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Freight Costs of Moving Iowa Feed Grains From Surplus to Deficit Area

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SUPPLEMENT TO BULLETIN 342

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The Interstate Rates, shown on pages 130-135, have been altered somewhat as a result of I.C.C. Docket No. 17000, Part VII, published July 1, 1935. Some of the through rates from local points in Iowa to terminal markets outside the state were increased, while others were decreased. Proportional rates were lowered. Sioux City was given a proportional rate on a comparable basis with the other western markets.

Proportional Rates, discussed on pages 136-139, and the example appearing on page 126, also have been altered by the above ruling and a supplement to the above ruling, which was issued during April, 1936. In the last two sections whenever interstate or proportional rates are used, they are accordingly affected by these alterations.

A division and order rendered Aug. 15, 1936, by the Railroad Commission of Iowa, Docket No. B-1676, has altered the mileage sequence shown in column 2, page 128, to a 10-mile interval instead of the 10, 15, 20 and 30. This ruling caused some increase and some decrease but all are minor in character. The significant change in rates resulting from this decision was to make all joint line hauls, not exceeding 3 miles, carry the same rate as single line hauls.

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SUMMARY

DEMAND conditions being equal, the market with the lowest freight cost is in a position to make the highest bid to the local shipper in a given surplus area. Changing crop conditions, however, may create demand for feed grains in territories normally not in the market. When such demands arise the market serving the deficit areas must bid equal to, or above, the market with the favorable freight cost in order to draw grain from an equal or slightly higher freight cost area.

When production in the western feeding area, served by Kansas City, falls to or below 82 percent of normal, Kansas City is forced to bid from 1 to 5 cents above Chicago to draw corn from north central Iowa where freight rates are equal to both markets. In years when production in the western area reaches this low level the price differential usually exists for a period of 12 to 14 months, from mid-summer of the small crop year to mid-summer of the following crop year.

Consumers of feed grains in eastern and southern Iowa and surplus producers of feed grains in central and northwestern Iowa need a method of dealing directly with each other. Many shipments could be made direct from producer to consumer if adequate inspection opportunities were available to buyer and seller. Either a higher rate must be charged to cover the risk of a direct shipment without inspection, or the grain must take a round-about routing for inspection.

Intrastate or local freight rates are based on mileage hauled. A zoning of these local rates shows the competitive areas of the Iowa primary markets as far as local rates are concerned.

The interstate or through rates have more influence on the trade territory of the primary markets than the intrastate. From one-half to three-fourths of the commercial corn and oats leave Iowa. With this large a volume entering interstate traffic, interstate rates are largely used as a basis of price quotation.

Freight Costs of Moving Iowa Feed Grains From Surplus to Deficit Areas¹

BY RONALD C. BENTLEY²

In general, the local shipper sells his feed grain to the individual or agency that bids highest. These bids may come from commission firms, merchandisers, processors, manufacturers or local feeders and these buyers may be scattered over a wide range of markets. Two factors influencing the bids sent out by purchasers of feed grain are of prime importance: (1) The costs of transportation from the shipper to the market and, (2) how badly in need of grain is the territory served by the market.

When other factors are equal, the market with the lowest freight cost is able to offer the highest bid. But changing crop conditions and the resulting variation in supplies, geographically considered, create demand for feed grains in territories normally inaccessible. When the feed supply in a given territory is not sufficient to meet local demands, then the price offered must be increased to draw grain from a higher freight rate territory.

If each local shipper received bids every day from each possible buyer so that he would know what the feed grain would net him on track at the local point, it would be simple to sell the grain. Too often the local shipper receives bids from a limited number of dealers who may be restricted to one or two markets. It is easy for a local shipper to get into the habit of shipping to one or two markets to the exclusion of all others because other markets show strength for only 1 or 2 months during the season and some may not offer advantage for 2 or 3 consecutive years.

The local shipper must know not only what crop conditions and feed supplies are in the different feeding areas, but he must also know the freight costs to these different outlets before he

¹ Project No. 9 Iowa Agricultural Experiment Station.

² The author is indebted to Mr. C. H. Harris, who obtained the rate information and prepared the rate maps while employed by the Agricultural Extension Service. The Iowa Railroad Commissioner's office, Des Moines, made available all of the tariff schedules from which the rate maps were drawn. The author takes this opportunity to thank the many grain men and traffic men throughout the state who gave of their time for interviews and especially to Mr. Carl A. Hansen of the rate dept., Commerce Council in Des Moines.

can intelligently take advantage of the markets with the most favorable freight rates and the smallest feed supplies.

Several charts and maps are used throughout this study to present a picture of the freight rate structure in Iowa. The reader is warned, however, against using as final these rate maps when speaking of any specific shipping point. Individual rates are changing every day, and a map showing rate zones is but a cross section as of a given date. The maps are valuable when comparing one zone or area with another, or one market with another, for most changes are made on a percentage increase or decrease for the whole area. There are individual exceptions where a local station or branch line may have its rate increased or decreased without changing the base for the whole area.

The purposes of this bulletin are: First, to present a picture of the freight rate structure, showing the freight cost of moving feed grains from surplus to deficit areas, within Iowa, and, to a limited extent, to the surplus and deficit of areas of neighboring states; and, second, to point out by means of examples the effect this freight rate structure has upon the price received by the producer, the price paid by the consumer and the directional flow of feed grains under changing supply and demand conditions.

Freight is the one fixed item, and usually the largest item, in figuring the cost of moving grain from one point to another. The other costs may vary with the demand for feed and the risk involved in delivering the product.

Varying feed supplies may force one deficit area to bid for grain in a higher freight rate zone. This may cause grain to move in exactly the opposite direction from its normal movement. If this occurs, the market price differentials on the two markets must be sufficient to more than cover the difference in freight rate.

THE FREIGHT RATE STRUCTURE

Our present freight rate structure is the result of long evolution. It has run the scale from largely monopolistic to competitive rate determination and back again. Competition has been an important factor in determining all freight rates. There has been competition between individual shipping points to obtain the best outlet, competition between large market cen-

ters in handling the products within their territory, and competition among the railroads themselves to obtain volume of traffic. With the advent of government regulation, however, much of the competitive flexibility has been eliminated and a rather rigid structure has taken its place.

Freight is divided into two large groups for rate-making purposes. Class rates cover all shipments of less than carload lots and commodity rates cover all shipments of full carload lots. Grains fall into this latter group. Further, the United States has been divided into three territories for rate-making purposes, Official, Southern and Western. Iowa and nearly all of the markets used on first billing shipments from Iowa are within the Western territory.

Western territory takes in all shipping points west of a line drawn through Chicago, Peoria, St. Louis and down the Mississippi to New Orleans. Official and Southern territories are divided by the Ohio River as far east as Ashland and from there a line drawn through Roanoke, Virginia, terminating at Norfolk on the coast. These boundary lines have not been selected arbitrarily, but have gradually formed through years of transportation development. The object of this division of territory was to establish areas which for a number of reasons have similar transportation problems.

Freight rates on grain shipments from local stations in Iowa come under two classifications, **intrastate** and **interstate**.

Intrastate rates cover all movements within the state and are fixed chiefly on a mileage basis. Interstate rates cover all shipments leaving or coming into the state, and they are primarily the result of evolutionary changes mentioned above.

INTRASTATE, OR LOCAL RATES TO IOWA MARKETS

Distance is the basis for all rates on grain moving within the state. All shipments of grain, whether they move from one local station to another or from a local station to a primary Iowa market^a, will carry the same rate for an equal distance moved, providing the shipment is direct on one railroad. As the distance increases, the rate per 100 pounds increases.

Table 1 (p. 128) shows the Iowa distance table with the corresponding rates. The mileage and rates shown in columns 1

^a By primary markets we mean markets within Iowa which receive grain for manufacturing, processing or reshipment purposes.

and 3 refer specifically to through traffic which originates and terminates on the same railroad.

Grain which originates on one road and terminates on another requires the "joint rate." A joint rate is arrived at by taking 80 percent of the local rate of each railroad that participates in the haul.⁴ For example, from table 1, a direct haul of 200 miles on the same railroad would be 14.5 cents per 100 pounds. The joint rate on a 200-mile haul with two railroads participating is as follows:

1st R.R.	75 mi.	9.5 cents
2nd R.R.	125 mi.	11.5 cents
	Total	<u>21.0 cents</u>
Joint rate = 80% of total = 16.8 cents		

LOCAL RATES

Rates to Cedar Rapids

Earlier studies reveal the importance of Cedar Rapids as a market for Iowa's commercial grain. These studies show that for the years 1926-31, 22 percent of the corn and 42 percent of the oats, shipped from local shipping points in Iowa, were destined to Cedar Rapids.⁵

Cedar Rapids is strategically located with respect to surplus and deficit areas of Iowa. Also, much of Iowa's grain moving to the eastern and southern markets passes through Cedar Rapids. Four of the larger railroad systems and two of the electric railways have direct connection at Cedar Rapids.⁶ Two other railroads do not have direct connection but have arrangements with other roads to run grain into Cedar Rapids for inspection with no additional charge above the through rate providing the shipment continues in the general direction in which it started.⁷

Intrastate (or local distance) rates on railroads with direct connection to Cedar Rapids are shown in fig. 1-A. Each zone was formed by drawing a line through stations where rate changes occur. All stations between the lines, if they have a direct connection, have the same rate to Cedar Rapids.

A study of fig. 1 reveals the competitive relationship of Ce-

⁴ More than two railroads may participate in the haul.

⁵ For reference concerning feed grain shipments see bulletins 218, "The Destination of Iowa's Commercial Corn," and 327, "The Destination of Iowa's Commercial Oats," R. C. Bentley, Iowa Agr. Exp. Sta.

⁶ These railroads are C. M. St. P. & Pac., C. R. I. & P., C. & N. W., I. C., W. C. F. N., C. R. & I. C.

