Losses of Livestock in Transit

in Midwestern and Western States

By
Joseph E. Rickenbacker

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JOSEPH G. KNAPP, ADMINISTRATOR

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The Farmer Cooperative Service conducts research studies and service activities of assistance to farmers in connection with cooperatives engaged in marketing farm products, purchasing farm supplies, and supplying business services. The work of the Service relates to problems of management, organization, policies, merchandising, product quality, costs, efficiency, and membership.

The Service publishes the results of the studies; confers and advises with officials of farmer cooperatives; and works with educational agencies, cooperatives, and others in the dissemination of information relating to cooperative principles and practices.

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To this must be added carcass devaluation and trim-out losses on animals showing bruises following slaughter. Surveys made by other agencies show that these "bruise losses" are substantially higher than the dead-cripple loss. Stated in another way, it would require 410 railway cars and 4,433 semi-trailer trucks to transport the annual total number of livestock which arrive at point of slaughter dead or crippled.[1] All those engaged in processing, marketing, and producing meat animals will be interested in the magnitude of these losses.

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Because of the extent of these losses, farmers and their cooperatives as well as other segments of the livestock industry, are deeply concerned in seeing that all feasible steps are taken toward reducing them. For this reason Farmer Cooperative Service made this study to analyze factors contributing to loss in transit. Particularly, it has studied the relationship of length-of-haul and seasonal weather conditions to losses in livestock received at 10 major markets in 1954-55.

A dead animal which arrives at the market or point of slaughter is a total loss except for the salvage value a rendering company might offer for the carcass. Even though the owner may be covered by insurance, in the broader sense, the loss still occurs. Crippled animals are devalued by buyers -- this reduction in price paid is based on the judgment of the buyer after he considers the extent of crippling and its possible "side effects," particularly possible bruising.

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This study required sampling both rail and truck receipts at the midwestern and far-western markets to estimate losses. The sample obtained represented over 4 million head of livestock of various species. It covered 35 percent of total rail receipts and 10 percent of total

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The majority of truck receipts moved under 100 miles to reach market. Rail shipments did not reach appreciable volume for distances under 250 miles in most instances. Loss per 10,000 head on the basis of total receipts of each species ran from a low of 1.4 crippled sheep for rail shipments to 28.89 crippled hogs moved by truck. In general, truck losses exceeded rail losses -- often by substantial margins. The incidence of crippling was several times that of death, except in the case of sheep.

As length-of-haul increased, losses tended to rise. This relationship was more clearly observed in rail receipts than in truck receipts. However, the major part of truck receipts were hauled shorter distances and at these lesser lengths-of-haul, the relationship between increased distance transported and rising losses was still apparent. For all distances up to 750 miles, truck losses exceeded rail losses. The study has recognized the importance of loading and sorting conditions and practices and their influence on transit losses.

Extreme and abrupt changes in temperature had a most important effect on losses. In general, winter was the most critical season except for calves. They had highest rail losses in the summer as contrasted with highest truck losses in winter.

On the basis of varying lengths-of-haul, various species showed somewhat different patterns of seasonal-distance relationships.

Cattle losses were relatively constant at a given distance from season to season but they rose as length-of-haul increased. That meant the losses for each season were progressively higher the farther the animals travelled. Calves moving by rail showed the strongest loss relationship to length-of-haul and seasonal weather conditions in the summer months. Truck shipments, however, had greater losses during fall and winter at distances involving the largest volume of receipts.

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Except for an almost constant level of loss in winter, losses of sheep moving by rail gradually declined as length-of-haul increased. Long distance truck shipments in winter showed the highest losses incurring in sheep.

Losses were measured on the basis of total miles involved in the transportation of total receipts of a single species of livestock. For example, 10 cattle hauled 10 miles was considered as representing 100 "cattle miles." On this basis, the level of loss generally declined as length-of-haul increased for all species and both transport media. Loss levels, however, were higher for truck shipments than for rail shipments.

This technique of measuring loss rates is of special interest to transportation agencies since it is an adaptation of the conventional method of measuring many losses in the transportation industry. The constantly increasing distance factor used in this measurement, unless offset by greater and/or equally significant changes in volume of receipts and/or number of deads or cripples, must result in declining loss levels at greater distances.

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This must be borne in mind in evaluating the significance of loss rates and levels determined by this procedure.

Shippers and transporters should give seasonal factors and length-of-haul special consideration since these two factors have more than a casual relationship to the incidence of dead and crippled livestock received at markets. Sorting and loading practices at time of shipment and handling during the journey may well influence such losses particularly when temperatures are extremely high or low.

Certainly the proper preparation of both animals and transportation equipment is of great importance where the distance to be traversed is long and the weather is unfavorable. The inclination to be haphazard in these matters when the length-of-haul is short probably causes losses on short hauls to be higher than they otherwise would be, particularly in the case of truck shipments. Some loss is probably inevitable, but certainly the level of losses can be reduced. All factors which contribute to loss cannot be completely controlled; however, man is able to exert substantial control over most of them either by means of special knowledge or devices at his command, and not infrequently, by the mere exercise of patience, care, and general good judgment.

Losses of Livestock in Transit in Midwestern and Western States

By Joseph E. Rickenbacker
Transportation Branch
Management Services Division

Losses due to death and crippling of animals in transit are of grave concern to farmers, their cooperatives and the livestock industry in general. The extent of these losses and their relationship to length-of-haul, carrier used, and seasonality, however, have been largely a matter of conjecture. Some stockyard companies, packing concerns, and transportation agencies have kept records of the losses in varying detail on an individual basis but no comprehensive study has been made.

Consideration of the relationship of the losses to transportation factors mentioned above has been limited to specific firms or narrowly defined areas. This study by Farmer Cooperative Service provides a more comprehensive estimate of the losses and analyzes some of the factors in transportation which affect the loss rates.

Records of livestock received at 10 principal public stockyards located in midwestern and western States were the source for the data. Information obtained included origin of shipment, mode of transportation, date of receipt at market, species and number of animals in shipment, and dead and/or crippled animals received. These data have been analyzed on the basis of relationship of number of dead or crippled animals received to total volume so as to establish loss rates. The loss rates obtained have been analyzed on the basis of length-of-haul and seasonality.

Some Limitations in the Basic Data

The material presented and the findings and conclusions stated in this report can best be evaluated if such an appraisal includes consideration of certain limitations applying to the supporting data. Specific limitations affecting certain of the presentations are noted in the discussion at the appropriate section of the text of the report. There are, however, some limitations which apply to several phases of the study, if not to the report in its entirety.

Major limitations in supporting data were due to the fact that records were not available at every market for the full 24-month period (1954-55). In some instances, records were maintained for a different number of months for truck receipts than for rail receipts. At other markets, only 12 months' data were

available for any of the receipts. This situation resulted in certain markets exerting significant influence in the over-all loss averages in some months and little or no influence in other months.

Variations in seasonal impact of the markets must be given particular attention, therefore, in evaluating the over-all loss data. Tables which present the data on an individual market basis are supplied in the appendix and the charts appearing in the text are marked to indicate which tables support them.

The systems used in noting losses at the various markets also varied. In general, the market had accurate records available for rail receipts. In the case of truck receipts, however, some of the markets kept admittedly sketchy records. This latter condition has undoubtedly resulted in reporting lower losses for truck receipts than they actually had. This was certain to be the case since some of the markets reported dead losses only to the extent that the carcass of the animals was handled by the stockyard company for final disposition.

The way markets reported receipts did not always give a truly accurate picture of the losses because they didn't always break them down far enough to reflect all the differences. This is true especially of calves. In more westerly markets, the calves are stocker or feeder animals whereas in the markets located in the eastern section of the area the calves are largely dairy calves -- often only a few days old. Losses are usually much higher in the case of the less sturdy dairy calves.

Since it was not possible to make this differentiation in character of receipts in the data, the loss figures established may be unduly influenced by variations in the relative volumes of one or the other types of animals included in the data for a given month. Thus, if the sample for the particular month is composed of a large volume of this type of calf, the loss rate may be quite high.

These limitations in the data make it more difficult to evaluate portions of the material in the study, but do not seriously impair its validity. The study was an exploratory investigation in a relatively uncharted field, where records were kept on a highly individualistic basis. But, in those instances where it was possible to check the loss rates established in the study against rates established by the markets themselves or by other agencies, the figures presented in this report substantially agreed with these other loss figures.

Volume of Livestock in the Survey

Over 4 million head of livestock of various species were tabulated in the survey of 10 markets included in this study (table 1). Of these, about 3 million (69.5 percent) were transported by rail. While rail shipments constituted the greatest volume - all species considered - this preponderance of rail volume was largely confined to sheep and hogs.

Several of the major markets surveyed were in a deficit hog production area and a great distance from supply sources, thus accounting for the large volume of hogs received by rail.

Sheep still move largely by rail in this area, too, although the national trend to truck movement of sheep has now begun to be more pronounced.

Sheep production is concentrated in areas which also tend to favor rail transportation.

Cattle and calves are more widely produced in commercial herds, although

Table 1. - *Total numbers of animals included in the sample*

Transportation	Cattle	Calves	Hogs	Sheep
Rail	528,077	78,139	905,653	1,522,727
Truck	440,665	77,722	332,587	479,416
Total	968,742	155,861	1,238,240	2,002,143

feed-lot operations concentrated near major markets are often quite distant from ranges. In the West, this often means a rail haul from range to feed-lot (perhaps through a public market) and a later truck movement after fattening.

The relationship of total volume to the volume of the various species was determined by the geographical boundaries of the survey and would have been different if other sections of the country had been studied.

The rail receipts represented about 35 percent of total rail receipts at the markets during the period covered by the survey. Truck receipts represented about 10 percent of total truck receipts at these markets. Lack of essential data at the various markets was a major factor in the difference in the percentage sampled as between rail and truck (see appendix).

Percentage Distribution of Receipts by Mileage Blocks

Decentralization of livestock marketing and to a lesser degree of the meat packing industry have reduced the average distance livestock must be transported from production areas to market. This decentralization has been due to many factors including development of new producing areas, growth and realignment of major meat consuming centers, and new techniques and innovations in marketing and processing.

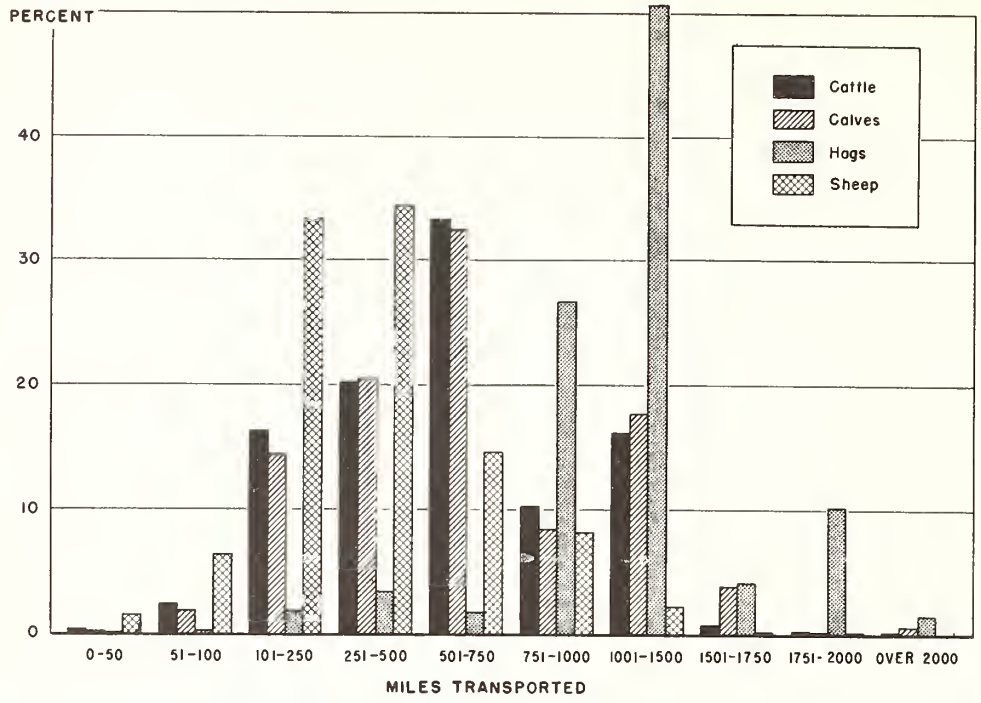
But a major factor in decentralization has been the development of the motor truck and its widespread acceptance in hauling livestock. The versatility, convenience, and adaptability of these vehicles make them an attractive means of transporting many commodities. If shipments originate at points where rail loading facilities are not readily available or are inconvenient, the truck has been a particularly welcome transport medium. Improvement of rural as well as State and national highway systems have also lent impetus to the trend to truck transportation. In 1955, over 80 percent of all cattle, calves, and hogs and 54 percent of the sheep received at public markets arrived in motor vehicles.

Although there is some movement of livestock by truck over great distances, the long distance hauls have continued to be largely by rail. The use of highway transportation for these long-haul movements has shown some growth in recent years and much experimenting and testing is in progress in this field. Whether or not the railroads will continue to receive the bulk of these longer-haul shipments will probably depend on the results of tests and experiments underway and the experiences of those presently involved in such long distance truck shipments -- packers, truckers, and various buyers and receivers as well as producers and other shippers. The railroads themselves may influence the trend by their own efforts to improve their service as well as sell their service.

Figures 1 and 2 contrast the relative length of haul by rail and truck of receipts tabulated in this study. The point of origin of each shipment was noted and the distance to the receiving market computed. These distances were grouped into a series of mileage blocks and the various shipments then tabulated by placing each in the appropriate block.

FIGURE 1

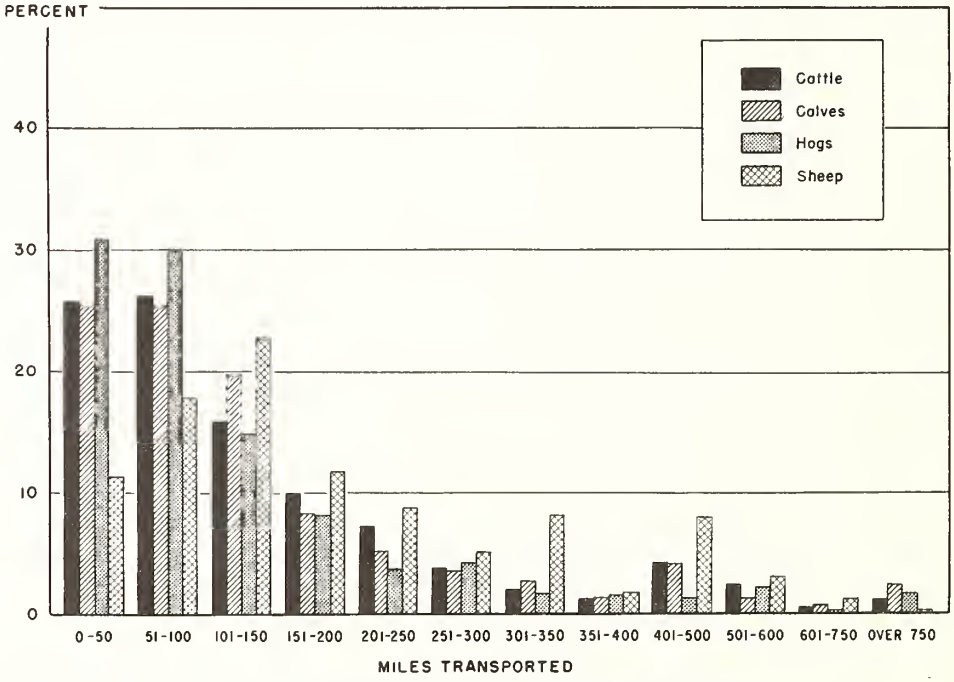
PERCENTAGE DISTRIBUTION BY MILEAGE BLOCK OF TOTAL RAIL RECEIPTS IN SAMPLE



NOTE: For relationship of individual markets to graphic presentation see appendix tables 1 through 4.

FIGURE 2

PERCENTAGE DISTRIBUTION BY MILEAGE BLOCK OF TOTAL TRUCK RECEIPTS IN SAMPLE



NOTE: For relationship of individual markets to graphic presentation see appendix tables 5 through 8

The data charted in these figures included all sample receipts at all markets and, because of the geographical scope of the study, present a typical pattern of length-of-haul in the West and Midwest if not in the Nation. (For a comparison of length-of-haul patterns of various markets, see the appendix figures 1-4.)

Rail Receipts

The scale of distances used in tabulating rail receipts ran from 0 to 2,000 miles and was broken into "blocks" indicated by the distances computed for the various shipments. Since the volume of rail shipments was concentrated in medium to long distance hauls, the scale was necessarily extended to the upper limit of 2,000 miles

Differences in miles transported among the various species is readily apparent although a generalization can be made that volume of rail receipts increases with distance to a given point in each instance and, further, that there is relatively little movement of livestock by rail under 100 miles.

Cattle and calves moved via rail in appreciable volume at distances 101 to 250 miles from market and this volume was approximately doubled at 500 to 750 miles after which it declined to the 101 to 250 mile level for hauls up to 1,500 miles and then dropped to insignificance.

Sheep movements were concentrated in about equal volume (30 - 35 percent each) in blocks 101 to 250 and 251 to 500, thus indicating that this species moved via rail in great volume at distances less than the maximum volume distance of cattle and calves.

Hogs did not move via rail in any substantial volume under 750 miles and over half of the rail movement was for shipments hauled 1,000 to 1,500 miles.

In every case, the pattern was largely determined by the location of production centers as related to consumption, feeding, or processing centers. Location is of singular importance in any consideration of length-of-haul patterns. But it is paramount in rail patterns because at the present time it appears the major determinant in the choice of railroad service versus truck service by long-distance shippers.

Truck Receipts

Motor vehicle receipts did not reach markets in appreciable volume in cases involving a haul in excess of 750 miles. Accordingly, the scale of distances ranged from 0 to 750 miles. Because the volume of these receipts originated at points within a narrowed mileage scale, shorter "blocks" than used in the rail scale were necessary to fully indicate the length-of-haul pattern of the various species.

Over 50 percent of truck shipments of cattle, calves, and hogs travelled under 100 miles and about half of these shipments moved under 50 miles. The 50 percent point for sheep was indicated at 150 miles. Whereas, volume of rail shipments showed an increase relative to longer distance of movement, truck volume shows the reverse trend except for increasing volume of sheep shipments in the first three blocks. The rate of decline in volume from the "peak block" was comparable for all species. Although slight increases in volume of receipts of various species occurred in some of the blocks covering longer hauls, the trend of volume to increased length-of-haul was a declining one.

