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# Economics of Transporting Idaho Beef Cattle

By

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## SUMMARY

Livestock production and marketing is an important segment of the agricultural economy in Idaho. Of the total farm cash receipts in 1961 approximately 46 per cent, \$196.6 million, came from the sale of livestock and livestock products. Over 50 per cent of this \$196.6 million, or \$99.6 million, came from the sale of cattle and calves.

Beef cattle production in Idaho has increased 64.6 per cent from 1950 to 1960. The southern part of the state accounts for 93.0 per cent of this increase.

Beef cattle classes partially determine the direction and distance of the movement of cattle. Direction and distance may in turn influence the type of transportation facilities used and the rates charged for moving cattle and calves from origin to destination. Stocker cattle generally move in intrastate and even intracounty fashion. Feeder cattle may move both in intrastate as well as interstate movement, but mostly intrastate. Slaughter cattle shipments tend to be more interstate in nature when Idaho cattle are involved than is the case for stocker or feeder cattle. This may be attributable to the limited amount of slaughtering and packing facilities available within the state. The direction of Idaho slaughter cattle movements has also changed in the past twenty years. Previously the direction was to points such as Denver, Omaha, Ogden, Portland, and Seattle. In recent years, the direction is toward the center of large population increases on the west coast. Imports of slaughter cattle into Idaho have been fairly low. Most cattle and calves imported are feeder animals coming from neighboring states and brought into the state for finishing purposes.

Cost of transportation of cattle and calves is associated with the distance and type of roads involved. Many of the farms and ranches in the state are located some distance from a hard-surfaced road. About 4 per cent of the shippers were using unimproved roads for an average of 2.8 miles. An overall average of 5.85 miles of all types of ranch road between loading point and hard-surfaced highway was used by respondents in the study.

Thirty-six per cent of the respondents ranchers used their own truck for hauling cattle, forty per cent of the ranchers used commercial haulers and twenty-four per cent used a combination of the two. However, only 9 per cent of the cattle were hauled by the ranchers in their own trucks. Sixty-two per cent were hauled in commercial trucks, and twenty-nine per cent of the cattle were hauled by a combination of the two.

All intrastate truck rates are regulated by the Idaho Public Utility Commission. Interstate truck rates generally are regulated by the Interstate Commerce Commission; however, truck transportation on interstate shipment of livestock is specifically exempted from ICC regulation by the agricultural exemption clause of the Interstate Commerce Act. Interstate rates were found to be based upon the tariff, set by the Idaho Public Utility Commission, plus additional charges which may be incurred in the various states.

Three major railroads provide Idaho with service to the cattle producing areas. Hauling rates for livestock are separated for slaughter and feeder cattle. Special charges are made for feeding, bedding, unloading, and reloading, and other services. Special services are provided by the railroads. Feeding in transit for a period from one day to 12 months and the right to divert a shipment of cattle from original destination to another destination are examples of such special services with no added cost.

Direct comparison of truck rates and rail rates does not give a clear picture of the economic efficiency involved in the two forms of livestock hauling. There are other significant factors that must be determined before one can decide the better method of transportation. However hauling rates are, in general, lower for truck hauling in intrastate movement and up to 1,000 miles in interstate movement. For distances longer than 1,000 miles hauling by rail is, in general, more favorable.

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† Cover picture courtesy of Union Pacific Railroad.

# Economics of Transporting Idaho Beef Cattle<sup>1</sup>

By

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## INTRODUCTION

Livestock production and marketing is an important segment of the agricultural economy in Idaho. Of the total farm cash receipts in 1961 approximately 46 per cent or \$196.6 million came from the sale of livestock and livestock products. Of this \$196.6 million over 50 per cent, or \$99.6 million, came from the sale of cattle and calves.<sup>3</sup>

In addition to the income received by farmers, ranchers, and feeders from the sale of livestock and livestock products, the income to marketing and processing agencies, from the handling of meat animals makes up about fifty per cent of the consumer's meat dollar. Hence, the \$99.6 million coming from the Idaho cattle industry in 1961 generated another \$99.6 million through the marketing and processing agencies, of which some are located in Idaho. The total effect of Idaho's cattle industry was an income of \$199.2 million at the retail level in 1961.

Transportation of cattle and of beef accounts for about seven per cent of the consumer's dollar spent for beef.<sup>4</sup> Consequently, about \$13.9 million is derived annually from the transportation of Idaho cattle and calves and the meat obtained from these animals.<sup>5</sup>

Transportation of Idaho cattle, then, is big business. Three railroad companies, many commercial truck lines, and numerous privately owned farm and ranch trucks undertake the tasks of transporting Idaho cattle to various locations within the state and to and from other states. A total of 360 commercial trucks were registered as commercial livestock trucks with the Idaho Public Utilities Commission in 1959.

<sup>1</sup> This work was completed as part of the Western Regional Livestock Marketing Project, WM-37, on Livestock Transportation.

<sup>2</sup> Assistant Agricultural Economist and former Assistant Agricultural Economist, respectively, Agricultural Experiment Station, University of Idaho.

<sup>3</sup> Economic Research Service, U. S. Department of Agriculture, "Farm Economic Situation," Feb. 1963, F. I. S. 189, p. 15-17.

<sup>4</sup> Agricultural Marketing Services, U. S. Department of Agriculture, "Beef Marketing Margins and Costs," Miscellaneous Publication No. 710, Washington, D. C., February 1956, p. 23-35.

<sup>5</sup> These figures do not take into account the cost of transporting cattle and calves from pasture to pasture. This would be an additional transportation charge.

Transportation costs play an important role in the decision making process of livestock producers, feedlot operators, and other members of the livestock trade. Differences in transportation rates, facilities available, and services offered often determine the type of market channel, the particular market, and the type of transportation that will be used in the marketing of cattle produced in Idaho.

Also important is to have adequate transportation facilities available to move cattle and calves from one location to another without any change in ownership. Movement of animals from pasture to pasture is significant, particularly in Idaho where the variable climate and public ownership of lands create seasonal grazing and feeding patterns. Spring, summer, and fall pastures may be widely separated and may also be distant from the headquarters' operation where the winter feeding is done.

## **The Purpose and Objectives of the Study**

The most complete data available on the movement of Idaho feeder and slaughter cattle and calves by classes are in the records of the State Brand Inspector. This information has never been tabulated, analyzed, or published in a form useful to the stockmen of the state. Although the Brand Inspector's office cooperated, it was impossible to obtain adequate funds to go through these records in detail for this study.

A limited amount of data has been published on the intrastate and interstate movement of Idaho cattle and calves. Specific information on the origins, destinations, and routes of the cattle and calves by classes has not been published. Other information on cattle movement, available in the records of auction markets, has not been compiled, analyzed, and published.

Little economic analysis is available on tariff rates for interstate shipment of cattle by rail and by truck. In fact, other than investigations made by the regulatory bodies or by the transportation firms themselves, little has been done to make an economic appraisal of transportation rates, facilities, and services.

The published tariffs or transportation rates often differ from actual charges made by the transportation agencies. This may be because of back-hauls and other considerations which arise within the framework of the agricultural exemption act of the federal government. These differentials also tend to cloud the picture livestock people have on the nature of transportation rate structures.

The study is restricted to feeder and slaughter beef cattle and calves originating in the state of Idaho. Only data for the movement of cattle during the 1958 calendar year were obtained. The tariff rates and services of 1958-59 were studied.

The study, as described in detail in Appendix A was designed: to describe and analyze the movement of feeder and slaughter cattle produced in Idaho and shipped to various points inside and outside the state, and to describe the structure of rail and truck transportation rates for cattle and calves.

In addition, this type of study necessarily involves a description and analyses of the facilities and services available to shippers of cattle and calves originating in the state. Regulations governing the activities of the transportation agencies involved in the livestock industry of Idaho are also discussed.

## MOVEMENT OF IDAHO CATTLE

### Changes in Geography of Production

The number of cattle on feed in Idaho has increased from 721,000 head in 1950 to 1,187,000 head in 1960.<sup>6</sup> This is an overall increase of 64.6 per cent. Table 1 presents the breakdown of this change by districts within the state. Area boundaries are outlined on the map in figure 1.

The area with the largest increase was the southcentral district (93.3 per cent). Other increases by area are southwest, 88.5 per cent; east, 43.8 per cent; and northern, 34.6 per cent. About one-third of the state increase during the 10-year period was found in each of the southwest, southcentral, and east districts. Only seven per cent of the state increase was found in the northern districts.

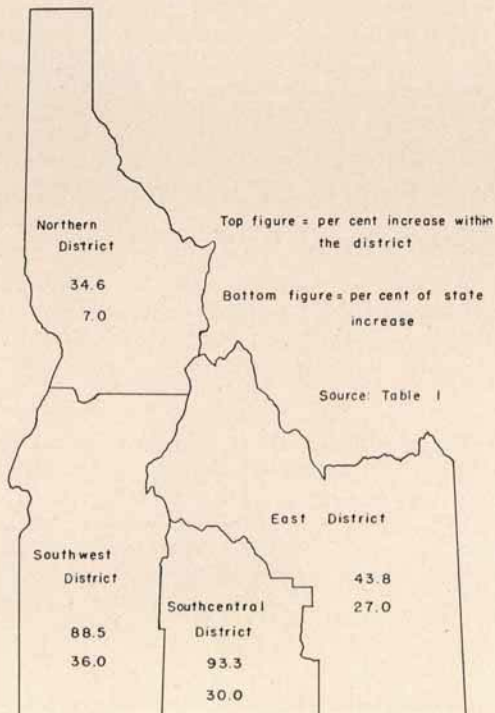
Part of the increase in beef cattle and calf numbers is attributable to expansion in the number of cattle and calves on feed. On April 1, 1950, 55,000 head were on feed and by April 1, 1960, this had increased to 115,000 head for a total increase of 109 per cent. This increase in feedlot cattle accounted for about 13 per cent of the increase in total beef cattle numbers between 1950 and 1960. In addition, part of this overall increase may have been based on the location in the cattle cycle. The year 1950 was the first year of the previous cattle cycle which ran from 1949 to 1958. The year 1960 was the second year in the most recent cattle cycle which began in 1958. Nevertheless, total cattle numbers increased significantly in Idaho between 1950 and 1960, and a substantial portion of this increase took place in the irrigated sections of the state along the Snake River Valley in south Idaho.

**Table 1. Changes in the Geographic Production of Beef Cattle and Calves in Idaho. January 1, 1950 to January 1, 1960.**

District	Number of Cattle Excluding Those Kept for Milk		Per Cent Increase Within District	Total Increase in No. of Cattle	Per Cent of Total State Increase
	1950	1960			
Northern	93,900	126,400	34.6	32,500	7
Southwest	190,800	359,600	88.5	168,800	36
Southcentral	148,500	287,100	93.3	138,600	30
East	287,800	413,900	43.8	126,100	27
Totals	721,000	1,187,000	64.6	466,000	100

Source: Statistical Reporting Service, Agricultural Estimates Division, United States Department of Agriculture, Boise, Idaho, April 27, 1961.

<sup>6</sup> Statistical Reporting Service, "Idaho All Cattle and Calves by Counties and Cows and Heifers 2 years and Up Kept for Milk by Counties," Agricultural Estimates, U. S. Department of Agriculture, Boise, Idaho, April 27, 1961.



**Figure 1: Percentage increase in Number of Beef Cattle Within and Among the Four Cattle Producing Districts in Idaho—1950 to 1960.**

## Beef Cattle Classification

Movement of Idaho cattle depends, at least partially, upon the classification of the cattle involved. Three major classifications in beef cattle and calves are stockers, feeders, and slaughter animals. Stocker designation is indicated for those animals that are moving from range to range or that are scheduled to return to the range for breeding purposes.

