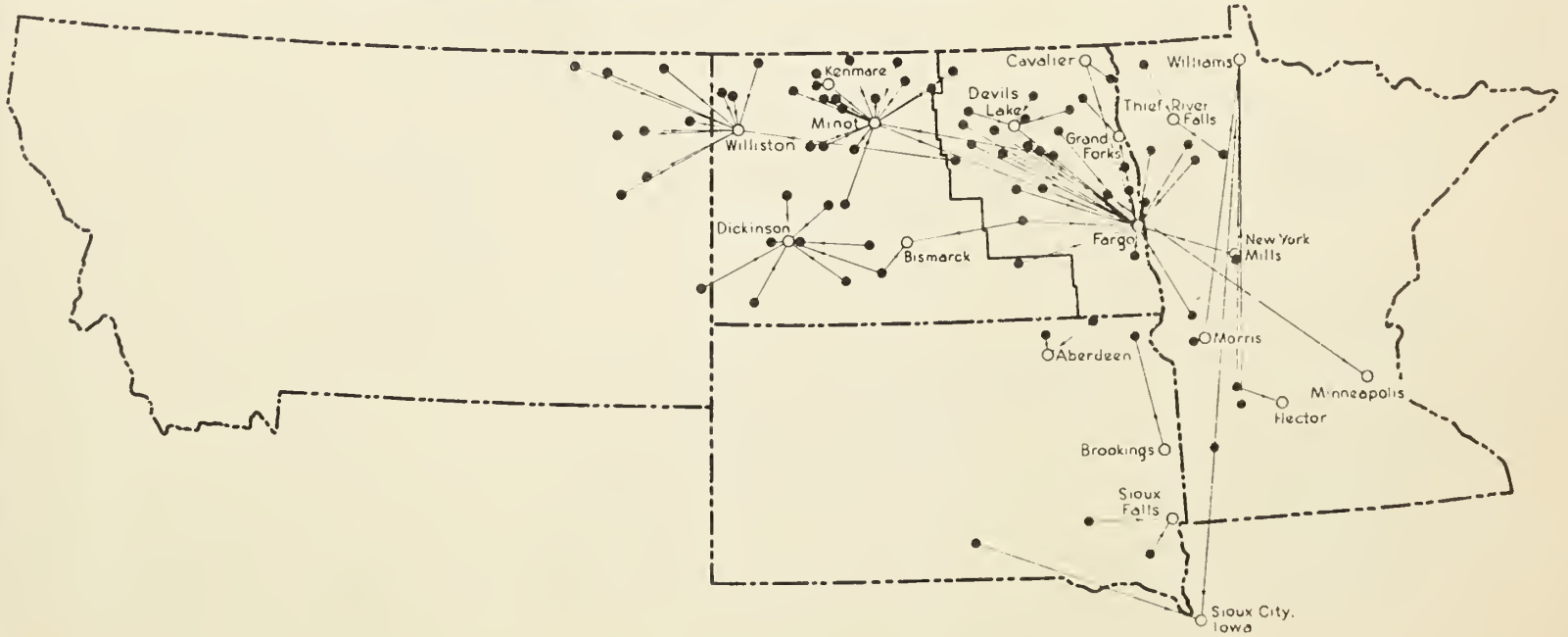

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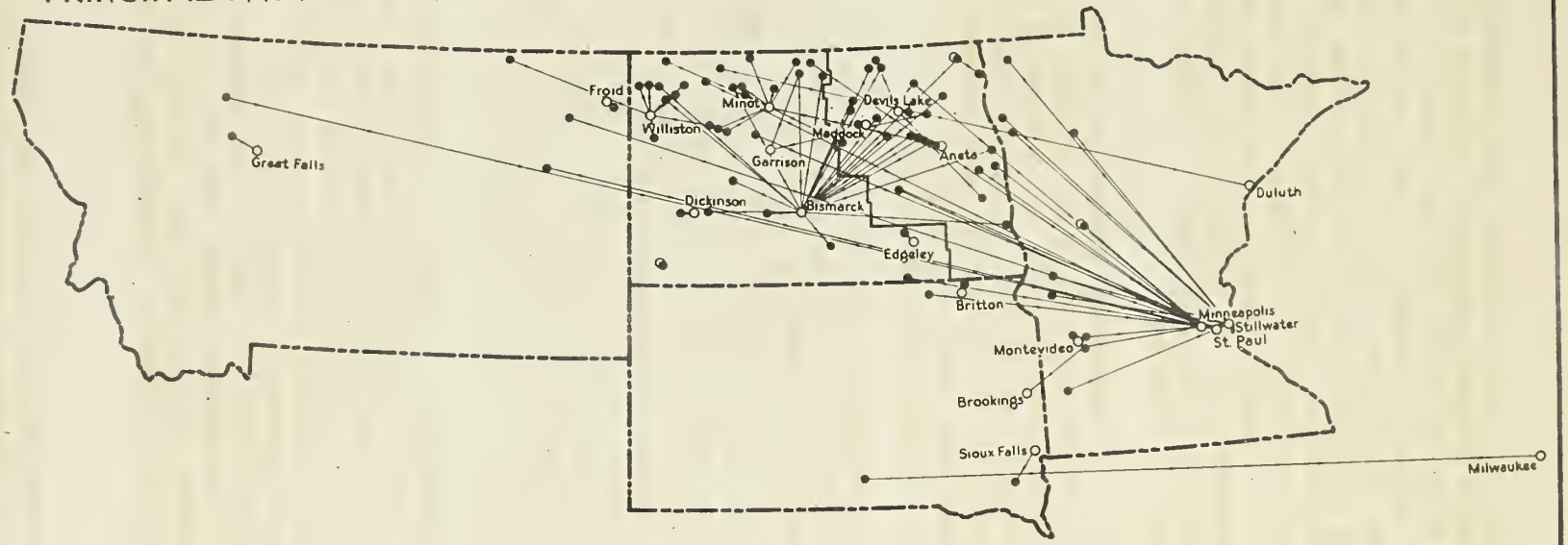
FIGURE II

PRINCIPAL TWINE BUYING CONNECTIONS OF REPORTING F.U.G.T.A. ELEVATORS, 1941



06130-11

As a result of this attitude, few elevators have made any attempt to pay a separate patronage dividend on supplies except in the case of petroleum which has lent itself to departmental operations since the distribution of this product has called for special operating facilities. The more common practice has been to pay patronage dividends at a flat rate either in cents per bushel or grain marketed for a member, or as a certain percentage of the member's total marketing and purchasing business with the elevator. Because of this general situation, few elevators can provide any definite information on the amount of net income which has been separately derived from their grain or supply sales, or from other operations such as grinding.