⁷ These railroads are C. G. W. and M. & St. L.

dar Rapids with respect to other feed grain markets in Iowa. For example, there is the 11-cent zone in Jasper County where coarse grain could go either to Cedar Rapids or Des Moines. Then there is the 13-cent zone in Hamilton County where coarse grain could go to any one of the three markets, Sioux City, Council Bluffs or Cedar Rapids. The competitive zone between the river markets and Cedar Rapids is found in the counties east of Cedar Rapids. But the local rate applies only to grains consumed in the local market, for all grain going beyond Cedar Rapids carries the balance of the through rate. Grain reconsigned immediately or grain held in transit and reshipped within a 12-months period may take the balance of the through rate from its point of origin to its point of destination. For example, a shipping point in western Story County which has a local rate of 11.5 cents for each cwt. to Cedar Rapids also has a through rate to Chicago of 18.5 cents.⁸ If a shipment of grain to Cedar Rapids from this point had to take the local rate from Cedar Rapids to Chicago it would be an additional 17.5 cents or a total of 29 cents. What actually happens, however, is that the car is reconsigned from Cedar Rapids to Chicago and pays only the balance of the through rate of 18.5 cents, which is 7 cents.

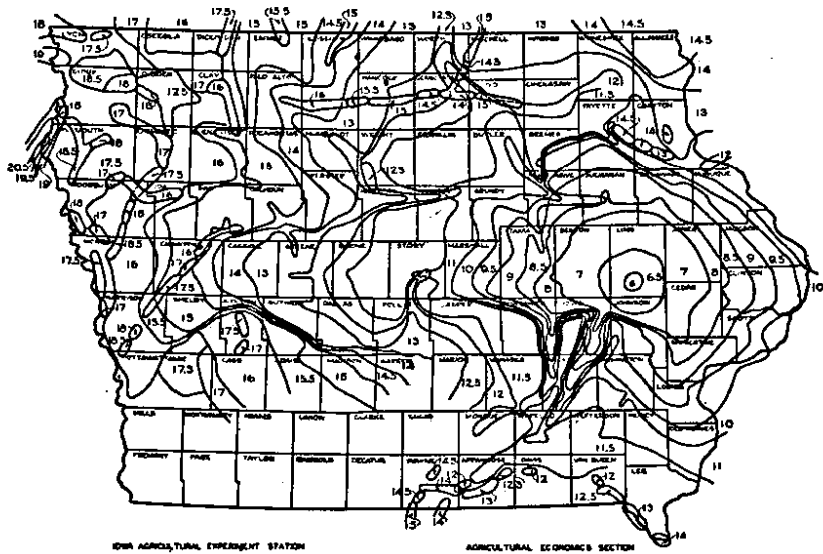
It is this transit privilege which enables Cedar Rapids to draw grain from practically every county in Iowa. The southern counties with no direct connection to Cedar Rapids ship very little grain to this market. The western tier of counties with better connections to the south and west are not frequent shippers to Cedar Rapids. This transit privilege, which has evolved with the growth of transportation facilities at Cedar Rapids and the growing demand for feed grains to the east and south, makes this market the largest cereal and feed manufacturing center in Iowa.

Rates to Des Moines

The volume of feed grains, of Iowa origin, shipped to Des Moines is not as large as that to some of the other primary markets within the state, yet this volume comes from a rather large area in central and northwest Iowa. Figure 1 shows the competitive areas for local freight to the Des Moines market.⁹

⁸ See fig. 3 (p. 132).

⁹ Des Moines has the largest number of railroads of any of the primary markets in Iowa. C. & N. W., C. B. & Q., C. G. W., C. M. St. P. & P., C. R. I. & P., M. & St. L., Wab., Ft. D. D. M. & S., D. & C. I.



A. Cedar Rapids

Fig. 1. Intrastate or local freight rate to Iowa's primary markets.

The rate zones are formed by drawing a line through stations with the same rate per 100 pounds on coarse grain. Only roads with direct connection to each market were used. For data secured as of July, 1934, see following tariffs.*