Even a casual comparison of figures 1 and 2 will lead one to conclude that the distance from a given market that motor transportation of livestock tapers off is precisely the distance where railroad movement becomes an important factor.

If nothing else, the distance involved in the movement of livestock would determine the choice of the kind of transportation used.

Overall Dead and Cripple Loss

An important economic loss in the marketing of livestock occurs when animals arrive at the market place dead or crippled. A dead animal must be written off as a total loss except for the salvage value which a rendering company might offer for the carcass.

Even though the owner may be indemnified by insurance, in the broader sense, the loss still occurs if the animal is dead or crippled. Crippled animals are devalued by buyers -- this reduction based on the judgment of the buyer after a consideration of the extent of crippling and its possible "side effects," particularly possible bruising.

Sellers of livestock may also be penalized in the prices they receive for their animals since the presence of dead or crippled animals in a load may cause prospective buyers to question the soundness of other stock.

The extent of death and crippling in livestock arriving at market is not generally known. While some markets keep an accurate record of such losses, others keep almost no records at all. Furthermore, no consolidation of loss records has been publicly presented if it has been made. Dead and cripple losses at the markets surveyed in this study have been determined on the basis of the sample of receipts taken.

Loss by death or crippling for all markets is shown in table 2. In citing these losses, the actual number of deads and cripples reported in the volume of receipts tabulated established figures stating the loss in terms of 10,000 head of livestock received. For example, if a truck load of 100 hogs arrived at market with 2 animals dead and 4 crippled, the dead loss would be at the rate of 200 per 10,000 and the cripple loss at 400 per 10,000 head received. The adoption of this system provided a way of expressing the loss in a simple and easily understood manner which conforms to accepted practice in the industry.

Table 2. - *Loss by death and crippling for all markets per 10,000 head*

Species	Physical condition	Rail	Truck
Cattle	Dead	1.49	1.86
	Cripple	7.46	7.44
	Combined[1]	3.35	3.72
Calves	Dead	3.19	10.29
	Cripple	18.55	19.17
	Combined[1]	7.82	15.08
Hogs	Dead	4.19	13.07
	Cripple	8.19	28.89
	Combined[1]	6.23	20.29
Sheep	Dead	4.27	9.42
	Cripple	1.40	9.36
	Combined[1]	4.62	11.76

[1]Four cripple equal one dead.

Data presented in table 2 do not reflect such factors as distance hauled, seasonality, and the like, but do differentiate between rail and truck receipts for each species. In almost every instance truck losses exceeded those of rail -- in many cases by substantial margins. The incidence of crippling was several times that of death, except in the case of sheep. The figures indicating "combined loss" are based on the premise generally accepted that the economic loss substained by 4 crippled animals will equal the loss of 1 dead animal of that species. The loss figures cited indicated the extent of these losses and emphasized the need for corrective measures to reduce or eliminate them.

Length-of-Haul as a Factor in Dead and Cripple Losses

When dead or crippled animals arrive at market, there is a tendency to conclude that during the transit period something occurred which can be blamed for the death or crippling. Unfortunately, in most instances no present means exist of positively determining whether or not such is the case. Of course, if there has been a wreck or accident en route, it may be proper to assume that the loss was truly occasioned by the mishap which occurred.

But these conditions prevail in only a few cases. All animals do not leave the shipping point in "the pink of health." A sick or weakened animal may die en route as a result of the malady, with transit conditions totally blameless. In other instances, the condition of the animal may be such that the rigors of the journey prove too much for it. While the transportation factor does play a part in these losses, such animals probably should not have been shipped at all.

Although the animal may be perfectly sound, the manner of sorting and loading and the conditions prevailing at that time may be directly or indirectly responsible for death or crippling. The use of make-shift, improper, or dilapidated loading chutes may result in crippling, bruising, and internal injuries. Rough handling may excite the animals so they injure themselves. A feeling of uneasiness is created which is a natural reaction when the animal is placed in strange surroundings or removed from his usual routine. This uneasiness can be readily changed to fear and excitement if aggravated by improper handling practices during sorting and loading. Any of these conditions can contribute to subsequent death or injury.

Once the animals are loaded and begin the trip, transit conditions exert an influence on the condition of the animals as they reach their destination. The condition of the vehicle, its manner of operation, weather factors, and care of the stock while in the vehicle all play a part. To positively determine the factors enumerated that might be responsible for a loss would have required constant observation during transit and complete knowledge of the animals' condition prior to and during loading. Since such information was not readily available, it has been necessary, for the purposes of this study, to assume that the animals left the shipping point in good condition and to analyze dead and cripple losses on the basis of factors which could be ascertained.

The longer an animal is exposed to conditions which might result in injury or death, the greater the liklihood of such misfortune occurring. In transportation, the most important single factor in determining the length of time for the journey is the distance to be traversed. The length-of-haul is, therefore, the logical measurement device from the standpoint of time. In addition, it indicates the effects of transit conditions on animal well-being.

Rail Losses

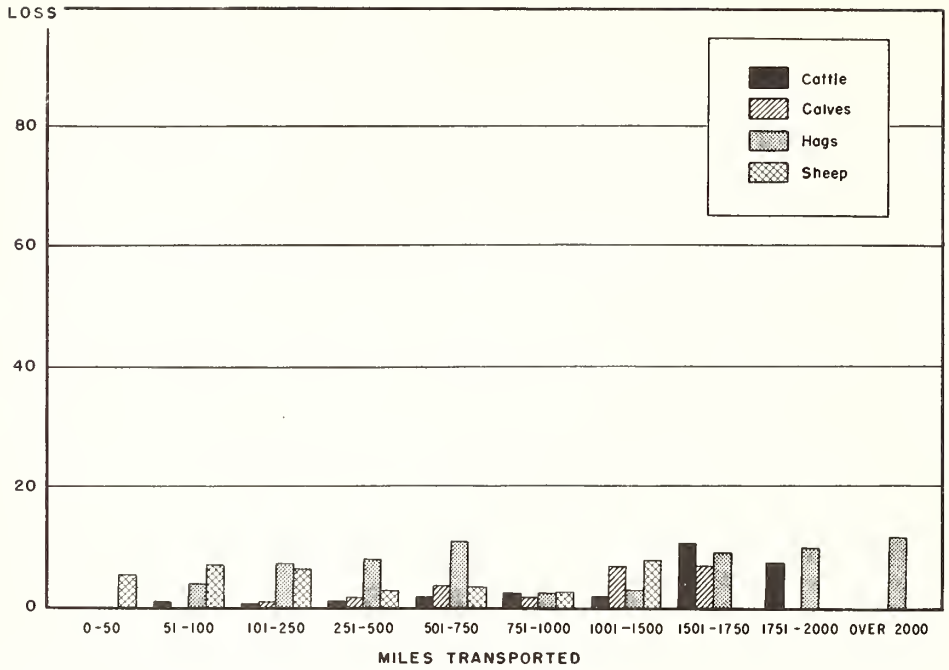
Figures 3 and 4 show the dead and cripple loss per 10,000 head which occurred at various lengths-of-haul on shipments received by rail. Two generalizations may be made:

(1) There was a rather positive relationship between increased loss and longer lengths-of-haul both in death and crippling for most species.

(2) Crippling accelerated at a greater rate than did death losses for most species as length-of-haul increased.

FIGURE 3

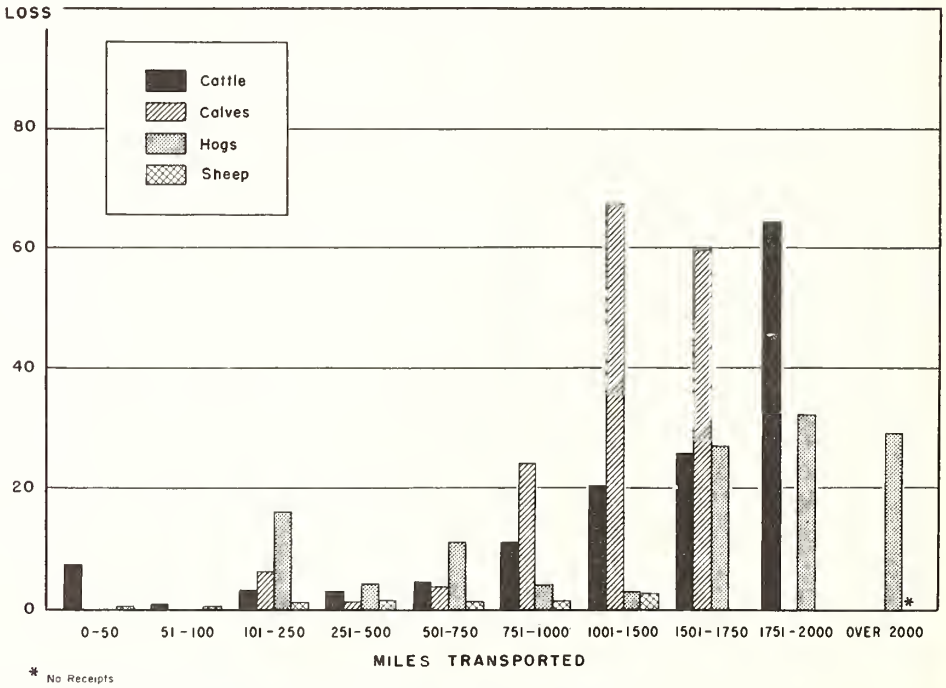
DEAD LOSS PER 10,000 HEAD BY MILEAGE BLOCK - RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 9 through 12

FIGURE 4

CRIPPLE LOSS PER 10,000 HEAD BY MILEAGE BLOCK - RAIL RECEIPTS



* No Receipts

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Dead and cripple losses declined or stabilized at what might be termed "mid-distances" and then spurted upward. This indicated that less hardy animals are less likely to withstand the rigors of a journey of moderate length. By the time necessary to more the livestock 750 to 1,000 miles, the animal has adjusted to his new environment and psychological and emotional factors which might adversely affect his condition have probably eased.

But an important event occurs about this time. Livestock moving interstate by rail must be unloaded for feed, water, and rest after 28 hours (except under entenuating circumstances or unless the shipper expressly agrees to extend the time to a maximum of 36 hours). If the loading and unloading required are done properly, no unfavorable effects on the animal should occur and he should be able to better withstand the remaining miles of travel. However, should the animal be handled roughly or become overly excited during the loading, same likelihood of injury mentioned in connection with original loading could again arise. It cannot be positively asserted that the rise in losses observed beginning of block 1,001 - 1,500 is due to the feed-water-and-rest stop, but there is justification for urging careful handling at such time. If we assume that no connection exists between stops in transit and rising losses, then the conclusion must be that the wear and tear of the longer journey is the responsible factor. The relatively low volume of receipts at both extremes of the mileage scale should be considered in evaluating the losses indicated, whether there are no losses or extremely high ones.

Truck Losses

A positive relationship between rising dead and cripple losses and increased length-of-haul was not as pronounced in truck receipts as in rail (figures 5 and 6). Such a correlation was indicated fairly well in the case of sheep and cattle dead loss and to a lesser degree in cattle cripplings. There was, however, a reasonably strong relationship for all species both as to dead and cripples in the first several blocks -- those for distances up to 200 miles. The low volume of receipts for longer distance blocks may well have been responsible for the blurred trend in these blocks. This assumption appears strengthened by the fact that when volume did remain rather substantial at longer distances, the trend was clearer -- as in the case of sheep.

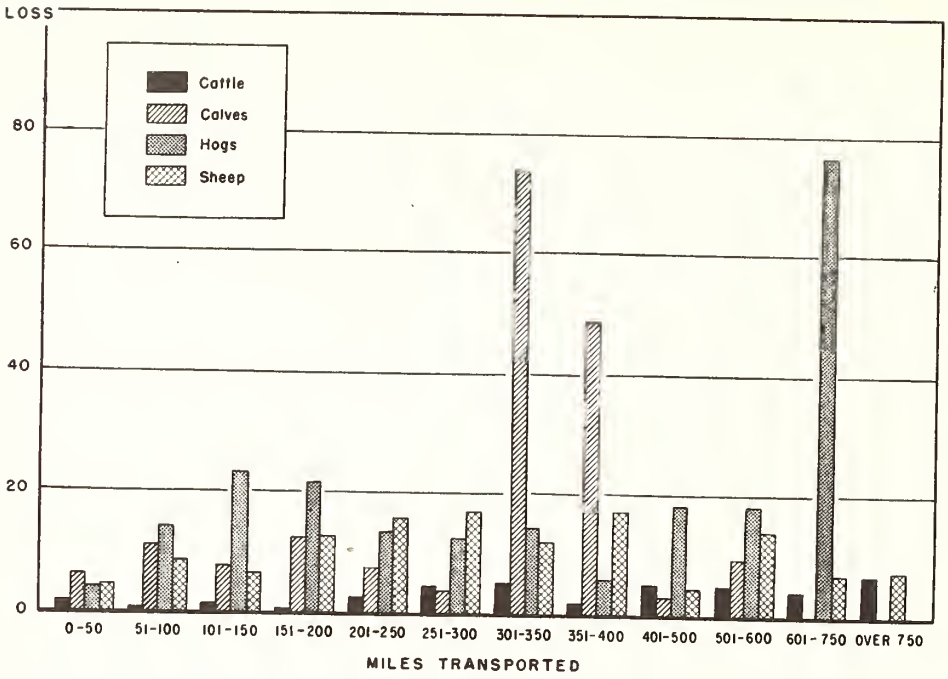
The shorter distances involved in truck shipment of livestock expose the animals to transit connected liabilities for a shorter period of time. This would tend to reduce the impact of these adverse factors on the stock. However, the same conditions before actual movement apply to truck shipments as to those moving by rail and may well account for the positive correlation in the first several mileage blocks. The character of the type of transportation itself may also offset any tendency of a curbed impact of distance, that is, road conditions, highway traffic, and the critical factor of driver handling. One or several of these conditions can operate to push losses upward.

Comparing Rail and Truck Losses

The difficulty of comparing rail and truck shipments of livestock lies in the fact that usual length-of-haul is not the same for one as for the other. The scales of distance used in presenting rail and truck losses were formulated to present the most complete analysis for each mode of transportation. Figures 7 and 8 represent a "blending" of these scales in so far as practical. The primary drawback to this method of

FIGURE 5

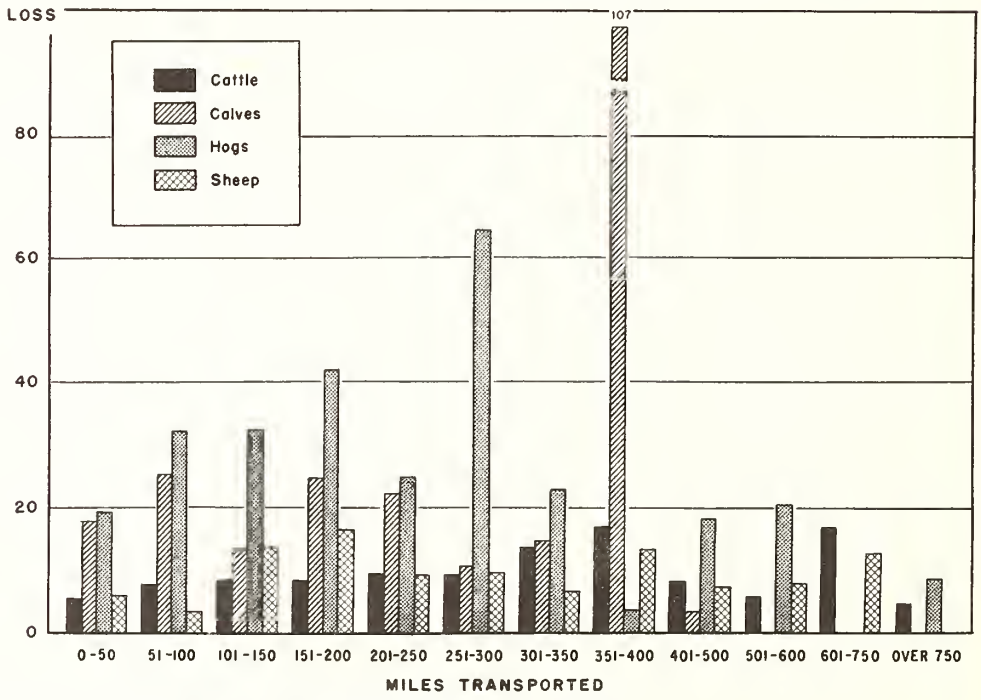
DEAD LOSS PER 10,000 HEAD BY MILEAGE BLOCK - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 17 through 20

FIGURE 6

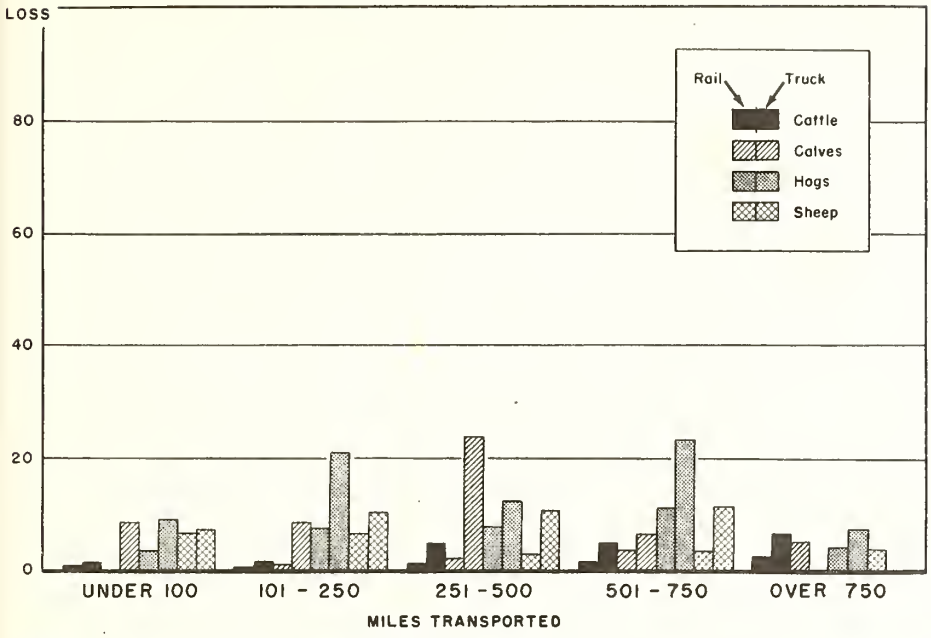
CRIPPLE LOSS PER 10,000 HEAD BY MILEAGE BLOCK - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 17 through 20

FIGURE 7

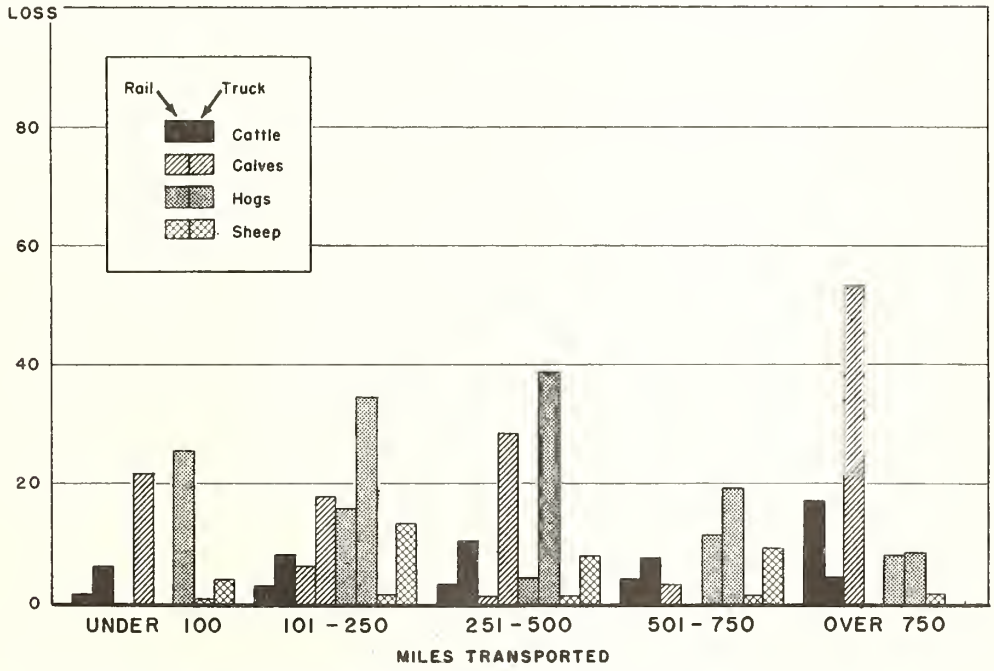
COMPARATIVE DEAD LOSS PER 10,000 HEAD RAIL AND TRUCK RECEIPTS BY COMPARABLE MILEAGE BLOCKS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 9 through 12 and 17 through 20

FIGURE 8

COMPARATIVE CRIPPLE LOSS PER 10,000 HEAD RAIL AND TRUCK RECEIPTS BY COMPARABLE MILEAGE BLOCKS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 9 through 12 and 17 through 20

treating length-of-haul was the necessity of including the bulk of rail receipts in the block for over 750 miles. The method does, however, simplify the analysis for comparative purposes.

