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MORE EFFICIENT MARKETING OF ARIZONA CATTLE

Arizona Agricultural Experiment Station
University of Arizona, Tucson

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SUMMARY

Arizona cattle producers and feeders have become interested in marketing aspects of their business as a result of lower prices and difficulties encountered by many in finding a satisfactory market outlet. The 1954 buyers' market in effect calls for more attention to marketing than in the past. Opportunities exist for improving returns to producers through more efficient marketing.

This report is an over-all examination of the cattle industry of the state, made through the medium of interviews with leading ranchers, feeders, and business men, to pinpoint existing marketing problems. Practically all of the suggestions for marketing improvement contained in the report came from these industry leaders. In effect, therefore, this is a report of the industry itself to its members. It is intended to describe the conditions under which cattle are produced and marketed in Arizona, as a basis for further research. Leaders interviewed were asked to express opinions of nine specific research projects.

Conditions of cattle production in Arizona have an important influence on marketing methods and problems. Production is typically on a cow and calf basis with a large proportion of the increase being marketed as calves, about a fifth as yearlings, and very few as older steers. Marketings are highly seasonal, mostly in the fall. A large number of cattle, including many older steers, are shipped in from other states and old Mexico, for feeding and steer pasturing.

Probably about 40 per cent of Arizona stocker and feeder cattle are fed out in the state, about the same number in California, and the remainder in states to the north and east. Most large operators are exceptionally well-informed, capable businessmen, but a good many opportunities exist for improving the efficiency of feedlot operations, which would benefit range cattle producers as well as feeders. Some of the best feedstuffs available in Arizona are not adapted to producing a high degree of finish. There are good reasons to believe that a study of consumer preferences for beef in southwestern markets would disclose consumer acceptance of less highly finished beef than has been believed by the trade.

The dividing line between eastern and western movement of cattle for slaughter has been moving gradually eastward in response to the increase in West Coast population. It now cuts through the eastern part of New Mexico. There are three principal areas of consumption of cattle produced in Arizona. About 20 per cent were slaughtered within the state, almost entirely for local consumption, about 65 per cent were shipped to California for eventual slaughter and consumption there, and the remaining 15 per cent went to other states.

At least half of the cattle produced and fed in Arizona are slaughtered in the Los Angeles area. The time is approaching when the area will be short of packinghouse capacity, calling for new construction. The general tendency toward decentralization of meat packing operations and special conditions existing in Arizona point to the possibility that an additional interstate

packing plant might be successfully operated in the state, and would be beneficial to ranchers, feeders, and local business interests. This possibility deserves further study.

Arizona farmers, ranchers, feeders, and dealers utilize organized livestock markets much less than in most other states. From 80 to 90 per cent of stocker and feeder cattle, and more than 80 per cent of fed cattle, are sold direct to feeders, packers or order buyers. Arizona has five auction markets but it is estimated that only about 5 per cent of stocker and feeder cattle produced in the state, and an even smaller proportion of fed cattle, are sold through them. The Los Angeles terminal is not considered to be an important market for stockers and feeders. These conditions point up the lack of any good price-registering markets for Arizona stocker and feeder cattle, and the need for more adequate market news services for such cattle sold direct.

Because of the large proportion of cattle sold direct, the method of transportation used for Arizona cattle is controlled generally by the buyer. About half of the stocker and feeder cattle are shipped by truck, and around 90 per cent of the fat cattle. Differences of opinion exist regarding the relative costs and merits of truck and rail transportation, especially in regard to shrinks, which it has been suggested should be the subject of research.

Range cattle producers have a number of marketing problems. These are most acute for the small producers, many of whom under present conditions cannot find a satisfactory outlet. Some additional auctions in certain localities, pooling, and buyer tours, are among possible ways of remedying this situation, but careful research would be required to determine the feasibility of any of these. A principal problem of the larger producer is determining what is a fair or maximum realizable price for his cattle, and in arriving at satisfactory terms of sale, including weighing conditions. Research can contribute to these ends.

One of the biggest marketing problems of the cattle feeder is finding a satisfactory market outlet. Feeders are dissatisfied with the consignment method of sale, or "rail basis," frequently forced on them by lack of buyers for outright sale on a live weight basis at a satisfactory price. If the selling of carcasses rather than live animals continues to be so widely practiced, research on various problems associated with this method might contribute toward removal of some of the objections.