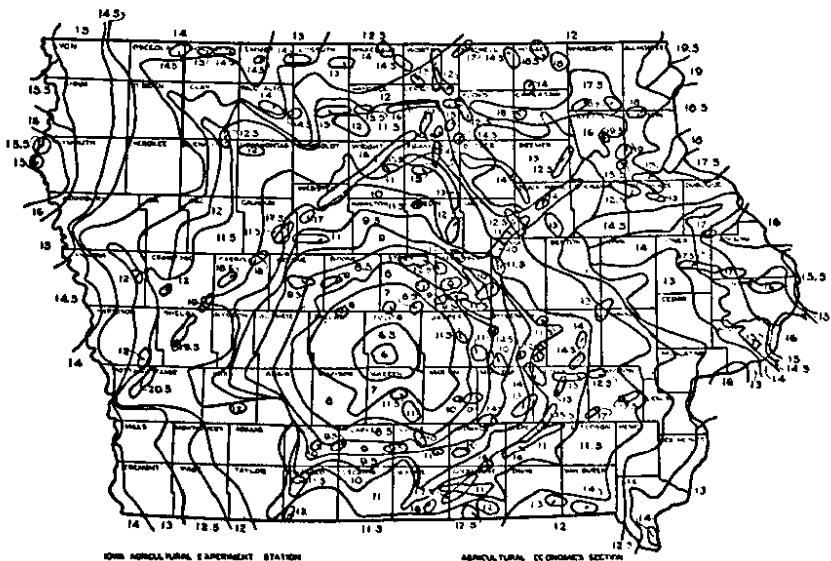


Fig. 1.—(Cont'd.) B. Des Moines

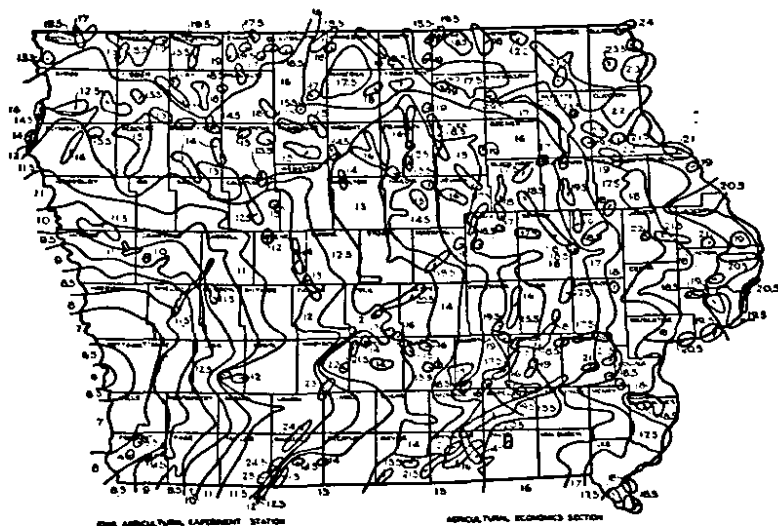


Fig. 1.—(Cont'd.) C. Council Bluffs

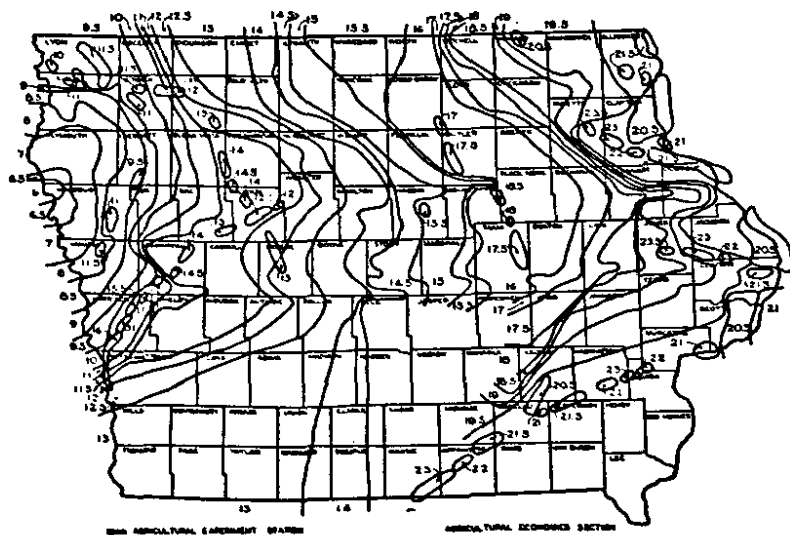


Fig. 1.—(Cont'd.) D. Sioux City

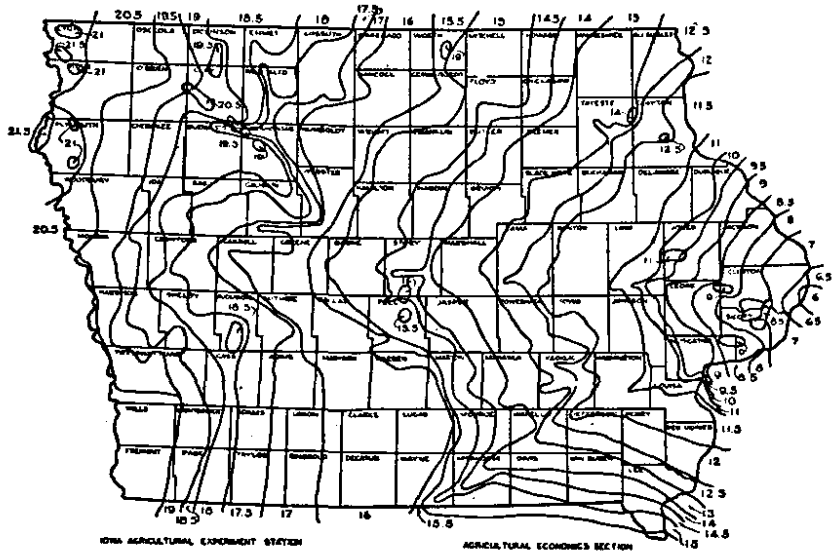


Fig. 1.—(Cont'd.) E. Clinton

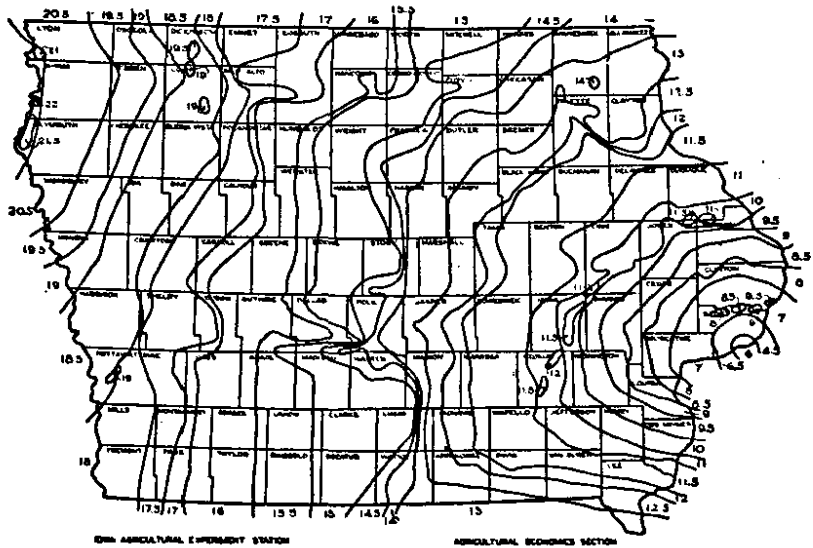


Fig. 1.—(Cont'd.) F. Davenport

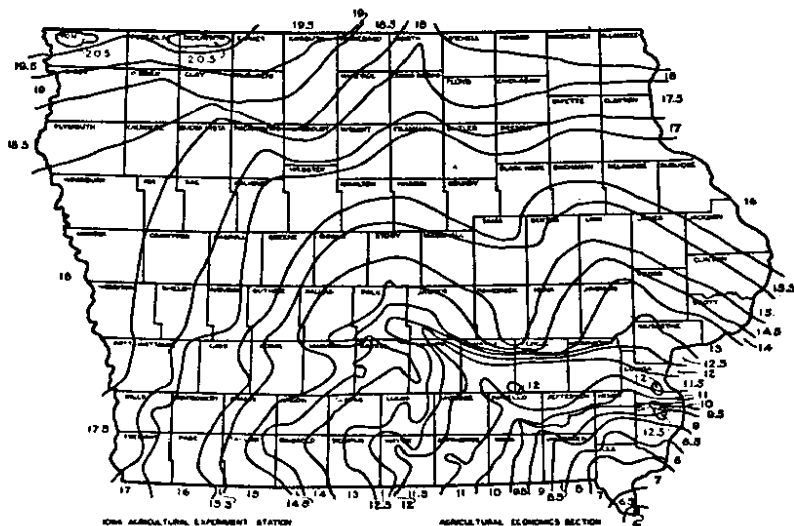


Fig. 1.—(Cont'd.) G. Keokuk

Fig. 1.—(Cont'd.)

*Tariffs

C. & N. W. G. F. D.	No. 14260-C	I. C. C. No.	9986
C. B. & Q. G. F. D.	No. 9000-B	I. C. C. No.	17392
C. G. W.	No. 133-C	I. C. C. —	5255
C. M. St. P. & P. G. F. D.	No. 4000-F	I. C. C. No.	B-6113
C. R. I. & P. Freight Tariff	No. 33300	I. C. C. No.	C-11924
M. & St. L. Tariff	No. 260-B	I. C. C. No.	B-402
Wabash-Local. Freight Tariff	No. B-15221	I. C. C. No.	6442
C. St. P. M. & O. G. F. D.	No. 4300-B	I. C. C. No.	9986
I. C. Tariff	No. 13131-C	I. C. C. No.	A-10441

With a limited local outlet, the bulk of the feed grain going into Des Moines passes through on transit privileges. The large feeding area of southern Iowa and northern Missouri offers an outlet for feed grain shipped through this market.

Des Moines is not limited, however, to this southern outlet since destination figures show that in years of low supplies in the western area, many cars of corn move into the Dakotas. Likewise in years of shortage in the Mississippi Valley much corn is shipped from Des Moines to the Wisconsin and Illinois feeding sections.

Rates to Council Bluffs and Sioux City

These two markets form the western outlet for Iowa's commercial feed grains. Council Bluffs receives more of Iowa's

commercial feed grains than Sioux City; not because of the number of railroads serving the market,¹⁰ nor of the local territory served, for Sioux City is nearer the heavy cash grain area; but because of the reshipment opportunities.

From fig. 1 the competitive zones for local shipments are easily located. There is the 8.5-cent zone along the river, the 11.5-cent zone in Carroll County and the 13-cent zone in Hamilton County. If all the feed grain of Iowa origin shipped to these markets was consumed locally their purchases would be limited to the areas just described. As was the case for Des Moines, however, the bulk of the feed grain shipped to these two markets must be reshipped to other market centers or consuming areas.

Council Bluffs has an advantage over Sioux City on a large volume of coarse grain originating in Sioux City territory destined for shipment to the Kansas City market. The proportional rate from Sioux City to Kansas City is 11 cents per cwt. as compared with the proportional rate from Council Bluffs to Kansas City of 7 cents per cwt. The 4-cent differential gives Council Bluffs a considerable advantage on coarse grain originating in Iowa and destined to Kansas City, as shown by the two following examples:

	Local rate from Southern Woodbury County (cents per cwt.)*	Proportional rate to Kansas City (cents per cwt.)	Total (cents per cwt.)
Sioux City	7 to 11	11	18 to 22
Council Bluffs	10 to 11.5	7	17 to 18.5

	Local rate from Buena Vista County (cents per cwt.)*	Proportional rate to Kansas City (cents per cwt.)	Total (cents per cwt.)
Sioux City	10 to 14	11	21 to 25
Council Bluffs	13 to 14.5	7	20 to 21.5

*See fig. 1, charts C and D.

Sioux City holds a similar advantage over Council Bluffs on grain moving north. The movement north, however, is very small compared with the movement south.

¹⁰Railroads with connections at:
Council Bluffs; C. B. & Q., C. G. W., C. M. St. P. & P., C. R. I. & P.,
C. & N. W., I. C., U. P., Wab.
Sioux City; C. B. & Q., C. M. St. P. & P., C. St. P. M. & O., C. & N. W.,
G. W., I. C.

On shipments west to Denver these two markets are on an equal footing. There is a zone within Iowa which carries river rates to Denver and beyond. A line drawn through Hawarden, LeMars, Correctionville, Arion, Manilla, Shelby, Malvern and Hamburg will outline this zone. The rate from this zone to Denver and beyond is the same for both Council Bluffs and Sioux City.

Rates to the Mississippi River Markets

The three river markets for which the rate zones are shown represent somewhat different types of markets. Of the feed grains, Clinton receives only corn, and all of it shipped there is consumed locally. Davenport and Keokuk are more like the Cedar Rapids market, as some grain is consumed and some is reshipped to other markets or feeding areas. Keokuk consumes a larger percentage of its receipts than Davenport.

Since these markets have few railroads with direct connections, the rate zones are relatively easy to picture.¹¹ Their competitive position with respect to the other primary markets in Iowa is shown in fig. 1.

The bulk of the corn bought for Clinton is on the basis of local or through rate to Clinton. But the Davenport and Keokuk purchaser, with considerable volume being reshipped, must consider his opportunities for reshipment. The natural flow of feed grains from these markets is to the east and southeast. Very little grain moves against this directional current in that section of the state.

JOINT RATES

The rates shown in fig. 1 refer specifically to shipments on railroads with direct connection to the markets. There are, however, many shipping points in Iowa where a shipment on one railroad would mean taking the grain many miles out of the way, and the rate would be prohibitive. There are many shipping points in Iowa which may not be on a railroad with direct connection to the best market at a particular season. In order for these shippers to reach the best market they are forced to use the joint rate.

With the use of fig. 2 and table 1, the joint rate between two

¹¹Railroads with direct connections at the following markets are:
 Clinton; C. M. St. P. & P., C. R. I. & P., C. & N. W.
 Davenport; C. M. St. P. & P., C. R. I. & P.
 Keokuk; C. B. & Q., C. R. I. & P., Wab., T. P. & W.

points may be figured with a reasonable degree of accuracy. Figure 2 shows all of the railroads operating within the state with all junction points and the distance between these junctions. Table 1 shows the rate which applies to each mileage change.

TABLE 1. IOWA INTRASTATE FREIGHT RATES ON CORN, OATS, BARLEY AND RYE PER 100 LBS. AND PER BUSHEL FOR CORN AND OATS, FOR DISTANCES NOTED.

Mileage	Mileage change for each rate change	Cents per 100 lbs. corn, oats, barley and rye in carload lots	Cents per bu. of corn 56 lbs. per bushel	Cents per bu. of oats 32 lbs. per bushel
0 - 5.4		6.0	3.36	1.92
5.5 - 15.4	10	6.5	3.64	2.08
15.5 - 35.4	20	7.0	3.92	2.24
35.5 - 45.4	10	8.0	4.48	2.56
45.5 - 55.4	10	8.5	4.76	2.72
55.5 - 65.4	10	9.0	5.04	2.88
65.5 - 75.4	10	9.5	5.32	3.04
75.5 - 85.4	10	10.0	5.60	3.20
85.5 - 100.4	15	11.0	6.16	3.52
100.5 - 130.4	30	11.5	6.44	3.68
130.5 - 140.4	10	12.0	6.72	3.84
140.5 - 155.4	15	12.5	7.00	4.00
155.5 - 175.4	20	13.0	7.28	4.16
175.5 - 190.4	15	14.0	7.84	4.40
190.5 - 200.4	10	14.5	8.12	4.64
200.5 - 220.4	20	15.0	8.40	4.80
220.5 - 230.4	10	15.5	8.68	4.96
230.5 - 260.4	30	16.0	8.96	5.12
260.5 - 270.4	10	17.0	9.52	5.44
270.5 - 290.4	20	17.5	9.80	5.60
290.5 - 300.4	10	18.0	10.08	5.76
300.5 - 320.4	20	18.5	10.36	5.92
320.5 - 330.4	10	19.0	10.64	6.08
330.5 - 350.4	20	19.5	10.82	6.24
350.5 - 380.4	30	20.5	11.48	6.56
380.5 - 390.4	10	21.0	11.76	6.72
390.5 - 410.4	20	21.5	12.04	6.88
410.5 - 420.4	10	22.0	12.32	7.04
420.5 - 440.4	20	23.0	12.88	7.36
440.5 - 450.4	10	23.5	13.16	7.52
450.5 - 470.4	20	24.0	13.44	7.68
470.5 - 480.4	10	24.5	13.72	7.84
480.5 - 500.4	20	25.0	14.00	8.00

Over .4 mile is counted as one unit.