A discussion of the relationship to distance hauled has already been given for both rail and truck shipments. An examination of figures 7 and 8 on a block by block, species by species basis, provides a comparison of the losses sustained at various distances by different modes of transportation. In every instance, dead losses on truck receipts exceeded rail losses for all shipments moving less than 750 miles. In the main, the truck loss was substantially greater. For shipments moving in excess of 750 miles, truck losses were higher for cattle and hogs with no losses for calves and sheep, but it is at this point that the truck volume drops to insignificance while the rail volume reaches its maximum. Rail volume in the blocks used in this "blended scale" was considerably higher in the lowest blocks than truck volume in the highest block. Hence, the volume of receipts is not as important to an evaluation of comparative losses. The same excess of truck over rail losses applied to cripples as well as deads.

Seasonal Factors as Related to Death and Crippling

Weather conditions exert an influence on the well-being of livestock at all times since animals spend most of their lives out of doors. Weather is of particular importance when animals are to be transported since the effects of unfavorable weather on livestock may be intensified during the transportation process.

In figures 9 to 12, the relationship of seasonal factors to dead and cripple loss was considered on the basis of monthly loss figures. In figures 13 to 14 a seasonal basis was employed. Both of these approaches provided only a general picture of the relationship since the daily vicissitudes of the weather were not recognized. Daily changes are often abrupt and would exert strong influence on losses. While no given month is exactly the same, weatherwise, in succeeding years, the same general conditions usually prevail. This is perhaps even more true of the seasons of the year. It is possible, therefore, to gain some indication of the relationship of seasonal factors to livestock losses by this monthly and seasonal approach even though the analysis obtainable only by a use of daily weather data is not precise.

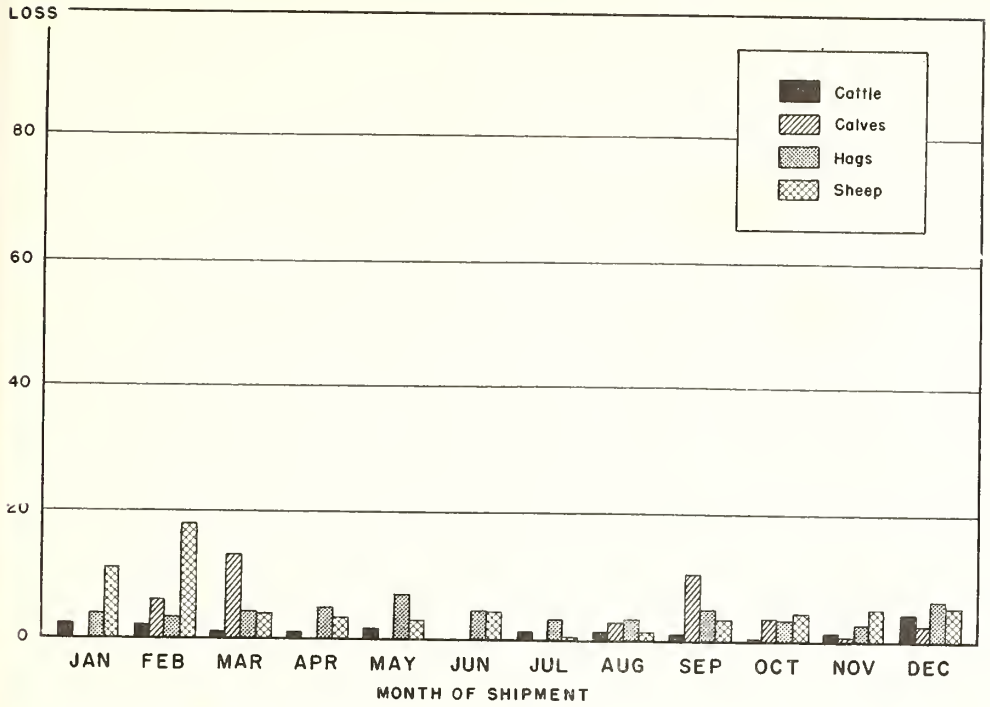
Temperature is probably the most important weather phenomena affecting livestock. Extreme heat and bitter cold are fraught with danger for animals. Abrupt changes in temperature are also dangerous, particularly when the change occurs during the transit period.

The effect of these conditions on livestock in transit may be allayed or intensified by the practices of those charged with transporting the animals. For example, proper bedding and controlled ventilation can allay the effects of both temperature extremes. Likewise, ventilation adjustments en route can offset abrupt temperature changes.

During extremely hot weather, the exercise of care in sorting and loading is especially important not only because of the danger of over-heating the animals but because of the disastrous effect on hot animals, especially hogs, of the drafts likely to be present in the moving vehicle. Shippers and transporters of livestock will do well to plan and execute their shipments with the help of weather forecasts.

FIGURE 9

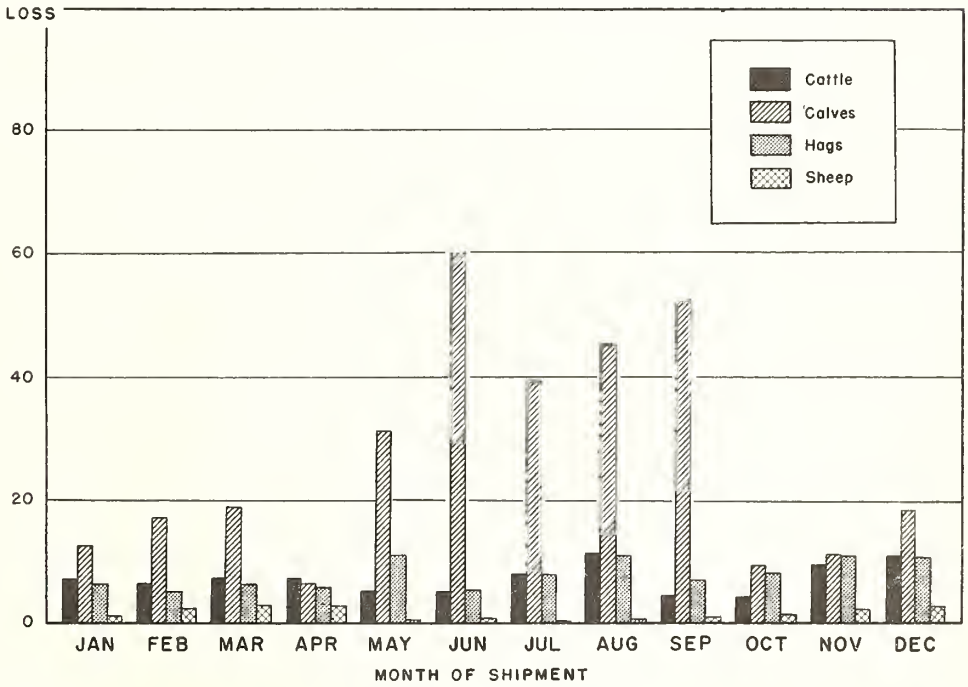
DEAD LOSS PER 10,000 HEAD BY MONTHS – RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 13 through 16

FIGURE 10

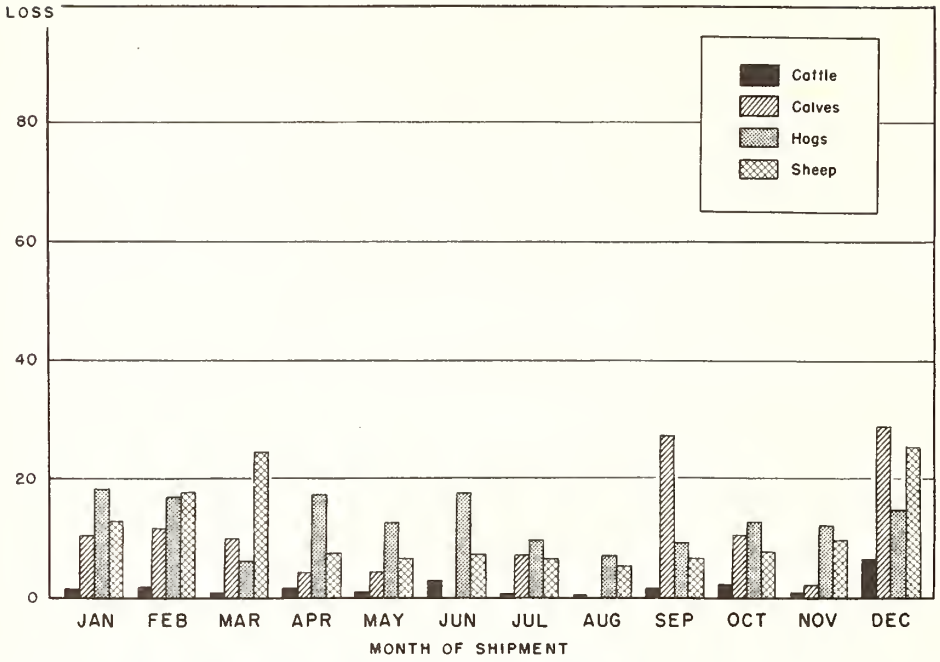
CRIPPLE LOSS PER 10,000 HEAD BY MONTHS – RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 13 through 16

FIGURE 11

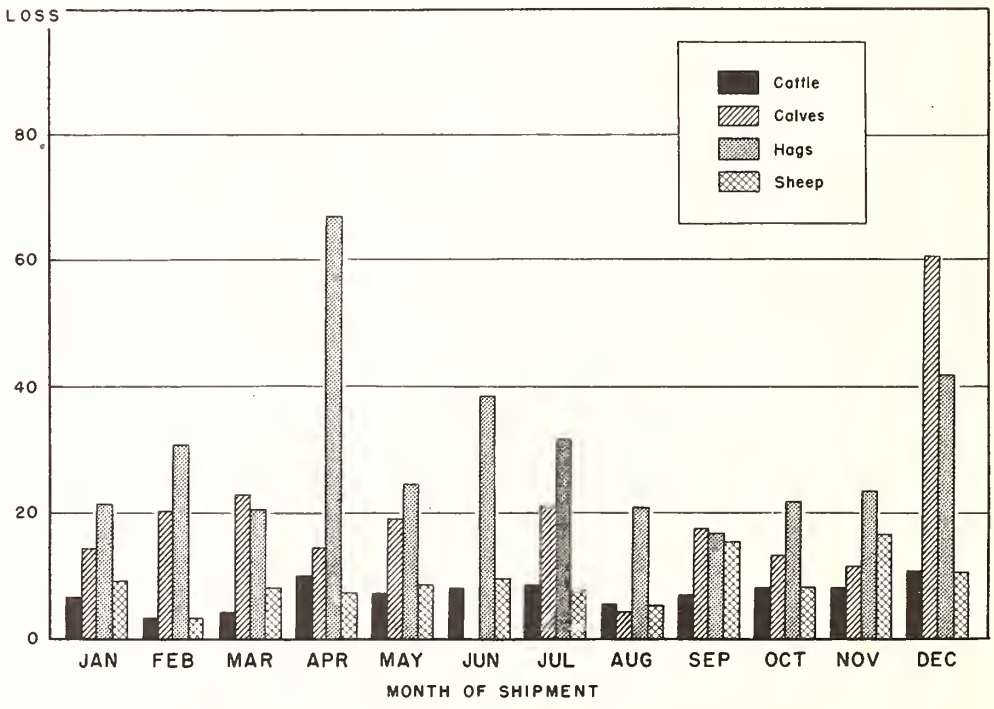
DEAD LOSS PER 10,000 HEAD BY MONTHS - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 21 through 24

FIGURE 12

CRIPPLE LOSS PER 10,000 HEAD BY MONTHS - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 21 through 24

Monthly Losses

In interpreting the data in figures 9 to 12, the significance of monthly loss variations is best evaluated by considering each species separately on the basis of transport media.

1. Cattle. - There appeared no significant variation in losses from month to month.

2. Calves. - Dead losses by rail or truck formed no regular pattern other than the fact that they were lower in late spring and summer (April through August). The paradox was the high cripple loss by rail in the May to September period -- the same period during which death losses are absent or are quite low. Cripple loss by truck, on the other hand, was highest in December.

Bearing in mind the difference in average lengths-of-haul by rail and truck, it would seem that greatest danger to this species lies in long haul rail movements in hot weather and somewhat less loss is apt to occur on short haul truck shipment in cold weather. One other factor should be noted. Frequently the calf shipments by truck are almost new born calves of dairy cows while calves moving by rail are usually stocker and feeder calves of beef origins. The variation in age and heartiness of the two types is no doubt a factor in the total loss ratios as well as in the monthly loss variations.

3. Hogs. - Rail shipments of hogs indicate relatively constant dead and cripple loss from month to month. Two conclusions may be reached on dead and cripple loss in truck receipts.

(a) Total loss is greater from winter to mid-spring (December through April).

(b) Hogs appear unusually susceptible to abrupt changes in temperature, especially temperature rises. This is indicated by the sharp rise in losses in April when occasional hot days occur and again in June when maximum temperatures soar. Although the "high" in April might be much below a June "high," the change may well be equally drastic in number of degrees and sufficiently high to reach the critical stage - above 75 degrees. While affinity to heat has long been recognized as a factor in hog physiology, the loss data compiled indicate that these animals are apparently able to condition to excessive heat since the losses fall steadily after the June high until the changeable weather of September and October.

4. Sheep. - Monthly variations in losses among sheep received by rail and truck point to cold weather as being critical since losses run generally higher from November through March.

Seasonal Losses

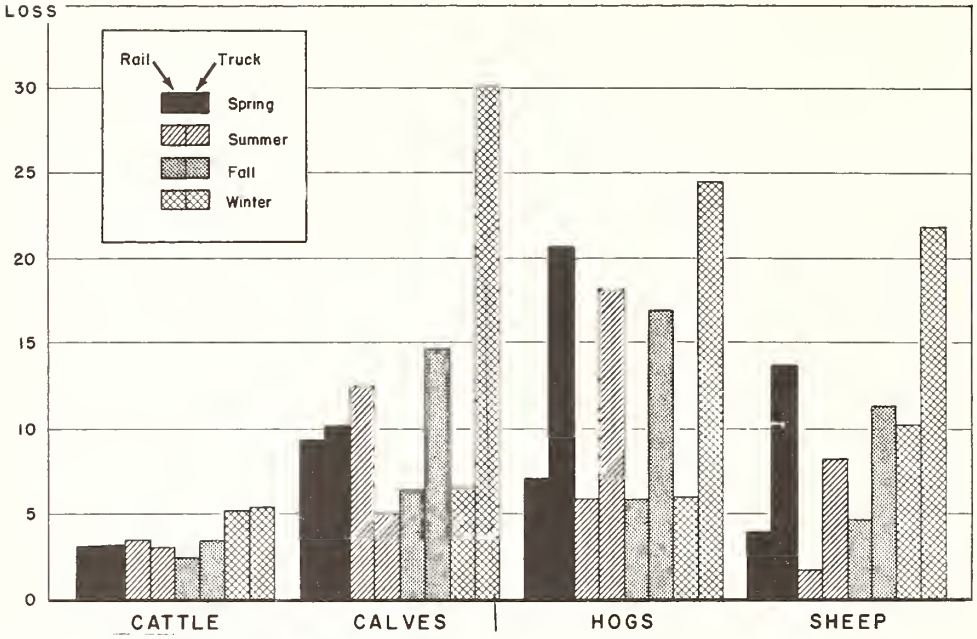
Figure 13 shows rail and truck losses on a seasonal basis.[2] The principal advantage in this method is that general weather conditions associated with seasons are apt to be more uniform from year to year than monthly comparisons, thus minimizing the effect on the analysis of unusual months. In addition, the effect of basic weather conditions (heat, cold, and the like) are more clearly defined for analytical purposes. Dead and cripple losses are combined by equating four cripples to one dead. This method also contributes to a more definite analysis and is proper in that losses are usually reduced to economic terms.

Disregarding species, rail loss was almost equal for each of the seasons. On the other hand, truck losses were far greater in the winter than in any other season -- more than double the loss in summer. While such a broad

[2]Seasonal grouping is on the following basis: Spring - March, April, May; Summer - June, July, August; Fall - September, October, November; and Winter - December, January, February.