Studies of the operating efficiency of cooperative elevators have generally shown, however, that elevator net income is commonly increased in rough proportion to the extent of supply business. While such studies have been of value in showing the desirability of handling supplies in connection with elevator operations, they have not yielded much exact information on the costs and degree of profitability of such supply operations.

Although practically none of the F.U.G.T.A. elevators attempted to allocate overhead expenses between supply and marketing operations, information is generally available on gross operating margins for both grain and supply sales. Such information shows that gross margins on supply sales are usually considerably larger than gross margins on grain sales. If it could be assumed that the expenses incidental to marketing a dollar's worth of supplies were equal to the expenses incidental to marketing a dollar's worth of grain, there would be no question but that supply operations were more profitable than grain operations. However, the general experience of elevators indicates that it is more expensive to distribute a dollar's worth of supplies than to market a dollar's worth of grain.[2]

In this connection it should be remembered that gross margins on grain are sometimes fixed at a low figure because of the ability of an elevator to make up losses from its supply operations. In other words, it is necessary to remember that gross margins on both supply and marketing operations are enerally fixed in accordance with general elevator operating policies. For these various reasons, any comprehensive study of the contribution of supply operations to elevator net income must wait until more elevators keep their records in such form that it will be possible to allocate expenses among marketing, purchasing, and service operations.

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[2] *For a further discussion of this point, see Ratcliffe, H. E., Hemphill, P. V., and Hollands, H. F., Cooperative Grain Elevators in North Dakota and Eastern Montana, F.C.A. Bul. 43, 58 pp. illus., 1941. See pp. 45-46.*

However, some evidence bearing on this point was obtained through correspondence with a few of the F.U.G.T.A. elevators.

Elevator A, with supply sales of $11,993, and total gross trading income on supplies of $1,853, estimated that elimination of these supply sales would have reduced costs by only about $120.

Elevator B, with supply sales of $10,307, and a total gross trading income on supplies of $1,243, stated that, "As near as we can figure, the extra expense incurred through the handling of our side lines would run about 4 percent which, however, is in labor for unloading, truckage, etc. We do not keep extra help on steady on account of these side lines as our volume is not large enough. The labor used is occasional. We figure that the handling of side lines helps our grain business to some extent since if we have a side line that a farmer wants he will deliver a load of grain in exchange."

Elevator C, with supply sales of $12,503, and total gross trading income on supplies of $1,749, reported as follows: "We have spent a little time in preparing this estimate but not enough to be prepared to argue its accuracy. Taking into consideration help, insurance, taxes, interest, but nothing for possible credit losses or equipment depreciation, we estimate that the handling of side lines for this year cost us about 50 percent of the gross net income on supplies."

Elevator D, with supply sales of $9,061, and total gross trading income on supplies of $819, reported that "I don't think that we could charge off more than 30 percent of our side line profit for expenses. Actually, it hasn't cost us any additional expense to handle these side lines. This side line business consisted mostly of twine and coal, twine being handled in the early fall when there wasn't very much grain brought in and the coal in the winter when again the grain business is pretty light. We have not had to hire any additional help that the handling of these side lines didn't pay their own way on."

Elevator E, with supply sales of $18,256, and total gross trading income on supplies of $1,758, reported as follows: "You will realize that it is almost impossible to give you any information except an estimate as we run all of our business together, all help hired participating in sales and service in addition to their duties pertaining to the grain business. However, I think we can safely say that we could do with one less employee for perhaps 6 months of the year, or about $450 in wages. As far as the other expenses are concerned, such as a part of the manager's salary, insurance,

and other overhead, this will be purely a guess which we'll say would be about $750 in addition to the above $450, or a total of $1,200.

"Our business principles have been to handle side lines at margin enough to take care of the expense involved and not as a money-making enterprise. We have not been declaring any patronage dividend on sales of side lines and this business has been maintained more as a service to patrons than any other reason."

The views of the elevators, as shown above, indicate that the elevators feel that a considerable part of the gross trading income on supplies results in net income for the elevators in view of the fact that supply operations can often be performed without significant additional cost for personnel or equipment.

Available information also suggests that the average gross margins taken by elevators on supplies are not greatly different from those taken by farm supply warehouses in this area. On the assumption that the average operating expenses were also about the same, the average operating net income on supplies for elevators would amount to 3 or 4 cents per dollar of supply sales.[3] However, the additional expense per dollar of sales for handling side lines by an elevator doing a grain marketing business should not be as great as the expense of an independent cooperative supply association because the elevator can spread overhead cost for labor and facilities. For this reason it can safely be assumed that net income from side line sales amounts, on the average, to at least 3 or 4 cents per dollar of such sales.

INFLUENCE OF SIZE OF SUPPLY SALES ON NET INCOME

Some evidence on how supply sales may affect elevator net income is given in table 18 which shows the relationship of elevator net income to size of supply sales for 54 F.U.G.T.A. elevators. It will be observed that the 16 elevators which had supply sales in excess of $10,000 had an average net income of 4 percent of sales, while the 38 elevators which had individual supply sales of less than $10,000 showed an average net income of only 2.8 percent of sales. This comparison suggests that the elevators which had the largest volume of supply sales had on the average a slightly higher percentage of net income to sales, a fact which is significant even though part of the higher rate of net income for the

[3] *The Cooperative Auditing Service of Minneapolis audited 17 local farm supply and warehouse associations in Minnesota and Wisconsin which had on the average a gross margin of 13.7 cents per dollar of sales, and an average net income of 3.7 cents per dollar of sales for 1940-41. This service also audited 10 general mercantile cooperatives for the same year which had an average gross margin of 15.7 cents per dollar of sales and a net income of 3.6 cents per dollar of sales.*

elevators in the first group may be attributed to somewhat larger average grain sales. When the elevators were again classified into groups of more or less than $5,000 of supply sales, the same type of net income advantage appeared for the group having the largest supply sales.[4]

The information shown in table 18 suggests that those elevators which have a larger than average volume of supply sales generally have a larger than average volume of grain sales and that the combination tends to show up in a slightly higher average net income. However, it should be remembered that an association may make a good net income showing due entirely to efficient marketing of a large volume of grain. Nevertheless, the fact that a better than average volume of supply business was associated with a better than average volume of grain sales and that this combination represented a better than average net income tends to prove that this combination of grain marketing and supply purchasing is sound.[5]

TABLE 18. Comparison of average net income to average sales for 54 F.U.G.T.A. elevators classified by size of supply sales, 1939-40