L. E. Kipp, Agt.—Tariff 160 J—I.C.C.-A-2420.

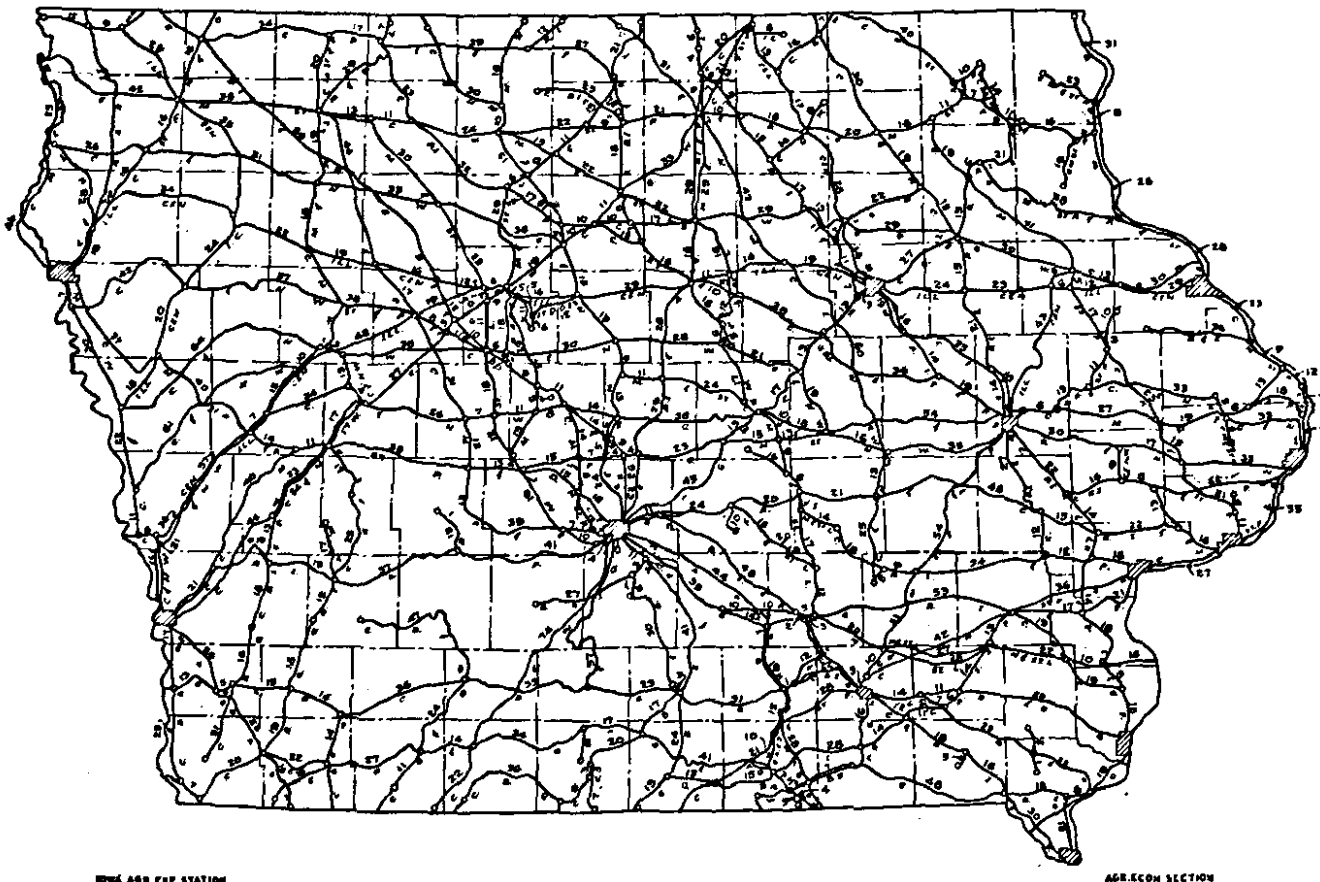


Fig. 2. Junction points and distances between for all railroads operating in Iowa.
 With this chart and table 1, the local direct or joint rate may be obtained between any two junction points in the state.

In cases where the through rate is 3.5 cents or more above the going rate for the zone, generally a joint rate will be cheaper.

In Carroll County, fig. 1-B, there is a small area which shows an 18.0-cent rate to Des Moines. This high rate falls within the 11-cent zone. This rate is for a haul on the Great Western from Lanesboro to Des Moines by way of Clarion and Oelwein. The joint rate on a shipment from Lanesboro to Des Moines via C. G. W. and C. M. St. P. & P. with a transfer at Lohrville would be only 14 cents. (See fig. 2.) The computation of this joint rate is as follows: from Lanesboro to Lohrville via C. G. W. is 9.1 miles with a rate of 6.5 cents and from Lohrville to Des Moines via C. M. St. P. & P. is 86.8 miles, with a rate of 11 cents. By adding these two rates together and then taking 80 percent of the total, we arrive at the 14-cent joint rate to Des Moines: $(6.5 + 11 = 17.5)$ and $(17.5 \times .80 = 14.0)$.

If one knows the distance from a local shipping point to the nearest junction point shown on the map in fig. 2, he can then figure the joint rate to any point within the state. This map may also be used to show the through rate on one road from a local surplus producing point in northwestern Iowa to a deficit or local feeding station in eastern Iowa.

INTERSTATE OR THROUGH RATE TO OUT-OF-STATE MARKETS

While the local, or intrastate, rate applies to a large part of the commercial movement of feed grains in Iowa more than half of the corn and nearly half of the oats, first billing shipments, are made on interstate rates. Of the corn shipped to Iowa's primary markets (48 percent of the state's total shipments) from one-third to two-thirds, depending upon the season, is re-shipped to out-of-state outlets taking advantage of transit or through rate privileges. Of the oats shipped to Iowa markets (52 percent of the state's total shipments) from one-half to three-fourths is reshipped to out-of-state markets, utilizing the transit or through rate privileges. In other words, from 60 to 80 percent of Iowa's commercial feed grains are moved on interstate rates.

RATES TO CHICAGO

Chicago receives a larger percentage of Iowa's commercial corn and oats than any other out-of-state market. The 5-year average, 1926-27 to 1930-31, shows that 21 percent of the corn

and 11 percent of the oats moved to Chicago on first billing. Reshipment figures from Iowa's primary markets indicate that a considerable volume of corn (14 percent) and oats (18 percent) is rebilled from these markets to Chicago.

Chicago holds the same position with regard to the Corn Belt that Cedar Rapids does to Iowa. Chicago is located on the border line between the surplus-producing states to the west and the deficit or feeding states to the east and south. With its network of railway and waterway transportation facilities and its large storage facilities Chicago is in a position to absorb a large volume of grain at the time of harvest, and to store and reship to eastern and southern consumers later.

Figure 3 shows the competitive freight costs on feed grain to the out-of-state markets. Careful study of the above chart reveals that Chicago holds no exclusive advantage in freight cost for Iowa. In each zone some other market has an equal or lower rate than Chicago. Chicago, however, receives grain from nearly every county in Iowa. The volume varies with the season and with the demand from other markets and deficit areas. The demand is expressed in market price differentials shown in fig. 6.

RATES TO MILWAUKEE

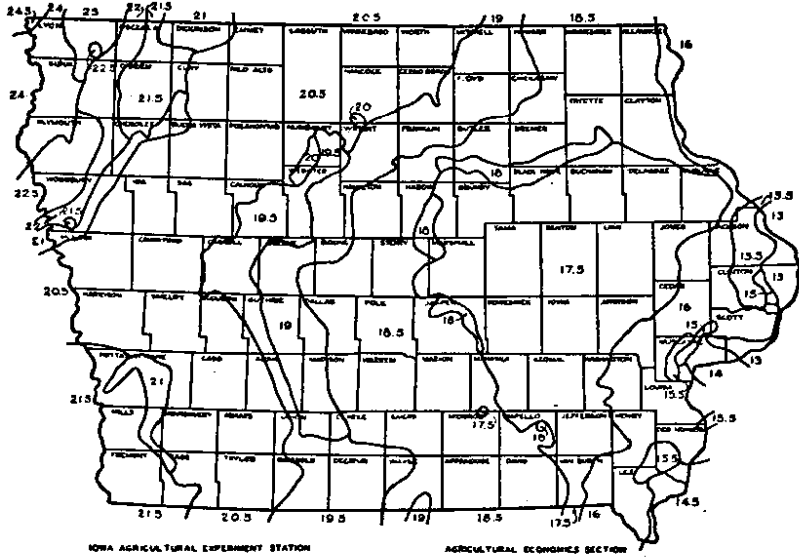
The rate map for Milwaukee was not reproduced because of the similarity to the Chicago map. With the exception of one or two divisions on the Rock Island, the rates are identical with the Chicago rates. Milwaukee ranks next to Chicago in volume of corn and oat receipts from Iowa. While Milwaukee figures in the Great Lakes movement of feed grains, the bulk of the receipts is consumed locally or in the neighboring Wisconsin feeding area.

RATES TO PEORIA

Throughout most of Iowa's heavy shipping area the rates to Peoria are almost identical with the Chicago rates which gives this market no exclusive advantage in Iowa. In the south central and southeastern part of the state the rates favor Peoria when compared with Chicago.

RATES TO ST. LOUIS

In general, rates to St. Louis are from 1 to 2 cents higher than to most of the other markets. This is especially true of



A. Chicago

Fig. 3. Interstate, local or flat rate to out-of-state markets.