FIGURE 13

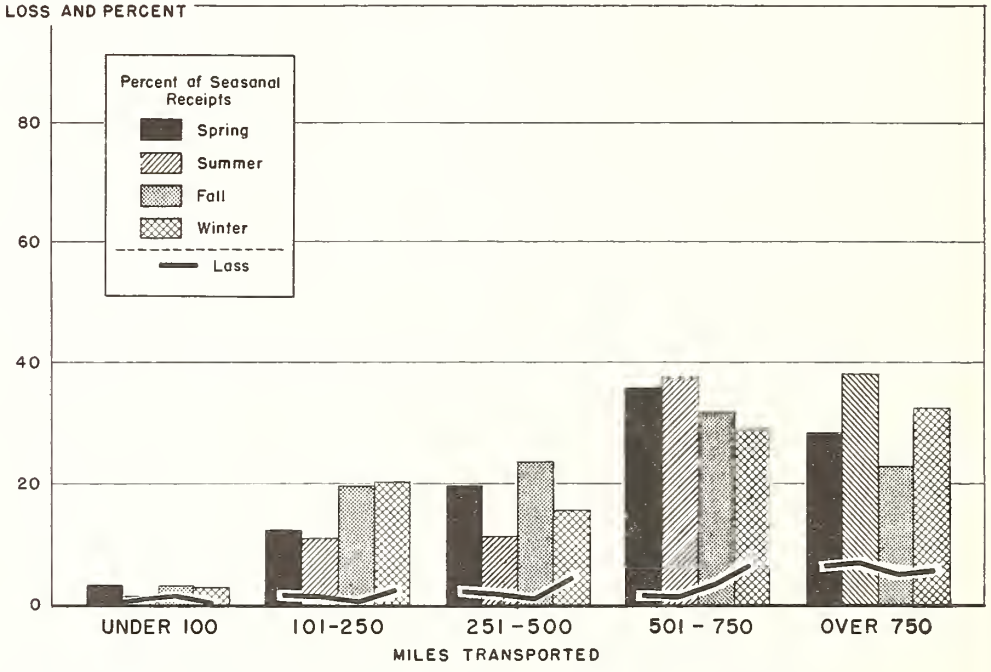
COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD OF RAIL AND TRUCK RECEIPTS BY SEASONS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 13 through 16 and 21 through 24

FIGURE 14

CATTLE, COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD AND PERCENTAGE DISTRIBUTION OF RECEIPTS BY SEASONS AND DISTANCE HAULED - RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 1, 9, and 13

analysis is of interest, the more important approach is to examine the seasonal loss pattern for each species.

Cattle. - Rail and truck losses followed the same general pattern: relatively the same loss in all seasons except winter which shows a measurable increase.

Calves. - Rail losses were almost equal for fall and winter, were some higher in spring, and markedly higher in summer. The truck pattern was almost the reverse, with fall and winter losses substantially higher than in other seasons -- six times as high in winter as compared to summer.

Hogs. - Patterns of rail and truck losses were quite similar beginning with relatively high loss in spring, then declining through summer and fall before increasing in the winter. Major difference lay in the much greater increase in winter truck losses.

Sheep. - Again patterns were similar for rail and truck and parallelled the pattern of hog losses.

If one is to generalize from the seasonal loss data in figures 13 and 14:

1. Seasonal factors are least important with respect to cattle shipments.
2. Winter may be rightly considered as the most crucial season.
3. Seasonal impact on losses for all species, except calves, results in relatively the same general loss pattern, regardless of transport used.

Length-of-Haul and Seasonal Factors as a Combined Impact on Losses

The relationship of length-of-haul and seasonality factors to dead and cripple losses has been analyzed separately. But a relationship between the two factors may also be important in livestock losses. Figures 14 to 21 graphically present an analysis of losses from this standpoint.

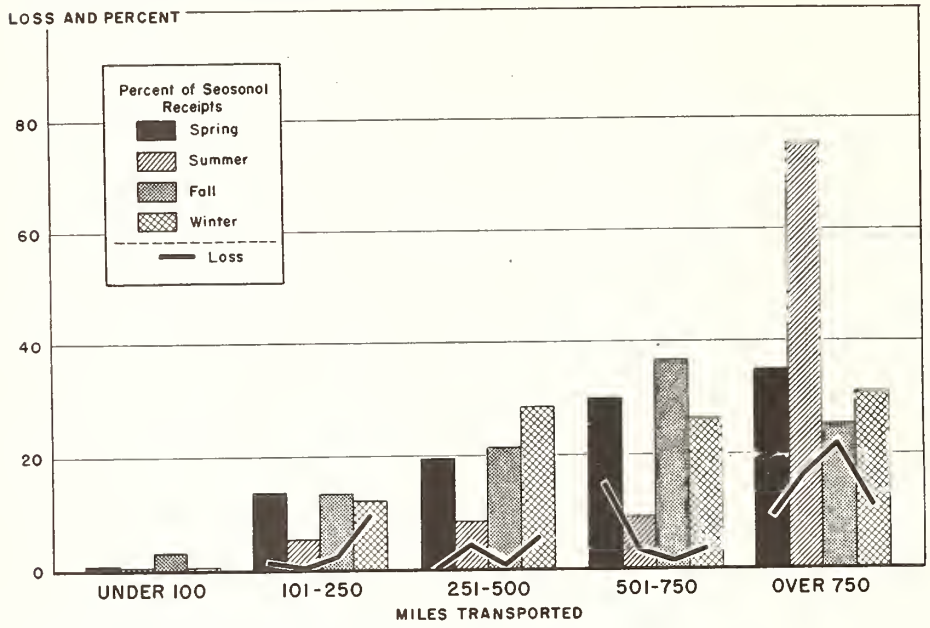
Since volume of receipts may need to be considered in evaluating the data presented, the percentage distribution of total receipts in each season has been indicated for each mileage block. Loss figures represent the combined dead and cripple loss per 10,000 head which occurred in a given season for each mileage block (the formula 4 cripples equal 1 dead determining the combined loss figure). Thus, in reading the data on figures 14 to 21, the figures on the vertical axis refer to percentage of total seasonal volume as indicated by length of the bar but indicate head loss per 10,000 head received as shown by the solid line. As an illustration, in figure 14, reading block 100 to 250, 12 percent of total volume received during the winter originated at points 100 to 250 miles distant from market and there was a combined dead and cripple loss of 2.79 per 10,000 head.

Each of the species charts may be read to ascertain the seasonal pattern within a given mileage block or to determine the distance relationship to a given season. For example, in reading figure 14, if we look at block 500 to 750, it is apparent that the seasonal trend of losses is steadily upward from spring to winter. If we single out a season, winter, for example, and follow that season through each block, it is obvious that as distance increases, losses rise.

Both of these analyses are useful in considering losses, since the pattern within a given mileage block may not correspond to the pattern established by the whole scale of blocks for all seasons. This, too, is illustrated in figure 15. Here, the trend of losses in each season is a rising one as distance increases. On the other hand, within a given block a decline from one season to the next may occur although the loss indicated in the latter season may be

FIGURE 15

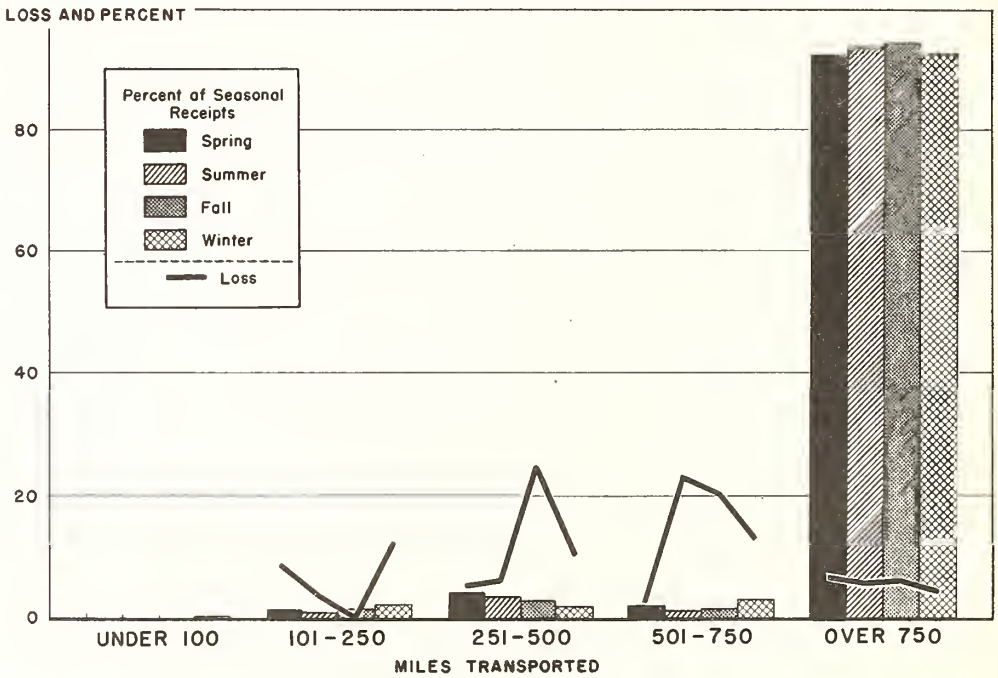
CALVES, COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD AND PERCENTAGE DISTRIBUTION OF RECEIPTS BY SEASONS AND DISTANCE HAULED - RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 2, 10, and 14

FIGURE 16

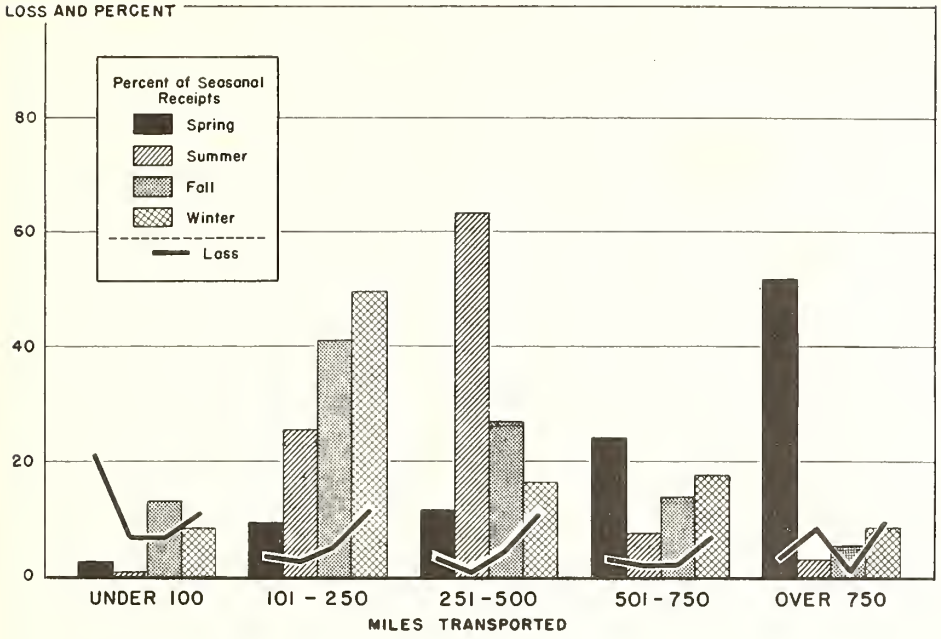
HOGS, COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD AND PERCENTAGE DISTRIBUTION OF RECEIPTS BY SEASONS AND DISTANCE HAULED - RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 3, 11 and 15

FIGURE 17

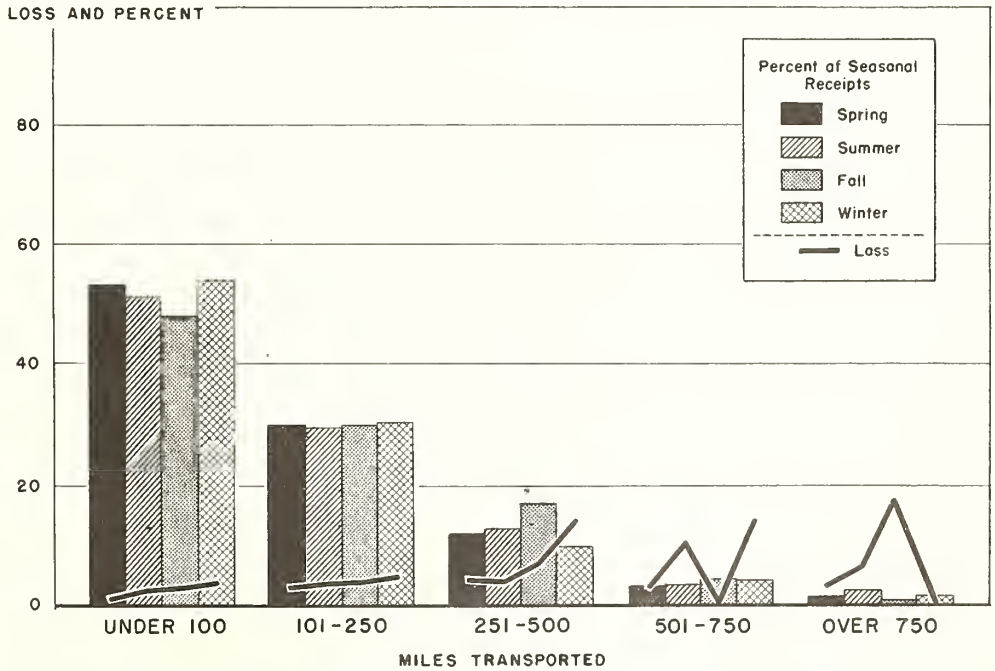
SHEEP, COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD AND PERCENTAGE DISTRIBUTION OF RECEIPTS BY SEASONS AND DISTANCE HAULED - RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 4, 12 and 16

FIGURE 18

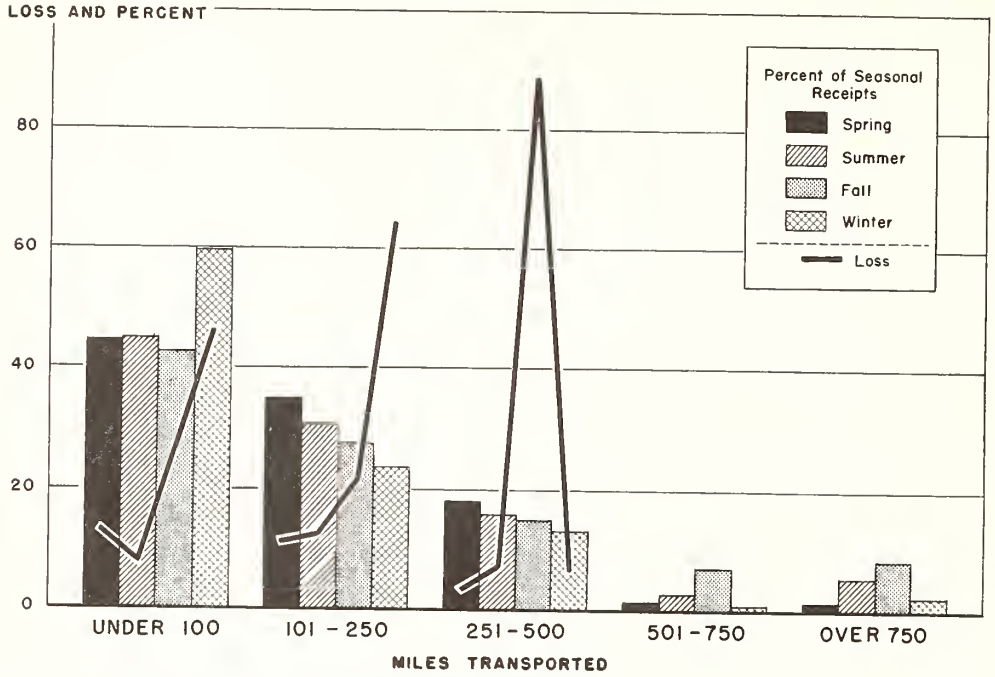
CATTLE, COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD AND PERCENTAGE DISTRIBUTION OF RECEIPTS BY SEASONS AND DISTANCE HAULED - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 5, 17 and 21

FIGURE 19

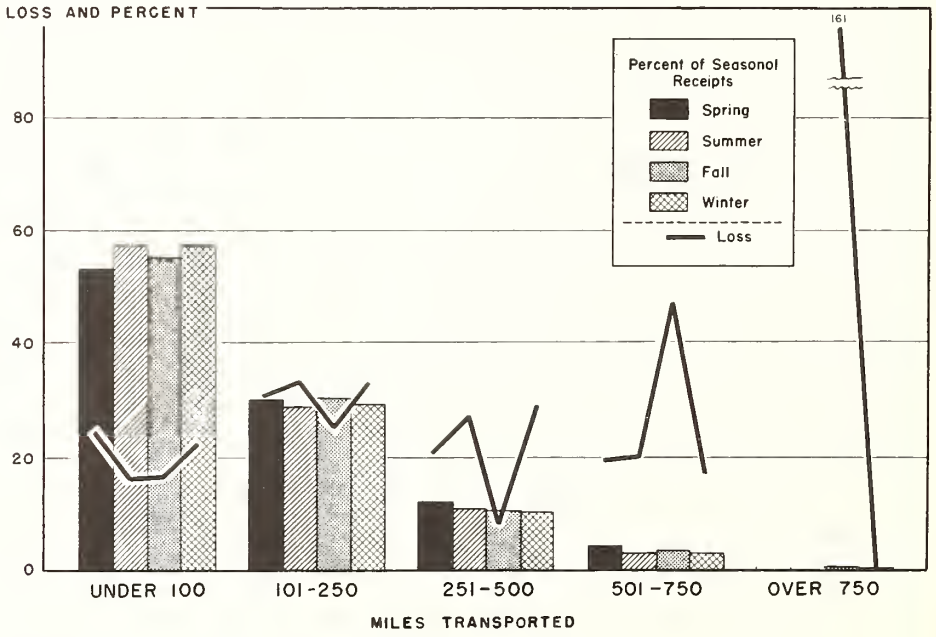
CALVES, COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD AND PERCENTAGE DISTRIBUTION OF RECEIPTS BY SEASONS AND DISTANCE HAULED - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 6, 18, and 22

FIGURE 20

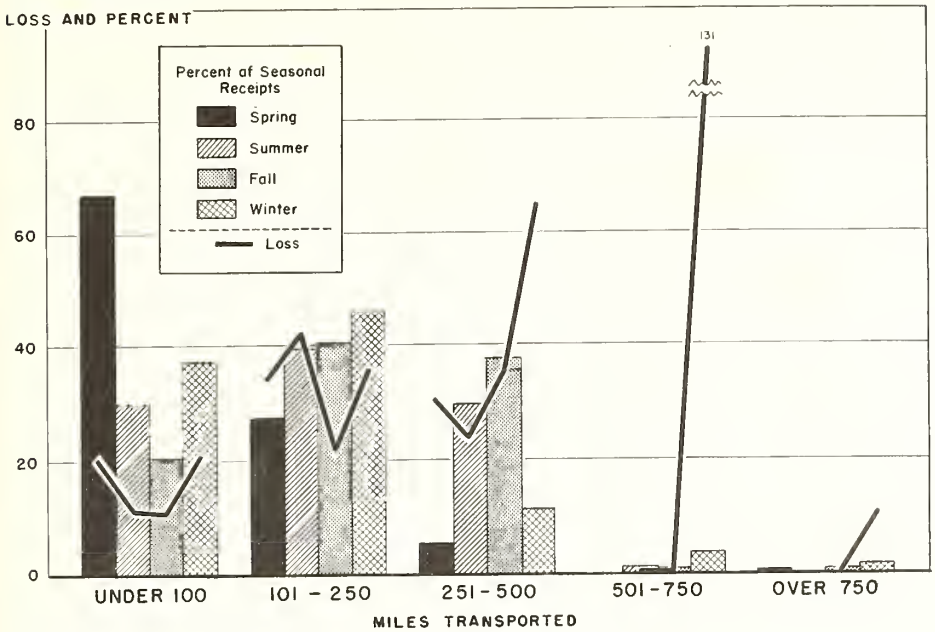
HOGS, COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD AND PERCENTAGE DISTRIBUTION OF RECEIPTS BY SEASONS AND DISTANCE HAULED - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 7, 19, and 23

FIGURE 21

SHEEP, COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD AND PERCENTAGE DISTRIBUTION OF RECEIPTS BY SEASONS AND DISTANCE HAULED - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 8, 20, and 24

higher in the block encompassing longer lengths-of-haul than in the preceding block. Losses decline from summer to fall on receipts travelling in excess of 750 miles but the fall seasonal loss is still higher than the loss in the same season in preceding blocks.

