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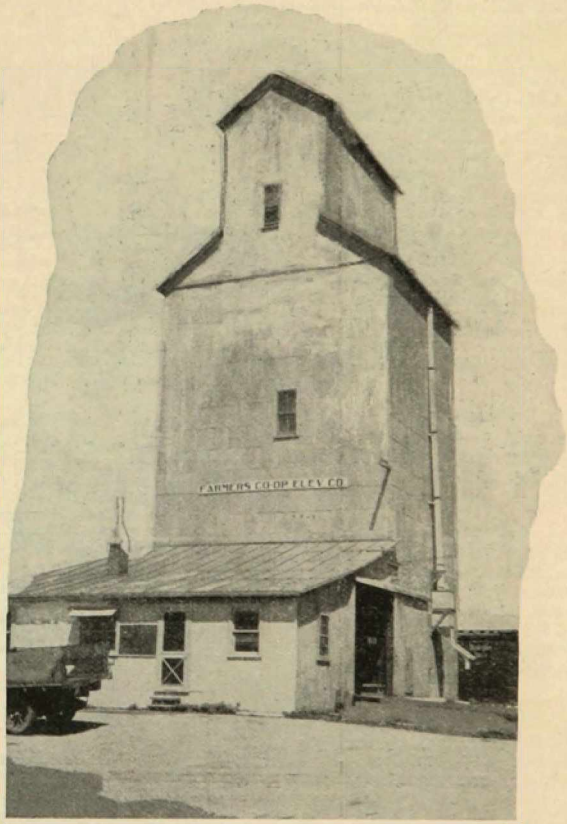
OPERATING PRACTICES OF FARMERS' COOPERATIVE ELEVATORS IN COLORADO

By D. N. Donaldson and Perry V. Hemphill



In cooperation with the Bureau of Agricultural Economics,
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Colorado Experiment Station
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CONTENTS

SUMMARY

There were earlier attempts at the cooperative marketing of grain in Colorado but the present farmer-elevator movement started about the time of the World War.

During the last few years new inventions, a more diversified buying basis and rapidly changing economic conditions have brought many perplexing problems to the managers and directors of farmers' elevators. In order to help them solve these problems a study has been made of a representative group of farmers' elevators in Colorado. These elevators are all located in the northeastern part of the state in one of the principal grain-growing sections.

These farmers' associations have, as a rule, been able to obtain a fairly liberal share of the grain coming to their respective stations. At 19 stations, where 45 percent of the elevators were owned by farmers, their elevators bought and sold approximately one-half of the grain.

In addition to grain, practically all of the Colorado farmers' elevators handle sidelines. With a number this phase of their business was of minor importance while at others the value of the sidelines exceeded that of the grain. A small margin of profit usually accrued from the sidelines even after they had been charged with their proportionate share of the expenses. Coal is the sideline most frequently handled. Other items may include feed, seeds, flour, gasoline and oil, machinery, livestock and beans.

The credit accounts of these farmers' enterprises are causing considerable concern, especially during these times of extremely low prices. The credit business of an elevator is largely due to sidelines.

A study of the effect of the volume of grain upon the per unit costs indicates that the expenses of those elevators having a volume of less than 100,000 bushels will likely be more than 5 cents and may be as much as 13 cents per bushel. A farmers' grain concern should have a minimum volume of about 175,000 bushels. It will have a better chance of success if it can secure upwards of 300,000 bushels.

A business analysis shows that the majority of the Colorado farmers' elevators are in a favorable position in respect to their working capital. The amount of fixed capital invested in the business is, as a rule, conservative. On the average they have a satisfactory volume of grain. The margins realized on grain and sidelines are also, in the main, satisfactory, altho the margins on sidelines are often somewhat narrower than could be maintained if these items were not handled in connection with another business.

OPERATING PRACTICES OF FARMERS' COOPERATIVE ELEVATORS IN COLORADO

D. N. DONALDSON AND PERRY V. HEMPHILL

This bulletin is a discussion of some of the practices and problems of farmers' elevators in the winter-wheat area of Colorado. Many studies of similar nature have been made by state experiment stations independently or in cooperation with the Bureau of Agricultural Economics of the United States Department of Agriculture. So far as is known, no previous work of this kind has been done with Colorado elevators. The history of the elevator movement in the state provides a good background for a study of this type. During the years of the World War, with rising prices, the elevator business prospered. Profits were large and costs did not keep pace with rising prices. Since the war when prices have been falling and overhead could not be reduced in proportion, it has tested severely the ability of many elevator men.

An accurate account of any elevator business cannot be written at this time, especially when grain and other commodities are selling at such low prices. Conditions in the elevator business are changing rapidly and it will only be after the agricultural situation has righted itself that the complete story of the elevator movement can be told.

It is not the purpose of this discussion to present new ideas or make recommendations that are suitable to all types and conditions of elevator operation. It is rather the purpose to outline the situation concerning the farmers' elevator business in Colorado, presenting some facts obtained from the survey and giving the authors' opinions based upon these facts.

No credit is claimed for originality of method. The initial stage of the study was builded largely upon the plan adopted by the United States Department of Agriculture in its elevator survey in the spring-wheat area. The incentive for the present study was prompted by a similar contemplated survey in the winter-wheat area, which was later abandoned.

In this study a survey was made of a selected group of Colorado farmers' elevators. Comparisons were made of their forms of organization and their operating methods and prac-

Note.—Acknowledgment is made for the assistance of the managers and directors of the various elevators studied. To all who gave valuable suggestions or assisted with the analysis in any way, appreciation is also expressed.

The major portion of this bulletin is composed of data taken from a thesis prepared by Mr. Hemphill in partial fulfillment of the requirement for a master's degree at the Colorado Agricultural College, 1932.

tices. Such comparisons were necessary in order to determine the factors that contribute to their success or failure. It may be that during years of stress, as represented by those used in the survey, one should not attempt to judge the success or failure of any business. However, an analysis at such times does permit the experiment station to aid the managers or anyone interested in the business. Many elevators are not weathering the storm because of a lack of understanding by their members of the nature of their business. If a study can in some way assist in creating a better relationship between the member and his organization, many managers will be spared a lot of business worries. In all lines of business, success is builded upon the avoidance of those things that contribute to failure. A farmers' elevator is no exception to the rule.

HISTORY

The farmers' grain elevator was among the first cooperative ventures to be tried generally in the United States. These date back to about the time of the Civil War. The sponsoring of the first cooperative elevators has often been attributed to the first Grange movement, but there is evidence that a few attempts preceded the coming of the Grange.[1]

Due to the impetus of the Grange movement, many farmers' elevators and grain-shipping organizations sprang up during the decade 1870-80 but the vast majority of these were short lived and passed out of existence with the decline of the Grange. About the same time a large number of independent elevators were built thruout the wheatbelt.

Many of the cooperative elevators passed into the hands of independent operators. At this time these small individual elevators were the dominating influence in the grain market. Soon, however, the line companies began to seek control and during the years which followed there was a continuous struggle between these larger groups and the small independent and, as a rule, locally owned elevators. Gradually the independent elevators came under the power of the line companies, because it was either that or extermination. Thus competition was stifled and margins of profits became wider. The farmer received the same bid for his grain no matter where he offered it and soon saw evidence of the combine against him.

This condition revived the attempts of the cooperative marketing of grain. The farmers of this decade (1890-1900) were

[1] Nourse, E. G. Fifty Years of Farmers' Elevators in Iowa. Iowa Agri. Exp. Sta. Bul. 21, 1932, p. 236.

in rather stringent financial circumstances and the opposition to their organization was bitter, hence the growth in the number of farmers' elevators was slow. In fact, practically the only ones that survived were those that had adopted the so-called penalty clause. This clause stipulated that the member must pay a stated sum, usually one-half cent per bushel, whenever he sold his grain to another elevator. This made it possible and compelled the farmer to maintain his own company when taking advantage of the high price offered by the opposition in an effort to put the farmers' elevator out of business.

In the years 1902-04 the line elevator companies tried to put the cooperatives out of existence by using a boycott, that is, they notified all commission men that they would forfeit the trade of the line companies if they continued to do business with the farmers' organizations. As the business of these organizations was only a fraction of that of the line elevators or the independent elevators controlled by them, this threat, with the exception of two instances, had the desired effect.

Happily for the cooperative elevators, two commission firms not only refused to boycott them but began to make a specialty of their business. They also sent men into the wheatbelt to organize additional farmers' elevators. One of these commission firms is still doing business today. The failure of the boycott and a governmental investigation instigated about the same time broke up the "combine" so that since 1904 the farmer elevator movement has not had such bitter opposition. Following this came a period of steady growth in the number of farmers' elevators which has continued until the present time. The United States Department of Agriculture lists the active associations as follows:[2]

Year	Number	Year	Number
1905	306	1920	2,958
1910	757	1925	3,212
1915	1,450	1930	3,448

Others have placed the number at a higher figure, Steen[3] placing it at 5,216 for 1921 and Filley[4] at 4,300 for 1926.

Many of the earlier farmers' elevators were unincorporated, being usually a loosely formed joint-stock company. Those that had incorporated were organized as stock companies under the regular corporation laws, as there were no cooperative statutes at that time.

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[2] Elsworth, R. H. Agricultural Cooperative Associations. U. S. D. A. Tech. Bul. 40, 1928, p. 76.
[3] Steen, Herman. Cooperative Marketing. 1923.
[4] Filley, H. Clyde. Cooperation in Agriculture. 1928.

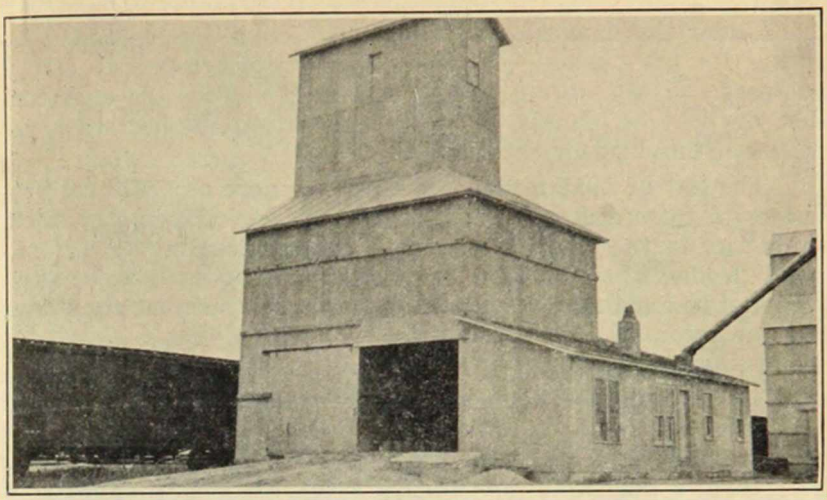
In Colorado the coming of the present farmer elevator movement is of comparatively recent date, the majority of them being organized since the passage of the first state cooperative law of 1913. In fact, practically all of them began business during the years of 1913 to 1920, inclusive. A few of these replaced older cooperative or semi-cooperative ventures but the majority were started where no previous farmer-owned grain company had been attempted.

The Grange may have influenced the first attempt at cooperative grain marketing in the state but of the 24 elevators chosen for this study, 12 were organized by the Equity Union and 10 by the Farmers' Union. The other two were probably influenced by the Farmers' Union because of their proximity to elevators and locals of that organization. The Farmers'-Union-sponsored elevators are located in the northern part of the wheat section of Colorado while the Equity elevators are to be found in the southern part of this section. There was some rivalry between the two organizations in at least two towns, for each of them organized an elevator.

SCOPE AND METHOD

During this survey contacts were made with 24 elevators. These are located in the wheat region of Northeastern Colorado at the following stations: Ault, Pierce, Briggsdale and New Raymer in Weld County; Willard, Peetz and Fleming in Logan County; Paoli and Holyoke in Phillips County; Laird, Wray, Eckley, Schramm and Yuma in Yuma County; Hyde and Akron in Washington County; Burlington, Bethune, Stratton, Vona and Seibert in Kit Carson County; and Limon in Lincoln County. Hereafter these elevators will be referred to by number in order that the identities shall not be revealed. In selecting these associations the chief object was to secure, with the least possible mileage, approximately 20 elevators that would be representative of the various types found in Colorado. Owing to the lack of complete data on all the 20 elevators, some of the tables will vary slightly but the results are not materially altered.

The method used in this study was the field-survey method, that is, personal visits were made to each elevator. Data were secured by interviewing the manager and by examining the records or books of the company. At first only preliminary or general questions were asked, as it seemed advisable to gain the goodwill and active cooperation of the managers before inquiring into the financial or more personal aspects of the business.



One of the smaller type elevators in the territory.

During the earlier visits the major portion of the information was obtained from the managers, but as the work progressed the auditors' reports, supplemented by personal examination of the companies' books, were the chief sources of information. Schedules or outline forms were used in order that the data would be as uniform as possible. However, due to the many different bookkeeping systems and the variations in the audits, uniformity was not always possible.

Schedules or forms used in the spring-wheat study (see Appendix A) were employed in this study to some extent, but as all were not applicable to conditions in this state, other forms were also used.

THE FARMER'S ELEVATOR

Colorado has had three laws that pertain to cooperative associations. The first was passed in 1913, the second in 1915 and the third in 1923. The most recent of these acts was not applicable to the farmers' elevators included in this study, as they were all organized prior to the passage of the 1923 enactment. (Fig. 1.) In fact, these elevators were all incorporated under the 1913 law. This law did not especially refer to the agricultural industry, as agriculture or livestock was not even mentioned. Under this act a cooperative was defined as follows:

"For the purpose of this act the words 'cooperative company, corporation or associations' are defined to mean any company, corporation or association which authorizes the distribution of its earnings in part or wholly, on the basis of, or in proportion to, the amount of property bought from or sold to members or to members and other customers, or of labor performed, or other service rendered to the corporation."[5]

[5] Colorado State Laws. p. 787, Cooperative Associations. (L '13, p. 220, pp. 1.)

Under this law 10 or more persons could be associated together for the purpose of cooperatively transacting any lawful business. It was specified that this could include the construction of bridges, canals, railways, irrigation ditches or other works of internal improvement.[6]

The law of 1915 authorized three or more agricultural producers to form a cooperative association, without capital stock, to engage in the production, shipping or marketing of agricultural products.[7] The act also stipulated that each association shall not be conducted for profit and that each member shall have but one vote.

Under the terms of the 1923 law a cooperative association shall be only one that is engaged in the marketing of agricultural products. The principal provisions of the law are: First, 11 or more persons engaged in the production of agricultural products may form a non-profit cooperative association, with or without capital stock; second, no stockholder may own more than one-twentieth of the common stock; third, a stockholder shall have but one vote irrespective of the number of shares he owns; fourth, stock dividends must be limited to 8 percent; fifth, each association may handle the products of non-members but this volume must not exceed that done with members; and sixth, those qualifying under the act are required to submit an annual report to the Colorado Director of Markets.