The zones are formed by drawing a line through stations with the same rate per 100 pounds on coarse grain. All of the railroads participating in interstate traffic were included. For data secured as of July, 1934, see following tariff.*

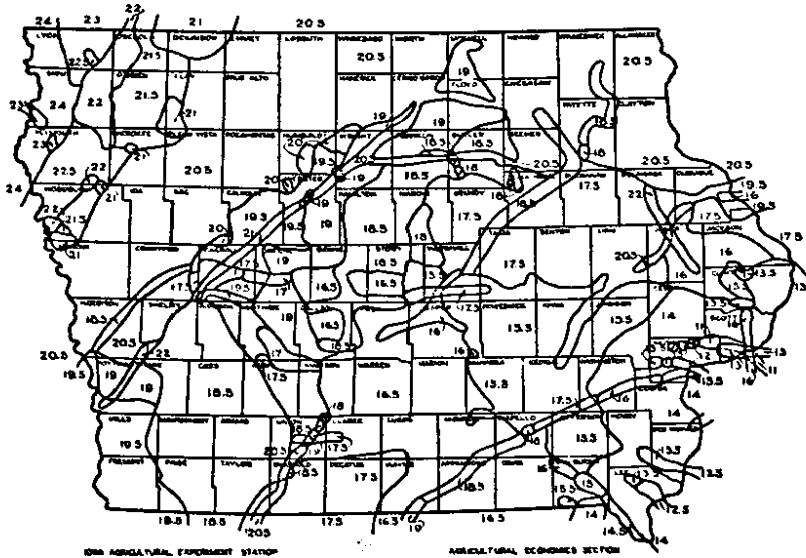


Fig. 3.—(Cont'd.) B. Peoria

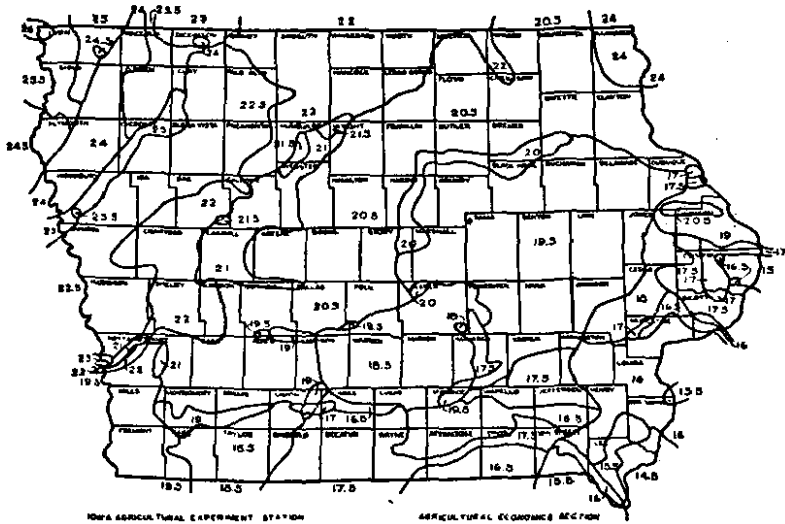


Fig. 3.—(Cont'd.) C. St. Louis

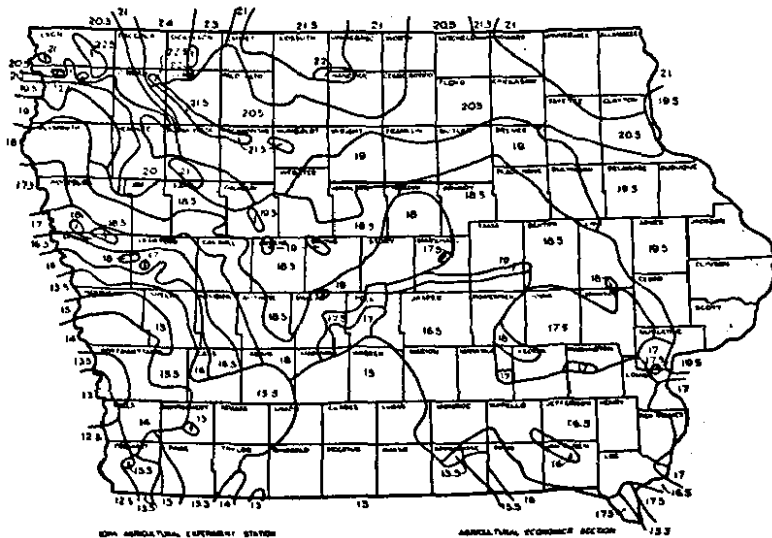


Fig. 3.—(Cont'd.) D. Kansas City (It was found that a combination of the local rate to Sioux City, Omaha or Des Moines plus the proportional from these markets on to Kansas City was lower than the flat rate. Whenever this combination was lower than the flat rate it was used. The proportional from Sioux City and Des Moines to Kansas City is 11 cents and from Omaha and Council Bluffs 7 cents.)

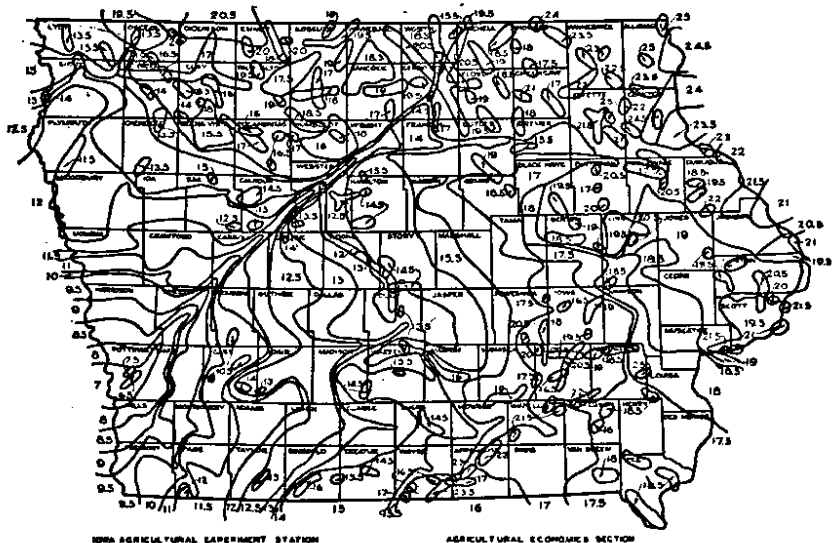


Fig. 3.—(Cont'd.) E. Omaha

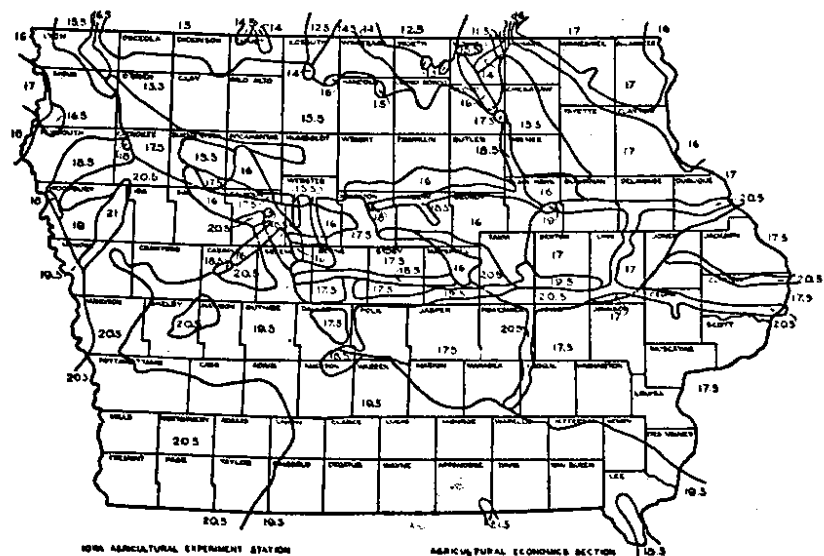


Fig. 3.—(Cont'd.) F. Minneapolis

Fig. 3.—(Cont'd.)

Tariff*			
C. M. St. P. & P. G. F. D.	No. 2463-J	I. C. C. No.	B- 6283
C. R. I. & P. Freight Tariff	No. 10389-J (Grain)	I. C. C. No.	C-12171
C. R. I. & P. Freight Tariff	No. 22000-I	I. C. C. No.	17857
C. R. I. & P. Freight Tariff	No. 29329-G	I. C. C. No.	C-12185
C. B. & Q. G. F. D.	No. 4000-N	I. C. C. No.	17857
C. B. & Q. G. F. D.	No. 3200-M	I. C. C. No.	17855
C. G. W. Tariff	No. 36-F	I. C. C. No.	5303
C. & N. W. G. F. D.	No. 16407-E	I. C. C. No.	10212
C. & N. W. G. F. D.	No. 11475-M	I. C. C. No.	10208
C. & N. W. G. F. D.	No. 11100-K	I. C. C. No.	10206
C. & N. W. G. F. D.	No. 16204-I	I. C. C. No.	10439
C. & N. W. G. F. D.	No. 16204-H	I. C. C. No.	10235
Wabash	No. G- 9921	I. C. C. No.	6333
Wabash Commodity Tariff	No. O- 5327	I. C. C. No.	6812
Wabash	No. G-10580	I. C. C. No.	6208
Wabash	No. G- 9921	I. C. C. No.	6333
M. & St. L. Freight Tariff	No. 1590-G	I. C. C. No.	B-744
M. & St. L. Freight Tariff	No. 1600-F	I. C. C. No.	B-747
I. C. Freight Tariff	No. 601-M	I. C. C. No.	A-10620
C. St. P. M. & O. G. F. D.	No. 4600-H	I. C. C. No.	4752

the rates from the heavy commercial corn and oat producing areas. An extra cent or two is not as great a handicap as it may seem, however, because the reshipment rates to most of the markets south and east of St. Louis are lower than from Chicago, Peoria or Kansas City.

RATES TO KANSAS CITY

Kansas City is on an equal basis with Omaha in south central Iowa (See fig. 3, C and D) and has an advantage over the other markets in this area. (See fig. 3.) In western, central and north central Iowa, Kansas City is on an equal basis with Omaha and Chicago. In several counties in north central Iowa Chicago has the advantage.

RATES TO OMAHA

Omaha has the lowest freight rates for the commercial corn producing area, with the exception of north central Iowa for which the Minneapolis rate is lower. As long as the grain is used locally or when the demand centers to the west, Omaha is in a strategic position. But if the bulk of the grain must move to the south and east, then Omaha's bid for grain must take into consideration the reconsignment opportunities.