Rail Receipts

These conclusions may be drawn from a study of figures 14 to 18:

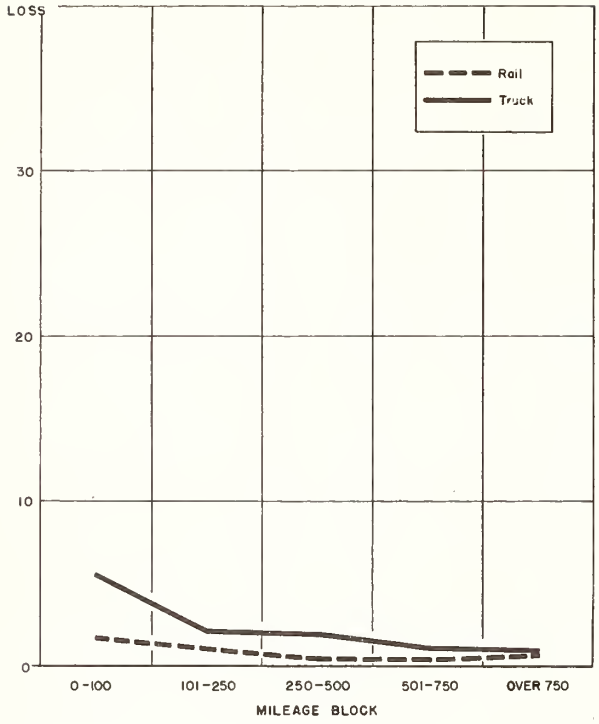
Cattle. - The trend of losses was upward as distance increased for the various seasons. The level of losses rises from block to block but the level with given blocks, while relatively constant, usually reaches a peak in winter.

Calves. - Distance and summer heat appeared the worst combination. Changeable weather conditions prevailing in spring and fall resulted in increased losses at longer distances, the former at distances 500 to 750 miles, the latter on longer distances. Except for the cases mentioned, winter losses were usually the highest of all seasons.

Hogs. - Highly irregular patterns of loss occurred within a given block except for the block encompassing distances over 750 miles which is almost constant. A rise in losses -- from moderate to drastic -- was shown for all seasons except spring with increased distance up to hauls of 750 miles. This would seem to indicate that after 750 miles hogs may become conditioned to travel.

Sheep. - Generally, the loss in each season gradually declined as distances increased. Winter losses remained almost constant regardless of distance hauled. Within given blocks, losses declined from spring to summer -- except at the greatest distance -- then rose to winter peaks although for extremely short hauls spring losses were

FIGURE 22
COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD OF RAIL AND TRUCK RECEIPTS PER MILLION SPECIES MILES BY MILEAGE BLOCKS - CATTLE



higher. Cold weather was apparently a factor for any length of movement.

Truck Losses

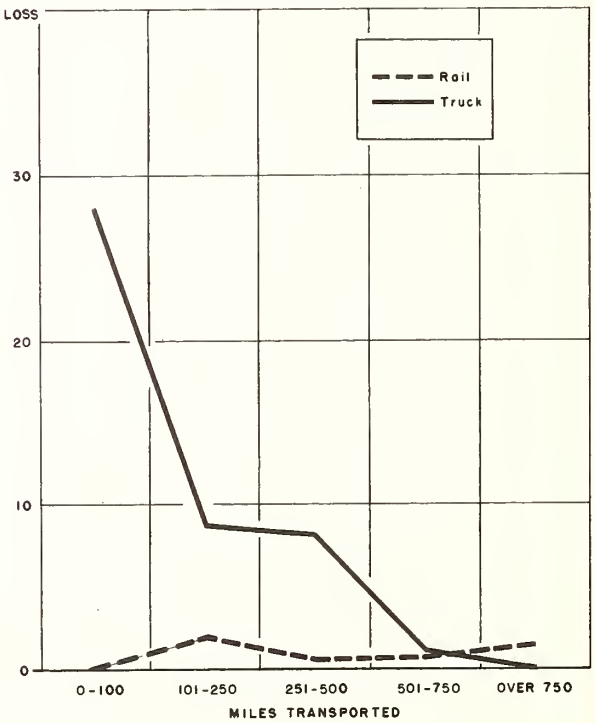
A cursory glance at figures 18 to 21 makes it clear that volume of receipts of livestock shipments by motor vehicle becomes increasingly less as distance to market becomes greater. When distances are over 500 miles, the volume is often insignificant or non-existent. For this reason, any conclusions drawn from an analysis of these charts should be based on the data for lengths-of-haul not over 500 miles. The discussion of figures 18 to 21 which follows will be so confined.

Cattle. - Losses showed a gradual rise in each season as distance increased except for a sharper rise in fall and winter for the longer hauls. This indicates distance is the more important factor. Pattern of losses in each block through 500 miles was identical - steadily rising from spring lows to winter highs. The level of loss rose as distance increased.

Calves. - Fall and winter appeared most critical at all distances through 500 miles indicating importance of seasonal factor. Spring and summer loss was relatively constant or slightly declining. Over-all level of losses was fairly constant for all distances which discounted the importance of length-of-haul.

Hogs. - Longer hauls and warm weather appeared the most hazardous combination. The rise in loss was very sharp from the shortest hauls to the next grouping of 100-250 miles, and while it declined thereafter, the level of loss remained high. Somewhat the same situation prevailed for winter, but with

FIGURE 23
COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD OF RAIL AND TRUCK RECEIPTS PER MILLION SPECIES MILES BY MILEAGE BLOCKS - CALVES



less variation as distance increased and with a lower level of losses at 500 to 750 miles.

The pattern of loss incurred in the spring was similar to winter while the fall pattern conformed only to the 500 mile limit. It would seem that except for summer, where a combined weather-distance impact has been noted, distance rather than weather is the major loss determinant.

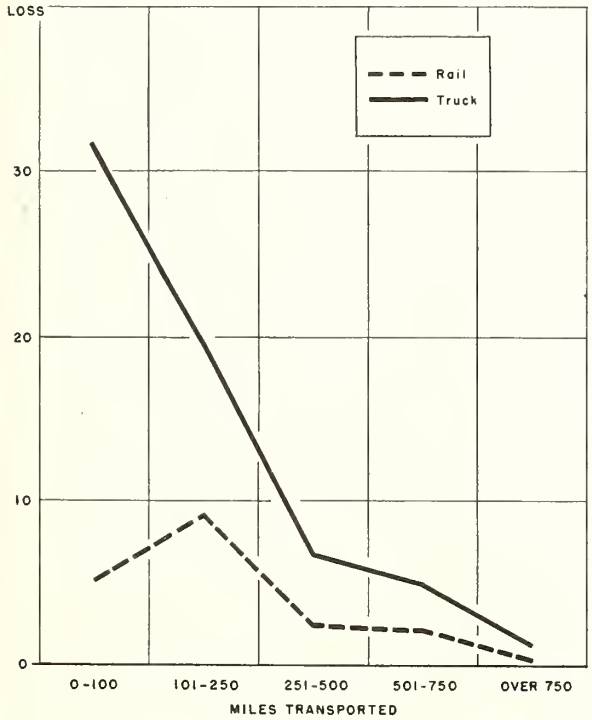
Sheep. - Weather conditions apparently combined with increased length-of-haul to raise losses sharply in two cases:

1. Longer hauls (250 to 500 miles) in the winter.
2. Medium hauls (100 to 250 miles) in the summer.

Losses on a "Species-Mile" Basis

Analyzing combined dead and cripple loss of rail and truck receipts by loss per million species-miles presents the data within a framework familiar to transportation agencies. It is included, therefore, primarily for their benefit. This is an adaptation of the technique employed by the Interstate Commerce Commission in measuring the safety factor in various types of transportation.

FIGURE 24
COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD OF RAIL AND TRUCK RECEIPTS PER MILLION SPECIES MILES BY MILEAGE BLOCKS - HOGS



It is used particularly to compare passenger fatalities recorded in the course of rail, bus, and air travel.

Determining species mile is relatively simple. In this analysis, the total number of head of each species received from origin points falling within a given block on the mileage scale is multiplied by a figure representing average distance hauled, usually the mid-point in each block. This results in the total number of species miles involved in movement within that block. With the number of deads and cripples which were received in these shipments known, the loss per million species miles can be derived. For example, if 10,000 head of cattle are received in a block for which the average haul is 100 miles, the total number of species miles in this block would be 1 million. If there were 1 dead and 4 crippled animals among those received, the combined loss per million species miles would be 2 (using the formula 4 cripples equal 1 dead).

The factors involved in this analysis are the total volume of receipts, the average distance hauled, and the actual number of deads and cripples received. The relationship of these three factors determines the loss per million species miles. The important consideration here is the introduction of a third factor, distance hauled.

In the previous analysis of length-of-haul as a factor in losses, volume of

receipts and the number of dead and crippled animals received were the only factors used in determining loss per 10,000 head at any given distance. If volume increased and the number of deads and/or cripples remained the same, the loss rate fell. In the species-mile analysis whether or not this would be the case would depend on the average distance hauled.

For example, if we go back to the illustration above and increase the volume of cattle to 20,000 head and leave the other factors constant, we have 2 million species miles and a loss rate of 1. However, if we lower the average distance factor to 50 miles we are back with a total of 1 million species miles for the 20,000 head and loss rate of 2. The interplay of these three factors determines the loss rate per million species miles. Because there are three factors we will not get the same results as in previous analyses of losses related to distance.

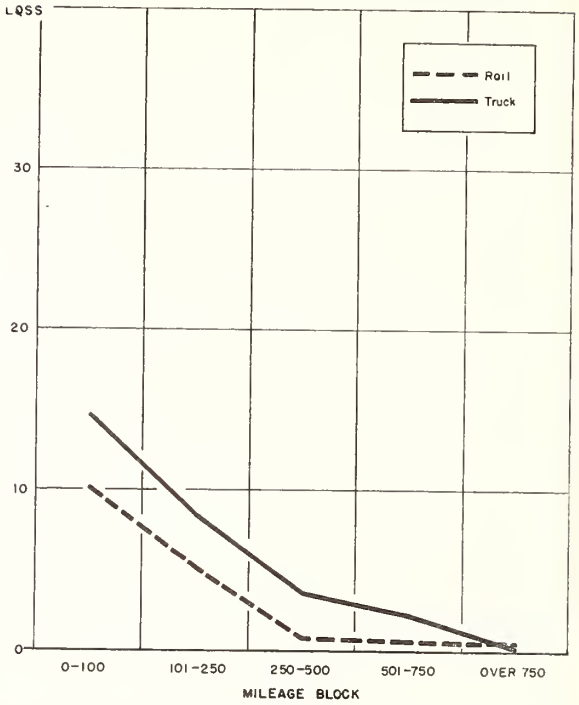
Figures 22 to 25 compare the rail and truck loss per million species miles on a mileage block basis for each species. Two conclusions may be drawn:

1. Rail losses are usually less than truck losses.

2. The same pattern of losses - declining as the length-of-haul increases - generally prevails for both rail and truck receipts regardless of species except for some variation in rail calf and hog loss rates.

Although it may appear that the species-mile data yield results contradictory to the results obtained in the analysis of losses as influenced by length-of-haul, a closer examination and

FIGURE 25
COMBINED DEAD AND CRIPPLE LOSS PER 10,000 HEAD OF RAIL AND TRUCK RECEIPTS PER MILLION SPECIES MILES BY MILEAGE BLOCKS - SHEEP



comparison of the appropriate charts will reveal some similarity of pattern - particularly if volume of receipts are given proper consideration. In addition, the losses are measured by two entirely different standards - one measure being loss per 10,000 head, the other, loss per million species-miles. Lastly, the impact of the third factor of average length-of-haul in determining the loss rate constantly increases from block to block. Unless volume and/or equal or significantly greater changes in actual number of dead and crippled animals offset this increase, then the loss rate per million species miles must inevitably decline.

Appendix

The data used in preparing the analysis in the body of this report were a compilation of materials gathered at 10 major public stockyards. The markets were located in the mid-western and far-western States. These markets were selected to provide a sample which would include adequate coverage of the following considerations:

1. Ample volume of both rail and truck receipts.
2. Considerable numbers of all species of livestock.
3. Long as well as short haul shipments.
4. Markets of varying size.
5. "Terminal" or "final" markets as well as "assembly" yards.
6. Divergent climatic conditions and geographical locations.

At each of the markets, official records of the company were the source of information. Necessary data were transcribed from actual "unload" or "chute" slips executed at the time the livestock was received or from "bulletin" sheets prepared from such original data. It was originally intended to examine such records for a 2-year period - the calendar years 1954 and 1955 - and to draw a sample therefrom. However, in some instances it was necessary to reduce the time period covered by the sample to 12 or 18 months because records were not readily available or because time wasn't available. Since the primary purpose of the study was to relate losses to the data obtained and since those markets were not fully recording such losses at the time the market was surveyed, truck receipts at two markets were sampled only on a token basis.

Rail loss figures obtained at the various markets are believed thoroughly reliable in each instance since the recording of such losses is carefully noted at each yard. Truck loss figures may be less reliable for the reason that some yards kept virtually no records of them and others recorded only those where the affected animals were handled through the yards for disposition. For example, if a dead or badly crippled steer arrived at the market and was left on the truck for delivery to a renderer by the trucker, no record of such loss was indicated. As a result, truck losses may be higher than indicated by the results of this study.

The tables in this appendix show the percentage distribution of receipts by mileage block, the monthly loss per 10,000 head, and the loss per 10,000 head for various lengths-of-haul for each of the markets. In any evaluation of the data included in these tables, these important considerations must be constantly remembered:

1. The data were limited by both the adequacy of the loss records kept by the company and by the sampling technique used. Such limitation(s) may have "improved" or "deteriorated" the loss record of the yard to some degree.

2. It was impossible to compare loss ratios at one yard with another because of the different characteristics of the yards with relation to character of receipts, geographical location, average length-of-haul, climatic conditions and methods of recording losses. In

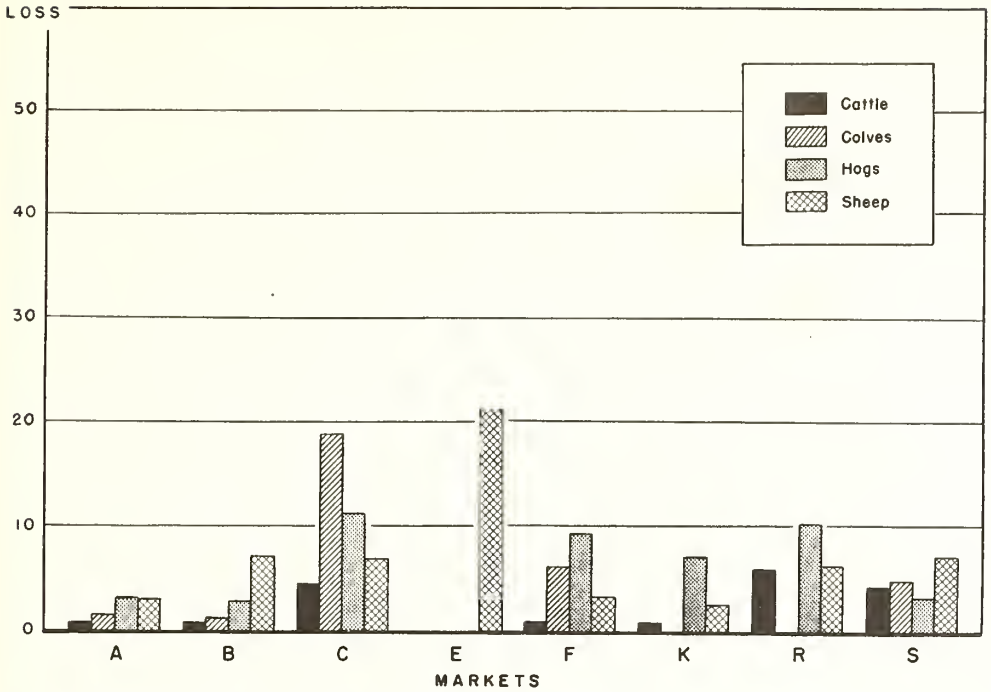
any event, the purpose of the study and the method of compiling the data were not intended to provide any such comparison.

3. All of the data included represents only those losses occurring PRIOR TO UNLOADING AT MARKET and in consequence no responsibility for or relationships to such losses can attach to any public stockyard company in any way.

In accordance with an agreement reached with the participating companies, the various markets were designated by an alphabetical symbol. The data indicating percentage distribution of receipts and loss rates on a distance basis have been indicated as being of especial interest to the companies. In order that such information may prove useful to them, each company has been advised of the symbol representing its own market but identification of other symbols was not provided.