Feeder cattle are animals that are scheduled to go into feedlots for further finishing. The slaughter animals may be divided into two general groups: grassfat and dry-lot fat cattle. Grassfats are those animals that have attained a reasonable degree of finish while on range or pasture without going into a dry-lot for finishing on grain, etc. Dry-lot fat cattle have generally been finished out on a ration with a high percentage of concentrates. Cattle fed on dry-lot have generally a better finish than those cattle fed entirely on grass.

As stated previously, the classification of beef cattle may partially determine how far and in which direction the cattle will be moved. These factors of direction and distance may in turn influence the type

of transportation facilities used and the rates charged for moving the cattle or calves from origin to destination.

Stocker cattle generally move from range to range, or move from range to market to range. In either case, the shipment is frequently local in nature. Often intrastate and even intracounty movements take place when stocker cattle are shifted from one location to another.

Feeder cattle may move intrastate or interstate. This is determined by the location of the feedlot where the cattle are to be delivered. Local and intrastate movement of feeder cattle and calves involve shorter distances and lower costs than shipment on an interstate basis. There is a noticeable tendency for a higher percentage of interstate cattle shipments to use railroad facilities than to intrastate shipments. Idaho slaughter cattle shipments tend to be more interstate in nature than is the case for stocker or feeder cattle shipment. This may be at least partly attributable to the limited amount of slaughtering and packing house facilities that are available within the state. At present Idaho has only six federally inspected slaughter plants and a few state inspected slaughter houses. The number of cattle slaughtered commercially in Idaho under federal inspection and other commercial slaughter (excluding farm slaughter) increased from 77,400 head in 1950 to 202,700 head in 1960, an increase of 162 per cent. In the same period the number of calves slaughtered under the same conditions, decreased from 16,800 head in 1950 to 9,000 head in 1960, a decrease of 46 per cent. Farm slaughter decreased in the same period from 15,000 head of cattle in 1950 to 12,000 head in 1960, a decrease of 20 per cent.<sup>7</sup>

Interstate shipments of slaughter livestock and the higher value of the animals being sold relative to the stocker and feeder values influence the type of transportation selected and the rates charged for the shipment.

## Growth and Size of Cattle Feeding Industry in Idaho

As mentioned previously cattle on feed in Idaho increased 64.6 per cent between January 1, 1950 and January 1, 1960. A large portion of this increase occurred in commercial feedlots with the results that the number of feedlots had increased to 272 in 1960. These feedlots are registered with the Idaho Bureau of Animal Industry.<sup>8</sup>

This growth is attributable to several factors. First, the demand for slaughter beef for western consumption is expanding. Second, the supply of roughage and feed grains grown locally that can be fed economically to livestock is good. Third, the supply of locally produced feeder cattle is substantial. This extensive feeder cattle production in Idaho is due partially to the availability of relatively inexpensive public and private

<sup>7</sup> Agricultural Statistics, United States Department of Agriculture, Volumes 1951 and 1961.

<sup>8</sup> A feedlot may be registered with the Bureau if the operator intends to place female animals in channels for slaughter purposes. This avoids the necessity of inspection for Brucellosis control. The detailed requirement for a feedlot operation registration may be obtained from the Bureau in Boise.

range. Fourth, the climate in Idaho is favorable to livestock feeding. Moderate temperatures and precipitation coupled with good land drainage and adequate water supplies have all encouraged expansion of the feedlot operations in the southern part of the state.

The growth and development of the cattle feeding industry has influenced both the type of transportation provided by the transportation firms and the type used by shippers. The finished animals are shipped generally to different markets at different times of the year than is the case with feeder animals. In some cases, rate differentials may exist between the fat and feeder classes of cattle.

## **Comparison of Market and Pasture Movement**

Many changes have taken place in the movement of Idaho beef cattle and calves during the past twenty years. Although specific empirical data are not available, cattle industry men generally agreed that several significant changes have occurred since 1940. Many of these changes took place in the post World War II era.

Traditionally, the major portion of feeder cattle and calves produced in Idaho were shipped to the mid-west corn belt to be finished out for slaughter purposes, but, in the post-war period the trend has been downward with a considerable increase in the number being fed within the state of Idaho.

The direction of Idaho slaughter cattle movements has also changed in the past twenty years. Even though slaughtering plants in Idaho have increased their volume from 96 million pounds in 1940 to 220 million pounds of beef live-weight in 1960, the movement of slaughter cattle shipped out of state has increased in a much greater number.

Traditionally, out-of-state shipments of cattle and calves for slaughter purposes have been fairly localized. Points such as Denver, Colorado; Ogden, Utah; Portland, Oregon, and Seattle, Washington, received some animals for slaughtering. In recent years, these locations and other intervening points outside of the state have received larger shipments of Idaho cattle and calves. However, a sizeable portion of the increased out-of-state shipments of finished animals are moving to more distant points including Stockton, San Francisco, and Los Angeles, Calif.

Imports of slaughter cattle into Idaho have been relatively low. Limited packing house and slaughtering facilities coupled with the surplus beef cattle production in Idaho have not encouraged importations of finished cattle and calves.

Most of the cattle and calves imported into Idaho are feeder animals. Shipping points are generally states adjacent to Idaho, namely: Montana, Wyoming, Utah, Oregon, Nevada, and Washington, with some animals coming in from other states and Canada. It should be noted that some of these imported cattle are owned by ranchers or feeders located in Idaho and are brought into the state for finishing purposes.



## Shipment of Cattle and Calves in 1958

A total of 81,837 head of feeder and slaughter cattle and calves were shipped by producer and feedlot respondents from all 37 grids in 1958. (See Appendix A for explanation of grid system).

Figure 2 presents the total number of cattle and calves shipped by method of transportation and by truck ownership. Of the total livestock transported, 6 per cent were cattle and 2.8 per cent were calves moved in trucks owned by the producers and feeders. Commercial truck transportation moved 68.4 per cent of the cattle and 15.5 per cent of the calves. Railroad transportation was used for 5.2 per cent of the cattle and 0.6 per cent of the calves while combination rail and truck transportation handled 0.6 per cent of the cattle and 0.9 per cent of the calves reported by the respondents in the sample. (See Appendix A Table 1)

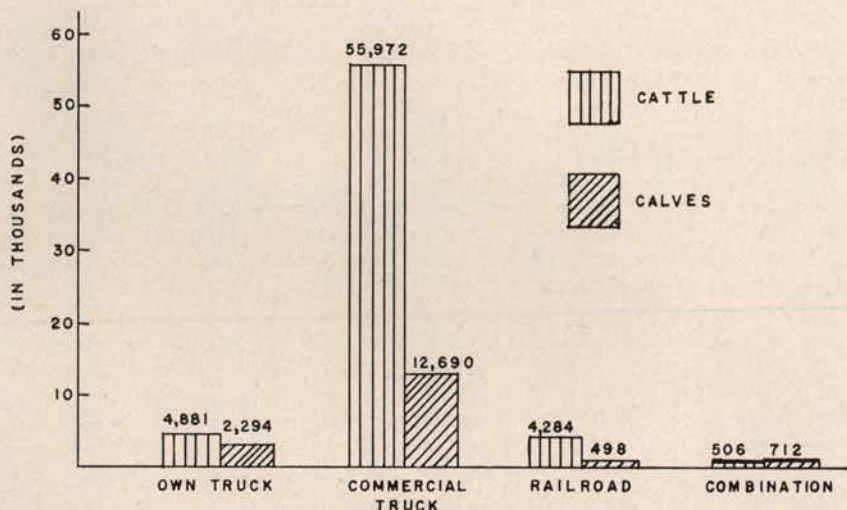


Figure 2: Total Number of Cattle and Calves transported by Type of Transportation as Listed by 247 Farmers in Idaho, 1958.

From the figures in appendix Table 1, representing the actual number of animals included in the sample, an estimate of the total number of cattle and calves shipped from the grids of origination in terms of classes of cattle is presented in figure 3. Of the cattle and calves shipped, 53.1 per cent were feeder and slaughter steers. Twenty-four per cent of the animals shipped were female. Only 8.1 per cent of the total cattle and calves transported were brood cows and the balance of the beef animals were mixed shipments (14.1 per cent) or bulls (0.8 per cent). See Appendix A Table 2.

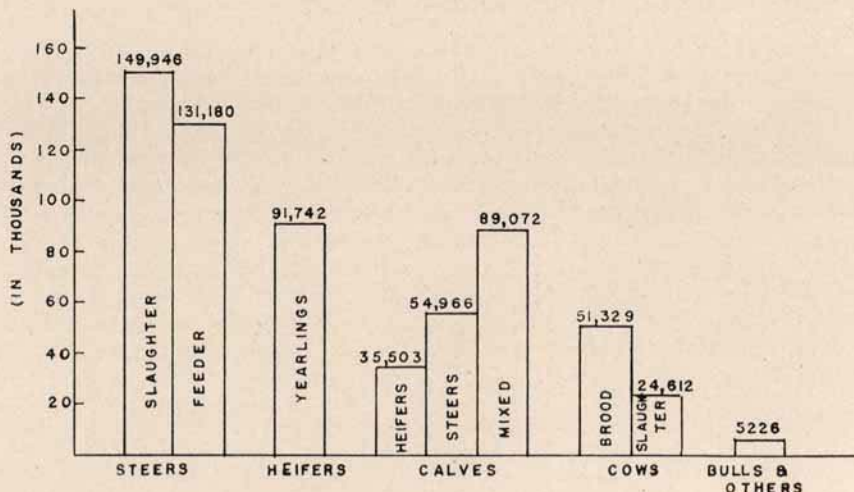


Figure 3: Estimated Total Number of Cattle and Calves Transported by Class of Cattle in Idaho, 1958.

## Type of Ranch Road

Cost of transporting cattle and calves is associated with the distance and type of roads involved. Many of the farms and ranches in the state are located some distance from hard-surfaced road. The road in the intervening space may be quite variable in its basic nature and utility. Rougher roads have tendency to cause greater economic loss through bruising and shrinkage.<sup>9</sup> To determine the extent of roadways used which do not have hard surfaces, respondents were questioned on this point. Table 2 presents the relationship between type of ranch road and distance of loading area from a hard-surfaced road. Over fifty per cent of the farms reporting indicated that the road from loading point to hard-surfaced road was graded and graveled. Average distance was

Table 2. Relationship Between Type of Ranch Road and Distance of Loading Area From Hard Surfaced Road as Listed by 248 Farmers in Idaho, 1958.

Type of Ranch Road	Number Of Farms	Distance of Loading Area From Hard Road (Average)
Unimproved road .....	11	2.8 miles
Graded not graveled .....	14	6.2 miles
Graded and graveled .....	154	4.9 miles
Graded and oiled .....	53	11.7 miles
Various combinations .....	16	10.8 miles
Average of all farms .....	248	5.8 miles

<sup>9</sup> For a discussion on losses due to bruising, see: Joseph E. Rickenbacker, "Handling Conditions and Practices Causing Bruises in Cattle," Farmer Co-operative Service, United States Department of Agriculture, Marketing Research Report 346, August 1959.

4.9 miles. Longest average distance (11.7 miles) was reported by 53 farmers who used graded and oiled roadways between loading point and hard surfaced highway. An overall average of 5.8 miles of all types of ranch road between loading point and hard surfaced highway was used by the respondents in this study. In general, the type of ranch and local roads seem to be fairly good for the transportation of livestock. The data in Table 2 represent type of road between loading point and hard surfaced highway by grid and by number of respondents in each grid.