Most of the marketing costs and charges between the livestock producer and meat consumer are for marketing operations beyond slaughter of the live animal. Retailing, despite great strides in improving efficiency, takes the largest single slice of the consumer's dollar, partly because of the high cost of small sale retail cutting and merchandising operations. Frozen pre-cut and pre-packaged meats offer a possible means of further reducing retailing costs. Research designed to find ways of decreasing over-all marketing costs for beef eventually must deal with possible economies in the packing and retailing operations, but problems connected with the marketing of live animals generally should receive attention first.

MORE EFFICIENT MARKETING OF ARIZONA CATTLE

BY FREDERICK L. THOMSEN [1]

The efficiency of marketing is an important factor affecting net cash returns of ranchers and feeders. While looking into the matter of efficiency of marketing Arizona cattle, consideration should be given briefly to a few matters that greatly affect the marketing of meat.

It has been shown that the retail value of meats consumed in the United States rises and falls closely in line with the "disposable" income (personal incomes after taxes) of consumers (Fig. 1). Although this was not true during World War II, the relationship quickly readjusted to the old basis after controls were abandoned. Again the quantity of beef marketed is primarily responsible for the prices received for beef and for cattle (Fig. 2). This was true in spite of the fact that many people believed the decline in cattle prices, from 1951 to 1953, was mainly

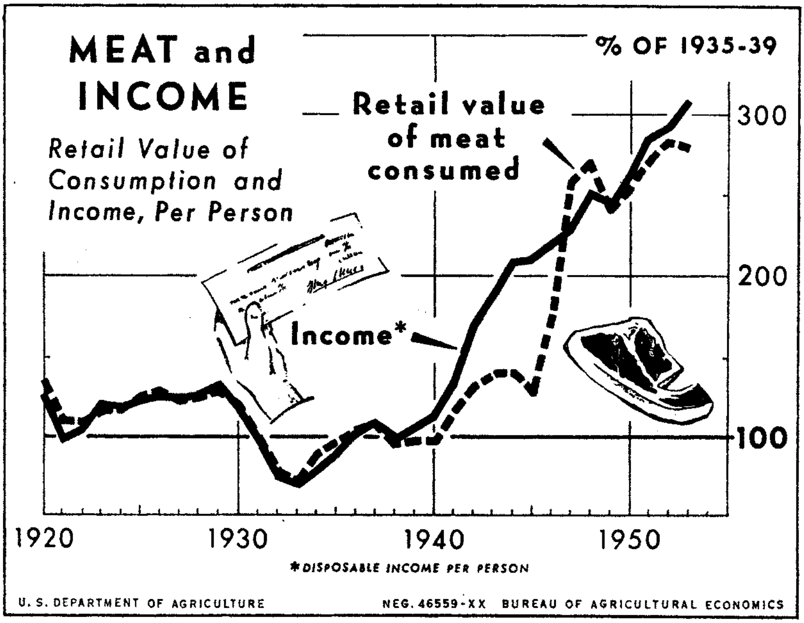

Figure 1.—Disposable income and retail value of meats consumed, per person, United States, 1920-1953 (Source: U.S. Dept. of Agriculture)

[1] This report grows out of discussions with leading ranchers and feeders of Arizona as reported by Frederick L. Thomsen, marketing consultant to the Arizona Agricultural Experiment Station. The survey was under the general direction of George W. Barr, Head, Department of Agricultural Economics.