TOTAL SUPPLY SALES	ELEVATORS REPORTING	AVERAGE GRAIN SALES	AVERAGE SUPPLY SALES	AVERAGE TOTAL SALES	AVERAGE NET INCOME	AVERAGE NET INCOME AS PERCENTAGE OF AVERAGE TOTAL SALES
	Number	*Dollars*				*Percent*
More than $10,000	16	99,057	24,402	123,459	4,966	4.0
Less than $10,000	38	82,224	3,707	85,931	2,401	2.8
More than $5,000	24	97,229	18,366	115,595	4,201	3.6
Less than $5,000	30	79,197	3,016	82,213	2,328	2.8
All	54	87,211	9,839	97,050	3,161	3.3

ANALYSIS OF GROSS MARGINS ON SUPPLY SALES

Fortunately, most of the elevators could provide information on gross margins for separate supplies handled, although they had made no attempt to analyze their operations so that they could show net income from supply sales. Table 19 shows the total value

[4] *None of the elevators included in this table reported separate net income from grinding or other services.*

[5] *For further evidence on this point see Ratcliffe, H. E., Hemphill, P. V., and Holland, H. F., Cooperative Grain Elevators in North Dakota and eastern Montana, F.C.A. Bul. 43, 58 pp. illus., 1941, see pp. 39-40; Hedges, H., Operations of Cooperative Grain Elevators in Kansas and Oklahoma, F.C.A. Bul. 30, 64 pp., illus., 1939, see pp. 47-49; Norton, L. J., Business Policies of County Grain Elevators, Ill. Univ. Expt. Sta. Bul. 477, 29 pp. 1941, see p. 307, "The more successful companies combine a large grain business with a substantial volume of other merchandise."*

of various supplies sold and the total value of gross margins taken on these sales for the 95 elevators which reported itemized sales and gross margins. This table also shows the number of elevators which reported both sales and margin information for various items, and the value of supplies sold and the gross margin per reporting elevator on such supplies.

The 95 elevators had combined total sales of $792,338 and combined total gross trading income of $110,751. The supply sales per reporting elevator thus amounted to $8,340 and the gross trading income per reporting elevator to $1,166. The gross margin on all supplies per elevator thus amounted to 14 percent of sales.

Coal represented the largest volume of supply sales. The 64 elevators which handled this item had coal sales of $257,336 and a gross trading income on coal of $33,564. The average elevator handling coal thus had coal sales of $4,021 and a gross trading income on coal of $524, giving a gross margin of 13 percent of the sales. Other items frequently handled were feed, seeds, and twine.

While only 12 elevators reported sales and gross trading income on petroleum, it is of interest that sales averaged $17,234, gross trading income $3,056, giving a gross margin of 17.7 percent of sales. It should be remembered that the handling of petroleum requires special equipment and labor, with the result that the gross trading incomes were consequently higher for elevators which provided this type of service.

Tables 20, 21, 22, 23, and 24, provide similar information for the elevators in the separate States included in this study. The information from these tables is summarized in chart form in figure 12. It will be observed that the highest average gross margins for all supplies combined were in Montana and western North Dakota, while the lowest average gross margins were in Minnesota and eastern North Dakota. The high average gross margins in Montana are partially explained by the larger proportion of petroleum sales in that State.

Figure 12 also shows that there was a considerable variation in the average gross margins for the supply items in the several States. For example, the highest average gross margin on feed was found in western North Dakota; on flour in South Dakota; on seed in Minnesota and western North Dakota; on coal in western North Dakota; and on twine in South Dakota.

TABLE 19. Total and average supply sales and trading income, and average gross margin on supply sales reported by 85 Farmers Union Grain Terminal Association elevators, 1939-40

ITEM	ELEVATORS REPORTING	TOTAL SALES	TOTAL GROSS TRADING INCOME	SALES PER REPORTING ELEVATOR	GROSS TRADING INCOME PER REPORTING ELEVATOR	GROSS TRADING MARGIN
	Number	*Dollars*				*Percent*
Feed	64	73,480	8,705	1,148	136	11.8
Flour	35	47,181	4,273	1,348	122	9.1
Fertilizer	1	100	40	400	40	10.0
Insecticide, etc.	8	749	102	94	13	13.6
Seeds	67	64,119	8,344	957	124	13.0
Coal	64	257,386	33,564	4,021	524	13.0
Twine	58	78,523	10,190	1,354	176	13.0
Building material and lumber	3	17,266	3,343	5,755	1,114	19.4
Paint	2	276	*14	138	*7	*5.1
Fencing, steel products, etc.	4	468	4	117	1	.8
Farm machinery and equipment	5	12,838	1,085	2,568	217	8.4
Farm tools and bench hardware	2	15,791	2,209	7,896	1,101	13.9
Petroleum products	12	206,815	36,679	17,234	3,056	17.7
Tires and batteries, etc.	5	4,060	638	812	127	15.6
Other	27	13,027	1,601	482	59	12.3
All elevators	85	799,328	110,751	9,340	1,166	14.0

**Indicates loss.*

TABLE 20. Total and average supply sales and trading income, and average gross margin on supply sales reported by Minnesota Farmers Union Grain Terminal Association elevators, 1939-40

ITEM	ELEVATORS REPORTING	TOTAL SALES	TOTAL GROSS TRADING INCOME	SALES PER REPORTING ELEVATOR	GROSS TRADING INCOME PER REPORTING ELEVATOR	GROSS TRADING MARGIN
	Number	*Dollars*				*Percent*
Feed	9	25,786	3,132	2,865	348	12.1
Flour	5	7,043	547	1,409	109	7.8
Fertilizer	1	400	40	400	40	10.0
Insecticides, etc.	1	75	15	75	15	20.0
Seeds	10	18,802	2,660	1,880	266	14.1
Coal	8	27,786	3,412	3,473	426	12.3
Twine	7	8,158	838	1,165	120	10.3
Building material and lumber	-	-	-	-	-	-
Paint	1	152	*26	152	*26	*17.1
Fencing, steel products, etc.	1	20	*8	20	*8	*40.0
Farm machinery and equipment	2	6,852	427	3,426	214	6.2
Farm tools and bench hardware	-	-	-	-	-	-
Petroleum products	2	11,966	2,506	5,983	1,253	20.9
Tires, batteries, etc.	1	607	100	607	100	16.5
Other	3	1,026	142	342	47	13.8
All elevators	10	108,873	13,725	10,867	1,388	12.7

**Indicates loss.*

TABLE 21. Total and average supply sales and trading income, and average gross margin on supply sales reported by Farmers Union Grain Terminal Association elevators in eastern counties of North Dakota, 1939-40