APPENDIX FIGURE 1

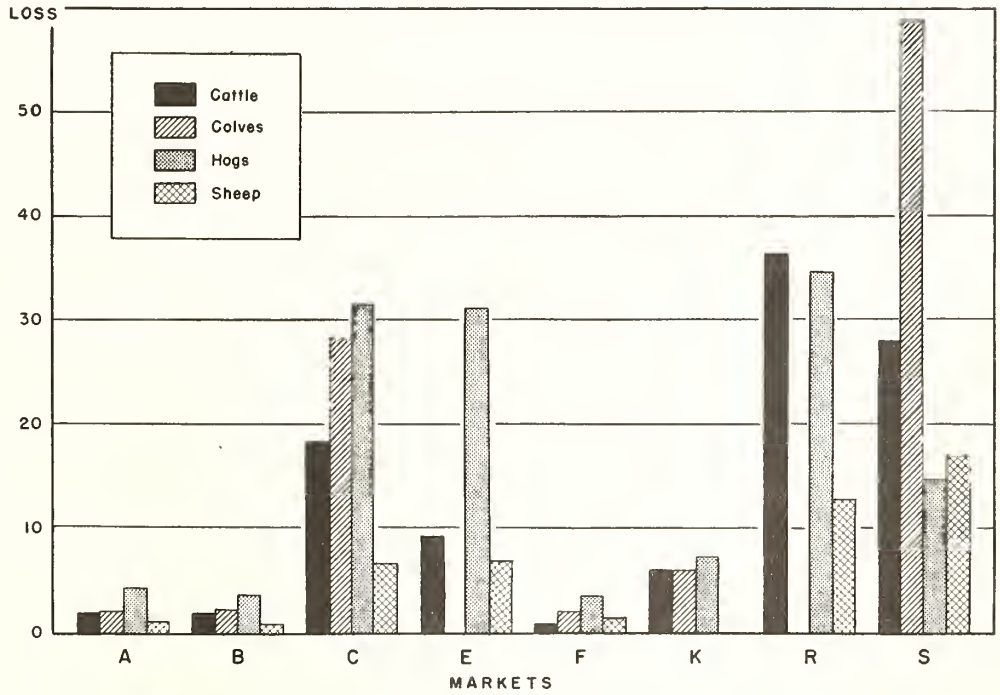
DEAD LOSS PER 10,000 HEAD AT VARIOUS MARKETS – RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 9 through 12

APPENDIX FIGURE 2

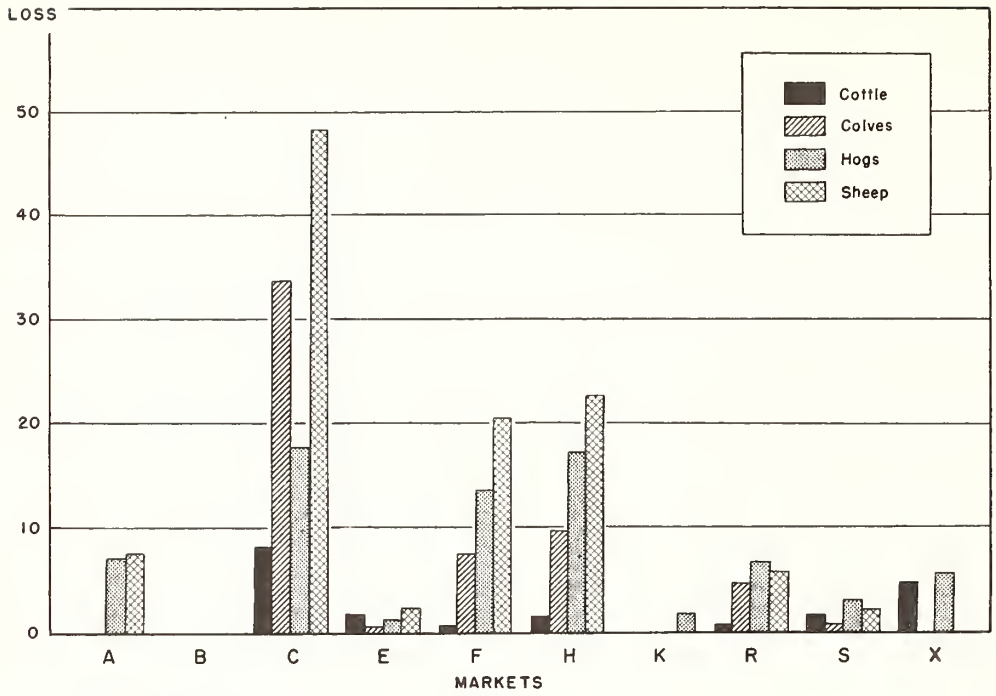
CRIPPLE LOSS PER 10,000 HEAD AT VARIOUS MARKETS – RAIL RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 9 through 12

APPENDIX FIGURE 3

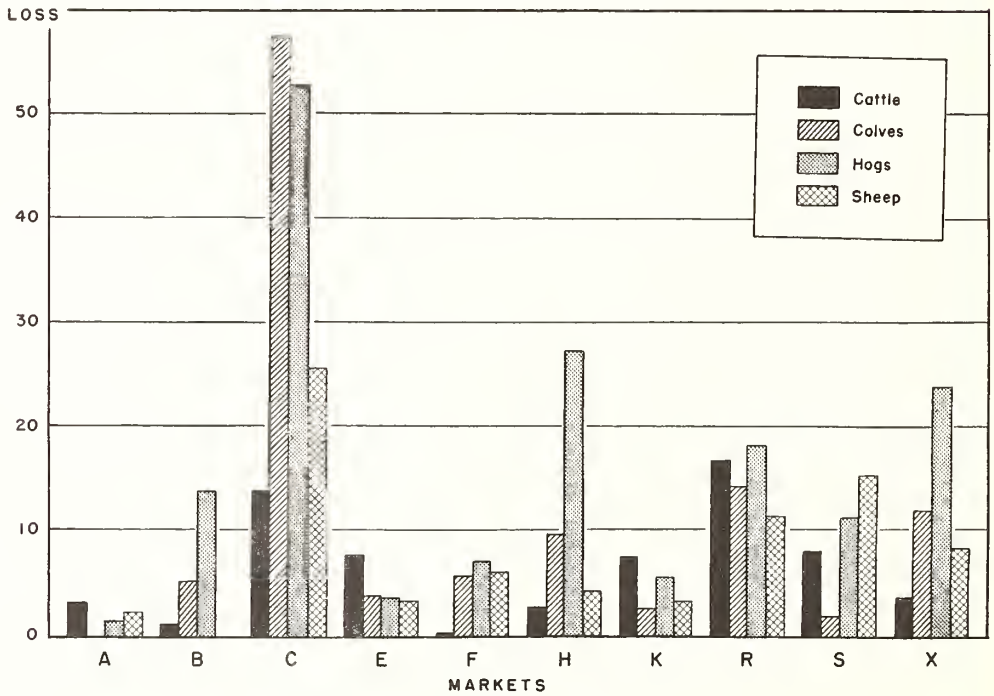
DEAD LOSS PER 10,000 HEAD AT VARIOUS MARKETS - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 17 through 20

APPENDIX FIGURE 4

CRIPPLE LOSS PER 10,000 HEAD AT VARIOUS MARKETS - TRUCK RECEIPTS



NOTE: For relationship of individual markets to graphic presentation see appendix tables 17 through 20

Appendix table 1. - *Cattle: Percentage distribution of rail receipts by mileage blocks*

Miles hauled	Market A	Market B	Market C	Market E	Market F	Market K	Market R	Market S	8 markets
Under 50	.75	.68	(1)	(1)	.44	(1)	(1)	(1)	.51
51 - 100	2.93	3.61	(1)	13.15	2.24	.32	(1)	.07	2.39
101 - 250	17.16	25.04	18.91	60.72	15.37	13.19	(1)	.21	16.10
251 - 500	24.29	13.81	23.69	18.96	44.20	42.19	6.96	1.85	20.20
501 - 750	43.95	32.76	31.91	2.95	28.55	38.99	7.55	13.88	33.27
751 - 1000	9.52	7.69	12.42	(1)	5.16	3.81	38.60	19.35	10.29
1001 - 1500	1.40	16.40	13.07	4.22	4.04	.63	41.36	58.44	16.07
1501 - 1750	(1)	.01	(1)	(1)	(1)	.43	3.12	4.84	.88
1751 - 2000	(1)	(1)	(1)	(1)	(1)	.44	1.67	1.29	.27
Over 2000	(1)	(1)	(1)	(1)	(1)	(1)	.74	.07	.02
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1]No receipts from this mileage block occurred in sample.

Appendix table 2. - *Calves: Percentage distribution of rail receipts by mileage blocks*

Miles hauled	Market A	Market B	Market C	Market E	Market F	Market K	Market R	Market S	8 markets
Under 50	.24	(1)	(1)	(1)	.02	(1)	(1)	(1)	.11
51 - 100	.50	13.30	(1)	(1)	1.24	(1)	(1)	.01	1.89
101 - 250	11.87	31.65	72.69	89.67	20.86	57.48	(1)	.14	14.26
251 - 500	26.60	17.76	24.01	10.33	38.88	17.09	52.60	3.74	20.52
501 - 750	50.05	30.35	3.30	(1)	27.48	24.56	12.78	12.59	32.45
751 - 1000	9.96	5.66	(1)	(1)	6.58	.65	.27	9.76	8.47
1001 - 1500	.78	1.28	(1)	(1)	4.94	.22	21.30	57.82	17.66
1501 - 1750	(1)	(1)	(1)	(1)	(1)	(1)	13.05	13.21	3.86
1751 - 2000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	.76	.22
Over 2000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1.97	.56
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1]No receipts from this mileage block occurred in sample.

Appendix table 3. - *Hogs: Percentage distribution of rail receipts by mileage blocks*

Miles hauled	Market A	Market B	Market C	Market E	Market F	Market K	Market R	Market S	8 markets
Under 50	(1)	(1)	(1)	(1)	.34	(1)	(1)	(1)	.01
51 - 100	(1)	.41	1.21	(1)	(1)	(1)	(1)	(1)	.29
101 - 250	3.60	1.06	86.93	93.90	1.04	.61	(1)	(1)	1.65
251 - 500	.61	1.85	11.86	6.10	43.67	6.79	1.07	(1)	3.46
501 - 750	3.84	.42	(1)	(1)	27.20	1.30	.11	(1)	1.71
750 - 1000	81.82	27.10	(1)	(1)	27.75	7.30	.10	(1)	26.79
1001 - 1500	10.13	69.10	(1)	(1)	(1)	56.73	.67	4.34	50.67
1501 - 1750	(1)	(1)	(1)	(1)	(1)	26.13	22.48	8.43	4.05
1751 - 2000	(1)	(1)	(1)	(1)	(1)	1.14	66.44	87.23	10.13
Over 2000	(1)	.06	(1)	(1)	(1)	(1)	9.13	(1)	1.24
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1]No receipts from this mileage occurred in sample.

Appendix table 4. - *Sheep: Percentage distribution of rail receipts by mileage blocks*

Miles hauled	Market A	Market B	Market C	Market E	Market F	Market K	Market R	Market S	8 markets
Under 50	1.87	1.37	(1)	(1)	(1)	(1)	(1)	(1)	1.49
51 - 100	3.24	18.36	(1)	7.97	.14	5.02	(1)	(1)	6.22
101 - 250	33.48	41.33	7.34	44.27	23.37	14.87	(1)	(1)	33.12
251 - 500	39.22	19.82	13.46	46.32	32.54	67.06	24.45	5.96	34.28
501 - 750	14.65	11.09	42.86	1.44	21.22	10.78	16.42	14.86	14.52
751 - 1000	7.38	6.58	15.75	(1)	11.53	1.18	38.68	11.53	8.01
1001 - 1500	.16	1.45	18.56	(1)	11.20	1.09	20.45	65.48	2.33
1501 - 1750	(1)	(1)	2.03	(1)	(1)	(1)	(1)	(1)	.02
1751 - 2000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	2.17	.01
Over 2000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1]No receipts from this mileage block occurred in sample.

Appendix table 5. - *Cattle: Percentage distribution of truck receipts by mileage blocks*

Miles hauled	Market A	Market B	Market C	Market E	Market F	Market H	Market K	Market R	Market S	Market X	10 markets
Under 50	15.46	32.76	9.22	33.09	28.93	22.54	43.56	12.61	29.39	93.17	25.56
51 - 100	20.59	9.63	26.44	35.62	38.18	37.64	38.45	17.98	10.68	4.35	26.17
101 - 150	23.99	15.53	23.76	24.39	13.82	16.46	10.22	23.02	6.80	1.94	15.98
151 - 200	22.39	21.76	17.16	5.47	9.39	7.38	2.41	21.27	3.95	.48	10.00
201 - 250	13.98	19.17	5.17	.55	4.13	6.64	2.78	6.79	13.32	.06	7.20
251 - 300	.16	.93	8.84	.35	2.56	1.82	1.47	3.10	7.80	(1)	3.73
301 - 350	1.74	.12	3.08	.36	.61	3.09	.08	3.64	1.90	(1)	2.11
351 - 400	(1)	(1)	.62	.17	.79	1.56	(1)	1.44	1.57	(1)	1.08
401 - 500	(1)	(1)	2.09	(1)	1.03	1.58	(1)	6.86	11.62	(1)	4.17
501 - 600	(1)	.10	3.45	(1)	.56	.60	1.00	1.00	8.06	(1)	2.40
601 - 750	(1)	(1)	.17	(1)	(2)	.44	(1)	1.55	.88	(1)	.55
Over 750	1.69	(1)	(1)	(1)	(2)	.25	.03	.74	4.03	(1)	1.05
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1]No receipts from this mileage block occurred in sample.
[2]Less than .01 percent.

Appendix table 6. - *Calves: Percentage distribution of truck receipts by mileage blocks*

Miles hauled	Market A	Market B	Market C	Market E	Market F	Market H	Market K	Market R	Market S	Market X	10 markets
Under 50	14.09	32.87	19.21	32.97	22.85	12.97	48.08	13.71	18.31	96.62	25.35
50 - 100	40.04	5.98	41.22	36.90	23.66	17.52	37.68	12.10	14.96	.53	25.41
101 - 150	43.40	6.68	13.85	24.75	19.23	7.44	7.74	41.42	6.71	2.67	19.83
151 - 200	1.34	41.81	9.08	4.93	15.08	10.28	2.52	5.96	9.47	.06	8.29
201 - 250	.23	10.05	3.41	.25	9.10	10.37	2.78	6.10	10.34	.12	5.11
251 - 300	.23	(1)	8.16	.02	5.55	7.93	.79	1.79	3.12	(1)	3.56
301 - 350	.67	2.61	2.91	.18	1.48	12.70	.28	3.46	2.23	(1)	2.61
351 - 400	(1)	(1)	.17	(1)	1.11	3.96	(1)	4.07	.95	(1)	1.32
401 - 500	(1)	(1)	.27	(1)	1.21	9.98	.08	8.98	11.58	(1)	4.16
501 - 600	(1)	(1)	.36	(1)	.61	6.61	(1)	1.78	4.03	(1)	1.40
601 - 750	(1)	(1)	1.37	(1)	(1)	(1)	(1)	.28	1.48	(1)	.58
Over 750	(1)	(1)	(1)	(1)	.12	.24	.05	.35	16.82	(1)	2.38
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1]No receipts from this mileage block occurred in sample.

Appendix table 7. - *Hogs: Percentage distribution of truck receipts by mileage blocks*

Miles hauled	Market A	Market B	Market C	Market E	Market F	Market H	Market K	Market R	Market S	Market X	10 markets
Under 50	2.20	33.27	12.78	42.03	6.27	28.45	38.28	65.84	43.39	98.29	30.74
50 - 100	7.27	5.03	36.93	27.90	4.95	45.54	40.45	15.79	18.52	1.47	29.99
101 - 150	8.75	12.92	22.00	23.55	3.85	15.57	9.83	6.99	22.67	.12	14.77
151 - 200	19.41	15.74	17.07	2.64	7.32	5.07	.84	1.91	1.87	.07	8.12
201 - 250	4.10	12.30	1.58	.67	6.55	3.38	4.75	6.15	3.94	(1)	3.51
251 - 300	(1)	.75	8.32	.99	14.34	.24	5.42	.25	2.48	(1)	4.13
301 - 350	(1)	.28	.67	.48	9.68	1.31	(1)	.51	1.14	(1)	1.68
351 - 400	(1)	(1)	.27	(1)	12.04	.09	(1)	.79	2.22	.05	1.51
401 - 500	(1)	(1)	.13	(1)	11.75	.14	(1)	.23	1.54	(1)	1.33
501 - 600	(1)	(1)	.15	(1)	21.52	.19	(1)	(1)	1.95	(1)	2.29
601 - 750	1.85	(1)	.10	(1)	1.73	(1)	(1)	(1)	(1)	(1)	.24
Over 750	56.42	19.71	(1)	1.74	(1)	.02	.43	1.54	.28	(1)	1.69
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1]No receipts from this mileage block occurred in sample.

Appendix table 8. - *Sheep: Percentage distribution of truck receipts by mileage blocks*

Miles hauled	Market A	Market B	Market C	Market E	Market F	Market H	Market K	Market R	Market S	Market X	10 markets
Under 50	.06	52.03	9.85	25.90	6.74	20.85	21.02	3.53	12.41	98.73	11.45
50 - 100	8.35	14.59	21.35	39.57	31.02	28.01	30.64	9.47	8.33	1.16	17.80
101 - 150	10.76	12.32	15.97	27.54	7.32	18.26	4.75	27.96	28.82	(1)	22.58
151 - 200	37.40	17.60	14.89	4.71	11.72	13.65	7.02	12.49	5.88	(1)	11.99
201 - 250	32.44	3.25	12.25	.70	17.16	8.40	22.94	7.17	7.30	(1)	8.79
251 - 300	(1)	.21	15.99	.95	18.10	.30	.12	4.00	18.49	(1)	5.09
301 - 350	4.06	(1)	5.28	.48	3.63	3.54	(1)	13.14	1.35	.11	8.24
351 - 400	1.65	(1)	.03	.01	2.94	4.13	(1)	1.66	11.12	(1)	1.59
401 - 500	(1)	(1)	.14	.11	.97	.80	(1)	13.70	5.62	(1)	7.71
501 - 600	(1)	(1)	3.47	.03	.40	(1)	13.51	4.22	.68	(1)	2.97
601 - 750	(1)	(1)	.78	(1)	(1)	(1)	(1)	2.66	(1)	(1)	1.49
Over 750	5.28	(1)	(1)	(1)	(1)	2.06	(1)	(1)	(1)	(1)	.30
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1]No receipts from this mileage block occurred in sample.