## **Type of Livestock Operation and Truck Ownership**

Relationship of type of livestock operation to method of shipment used by farmers is shown in Appendix A, Table 3. Of those who raised only cattle, about 42 per cent used their own trucks and 44 per cent used commercial trucks. The remainder used their own trucks or a combination of own truck and commercial trucks.

In total 74 per cent of the cattle and 48 per cent of the calves were transported by commercial trucks from the three types of livestock operations.

Cattle producers and feedlot operators were asked to indicate the type of shipper responsible for shipping the cattle and calves to various points within the state and to other states. Respondents indicated that thirty per cent of the shippers were ranchers and 26 per cent were cattle feeders. The remainder consisted of a variety of shippers. When looking at the number of cattle shipped the relative importance changes. Thus, ranchers accounted for only eleven per cent of the total number of cattle transported while feedlot operators account for 41 per cent of the volume. On the other hand, ranchers accounted for 28 per cent of the total volume of calves transported, whereas, feedlot operators accounted for only 15 per cent. (See Appendix A, Table 4).

Since some shippers do not have full loads when transporting animals and since others do not have their own transportation facilities, the shippers were asked if they would be willing to transport their neighbors' cattle. Just over one-third of the shippers indicated they would be willing to transport their neighbors' cattle and about one-third said they would not. The rest did not respond to this specific question. Results here would suggest that many shippers would use their own truck to help transport neighbors' cattle if circumstances permitted. However, circumstances are not always favorable to such an arrangement. Seldom does the neighbor want his cattle moved when the trucks are available. This and other complications (e.g. legality of such transports) may effectively prevent such cooperative action and force the neighbor to transport his cattle by other means.

## **Type of Hauling Equipment and Services**

Commercial truckers and truck owners who ship their cattle use a wide variety of equipment. In this study over 50 per cent of the farmers owning trucks had only shortbed trucks. The next largest group of

farmer truckowners used a combination of equipment types. In the commercial truckers group, the largest segment (59 per cent) used a combination of equipment. Complete details on type of equipment and type of truck body is presented in Appendix A Table 5.

In general, respondents in the study considered the equipment used to transport cattle and calves to be in good condition. Only six respondents indicated that equipment condition was unsatisfactory and three of these six owner-shippers evidently were critical of their own equipment. Commercial truck equipment was considered to be in good condition by the respondents.

Range conditions, weather, condition of cattle, market prices, and need for money all influence when a livestock man is ready to ship his animals. When one or more of these conditions dictate a need for movement, availability of adequate transportation equipment to do the job is essential. Less than five per cent of the respondents in the study indicated any difficulties in getting sufficient number of trucks or railroad cars at their shipping points on the date and at the time they wanted to ship.

## **Death Losses**

Cattle and calves death losses reported in the study on truck-hauled animals were low. Only 15 respondents indicated any in-transit death losses at all. Eight of these cases involved commercial trucks. Six of the 15 were combination commercial and owner-shippers, and one was an owner-shipper. The number of cattle involved in these death losses is not known, and the Idaho record could be improved in this area.<sup>10</sup> In all but five cases, settlement by the hauler for death loss was satisfactory with the shipper. Settlement varied between shippers and by class of cattle. With fat cattle, the transportation agency bore 100 per cent of the loss, and, in at least some cases with feeder cattle, the loss was split 50-50 between the shipper and the hauler. Complaints were made regarding the hauler's tendency to over-crowd the cattle, to not use adequate dividers, and to use rough driving maneuvers (fast start and stopping) in transporting cattle. Some question was also raised about the adequacy of checks on the load by the driver between origin and destination. No criticism of railroad settlement for death losses was reported in the study.

## **Shrinkage of Cattle and Calves**

Transportation rates for feeder and fat cattle and calves are based not only in distance and weight of animals but also to some extent on value of the animals and conditions of the road. Determining hauling distances is generally easy, but methods of determining weight of payload are variable. Charges may be on a per head basis which is dependent upon weight per head, on a gross weight basis, or on a net weight

<sup>10</sup> For a discussion of death losses, see: Joseph E. Rickenbacker, "Losses of Livestock in Transit in Midwestern and Western States." Farmer Cooperative Service, USDA, Marketing Research Report 247, June 1958.

basis. Sometimes the weight may simply be estimated and agreed upon by shipper and hauler. Gross weight is the loading weight and may considerably exceed the net weight or unloading weight.

Results of a question about weighing conditions to determine pay weight indicated that twenty per cent of the shipments were weighed at origin and 52 per cent were weighed at destination. Thirty-five per cent of the cattle and 16 per cent of the calves were weighed at origin, and 35 per cent of the cattle and 58 per cent of the calves were weighed at destination. The remainder of the shipments and types of animals were either hauled on estimated weights or on a per head or per trip basis. In some cases where destination weights were used, respondents indicated that an estimate of shrinkage would be made to determine pay weights. This shrinkage figure varied by distance, time, and type of animals involved and was not used consistently in calculation of hauling charge pay weights.

Weighing conditions can appreciably affect the charges to shippers and their overall cost of marketing. Increased knowledge of the effect of variations in weight conditions might be helpful.

Some examples might point out the economic effects of these different methods of calculating pay weight. Assume that a shipper has thirty head of 800 pound feeder cattle to ship to market, and that he lives 100 miles from the sales market. The following cases may be presented for comparison of the results of using different weighing conditions.

- Case 1 Weight at origin of transportation  
30 head at 800 pounds at the ranch = 24,000 pounds  
Rate charged = 40c/cwt.<sup>11</sup>  
Transportation charge - \$96.00
- Case 2 Weight at destination (no deduction for shrinkage)  
30 head at 770 pounds (3.75 per cent actual shrinkage)<sup>12</sup> = 23,100 lbs.  
Rate charged = 40c/cwt.  
Transportation charge - \$92.40
- Case 3 Weight at destination (add on 3 per cent for shrinkage)  
30 head weight at 770 pounds  
Add on 3 per cent shrinkage = 794 pounds = 23,820 pounds  
Rate charged = 40c/cwt. transportation charge = \$95.28
- Case 4 Weight Estimated (5 per cent over or under actual)  
Five per cent under estimation  
30 head at 760 pounds = 22,800 pounds  
Transportation charge - \$91.20  
With five per cent over estimation  
30 head - at 840 pounds = 25,200 pounds  
Transportation charge - \$100.80

Results of Case 4, a five per cent wrong guess of weight results in a five per cent change in transportation charge.

<sup>11</sup> Rate is obtained from Idaho Public Utilities Commission, Freight Tariff No. 3-A, Item 2140, p. 73.

<sup>12</sup> Shrinkage estimate used here is based on Tippets, Stevens, Brotherton and Abel, "In-Transit Shrinkages of Cattle," Wyoming Agricultural Experiment Station, Mimeograph Circular No. 78, Feb. 1957.

Thus, it is seen that transportation charges could vary from \$91.20 to \$100.80, a difference of \$9.60 for this load of cattle.

## **Changes in Equipment and Methods of Transporting Cattle in the West**

The long trail drives which were necessary to move cattle from one location to another were replaced by the advent of railroad transportation in the latter part of the 19th century. Railroad transportation was supplemented and to some degree supplanted by the introduction of the motor truck and hard surfaced highways in the 1920's and 1930's. Although occasionally some cattlemen move their animals by trailing, virtually all cattle movements presently are made by rail or truck transportation.

Introduction of new equipment, faster delivery schedules, better service, and lower costs have all taken place in both rail and truck transportation of cattle during the past 30 or 40 years.

### **Intrastate**

Shipments of livestock moving between points within Idaho have tended to utilize a larger portion of trucks owned by the livestock shipper than is the case when between-state movements take place. Nevertheless, as shown in appendix Table 1, only 8.8 per cent of all movements of cattle were in shipper-owned trucks and almost 84 per cent of the cattle and calves were shipped in commercial trucks. This table includes both intrastate and interstate shipments. However, because of shorter distances and smaller lots of cattle and calves it is assumed that more shipper-owned trucks are used in intrastate cattle shipments than in interstate shipments.

Railroad transportation probably does not account for a significant portion of intrastate movement of cattle and calves. This is attributable to the relatively short distances involved and to the limited flexibility of rail facilities in pick-up and delivery service at the ranch or feedlot.

Both truck and rail transportation facilities and service for intrastate and interstate livestock movements have been improved markedly in the past 30 years. Trucks are larger, more elaborate and more powerful. Increased size in both commercial and shipper-owned trucks enables shipment of larger lots of animals at lower per-unit costs. Better body and suspension systems increase the comfort of the animals and reduce shrinkage, bruising, and crippling. Increased power in the truck engine also reduces jostling of the animals and increases their comfort. Faster schedules and better service in pick-up and delivery at the time selected by the shipper have also been inaugurated in truck shipments.

Major changes in the railroad facilities include larger stockcars, double decking, increased power, and improved loading and unloading yards. Larger cars and double decking reduce per unit costs for livestock shipped on railroads. Increased power reduces jostling and thus decreases shrinkage, death, crippling, and bruising. In some cases covered stockyards are available at loading and unloading points which increase the comfort of the animals. Express runs for livestock move-

ment, better management of loading and unloading, and in-transit privileges for grazing or feeding purposes have all been changes that enhance railroad movement of cattle and calves.

## Interstate

Movement of cattle and calves between states has also been affected



Figure 4: New, modern trucks, such as this one, are seen more and more on the highways as truckers strive for faster, smoother, more economical ways to serve the livestock industry. (Photo courtesy of Stockland Union Stockyards.)

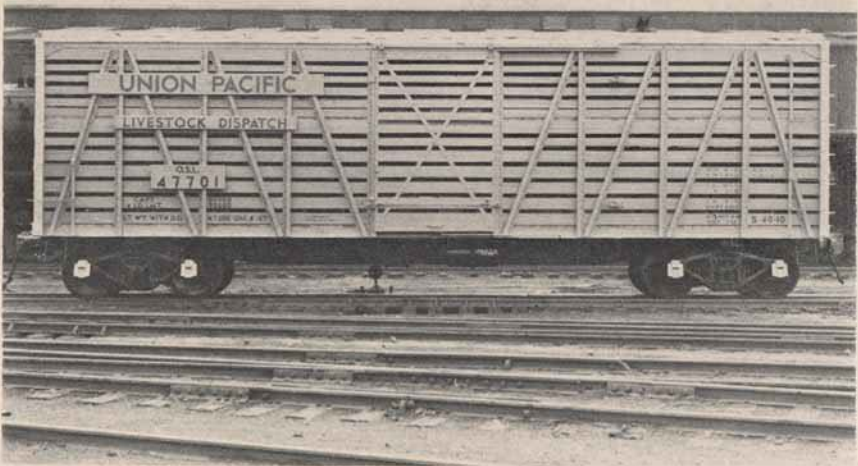


Figure 5: A new type of livestock car with the upper deck above center. In addition to using this car for double decks of sheep or hogs, it can also be used by loading the lower deck with cattle and the upper deck with hogs or sheep. (Photo courtesy of Union Pacific Railroad.)

by changes in the truck and rail transportation facilities and services. All of the changes described in the previous section on intrastate movements have taken place in interstate shipment as well. Nevertheless, some additional factors are involved.

Fewer shortbed trucks are used for interstate shipments. Generally semi-trailers or truck and trailer combinations are used for long distance shipment of livestock across state lines. Modern trucks as shown in figure 4 are illustrative of changes aimed at economy of movement.