As the farmers' elevators surveyed during this study were all organized during the period of 1913 to 1922 (Fig. 1), they were not required to include in their by-laws many of the features that today are commonly attached to cooperation in marketing. These features include the following requirements: First, all associations must be entirely owned and controlled by producers in agriculture; second, each member shall have but one vote; third, the dividend on stock shall not exceed 8 percent; fourth, a limit may be placed on the number of shares of stock a member shall own; fifth, the association may pay patronage dividends; and sixth, 51 percent of their business shall be with members.

Table I indicates to what extent these elevators have adopted the above cooperative principles. (The latter or sixth provision was not included in the table because the amount of business which an elevator does with non-members varies from year to year.)

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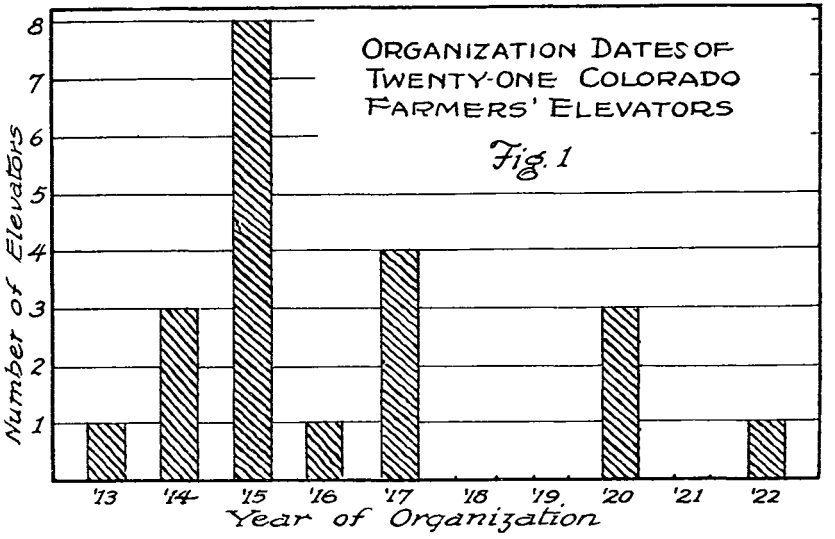
[6] Colorado State Laws. p. 788, Cooperative Associations. (L '13, p. 220, pp. 2.)

[7] Farmers' grain elevators are universally organized as stock companies, hence there have been but two Colorado cooperative laws under which they could incorporate. The majority of the farmers' elevators in Colorado were incorporated under the 1913 law, as only a few have been organized since 1923.



Less than half of the 21 associations are entirely farmer-owned, but it would be incorrect to state that they are not farmer-controlled, as the majority of the stock of all the companies is in the hands of the farmers. They were all probably entirely farmer-owned when first started, but gradually some of the stock passed into the hands of non-producers because no provision had been made in the by-laws to retire or transfer the stock of members who discontinued farming and entered other occupations. This is causing concern, for several of the elevator companies are paying dividends on stock that is no longer active in bringing grain and other produce to the elevator. Situations of this kind interfere with volume of business, and they frequently interfere with the success of the enterprise.

Table I.—Cooperative features of 21 farmers' elevators.

Feature	Yes		No	
	Number	Percentage	Number	Percentage
Entirely farmer-owned and controlled	8	38.1	13	61.9
Each member has but one vote	19	90.5	2	9.5
Stock dividend 8 percent or less	19	90.5	2	9.5
Limited amount of stock per person	19	90.5	2	9.5
Patronage-dividend provision in by-laws	19	90.5	2	9.5

The other features have, to a large extent, been adopted. This came about more in an attempt to conform with the federal law, known as the Capper-Volstead Act, than to conform with the Colorado cooperative law of 1923. The intention or purpose

was to gain exemption from federal income taxes, but the elevator management has since learned that the Bureau of Internal Revenue gives little or no weight to any cooperative law in determining exemption. The following quotation taken from a letter written by L. S. Hulbert, Chief Attorney for the Division of Cooperative Marketing, Federal Farm Board, emphasizes this point:

"In determining the eligibility of an association for exemption from income taxes the Bureau of Internal Revenue gives little, if any, weight to the Capper-Volstead Act. In fact, the question of exemption is resolved by that Bureau solely with reference to the exemption language appearing in Section 103 of the Revenue Act of 1928."[8]

As there is some disagreement between various laws and agencies as to what constitutes a true cooperative, the term "farmer's elevator" rather than "cooperative elevator" is herein used, for the organizations under discussion are certainly farmers' organizations even tho there may be some doubt as to whether they are all truly cooperative.

Various reasons for starting an elevator were given by members of these associations, the most frequent being that the local dealer took too large a margin. However, most reasons given resolve down to about the following: "We organized to secure higher prices and mutual benefit thru cooperative effort." Some claim that they were talked into organizing by outside interests. There may be some truth in this statement, as 13 of the 21 companies were aided by persons not residents of the local community.

Fifteen of the 24 elevators now owned by this group were bought from independent or line companies already doing business at that particular station. Six of these associations bought the only local elevator, hence they had no local competition.

Table II.—The number of local competitors of 24 farmers' elevators.

Number of local competitors	Number of farmers' elevators in respective groups	
	At time of organization	At time of this study
0	6	3
1	12	10
2	3	8
3	3	3

The above summary indicates that only three farmers' elevators are now without local competitors and that none of them have to cope with more than three. The degree of competition is

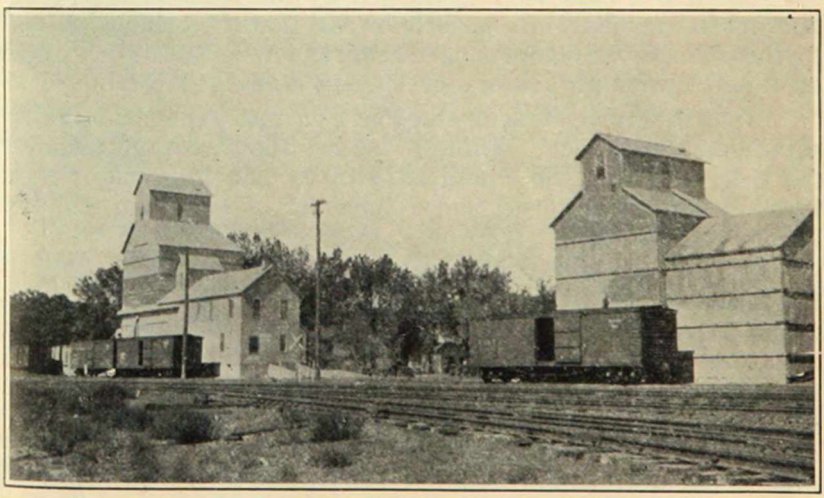
[8] From a letter dated Sept. 28, 1931, addressed to W. J. Hart, Associate Economist, Federal Farm Board.

probably of as much importance as the number of competitors. At 14 elevators it was stated that the local rivalry for business was keen. Eleven managers asserted that the competition of other stations was keen. This is especially true where stations on parallel railroads are competing for the grain of an area that lies between. A variance of but 1 cent a bushel will often divert a considerable volume of grain either one way or the other. Only two managers said that their volume was not affected by prices offered at other stations.

The farmers' elevators have, as a rule, been able to obtain a fairly liberal share of the grain coming to their respective stations. During the 3 calendar years of 1927-1929, inclusive, the farmers' organizations, comprising 45 percent of the elevators, handled as an average, 49 percent of the grain that moved out of these stations. The percentage shipped by the farmers' elevators during each of the 3 years was:

1927	53 percent
1928	50 percent
1929	46 percent

The average percentage shipped by each producer association is shown in Table III. In only three instances did they fail to receive their proportionate share of grain. At each of three stations supporting three elevators the farmers' companies secured more than half of the volume. In two towns having but two elevators the farmers' company handled three-fourths or more of the volume. One of these elevators handled, as a 3-year average,



Two cooperative elevators at the same station

Table III.—Carlot shipments of grain by 21 farmers' elevators compared with the total shipments from these stations, 3-year average, 1927-29.

Station No.	Total number cars of grain shipped from station	Number of cars shipped by farmers' elevators	Percentage shipped by farmers' elevators	Number of elevators at station[1]
92	60	58	97	1
21	175	88	50	2
24	144	78	54	3
61	290	245	84	2
82	347	179	51	3
53	556	241	43	3
20	574	174	30	3
85	270	153	57	4[2]
50	38	36	95	1
13	121	61	50	2
74	111	68	61	2
2	466	283	61	3
10	102	76	75	2
73	195	87	45	3[2]
32	426	110	26	4
93	86	51	59	2
72	191	46	24	3
22	104	56	54	2
71	94	61	65	2
Total	4350	2151	49	47

[1] Forty-five percent of these elevators are farmer organizations which handled 49 percent of the grain from these stations.

[2] There are two farmers' elevators at these stations.

84 percent of the grain. In 1927 it bought and sold 88 percent of the grain brought to that station.

The above data were furnished by the railroad companies and, when converted into bushels, reveal that the volume handled by the farmers' elevators ranged from as low as 36,166 to as high as 498,870, with an average of 162,218 bushels of grain.

A further analysis indicates that as a group they had a fairly satisfactory turnover.[9] Table IV shows their average turnover for the years 1927, 1928 and 1929 to be 8.5. The majority of these elevators, however, had a turnover of less than 8.5, two being less than 4.

Table V gives the same information for the fiscal years of 1929-30 and 1930-31.[10] It can be readily seen that there is considerable variation in the volume handled by the farmers' grain elevators. The average turnover of the group for the 1930-31 season was nearly twice that of the previous season, being 18.1

[9] Turnover equals number of times the bin capacity of the elevator has been utilized during 1 year.

[10] The data used in this case were secured from the management of the various elevators and are based (as are all the data used in this bulletin unless otherwise stated) upon the fiscal year of the company which, as a rule, begins either on June 1 or July 1.

Table IV.—Turnover of 19 farmers' elevators—3-year average, 1927, 1928, 1929.

Elevator No.	Average Volume 1927-28-29 (bushels)	Capacity of elevator (bushels)	Turnover
16	498,870	18,000	27.7
20	424,104	45,000	9.4
35	361,090	22,000	16.4
28	286,860	18,000	14.8
2	261,781	30,000	8.7
23	168,108	25,000	6.7
43	133,972	45,000	3.0
12	131,818	10,000	13.2
42	116,819	20,000	5.8
1	115,730	11,000	10.5
47	101,836	15,000	6.8
15	95,277	23,000	4.1
31	93,344	16,000	5.8
17	92,330	18,000	5.1
29	87,297	12,000	7.3
11	85,021	17,000	5.0
39	77,697	17,000	4.6
5	54,206	11,000	4.9
33	36,166	20,000	1.8
Average	168,543	20,684	8.5

as compared with 9.8. Ten of the 20 elevators handled a volume of more than double that handled during 1929-30, yet there were two companies whose volume was still very low.

Obviously some of the farmers' organizations are handicapped because of an insufficient volume. To meet the situation they handle sidelines in an attempt to utilize more advantageously the buildings and equipment in which the members have already invested their money. This, of course, is not the only motive for handling sidelines. Some associations deal in items other than grain in order that the time of their employees may be utilized to a better advantage during slack seasons. Others handle sidelines merely as an accommodation for their patrons.

Coal is the sideline most frequently handled by Colorado farmers' elevators. Miscellaneous merchandise (twine, repairs, hardware, paint, etc.) ranks second. Other items handled may include feed, seeds, flour, gasoline and oil, machinery, livestock and beans.

The value of the sidelines sold as compared with that of grain varies a great deal from year to year, as the volume of grain, the prices of grain, the selling price of sidelines and the number of units sold may all fluctuate. The relationship of the sideline business to the total business of 21 Colorado farmers' elevators is tabulated in Tables VI and VII. For the fiscal year

Table V.—Turnover of 19 farmers' elevators for fiscal years of 1929-30 and 1930-31.

Elevator No.	Capacity of elevator (bushels)	Volume of Grain (bushels)		Turnover	
		1929-30	1930-31	1929-30	1930-31
20	45,000	450,928	984,705	10.0	21.9
35	22,000	398,401	887,573	18.1	40.3
16	18,000	345,218	728,419	19.2	40.5
43	45,000	341,249	495,079	7.6	11.0
2	30,000	291,795	231,160	9.7	7.7
23	25,000	281,721	629,660	11.3	25.2
15	23,000	225,025	283,045	9.8	12.3
31	16,000	222,144	304,700	13.9	19.0
47	15,000	173,376	256,142	11.6	17.1
29	12,000	171,014	88,302	14.6	7.4
28	18,000	162,995	581,821	9.1	32.3
42	20,000	145,448	283,964	7.3	14.2
5	11,000	138,489	167,166	12.6	15.2
1	11,000	109,591	303,866	10.0	27.6
17	18,000	82,216	273,651	4.6	15.2
12	10,000	76,849	101,821	7.7	1.2
39	17,000	70,551	207,729	4.2	12.2
11	10,000	41,319	201,273	4.1	20.1
33	20,000	28,083	68,688	1.4	3.4
Average	20,316	197,706	372,567	9.8	18.1

of 1929-30 this ranged from 1 to 76 percent and in 1930-31 from 0 to 55 percent.

It is not always the low-volume elevators that handle the larger percentage of sidelines. Of the elevators whose sideline business during both years exceeded 25 percent, four had a volume of more than 220,000 bushels of grain. For the 2 years the average of the four was 350,000 bushels. On the other hand, only two elevators handling more than 25 percent were, for both years, in the group with less than 100,000 bushels. The average volume of these two was 57,000 bushels.

The aggregate business transacted by the 21 elevators during the crop year of 1929-30 ranged from $54,262.78 to $489,-124.46. The range was even greater in 1930-31, being $58,074.96 to $599,088.94. In the former year there were five companies in the "less than $100,000 per year" group, while in the latter year four were in that group. In 1929-30 three elevators exceeded $400,000, while in 1930-31 four were above this amount. Two of the latter passed the one-half million mark.

There is a wide variation in the number of members belonging to each of the farmers' grain-elevator associations and in the amount of money that Colorado farmers have invested in their companies. In each of the items considered in Table IX (i. e., capital stock paid in, number of members, and average "paid in" capital per member) the larger sum is more than 10 times the

Table VI.—Sideline sales as compared with the total sales of 21 farmers' elevators during the 1929-30 crop year.

Elevator No.	Value of commodities sold	Sidelines	
		Value	Percentage of total sales
43	$489,124.46	$204,125.32	42
20	458,953.89	102,402.23	22
2	411,397.63	171,294.05	42
35	363,569.41	45,913.19	13
23	343,347.95	105,349.63	31
16	324,689.12	4,592.83	1
31	278,991.19	107,291.65	38
15	243,661.97	15,589.01	6
17	242,906.66	184,813.50	76
29	208,468.68	59,879.46	29
28	147,316.84	8,196.20	6
42	142,996.88	12,108.15	8
5	142,257.50	17,202.36	12
32	109,033.42	32,818.71	23
40	131,023.44	48,897.74	37
47	122,750.00	2,693.13	2
12	88,284.34	7,140.06	8
1	84,467.07	2,202.55	3
39	69,901.81	9,007.58	13
11	65,888.34	24,164.22	37
33	54,262.78	29,880.21	55
Average	$216,957.71	$ 56,931.51	26

Table VII.—Sideline sales as compared with the total sales of 21 farmers' elevators during the 1930-31 crop year.