ITEM	ELEVATORS REPORTING	TOTAL SALES	TOTAL GROSS TRADING INCOME	SALES PER REPORTING ELEVATOR	GROSS TRADING INCOME PER REPORTING ELEVATOR	GROSS TRADING MARGIN
	Number	*Dollars*				*Percent*
Feed	19	22,099	2,419	1,163	127	10.9
Flour	9	15,951	1,089	1,772	121	6.8
Fertilizer	-	-	-	-	-	-
Insecticide, etc.	3	320	44	107	15	13.8
Seeds	20	20,795	2,373	1,040	119	11.4
Coal	30	160,368	20,929	5,346	698	13.1
Twine	20	31,523	4,145	1,576	207	13.1
Building material and lumber	1	445	50	445	50	11.2
Paint	1	124	-	124	-	-
Fencing, steel products, etc.	-	-	-	-	-	-
Farm machinery and equipment	2	5,500	500	2,750	275	10.0
Farm tools and bench hardware	-	-	-	-	-	-
Petroleum products	2	64,324	9,340	32,162	4,670	14.5
Tires, batteries, etc.	1	450	44	450	44	9.8
Other	4	4,291	542	1,073	136	12.6
All elevators	31	326,190	41,537	10,522	1,340	12.7

TABLE 22. Total and average supply sales and trading income, and average gross margin on supply sales reported by Farmers Union Grain Terminal Association elevators, in western counties of North Dakota, 1939-40

ITEM	ELEVATORS REPORTING	TOTAL SALES	TOTAL GROSS TRADING INCOME	SALES PER REPORTING ELEVATOR	GROSS TRADING INCOME PER REPORTING ELEVATOR	GROSS TRADING MARGIN
	Number	*Dollars*				*Percent*
Feed	23	14,705	2,016	639	88	13.7
Flour	18	22,964	2,468	1,270	137	10.8
Fertilizer	-	-	-	-	-	-
Insecticides, etc.	2	184	31	92	16	16.8
Seeds	25	15,919	2,329	637	93	14.6
Coal	14	22,383	3,379	1,670	241	14.5
Twine	24	35,078	4,639	1,462	193	13.2
Building material and lumber	1	1,610	230	1,610	230	14.3
Paint	-	-	-	-	-	-
Fencing, steel products, etc.	3	448	12	149	4	2.7
Farm machinery and equipment	-	-	-	-	-	-
Farm tools and bench hardware	-	-	-	-	-	-
Petroleum products	6	76,552	13,367	12,759	2,228	17.5
Tires, batteries, etc.	2	946	117	473	59	12.4
Other	10	4,402	457	367	38	10.4
All elevators	34	196,091	29,040	5,767	854	14.8

TABLE 23. Total and average supply sales and trading income, and average gross margin on supply sales reported by Farmers Union Grain Terminal Association elevators in Montana, 1939–40

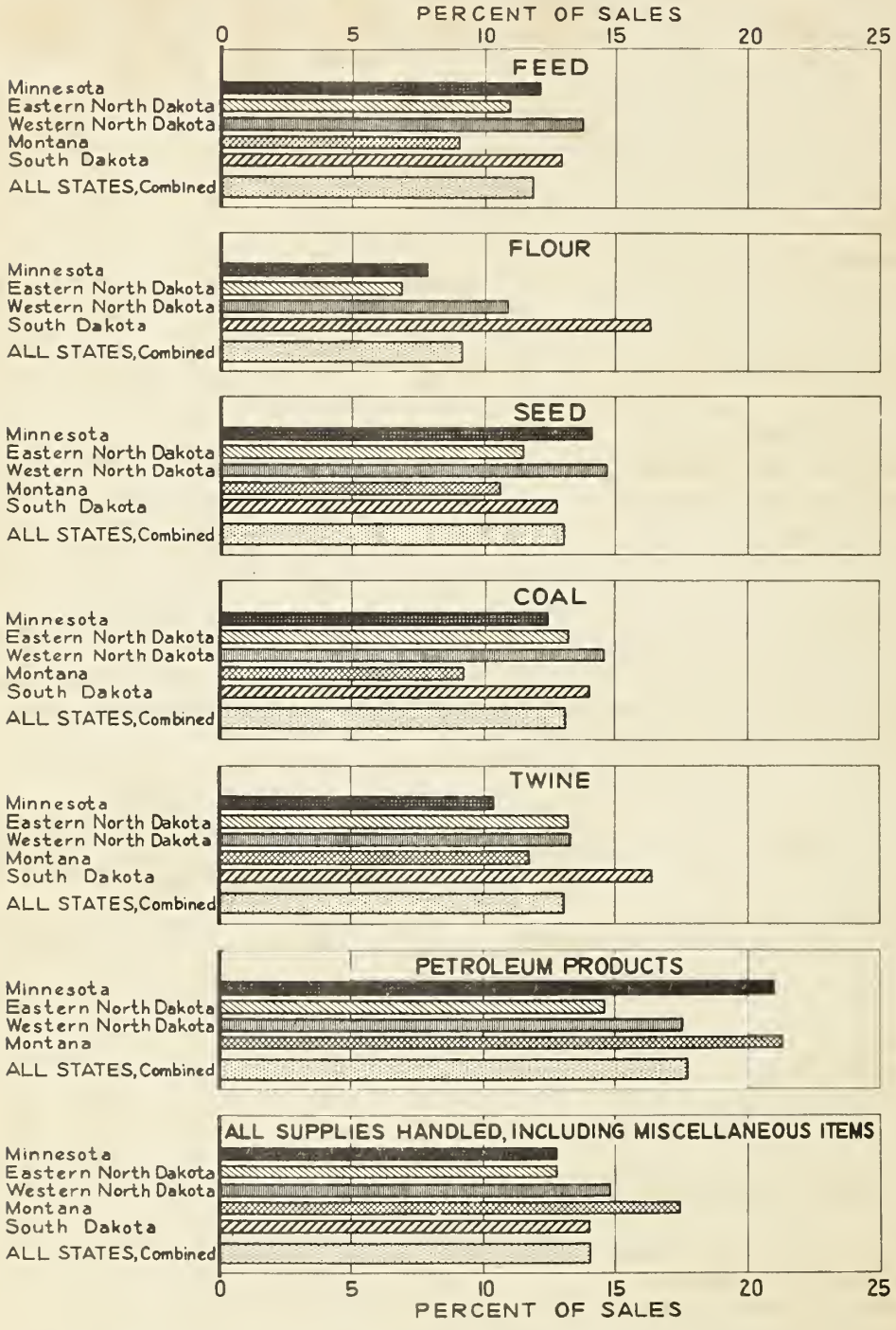
ITEM	ELEVATORS REPORTING	TOTAL SALES	TOTAL GROSS TRADING INCOME	SALES PER REPORTING ELEVATOR	GROSS TRADING INCOME PER REPORTING ELEVATOR	GROSS TRADING MARGIN
	Number	*Dollars*				*Percent*
Feed	7	8,819	625	888	89	9.0
Flour	1	428	28	428	28	6.5
Fertilizer	–	–	–	–	–	–
Insecticides, etc.	2	170	12	85	6	7.1
Seeds	8	5,001	526	625	66	10.5
Coal	6	11,158	1,021	1,860	170	9.2
Twine	3	977	113	326	38	11.6
Building material and lumber	1	15,211	3,068	15,211	3,068	20.1
Paint	–	–	–	–	–	–
Fencing, steel products, etc.	–	–	–	–	–	–
Farm machinery and equipment	1	486	108	486	108	22.2
Farm tools and bench hardware	2	15,791	2,202	7,896	1,101	13.9
Petroleum products	2	53,973	11,436	26,987	5,718	21.2
Tires, batteries, etc.	1	2,057	372	2,057	372	18.1
Other	5	1,499	197	300	39	13.1
All elevators	14	113,670	19,733	8,119	1,410	17.4