Interstate railroad shipment of livestock has benefited from the changes outlined in the above section on intrastate shipments. Also certain additional service improvements have been made. For example, car-lot rates are now available for a shipment that involves an overflow car formally termed as a car and trailer. Change in the livestock cars used by the railroads may be seen in figure 5.

## FEDERAL AND STATE LAWS AND REGULATIONS

### Truck Transportation

The basic law which governs interstate shipment of goods by truck is "The Motor Carrier Act of 1935 as Amended." This is commonly known as a portion of the Interstate Commerce Act. This act pertains to service, equipment, and rates for interstate movement of goods. Basically this act provides that comparable, non-discriminatory service be given to all shippers and that a uniform system of rates be applied to all shippers of similar products. The act is administered by the Interstate Commerce Commission (ICC) which issues permits to operators of motor vehicles used in interstate commerce. Truck transportation on interstate shipment of livestock is specifically exempted from ICC regulation by the agricultural exemption clause of the Interstate Commerce Act. This clause exempts motor carriers handling agricultural commodities (including unmanufactured products thereof) from economic regulation by the ICC. Economic regulation includes control over who may engage in trucking, the routes or areas to be served, and the rates to be charged.<sup>13</sup> Thus, livestock truckers engaged in interstate movement of cattle and calves have considerable freedom of operation when compared with truckers in general.

The Idaho Public Utilities Commission (IPUC) administers the laws under which commercial intrastate livestock trucks operate. The laws are enforced by the Motor Carrier Division of the Department of Law Enforcement. Regulation of rates, truck sizes and weights, and to some extent, services are conducted under the Idaho Code.

Rate-making authority for commercial livestock motor carriers rests with the IPUC. However, the final rates are only established after extensive meetings and hearings have been held by the IPUC. At these

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<sup>13</sup> For the details see: **The Agricultural Exemption In Interstate Trucking—A Legislative and Judicial History**, by Celia Sperling, Marketing Research Division, Agricultural Marketing Service, USDA, Washington 25, D. C., Marketing Research Report No. 188, July, 1957.



meetings truckers, shippers, and other interested parties can present testimony on the subject of truck rates. The final decision on the rates rests with the Idaho Public Utilities Commission. Any shipper who feels that the rates charged are not in line with the tariffs can appeal to the commission. The commission investigates and determines what necessary adjustments are to be made.

The size and weight of local Idaho trucks are also governed by state law. Idaho Code requires that no truck bed shall exceed eight feet in width, thirty-five feet in overall length and fourteen feet in height.<sup>14</sup> This restriction in size is supplemented by Idaho law governing the maximum weights per axle. Trucks operating in Idaho shall not exceed 18,000 pounds per axle nor shall the total gross weight imposed on the highway by any wheel exceed 9,000 pounds. Since these controls are based on safety and upon "road and bridge punishment," the weight maximum varies from one season of the year to the next, and also varies in different areas of the state. During the spring thaws, weight limitations are more stringent and since roadbed conditions may vary throughout the state this restriction on maximum weight may also vary. Posting of local and state roads is a common policy in Idaho during the spring months when roads are susceptible to excessive punishment by heavy loads.

The Idaho Code also indicates that any operator of a commercial livestock truck must provide basically the same service, as well as charges, to any person or firm which wishes to hire the commercial truck.<sup>15</sup> This attempts to avoid discrimination among various shippers by truck operator.

State taxes and fees in Idaho are based on a ton-mile system. This means the size of the truck (in weight) coupled with the distance traveled in the state and the type of fuel used determine the amount of the use fees to be paid by commercial livestock trucks to the state of Idaho. All trucks are licensed on the basis of weight and age of truck. The local commercial trucks are listed with the Idaho Public Utilities Commission and are under its regulation; whereas shipper owned trucks are registered with the Idaho Department of Motor Vehicles and are controlled by the Motor Carrier Division of the Idaho Department of Law Enforcement.

## **Insurance**

Commercial livestock truckers generally carry cargo insurance in addition to coverage on public liability and property damage. Shippers may wish to take out special trip insurance for valuable registered livestock, but ordinarily the trucker will compensate the shipper for all death losses of commercial or grade cattle incurred in transit. In this study, all shippers who had animals that died enroute were satisfied with the compensation received from the trucker.

<sup>14</sup> "Weight, Speed and Tire Regulations," Title 49, Chapter 9, Idaho Code.

<sup>15</sup> For a statement of the state restrictions on all of the above items see: Idaho Public Utilities Commission, "Rules and Regulations Governing Transportation of Persons and/or Property Over Public Highways of the State of Idaho by Motor Propelled Vehicles," Boise, Idaho, effective Jan. 1, 1958.

## Regulations Affecting Rail Transportation of Cattle

Railroad transportation has played a significant role in the movement of western cattle during the past 80 years. Even though only 5.8 per cent of the cattle and 1.5 per cent of the calves reported by the respondents were shipped by rail, a much greater portion of the total livestock shipments is made by rail since many longer shipments utilize railroad transportation. As recently as 1955 about 20 per cent of all livestock deliveries at terminal markets were made by railroads.<sup>16</sup>

Rail transportation of cattle is conducted by businesses involved in interstate commerce and therefore, is under the jurisdiction of the Federal Interstate Commerce Commission (ICC). The ICC regulates rates, schedules, franchises, and to some extent, services of railroad companies which provide livestock transportation.

Basic rates and adjustments on rates for railroad transportation of livestock are established by the ICC after public hearings have been held. At these hearings testimony is presented by shippers and transportation agencies. After due deliberation, the ICC sets and posts these rates which cannot be changed without permission of the Commission. Current basic railroad transportation rates for moving feeder and slaughter cattle and calves from various origins and destinations are contained in appendix Table C.

All livestock transported by railroads is shipped under a uniform livestock contract that is provided by the railroads in conformity with the rates and regulations established by the ICC. Any special consideration given to the specific livestock shipments along with the related charges are generally listed on this uniform livestock contract.

One of the most stringent regulations of livestock transportation service by railroads is the federal "28-hour law." This federal law provides that livestock cannot remain in railcars over 28 hours but must be unloaded for feed, water, and rest unless the shipper or owner signs a release permitting an extension to 36 hours. Five hours off the car for each of these stops must be provided. One recent publication has this to say about the 28-hour law:

**"Building of the railroads brought new problems in connection with the human handling of animals in transit to distant markets as well as disease-control problems. Livestock were frequently crowded and shipped long distances without unloading for water, feeding, or rest. Protests from livestock owners and the general public led to enactment in 1873 of the first 28 Hour Law or Humane Act.**

**The present 28-hour law was passed in 1906. It provides that livestock in interstate transportation by rail or water shall be unloaded in a humane manner at stated intervals into properly equipped pens for rest, water, and feeding, except under certain conditions when they may be fed and watered in the car.**

**At the present time, approximately 750 rest stations are operated by carriers along transportation lines. Of this number, 435 are regular stations for feeding, watering, and resting livestock and 310 are for emergency use. These stations are periodically checked by federal livestock inspectors to help assure that standards for the sanitary and humane handling of livestock at rest stops are maintained.<sup>16</sup>"**

<sup>16</sup> "Agricultural Research Service Facts About Federal Regulations Affecting the Interstate Movement of Livestock," USDA, Special Report, Oct. 1960. p. 7.

Although a slight additional cost and delay in marketing is incurred because of the feed-and-rest stops it certainly appears that such stops are necessary to insure arrival of animals in good market condition.

One of the significant privileges of shippers utilizing railroad transportation of livestock is the provision made by many railroads for feeding cattle in transit. Any shipper who wishes to delay his animals while in transit for one day to 12 months may do so at a minimal in-transit fee. This provision enables a shipper to ship his cattle to a feeding or grazing point for fattening out and then move them on to the final destination. A small fee is charged on a per-car basis.

Another privilege of livestock shippers using rail service is a diversion privilege. This provision enables the cattle owner to divert his stock from original destination to another market or destination with no diversion fee incurred. Of course effective rates will apply on the actual distances the cattle are shipped.

As mentioned earlier in this report, another privilege extended to cattle shippers is the application of carload rates on all animals hauled if an overflow car or trailer is necessary to handle animals not accommodated by a single car.

Practically every railroad company now offers fast express livestock trains to attain greater marketing efficiency. This speed reduces in-transit time and reduces shrinkage losses as well as attaining a reduction in the uncertainty prevailing on market price fluctuations from day to day.

## ECONOMIC ANALYSIS OF RATE STRUCTURE

### Intrastate Movement

Charges and rates for shipment of cattle and calves within the state of Idaho are regulated by the Idaho Public Utility Commission. These rates are listed, along with exceptions and application, in Appendix C Tables 1 and 2. Note that charges must be based on whichever rate is lower, item 2140 or item 2120, with the exception of an individual hauler who always applies item 2140.

To effectively analyze the two rates, a common ground for comparison must be found. Tariff item 2120 is based on feet of loading space as one variable and "loaded mileages" traveled as another variable. Item 2140 is based on weight of load and "loaded mileages" traveled. Therefore, to compare the two, it is necessary to determine the relationship of "feet of loading space" to load capacity in pounds. This relationship is shown in the following tables. Tables 3 and 4 indicate the relationship of length of truck or trailer space to the total load capacity.<sup>17</sup>

<sup>17</sup> These figures are printed by permission of W. P. Stephens of the Department of Agricultural Economics, New Mexico State University, Las Cruces, New Mexico. This material was collected in the New Mexico portion of the regional transportation project WM-37.

**Table 3: Tonnage hauled by various trailer lengths and average weight of animals per load.<sup>1</sup>**

Trailer Length Feet	Loading Space Sq. Ft.	Total Weight of load if the average weight of animals per load (in pounds) is:									
		300	400	500	600	700	800	900	1000	1100	1200
		cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
31	241	147	166	177	185	195	203	209	215	215	223
32	249	152	171	183	193	201	210	216	210	227	231
33	257	157	177	189	200	208	216	223	229	234	238
34	265	162	182	195	205	214	223	230	236	241	246
35	273	167	188	201	212	221	229	236	243	249	253
36	281	171	193	206	218	222	236	243	250	256	260
38	297	181	204	219	230	240	250	257	265	270	275
40	313	191	215	230	243	253	263	271	279	285	290
45	353	215	242	260	273	285	297	306	315	321	327
47	369	225	253	271	286	298	310	319	329	336	342
50	400	244	275	294	310	323	336	346	357	364	371
51	408	249	280	300	316	330	343	353	364	372	378
52	416	254	286	306	322	336	350	360	371	379	385
60	473	289	325	348	366	382	398	410	422	431	438
Lbs. per square ft.		61.0	68.7	73.5	77.5	80.8	84.0	86.6	89.1	91.1	92.7

<sup>1</sup> Based on the number of head hauled in a forty foot truck determined from the answers received from truckers.

Source: Department of Agricultural Economics, New Mexico State University, Las Cruces, New Mexico.

To use this table, refer to the trailer length, then follow horizontally to the right to determine the load capacity for the various sizes of cattle. For example: a trailer 40 feet long will handle about 19,100 pounds of 300 pound calves, or up to 29,000 pounds of 1200 pound animals.

An average inside width of 7.8 feet is used to calculate loading space. Pounds per square foot for each size of animal are listed in the bottom row of the table.