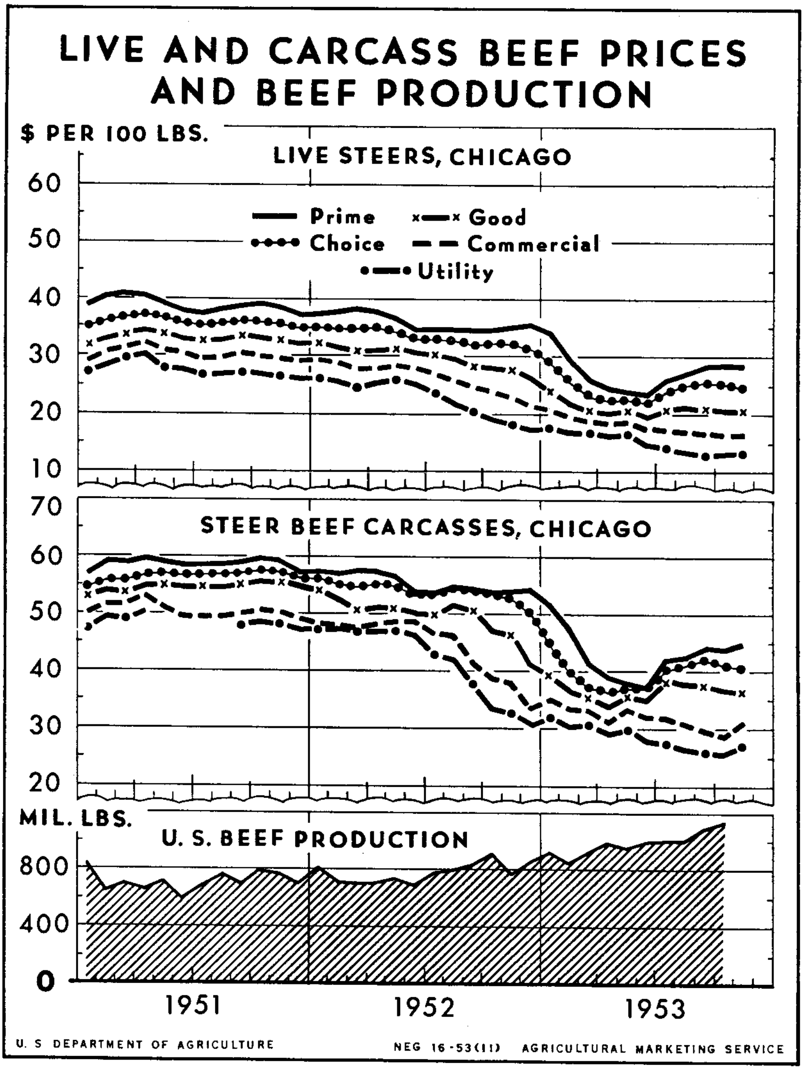

Figure 2.—Live and carcass beef prices and beef production, U.S. 1951-53 (Source: U.S. Dept. of Agriculture)

a reflection of increased marketing charges. Actually the U.S. Department of Agriculture found that the decline in cattle prices during this period could not be attributed in any substantial degree to an increase in marketing charges (Fig. 3), but rather reflected an increase in slaughter from 26 million head in 1951 to 36 million head in 1953. The proportionately larger increase in marketings of lower grade cattle was associated with a widening of the price spreads between grades.[2]

[2] Marketing Margins for Beef, U. S. Dept. of Agriculture, Agricultural Marketing Service, Washington, D. C., December 1953.

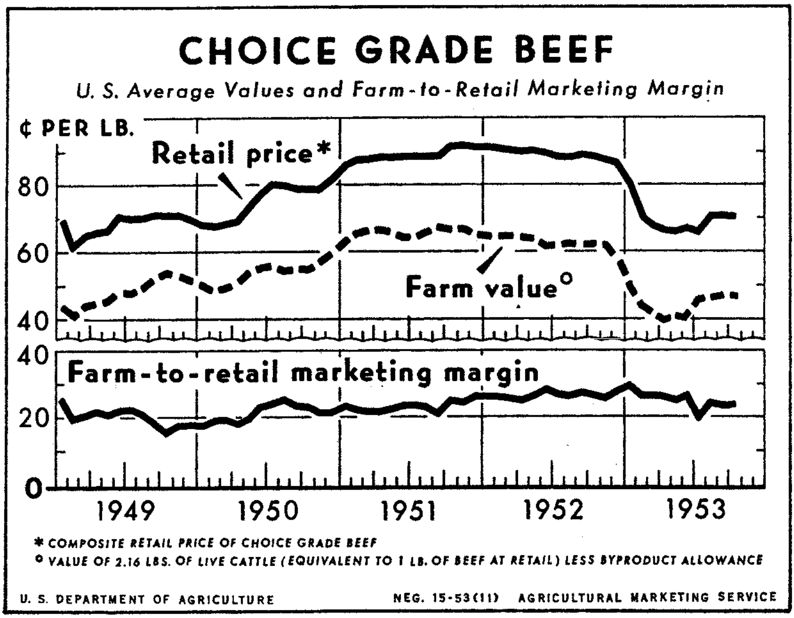

Figure 3.—Average retail price of choice grade beef, farm value of live cattle equivalent, and farm-retail marketing margin, United States, 1949-53 (Source: U.S. Dept. of Agriculture)

Marketing is important for cattle producers. It deserves more attention than it has received in the past. If, by better marketing, the producer can increase his gross returns even a cent a pound, his net profits will be increased by a substantial amount.

PURPOSE OF THIS REPORT

The Agricultural Experiment Station of the University of Arizona has for some years been conducting research in the marketing of various products other than livestock. Increasing interest in marketing by stockmen, for reasons indicated above, has resulted in extending this work to cattle.

The first step necessary for developing a practical program of cattle marketing research is a general survey of cattle marketing in the State, designed to pinpoint the important marketing problems which are found here, and to suggest the types of research activities best suited to dealing with them.