TABLE 24. Total and average supply sales and trading income, and average gross margin on supply sales reported by Farmers Union Grain Terminal Association elevators in South Dakota, 1939–40

ITEM	ELEVATORS REPORTING	TOTAL SALES	TOTAL GROSS TRADING INCOME	SALES PER REPORTING ELEVATOR	GROSS TRADING INCOME PER REPORTING ELEVATOR	GROSS TRADING MARGIN
	Number	*Dollars*				*Percent*
Feed	6	3,971	513	662	86	12.9
Flour	2	895	146	448	73	16.3
Fertilizer	–	–	–	–	–	–
Insecticides, etc.	–	–	–	–	–	–
Seeds	4	3,601	456	900	114	12.7
Coal	6	34,641	4,822	5,774	804	13.9
Twine	4	2,787	455	697	114	16.3
Building material and lumber	–	–	–	–	–	–
Paint	–	–	–	–	–	–
Fencing, steel products, etc.	–	–	–	–	–	–
Farm machinery and equipment	–	–	–	–	–	–
Farm tools and bench hardware	–	–	–	–	–	–
Petroleum products	–	–	–	–	–	–
Tires, batteries, etc.	–	–	–	–	–	–
Other	3	1,809	263	603	88	14.5
All elevators	6	47,704	6,656	7,951	1,109	14.0

FIGURE 12

AVERAGE GROSS MARGINS FOR SELECTED SUPPLIES OF F.U.G.T.A. ELEVATORS, BY STATES, 1939-40*



*Based on data in tables

Average gross margins were highest in Montana, lowest in Minnesota and Eastern North Dakota. They varied greatly, however, by region and commodity.

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Degree of Variation in Gross Margins

The average gross margins on supplies, as shown in figure 12, are misleading if it is assumed that such margins are typical for individual elevators. It should be kept in mind that average gross margins tend to cover up the variation in the individual margins which are combined together in a general average.

A more accurate description of the true situation with regard to the margin practices of these elevators is given in table 25, which shows the number of elevators which sold supplies within definite margin groupings. This table shows, for illustration, that of the 63 elevators which reported gross margins on feed, 1 had a gross margin of less than 5 percent of sales; 19 of from 5 to 9 percent of sales; 24 of from 10 to 14 percent of sales; 8 of from 15 to 19 percent of sales; 5 of from 20 to 24 percent of sales; while 6 had gross margins of 25 percent or more of sales. Similar variation in margins was found for the other supplies. It is significant that the most common margin grouping on feed, flour, seed, coal, and twine, was from 10 to 14 percent of sales. The most common margin for petroleum products was, however, from 20 to 24 percent of sales.

Table 25 clearly shows that there was no common margin practice followed by the elevators for any commodity or in any district served by the Farmers Union Grain Terminal Association.

Size of Gross Margins in Relationship to Volume of Supply Sales

The question arises as to whether the gross margins taken on various supplies were higher or lower for those elevators which handled a considerable quantity of supplies or a considerable quantity of any particular supply. An inspection of the gross margins for individual elevators did not indicate that they were significantly influenced by the volume of the supply sales. For example, certain elevators which handled a relatively large volume of supplies operated on a fairly high average gross margin while others with about the same volume operated on a comparatively low margin basis. For illustration, one elevator with supply sales of about $30,000 operated on an average gross margin of 8 percent of sales while another elevator in the same general territory with similar supply sales of about $35,000 operated on a gross margin of about 16 percent of sales. Similar diversity in margin practice was found for elevators having comparable volumes of supply business.

Further evidence on this question is given in table 26 which shows the average gross trading margin on certain supplies classified according to size of supply sales. It will be observed that the 22 elevators which had feed and flour sales of more than $2,000 operated on a gross trading margin of 11 percent while the 47 with sales of less than $2,000 operated on a gross trading margin of 10 percent.

TABLE 25. Number of F.U.G.T.A. elevators in specified gross margin groupings on principal supply items by States, 1939-40

GROSS MARGIN AS A PERCENTAGE OF SALES	ALL STATES	MINNESOTA	EASTERN NORTH DAKOTA	WESTERN NORTH DAKOTA	MONTANA	SOUTH DAKOTA
Feed:						
Less than 5 percent...	1	1	-	--	-	-
5 - 9 percent.....	19	1	7	5	3	3
10 - 14 percent.....	24	5	7	8	3	1
15 - 19 percent.....	8	1	2	4	1	-
20 - 24 percent.....	5	1	1	3	-	-
25 percent or more...	6	-	2	3	-	1
Number of elevators.....	63	9	19	23	7	5
Seeds:						
Less than 5 percent...	7	-	2	3	2	-
5 - 9 percent.....	14	1	4	6	1	2
10 - 14 percent.....	22	3	6	8	4	1
15 - 19 percent.....	14	5	6	3	-	-
20 - 24 percent.....	4	-	2	1	1	-
25 percent or more...	5	1	-	4	-	-
Number of elevators.....	66	10	20	25	8	3
Coal:						
Less than 5 percent...	4	-	2	1	-	1
5 - 9 percent.....	8	-	2	3	2	1
10 - 14 percent.....	34	3	19	4	3	2
15 - 19 percent.....	13	2	5	4	1	1
20 - 24 percent.....	2	-	-	2	-	-
25 percent or more...	2	-	2	-	-	-
Number of elevators.....	63	5	30	14	6	5
Twine:						
Less than 5 percent...	3	-	-	1	1	1
5 - 9 percent.....	14	3	9	2	-	-
10 - 14 percent.....	18	2	5	10	1	-
15 - 19 percent.....	10	-	4	4	1	1
20 - 24 percent.....	8	1	-	6	-	1
25 percent or more...	3	-	2	1	-	-
Number of elevators.....	56	6	20	24	3	3
Petroleum:						
Less than 5 percent...	1	-	-	1	-	-
5 - 9 percent.....	-	-	-	-	-	-
10 - 14 percent.....	1	1	-	-	-	-
15 - 19 percent.....	3	-	-	2	1	-
20 - 24 percent.....	5	1	2	1	1	-
25 percent or more...	2	-	-	2	-	-
Number of elevators.....	12	2	2	6	2	-

TABLE 26. Average sales and gross margins on feed and flour, coal, seeds and twine in Minnesota, North Dakota, Montana, and South Dakota.