RATES TO MINNEAPOLIS

Practically all of north central Iowa has a much lower rate to Minneapolis than to any of the other markets. This places the Twin Cities in a very favorable position in years when crops are short in their local territory, but normally the demand is not sufficient to require large shipments from the Iowa territory.

PROPORTIONAL OR JOINT RATES TO IOWA'S DEFICIT AREAS

The Interstate Commerce Commission says, "A proportional rate is a local or joint rate dependent for application upon (1) a previous transportation to the point from which the proportional rate applies; (2) a subsequent transportation from the point to which the proportional rate applies; (3) or both. It is supposed to be a part of a through rate and is usually lower than the flat rate between the same points. When dependent upon previous inbound transportation it is applicable only upon surrender of the inbound paid freight bill showing the transportation of the shipment inbound. The freight bill need cover only an equivalent inbound tonnage, as preservation of identity grain is not required."¹²

Iowa producers' and grain dealers' interest in proportional rates differs. First, those in the surplus-producing area in western and north central Iowa must use the local rates, in competition with proportional rates from the western markets, on shipments to the eastern deficit areas within the state. Second, the feeder in the deficit-producing areas of eastern Iowa is looking for the lowest freight rate in procuring feed grains.

In discussing proportional rates from the standpoint of moving feed grain into Iowa's eastern deficit area and into deficit areas of Wisconsin and Illinois we are concerned only with the first of the three cases mentioned above. Shipments from Kansas City, Omaha and Minneapolis to use the proportional rate into eastern Iowa are dependent upon a previous transportation to these markets.

Sioux City does not have a proportional rate such as the other three markets, but makes use of the "balance of through rate." This through rate is dependent upon the point of origin

¹²Interstate Commerce Commission, Docket 17000, Rate Structure Investigation, Part VII, Grain and Grain Products Within Western District and for Export, 1929-30. Page 633.

and point of destination. If these two points are on the same road the rate will be lower than if on two roads.

MINNEAPOLIS PROPORTIONAL

Minneapolis has a very favorable proportional rate on feed grains to northeastern and east central Iowa as shown in fig. 4. This advantage of 2.5 to 4.5 cents per 100 pounds, however, which Minneapolis holds over Kansas City and Omaha is offset by the fact that Minneapolis has access to very little surplus corn. The surplus corn producing area of Minnesota is in the extreme southwest and south central sections of the state. If Minneapolis bids for this grain the advantage in the proportional rate would quickly be offset.

Minneapolis does, however, have a great advantage on any surplus feed grain that comes from northern South Dakota, eastern North Dakota and northwest Minnesota. This feed finds a ready outlet in central and eastern Wisconsin and to some extent in southern Wisconsin and northeastern Iowa.

With oats and barley the low proportional rate is an advantage, for the Red River Valley produces much more commercial oats and barley than corn. This surplus oats and barley which enters commercial channels finds its way into Wisconsin and northeastern Iowa by using the proportional rate out of Minneapolis.

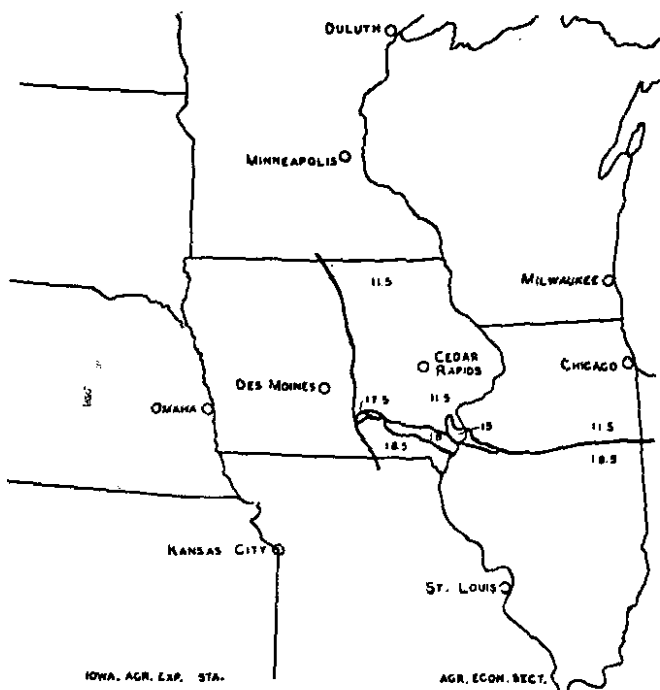
OMAHA PROPORTIONAL

Although Minneapolis shows the lowest proportional rate into northeastern Iowa, Omaha has a 1-cent advantage over Kansas City in the northeastern and north central parts of the state. Omaha holds the advantage in the western feeding area of Iowa. Very little feed moves into this area by rail, however, for most of it comes from nearby surplus producing areas along the river.

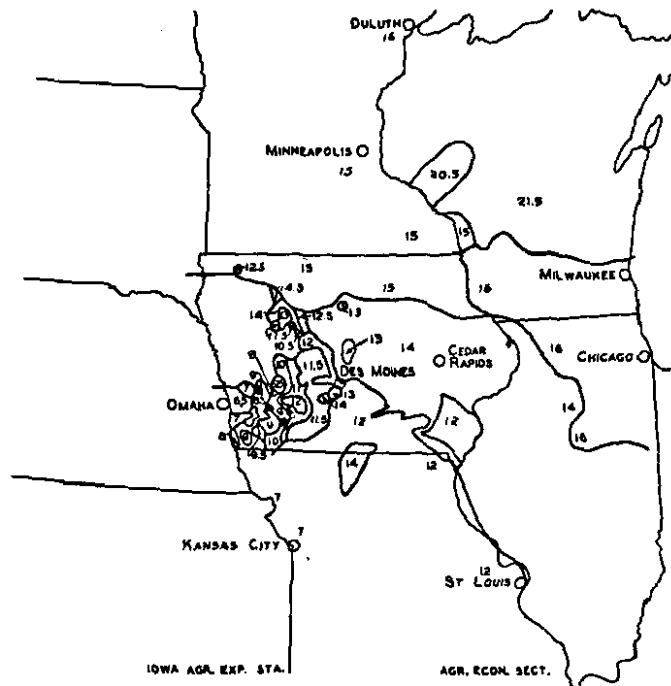
KANSAS CITY PROPORTIONAL

The Kansas City proportional has the advantage in the heavy feeding areas of northwest and north central Missouri. There is also a small area in south central Iowa where the Kansas City proportional has the advantage over the Omaha rate.

Aside from these areas of advantage for each of the markets, there are three rather large zones where proportional rates from Kansas City and Omaha are on a highly competitive base. First, a large area in northeastern Missouri, south central and



A. Minneapolis



B. Omaha

Fig. 4. Proportional rates on feed grain destined for deficit areas.

The zones are formed by drawing a line through the stations with the same rate per 100 pounds on coarse grain. For data secured as of July, 1934, see following tariffs.*

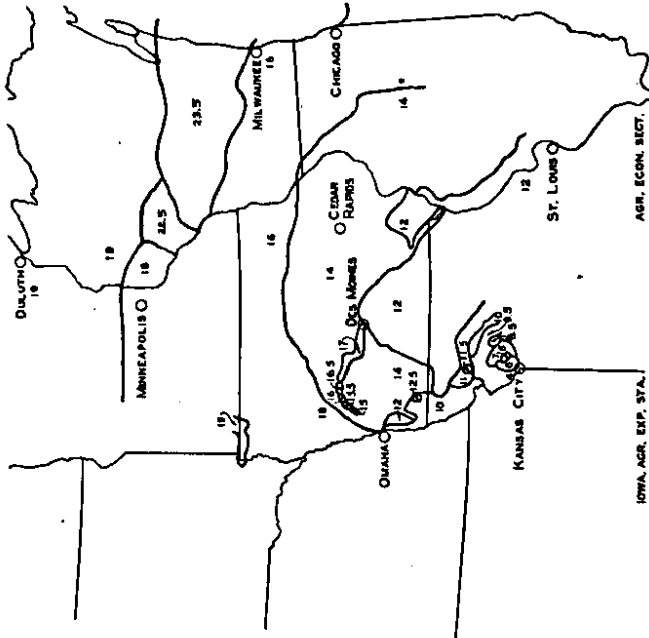


Fig. 4.—(Cont'd.) C. Kansas City

Fig. 4.—(Cont'd.)

Tariffs*

C. M. St. P. & P. G. F. D.	No. 2463-J	I.C.C. No.	B-6283
C. & N. W. G. F. D.	No. 11100-K	I.C.C. No.	10206
C. R. I. & P. Freight Tariff	No. 29329-G	I.C.C. No.	12185
C. B. & Q. G. F. D.	No. 3200-M	I. C. C. No.	17855
M. & St. L. Freight Tariff	No. 1600-F	I.C.C. No.	B-747
C. G. W. Tariff	36-F	I.C.C. No.	5303

southeastern Iowa have a 16-cent rate from these two markets.

The extent to which these markets make use of these proportional rates depends upon: First, the volume of surplus feed in the areas immediately west of the markets; and second, demand for feed grain in Iowa's eastern deficit area. Normally eastern Iowa receives the bulk of its feed grain from western and northwestern Iowa. In years like 1924-25 and 1927-28 large quantities of feed must come in from outside surplus areas.

The 1924-25 season favored the Kansas City market. Nebraska and South Dakota were very dry, as was the surplus producing area of northwest Iowa. Kansas had better than a normal crop of good quality corn. During the crop year Kansas City furnished 44 percent of all the corn shipped into Iowa's deficit feeding area.¹³

¹³Unpublished data from Project 8, Iowa Agr. Exp. Sta., Ames, Ia.

Again in 1927-28 with a large crop in the states west of Iowa and a short crop in the Mississippi Valley, Kansas City, Omaha and Sioux City all shipped some corn to Iowa's deficit areas. While Omaha and Sioux City furnished much more than in 1924-25, their volume did not begin to compare with the large shipment from Kansas City during the 1924-25 season.