Appendix table 9. - *Cattle: Dead and cripple loss per 10,000 head by distance hauled - rail receipts*

Miles hauled	Market A		Market B		Market C		Market E		Market F		Market K		Market R		Market S		8 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
0 - 50	(1)	13.67	(1)	(1)	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	7.47
51 - 100	(1)	1.74	1.86	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)	.79	.79
101 - 250	.59	2.67	.26	1.07	(1)	80.51	(1)	14.93	1.36	(1)	(1)	7.12	(2)	(2)	(1)	(1)	.47	3.29
251 - 500	.84	3.15	.97	2.44	6.42	9.54	(1)	(1)	.47	1.42	1.48	5.09	(1)	41.75	6.08	6.08	1.03	3.28
501 - 750	.58	2.44	1.23	3.50	9.54	(1)	(1)	(1)	1.47	.73	(1)	7.23	57.69	19.23	9.73	21.08	1.70	4.26
751 - 1000	1.61	2.14	2.63	.87	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	22.58	3.49	28.51	2.23	11.03
1001 - 1500	(1)	3.64	(1)	.82	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	56.19	2.89	29.48	1.76	20.50
1501 - 1750	(2)	(2)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	46.51	(1)	9.31	27.93	10.71	25.70
1751 - 2000	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	8.76	78.87	7.16	64.46
Over 2000	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)

[1]No deads (or) cripples in shipments in sample.
[2]No receipts from this mileage block occurred in sample.

Appendix table 10. - *Calves: Dead and cripple loss per 10,000 head by distance hauled - rail receipts*

Miles hauled	Market A		Market B		Market C		Market E		Market F		Market K		Market R		Market S		8 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
0 - 50	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)
51 - 100	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)
101 - 250	(1)	5.07	(1)	3.53	12.95	38.96	(1)	(1)	(1)	4.94	(1)	(1)	(2)	(2)	(1)	(1)	.89	6.28
251 - 500	(1)	(1)	6.29	(1)	39.21	(1)	(1)	(1)	2.65	2.65	(1)	(1)	(1)	(1)	(1)	12.10	1.87	1.24
501 - 750	2.40	1.80	(1)	3.68	(1)	(1)	(2)	(2)	18.76	(1)	(1)	22.22	(1)	(1)	(1)	14.36	3.54	3.54
751 - 1000	3.02	6.04	(1)	(1)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	64.87	1.51	24.16
1001 - 1500	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	7.03	72.74	6.52	67.39
1501 - 1750	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	6.84	61.62	6.62	59.62
1751 - 2000	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)
Over 2000	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)

[1]No deads (or) cripples in shipments in sample.
[2]No receipts from this mileage block occurred in sample.

Appendix table 11. - *Hogs: Dead and cripple loss per 10,000 head by distance hauled - rail receipts*

Distance hauled	Market A		Market B		Market C		Market E		Market F		Market K		Market R		Market S		8 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
0 - 50	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)
51 - 100	(1)	(1)	3.90	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3.82	(2)
101 - 250	(2)	3.69	9.10	7.58	12.89	36.61	(2)	32.89	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	7.35	16.04
251 - 500	(2)	(2)	3.45	6.91	(2)	(2)	(2)	(2)	13.20	2.64	4.38	(2)	(2)	15.76	(1)	(1)	7.98	4.46
501 - 750	(2)	(2)	22.23	34.64	(1)	(1)	(1)	(1)	9.53	8.47	22.88	(2)	78.12	78.12	(1)	(1)	10.97	11.62
751 - 1000	3.25	4.55	2.01	4.20	(1)	(1)	(1)	(1)	3.11	1.03	(2)	12.23	(2)	(2)	(1)	(1)	2.34	4.24
1001 - 1500	3.94	3.94	2.78	2.97	(1)	(1)	(1)	(1)	(1)	(1)	4.72	9.45	12.54	62.73	(2)	32.25	2.89	3.39
1501 - 1750	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	14.82	3.42	7.49	36.33	(2)	(2)	8.99	27.26
1751 - 2000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	10.77	34.85	4.00	15.23	9.80	32.04
Over 2000	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	11.98	30.43	(1)	(1)	11.57	29.38

[1]No receipts from this mileage block occurred in sample.
[2]No deads (or) cripples in shipments in sample.

Appendix table 12. - *Sheep: Dead and cripple loss per 10,000 head by distance hauled - rail receipts*

Distance hauled	Market A		Market B		Market C		Market E		Market F		Market K		Market R		Market S		8 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
0 - 50	6.06	.55	2.20	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	5.28	.44
51 - 100	3.82	.63	8.56	.49	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	6.75	.52
101 - 250	4.77	1.47	8.04	1.46	23.20	(1)	43.18	6.16	5.29	.93	(1)	(1)	(2)	(2)	(2)	(2)	6.18	1.48
251 - 500	1.76	.73	7.01	.60	12.65	44.27	.04	.01	2.46	1.79	2.42	(1)	4.96	29.77	(1)	52.63	2.60	1.32
501 - 750	2.04	1.12	4.36	1.09	7.94	1.98	(1)	(1)	3.77	1.37	7.54	(1)	14.77	14.77	7.03	14.06	3.11	1.49
751 - 1000	2.79	1.11	1.37	(1)	(1)	(1)	(2)	(2)	1.26	(1)	(1)	(1)	5.22	7.31	9.05	36.23	2.54	1.55
1001 - 1500	6.57	6.57	25.00	(1)	(1)	(1)	(2)	(2)	4.55	1.95	(1)	(1)	3.95	1.97	7.97	11.16	7.61	3.38
1501 - 1750	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)
1751 - 2000	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)
Over 2000	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)

[1]No deads (or) cripples in shipments in sample.
[2]No receipts from this mileage block occurred in sample.

Appendix table 13. - *Cattle: Dead and cripple loss per 10,000 head by months - rail receipts*

Month	Market A		Market B		Market C		Market E		Market F		Market K		Market R		Market S		8 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
January	1.12	5.61	.69	1.39	(1)	(1)	(2)	(2)	(2)	(2)	(2)	5.42	21.05	164.94	9.61	19.22	2.15	7.40
February	2.32	(2)	2.57	6.44	(1)	(1)	(3)	(3)	4.91	(2)	(2)	4.30	(2)	(2)	(2)	21.55	2.00	6.50
March	(2)	9.22	.94	2.83	(1)	(1)	(2)	(2)	1.11	1.11	(2)	3.27	(2)	59.17	3.75	26.31	1.18	7.68
April	(2)	(2)	1.16	4.64	(2)	13.47	(2)	(2)	1.12	1.12	(2)	9.54	(2)	24.44	4.98	37.38	1.19	7.76
May	(2)	3.15	1.15	(2)	(1)	(1)	(2)	(2)	(2)	(2)	2.60	2.60	(2)	(2)	10.00	45.00	1.76	5.30
June	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	4.35	(2)	127.38	(2)	27.94	(2)	5.19
July	.62	2.49	.69	3.49	21.09	(2)	(2)	(2)	(2)	(2)	2.40	(2)	(2)	(2)	4.57	34.31	1.69	8.27
August	.55	4.99	(2)	1.73	(1)	(1)	(2)	(2)	2.37	2.37	(2)	6.09	12.62	12.62	3.53	37.13	1.41	11.54
September	.29	2.66	.49	.99	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	32.67	(2)	5.81	30.53	1.16	4.96
October	(2)	1.87	.85	1.28	(2)	(2)	(2)	(2)	(2)	(2)	(2)	12.71	(2)	15.38	.79	22.17	.31	4.52
November	.38	2.68	1.51	1.51	(1)	(1)	(2)	44.54	(2)	2.66	(2)	25.07	(2)	(2)	5.21	29.30	1.79	9,93
December	4.60	1.72	1.24	1.24	7.89	43.40	(2)	(2)	(1)	(1)	(2)	12.11	(2)	67.00	6.50	18.71	4.39	11.11
Annual loss	.71	2.70	.87	1.95	4.56	18.26	(2)	9.07	.83	.83	.62	5.95	5.82	36.31	4.39	28.15	1.49	7.46

[1]This month not included in sample.
[2]No deads (or) cripples in shipments in sample.
[3]No receipts in this month occurred in sample.

Appendix table 14. - *Calves: Dead and cripple loss per 10,000 head by months - rail receipts*

Month	Market A		Market B		Market C		Market E		Market F		Market K		Market R		Market S		8 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
January	(1)	11.53	(1)	(1)	(2)	(2)	(1)	(1)	(1)	16.12	(1)	(1)	(1)	(1)	(1)	50.59	(1)	12.95
February	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	61.72	(3)	(3)	20.00	40.00	5.89	17.67
March	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)	36.21	(1)	(1)	(1)	(3)	(3)	7.97	79.74	13.30	19.00
April	(1)	(1)	(1)	24.03	(1)	36.23	(1)	(1)	(1)	(1)	(1)	(1)	(3)	(3)	(1)	52.35	(1)	6.85
May	(1)	(1)	(1)	(1)	(2)	(2)	(3)	(3)	(1)	(1)	(1)	(1)	(3)	(3)	(1)	64.51	(1)	31.44
June	(1)	169.49	(1)	(1)	(2)	(2)	(3)	(3)	(1)	(1)	(1)	(1)	(3)	(3)	(1)	134.37	(1)	70.11
July	(1)	(1)	(1)	(1)	(1)	(1)	(3)	(3)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	52.08	(1)	39.49
August	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	4.00	64.12	2.84	45.46
September	(1)	(1)	20.20	(1)	(2)	(2)	(1)	(1)	(1)	35.58	(1)	(1)	(1)	(1)	15.33	92.02	10.57	52.88
October	3.76	2.50	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	9.19	39.86	3.85	9.63
November	.86	1.72	(1)	2.88	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1.88	43.44	.88	11.45
December	1.94	(1)	(1)	(1)	41.23	41.23	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	50.44	2.94	18.64
Annual loss	1.51	2.10	1.11	2.23	18.83	28.24	(1)	(1)	6.18	2.06	(1)	5.95	(1)	(1)	4.97	58.79	3.19	18.55

[1]No deads (or) cripples in shipments in sample.
[2]This month not included in sample.
[3]No receipts in this month occurred in sample.

Appendix table 15. - *Hogs: Dead and cripple loss per 10,000 head by months - rail receipts*

Month	Market A		Market B		Market C		Market E		Market F		Market K		Market R		Market S		8 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
January	4.59	1.53	2.43	4.16	(1)	(1)	(2)	(2)	16.99	16.99	27.50	3.05	11.67	45.41	(2)	24.30	3.78	6.48
February	7.47	2.49	2.23	3.67	(1)	(1)	(2)	(2)	(2)	(2)	(2)	15.12	16.49	32.98	(2)	(2)	3.33	5.64
March	(2)	9.03	4.57	4.43	(1)	(1)	(2)	(2)	(2)	2.36	(2)	(2)	12.29	27.65	(2)	(2)	4.59	6.73
April	4.80	3.20	2.99	2.67	(2)	76.33	(3)	(3)	4.78	4.78	(2)	(2)	21.18	33.88	18.86	18.86	5.04	6.48
May	8.89	7.11	3.74	4.68	(1)	(1)	(2)	(2)	9.73	(2)	(2)	(2)	17.73	36.83	(2)	26.97	7.34	11.69
June	(2)	2.56	3.69	2.46	(1)	(1)	(3)	(3)	9.18	4.59	8.58	(2)	8.07	26.25	11.00	11.00	4.53	5.87
July	(2)	(2)	2.55	2.55	(2)	44.74	(2)	(2)	10.21	(2)	3.96	(2)	4.48	35.90	16.47	41.18-	3.33	8.45
August	5.17	(2)	2.02	1.34	(1)	(1)	(2)	(2)	5.29	(2)	2.31	11.55	5.09	36.42	8.30	33.22	3.35	11.13
September	(2)	6.23	2.10	2.10	(1)	(1)	(2)	(2)	44.60	2.34	2.54	(2)	2.07	33.17	(2)	(2)	5.10	7.56
October	3.40	6.81	1.60	3.21	(2)	(2)	(2)	(2)	(2)	18.76	(2)	(2)	11.62	33.57	(2)	(2)	3.34	8.73
November	2.01	6.03	1.95	3.61	(1)	(1)	(2)	140.84	(2)	(2)	(2)	9.97	8.12	42.96	(2)	16.72	2.80	11.20
December	1.78	2.67	4.18	5.37	21.18	16.94	(2)	42.19	(1)	(1)	14.06	15.62	10.12	27.00	(2)	9.78	6.31	10.91
Annual loss	3.06	4.25	2.74	3.54	11.21	31.39	(2)	30.88	9.22	3.74	7.15	7.15	10.10	34.77	3.49	14.68	4.19	8.19

[1]This month not included in sample.
[2]No deads (or) cripples in shipments in sample.
[3]No receipts in this month fell in sample.

Appendix table 16. - *Sheep: Dead and cripple loss per 10,000 head by months - rail receipts*

Month	Market A		Market B		Market C		Market E		Market F		Market K		Market R		Market S		8 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
January	11.14	1.31	10.70	1.35	(1)	(1)	(2)	(2)	9.30	(2)	(3)	(3)	24.18	(2)	(2)	(2)	11.04	1.21
February	6.30	1.71	36.57	.61	(1)	(1)	28.61	(2)	4.24	5.65	(3)	(3)	5.05	5.05	(3)	(3)	16.99	2.20
March	4.14	2.48	3.70	(2)	(1)	(1)	(3)	(3)	4.46	4.46	(3)	(3)	(2)	(2)	(3)	(3)	4.22	3.16
April	4.27	1.18	3.28	9.86	5.57	2.78	(3)	(3)	1.01	1.52	(2)	(2)	(3)	(3)	(2)	62.11	3.34	2.83
May	3.48	.73	1.07	(2)	(1)	(1)	(3)	(3)	1.87	(2)	(2)	(2)	(3)	(3)	(3)	(3)	3.02	.57
June	2.77	.69	(2)	(2)	(1)	(1)	(2)	85.47	21.04	(2)	(2)	(2)	34.07	17.03	(3)	(3)	4.43	1.18
July	.27	.41	2.37	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	21.03	(2)	.43	.37
August	1.49	.70	3.92	(2)	(1)	(1)	(2)	7.83	(2)	(2)	7.44	(2)	28.05	70.12	12.59	(2)	1.70	.87
September	4.02	1.04	2.07	(2)	(1)	(1)	4.76	(2)	7.31	(2)	(2)	(2)	1.76	19.39	6.21	31.07	3.65	1.19
October	5.30	1.22	3.14	.32	12.72	(2)	40.16	2.23	1.40	.56	3.62	(2)	(2)	47.79	3.10	27.95	4.57	1.41
November	2.26	2.26	11.27	.77	(1)	(1)	49.72	11.04	3.07	3.07	(2)	(2)	7.34	2.44	7.67	7.67	5.18	2.42
December	3.40	1.57	15.39	2.33	6.58	23.06	(2)	(2)	(1)	(1)	(2)	(2)	(2)	6.03	(2)	(2)	5.68	2.46
Annual loss	3.04	1.07	7.25	.93	6.81	6.81	21.16	3.41	3.49	1.31	2.44	(2)	6.47	12.94	7.31	16.71	4.27	1.40

[1]This month not included in sample.
[2]No deads (or) cripples in shipments in sample.
[3]No receipts in this month fell in sample.

Appendix table 17. - *Cattle: Dead and cripple loss per 10,000 head by mileage block - truck receipts*

Miles hauled	Market A		Market B		Market C		Market E		Market F		Market H		Market K		Market R		Market S		Market X		10 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
0 - 50	(1)	(1)	(1)	(1)	8.39	16.79	1.65	7.44	(1)	(1)	1.71	1.71	(1)	6.52	(1)	12.55	1.48	6.31	5.22	4.17	1.59	5.06
51 - 100	(1)	5.24	(1)	(1)	4.88	13.67	1.53	6.91	.51	1.02	.51	2.30	(1)	9.85	(1)	24.82	1.02	10.21	(1)	(1)	.95	7.28
101 - 150	(1)	4.50	(1)	7.03	3.25	7.60	(1)	7.85	1.42	(1)	1.76	2.93	(1)	4.63	.62	15.63	1.60	19.24	(1)	(1)	1.27	8.37
151 - 200	(1)	17.78	(1)	(1)	(1)	10.53	(1)	15.00	2.09	(1)	1.30	(1)	(1)	19.68	.67	14.89	(1)	5.52	(1)	(1)	.68	8.16
201 - 250	(1)	(1)	(1)	(1)	4.99	44.93	(1)	(1)	(1)	(1)	4.36	5.81	(1)	(1)	4.23	10.59	2.45	9.01	(1)	(1)	2.83	9.13
251 - 300	(1)	(1)	(1)	(1)	14.61	17.53	(1)	(1)	(1)	(1)	10.57	21.14	(1)	(1)	(1)	4.64	(1)	5.59	(2)	(2)	4.25	9.11
301 - 350	(1)	(1)	(1)	(1)	25.12	25.12	(1)	(1)	(1)	(1)	3.12	(1)	(1)	(1)	3.95	39.15	(1)	(1)	(2)	(2)	5.38	13.98
351 - 400	(2)	(2)	(2)	(2)	42.01	(1)	(1)	163.93	(1)	(1)	(1)	6.18	(2)	(2)	(1)	19.98	(1)	27.79	(2)	(2)	2.10	16.81
401 - 500	(2)	(2)	(2)	(2)	86.31	12.33	(2)	(2)	(1)	(1)	(1)	6.12	(2)	(2)	(1)	14.68	2.81	5.63	(2)	(2)	5.43	8.15
501 - 600	(2)	(2)	(1)	(1)	29.89	7.47	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	14.45	1.35	5.41	(2)	(2)	4.73	5.68
601 - 750	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	9.29	12.40	37.22	(2)	(2)	4.16	16.64
Over 750	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(2)	(2)	19.60	(1)	5.41	5.41	(2)	(2)	6.48	4.32

[1]No deade (or) cripples in shipments in sample.
[2]No receipts in this block occurred in sample.