ITEM AND SALES	CASES	AVERAGE SALES	AVERAGE GROSS TRADING INCOME	AVERAGE GROSS MARGIN AS A PERCENTAGE OF SALES
	Number	*Dollars*		*Percent*
Feed and flour:				
More than $2,000.....	22	3,687	404	11
Less than $2,000.....	47	771	75	10
Coal:				
More than $4,000.....	27	6,684	905	14
Less than $4,000.....	36	1,877	214	11
Seeds:				
More than $1,000.....	27	1,833	229	12
Less than $1,000.....	39	354	52	15
Twine:				
More than $1,000.....	31	2,037	260	13
Less than $1,000.....	26	584	80	14

In the case of coal, the 27 elevators which had sales of more than $4,000 operated on a gross trading margin of 14 percent while those with sales under $4,000 operated on a gross trading margin of 11 percent. On the other hand, the 27 elevators which had sales of seed of more than $1,000 operated with a gross trading margin of 12 percent while those with sales of less than $1,000 operated on a gross trading margin of 15 percent.[6]

The analysis of average gross margins in relation to size of supply sales thus suggests that size of gross margins was not closely related to size of supply operations. Some elevators

[6] *A recent study, Norton, L. J., Business Policies of Country Grain Elevators, Bul. 477, Ill. Agr. Expt. Sta., 29 pp., 1941 - pointed out that "Margins earned on merchandise by companies handling largest amounts of merchandise were typically larger than those earned by companies handling small amounts. Small volumes of a commodity are handled on a low margin strictly as a side line, but when a commodity becomes important to a company larger margins are more common." The experience of the Illinois elevators does not apply for the elevators served by the F.U.G.T.A. since in Illinois the elevators handle much larger volumes of supplies. The average margin per dollar of sales in Illinois for a group of associations with sales ranging from $3,000 to $9,000 was 7.8 cents. The average margin per dollar of sales on coal for associations with sales running from $1,000 to $2,000 was 12 cents while for associations with sales running from $3,000 to $5,000 it was 13.9 cents. On seed, the average margin per dollar of sales for associations with sales running from $1,000 to $2,000 was 13.7 cents. On twine the average margin amounted to 10.5 cents per dollar of sales.*

evidently followed the practice of keeping gross margins down in order to increase the volume of this kind of business, while others maintained fairly high gross margins in order to make as large an income as possible on supplies. Some elevators are able to operate with a relatively high gross margin on supplies and yet meet competitive prices because of their relative ability to buy supplies cheaply. Others are apparently forced to operate on a low gross margin basis in order to meet competitive prices because of their inability to buy cheaply. While information was not available which would show the comparative ability of elevators to buy quality supplies cheaply, it can be assumed that much variation in such ability exists and that this influenced appreciably the size of the gross margins since selling prices are to a considerable extent fixed by competitive conditions.

PROBLEMS IN HANDLING SUPPLIES

In connection with this survey, the elevator managers were asked to describe their main problems in handling supplies.

Location, Equipment, and Facilities

The problems of the elevators with regard to location, equipment, and facilities are analyzed in table 27.

TABLE 27. Analysis of comments given by Farmers Union Grain Terminal Association elevators on following request: "Please describe your main problems in handling supplies in regard to location, equipment, and facilities."

TYPE OF ANSWER	ELEVATORS REPORTING	PERCENTAGE OF TOTAL	REPLIES FROM				
			MINNESOTA	NORTH DAKOTA		MONTANA	SOUTH DAKOTA
				EASTERN	WESTERN		
	Number	*Percent*	*Number*				
Facilities and location fairly satisfactory	22	14.2	7	8	5	1	1
Supply storage and display space or equipment inadequate	56	36.1	9	19	17	8	3
Present location not favorable	5	3.2	1	1	1	-	2
Number not answering question	72	46.5	8	24	21	12	7
Total number of schedules received	155	100.0	25	52	44	21	13

It is significant that only 22, or 14 percent of all the elevators which returned schedules, stated that their facilities and

location are fairly satisfactory; 56 elevators, or 36 percent, indicated that supply storage and display space and equipment are inadequate for performing a supply service; 5 of the elevators stated that their present location is not favorable for supply operations. Some of the individual statements of the elevator managers are here given to indicate in a more realistic way the problems of this general character which confront the elevators:

Minnesota

"Warehouse space limited for feed, seed, and petroleum products; poor coal sheds, limited space, no feed grinder."

"Have no equipment and facilities. We have just two elevators and coal shed."

"I am very short of store room at present. I just don't know where to store seeds when spring comes."

"Facilities are not large enough to store any large quantities and in turn to get a better price on the supplies. Supplies have to be taken by local freight which costs us too much."

"We are well equipped to handle coal, but feeds, flour, and salt, etc. must be crowded here and there, wherever space can be found."

"Our elevator and feed sheds are scattered, and this leaves poor chance for advertising and service."

Eastern North Dakota

"We do not have facilities to handle side lines now. Our equipment and facilities are inadequate."

"We have no facilities for handling flour at present, and have little storage space for other commodities."

"Our equipment is not in the best of shape."

"My location is too close to bigger town. Have no warehouse for feeds, or seeds. Have only four coal bins whereas five or six would be desirable."

Western North Dakota

"This is our main problem in handling side lines. We have no capital for that purpose. Therefore, we have to take in supplies on consignment or just make small purchases. This way we have to pay more for our supplies, and that makes it hard in selling at a fair margin."

"We have a good location, but would have to have considerably more equipment."

"We haven't room for handling many supplies. As to building materials, posts, and wire, we should really have sheds. They would soon pay for themselves, besides helping to hold the grain trade."

"We are curtailed due to lack of room for storage and display."

"We do not have building that would be considered proper to keep the various commodities in the right condition."

"Have no equipment, but we have plenty of room in the elevator office."

Montana

"We are short of merchandising space. We find displays of stock very essential. We need more room to display merchandise."

"We do not have warehouse and have to carry feed in the office - it gets dusty and reduces sales."

South Dakota

"Better storage space might enable us to buy in slightly larger quantities and thus possibly cheaper. Have not sufficient warehouse space for handling many side lines."

"We are not in business district. Small package retail sales suffer most. Display is not effective because of location."

These answers show clearly that many of these elevators are not adequately equipped to perform an efficient supply service.