**Table 4: Number of head hauled by length of trailer and by size of animal.<sup>1</sup>**

Trailer Length—Feet	Number of Head per load if the average weight per Head in pounds is:									
	300	400	500	600	700	800	900	1000	1100	1200
	Number									
31	49	41	35	31	28	25	23	21	20	19
32	51	43	37	32	29	26	24	22	21	19
33	52	44	38	33	30	27	25	23	21	20
34	54	46	39	34	31	28	25	24	22	20
35	56	47	40	35	32	29	26	24	23	21
36	57	48	41	36	32	30	27	25	23	22
38	60	51	44	38	34	31	29	26	25	23
40	64	54	46	40	36	33	30	28	26	24
45	72	61	52	46	41	37	34	31	29	27
47	75	63	54	48	43	39	35	33	31	28
50	81	69	59	52	46	42	38	36	33	31
51	83	70	60	53	47	43	39	36	34	31
52	85	71	61	54	48	44	40	37	34	32
60	96	81	70	61	55	50	45	42	39	38

<sup>1</sup> Based on tonnage hauled as determined in Table 3.

How to use the table: For example, a trailer 40 feet long can haul 64 head of 300 pound calves or 24 head of 1200 pound animals. These figures, are of course, under optimum conditions.

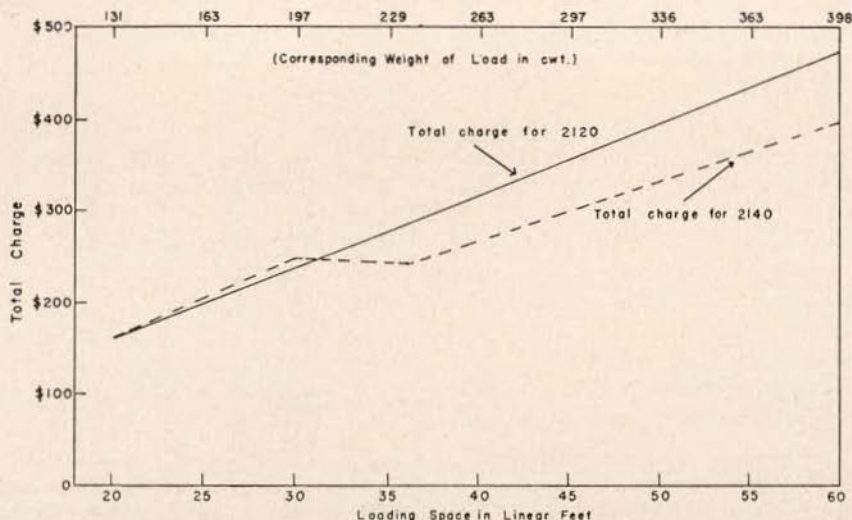


Figure 6: Total Charge for Transporting Cattle 400 Miles by Different Size of Truck and Varying Total Load using Tariff Item 2120 and Item 2140.

A comparison of the two tariffs, items 2120 and 2140, can now be made by using the information in Tables 3 and 4. The total truck load is not a function of trailer or truck length alone but also, a function of the average weight of the animals. To show the difference in the two tariffs in a two dimensional graph the size factor of animals must be kept constant. This is done in fig. 6. The corresponding weights of loads to size of truck in linear feet are computed for an average size animal of 800 pounds. With that average size animal, a 20-foot truck can hold 131 hundred-pounds (cwt) and a 60-foot trailer can hold 398 cwt.

Assuming all possible loads of cattle transported in trucks between 20 to 60 feet of loading space are transported 400 miles, and the tariffs items 2120 and 2140 are applied, then the two curves in figure 6 will result. For relatively small trucks the tariff 2120 is the lowest in total charge. Item 2140 is the lower rate for long trips when trucks larger than 30-foot lengths and/or 19,700 pounds load weight are used.

Similar analysis could be made for different weights of cattle and calves. Consideration could be given to double decking, possum bellies and other deviations from the situation illustrated in figure 6.

## Interstate Movement

The Interstate Commerce Commission (ICC) has the basic jurisdiction over transportation rates in interstate transport. However, some commodities coming from the agricultural sector of the economy are exempt from rate control of the ICC. Movement of cattle comes under this exemption clause, and hence the rates charged by the truckers engaged in interstate transport of cattle are neither subject to the

regulations of the ICC nor the Idaho Public Utility Commission. However, this is only true when a state line is crossed and does not apply to transport of cattle within the state of Idaho, in which case the latter agency takes control.

To find the method truckers used in computing the rates for transport of cattle for out-of-state movement, a sample of thirty livestock haulers was interviewed. This resulted in a majority of the haulers reporting that they generally applied the same rate charges for cattle transport within the state as well as interstate movements.

If this contention was true, the actual costs of transportation recorded by the cattle ranchers and cattle feeders should show the same relationships between rates and miles traveled and size of truck as were found in item 2120 or item 2140 using multiple regression analysis. (See appendix B for detailed explanation of computation of cost of transportation formulae).

The three transportation formulae (1.1); (1.2) and (1.3) from appendix B can now be compared to see if the truckers in interstate movement of cattle in reality do follow the tariffs set by the Idaho Public

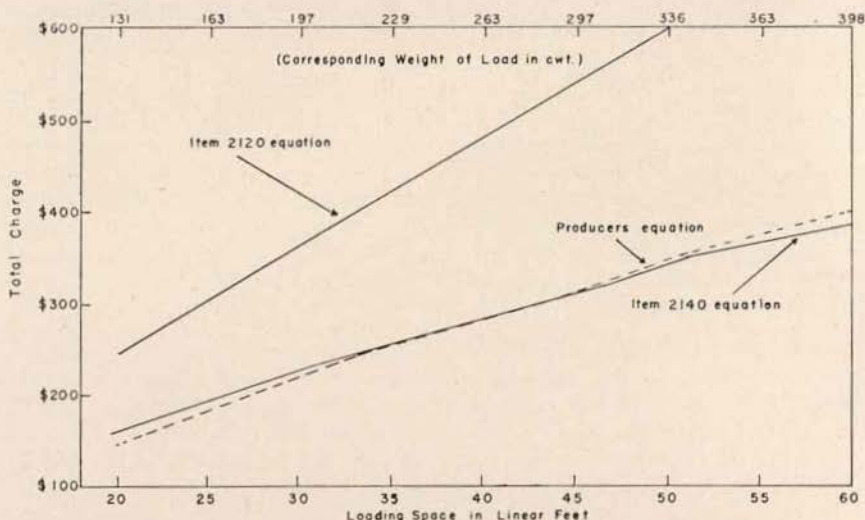


Figure 7: Total Charge for Transporting Cattle 600 miles by different Size of Truck and varying Total Load using three different estimation equations.

Utility Commission. The three equations are compared in figure 7. The figure shows the total charges of transporting cattle 600 miles by different size trucks with corresponding size of load proportional to the size of trucks.

If "item 2120 equation" is applied for computing the total cost of transportation, the cost will be far above the cost arrived at by using "item 2140 equation" or the producers' equation. The producers' equa-

tion and "item 2140 equation" when used for computing total cost of transportation are so close in figure 7 that they give nearly the same total cost of transportation. Remember that mileage is kept constant at 600 miles in this example to show the relationship in a two-dimensional graph. However, when all three variables, (rates, size of truck, mileage) vary, the total cost estimates of the two equations are still very close. This is, of course, only true within the range of the data.

**Table 5: Comparison of Actual Rates Paid by the Producers and Rate Charges using Item 2140, for equal Mileage and Size of Truck.**

Transportation		Size of Truck							
Mileage		32 feet		40 feet		50 feet		60 feet	
	Formulae	cwt.	% <sup>1</sup>	cwt.	&	cwt.	%	cwt.	%
		Diff.		Diff.		Diff.		Diff.	
200	Producer	62		59		55		52	
	Item 2140	58	-6	54	-8	48	-13	43	-17
300	Producer	74		71		68		64	
	Item 2140	72	-3	68	-4	62	-9	57	-11
400	Producer	87		84		81		77	
	Item 2140	87	0	82	-2	76	-6	71	-8
500	Producer	100		97		94		90	
	Item 2140	101	1	96	-1	91	-3	85	-6
600	Producer	112		109		106		102	
	Item 2140	115	3	110	1	105	-1	99	-3
700	Producer	125		122		119		115	
	Item 2140	129	3	124	2	119	0	113	-2
800	Producer	138		135		131		128	
	Item 2140	143	4	139	3	133	1	128	0
900	Producer	151		148		144		140	
	Item 2140	158	4	153	3	148	3	142	1
1000	Producer	163		160		157		153	
	Item 2140	172	6	167	4	162	3	156	2
1100	Producer	175		173		169		166	
	Item 2140	186	6	182	5	176	4	170	2
1200	Producer	188		186		182		178	
	Item 2140	200	6	196	5	190	4	184	3

<sup>1</sup> The differences between the two rate formulae are computed with the Producer rate formula as the base.

Table 5 indicates the deviation between the total charges when size of truck and mileage vary using the two above-mentioned equations. The deviation expressed in per cent of the producers' equation is greatest when large trucks haul short distances, or when small trucks haul long distances.

From this can be concluded that the truckers in Idaho, engaged in interstate transport of cattle, do follow the tariff set by the Idaho Public Utility Commission, and the tariff is item 2140 and not item 2120. Either one of the two equations (1.2) or (1.3) Appendix B gives a reliable estimate of the cost of transportation in interstate movement of cattle from the state of Idaho.

## Comparison of Truck and Rail Rates

Direct comparison of truck rates and rail rates does not give a clear picture of the economic efficiency involved in the two forms of live-

stock hauling. Other significant factors must be analyzed before one can decide the better method of transportation. Excluding rates, truck-hauling has some definite advantages over rail-hauling. For example: (1) trucks can pick up the cattle at the ranch; (2) trucks are relatively easy to obtain at any time; (3) truckers can provide more personal service.

Railroads have their advantages on the long haul. (1) they have good loading facilities; (2) good feeding facilities for rest stops; (3) up to 12 months stopover-in-transit for grazing or feeding purposes; and (4) the privilege of diverting the shipment from original destination to another market.

Another factor of importance which makes a comparison of truck and rail rates very difficult is the weight lost by livestock during time in transit. An exact estimate of transit shrinkage is nearly impossible to obtain, but a study at the University of Wyoming<sup>20</sup> found that shrinkage was a function of time in transit.

Taking into account the above reservations of comparing equities of transportation rates for rail and truck hauling, the following tables 6 and 7 give a basis for comparison. Tables 6 and 7 show the actual rail rates from points of origin in Idaho to points of destination outside the state of Idaho. The corresponding truck rates were computed from equation (1.3) appendix B. This equation was estimated from data obtained from cattle producers and were actual transportation charges paid by these producers. The justification for using this equation for estimating the truck rates in tables 6 and 7 is that this equation gives nearly the same result as if tariff 2140 was used. This fact verifies

**Table 6: Comparison of Livestock Transportation Rates for Truck and Rail (In Cents Per Hundred Pounds).**

Rates from cities in Idaho to cities in other states	Slaughter Cattle									
	Lewiston		St. Maries		Burley		Idaho Falls		Caldwell	
	Truck cwt	Rail cwt.	Truck cwt	Rail cwt.	Truck cwt	Rail cwt.	Truck cwt	Rail cwt.	Truck cwt	Rail cwt.
Spokane, Wash. ....					106	112	99	107	86	81
Seattle, Wash. ....	84	88	83	80	122	123	138	133	98	89
Portland, Ore. ....	78	79	91	93	113	115	129	125	88	79
San Francisco, Cal. ..	150	142	166	147	127	124	143	135	122	122
Los Angeles, Cal. ....	186	177	198	183	138	147	159	144	151	140
Elko, Nev. ....					60	68	77	79	85	75
Ogden, Utah ....	112	133	125	116	56	70	58	63	81	92
S. Lake City, Utah ..					60	70	63	63	84	92
Denver, Colo. ....	183	172	171	161						
Omaha, Neb. ....	223	204	210	186						
Rawlins, Wyo. ....	147	151	160	138						
Billings, Mont. ....	116	115								
Chicago, Ill. ....	246	228	257	214						

Source: Appendix table—Interstate Shipments of Cattle and Calves by Railroad. Truck rates are estimated from equation (1.3) page 31.