Elevator No.	Value of commodities sold	Sidelines	
		Value	Percentage of total sales
20	$599,088.94	$ 56,118.58	9
35	500,930.64	28,212.38	6
23	463,758.30	114,889.22	25
43	422,975.88	165,506.82	39
16	394,167.38	3,386.62	1
2	380,653.35	139,262.70	37
28	323,338.78	6,563.31	2
17	257,283.60	127,757.29	50
31	242,752.27	79,119.42	33
42	191,800.00	25,202.53	13
15	167,356.02	11,704.79	7
1	158,285.97	1,538.94	1
47	135,282.60	.....	..
11	118,694.47	20,693.29	17
39	108,480.70	6,888.88	6
29	103,885.68	50,655.03	49
5	103,293.21	11,331.97	11
40	79,492.22	43,763.01	55
32	68,192.68	23,285.74	34
33	66,729.40	35,595.71	53
12	58,074.96	7,885.90	14
Average	$235,453.19	$ 45,683.91	19

Table VIII.—Summary of the yearly business of 21 farmers' elevators.

Range of yearly sales (dollars)	Number of Elevators in Group	
	1929-30	1930-31
Less than 100,000	5	4
100,000 — 200,000	6	8
200,000 — 300,000	4	2
300,000 — 400,000	3	3
400,000 — 500,000	3	2
500,000 — 600,000	.	2

smaller. The lowest amount of paid-in capital stock was $3,975.00, while the highest was $56,098.62. Likewise, the least number of members was 36, while the largest was 430, and the lowest average paid-in capital stock was $65.16 as contrasted with the highest of $733.33.

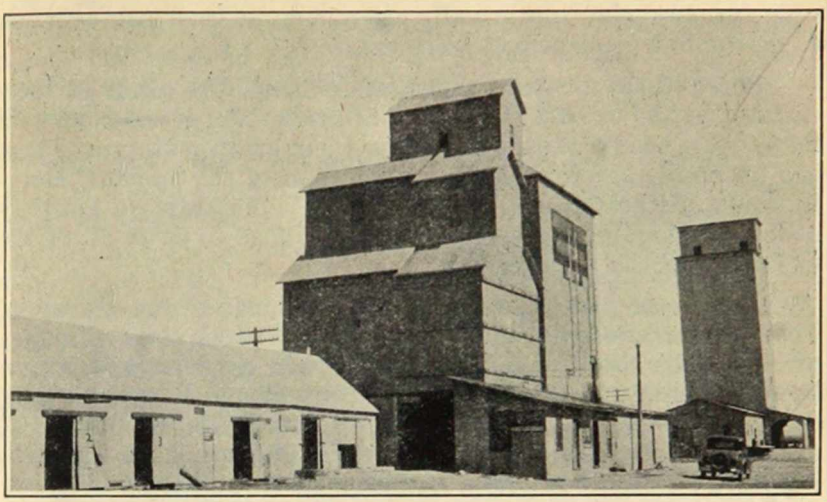
Table IX.—The capital stock paid in, the number of members and the average amount of paid-in stock per member of 17 farmers' elevator associations.

Association No.	Capital stock paid in (dollars)	Number of members	Average paid-in capital per member (dollars)
68	$56,098.62	430	$130.46
33	44,632.50	100	446.33
2	40,650.00	102	398.53
23	39,642.78	200	198.21
32	38,976.51	160	243.60
48	36,230.35	340	106.56
31	32,747.56	150	218.32
28	29,891.43	185	161.58
17	26,661.20	150	177.74
35	26,400.00	36	733.33
40	24,110.00	85	283.65
11	19,794.52	125	158.36
16	15,800.00	104	151.92
15	10,600.00	110	96.36
12	10,243.75	50	204.88
29	7,025.00	65	108.08
42	3,975.00	61	65.16
Average	$27,263.48	144	$189.33

OPERATING METHODS AND PRACTICES

The successful association is not always the one with the largest membership and largest amount of paid-in capital stock, nor is the association unsuccessful if its membership and capital stock are small. There are a number of factors that have to do with the success or failure of an association. Some of these will be considered in this section.

The methods of handling grain used by the managers of the farmers' grain companies are the same or at least very similar



Plenty of storage space.

to those used by independent or line companies. The farmer is paid cash for his grain, according to grade, as he brings it to the elevator. This price is usually determined by deducting the freight differential, plus a small margin, from the terminal market price for that day or the previous day. The margin used is intended to cover not only the expense of handling the grain, but also to include a small profit per bushel.

Oftentimes it is difficult to determine what the margin should be. The margin is frequently fixed more by custom or guess than by actual knowledge of what it should be. The most frequently used margin is 5 cents per bushel.

The price paid at competing elevators must also be considered. It sometimes happens that the manager at one elevator may more or less take the lead in establishing the daily price. In other instances the various managers may agree upon a price that the market seems to justify. If all the elevators at a given station do, as a rule, maintain the same price it does not follow that they all make the same profit per bushel. It is seldom that the expenses of any two companies are exactly the same. The volume of grain has a great deal of influence upon the unit costs.

A farmer's organization may pay a lower price than its competitors and still obtain sufficient volume. This may come about because of the loyalty of the members, but probably more frequently because they expect to receive the difference in the form of dividends at the end of the year. The management of the Colo-

rado farmers' elevators usually attempt to at least pay as much as do the independent or line elevators.

Some of the farmers' managers enhance the profit of their elevator by the mixing or cleaning of grain. All of the managers that follow the practice of cleaning their grain maintain that it is a profitable practice. At more than half of the farmers' elevators part of the grain is cleaned before being shipped, but only about one-third of the elevators are equipped to clean all of the grain during the rush season.

Mixing is practiced at about one-third of the elevators. There are several advantages that accrue from mixing. A higher price may be obtained for low-grade grain by putting it with a larger amount of a higher grade. Care should be exercised in order that the grade of the better grain shall not be lowered. It may even be profitable to mix two grades of grain if the resultant intermediate grade brings a higher average price.

Only two of these farmers' elevators store grain in an appreciable amount and they claim that they were forced into it when their competitors started the practice. The managers are endeavoring to discourage storing, as they have learned that it usually is a losing proposition both for the farmers themselves and for their organization. No charge was made for this service and the grain was not actually stored but was immediately sold. In order to have protection most managers hedged such transactions.

About one-third of the managers hedged to some extent in connection with their regular trading operations, but they were seldom consistent in their hedging practices. No adequate records were kept of the hedging transactions, hence an analysis could not be made of hedging as practiced by Colorado farmers' elevators.

Three methods of sale may be used in the selling of grain. It may be consigned, sold to arrive, or sold on track. If consigned the car of grain is billed to a broker or commission merchant who sells the grain as soon as possible after it reaches its destination. The commission merchant then remits the proceeds after deducting the expenses, including his commission. It usually happens that a draft, in amount about 90 percent of the estimated value of the grain, is drawn upon the commission merchant as soon as the car is billed. In that case only a small sum remains to be adjusted when the car is finally sold.

When the grain is sold "to arrive" the country elevator manager receives a bid, either by telegraph or telephone, which offers

a definite price, the grain to be shipped at a stated future date, usually not over 30 days. If the grain is sold by the third method, that is, "on track," it is sold as soon as loaded in the railway car at a price previously agreed upon.

In the two latter methods the grain must be of a given grade, but if it is of a different grade the sale is usually consummated but at an established discounted price. The greater percentage of grain is sold on consignment, especially during periods of a rising price level. During periods of uncertain prices the other two methods are usually preferred if a bid that seems to offer any degree of profit can be obtained. However, consignment losses can, in a large measure, be avoided even during declining prices if a wide enough margin can be taken, or the loss may be insured against thru the expediency of hedging, if properly conducted.

The grain marketed by the Colorado farmers' elevators generally flows either east or west. As a rule wheat, rye and millet are sent east, while corn and barley are shipped west. Figures 2 and 3 show the market to or thru which these grains are most frequently sold. Only three of these are of major importance, as Kansas City, Denver and Omaha received more than 90 percent of the grain shipped to these seven markets by the 23 farmers' elevators during the 5-year period of 1925 to 1929, inclusive. These three terminals ranked as follows: Kansas City 47 percent, Denver 27 percent and Omaha 18 percent.

There is, however, considerable variation if the principal grains are considered separately. For the above 5-year period Kansas City received 60 percent and Omaha 25 percent of the wheat. Denver was of minor importance with only 4 percent of the wheat for the period.[11] Denver and Kansas City were the only two places that handled corn to any great extent. For this grain Denver was of far more importance since 88 percent of the corn shipped by these 23 farmers' organizations was sold thru this market. Denver also handled 56 percent of the barley as compared with 28 percent for Kansas City and 10 percent for Omaha. Rye goes to the same markets as wheat, while millet goes to Kansas City, St. Louis, Denver or Minneapolis.

In the operation of a farmers' elevator one of the important factors that must be considered is that of expense. The average expenses of 17 Colorado associations have been grouped, as indi-

[11] The situation was decidedly different during the 1931-32 crop year because a large volume of Colorado wheat was marketed thru Denver, due in part to changed freight rates and also to an abnormal western demand for wheat.