Retail Credit

The elevator managers indicated that retail credit represented one of the most serious problems in handling supplies. This is shown in table 28 which indicates that 52 of the 155 elevators returning schedules felt that credit represented a serious problem. However, 28 of these elevators expressed the view that credit was a problem that could be controlled. Only 13 of the elevators stated that credit did not represent a serious problem although more than half of the elevators did not answer the question. Some of the individual comments of the managers relative to the credit problem are here given to show the viewpoint of these managers relative to this question. In general, these views show clearly that successful supply operations are dependent upon having a sound credit policy.

TABLE 28. Analysis of comments given by Farmers Union Grain Terminal Association elevators on following request: "Please describe your main problems in handling supplies in regard to retail credit."

TYPE OF ANSWER	ELEVATORS REPORTING	PERCENTAGE OF TOTAL	REPLIES FROM				
			MINNESOTA	NORTH DAKOTA		MONTANA	SOUTH DAKOTA
				EASTERN	WESTERN		
	Number	*Percent*	*Number*				
Credit presents a serious problem...	24	15.5	4	10	7	1	2
Credit presents a serious problem which can be controlled.....	28	18.0	7	6	7	5	3
Credit does not represent a serious problem.....	13	8.4	3	7	1	2	-
Number not answering question.....	90	58.1	11	29	29	13	8
Total number of schedules received	155	100.0	25	52	44	21	13

Minnesota

"Our biggest problem on individual lines, but by being careful has worked out pretty well. In order to meet competition in this territory it is impossible to go on a cash basis."

"We will just have to hold credit back and be on a cash basis."

"The feed companies furnishing concentrates usually have a financial plan for poultry growers."

"We give credit mostly to those we know will have either grain or potatoes that will be marketed through us."

"We have set a limit on our credit. Considering our volume of business we have very little credit."

"Under our policy we extend but very little credit."

"Retail credit is our biggest problem. The farmers in this locality have received too much credit from this elevator in past years."

"Credit is our only big problem in handling supplies."

"This, I would say, is one of our major problems."

"Our main problem is collecting."

Eastern North Dakota

"Too much credit is our downfall, and the more supply business the more credit we have."

"Credit - that is a problem - to control credit. It is expensive and requires more labor and employees to keep it in control."

"Credit must be given for twine as farmers' finances are long exhausted before threshing. We find twine runs into a great sum when you supply 150 customers with their twine supply. Almost 100 percent collection on sales of twine, etc., before harvest. Other accounts current can be liquidated rapidly."

"We try to stick to small, short-time, closely supervised credit. We do not have to extend much credit. Credit has not been hard to handle so far."

Western North Dakota

"Credit is a most difficult problem. It would be easier to expand in different directions if there was more money among the customers."

"This is our worst problem. Believe there should be more credit unions. We are practically on a cash basis. Other establishments went broke in this town due to credit."

"Credit problem puts us at a disadvantage as the business we buy from demands cash and the farmers are unable to pay."

Montana

"Credit is usually a problem although we have a chance to collect most accounts through the grain department."

"Credit is a problem that must be met. We restrict credit to those having grain in elevators or definite proof of ability to pay in a limited time. We grant credit only at manager's own risk."

South Dakota

"Constant source of trouble. Someone is always nicking us for small amounts."

Problems Relating to Personnel

The elevator managers did not indicate that they had any special problem in obtaining personnel for side line operations since in most cases side lines could be handled by the elevators' regular personnel. On the other hand, there was little indication that the elevators had given any attention to the desirability of having personnel especially trained to perform an efficient side line service.

Some of the comments of the managers relative to their personnel problem in handling side lines were as follows:

Minnesota

"Manager handles it here practically all himself except during the potato buying rush when some help is needed."

"Personnel can easily be taken care of. I think that a manager can secure reliable help."

"Most side lines are handled without additional personnel. The unloading of coal is the only additional help needed by us."

Eastern North Dakota

"We have the personnel to handle more farmers' supplies."

"The sales are handled by the manager alone except during the fall rush of grain business."

"We handle supplies with the same personnel except for a man to shovel coal."

Western North Dakota

"If we had a good warehouse our personnel would not be unused."

"We can handle a considerable number of side line articles without increasing our personnel and overhead."

SUMMARY OF FINDINGS

1. In general, the 300 elevators served by the Farmers Union Grain Terminal Association are located in grain farming areas, characterized by farms of relatively large acreages (see figures 1, 2, 3, 4, and 5).

2. The expenditures for major farm supplies by farmers in the four States served by the Farmers Union Grain Terminal Association amounted to approximately 180 million dollars in 1939, as shown by

the Census. Implements, machinery, etc. represented an expenditure of more than 70 million dollars, while gasoline and other supplies used in operating tractors, trucks, automobiles, and other power-driven equipment, amounted to almost 50 million dollars. The expenditures for feed amounted to almost 35 million dollars and for building materials to 24 million dollars. These various supplies totaled approximately 92 million dollars in Minnesota, 33 million dollars in North Dakota, 23 million dollars in Montana, and 32 million dollars in South Dakota (see table 3).

3. The expenditures per reporting farm for the four States combined were as follows (see table 5):

Implements, etc.....	$389
Gasoline, etc.....	162
Feed.....	155
Building materials, etc.....	133
Commercial fertilizer.....	75

The percentage of farms which reported expenditures for the various supplies for the four States combined was as follows (see table 4):

Gasoline, etc.....	79.7 percent
Feed.....	58.2 percent
Building materials, etc	47.5 percent
Implements, etc.....	46.8 percent
Commercial fertilizer.	2.7 percent

4. Feed expenditures in the four States fell from $43,190,521 in 1929 to $34,772,432 in 1939. Much of this decline, however, was because feed prices declined the index number of feed falling from 145 in 1929 to 95 in 1939, a decrease of 34.5 percent. In terms of 1929 prices, feed sales therefore actually increased in volume by about 21 percent (see table 6).

5. In 1939 cooperative purchasing was reported by 35.1 percent of all farms located in the four States served by the F.U.C.T.A. Ten years earlier, in 1929, only 16.5 percent of the farms reported cooperative purchasing. These percentages can be compared with the national average which was 12.2 percent in 1939 and 6.5 percent in 1929.

6. In 1936 farmers in the four States served by the F.U.C.T.A. obtained almost 20 million dollars worth of supplies through cooperative associations. On the basis of general information it is believed that the figure for 1940 would be at least 22 million dollars. The sale of petroleum products in 1936 by cooperatives amounted to more than 9 million dollars. Feed and flour and coal were next in importance (see table 8).

7. From information obtained in the survey the average elevator had 127 members and 187 patrons (see table 9).

8. The average grain sales per elevator which reported information on grain and supply sales were $76,716 and supply sales $8,157.

9. The average net income for those elevators reporting net income amounted to $3,112. The average net income averaged 3.7 percent of the average combined grain and supply sales for elevators reporting such information (see table 10).