Appendix table 18. - *Calves: Dead and cripple loss per 10,000 head by mileage block - truck receipts*

Miles hauled	Market A		Market B		Market C		Market E		Market F		Market H		Market K		Market R		Market S		Market X		10 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
0 - 50	(1)	(1)	(1)	(1)	31.31	76.85	2.29	2.29	(1)	8.38	(1)	37.73	(1)	(1)	(1)	(1)	(1)	(1)	(1)	12.15	6.09	17.76
51 - 100	(1)	(1)	(1)	(1)	23.87	62.34	(1)	2.04	(1)	(1)	55.86	13.96	(1)	(1)	(1)	4.99	(1)	(1)	(1)	(1)	11.13	25.31
101 - 150	(1)	(1)	(1)	(1)	39.47	51.32	(1)	9.16	(1)	(1)	(1)	(1)	(1)	32.89	2.91	5.82	(1)	(1)	(1)	(1)	7.78	13.62
151 - 200	(1)	(1)	(1)	(1)	42.14	60.20	(1)	(1)	12.70	(1)	(1)	(1)	(1)	(1)	(1)	50.65	(1)	10.00	(1)	(1)	12.41	24.82
201 - 250	(1)	(1)	(1)	50.00	(1)	64.20	(1)	(1)	63.15	42.10	(1)	(1)	(1)	(1)	(1)	19.80	(1)	(1)	(1)	(1)	7.55	22.66
251 - 300	(1)	(1)	(2)	(2)	6.70	6.70	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	33.67	(1)	30.30	(2)	(2)	3.61	10.83
301 - 350	(1)	(1)	(1)	(1)	262.66	56.28	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	42.37	(1)	(2)	(2)	73.96	14.79
351 - 400	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(2)	(2)	74.07	162.96	(1)	(1)	(2)	(2)	48.68	107.10
401 - 500	(2)	(2)	(2)	(2)	204.08	(1)	(2)	(2)	(1)	(1)	(1)	24.50	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	3.09	3.09
501 - 600	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(2)	(2)	34.01	(1)	(1)	(1)	(2)	(2)	9.19	(1)
601 - 750	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)
Over 750	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)

[1]No deade (or) cripples in shipments in eample.
[2]No receipts in this block occurred in eample.

Appendix table 19. - *Hogs: Dead and cripple loss per 10,000 head by mileage block - truck receipts*

Miles hauled	Market A		Market B		Market C		Market E		Market F		Market H		Market K		Market R		Market S		Market X		10 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
0 - 50	(1)	(1)	(1)	(1)	11.67	32.52	(1)	2.93	4.97	(1)	4.78	15.04	(1)	3.63	1.37	19.30	(1)	15.20	5.74	34.45	4.01	19.17
51 - 100	(1)	(1)	(1)	(1)	17.02	50.22	4.42	4.42	(1)	(1)	17.72	27.12	(1)	10.30	1.43	21.56	2.73	5.47	(1)	(1)	14.53	32.28
101 - 150	(1)	(1)	(1)	(1)	23.74	46.02	(1)	5.24	(1)	8.10	29.36	36.86	(1)	(1)	58.42	12.98	2.23	2.23	(1)	(1)	23.40	32.76
151 - 200	21.81	7.27	(1)	(1)	16.85	55.56	(1)	(1)	27.79	8.51	38.98	38.39	(1)	(1)	11.86	23.72	(1)	(1)	(1)	(1)	21.47	42.20
201 - 250	(1)	(1)	(1)	22.72	26.95	53.90	(1)	(1)	9.52	4.76	14.38	48,92	(1)	(1)	14.76	3.69	12.90	12.90	(2)	(2)	13.71	24.85
251 - 300	(2)	(2)	(1)	(1)	14.09	105.08	(1)	(1)	8.69	10.86	(1)	(1)	(1)	(1)	(1)	90.90	40.98	20.49	(2)	(2)	12.37	64.76
301 - 350	(2)	(2)	(1)	(1)	(1)	63.49	(1)	(1)	19.31	16.01	7.42	29.69	(2)	(2)	(1)	(1)	44.44	(1)	(2)	(2)	14.33	23.29
351 - 400	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	7.76	(1)	(1)	202.02	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	5.98	3.99
401 - 500	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	13.26	7.96	205.47	68,49	(2)	(2)	(1)	(1)	132.01	(1)	(2)	(2)	18.01	18.01
501 - 600	(2)	(2)	(2)	(2)	212.76	354.60	(2)	(2)	13.03	8.69	102.56	256.41	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	18.36	20.98
601 - 750	(1)	(1)	(2)	(2)	(1)	(1)	(2)	(2)	107.91	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	76.33	(1)
Over 750	5.00	(1)	(1)	56.73	(2)	(2)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	29.58	14.79	(1)	(1)	(2)	(2)	7.10	8.88

[1]No deads (or) cripples in shipments in sample.
[2]No receipts in this block occurred in sample.

Appendix table 20. - *Sheep: Dead and cripple loss per 10,000 head by mileage block - truck receipts*

Miles hauled	Market A		Market B		Market C		Market E		Market F		Market H		Market K		Market R		Market S		Market X		10 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
0 - 50	(1)	(1)	(1)	(1)	32.45	24.34	.58	4.12	(1)	(1)	14.47	3.61	(1)	6.17	9.73	5.40	(1)	17.60	(1)	8.50	4.73	5.82
51 - 100	(1)	(1)	(1)	(1)	29.96	11.23	4.24	3.85	16.80	(1)	17.50	5.38	6.35	6.35	2.81	1.61	(1)	(1)	(1)	(1)	8.66	3.16
101 - 150	5.38	(1)	(1)	(1)	27.54	15.02	1.66	2.77	5.94	50.94	37.19	4.13	(1)	(1)	4.49	15.54	7.58	22.74	(2)	(2)	6.37	13.58
151 - 200	9.27	6.19	(1)	(1)	37.60	42.97	(1)	(1)	51.89	1.85	11.05	(1)	(1)	(1)	6.41	22.59	(1)	74.34	(2)	(2)	12.70	16.88
201 - 250	10.71	(1)	(1)	(1)	48.97	19.58	(1)	(1)	25.31	7.59	13.47	8.98	(1)	(1)	11.69	13.28	(1)	(1)	(2)	(2)	15.66	9.25
251 - 300	(2)	(2)	(1)	(1)	55.00	45.00	16.02	(1)	15.60	1.20	(1)	(1)	(1)	(1)	4.76	4.76	(1)	(1)	(2)	(2)	16.79	9.82
301 - 350	(1)	(1)	(2)	(2)	113.63	30.30	(1)	(1)	5.97	(1)	74.62	(1)	(2)	(2)	7.25	6.67	(1)	(1)	(2)	(2)	12.15	6.83
351 - 400	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)	36.98	22.18	63.92	9.13	(2)	(2)	2.31	11.50	(1)	19.64	(2)	(2)	17.10	13.15
401 - 500	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	22.32	(1)	(1)	(1)	(2)	(2)	4.45	7.23	(1)	(1)	(2)	(2)	4.59	7.03
501 - 600	(2)	(2)	(2)	(2)	161.47	11.53	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)	5.42	9.03	(1)	(1)	(2)	(2)	14.04	7.72
601 - 750	(2)	(2)	(2)	(2)	51.28	51.28	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	5.73	11.47	(2)	(2)	(2)	(2)	6.97	12.56
Over 750	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)

[1]No deads (or) cripples in shipments in sample.
[2]No receipts in this block occurred in sample.

Appendix table 21. - *Cattle: Dead and cripple loss per 10,000 head by months - truck receipts*

Month	Market A		Market B		Market C		Market E		Market F		Market H		Market K		Market R		Market S		Market X		10 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
January	(1)	3.35	(2)	(2)	4.51	13.54	(1)	21.23	(1)	(1)	(1)	2.59	(2)	(2)	(1)	12.84	1.36	8.20	19.60	4.90	1.70	6.53
February	(2)	(2)	(2)	(2)	3.95	3.95	(1)	26.59	(1)	(1)	1.10	1.10	(2)	(2)	(1)	12.80	5.26	1.75	(1)	(1)	1.98	3.57
March	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	1.65	2.47	(1)	(2)	(2)	(1)	22.17	(1)	4.69	(1)	(1)	.82	4.14
April	(1)	8.21	(2)	(2)	4.95	4.95	(1)	5.64	1.89	(1)	1.32	10.61	(1)	(1)	2.81	36.61	(1)	5.55	6.30	18.91	1.93	10.00
May	(2)	(2)	(2)	(2)	4.09	4.09	(1)	8.92	(1)	(1)	(1)	1.24	(1)	20.08	(1)	34.76	1.48	5.18	(2)	(2)	.90	7.57
June	(2)	(2)	(2)	(2)	9.73	14.59	(1)	(1)	(1)	(1)	5.90	3.54	(1)	11.79	(1)	23.28	2.49	9.13	(2)	(2)	2.96	8.00
July	(1)	(1)	(2)	(2)	3.93	15.47	(1)	(1)	(1)	(1)	1.19	(1)	(1)	8.96	(1)	15.12	1.21	12.13	(1)	(1)	.95	8.34
August	(2)	(2)	(2)	(2)	3.55	7.11	(1)	5.22	(1)	(1)	(1)	(1)	(1)	(1)	1.00	10.08	(1)	9.49	(1)	(1)	.40	5.51
September	(2)	(2)	(1)	(1)	3.68	7.36	(1)	(1)	1.79	1.79	1.20	3.60	(1)	20.68	(1)	13.91	3.58	8.06	(2)	(2)	1.54	7.05
October	(2)	(2)	(1)	5.62	8.22	21.38	3.26	4.90	(1)	(1)	2.24	2.24	(1)	7.49	(1)	9.02	1.78	12.52	(1)	(1)	2.03	8.12
November	(1)	2.99	(1)	(1)	(1)	20.83	1.68	16.83	(1)	(1)	(1)	5.32	(1)	3.22	2.92	14.61	(2)	(2)	(2)	(2)	.89	8.07
December	(2)	(2)	(1)	(1)	20.49	21.77	2.89	8.67	3.40	(1)	2.98	3.97	(1)	(1)	2.99	20.97	(2)	(2)	(2)	(2)	6.64	10.97
Annual loss	(1)	3.24	(1)	1.09	8.26	13.94	1.09	7.94	.58	.39	1.54	2.70	(1)	7.58	.86	16.69	1.74	8.18	4.86	3.89	1.86	7.44

[1]No deads (or) cripplee in shipments in sample.
[2]This month not included in sample.

Appendix table 22. - *Calves: Dead and cripple loss per 10,000 head by months - truck receipts*

Month	Market A		Market B		Market C		Market E		Market F		Market H		Market K		Market R		Market S		Market X		10 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
January	(1)	(1)	(2)	(2)	23.86	47.93	(1)	(1)	(1)	(1)	56.98	(1)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	18.55	10.23	14.33
February	(2)	(2)	(2)	(2)	7.45	29.80	(1)	(1)	(1)	(1)	(1)	27.62	(2)	(2)	50.93	33.95	(1)	(1)	(1)	(1)	11.68	20.44
March	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	28.98	(1)	(2)	(2)	18.06	63.23	(1)	(1)	(1)	(1)	9.87	23.03
April	(1)	(1)	(2)	(2)	5.31	26.52	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	16.69	(1)	(1)	(1)	(1)	36.29	4.18	14.63
May	(2)	(2)	(2)	(2)	21.07	31.61	(1)	(1)	(1)	(1)	(1)	69.44	(1)	(1)	(1)	50.50	(1)	9.79	(2)	(2)	4.27	19.23
June	(2)	(2)	(2)	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(1)	(1)
July	(1)	(1)	(2)	(2)	36.41	58.26	(1)	92.16	(1)	(1)	(1)	(1)	(1)	18.86	(1)	10.54	(1)	(1)	(1)	15.08	7.12	21.37
August	(2)	(2)	(2)	(2)	(1)	24.00	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3.34	(1)	(1)	(1)	(1)	(1)	4.16
September	(2)	(2)	(1)	(1)	147.73	73.86	(1)	(1)	19.80	(1)	(1)	18.55	(1)	(1)	(1)	13.77	(1)	(1)	(2)	(2)	27.60	17.86
October	(2)	(2)	(1)	(1)	26.58	38.39	(1)	2.90	8.62	(1)	9.63	9.63	(1)	(1)	10.81	16.22	10.02	(1)	(1)	(1)	10.42	13.39
November	(1)	(1)	(1)	7.36	(1)	42.31	2.39	4.78	13.08	39.26	(1)	(1)	(1)	(1)	(1)	13.41	(2)	(2)	(2)	(2)	2.12	11.66
December	(2)	(2)	(1)	(1)	52.78	111.90	(1)	(1)	31.64	(1)	(1)	(1)	(1)	(1)	(1)	8.39	(2)	(2)	(2)	(2)	29.15	60.54
Annual loss	(1)	(1)	(1)	5.02	33.89	57.40	.75	3.77	7.66	5.74	9.78	9.78	(1)	2.54	4.82	14.48	.94	1.89	(1)	11.74	10.29	19.17

[1]No deads (or) cripplee in shipments in sample.
[2]This month not included in sample.

Appendix table 23. - *Hogs: Dead and cripple loss per 10,000 head by months - truck receipts*

Month	Market A		Market B		Market C		Market E		Market F		Market H		Market K		Market R		Market S		Market X		10 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
January	22.37	(1)	(2)	(2)	13.04	39.13	(1)	(1)	24.46	12.23	18.61	22.91	(2)	(2)	50.67	16.89	12.87	12.87	(1)	28.64	18.11	21.61
February	(2)	(2)	(2)	(2)	23.01	53.71	(1)	13.71	19.30	9.65	17.62	31.18	(2)	(2)	4.14	8.28	(1)	5.85	76.77	95.96	16.97	30.95
March	(2)	(2)	(2)	(2)	(2)	(2)	(1)	(1)	8.19	10.92	10.36	38.01	(2)	(2)	(1)	8.98	(1)	(1)	(1)	26.49	6.15	20.52
April	(1)	(1)	(2)	(2)	16.23	56.19	(1)	(1)	16.55	8.27	42.05	67.29	(1)	(1)	(1)	24.12	(1)	(1)	(1)	35.65	17.36	67.17
May	(2)	(2)	(2)	(2)	15.34	52.59	(1)	(1)	5.29	10.59	23.33	29.55	(1)	(1)	(1)	12.31	6.13	3.06	(2)	(2)	12.72	24.94
June	(2)	(2)	(2)	(2)	36.52	132.80	(1)	(1)	13.25	(1)	26.79	33.93	(1)	14.49	8.38	22.35	3.57	14.28	(2)	(2)	17.79	38.82
July	(1)	(1)	(2)	(2)	16.39	67.63	(1)	(1)	12.43	(1)	16.59	11.06	(1)	(1)	3.41	23.87	(1)	15.65	3.75	30.04	9.65	31.53
August	(2)	(2)	(2)	(2)	13.84	32.88	(1)	(1)	14.53	(1)	6.16	26.21	(1)	(1)	2.86	18.59	3.22	12.89	11.70	46.83	7.04	21.14
September	(2)	(2)	(1)	(1)	25.75	25.75	(1)	23.58	8.08	(1)	9.39	18.79	(1)	(1)	2.06	24.80	(1)	(1)	(2)	(2)	9.34	16.65
October	(2)	(2)	(1)	40.78	10.03	25.09	(1)	(1)	33.43	7.42	14.35	18.77	(1)	8.64	20.79	13.86	(1)	61.09	6.34	28.53	12.58	22.08
November	(1)	5.31	(1)	(1)	17.03	34.06	(1)	(1)	5.92	2.96	20.88	37.01	(1)	(1)	(1)	15.97	(2)	(2)	(2)	(2)	12.08	23.80
December	(2)	(2)	(1)	(1)	21.01	68.11	14.22	14.22	5.12	15.36	10.74	16.39	(1)	(1)	(1)	16.68	(2)	(2)	(2)	(2)	14.57	42.25
Annual loss	7.05	1.41	(1)	13.97	17.79	52.86	1.23	3.70	13.40	7.16	17.02	27.41	(1)	5.56	6.81	18.16	3.04	11.16	5.64	33.86	13.07	28.89

[1]No deade (or) cripplee in shipmente in eample.
[2]Thie month not included in eample.

Appendix table 24. - *Sheep: Dead and cripple loss per 10,000 head by months - truck receipts*

Month	Market A		Market B		Market C		Market E		Market F		Market H		Market K		Market R		Market S		Market X		10 markets	
	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple	Dead	Cripple
January	144.23	32.05	(1)	(1)	48.07	32.05	(2)	8.05	15.37	(2)	10.86	2.71	(1)	(1)	6.37	4.24	(2)	105.82	(2)	11.76	12.80	9.22
February	(1)	(1)	(1)	(1)	23.88	7.96	(2)	(2)	22.65	3.77	31.45	2.85	(1)	(1)	5.08	2.54	(2)	(2)	(2)	(2)	17.64	3.15
March	(1)	(1)	(1)	(1)	(1)	(1)	(2)	5.45	37.06	1.54	38.24	(2)	(1)	(1)	14.88	19.85	(2)	(2)	(2)	(2)	24.57	8.25
April	9.17	18.34	(1)	(1)	22.43	59.83	(2)	(2)	14.86	(2)	10.06	5.03	(2)	(2)	4.22	3.38	(2)	31.64	(2)	17.93	7.65	7.65
May	(1)	(1)	(1)	(1)	28.77	14.38	(2)	21.18	17.07	(2)	18.08	(2)	(2)	(2)	3.70	9.87	(2)	(2)	(1)	(2)	6.61	8.50
June	(1)	(1)	(1)	(1)	23.23	23.23	(2)	(2)	45.40	25.22	29.79	23.83	(2)	(2)	3.33	7.32	(2)	21.07	(1)	(1)	7.33	9.77
July	.96	(2)	(1)	(1)	22.45	31.43	(2)	4.55	74.74	90.76	22.07	(2)	(2)	(2)	5.39	6.78	(2)	(2)	(2)	6.32	6.80	7.93
August	(1)	(1)	(1)	(1)	8.24	16.48	1.00	1.00	10.14	2.02	7.05	(2)	2.18	3.27	6.34	7.25	(2)	(2)	(2)	(2)	5.29	5.43
September	(1)	(1)	(2)	(2)	29.12	23.29	5.27	2.25	4.06	(2)	6.98	(2)	(2)	9.60	8.45	31.94	(2)	(2)	(1)	(1)	6.90	15.64
October	(1)	(1)	(2)	(2)	32.55	24.89	3.01	1.80	17.54	(2)	6.31	18.93	(2)	(2)	5.99	10.66	14.28	28.57	(2)	(2)	7.78	8.26
November	3.86	(2)	(2)	(2)	74.19	16.48	2.35	8.23	18.30	7.32	113.96	9.49	21.05	(2)	4.63	28.86	(1)	(1)	(1)	(1)	9.81	16.68
December	(1)	(1)	(2)	(2)	81.69	25.03	1.88	3.76	(2)	(2)	14.92	(2)	(2)	(2)	6.07	10.11	(1)	(1)	(1)	(1)	25.57	10.71
Annual loss	7.53	2.31	(2)	(2)	48.07	25.59	2.44	3.35	20.42	6.08	22.63	4.14	1.94	3.24	5.68	11.39	2.18	15.29	(2)	8.39	9.42	9.36

[1]This month not included in sample.
[2]No deads (or) cripples in shipmenta in sample.

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