PRINCIPAL MARKETS FOR WHEAT AND RYE FROM COLORADO FARMERS' ELEVATORS

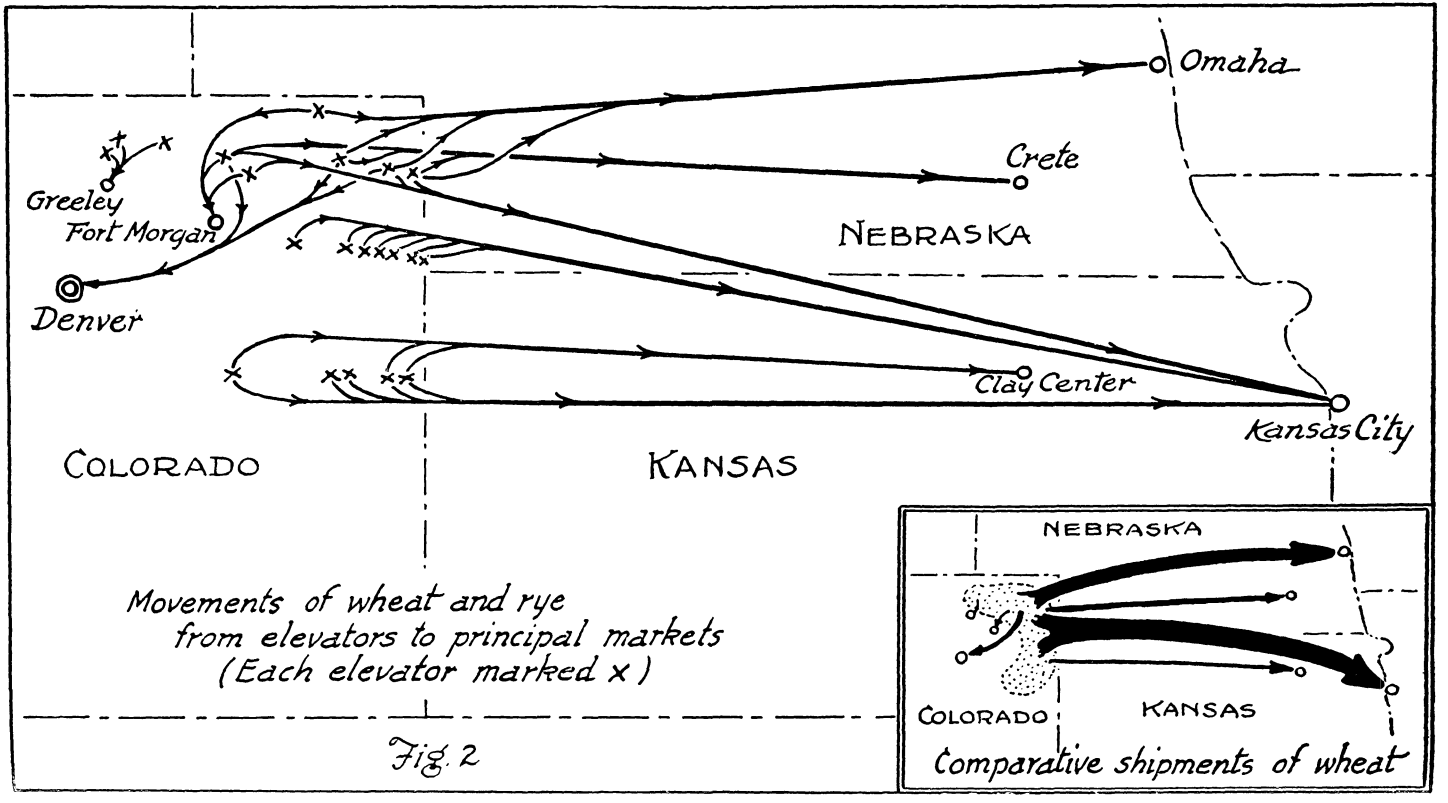


Fig. 2

PRINCIPAL MARKETS FOR CORN AND BARLEY FROM COLORADO FARMERS' ELEVATORS

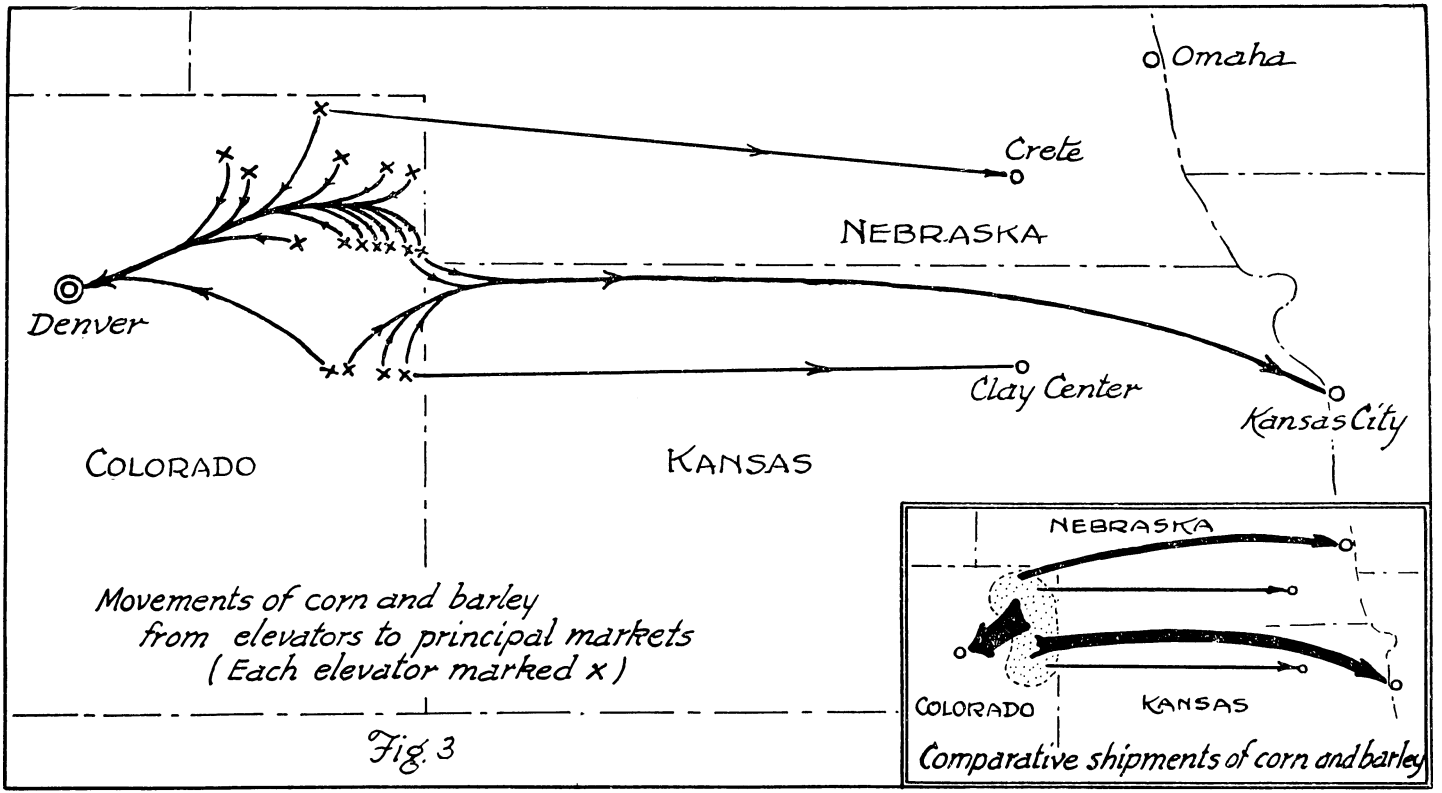


Fig. 3

cated in Table X, into 13 general classifications. The average operating expense for the group was $11,024 in 1929-30 and $12,068 the following year. The association having the lowest expense in 1929-30 operated with a total cost of slightly less than $2,500 ($2,488), while the association having the heaviest cost had a total of more than 10 times that amount ($28,545). In 1930-31 the range was not quite so great, as the lowest was $3,752 compared with $26,866 for the company at the other extreme.

The largest expense item for all the elevator companies, with one exception, was that of salaries and wages. These two items of expense averaged more than half the total expense for both years. Salaries were undoubtedly the more important of these two items and constituted the largest source of expense for the majority of the associations, yet the group average was less than that of extra help. Salaries consist mainly of payments made to managers, but include also the fees paid to directors, when such fees were paid. Seven of the associations did not pay their directors during either year. In 1929-30 the average of salaries paid was $2,018 or 18.3 percent of the total expense, while the following year they were $2,079, or 17.2 percent.

The average of the wages paid to extra help increased from $3,607 in 1929-30 to $4,106 in 1930-31. A larger volume of grain necessitated more help during the 1930-31 season. The amounts paid for wages ranged from $512 to $13,093 in 1929-30 and from $793 to $14,527 in 1930-31. The majority of the associations hired at least one helper for the full year. Some employ more than one on a 12-month basis, especially those that handle a relatively large volume of sidelines.

Table X.—The average expenses (itemized) of 17 farmers' elevator associations.

Item of expense	1929-30		1930-31	
	Dollars	Percentage	Dollars	Percentage
Salaries	$ 2,018	18.3	$ 2,079	17.2
Wages (extra help)	3,607	33.7	4,106	34.0
Depreciation	1,166	10.6	1,053	8.7
Interest	902	8.2	738	6.1
Taxes	658	6.0	745	6.2
Light, heat and power	455	4.1	610	5.1
Insurance	387	3.5	431	3.6
Maintenance	374	3.4	521	4.3
Supplies	152	1.4	150	1.2
Advertising	185	1.7	167	1.4
Marketing information	174	1.6	220	1.8
Bad accounts	125	1.1	360	3.0
Unclassified	822	7.4	888	7.4
Total	$11,024	100.0	$12,068	100.0

The third largest element of expense is that of depreciation. For both years the average was more than $1,000 per year. One elevator association had a depreciation expense of $3,007 in 1929-30 and $2,904 in 1930-31. Two of the associations made no charge for depreciation in either year. One of these has a fairly substantial depreciation reserve and apparently omitted the depreciation charge because of the narrow margin of profit during these 2 years. The other association has never set aside a depreciation reserve and consequently their profits have been consistently overstated. However, the question of depreciation must be faced sooner or later. They have been engaged for a number of years in reducing a deficit incurred shortly after they commenced business, but it is doubtful if it has been reduced as much as the books would indicate if the depreciation factor is taken into account.

The next element of expense is interest. The average for 1929-30 was 8.2 percent of the total expense. This, however, is not a true picture of the situation, for one elevator paid $6,990 during the year for interest. If that sum is eliminated from the calculation the average for the remaining 16 associations is less than 5 percent. Four paid no interest whatsoever and seven others had interest obligations of less than $521. Interest payments were somewhat lower in 1930-31.

Interest is an expense that could be reduced considerably if the farmers were not quite so anxious for their company to declare and pay dividends. One association paid a dividend of approximately $12,000 at the end of the 1929-30 season and then had to borrow within a few hundred dollars of that amount the following year.

The average tax expense was about the same for both years. Taxes paid during 1929-30 ranged from $214 to $1.310. The range the next year was from $266 to $1,797. The 1929-30 average was $658 and the 1930-31 average $745.

The averages paid for heat, light and power were $455 and $610. The expenses for power were somewhat higher in 1930-31 than in 1929-30 because more power was needed in the handling of the larger volumes. In some cases the source of power was the gasoline engine and in others, where electricity was available, electric motors supplied the necessary power.

There was very little variation in the amount paid for insurance. The averages for each of the 2 years were $381 and $431, respectively, or 3.5 and 3.6 percent of the total operating expenses. The buildings and equipment are usually insured and

then in addition a blanket policy is kept on the grain. That is, the policy varies with changes in the amount of grain in the "house." It might seem that the cost of insurance would be considerably more in years of larger volumes, but the grain is handled more rapidly, hence the average amount of grain in store is only slightly larger. A car of grain is insured while in transit, but the cost is entered on the "account sales" as an item of the selling expense and therefore does not enter into the above general insurance expense.

The expense of maintenance, that is, the cost of repairs and renewals for the buildings and equipment, averaged $374 in 1929-30 and $521 in 1930-31. The amount spent for maintenance is quite frequently more during the better years, as repairing is apt to be postponed during the poorer years.

The amount spent for advertising averages about $175 per year per company. It is nearly always the sideline commodities that are advertised in the newspapers, but a considerable portion of the advertising costs are due to the purchase of calendars and novelties. These may advertise sidelines only, but usually are advertisements of a general nature. At times advertisements are carried more for the goodwill which they create than for the increased sales.

The money spent for market information is largely for telegraph or telephone messages. Other sources of information are market periodicals, telegraphic reports, etc. The average amount spent for market information was less than 2 percent of the total expense.

The amount charged to supplies was approximately $150 for each year. Included under this amount were office supplies, stamps, brooms, sacks and similar articles.

Some associations made no deduction for bad accounts, in fact, only 6 of the 17 associations made such a charge in 1929-30. The next year there were increases in the number of companies making such deductions and in the average amount charged off, as the number of companies increased to 9, while the average amount was $360, compared to $125 for the previous year. Many of the farmers' elevators charge off bad accounts only when they have enjoyed a good year. This probably is done partly because the amount charged off is not so noticeable when the net profit is larger and partly on account of income taxes. Such accounts are deductible in income tax schedules. Bad accounts are usually the result of credit business in connection with sidelines.

The final expense element considered in Table X is that of the unclassified or miscellaneous expenses. In this classification were placed such items as rent and donations, in fact, all that do not properly fall into one of the other 12 classifications. During both years this amounted to 7.4 percent of the total expenses.

Seldom was there an attempt made to apportion the general expenses between the grain and sideline business of a farmers' elevator association, except in instances where the business had been departmentalized. It is even then difficult, if not entirely impossible, to apportion exactly and accurately such expenses. Yet it is very desirable that this should be attempted in order to ascertain which phase of the enterprise is the most profitable or to learn if the sideline business is really a paying one. Various methods have been tried, but none has proved entirely satisfactory.

One method has been used to arrive at the "out-of-pocket" costs. That is, the manager was asked to determine how much of each item of expense would have been eliminated had there been no sideline handled. In a similar method the manager was asked to apportion each cost item between the grain and the sideline business. This second method was attempted in this study. It was discovered, however, that the managers usually based their distribution upon the percentage which each line of endeavor bore to the total business. For example, if 40 percent of the business was a sideline and 60 percent grain, he used a 40-60 percentage in determining the division of most of the expenses. A few managers did not make the desired apportionment of expenses or made but hurried guesses. Because of this and in order to place all the elevators as nearly as possible on the same basis, the procedure illustrated in the above example was adopted for this survey. That is, the expenses of the elevator were allotted to sidelines and to the grain according to the percentage of sideline sales and of grain sales, in dollars.

Such a method may seem to place too much of the expense with the sidelines, as they are often carried more as an accommodation or to round out the activities of the elevator. But when the method of apportioning expenses outlined above was used with the two elevators that have departmentalized their business the expenses charged against the sidelines were less than those charged against them on the departmental basis. While, as before stated, no method is exact, yet this analysis indicated that for the average elevator the dividing of the expenses in the same ratio as the sideline sales are to the grain sales is probably as fair and reliable as any.

Such an apportionment of expenses was made for 20 Colorado farmers' elevator companies and the results are contained in Tables XI and XII. In 1929-30 more than half of these elevators fared better on their sidelines than with grain. Only five companies show a loss on the sidelines handled. Three of these sustained losses of less than $100. The net trading profit from sidelines ranged from a gain of $16,011 to a loss of $1,261, with an average net gain of $2,169. The average net profit from the handling of grain was only $234. There was quite a wide range in the net grain trading profit. Three of the elevators had a net gain of more than $10,000 (one had a gain of about twice that amount). Two of the elevators had a net loss of more than $10,000. The 1929-30 season was rather a difficult year with the majority of the 20 farmers' elevators because of rapidly falling grain prices. Twelve of these companies finished the year with a net trading loss on grain of from $677 to $13,764. Four of them had a trading loss even before the operating expenses were deducted.

On the whole these farmers' companies had a better year in 1930-31. Only six of the elevators closed the year with a net trading loss on grain. The greatest loss was $8,104, while the other grain losses ranged between $1,000 and $4,000. Part of

Table XI.—A comparison of the gross trading profit or loss, the estimated share of expenses, and net trading profit or loss for the grain and sidelines handled by 20 farmers' elevators, 1929-30.

Elevator	Gross trading profit or loss		Expenses		Net trading profit or loss	
No.	Grain	Sideline	Grain (estimated)	Sideline (estimated)	Grain (estimated)	Sideline (estimated)
43	$26,241	$ 5,078	$ 6,893	$ 4,992	$19,348	$ 86
23	24,901	22,031	9,331	12,728	15,580	9,303
15	18,467	1,272	6,966	445	11,501	827
20	18,249	6,457	8,595	2,424	9,654	4,033
31	7,879	5,017	3,669	2,249	4,210	2,768
29	6,838	8,877	9,916	4,050	-3,078	4,827
47	6,568	163	2,814	57	3,754	106
39	5,231	1,331	2,935	439	2,296	892
42	4,629	1,046	4,324	376	305	670
2	1,714	36,084	8,472	20,073	-6,758	16,011
33	901	3,749	3,909	4,777	-3,008	-1,028
11	890	880	1,567	921	-677	-41
17	490	4,760	1,902	6,021	-1,406	-1,261
12	467	366	4,928	429	-4,461	-63
5	434	2,130	4,711	642	-4,277	1,488
1	-138	22	2,683	83	-2,821	-61
28	-1,455	1,324	6,201	396	-7,656	928
16	-5,994	73	6,416	65	-12,410	8
35	-7,103	1,200	6,661	995	-13,764	205
Average					234	2,169

Table XII.—A comparison of the gross trading profit or loss, the estimated share of expenses, and net trading profit or loss for the grain and sidelines handled by 20 farmers' elevators, 1930-31.

Elevator No.	Gross trading profit or loss		Expenses		Net trading profit or loss	
	Grain	Sideline	Grain (estimated)	Sideline (estimated)	Grain (estimated)	Sideline (estimated)
20	$32,993	$ 4,598	$ 9,704	$ 960	$23,289	$ 3,638
23	26,992	25,167	11,690	14,677	15,302	10,490
2	14,366	28,353	9,800	19,819	4,566	8,534
43	11,395	2,539	9,024	5,769	2,371	-3,230
28	10,500	524	8,392	171	2,108	353
1	10,320	42	3,835	39	6,485	3
16	10,140	-169	7,110	72	3,030	-241
15	9,923	561	7,227	544	2,696	17
35	9,498	637	8,149	520	1,349	117
47	8,055	.....	3,779	.....	4,276	.....
42	7,808	1,812	4,557	681	3,251	1,131
31	7,028	3,676	4,430	2,182	2,598	1,494
39	5,377	-1	4,279	273	1,098	-27
11	4,798	499	3,114	638	1,684	-139
12	3,710	539	5,287	861	-1,577	-322
5	3,644	335	4,765	589	-1,121	-254
29	2,886	6,901	6,745	6,481	-1,859	420
17	2,431	6,173	4,683	4,683	-2,252	1,490
33	1,650	3,221	3,673	4,142	-2,023	-921
40	-3,765	8,715	4,339	5,304	-8,104	5,411
Average					2,758	1,286

the $8,104 loss was really the result of the previous year's operations, but was carried into 1930-31 because a considerable volume of grain was overvalued when invoiced at the end of 1929-30. The largest net grain trading profit in 1930-31 was $23,289. The average net gain on grain was $2,758. The average gain from sidelines was only $1,286. Seven elevators had a loss on sidelines when their proportionate share of the expenses had been taken into account. Only one of these losses was for more than $1,000, however. This elevator had a net loss on sidelines of $3,230, largely because they handled more than $146,000 worth of livestock with practically no margin of profit. The analyses of both these years indicate that the handling of sidelines quite frequently results in some profit even after their share of the expenses has been considered and that when a loss does occur it is usually comparatively small.

Tables XIII and XIV show the combined net trading profit or loss of grain and sidelines. The final net incomes are also shown after the miscellaneous or other income has been added. Other income includes such revenues as rent, interest, claims or bad debts collected. The net incomes ranged, in 1929-30, from a gain of $19,572 to a loss of $13,351. The corresponding figures

for 1930-31 were a gain of $29,122 and a loss of $2,882. Nine of the 20 elevators suffered losses in 1929-30, while only four were unable to show profits for the 1930-31 season. The average net incomes of the group for these 2 years were $3,408 and $5,211, respectively.