PROPORTIONAL vs. INTRASTATE RATES

Of what use is a proportional rate, and who benefits if there is any benefit from it? In fig. 5 the local direct rate from Irwin to Dyersville is 16 cents per cwt. on coarse grain. The proportional rate from Omaha to Dyersville is only 14 cents per cwt. At first glance this would seem to be a violation of the "long and short haul" clause. But the 14-cent proportional rate is dependent upon at least the minimum local rate of 6 cents per cwt. into Omaha from Nebraska, which makes the total through rate on the shipment 20 cents.

The local shipper, however, is marketing his grain in competition with the 14-cent rate, for the Omaha dealer bids the Nebraska shipper Omaha price less freight. Now let us see what the procedure might be in getting a carload of corn to a dealer in Dyersville.

A dealer in Dyersville places a bid with an Omaha firm for a car of No. 3 yellow country-run corn. The Omaha market is 80 cents on No. 3 yellow. The dealer therefore quotes his Dyersville client 90 cents per bushel delivered. This price represents 8 cents per bushel for freight and 2 cents per bushel for commission and handling.¹⁴

At the same time the local dealer at Irwin calls the Omaha representative saying he has a car of No. 3 yellow on track, and asks what is being offered. The Omaha representative offers 80 cents minus freight, or 75 cents per bushel at Irwin. The Irwin dealer accepts, and the Omaha representative asks that the car be billed to the John Doe Elevator Co. at Dyersville.

By this transaction the Omaha representative has profited 4 cents per bushel. In other words, instead of it costing him 88 cents to lay a car down at Dyersville via Omaha he now ships the car from Irwin at 9 cents a bushel freight, plus 75 cents for the corn, making a total of 84 cents, laid down.

¹⁴ See table 1 for conversion of rate per cwt. to rate per bushel (p. 128).

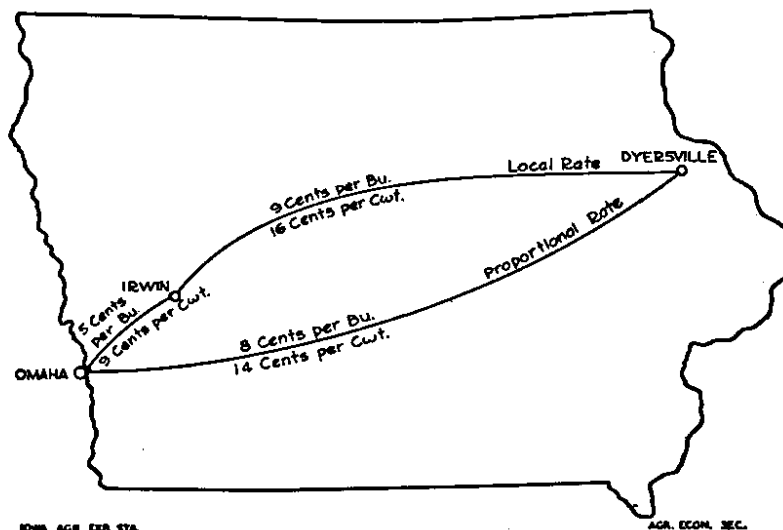


Fig. 5. Proportional vs. local rates. Expressed in cents per 100 pounds on coarse grain, and in cents per bushel for corn.

It may be argued that Chicago prices will force the Omaha dealer to bid more than the 75 cents at Irwin. The local rate from Irwin to Chicago is 11.5 cents per bushel (20.5 cents per cwt.). This means Chicago would have to be at least 6.5 cents above Omaha to equal the 75-cent bid.

For the 10-year period, 1923-24 to 1932-33, a study of the price difference between the Chicago and Omaha markets shows that of the 120 months there were only 34 months when Omaha was 6.5 cents or more below Chicago.¹⁵ And of these 34 months only 12 were in the second six months of the crop year, and these in the period when the eastern feeding section gets its largest volume of corn.

It may appear from the foregoing discussion that the dealer in Dyersville is operating under some illusion which causes him to pay 90 cents for corn when he might have got it for 86 cents and at the same time paid the producer 77 cents instead of the 75 cents actually received. But there are other factors which cause the Dyersville dealer to pay 90 cents for corn.

The local dealers throughout Iowa could do a much better job of both buying and selling if they had before them more complete information on freight rates to and from all of the possible

¹⁵ See fig. 6 for the price differentials (p. 145).

markets. But to keep posted on all rates and connections is a tremendous task which requires much training and experience. Therefore, in years when a local dealer must get grain from some other area than the one he is familiar with, he must pay for the services rendered by some one who is familiar with these other sources.

The dealer in Omaha assumed the risk of moving a car of country-run corn into Dyersville and having it refused on the grounds that it was sample grade instead of No. 3 yellow. This shipment, when moved direct, does not pass through a point where it can have an inspection.

Much of the movement from the surplus producing area of northwest Iowa to the deficit feeding area in northeast and east central Iowa is over routes which do not have inspection opportunities. In the majority of cases the feeder is paying the equivalent of a round about movement through a point for inspection. For if the dealer moves the corn direct he must assume the risk, and therefore the charge is made accordingly.

There are several points in north central Iowa where inspection privilege would be of great service to both the deficit and surplus areas. Perhaps there is not sufficient volume at any one of these points to pay for installing all of the equipment necessary for the service. But it might be possible to have at least samplers at these points who could send samples to already established inspection offices for inspection on a 12- or 24-hour layover. Granting this service cost \$5.00 per car it would be much cheaper to the feeder than the extra 2 cents per bushel or about \$30 per car which he now pays.

INTERSTATE vs. PROPORTIONAL

Why is Kansas City bidding considerably more than Chicago for corn at the present time? (March, 1935) And why is Kansas City likely to remain in that position relative to Chicago until next summer? (July, 1935.)¹⁸

Most of the coarse grain shipped from Iowa destined to Chicago carries a flat rate. These rates fall into rather large zones. For example, the 20.5-cent rate covers a large area in northern and western Iowa. (See fig. 3, A) It is from this section of the

¹⁸November 1, 1935. This prediction proved to be true for not until July was Chicago able to outbid Kansas City, and it was not until September that the average price for the month put Chicago over Kansas City.

state that the largest volume of commercial corn originates.

Compare these wide zones shown on the Chicago map with the rather narrow and short zones shown on the Kansas City map, fig. 3, C. While there are some flat rates to Kansas City from the heavy surplus area of Iowa, most of the commercial corn moving in this direction must take a local rate into Sioux City, Omaha or Des Moines and a proportional from these markets to Kansas City. It is this combination of local and proportional rates that cuts the rate zones into such small areas. In the surplus area of northern Iowa there is a comparatively small area where rates are equal to the two markets. Many of the counties in northern Iowa have a higher rate to Kansas City.

Demand conditions being equal the market with the lowest freight cost is in a position to make the highest bid to the local shipper in a given surplus area. Changing crop conditions, however, may create demands for feed grains in territories normally not in the market. When such demands arise the market serving the deficit area is forced to bid equal to, or above, the market with the favorable freight cost in order to draw grain from an equal or higher freight cost area.

The meat producing section of the United States may be divided into three rather large feeding areas; namely, eastern, southern, and western as shown in table 2. This division is made primarily from the standpoint of the markets serving the areas. The eastern area is served by Milwaukee, Chicago and Peoria; the southern area by Chicago, St. Louis, and Kansas City; and the western by Kansas City, Omaha, Sioux City and Minneapolis.

These markets form a complete circle around Iowa and Illinois, the two states producing a large share of the total commercial corn. The bulk of Illinois' commercial corn moves to the east and south. Iowa's commercial corn, on the other hand, is in a position to move in any direction depending upon the demand.

Figure 6 substantiates the statement that Kansas City, Omaha and Minneapolis serve the western feeding area. With but few exceptions these three western markets follow a similar seasonal price movement. Likewise the St. Louis market follows fairly closely the Chicago seasonal movement. Since space does not permit a comparison of all markets, Kansas City has been cho-

TABLE 2. CORN PRODUCTION IN THREE FEEDING
AREAS OF THE U. S.

In percentage of normal (1922-1931)

Year	Eastern feeding area*	Southern feeding area**	Western feeding area***
1900-1901	107.9	117.2	87.5
1901-1902	72.9	62.7	45.8
1902-1903	102.5	136.2	101.0
1903-1904	87.1	125.2	101.0
1904-1905	98.1	118.0	106.0
1905-1906	108.4	129.5	119.9
1906-1907	111.0	135.3	122.2
1907-1908	94.8	122.9	98.8
1908-1909	91.4	110.1	108.6
1909-1910	100.8	111.6	94.3
1910-1911	104.7	138.8	102.2
1911-1912	97.2	120.2	71.0
1912-1913	111.6	133.3	108.9
1913-1914	93.8	95.2	61.0
1914-1915	99.4	106.7	83.2
1915-1916	96.0	135.1	117.3
1916-1917	92.0	104.9	83.0
1917-1918	105.8	160.6	86.5
1918-1919	100.5	105.9	61.6
1919-1920	106.6	110.2	85.7
1920-1921	113.4	132.3	118.6
1921-1922	110.1	125.6	109.2
1922-1923	105.5	113.0	93.9
1923-1924	108.6	109.3	117.1
1924-1925	82.1	97.7	96.7
1925-1926	122.9	107.6	87.6
1926-1927	106.0	112.2	74.7
1927-1928	87.3	104.5	138.1
1928-1929	106.3	98.3	112.0
1929-1930	97.9	90.6	104.4
1930-1931	81.5	52.6	94.1
1931-1932	101.7	113.1	81.6
1932-1933	117.5	106.3	113.2
1933-1934	92.9	92.9	81.6
1934-1935†	58.9	63.6	18.3

†Estimate December 1, 1934.

*Includes—N. Y., Pa., Ohio, Ind., Ill., Mich., Wisc., Minn., Ia.