10. The average value of supply sales for 122 elevators which reported the size of their supply sales was $8,070. Only 55 of these elevators, or 45 percent, had supply sales of more than $5,000, but they represented 83 percent of the total supply sales reported (see table 11).

11. The 122 elevators which reported itemized supply sales had total supply sales of $984,490. Coal represented the largest volume of supply sales, followed by petroleum products, twine, seed, feed, and flour. The proportion of various supplies handled by elevators in the various States served by the F.U.G.T.A. varied considerably (see table 12).

12. Of the 133 elevators which provided information on the supplies which they handled, 96 handled feed; 94 handled coal; 91 handled twine; 86 handled seeds; 53 handled flour; and 59 handled salt (see table 13).

13. The most common supply items which elevators did not handle but which they felt it was desirable to handle were salt, fence materials, lumber and building materials, feed and flour, posts, poultry equipment, wire and twine (see tables 14 and 15).

14. Twenty-one elevators reported an average income from feed-grinding operations of $1,031. In general, these elevators felt that feed-grinding was a service that could be profitably rendered by an elevator for the benefit of its members (see tables 16 and 17).

15. The survey discloses that F.U.G.T.A. elevators have obtained their supplies from a wide number of sources (see figures 7 to 11).

16. Analysis of general information obtained in the course of this survey indicates that the general saving in handling farm supplies has amounted to at least 3 or 4 cents per dollar of sales.

17. When the elevators were classified in accordance with the size of their supply sales those with supply sales of more than

$10,000 had an average net income of 4 percent of the total marketing and supply sales while those which had individual supply sales of less than $10,000 had an average net income of only 2.8 percent of sales (see table 18).

18. The gross margin on all supplies per reporting elevator amounted to 14 percent of supply sales. The per elevator gross margin varied considerably for various supplies and between States (see table 19 and figure 9).

19. There is a high degree of variation in gross margins on the same supplies between elevators which indicated that no common margin practice was followed by the elevators for any commodity or in any district served by the F.U.G.T.A. (table 25).

20. There was no indication that the size of gross margins for individual elevators was significantly influenced by the volume of supply sales (see table 26).

21. This survey indicated that a relatively small proportion of the elevator managers felt that they were adequately equipped to provide an effective supply service in such factors as facilities, location, display space, and equipment (see table 27).

22. The managers of most of the elevators indicated that one of the most serious problems in handling supplies arose from difficulties stemming from the extension of credit (see table 28).

23. Few of the elevators indicated that they had a serious problem in obtaining competent personnel to handle side lines at the present time. On the other hand, there was little indication that the elevators had given any attention to the desirability of having personnel especially trained to perform an efficient side line service.

OBSERVATIONS AND SUGGESTIONS

Development of an effective side-line supply service enables a cooperative elevator to better serve its patrons and to operate more efficiently. The principal advantages of combining supply service with normal elevator operations are as follows:

1. Overhead costs for land and buildings can be spread over both marketing and purchasing operations.

2. Labor can be employed continuously and used efficiently. By handling supplies the labor force can be used in slack periods when grain activities are light. The time when supplies move to the farmers in greatest quantity is in the spring when elevator marketing operations are slack.

3. The larger scope of operations as a result of handling supplies makes it possible to afford the employment of more competent management than if only grain were marketed.

4. The relative stability of the supply requirements tends to insure the continuation of an elevator which may be confronted with several years of poor crop conditions. While the demand for side lines shows some relationship to crop conditions, farmers must continue to buy essential supplies regardless of changes in income.

5. The wider range of services provided to the membership through handling supplies improves membership interest and support. By handling supplies, as well as performing marketing service, the elevator becomes the farmer's local cooperative business center. Furthermore, the handling of supplies may increase savings of the elevator and thus provide added enthusiasm for membership. By handling supplies an elevator can keep in contact with its members regularly throughout the year and thus attract additional grain business.

In the face of these significant advantages which elevators may obtain from handling side lines in connection with their elevator operations, many cooperative elevators in the Northwest have continued to look upon side-line business as of incidental importance when compared with grain marketing. As long as this attitude has prevailed, no special emphasis has been placed on the value to be derived from an efficient supply service. As a result, those elevators with "supply-minded" directors and managers have generally made a success of supply operations, at the same time helping their grain operations, while those elevators with "grain-minded" directors and managers have made little progress in developing a successful supply business because they lacked interest in building up such a service. Many of these "grain-minded" elevators have not provided the types of equipment, storage, and display facilities that are necessary for adequate farm supply service. If this attitude continues to prevail, no great increase in supply operations by cooperative elevators in the Northwest can be anticipated, even though such expansion would be to the interest of the elevators and their members. On the other hand, if the elevators come to look upon supply service as having just as great importance as grain marketing service, a greater growth of supply business may be expected.

Suggestions for the improvement of supply services of F.U.G.T.A. elevators follow:

1. An elevator should carefully select its line of supplies to see that it handles only such supplies as are consumed in volume by its patrons. Careful study should be given to supplies which require extra cost of labor, sales promotion, etc.

2. Only supplies of dependable quality should be handled. There is no justification for handling supplies of inferior quality in order to make a profit. Service to the member must be the main consideration.

3. Adequate provision must be made for handling supplies efficiently. Elevators must realize that supplies cannot be handled efficiently unless adequate provision is made for such facilities as parking space, unloading platforms, warehouse space, display space, scales, delivery equipment, grinding equipment, etc. In most cases the added investment for handling side lines will not be large since the elevator is already in operation.

4. The management and personnel of an elevator must realize the importance of giving the best supply service possible as a benefit to the patron. The members of the personnel must be trained not only to provide information but also to be courteous and alert.

5. The membership policy of the elevator must reflect the importance of supply operations. Members must be kept informed as to the value of this service and the ways in which they can make the best use of it.

6. Supplies should be sold at the prevailing competitive prices and any savings on supplies should be repaid to members in accordance with their patronage. A supply business should stand on its own feet and not be looked upon as a "loss-leader" to attract members to market through the association. In line with this, supply operations should be departmentalized, as far as possible, in the accounting records of the association, so that the elevator can keep track of the operating efficiency of its supply operations and make patronage refunds on the basis of earnings of the supply department. This will emphasize the benefits derived from supply service and also encourage nongrain farmers to use the elevator as a source of supplies.

7. Merchandise stocks should be carefully controlled to insure a rapid turn-over of supplies. Careful control of merchandise protects against "shop-worn" merchandise and speculation in inventories, and conserves the capital of the elevator. Members should be encouraged to place orders for major requirements in advance so that the elevator can stock supplies in accordance with anticipated needs.

8. Supplies should be handled on a cash or a restricted-credit basis. The manager should have the full support of the directors in enforcing this cash or restricted-credit policy.