<sup>20</sup> Tippets, Stevens, Brotherton and Abel, op. cit., page 13.



**Table 7: Comparison of Livestock Transportation Rates For Truck and Rail (In Cents Per Hundred Pounds)**

**Feeder Cattle**

Rates from cities in Idaho to cities in other states	Lewiston		St. Maries		Burley		Idaho Falls		Caldwell	
	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail
	cwt	cwt.	cwt	cwt.	cwt	cwt.	cwt	cwt.	cwt	cwt.
Spokane, Wash. ....					106	96	99	90	86	81
Seattle, Wash. ....	84	74	83	68	122	100	138	112	98	89
Portland, Oregon ....	78	68	91	79	113	98	129	107	88	79
San Francisco, Cal. ..	150	122	166	125	127	104	143	114	122	122
Los Angeles, Cal. ....	186	149	198	157	138	125	199	123	151	143
Elko, Nev. ....					60	58	77	68	85	75
Ogden, Utah ....	112	112	128	99	56	71	58	65	81	92
S. Lake City, Utah ..					60	71	63	65	84	92
Denver, Colo. ....	182	146	171	136						
Omaha, Neb. ....	223	174	210	159						
Rawlins, Wyo. ....	147	128	160	117						
Billings, Mont. ....	116	98								
Chicago, Ill. ....	246	194	257	182						

Source: Appendix table—Interstate Shipments of Cattle and Calves by Railroad. Truck rates are estimated from equation (1.3) page 31.

truck haulers' answers that they were using tariff 2140 in calculating out-of-state transportation rates.

Obviously, there are some variations between rail and truck rates as indicated in tables 6 and 7. It should be noted that the railroads have different rates for feeder and slaughter cattle.

The result of the comparison is that, in general, hauling rates are lower for truck hauling in intrastate movement and up to 1,000 miles in interstate movement. For distances longer than 1,000 miles hauling by rail is, in general, more favorable.

## APPENDIX A

### Methods and Procedures of Investigation

To obtain the necessary information on livestock movements in 1958, and on facilities and services available for transportation, a sample survey was made of ranchers, feedlot operators, and truckers.

The state was divided into a grid system. Each grid was 50 miles square. Grids were numbered consecutively from 1 to 37, as shown in figure 1. This grid system enabled analyzing cattle movement on a

more uniform pattern for the 11 western states than would be possible on a county or other geographic system.

A stratified random sample of 750 was drawn from a list of 2400 members of the Idaho Cattlemen's Association with proportional observations from each grid. A questionnaire was mailed to the selected producers throughout the state. Thirty-five per cent of the producers returned completed questionnaires.

To secure enough data from feedlot operators, a complete survey was made of all feedlots registered with the State Bureau of Animal Industry in Boise. Questionnaires were sent to all the 272 registered feedlots, and thirty-eight per cent were returned.<sup>1</sup>

Thirty commercial livestock haulers with business domicile in the state of Idaho were visited and interviewed.

Tariff rates (Ex-Parte 212) for railroad transportation were obtained through direct correspondence with the three railroads operating in Idaho. These rates were verified with the Traffic Bureau of the Interstate Commerce Commission, Washington, D. C.



Appendix Figure 1: Boundaries of the 50 miles square grid system.

<sup>1</sup> A feedlot may be registered with the Bureau if the operator intends to place female animals in channels for slaughter purposes. This avoids the necessity of inspection for Brucellosis control. The detailed requirements for a feedlot registration may be obtained from the Bureau in Boise.

Appendix A  
Table 1

Relation of Truck Ownership  
to the  
Number of Cattle and Calves Transported  
As Listed by 247 Farmers in Idaho, 1958

Grid	Own Truck		Commercial Truck		Rail-Road		Combination		Total
	Cattle	Calves	Cattle	Calves	Cattle	Calves	Cattle	Calves	
2	.....	.....	784	631	.....	.....	.....	.....	1,415
3	.....	24	7,145	443	120	.....	126	164	8,200
4	.....	600	4,780	425	.....	.....	.....	.....	5,805
5	.....	195	140	162	123	27	14	.....	817
6	.....	257	2,259	894	175	40	89	390	4,131
7	.....	.....	320	140	160	.....	.....	.....	620
8	.....	197	7,445	2,185	.....	.....	.....	.....	9,917
9	.....	60	176	212	16	.....	12	.....	476
10	.....	185	6,750	1,450	.....	.....	.....	108	8,385
11	.....	357	406	600	1,053	.....	.....	.....	2,524
12	.....	34	100	60	.....	.....	.....	.....	194
13	.....	689	20	8,583	1,429	30	100	.....	10,851
15	.....	83	.....	225	90	.....	.....	.....	398
16	.....	50	.....	357	675	14	131	.....	1,227
17	.....	400	100	320	120	.....	.....	.....	940
18	.....	153	230	10,382	36	.....	.....	.....	10,801
20	.....	36	75	230	.....	60	.....	.....	401
21	.....	.....	558	275	.....	.....	.....	.....	833
22	.....	.....	23	180	.....	.....	.....	.....	203
24	.....	90	275	2,222	1,267	1,936	10	.....	5,800
25	.....	25	120	788	590	1,650	300	.....	3,473
28	.....	.....	.....	535	210	.....	.....	.....	745
31	.....	443	259	1,150	65	.....	.....	.....	1,917
32	.....	517	385	100	93	.....	75	35	1,205
35	.....	136	37	.....	.....	.....	.....	.....	173
36	.....	160	51	.....	.....	.....	30	15	256
37	.....	80	.....	.....	.....	.....	50	.....	130
Total ..	4,881	2,294	55,972	12,690	4,284	498	506	712	81,837
Per cent of total in sample ....	6.0	2.8	68.4	15.5	5.2	0.6	0.6	0.9	100
Total Idaho* Shipment in 1958	38,000	17,700	433,400	98,200	32,900	3,800	3,800	5,700	633,500

\* Total shipment figures are estimated by the formula  $Ye = Ny$ , where  $Ye$  is the estimate of total cattle and calves shipped in Idaho in 1958,  $N$  is the number of cattle producers from which the sample is drawn and  $y$  is the average number of cattle and calves shipped by each respondent in the sample.

Note on Appendix A table 1.

The Statistical Reporting Service, Boise, estimated that total marketing of cattle and calves in 1958 from Idaho were 418,000 cattle and 119,000 calves or a total of 537,000 head. The estimate in table 1 was 508,100 cattle and 125,400 calves or a total of 633,500 head. The difference between the two estimates may be attributable to cattle and calves shipped but not sold at market during the year. Furthermore, the assumption under which the estimates are made may not be valid because the respondents to the mail questionnaires may have introduced errors in the sample by belonging to a group of farmers who are not representative of the population.

It should be noted that there were no shipments reported for grids 1, 14, 19, 23, 26, 27, 29, 30, 33, and 34. This is probably due to the distribution of ranchers and feedlots in the state, and to the lack of complete representation in the sample drawn. There are few if any ranch headquarters located in the omitted grids except for grids 1 and 22.

Appendix A  
Table 2

CLASSES OF CATTLE TRANSPORTED  
FROM EACH GRID—1958  
ESTIMATED TOTAL FOR IDAHO

Grid No.	Steers		Heifers		Calves		Cows		Bulls and Others	Total	Percent- age
	Slaughter	Feeder	Yearlings	Heifers	Steers	Mixed	Brood	Slaughter			
2	635	6,557	3,615	.....	.....	9,716	612	403	341	21,879	3.5
3	63,778	4,808	11,969	2,323	1,850	596	480	1,246	217	87,267	13.7
4	15,097	4,498	13,835	2,957	294	2,694	1,951	1,556	387	43,269	7.7
5	4,513	635	387	526	642	2,926	294	743	314	10,980	1.7
6	5,420	11,159	21,035	6,765	6,945	14,989	11,474	3,252	828	81,867	12.8
7	.....	4,885	891	.....	2,230	.....	.....	433	.....	8,439	1.3
8	2,508	8,392	7,936	1,061	5,657	937	.....	139	.....	26,630	4.2
9	542	402	155	248	1,897	2,199	1,076	403	232	7,154	1.1
10	4,824	2,694	5,264	929	3,933	18,557	18,635	505	937	56,278	8.8
11	1,633	5,079	2,462	3,584	7,595	7,254	31	1,788	735	30,161	4.8
12	263	.....	186	.....	.....	.....	.....	62	15	526	0.1
13	45,144	929	8,594	1,479	3,848	6,116	743	1,858	124	68,835	10.9
15	279	619	418	643	813	.....	186	93	77	3,128	0.5
16	46	3,352	464	619	3,391	5,853	186	1,138	62	15,111	2.4
17	875	.....	999	.....	.....	1,850	.....	.....	.....	3,724	0.6
18	1,277	2,865	1,564	356	310	.....	.....	1,138	46	7,556	1.2
20	.....	1,618	.....	1,618	2,617	.....	.....	1,076	31	6,960	1.1
21	.....	3,817	.....	2,446	.....	1,231	1,076	201	108	8,879	1.4
24	.....	52,304	5,512	4,568	5,326	9,966	12,666	2,052	232	92,626	14.5
25	108	5,326	2,988	2,292	2,772	.....	766	2,292	77	16,621	2.1
28	.....	15	.....	619	1,541	.....	.....	1,014	139	3,328	0.5
31	1,943	7,517	1,200	1,262	859	673	46	890	108	14,498	2.3
32	720	2,106	1,308	1,146	2,245	2,679	1,045	1,603	124	12,976	2.0
35	155	124	170	62	201	.....	.....	294	15	1,021	0.2
36	.....	1,479	635	.....	.....	464	62	387	62	3,089	0.5
37	186	.....	155	.....	.....	372	.....	46	15	774	0.1
<b>Totals</b>	149,946	131,180	91,742	35,503	54,966	89,072	51,329	24,612	5,226	633,576	100.0
<b>Percentage</b>	23.7	20.7	14.5	5.6	8.7	14.1	8.1	3.9	0.8	100.0	

Note on Appendix A Table 2.

Six grids (3, 4, 6, 10, 13, 24) account for about 69 per cent of the total cattle shipped in 1958.

**Appendix A Table 3**

**Type of Livestock Operation Related to Method of Shipment  
As Listed by 301 Farmers in Idaho, 1958**

Type of Livestock Operation	Own Truck			Commercial Truck			Combination*		
	Number Farms	Cattle	Calves	Number Farms	Cattle	Calves	Number Farms	Cattle	Calves
Cattle only .....	30	1,683	257	32	7,742	891	10	2,115	2,121
Cattle and sheep .....	4	29	2	12	18,515	2,348	4	323	415
Crop and Cattle .....	52	2,230	1,442	54	12,518	1,756	38	6,928	2,553
Other .....	5	75	19	1	700	.....	3	111	350
Various Combinations .....	11	610	519	14	2,570	320	7	4,158	1,291
No Classification .....	5	254	55	7	384	485	12	207	328
Total .....	107	4,881	2,294	120	42,429	5,800	74	13,842	7,058

\* Combination of own truck and commercial truck.