Table XIII.—The net trading profit or loss, other income and net income of 20 farmers' elevators, 1929-30.

Elevator No.	Net trading profit or loss	Other income	Net Income
43	$19,434	$ 138	$19,572
23	24,883	4,047	28,930
15	12,328	70	12,398
20	13,687	2,091	15,778
31	6,978	320	7,298
29	1,749	2,741	4,490
47	3,860	...	3,860
39	3,188	84	3,272
40	2,031	847	2,878
42	975	673	1,648
2	9,253	3,644	12,897
33	—4,036	1,617	—2,419
11	—718	38	—680
17	—2,667	1,275	—1,392
12	—4,524	170	—4,354
5	—2,789	350	—2,439
1	—2,882	...	—2,882
28	—6,728	1,624	—5,104
16	—12,402	162	—12,240
35	—13,559	208	—13,351
Average	$ 2,403	$1,005	$ 3,408

Table XIV.—The net trading profit or loss, other income and net income of 20 farmers' elevators, 1930-31.

Elevator No.	Net trading profit or loss	Other income	Net Income
20	$26,927	$ 451	$27,378
23	25,792	3,330	29,122
2	13,100	2,975	16,075
43	—859	1,004	145
28	2,461	1,488	3,949
1	6,488	115	6,603
16	2,789	747	3,536
15	2,713	30	2,743
35	1,466	1,539	3,005
47	4,276	100	4,376
42	4,382	547	4,929
31	4,092	191	4,283
39	824	106	930
11	1,545	418	1,963
12	—1,899	2,414	515
5	—1,375	262	—1,113
29	—3,439	2,520	—919
17	—762	1,736	974
33	—2,944	1,562	—1,382
40	—4,693	1,811	—2,882
Average	$ 4,044	$1,167	$ 5,211

One fact must be recognized in connection with the losses suffered by farmers' grain elevators. It may happen that the farmers' association has assumed a loss that really should have been borne by the individual farmers—that is, the elevator operated on too narrow a margin in an effort to secure for the members as much as possible for their products. Even when a satisfactory margin is obtained, losses may occur because of such factors as insufficient volume, mismanagement, too large an investment, or too much overhead.

The margins realized on the grain received by the elevators under discussion ranged from 8.8 cents to a minus 1.8 cents a bushel in 1929-30 (gross profit or loss, Table XV). The estimated cost or expense[12] ranged from 13.9 cents down to 1.6 cents a bushel. Six of the elevators had an expense of 2.0 cents or less per bushel. All of these low-cost establishments had a volume of more than 175,000 bushels. The expense of four was more than 5.0 cents per bushel. These all had a volume of less than 175,000 bushels. Eight of the elevators made profits ranging from .2 to 5.7 cents per bushel. The other 12 suffered losses of from 1.6 to 10.7 cents a bushel. The majority of these lost because of insufficient volume, altho a number would have fared much better had they been able to realize a satisfactory margin.

In 1930-31 all of the elevators, except one, realized a trading margin or gross trading profit per bushel (Table XVI). This one unit would probably have realized a gross profit if the grain in store there had been invoiced at the market when the audit was made at the end of the 1929-30 season. The other 19 were able to obtain margins ranging from .9 to 6.2 cents per bushel. The expenses ranged from .9 to 7.5 cents per bushel. Twelve elevators had a per bushel cost of less than 2.0 cents. The volume handled by each of these was more than 200,000 bushels.

Four elevators had an expense of more than 5.0 cents a bushel. These all handled volumes of less than 102,000 bushels. Fourteen of the group had net profits ranging from .2 to 2.4 cents a bushel, while six lost from .7 to 17 cents a bushel. Five of these handled less than 175,000 bushels. The other one handled almost 100,000 bushels more than that, but nevertheless sustained a loss because the margin or gross profit was only .9 cents a bushel.

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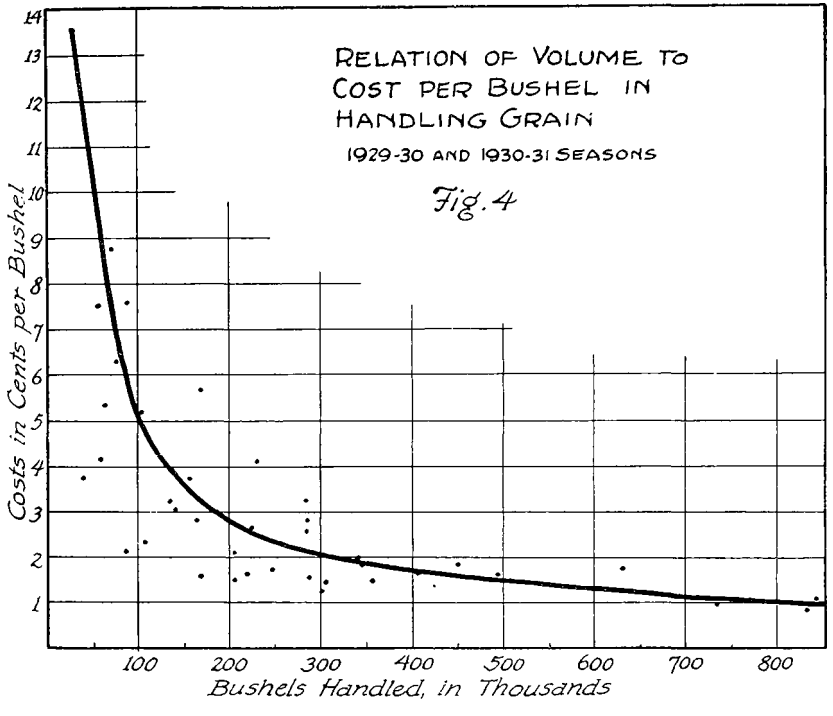
[12] For method of estimating expenses, see page 27.

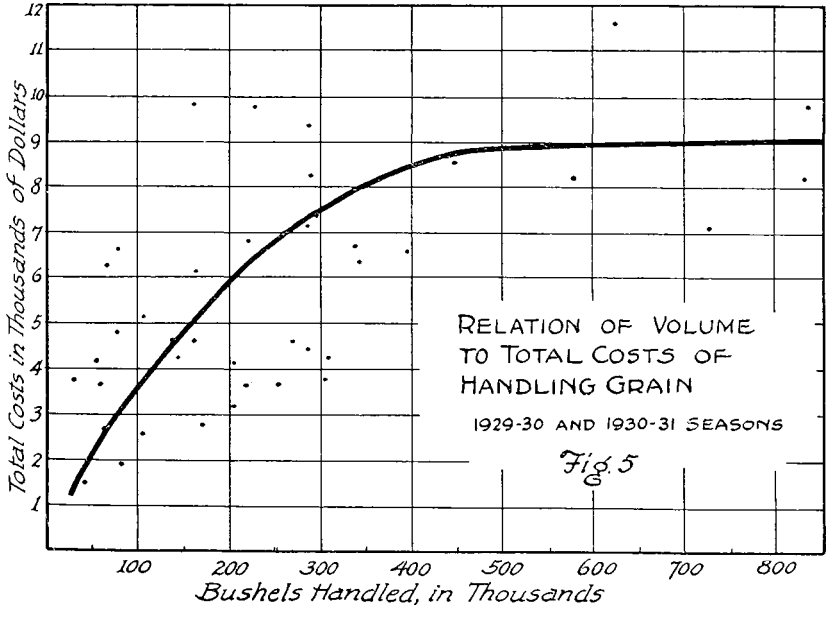
Table XV.—A comparison of the volume of grain and the gross profit or loss, the expenses and the net profit or loss per bushel at 20 farmers' elevators, 1929-30.

Elevator No.	Per bushel analysis of grain trading			
	Volume of grain	Gross profit or loss	Estimated grain expenses	Net profit or loss
	(bushels)	(cents)	(cents)	(cents)
20	450,928	4.0	1.9	2.1
35	398,401	—1.8	1.7	—3.5
16	345,218	—1.7	1.9	—3.6
43	341,249	7.7	2.0	5.7
2	291,795	.6	2.9	—2.3
23	281,721	8.8	3.3	5.5
15	225,025	7.2	2.7	4.5
31	222,144	3.5	1.7	1.8
47	173,376	3.8	1.6	2.2
49	171,014	4.0	5.8	—1.8
28	162,995	—.9	3.8	—4.7
42	145,448	3.2	3.0	.2
5	138,489	.3	3.4	—3.1
1	109,591	—.1	2.4	—2.5
17	82,216	.6	2.3	—1.7
12	76,849	.6	6.4	—5.8
40	72,663	6.6	8.9	—2.3
39	70,551	7.4	4.2	3.2
11	41,319	2.2	3.8	—1.6
33	28,083	3.2	13.9	—10.7

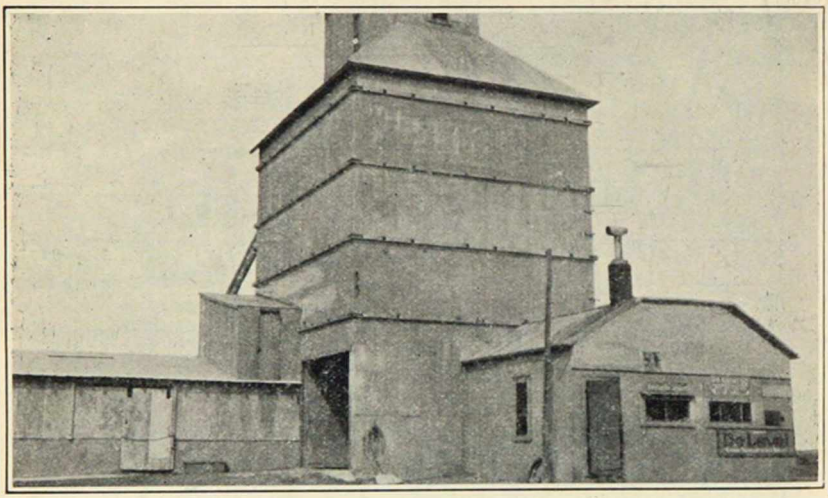
Table XVI.—A comparison of the volume of grain and the gross profit or loss, the expense and the net profit or loss per bushel at 20 farmers' elevators, 1930-31.

Elevator No.	Per bushel analysis of grain trading			
	Volume of grain	Gross profit or loss	Estimated grain expenses	Net profit or loss
	(bushels)	(cents)	(cents)	(cents)
20	984,705	3.4	1.0	2.4
35	887,573	1.1	.9	.2
16	728,419	1.4	1.0	.4
23	629,660	4.3	1.9	2.4
28	581,821	1.8	1.4	.4
43	495,079	2.3	1.8	.5
31	304,700	2.3	1.5	.8
1	303,866	3.4	1.3	2.1
42	283,964	2.7	1.6	1.1
15	283,045	3.5	2.6	.9
17	273,651	.9	1.7	—.8
47	256,142	3.1	1.5	1.6
2	231,160	6.2	4.2	2.0
39	207,729	2.6	2.1	.5
11	201,273	2.4	1.5	.9
5	167,166	2.2	2.9	—.7
12	101,821	3.6	5.2	—1.6
29	88,302	3.3	7.6	—4.3
33	68,688	2.4	5.3	—2.9
40	58,227	—6.5	7.5	—14.0


RELATION OF VOLUME TO COST PER BUSHEL IN HANDLING GRAIN
1929-30 AND 1930-31 SEASONS
Fig. 4
Costs in Cents per Bushel
1
2
3
4
5
6
7
8
9
10
11
12
13
14
100
200
300
400
500
600
700
800
Bushels Handled, in Thousands


RELATION OF VOLUME TO TOTAL COSTS OF HANDLING GRAIN
1929-30 AND 1930-31 SEASONS
Fig. 5
Total Costs in Thousands of Dollars
1
2
3
4
5
6
7
8
9
10
11
12
100
200
300
400
500
600
700
800
Bushels Handled, in Thousands

Thus the analysis of Tables XV and XVI seems to indicate that there is a fairly definite volume range which the elevators must, as a rule, at least approach if they are to realize a profit on their grain trading. Figure 4 substantiates the conclusion. In this scatter diagram each dot represents the volume and costs per bushel for one elevator for 1 year. The costs and volumes of 20 Colorado farmers' grain elevators for the fiscal years of 1929-30 and 1930-31 are included in the diagram. All of the elevators with a volume of more than 300,000 bushels operated with a per bushel cost of less than 2.0 cents. The free-hand curve in Fig-



A diversified business.

ure 4 indicates that the costs per bushel are relatively high for those grain companies that are compelled to operate with a volume of much less than 200,000 bushels.

Figure 5 shows approximately how the total expenses or costs increase with increased volume. The total costs show a tendency almost opposite that of the costs per bushel—that is, the curve representing total costs rises rather rapidly as the volume increases from 50,000 bushels up to 300,000 bushels and then flattens out, whereas the curve representing the costs per bushel falls very rapidly as the volume handled increases from 50,000 bushels to 200,000 bushels and flattens out after the 300,000-bushel point is reached.

It would seem, then, that a farmers' grain concern should have a minimum volume of about 175,000 bushels and that it has a much better chance of success if it can secure 300,000 bushels or more.

FINANCIAL FACTORS AND STANDARDS

Tables XVII-A and XVII-B contain a comparison or analysis of certain phases of the business methods or practices of 20 Colorado farmers' grain elevators. The factors or ratios have been grouped into four divisions: I, Working Capital Situation; II, Fixed Capital Analysis; III, Financial Results of Operation; and IV, Volume. Between the two horizontal lines in the middle of the table are the "desirable standards" for each factor or ratio. These desirable standards[13] are the results of a large number of studies conducted by the experiment stations of the various grain states and of surveys made by the Division of Co-operative Marketing.[14]

The ratios of each elevator were placed in the table according to rank, with those better than the desirable standard above the two horizontal lines and those under the standard below these lines. Thus the table contains ratios of all the elevators without revealing the identity of any individual organization. If it is desirable to point out the position of any particular elevator to its manager or directors it can be done by underlining the ratios pertaining to that business as represented by a hypothetical example, shown in boldface type in Appendix B.

It has been found that if farmers' grain organizations are to be successful they must equal or exceed a majority of these standards. The ratios in Tables XVII-A and XVII-B indicate the position of the Colorado elevators at the end of the 1930-31 season and are based upon the audits made at that time.

In division I are those factors concerned with the working capital situation. The first column considers the ratio of current assets to current liabilities. The current assets are cash and other items not of a fixed investment character, while current liabilities are short-term obligations that must be paid within 12 to 14 months. The standard for column A is 2 to 1; that is, the current assets should be twice the current liabilities. It is commonly recognized by most business concerns that current obligations can be readily met, without sacrifice, if such a ratio is maintained.

Twelve of the elevators included in this study were above the 2 to 1 standard. Two of these had current assets which were more than 50 times their current liabilities.