**Includes—Mo., Ky., Tenn., Ala., Miss., Ark., La.

***Includes—N. Dak., So. Dak., Nebr., Kans., Okla., Texas, Wyo., Colo., N. Mex.

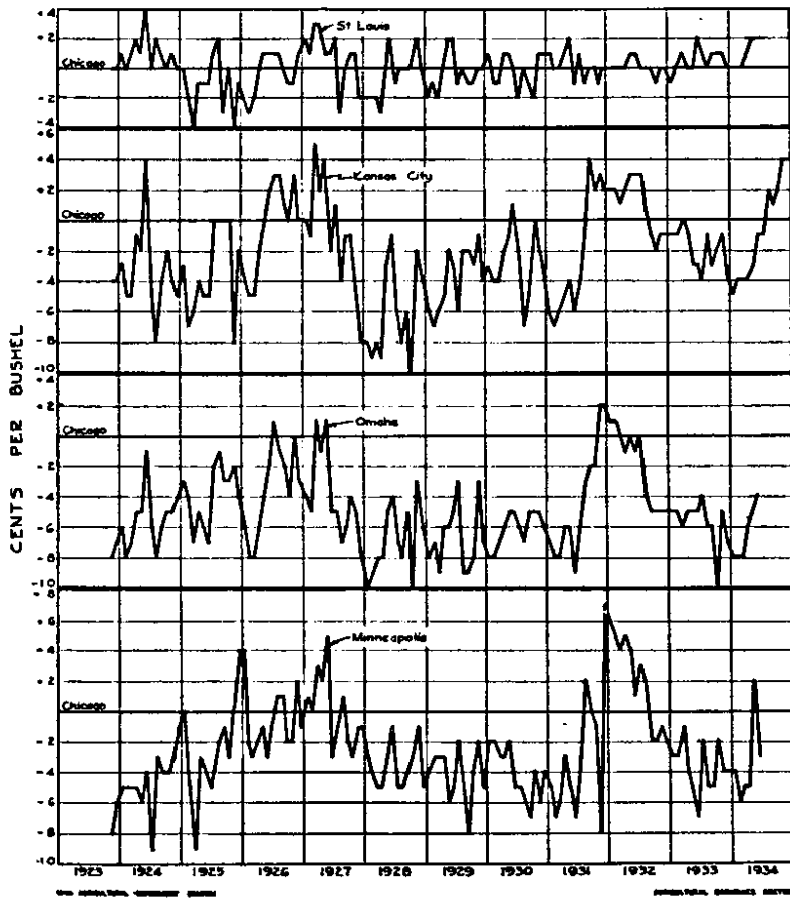


Fig. 6. Difference between the monthly average price of corn at Chicago and the following markets: St. Louis, Kansas City, Omaha and Minneapolis, 1923-34. Monthly weighted average price of No. 3 yellow corn was used for each market.

sen to represent the western feeding area and Chicago the eastern and southern areas.

Further study of table 2 reveals varying feed supplies in the three feeding areas. The western feeding area shows the greatest variation perhaps because of the frequent occurrence of dry years in these western states. In 8 of the years shown, the western area's production was 18 percent or more below normal. In the other two areas there were only 3 years, for each, when production dropped below the 18-percent level.

In years of normal crop production in the western feeding area, Kansas City is able to supply its corn needs from the states to the west. Also in years of moderately short crops of 5, 10 and even 15 percent below normal, supplies may be procured from southwestern and western Iowa where rates are favorable to Kansas City. But in years such as 1901-02, 1911-12, 1913-14, 1918-19, 1926-27, 1931-32 and 1934-35, with the crop production in the western feeding area 18 percent or more below normal,¹⁷ Kansas City is forced to enter northern Iowa for necessary feed and that means bidding up to, or above, Chicago.

Figure 7 shows to what extent Kansas City was forced to bid over Chicago in 6 of the years cited. In 1934 Kansas City outbid Chicago during the last quarter of July, and continued to outbid Chicago until feed crops matured in the southwest in 1935.

Figs. 7 and 8 give the answer to the question asked earlier, "Why is Kansas City likely to remain above Chicago until July, 1935?" In each of the 8 years, with one exception, when production in the Western feeding area fell 18 percent or more below normal the price of No. 3 yellow corn at Kansas City advanced over Chicago during the summer months previous to the harvest of the short crop. In 6 of the years Kansas City prices averaged above Chicago for 10 to 14 months, or well into the summer following the short crop. For the current year, 1934-35, the first six months show Kansas City prices averaged above Chicago and it is very likely this will continue until next summer.¹⁸

A study of table 2 raises the query, why is it that the Kansas City price did not rise above Chicago in 1933-34 for the production that year was the same as in 1931-32? There are two reasons: First, the tremendous carry-over from the 1932 crop, which was one of the largest in history, and second, the low price of livestock.

From the foregoing, it is evident that the local dealer in the surplus areas of Iowa must not only keep in touch with these shifting supply and demand conditions between the eastern and

¹⁷See table 2.

¹⁸Nov. 1, 1935, a weighted monthly average showed that Kansas City was above Chicago from August, 1934, through August, 1935, a period of 13 months.

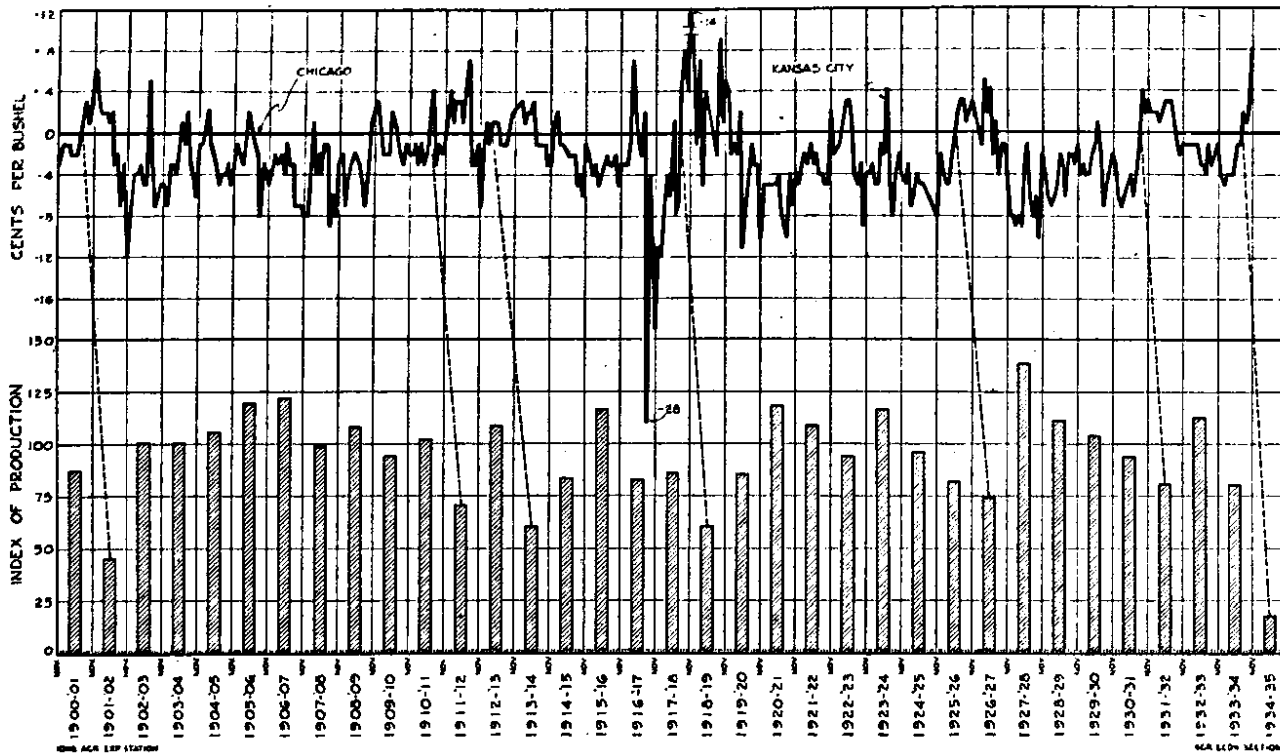


Fig. 7. Differences between monthly averages of No. 3 yellow corn at Kansas City and Chicago and the production of corn in the western feeding area.

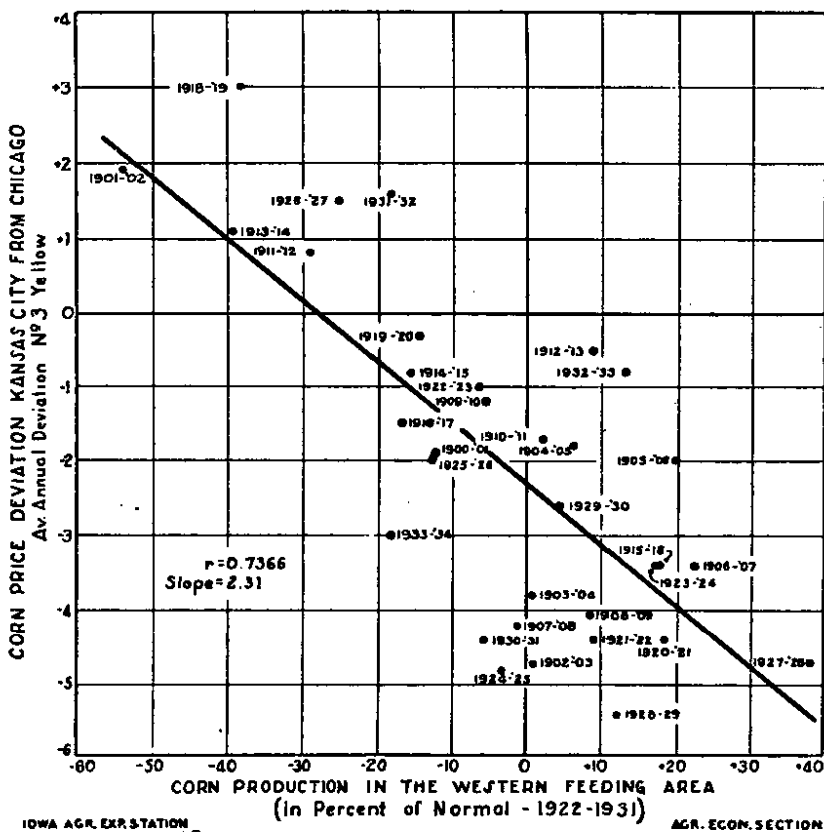


Fig. 8. The Kansas City-Chicago corn price differential and the production of corn in the western feeding area.

western feeding areas of the United States, but he must know what the freight cost is to each of the markets serving these two large areas so that when price differentials shift sufficiently to make up the difference in freight cost he may take advantage of these changes.