**Appendix A Table 4**

**Relationship of Type of Shipper to Number  
Of Cattle and Calves Transported  
As Listed by 273 Farmers in Idaho—1958**

Type of Shippers	Number of Per Cent		Cattle	Per Cent		Per Cent of Total
	Farmers	of Total		of Total	Calves	
Cattle Feeders .....	78	26	25,147	41	2,254	15
Order Buyers .....	40	13	2,055	3	1,624	11
Meat Packers .....	13	4	5,822	10	571	4
Ranchers .....	89	30	6,665	11	4,191	28
Others .....	13	4	1,490	2	746	5
Various Combinations ..	40	14	14,255	23	2,972	19
No Response .....	28	9	5,718	10	2,794	18
Total .....	301	100	61,152	100	15,152	100

**Appendix A Table 5:**

**Type of Truck Equipment in Relation to Number of Cattle Hauled By  
Type of Truck, as Listed by 301 Farmers in Idaho, 1958**

Type of Equipment	Own Truck			Commercial Truck		
	Number of Farms	Cattle and Calves	Per Cent of Total	Number of Farms	Cattle and Calves	Per Cent of Total
Small Trailer .....	2	75	1.0	1	190	0.3
Semi Trailer Truck .....	2	100	1.4	40	13,981	20.2
Pickup Truck .....	2	23	0.3	3	430	0.6
Shortbed Truck .....	56	3,101	43.2	19	1,686	2.4
Shortbed Truck— Full Trailer .....	.....	.....	.....	4	11,245	16.4
Other .....	3	122	1.7	1	50	0.1
Combination .....	33	3,455	47.9	113	38,732	56.0
No Response .....	10	319	4.5	12	2,815	4.0
Total .....	108	7,175	100.0	193	69,129	100.0
<b>Type of Truck Body</b>						
Open Stock Rack						
No Cover .....	88	4,759	68.8	49	4,984	7.2
Van Type Body .....	1	.....	.....	7	9,010	13.0
Open Stock Rack, With Cover .....	1	.....	.....	22	8,901	12.8
Double Deck for Calves .....	.....	.....	.....	1	160	0.3
Double Deck for Cattle .....	.....	.....	.....	.....	.....	.....
Others .....	1	75	1.1	.....	.....	.....
Combination .....	9	2,080	30.1	34	23,474	33.8
No Response .....	.....	.....	.....	88	22,861	32.9
Total .....	100	6,914	100.0	201	69,390	100.0

### Equations for Estimating Truck Transportation Costs

Using the information in Table 3, page 20, a cost of transportation formula can be computed using the loading space variable, measured in either feet or pounds, and the variable miles traveled. These two variables are independently associated with the rate charge. By using the figures from Table 3, and holding the size of animals constant at 800 pounds per animal, the relationship between loading space and total weight of load will be as follows for selected figures:

Trailer Length in Feet	Weight of Load in cwt.
31	203
34	223
40	263
50	336
60	398

Applying this relationship to tariff item 2120 for transport of cattle more than 100 miles, with loading space ranging from 20 to 60 feet, the cost of transportation can be computed from an equation as the following:

$$Y_c = a + b_1 x_1 + b_2 x_2$$

where  $Y_c$  = rate per hundred pounds (cwt.)

$a$  = constant

$b_1, b_2$  = regression coefficients

$x_1$  = length of trailer in feet

$x_2$  = miles (total loaded mileage)

Computing this formula from information obtained from cattle producers and feeders concerning the size of truck (loading space) and the length of transport (loaded mileage) and using tariff 2120 for computing the charges, the following equation was obtained:

$$Y_c = 6.86 - 0.25x_1 + 0.31x_2 \quad (1.1)$$

where  $Y_c$  = cents per hundred pounds

$x_1$  = length of trailer in feet

$x_2$  = miles (total loaded mileage)

The multiple correlation coefficient is 0.998 and the two variables, loading space and mileage, account for 99.7% of the variation in rates. The range of the variables is 20 to 60 feet of loading space, and mileage over 100 miles. Note that the negative sign in front of the constant of  $x_1$  indicates a lower rate per cwt. for an increase in the size of truck, or in other words, an inverse relationship exists between rates and loading space.

If the rates of tariff item 2140 were applied to the transportation

data obtained from cattle producers and feeders in the same manner as under item 2120, the following equation results:

$$Y_c = 47.85 - 0.54x_1 + 0.14x_2 \quad (1.2)$$

where  $Y_c$  = cents per hundred pounds

$x_1$  = length of trailer in feet

$x_2$  = miles (total loaded mileage)

The multiple correlation coefficient is 0.98 and the two variables, length of truck and mileage, account for 96 per cent of the variation in rates.

The range of length of truck or trailer is 32 to 60 feet; range of mileage is from 100 to 900 miles.

It should be remembered that these two tariffs items 2120 and 2140, are rates regulated by the Idaho Public Utility Commission for transport of cattle and calves within the state of Idaho.

To examine the nature of the rate structure of the actual transportation data collected from the cattle producers the same procedure of computation was used as in the calculation of the equations (1.1) and (1.2).

The result is shown in the following equation:

$$Y_c = 48.11 - 0.36x_1 + 0.13x_2 \quad (1.3)$$

where  $Y_c$  = cents per hundred pounds (cwt.)

$x_1$  = length of trailer in feet

$x_2$  = miles (total loaded mileage)

The multiple correlation coefficient is 0.86, and the variables  $x_1$  and  $x_2$  account for 75 per cent of the variation in rates. The multiple correlation coefficient is highly significant at the 0.01 level of significance.

The range of the variable  $x_1$  is 32 to 60 feet, and the variable  $x_2$  is from 100 to 900 miles.

In order to be able to distinguish between the three estimating equations in the text they are identified by the following:

Item 2120 Equation (1.1)

Item 2140 Equation (1.2)

Producer's Equation (1.3)

# APPENDIX C

## Supplementary Data

Appendix C  
Table 1:

(Reprint from I.P.U.C. Regulations)

### Tariff for Trucks

T 2nd revised page No. 73

Cancels 1st revised page No. 73

I. P. U. C. No. 8

#### Section 3—Mileage Commodity Rates

**Item 2140—Livestock, VIZ.:** Cattle, horses, mules, sheep, goats and hogs, but does not include stock for racing, breeding or exhibition purposes.

(A) Except as provided in (B) below, rates named in this item will apply A for all carriers when a lower charge will be provided than would be assessed under application of rates named in item 2120.

(B) Rates named in this item will apply on all shipments of livestock handled by E. A. Tolman Livestock Transportation Company.

Except as may be otherwise provided, the provisions of Notes 1, 2 and 3 and Item 2120 will apply to all shipments moving under rates named in this item.

Miles		Minimum weight in lbs.			Miles		Minimum wt. in lbs.		
Over	Not Over	10,000	20,000	25,000 <sup>1</sup>	Over	Not Over	10,000	20,000	25,000 <sup>1</sup>
		(Cents per 100 pounds)					(Cents per 100 pounds)		
0	5	6	5	4	210	220	71	63	61
5	10	8	7	6	220	230	74	65	60
10	15	10	9	7	230	240	77	68	66
15	20	12	11	9	240	250	80	71	68
20	25	14	13	11	250	260	83	73	70
25	30	16	15	13	260	270	86	75	72
30	35	18	17	15	270	280	89	78	74
35	40	20	19	17	280	290	92	80	76
40	50	22	21	19	290	300	95	83	78
50	60	24	23	21				0	
60	70	26	25	23	300	310	98	86	80
70	80	29	28	25	310	320	101	88	82
80	90	32	31	28	320	330	104	90	84
90	100	36	34	30	330	340	106	92	86
100	110	40	37	33	340	350	109	94	88
110	120	44	40	37	350	360	110	96	90
120	130	48	42	40	360	370	113	98	92
130	140	51	44	42	370	380	117	101	94
140	150	54	46	44 <sup>‡</sup>	380	390	118	103	97
150	160	56	48	46	390	400	124	105	100
160	170	58	50	48	400	410	125	107	102
170	180	60	52	50	410	420	127	109	105
180	190	63	55	53	420	430	130	112	107
190	200	66	58	56	430	440	135	116	111
200	210	68	60	58	440	450	139	120	115

For distances beyond 450 miles the rate will be 60 cents per loaded mile for a solo truck and 70 cents per loaded mile for a truck and full trailer.

<sup>1</sup>—Two or more shipments, originating at one point and place of origin, may be combined and rated under the following provisions:

(A)—Shipments so combined must be destined to points directly intermediate to point of final destination for such combination of shipments must total 25,000 lbs.

(B)—Rates will be assessed on each individual shipment of the combination as set forth in this column for distance transported subject to a minimum weight of 5,000 lbs., applicable to each individual shipment of the combination.



Δ—Restriction formerly named under the (\*) reference canceled.

‡—To correct clerical error.

T—Except as indicated by ‡ all information on this page reissued from 1st revised page No. 73.

Effective May 20, 1960.

(Refer to page 14 for explanation of abbreviations and reference marks not explained on this page.)

Issued: April 27, 1960	Effective: May 28, 1962
Issued by Louis W. Schiele, Agent	P. O. Box 162 Boise, Idaho
Correction No. 151	

### Appendix C

#### Table 2: (Reprinted from I.P.U.C. Regulations)

2nd Revised Page No. 72 I. P. U. C. No. 8  
 Cancels First Revised Page No. 72 (Louis W. Schiele, Agent Series)

† Idaho Motor Tariff Bureau, Inc., Agent Freight Tariff No. 3-A

#### Section 3—Mileage Commodity Rates

**Item 2120—Livestock VIZ:** Cattle, horses, mules, sheep, goats and hogs but not including stock for racing, breeding or exhibition purposes.

Except as provided in (1) below, unless lower charges can be computed by the application of rates named in Item 2140, rates named in this Item will apply subject to the provisions of notes 1, 2, 3, and 4 below.

- (1)—Rates named in this Item will not apply for account of E. A. Tolman Livestock Transportation Co. for rates of this carrier. See Item 2140.

*Feet of Loading Space Furnished	When haul is from 0 to 50 miles incl.	When haul is over 50 but not over 100 miles.	Except as noted in 2 rates are in cents per miles for all "loaded mileage" traveled over 5 miles.	
Over	The charge for the first five miles or portion thereof will be:	The charge for the first five miles or portion thereof will be:	2 — On distances over 100 miles, charge the rate per mile for the total "loaded mileages" traveled	
0	15½	\$ 5.00	\$ 2.50	40
15½	18	5.50	2.75	40
18	20	6.00	3.00	42
20	22	6.50	3.25	44
22	24	7.00	3.50	46
24	26	7.50	3.75	50
26	28	8.00	4.00	54
28	30	8.50	4.25	58
30	32	9.00	4.50	62
32	34	9.50	4.75	66
34	36	10.00	5.00	70
36	38	10.50	5.25	74
38	40	11.00	5.50	78
40	44	12.00	6.00	84
44	48	13.00	6.50	92
48	52	14.00	7.00	100
52	56	15.00	7.50	108
56	60	16.00	8.00	116

Note 1—Double Decking: When double decking is requested, there will be an additional charge as follows:

\$ 5.00 per solo truck or trailer of 18 feet or less.

7.50 per semi-trailer, truck or trailer over 18 ft. but not over 28 ft.

10.00 per semi-trailer over 28 ft.

Note 2—Stop in transit: Stops in transit to load or unload will be made at points between point of origin. And destination at a charge of \$3.00 per

stop. The mileage charged for will be that traveled from origin to destination.