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[13] The desirable standards were originated largely by Professors R. M. Green and Vance Rucker of the Kansas Station. The standards were determined from elevator records collected in that state in 1921, 1922 and 1923. These ratios, however, have been used in one form or another in various statement analyses. The present setup was changed somewhat from the original by the authors.

[14] Formerly with the United States Department of Agriculture but now a section under the Federal Farm Board.

Table XVII-A.—Ratio analysis of 20 Colorado farmers' elevators at end of 1930-31 season.

	I. Working capital situation					II. Fixed capital situation	
	A	B	C	D	E	F	G
	Current assets to current liabilities	Cash and receivables to current liabilities	Ratio of sales to receivables	Ratio of sideline sales to receivables	Ratio of cash to current liabilities	Ratio of sales to fixed assets	Ratio of net worth to fixed assets
	.....	.....	.....	.....	.....	67.61	.....
	.....	.....	315.95	.....	39.81	28.26	.....
	.....	.....	198.68	.....	24.72	24.93	.....
	56.37	49.48	83.07	.....	8.60	22.05	4.08
	59.91	48.45	69.67	.....	7.50	21.01	3.73
	17.60	16.18	64.97	.....	4.84	20.87	3.61
	13.72	10.68	43.65	.....	2.18	19.80	3.27
	11.58	9.96	36.65	.....	1.77	17.12	2.70
	5.62	4.25	36.43	.....	1.07	17.04	2.54
	5.38	3.86	25.03	.....	.80	14.48	2.27
	4.90	2.48	21.60	.....	.72	12.78	2.05
	3.81	2.43	18.06	.....	.53	11.03	2.00
	3.36	1.46	17.29	.....	.26	10.11	1.82
	2.37	1.37	14.74	32.98	.26	8.47	1.74
	2.01	1.32	14.52	15.97	.23	8.20	1.60
Desirable standards.....	2 to 1	1 to 1	12 to 1	12 to 1	.2 to 1	8 to 1	1.5 to 1
	1.49	.75	11.77	9.80	.08	6.01	1.34
	1.39	.61	11.55	5.74	.06	3.16	1.20
	.96	.57	10.64	5.74	.02	2.41	.89
	.92	.55	6.96	4.87	.01	2.10	.89
	.85	.52	4.45	4.68	.01	1.36	.89
	.85	.52	1.86	4.50	.01	.....	.83
	.72	.46	.....	4.12	.....	.....	.46
	.61	.41	.....	4.12	.....	.....	.....
	.....	.....	.....	3.71	.....	.....	.....
	.....	.....	.....	3.60	.....	.....	.....
	.....	.....	.....	3.04	.....	.....	.....
	.....	.....	.....	3.04	.....	.....	.....
	.....	.....	.....	2.71	.....	.....	.....
	.....	.....	.....	2.56	.....	.....	.....
	.....	.....	.....	2.45	.....	.....	.....
	.....	.....	.....	1.26	.....	.....	.....
	.....	.....	.....	.74	.....	.....	.....
	.....	.....	.....	.62	.....	.....	.....

Table XVII-B.—Ratio analysis of 20 Colorado farmers' elevators at end of 1930-31 season.

	III. Financial results of operation						IV. Volume
	H	J	K	L	M	N	O
	Ratio of operating cost to gross income	Ratio of cost of total sales to total sales	Ratio of cost of sideline sales to sideline sales	Ratio of cost of wheat sales to wheat sales	Ratio of salaries and wages to total operating expense	Relation of salaries and wages to gross sales	Turnover of grain
	.....	.....	.....	.....	.29	.....	40.5
	.....	.....	.....	.....	.31	.....	40.5
	.....	.....	.....	.....	.36	.....	32.3
	.32	.....	.....	.....	.43	.....	28.7
	.37	.....	.....	.....	.43	.....	25.2
	.47	.....	.....	.80	.45	.....	25.2
	.48	.....	.....	.84	.46	.74	21.4
	.61	.79	.....	.93	.47	.84	20.1
	.65	.89	.....	.93	.48	.97	19.1
	.66	.89	.....	.94	.50	1.25	18.3
	.67	.91	.....	.94	.52	1.25	15.3
	.68	.92	.....	.94	.53	1.35	14.2
	.74	.93	.....	.94	.53	1.56	12.3
	.77	.93	.....	.94	.54	1.68	12.3
	.83	.94	.78	.94	.54	1.68	11.8
	.91	.94	.80	.94	.55	1.84	11.0
	.92	.94	.80	.95	.55	1.96	10.2
Desirable standards.....	.96 to 1	.94 to 1	.85 to 1	.95 to 1	.6 to 1	2%	10 to 1
	.99	.95	.86	.96	.62	2.26	7.7
	1.07	.95	.87	.96	.63	2.54	7.4
	1.26	.96	.91	.96	.67	2.81	3.4
	1.39	.96	.92	.97	.....	3.78	1.2
	1.43	.96	.92	.98	.....	4.06	.....
	2.06	.97	.92	.98	.....	4.22	.....
	.....	.97	.93	1.06	.....	6.11	.....
	.....	.97	.95	1.83	.....	7.09	.....
	.....	.97	.95	.....	.....	7.95	.....
	.....	.98	.95	.....	.....	.....	.....
	.....	.....	.97	.....	.....	.....	.....
	.....	.....	.98	.....	.....	.....	.....
	.....	.....	.98	.....	.....	.....	.....
	.....	.....	.98	.....	.....	.....	.....
	.....	.....	1.00	.....	.....	.....	.....
	.....	.....	1.05	.....	.....	.....	.....
	.....	.....	1.06	.....	.....	.....	.....
	.....	.....	.....	.....	.....	.....	.....

Two of the eight elevators below the 2 to 1 standard had current assets that were more than their current liabilities. One of these two had a surplus of more than the total liabilities and therefore could have paid them off had they so desired. The other association had paid out more than $10,000 in patronage dividends at the end of the 1929-30 season, but was compelled to borrow that much before the close of the next season. It was able to do this because of a good credit standing.

Of the six elevators whose current liabilities were more than their current assets, one has since gone into the hands of a receiver, one has been practically bankrupt for a number of years and is now operated by a leasee, another has been controlled largely by a bank for a number of years. The other three are able to secure working capital because of the credit or influence of the directors.

Column B gives the ratio of cash and receivables to current liabilities. Receivables consist of notes and open accounts which are due the business. The standard here is 1 to 1, meaning that the current liabilities should not exceed the cash plus the notes and accounts due the elevator. This ratio would enable the company to pay all current obligations if suddenly called upon to do so, without selling anything, merely by converting all receivables into cash. If the accounts are not all immediately collectible they can usually be discounted unless of a doubtful character.

Column C is a consideration of the relation of total sales to receivables. It is usually desirable that the accounts due an elevator should be paid on the average at least once a month. This can be accomplished even if some accounts run for more than 30 days if there are enough cash sales to counterbalance the longer accounts. Such an average will mean that the number of accounts outstanding at the end of the year will be one-twelfth of the total sales for the year. Thus the standard of sales to receivables should be not less than 12 to 1. A smaller ratio indicates too much credit or too many slow accounts. Fourteen of the Colorado elevators had better than a 12 to 1 ratio. Two of them had ratios that exceeded the standard more than 10 times, which indicates that they do very little credit business. Only three of the elevators were enough below the standard to be on dangerous ground.

The credit extended by most elevators is for the sale of sidelines, hence the receivables should usually be compared with the yearly sideline sales and not with the total sales. Such a comparison was made in column D and reveals that all but two of the elevators extend too much credit on sidelines. In one or

two instances the receivables were not due entirely to the sideline part of the business, yet these ratios show that most of the elevators have been too liberal with credit on sidelines.

The last ratio under "working capital situation" is that of cash to current liabilities. The standard here, column E, is .2 to 1; that is, the cash should be 20 percent of the current liabilities. Money in the bank, which is subject to check, as well as till money, is considered as cash. Such a 20 percent ratio should make it possible for the business to meet all immediate payment demands.

An elevator association having a favorable standing in respect to all the five factors of division I, should have ample working capital for all ordinary elevator operations and should also be able to secure credit whenever needed.

Two factors are considered in division II, "fixed capital analysis," that of the relation of sales to fixed assets and net worth to fixed assets. The standard of the first of these ratios, column F, is 8 to 1; that is, the total sales should be at least eight times the fixed assets. Fixed assets include all long-term and permanent investments less the reserve for depreciation. If the sales of an elevator are below the standard they have too large an investment for the business that is obtainable or which they have been able to secure. Three-fourths of the elevators were above the standard which indicates that as a rule the Colorado farmers do not have too much invested in their elevators. Four of the elevators were far below the standard which reveals that some have a serious problem. Almost without exception this has come about because changed cropping practices have reduced the amount of business available.

Column G indicates that the net worth should be one and one-half times the fixed assets or that the members' equity in the business should be one and one-half the fixed assets. The net worth is the outstanding stock of the company plus the surplus and cash reserves. In the case of a deficit the amount of the deficit must be subtracted from the outstanding stock in order to find the net worth. The net worth of 15 of the elevators was above or near the desirable standard.

This brief analysis of the fixed capital should disclose the position of the company in regard to the amount invested in the business.

Division III (Table XVII-B) is a summary of the financial results of operation and was made from the standpoint of six factors. The first of these, that of the relation of operating cost to gross income, column H, has a standard of .96 to 1. This

means that for every dollar of gross income the cost of producing that income should not exceed 96 cents, thus leaving a net income of 4 cents or 4 percent of the gross income. Column H shows 14 elevators above the standard with operating costs of less than 96 percent of the gross income and also that the operating expenses of the 20 elevators ranged from less than one-third to more than twice the gross income.

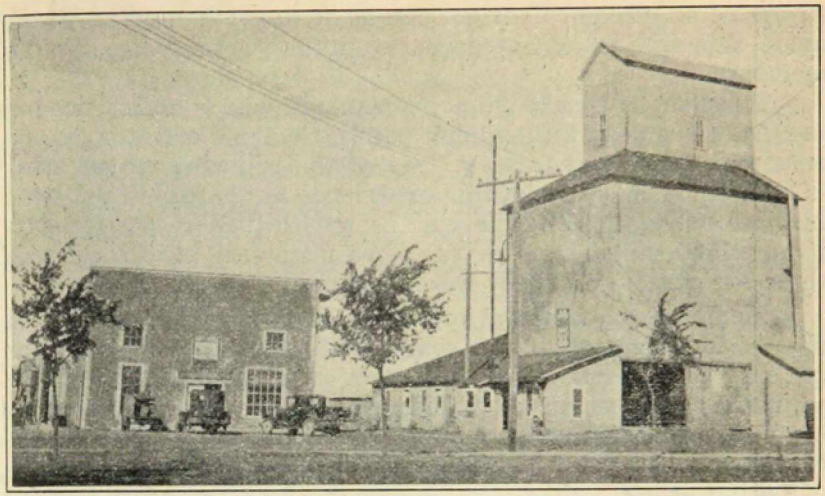
The next three columns consider the relation of cost of sales to sales, considering the total sales, sidelines and wheat sales. The cost of sales is obtained by adding the opening inventory to purchases and deducting the closing inventory. Column J indicates that the cost of total sales should not exceed 94 percent of the total sales. Exactly half of the elevators were above this standard and half below, but in no case did the cost of total sales exceed the total gross sales.

The standard for sideline sales is .85 to 1. Therefore, the average profit should be 15 percent on the sidelines handled by farmers' elevators. Column K discloses that only 3 of the 20 companies averaged 15 percent or better, that 10 had a margin of less than 10 percent and that 3 had a gross loss on the sidelines handled. This proves that the majority of the elevators realized too narrow a margin on sidelines and shows why the net profits from sidelines are often small.

The desirable standard for wheat sales is .95 to 1, which means that the margin is 5 cents per dollar sales or 5 percent. *It should be noted that the margin is not 5 cents a bushel.* Column L reveals that 12 of the elevators obtained margins which were equal to or better than the standard and that 11 were within 1 percent of the desirable margin.

The last two factors in division III are a consideration of the relation of salaries and wages, first with the total operating expense and second, with the gross sales. Salaries and wages should not be more than 60 percent of the total operating expense and therefore the standard in column M is .6 to 1. These elevators show very favorably in this respect, as only three were above the 60 percent and ranged down to about 30 percent. Column N indicates that the salaries and wages should not be more than 2 percent of the gross sales. This is a ratio that is fairly easy to maintain for those with a large volume of business but extremely difficult for those handicapped because of insufficient volumes.

The volume or turnover of grain ratio is the only factor considered in division IV. The standard in this case is 10 to 1; that is, an elevator with a capacity of 10,000 bushels should handle at least 100,000 bushels of grain. According to column C two elevators had a turnover much less than the standard, two had



An example of a combined business

turnovers a little less, while all the others had turnovers ranging from 10 up to about 40.

CONCLUSIONS

The problems of farmers' grain elevators are many and varied, yet certain ones confront most associations some time during their existence. There is one thing that should be answered even before the association is organized, namely: Is there a place and a definite need for such an organization? If this question is not investigated and properly answered, the farmers' company may spend its entire life struggling for an existence.

When the company is ready to start operations it is very important that proper management be procured. In order to do this the most-capable and best-informed members should be elected as directors. This does not necessarily mean the organizers or the best talkers, for it sometimes happens that they do not make good as directors or managers. The directors should have some conception of business principles and should be able to cooperate among themselves and with their manager.

It is the duty of the directors to select the manager. In doing this they should realize that the man who is willing to manage a business for the lowest salary may not prove to be for the best interest of the business; neither should friendship nor relationship be allowed to influence their choice. After the manager has been hired the directors should outline the general policies and then allow the manager to conduct the business. The

efforts of an efficient manager can be seriously hampered by too much supervision or interference on the part of directors or members.

It is usually best to employ a manager who is experienced in the grain business, altho a man with little or no elevator experience may prove satisfactory. Six of the managers cooperating in this study had no elevator experience at the time they were hired as managers. They have all been with their respective companies for a number of years. Two managers have been with their companies since they were organized.

Members of farmers' organizations sometimes ask for a change in managers if the company fails to pay dividends or suffers a loss. They are apt to forget or fail to realize that their company could lose merely because the manager paid them a few cents too much per bushel for their grain and not because he was careless or dishonest. This may be especially true during periods of falling prices.

It is also the duty of the directors to see that adequate records are kept. At the majority of the elevators the manager keeps the books. In some instances this is entirely satisfactory while at others it is not, because the manager either has to spend time on his books that should be spent elsewhere or he has to let his records go with as little attention as possible until a slack season. If this is done inaccurate and careless work may be the result.

The systems of bookkeeping used are usually those recommended by the company's auditor and are in the main satisfactory. However, there is one phase that should be given more attention. Few of the auditors or boards of directors require that an accurate and detailed record be kept of the number of bushels of grain bought and sold. At a number of places the only record kept is that of the carlot sales and in some instances this is not accurate or complete. When one manager was questioned about the lack of bushelage record he replied that the only thing they were interested in was dollars and cents. This may be largely true, yet in order to make a complete analysis of the business the other record should be available. In one instance a flour mill was operated by the farmers' company and yet no record was kept of the number of bushels of grain furnished to the mill by the elevator.

There is scarcely an elevator that does not have a financial problem of some kind. If they have a deficit, how can it be removed? Where there is sufficient volume and the deficit has occurred because of one or two unfortunate years, the shortage should, thru loyal membership and careful efficient management,

be removed in a comparatively short period. On the other hand, if the deficit has been steadily increasing for a number of years and the volume has at the same time been declining, the problem is difficult and perplexing. A few of the Colorado farmers' elevators have just such a problem. This could have been avoided by at least one of these companies.

The experience of this association is typical of many a farmers' elevator. The farmers were organized largely thru the efforts of an outside organizer to whom they paid a 5 percent commission. They sold the stock for a small cash payment and took notes for the balance. When the organization was complete they found it took most of the cash to pay the organizer his commission and hence were ready to start business with little in the treasury except notes. The association acquired an elevator from a private dealer by heavily mortgaging it and secured working capital thru the medium of a directors' joint note and started to buy and sell grain. For a number of years the elevator handled a good volume of grain and considerable profit was made each year. No reserves were set up nor was the mortgage indebtedness retired or provisions made for its retirement. All profits were paid out to the members in the form of dividends. The majority of the members have received dividends in an amount greater than the par value of the stock they hold. There came a time, however, when the volume began to decrease, due largely to changing cropping practices. Soon the books showed a deficit. Today the plant is still mortgaged, has a deficit of a good many thousand dollars and still they struggle on.

Other associations may have no deficit, yet they are somewhat hampered thru the lack of working capital because the members insist on declaring all of the profits in dividends. One way of meeting such a situation would be to declare the dividends, but defer payment for, say, 3 years. In this way a revolving fund could be built up to be used as working capital and to meet emergencies and yet, after the lapse of the first 3 years, dividends would be paid every year. (That is, unless none had been declared 3 years previous.) Such a method would probably also work for the benefit of the members, as the years when large dividends are declared are usually the years when the farmer least needs them.

The company whose finances are in good shape usually has a problem. How shall the finances be kept in good shape? This is more difficult than it appears, as the members do not always see the value of a surplus or reserve. Nor do the directors, the manager or the members always agree upon the amount of reserves. Authorities have contended that a going concern should

have a surplus or reserves equal to the outstanding capital stock. Some members, while willing that their company shall establish and keep reserves, feel that they should have the privilege of borrowing from the reserve fund and with little or no security. Educational work on good business principles should help the members to see that their company must proceed along lines coherent with sound business practices. Even some of the better farmers who conduct their own businesses in an orderly, intelligent manner are not always willing to admit that their company should do likewise.

Colorado farmers' elevators are quite generally concerned with questions regarding the extension of credit. The deferred payments are usually due to sidelines and, as there has been a tendency the last few years to increase the number of sidelines, the volume of credit accounts has been steadily increasing. The sudden declining price level made this situation more acute. The associations were confronted with large book accounts which greatly reduced their working capital.

The elevators are attempting to meet the situation in various ways. Some are attempting to go on a cash basis, others extend credit to members only, with some restricting their credit to an amount not to exceed the value of the stock each member owns. A number are reducing the number of sidelines, while others are placing the extension of credit largely with the board of directors.

A few of the associations who placed in their by-laws a provision that the dividends on stock should be high, in order to attract capital, are now experiencing difficulty in maintaining an active local membership. This is especially true where the by-laws contain no provision for the retirement or transfer of absentee stock. If the company has been successful and has always been able to pay the stock dividend, the members who change to other occupations or move out of the shipping area, retain their stock because it is a good investment. Thus the company is obliged to send considerable money outside the community and at the same time often experience a declining volume because of the decreased local membership. Such a situation can be remedied thru a change in the by-laws. It should be comparatively easy to insert an amendment concerning absentee stock, but it may be difficult to pass the amendment calling for a reduction in the stock dividends. The latter provision would reduce the interest payments to local members as well as to outside members, yet the local membership should be willing to make the change because of the following reasons: First, it would lessen the tendency for those who no longer patronize the

elevator to retain their stock and thus make it easier to maintain or build up an active local membership; second, a larger membership will result in a larger volume which should lower the unit costs and increase the profits of the association; third, larger profits mean more patronage dividends for members; and fourth, patronage dividends in turn usually result in more members. Non-member patrons may be induced to become members if they are paid patronage dividends which must be applied toward the purchase of stock in the association.

A campaign to increase the membership may be aided by certain other changes in the company's by-laws. It may be that the par value of the stock is too high for times of low prices and little ready cash. If the par value of the stock is $100 it may be advisable to issue four shares of stock with a value of $25 each to take the place of the $100 stock. This would make it easier for a farmer to become a member and may also induce some of the members to sell a few shares. Another by-law provision sometimes found is one that requires that a member shall own a stipulated number of shares before he may receive patronage dividends in cash. This may have been all right when prices were high, but it is questionable if it is desirable during more difficult times.

It may become necessary for a farmers' organization to put on a special membership campaign, but this can be avoided if they have waged a continuous campaign for members. That is, the manager and directors should always be on the alert for new members and should strive and be empowered to keep an active membership.

The problems and conditions which a farmers' grain elevator is called upon to meet are continually changing. The successful elevator is usually the one that can and does meet these conditions. A change from cash grain crops greatly concerns a farmers' organization. They must either abandon their business or change more and more to sidelines. In a few cases the handling of grain has really become the sideline, as the association now deals largely in farmers' supplies.

A few years ago the payment of protein premiums to the farmer was quite a problem with grain elevators, especially where only part of the shipping area had high-protein wheat. However, during the 1929-30 and 1930-31 seasons protein wheat was plentiful, resulting in small protein premiums; hence the reflection of these premiums to the farmer had ceased to be a problem.

The coming of the truck, together with improved roads, necessitated numerous adjustments. A surfaced road often

diverted a considerable volume of grain. This gave the elevators at certain stations more grain than they were equipped to handle, whereas the volume at other stations was greatly reduced. This was especially true in Colorado, where a portion of the grain is hauled upwards of 40 miles. The truck is also offering serious competition to farmers' grain elevators, as truckers are now supplying feed grain to areas that were formerly supplied by local elevators.

The combine has also brought with it a problem for the farmers' grain company. Their elevator must now handle a larger percentage of the grain during or immediately following harvest and they have been obliged to increase or to enlarge and speed up their equipment. The matter is further complicated because of the fact that combined grain is often damp and immature. Some associations attempt to dry the grain by elevating or fanning it. Others merely ship it out as quickly as possible. A few elevator managers simply refused to receive the grain if it contained too much moisture.

The average farmers' elevator is solving or attempting to solve its problems by making the necessary adjustments, yet there are a few that are seriously handicapped because of location. Good roads, the trucks or other circumstances have taken away their volume and there is but slight hope that it will ever be regained. There seems to be but two things possible for them, either they must pass out of existence or they must become a branch of a neighboring farmers' elevator association. This is difficult to bring about, yet it would be better for both elevators if such a consolidation were made. The combined overhead expenses of the two plants would be less when consolidated than when separate. Only one market connection would need be maintained and other economies could be effected as they would no longer be competing with one another. Certain members would also benefit as they could haul their grain to the nearest elevator and still receive their patronage dividends. There are instances in Colorado where farmers hold stock in two elevators, but take their grain to the elevator handling the larger volume in order that they may receive dividends.

The farmers' elevator renders many services for its members, and for the community as well. Both the members and nonmembers, patrons and those patronizing competing elevators receive the benefit of prices that are probably, as a rule, better than they would otherwise be if a group of farmers were not maintaining their own selling and buying unit. Because they are members of a cooperative company, many farmers are better informed as to market conditions and know what the market de-

mands. Oftentimes because of this they have improved the quality of their product.

The farmers' elevator acts as a clearing house of information, treats seed grain, grinds feeds and renders many other services for its members and patrons. It often helps the farmer collect debts or divide rents. Some associations even lend money to members. In addition to the above and other services, the farmers' elevator also gives to its members a certain pride of ownership.

RECOMMENDATIONS

1. Be sure that there is a need for a farmers' elevator before a movement is started to form an organization.

2. After an organization is formed, elect a good board of directors and see that they pick a good manager.

3. Pay wages for a manager that will secure a first-class man. It is not always the cheap man who is the best man.

4. Keep a good set of books. It may pay to hire a bookkeeper. A good manager should not be compelled to do clerical work.

5. Be slow about paying an outsider a large commission for organizing. Make it a cooperative from the start and let your members have an interest.

6. Make provisions in the by-laws that prevent an influential member obtaining control of the business.

7. Provide for stock retirement of non-producers or members who leave the neighborhood.

8. Protect credit expansion. If necessary put a limit on credit to the amount that each member has invested in the business.

9. Do not promise too high cash dividends. Do not promise that the association will pay dividends at the start and provide, if possible, deferrment of dividends for 2 or 3 years. It is better to operate with small capital successfully than obtain a large capital and go broke.

10. Finally, remember that conditions are changing rapidly in the elevator business. Go slow with your organizing, the present conditions may only be temporary. If necessary, hire good legal counsel or consult those who will give you benefit of their observation and experience. A little time and a few dollars spent in investigation at the start may save a good many dollars in the future.

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APPENDIX A

The following forms were used in the study insofar as they were applicable to conditions in Colorado:

Form 1.
Elevator No.....

Organization and Management of Farmers' Elevators

General

Name of Elevator.....
Location.....
Year organized.....
Cooperative or proprietary.....
Organized under.....Cooperative law.....
Limitation of votes to stockholders.....
Limitation of number of shares owned by any stockholder.....
Do by-laws provide for patronage dividends?.....
Is business of non-members handled on same basis as members?.....
Any limitations of dividends paid on stock.....
Number of stockholders.....Number of patrons.....
Do non-farmers hold stock?.....
Has the company been reorganized since original organization?.....
Reasons: .....
.....
Changes made in organization.....
.....
Frequency of board meetings.....
Frequency of stockholders' meetings: Regular.....Special.....
What publicity work is being accomplished?.....
Is there any provision for retirement of stock of absentee stockholders?.....
.....
Is there any definite provision for changing non-member patrons into member patrons?
.....

Financial Data

Capital stock authorized.....Capital stock subscribed.....
Actual capital secured.....Number of shares.....
Authorized rate of dividend on stock.....Value per share $.....
Are patronage dividends paid to non-stockholders?.....
In same amount as patronage dividend?.....
Division of original capital: Fixed $.....Working $.....
Additional capital stock sold: Amount $.....Shares.....

Analysis of Fixed Indebtedness

Kind	Amount	Source	Date made	Rate	Security

Manager's estimate of amount of outstanding non-collectible.....

Analysis of Operating Capital

Amount	Source	Security	Rate paid	Rate on balances

Is the elevator under obligations to ship a definite proportion of grain to commission company by whom it is financed?.....Percentage.....

Does the manager feel obligated to ship definite amount of grain to commission company by whom financed?.....

Does the commission company insist on close hedging as a security for its loans?.....

When is draft drawn on commission merchant?.....

To what proportion of value of grain?.....

Is there any limit on the amount of credit obtainable at any particular time?.....

Effect of practice of handling stored grain on amounts of operating capital needed.....

.....

Does commission company finance sideline operation?.....

How long has present system of financing been used by elevator?.....

Management

Name of manager.....

Number of years manager held present position.....

Previous experience.....Present salary.....

Is he employed for entire year?.....

Bookkeeper..... Salary.....

Number of helpers.....Rate of wages.....

Number of months each is employed.....

Is manager a member of board of directors?.....

How often does board of directors meet?.....

Number of members of board.....Fees paid to directors.....

How many directors are well informed for duties?.....

Is elevator member of state grain dealers' association?.....

Attitude toward grain pooling: Directors.....Members.....

Physical Properties

Elevators: Type of construction; material, etc.....

Year constructed.....Capital cost.....Capacity.....bu.

Present cost.....Bins, No.....Size.....

Number bins reserved for each grain.....

Engine: Kind.....Size.....H. P.

Age.....Scales, kind.....Size.....

Age.....Cleaner, kind.....Capacity.....Age.....

Number of legs.....Aid dump.....Type of loading scale.....

Adding machine.....Filing system.....Cabinet record safe.....

Other equipment.....Feed grinder, type.....

Capacity..... Cost.....

Coal sheds: construction.....Size.....Capacity.....Cost.....

Machinery warehouse: construction.....Size.....

Capacity..... Cost.....

Feed warehouse: construction.....Size.....

Capacity..... Cost.....

Other buildings: construction.....Use.....Value.....

Grading

Check grading equipment used: moisture tester, double-shelled trier, brass kettle and scales, sieves, other equipment.....

Is the trier used to obtain a sample from each wagonload of grain?.....

How many probes for a wagonload of grain?.....

What proportion of purchases of corn are tested for moisture content?.....

Is each purchase of grain graded carefully?.....

In case of dispute with the farmer regarding the grade of grain, what is the procedure to settle it?

Are there very many such disputes?

For what grains are representative samples sent to terminal markets for grading? For protein test?

Are samples sent to state inspection department?

Under what circumstances are they sent?

Are such samples ever sent at request of producers?

What is the basis of grading when selling at a point that has no inspection?

Is elevator grain graded higher than pooled grain?

Why?

Do farmers bring samples for managers to grade?

Number of protein samples handled for farmers

Dockage

Are dockage and foreign material determined for each load of grain?

If not, is there a flat rate of dockage? Rate?

Is the price paid affected by the presence of dockage?

What equipment is provided to determine dockage?

Is grain over-docked or under-docked intentionally?

Cleaning

Capacity of cleaner for commercial grain cleaning

Proportion of grains cleaned past season: Wheat Durum

Rye Oats Barley

When is commercial grain usually cleaned?

Is commercial grain cleaned at terminals for elevator account?

Does clean grain bring a higher price than dirty grain?

Is dockage increasing in community?

Seed cleaning done past season: No. of farmers

Bushels cleaned Charge per bu.

Is practice increasing? Is seed cleaning a profitable sideline?

Mixing practices

Is mixing grain practiced?

For how many grains is elevator equipped for mixing when loading out?

When is mixing done?

Purpose of mixing past season: Grade Weight

Protein Moisture Foreign materials

Dark vitreous kernels

What qualities were commonly mixed past season?

Under what conditions is mixing profitable?

Unprofitable?

Did elevator gain by mixing past season?

Do federal grades make the mixing of wheat, oats or corn of different grades easier or more difficult?

How do they affect the mixing of different grains (e. g., barley with oats, or rye with wheat)?

Storing

Percentage each grain stored: Wheat Durum

Rye Oats Barley Flax

Charges per bushel collected

Charges collected on "pool" grain

Average length of time grain held in storage

Percentage stored grain put in special bins

Is regular stored grain binned by grades?