Note 3—Off highway travel: When travel is all or partially via rough or difficult to travel roads, an additional charge of not less than 10 per cent of the rates named above will be assessed for such mileage traveled. Also, the rate provisions of this rule apply when the services of additional trucks (over and above the number normally required to complete the shipment in one day) is requested by the shipper or consignee.

Note 4—The term "loaded mileage traveled" shall be considered as the distance as provided in item 300 between the point or place of origin on the one hand and the point or place of destination on the other and shall not be considered as the combined mileage of two or more trucks where a single shipment is transported at carrier's convenience upon more than one piece of equipment, or in more than one load.

\*—In the case of double or triple decked equipment, the inside length of the truck body will be considered the loading space furnished.

(Refer to Page 14 for explanation of abbreviations and symbols not explained on this page.)

Issued: September 6, 1961	Effective: October 11, 1961
Issued by: Louis W. Schiele, President	P. O. Box 162 Boise, Idaho
Correction No. 300	

### Appendix C

**Table 3: Interstate Shipments of Cattle and Calves by Railroad**  
**Slaughter Cattle also calves in doubledeck cars**

This is not a tariff. Rates have been taken from tariffs on file with the Interstate Commerce Commission and subject to change without notice.

Ex Parte 212—Minimum rates (Carloads)

Freight rates from cities in Idaho to cities in other states	Spokane	Seattle	Portland	San Francisco	Los Angeles	Elko, Nevada	Salt Lake City	Ogden	Denver	Omaha	Chicago
DOLLARS PER HUNDREDWEIGHT											
New Meadows ..	1.02	1.07	.97	1.51	1.78	1.04	1.04	1.04	.....	.....	.....
McCall .....	1.07	1.09	1.04	1.51	1.77	1.04	1.02	1.02	.....	.....	.....
Caldwell .....	.96	1.04	.96	1.42	1.64	.90	.90	.90	.....	.....	.....
Stoddard .....	.97	1.15	.97	1.42	1.65	.90	.91	.88	.....	.....	.....
Mountain Home	1.04	1.09	1.04	1.35	1.61	.79	.78	.78	.....	.....	.....
Gooding .....	1.08	1.15	1.07	1.33	1.50	.75	.72	.72	.....	.....	.....
Twin Falls .....	1.15	1.24	1.16	1.23	1.50	.58	.72	.72	.....	.....	.....
Burley .....	1.12	1.23	1.15	1.24	1.47	.68	.70	.70	.....	.....	.....
Minidoka .....	1.12	1.23	1.15	1.25	1.47	.70	.68	.68	.....	.....	.....
Ketchum .....	1.16	1.24	1.15	1.38	1.58	.79	.78	.78	.....	.....	.....
Mackay .....	1.12	1.34	1.25	1.42	1.50	.90	.71	.71	.....	.....	.....
Pocatello .....	1.12	1.30	1.23	1.33	1.39	.75	.58	.54	.....	.....	.....
Idaho Falls .....	1.07	1.33	1.25	1.35	1.44	.79	.63	.63	.....	.....	.....
Dubois .....	1.02	1.25	1.25	1.39	1.49	.88	.71	.71	.....	.....	.....
St. Anthony .....	1.08	1.34	1.25	1.39	1.49	.80	.70	.70	.....	.....	.....
Victor .....	1.12	1.38	1.33	1.44	1.51	.91	.75	.75	.....	.....	.....
Montpelier .....	1.21	1.38	1.30	1.39	1.44	.88	131.53	131.53	.....	.....	.....
Preston .....	1.15	1.34	1.25	1.34	1.38	.78	83.80	83.80	.....	.....	.....
Downey .....	1.15	1.34	1.25	1.34	1.38	.78	90.17	90.17	.....	.....	.....
Malad .....	1.24	1.39	1.34	1.33	1.35	.75	77.55	77.55	.....	.....	.....
St. Maries .....	.39	.80	.93	1.47	1.83	1.23	1.21	1.16	1.61	1.86	2.14
Avery .....	.52	.93	.96	1.50	1.86	1.25	1.15	1.12	1.58	1.83	2.11
Sandpoint .....	.38	.88	.91	1.49	1.83	1.44	1.44	1.42	1.64	1.91	2.17
Lewiston .....	.54	.88	.79	1.42	1.77	1.34	1.34	1.33	1.72	2.04	2.28

### Minimum Weights

Fat Cattle 24,000 lbs. 36 ft. cars

Fat Calves DD 23,000 lbs. 36 ft. cars

\*Rates are in dollars and cents per 36 ft. cars.

### Appendix C

**Table 4: Interstate Shipments of Cattle and Calves by Railroad  
Feeder Cattle also Feeder Calves Doubledeck**

This is not a tariff. Rates have been taken from tariffs on file with the Interstate Commerce Commission and subject to change without notice.

Freight rates from cities in Idaho to cities in other states	Ex Parte 212—Minimum rates										(Carloads)		
	Spokane	Seattle	Portland	San Francisco	Los Angeles	Elko, Nevada	Salt Lake City	Ogden	Denver	Omaha	Chicago		
<b>DOLLARS PER HUNDREDWEIGHT</b>													
New Meadows ..	.81	.90	.83	1.28	1.50	.89	1.08	1.08	.....	.....	.....	.....	
McCall .....	.91	.92	.89	1.28	1.49	.89	1.04	1.04	.....	.....	.....	.....	
Caldwell .....	.81	.89	.79	1.22	1.43	.75	.92	.92	.....	.....	.....	.....	
Stoddard .....	.82	.98	.82	1.22	1.40	.75	.77	.74	.....	.....	.....	.....	
Mountain Home	.88	.92	.89	1.14	1.37	.68	.79	.79	.....	.....	.....	.....	
Gooding .....	.92	.98	.90	1.12	1.28	.65	.74	.74	.....	.....	.....	.....	
Twin Falls .....	.98	1.04	.99	1.03	1.28	.49	.74	.74	.....	.....	.....	.....	
Burley .....	.96	1.03	.98	1.04	1.25	.58	.71	.71	.....	.....	.....	.....	
Minidoka .....	.96	1.03	.98	1.07	1.25	.60	.71	.71	.....	.....	.....	.....	
Ketchum .....	.99	1.04	.98	1.16	1.34	.68	.79	.79	.....	.....	.....	.....	
Mackay .....	.96	1.13	1.07	1.22	1.28	.75	.73	.73	.....	.....	.....	.....	
Pocatello .....	.96	1.11	1.03	1.12	1.19	.65	.60	.55	.....	.....	.....	.....	
Idaho Falls .....	.90	1.12	1.07	1.14	1.23	.68	.65	.65	.....	.....	.....	.....	
Dubois .....	.88	1.07	1.07	1.19	1.34	.74	.73	.73	.....	.....	.....	.....	
St. Anthony .....	.91	1.13	1.03	1.19	1.34	.70	.71	.71	.....	.....	.....	.....	
Victor .....	.96	1.16	1.12	1.23	1.28	.77	.77	.77	.....	.....	.....	.....	
Montpelier .....	1.02	1.16	1.11	1.19	1.23	.74	131.53	131.53	.....	.....	.....	.....	
Preston .....	.98	1.13	1.07	1.13	1.16	.67	83.80	83.80	.....	.....	.....	.....	
Downey .....	.98	1.13	1.07	1.13	1.16	.67	90.17	90.17	.....	.....	.....	.....	
Malad .....	1.04	1.19	1.13	1.12	1.14	.65	77.55	77.55	.....	.....	.....	.....	
St. Maries .....	.33	.68	.79	1.25	1.57	1.03	1.02	.99	1.36	1.59	1.82	.....	
Avery .....	.44	.79	.81	1.28	1.59	1.07	.98	.96	1.34	1.56	1.79	.....	
Sandpoint .....	.33	.74	.77	1.27	1.57	1.23	1.22	1.22	1.39	1.63	1.85	.....	
Lewiston .....	.46	.74	.68	1.22	1.49	1.13	1.13	1.12	1.46	1.74	1.94	.....	

### Minimum Weights

Feeder Cattle 22,000 lbs. 36 ft. cars

Feeder Calves DD 23,000 lbs. 36 ft. cars

\*Rates are in dollars and cents per 36 ft. car.

## Appendix C

Table 5: Interstate Shipments of Cattle and Calves by Railroad  
Calves Single Deck

This is not a tariff. Rates have been taken from tariffs on file with the Interstate Commerce Commission and subject to change without notices.

Freight rates from cities in Idaho to cities in other states	Ex Parte 212—Minimum rates								(Carloads)			
	Spokane	Seattle	Portland	San Francisco	Los Angeles	Elko, Nevada	Salt Lake City	Ogden	Denver	Omaha	Chicago	
	DOLLARS PER HUNDREDWEIGHT											
New Meadows ..	1.15	1.23	1.12	1.78	2.04	1.21	1.21	1.21	.....	.....	.....	
McCall .....	1.23	1.25	1.21	1.78	2.02	1.21	1.15	1.15	.....	.....	.....	
Caldwell .....	1.11	1.21	1.11	1.64	1.87	1.04	1.04	1.04	.....	.....	.....	
Stoddard .....	1.12	1.23	1.12	1.64	1.90	1.04	1.07	.98	.....	.....	.....	
Mountain Home	1.21	1.25	1.21	1.58	1.84	.96	.91	.91	.....	.....	.....	
Gooding .....	1.24	1.33	1.23	1.49	1.74	.88	.80	.80	.....	.....	.....	
Twin Falls .....	1.33	1.44	1.35	1.39	1.74	.68	.80	.80	.....	.....	.....	
Burley .....	1.30	1.39	1.33	1.44	1.70	.75	.78	.78	.....	.....	.....	
Minidoka .....	1.30	1.39	1.33	1.46	1.70	.78	.75	.75	.....	.....	.....	
Ketchum .....	1.33	1.44	1.33	1.61	1.79	.96	.91	.91	.....	.....	.....	
Mackay .....	1.30	1.51	1.46	1.64	1.74	1.04	.79	.79	.....	.....	.....	
Pocatello .....	1.30	1.47	1.39	1.49	1.62	.88	.68	.....	.....	.....	.....	
Idaho Falls .....	1.23	1.49	1.46	1.58	1.65	.96	.72	.72	.....	.....	.....	
Dubois .....	1.15	1.46	1.46	1.62	1.72	.98	.79	.79	.....	.....	.....	
St. Anthony .....	1.24	1.51	1.46	1.62	1.72	.97	.78	.78	.....	.....	.....	
Victor .....	1.30	1.61	1.49	1.65	1.78	1.07	.88	.88	.....	.....	.....	
Montpelier .....	1.38	1.61	1.47	1.62	1.65	.98	106.10	106.10	.....	.....	.....	
Preston .....	1.33	1.51	1.46	1.51	1.61	.91	80.63	80.63	.....	.....	.....	
Downey .....	1.33	1.51	1.46	1.51	1.61	.91	82.73	82.73	.....	.....	.....	
Malad .....	1.44	1.62	1.51	1.49	1.58	.88	76.36	76.36	.....	.....	.....	
St. Maries**	.39	.80	.93	1.47	1.83	1.23	1.21	1.16	1.61	1.86	2.14	
Avery** .....	.52	.93	.96	1.50	1.86	1.25	1.15	1.12	1.58	1.83	2.11	
Sandpoint** .....	.38	.88	.91	1.49	1.83	1.44	1.44	1.42	1.64	1.91	2.17	
Lewiston** .....	.54	.88	.79	1.42	1.77	1.34	1.34	1.33	1.72	2.04	2.28	

Minimum Weight Calves SD 16,000 lbs., 36 ft. cars

\*Rates in dollars and cents per 36 ft. car.

\*\*Rates for double deck.