Was stored grain stored at terminals past season?
Was it necessary to sell stored grain prior to purchase past season?
Storage liability incurred: Maximum bu. Average bu.
Amount of liability bond
Is stored grain that is sold, hedged?
What methods are used to avoid loss from "spreads"?
Did elevator gain or lose from "spreads" past season?
Does the state law work any hardship on elevators by compelling them to accept grain offered for storage?
Do farmers use storage receipts as collateral for loans?
(See local banker on this point)
Has there been any idle storage space in this market during the past year?
Are advances made to farmers on storage tickets?
If so, does elevator hold tickets, market the tickets or use other methods to protect itself?
If elevator does not store, give reasons why it does not
Attitude of manager toward storing for farmers

Hedging

Did elevator try to hedge closely past season?
Was daily "long" and "short" statement kept?
Manager's attitude toward hedging closely
Board of directors' attitude toward hedging closely
Does manager hedge himself or report to commission company?
Is grain as likely to be hedged on a strong or rising market?
How are hedges for small daily purchases handled?
Is there a tendency to stop hedging when receipts are light?
Is grain sold at local markets, as country mills, hedged?
If so, how?
Is grain ever hedged in a market to which it is not shipped, e. g., wheat sold in Minneapolis and hedged in Duluth?
Does elevator ever hedge a growing crop for a farmer?
Does elevator hedge purchases by contract for future delivery from farmers?
Or grain in the farm granary?
Does elevator handle hedges for patrons?
Or buy and sell futures for itself or for other people for other than hedging transactions?
Do changes in the spread between cash and futures ever seriously interfere with hedging, especially as to stored grain sold?

Selling

Number of Cars Sold by Various Methods

	Corn	Wheat	Rye	Oats	Barley
Consigned					
Sold on track					
Sold to mills					
Sold to arrive					

Is elevator satisfied with sales service?
Attitude of manager toward a cooperative line system of farmers' elevators in area

Market News Service

Is grain bulletin used?
Other sources of market information used
Advantages of information used
Is radio used to secure markets?
Is it satisfactory?
Does elevator need any further market information?
Does elevator receive bureau market analyses?
Is it satisfactory?
Any suggestions for improvement

Competition and Buying Policies

Number of competitors: Line Independent Track Mills
Amounts handled
Degree of competition in past season (keen, moderate, none)
Is there any understanding between managers?

Competition from surrounding stations (degree and effect).....
Distance grain is hauled north.....south.....east.....west.....
Market news srevice used.....
Amount paid over and under the card at different times: Wheat.....
Oats..... Barley..... Rye..... Flax.....
Attempted buying margin at different periods.....
Amount of overgrading on different grains: Wheat.....
Durum..... Rye..... Oats.....
Barley..... Flax..... Corn.....
Special seasonal factors affecting grade (mixtures, test weight, foreign materials, damage, moisture, dark, hard and vitreous kernels, dockage).....
Freight rate to Minneapolis: Wheat.....Oats.....Barley.....Rye.....
Was attempt made to reflect premiums for proteins back to any grower?.....
If so, how?.....
General satisfaction of growers toward prices received.....
Attitude of directors toward buying policy.....
What other means of meeting competition was used past season?.....

Claims

What are the chief causes for claims against railways?.....
Number of claims.....Does elevator prosecute its own claims?.....
Or are they handled by a commission merchant?.....
Is each shipment weighed at elevator?.....

Sidelines

List kinds of sidelines handled.....
Which are profitable?.....
Which are not profitable?.....
Attempted margins taken on each.....
Are sidelines sold on credit?.....
Is elevator equipped for custom grinding?.....
Grains most commonly ground.....
Charges per cwt.....
Is custom grinding considered profitable?.....
Is amount done annually increasing?.....
Estimated expense apportionment between branches of business:

	Expense of Grain Business	Expense of Supplies Business	Expense of Services: Grinding, Seed Cleaning, Etc.
Salaries	% or $	% or $	% or $
Extra labor			
Repairs and renewals			
Depreciation			
Light, heat and power			
Auditing and bookkeeping			
Taxes			
Insurance			
Market news			
Supplies (office and elevator)			
Bad accounts			
Interest and exchange			
Advertising			
Miscellaneous			
Total expense			

Miscellaneous Information

System of accounts used.....
Date of annual cutoff.....
Name of auditor.....
Commission company handling account.....
Name of person taking this record.....
Date of this record.....

Form No. 2

RECORD OF CASH OR STORED PURCHASES

Elevator

Town

Date	Quantity	Grade	Price	Amount	Date	Quantity	Grade	Price	Amount

Form No. 3

CONTRACT GRAIN

Elevator _____

Town _____

Name of farmer	Date of contract	Amount	Kind of grain	Grade	Price	Delivery dates					Remarks

Form No. 4

RECORD OF CASH SALES (RETURNS)

Elevator _____

Town _____

(Use separate sheets for each grain)

Date sold	Car number	Market	Test weight	Grade and dockage	Foreign materials	Moisture	% dark vitreous kernels	Protein content	Dockage (bushels)	Net bushels	Price	Amount	Deductions (expense)	Net

Form No. 5

Elevator

Local sales

Town

Date	Net bushels	Amount	Date	Net bushels	Amount

Form No. 6

RECORD OF HEDGING TRANSACTIONS

Elevator _____

Town _____

(Use separate sheets for each grain.)

Date	Quantity	Commodity bought	Price	Loss	Date	Quantity	Commodity sold	Price	Gain	Tax	Commission	Interest	Net loss	Net gain

Form No. 7

RECORD OF STORAGE OPERATIONS

Elevator

Town

(List storage tickets consecutively—each grain separately.)

Storage ticket number	Net bushels	Date of issue	Date of purchase	Number of days in store	Storage charges earned	Storage charges collected	Storage charges waived

APPENDIX B

The following outlines show the methods of presenting the business or ratio analysis to the officials of the elevators:

A_____Elevator Company

B_____, Colorado

1930

		Desirable
I. Working capital situation:		
1. Current assets to current liabilities	4.90 to 1 excellent	2 to 1
2. Cash and receivables to current liabilities	2.48 to 1 excellent	1 to 1
3. Ratio of sales to receivables	43.65 to 1 good	12 to 1
4. Ratio of sideline sales to receivables	15.97 to 1 good	12 to 1
5. Ratio of cash to current liabilities	1.77 to 1 fair	.2 to 1
II. Fixed capital analysis:		
1. Ratio of sales to fixed assets	10.11 to 1 good	8 to 1
2. Ratio of net worth to fixed assets	2.27 to 1 good	1.5 to 1
III. Analysis of finanical results of operations:		
1. Ratio of operating costs to gross income	.65 to 1 good	.96 to 1
2. Ratio of cost of sales to sales	.91 to 1 good	.94 to 1
3. Ratio of cost of sideline to sideline sales	.80 to 1 good	.85 to 1
4. Ratio of cost of wheat sales to wheat sales	.94 to 1 fair	.95 to 1
5. Ratio of salaries and wages to total operating expense	.50 to 1 good	.6 to 1
6. Relation of wages to gross sales	4.06 to 1 high	2%
7. Relation of sideline sales to total sales	37%	
IV. Volume analysis:		
1. Relation of membership to capacity of elevators		100
2. Turnover	11 to 1 fair	10 to 1

Working capital situation				Fixed capital analysis		Financial results of operation						Volume analysis			
Current assets to current liabilities	Cash and receivables to current liabilities	Ratio of sales to receivables	Ratio of sideline sales to receivables	Ratio of cash to current liabilities	Ratio of sales to fixed assets	Ratio of net worth to fixed assets	Ratio of operating cost to gross income	Ratio of cost of sales to sales	Ratio of cost of sideline sales to sideline sales	Ratio of cost of wheat sales to wheat sales	Ratio of salaries and wages to total operating expense	Relation of wages to gross sales	Relation of membership to capacity of elevator	Turnover	Relation sideline sales to total sales
											.29			40.5	%
											.31				
					67.61						.36			32.3	
		315.95		39.81	28.26		.32				.43			28.7	
		198.68		24.72	24.93		.37							25.2	
56.37	49.48	83.07		8.60	22.05	4.08	.47			.80	.45				
55.91	48.45	69.67		7.50	21.01	3.73	.48			.84	.46	.74		21.4	
17.60	16.18	64.97		4.84	20.87	3.61	.61	.79		.93	.47	.84		20.1	55.
13.72	10.68	**43.65**		2.18	19.80	3.27	**.65**	.89			.48	.97		19.1	53.
11.58	9.96	36.65		**1.77**	17.12	2.70	.66			**.94**	**.50**	1.25		18.3	50.
5.62	4.25	36.43		1.07	17.04	2.54	.67	**.91**			.52			15.3	49.
5.38	3.86	25.03		.80	14.48	**2.27**	.68	.92			.53	1.35		14.2	39.
4.90	**2.48**	21.60		.72	12.78	2.05	.74	.93				1.56		12.3	38.
3.81	2.43	18.06		.53	11.03	2.00	.77				.54	1.68			**37.**
3.36	1.46	17.29		.26	**10.11**	1.82	.83	.94	.78					11.8	34.
2.37	1.37	14.74	32.98		8.47	1.74	.91		**.80**		.55	1.84		**11.**	33.
2.01	1.32	14.52	**15.97**	.23	8.20	1.60	.92			.95		1.96		10.2	25.
Desirable 2 to 1	1 to 1	12 to 1	12 to 1	.2 to 1	8 to 1	1.5 to 1	.96 to 1	.94 to 1	.85 to 1	.95 to 1	.6 to 1	2%	100	10 to 1	
Standards															
1.49	.75	11.77	9.80	.08	6.01	1.34	.99	.95	.86	.96	.62	2.26		7.7	17.
1.39	.61	11.55	5.74	.06	3.16	1.20	1.07		.87		.63	2.54		7.4	11.
.96	.57	10.64		.02	2.41	.89	1.26	.96	.91		.67	2.81		3.4	8.
.92	.55	6.96	4.87	.01	2.10		1.39		.92	.97		3.78		1.2	7.
.85	.52	4.45	4.68	.01	1.36		1.43			.98		**4.06**			6.
		1.86	4.50	.01		.83	2.06	.97				4.22			
.72	.46		4.12			.46			.93	1.06		6.11			
.61	.41								.95	1.83		7.09			2.
			3.71									7.95			1.
			3.60					.98							
			3.04						.97						
									.98						
			2.71												
			2.56												
			2.45						1.00						
			1.26						1.05						
			.74						1.06						
			.62												

X_____ Elevator Company

Y _____ Colorado,

1930–31

I. Working capital situation:			Desirable
1. Current assets to current liabilities	.85 to 1	too low	2 to 1
2. Cash and receivables to current liabilities	.57 to 1	too low	1 to 1
3. Ratio of sales to receivables	6.96 to 1	too low	12 to 1
4. Ratio of sideline sales to receivables	3.71 to 1	too low	12 to 1
5. Ratio of cash to current liabilities	.08 to 1	low	.2 to 1
II. Fixed capital analysis:			
1. Ratio of sales to fixed assets	2.41 to 1	too low	8 to 1
2. Ratio of net worth to fixed assets	.89 to 1	too low	1.5 to 1
III. Analysis of financial results of operation:			
1. Ratio of operating costs to gross income	1.39 to 1	too high	.96 to 1
2. Ratio of cost of sales to sales	.93 to 1	fair	.94 to 1
3. Ratio of cost of sideline to sideline sales	.91 to 1	narrow	.85 to 1
4. Ratio of cost of wheat sales to wheat sales	.93 to 1	fair	.95 to 1
5. Ratio of salaries and wages to total operating expense	.31 to 1	very good	.6 to 1
6. Relation of wages to gross sales	4.22%	high	2%
7. Relation of sideline sales to total sales	55%		
I V. Volume analysis:			
1. Relation of membership to capacity of elevators			100
2. Turnover	3.4	too low	10 to 1

	Working capital situation				Fixed capital analysis		Financial results of operation						Volume analysis			
	Current assets to current liabilities	Cash and receivables to current liabilities	Ratio of sales to receivables	Ratio of sideline sales to receivables	Ratio of cash to current liabilities	Ratio of sales to fixed assets	Ratio of net worth to fixed assets	Ratio of operating cost to gross income	Ratio of cost of sales to sales	Ratio of cost of sideline sales to sideline sales	Ratio of cost of wheat sales to wheat sales	Ratio of salaries and wages to total operating expense	Relation of wages to gross sales	Relation of membership to capacity of elevator	Turnover	Relation sideline sales to total sales
												.29			40.5	%
												.31				
						67.61						.36			32.3	
			315.95		39.81	28.26		.32				.43			28.7	
			198.68		24.72	24.93		.37							25.2	
	56.37	49.48	83.07		8.60	22.05	4.08	.47			.80	.45				
	55.91	48.45	69.67		7.50	21.01	3.73	.48			.84	.46	.74		21.4	
	17.60	16.18	64.97		4.84	20.87	3.61	.61	.79		**.93**	.47	.84		20.1	**55.**
	13.72	10.68	43.65		2.18	19.80	3.27	.65	.89			.48	.97		19.1	53.
	11.58	9.96	36.65		1.77	17.12	2.70	.66			.94	.50	1.25		18.3	50.
	5.62	4.25	36.43		1.07	17.04	2.54	.67	.91			.52			15.3	49.
	5.38	3.86	25.03		.80	14.48	2.27	.68	.92			.53	1.35		14.2	39.
	4.90	2.48	21.60		.72	12.78	2.05	.74	**.93**				1.56		12.3	38.
	3.81	2.43	18.06		.53	11.03	2.00	.77				.54	1.68			37.
	3.36	1.46	17.29		.26	10.11	1.82	.83	.94	.78					11.8	34.
	2.37	1.37	14.74	32.98		8.47	1.74	.91		.80		.55	1.84		11.	33.
	2.01	1.32	14.52	15.97	.23	8.20	1.60	.92			.95		1.96		10.2	25.
Desirable Standards	2 to 1	1 to 1	12 to 1	12 to 1	.2 to 1	8 to 1	1.5 to 1	.96 to 1	.94 to 1	.85 to 1	.95 to 1	.6 to 1	2%	100	10 to 1	
	1.49	.75	11.77	9.80	**.08**	6.01	1.34	.99	.95	.86	.96	.62	2.26		7.7	17.
	1.39	.61	11.55	5.74	.06	3.16	1.20	1.07		.87		.63	2.54		7.4	11.
	.96	**.57**	10.64		.02	**2.41**	**.89**	1.26	.96	**.91**		.67	2.81		**3.4**	8.
	.92	.55	**6.95**	4.87	.01	2.10		**1.39**		.92	.97		3.78		1.2	7.
	.85	.52	4.45	4.68	.01	1.36		1.43			.98		4.06			6.
			1.86	4.50	.01		.83	2.06	.97				**4.22**			
	.72	.46		4.12			.46			.93	1.06		6.11			
	.61	.41								.95	1.83		7.09			2.
				3.71									7.95			1.
				3.60					.98							
				3.04						.97						
										.98						
				2.71												
				2.56												
				2.45						1.00						
				1.26						1.05						
				.74						1.06						
				.62												