For this purpose, it was believed to be unnecessary to obtain detailed quantitative information by mailed questionnaires or personal interviews with large numbers of ranchers, feeders, and marketing agencies. For example, most of the stocker and feeder cattle marketed by Arizona ranchers are sold by private negotiation direct to feeders, order buyers and dealers, without going through any organized markets. The concensus of informed opinion is that such direct sales represent from 80 to 90 per cent of such cattle marketed. A detailed investigation might disclose the actual figure to be 79 per cent or 92 per cent, but the exact proportion is of no particular importance. A concensus of well-informed opinions on such matters will not differ materially from the actual facts.

Instead of making a detailed and costly descriptive survey, therefore, leading ranchers and feeders of Arizona were interviewed. From the opinions and estimates so obtained, a general description of cattle marketing conditions in the state has been prepared and presented in this report. At the same time, the relative importance of various cattle marketing problems and possible research projects to deal with them were discussed. As a result, a number of recommended projects have been set up which serve as a guide to future research on cattle marketing in Arizona. These problems and types of research are discussed briefly in this report.

This, therefore, is essentially a report of the leaders of the industry itself, on marketing conditions as they exist in Arizona today and what might be done to improve them. No one person interviewed may agree with everything in this report, since it necessarily represents a summary and sometimes a compromise of the opinions of many individuals having differing backgrounds and interests. The reactions of other industry members whom it was impossible to interview in the time alloted will be welcomed.

CATTLE PRODUCTION IN ARIZONA

Production conditions significantly influence marketing methods. This is evident, for example, in the comparative unimportance of the auction method of marketing livestock in Arizona as compared with many other states.

In 1952 livestock accounted for 28.5 per cent of total cash receipts from farm marketings in Arizona, ranking second only to cotton among agricultural commodities produced in the state. Sales of cattle and calves represented over 90 per cent of cash receipts from livestock. Arizona is an important surplus producer of cattle; it is a deficit area for hogs, and has only a small surplus of sheep and lambs (Fig. 4). Nearly a million head of cattle and calves are maintained on inventory, producing each year more than 300,000 head for market, in addition to substantial numbers of cattle shipped in for pasturing and feeding.

Nearly three-fourths of the land in Arizona belongs to the federal government. More than half of the remainder is classified as state and what are still referred to as railroad lands, with not more than 10 per cent under individual ownership. Most of the land in the state devoted to cattle production, therefore, is operated under lease or grazing permits.[3]

Cattle ranching in Arizona ordinarily does not include any form of crop production. Supplemental feeding on ranches is sparingly practiced. The low carrying capacity results in a very extensive type of production, with from about 20 to 200

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[3] For a more complete description, see: Stanley, E. B. and Walter Armer, *The Cattle Ranching Industry in Arizona*, Univ. of Arizona, Agr. Exp. Sta., Dept. of Animal Husbandry, Mim. Report No. 54, July, 1951.

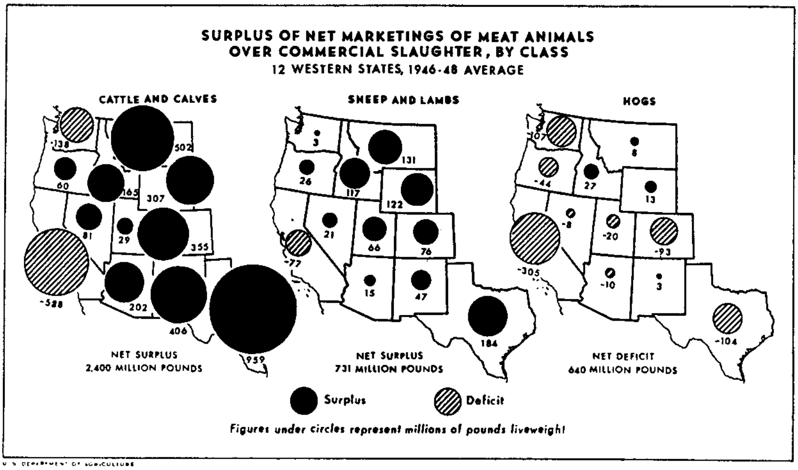

Figure 4.—Surplus of net marketings of meat animals over commercial slaughter, by class, twelve Western States, 1946-48 average (Source: Western Livestock Marketing Research Technical Committee)

acres per animal unit being required. Individual ranches run from about 100 to 3,000 or more cows, but there are many smaller so-called ranches and farms with fewer numbers (Table 1). The bulk of the cattle (around 80 per cent) are produced on ranches having a January inventory of more than 200 animals; but the bulk of the cattle producers have fewer than this number on inventory. Most cattle producers, even in Arizona, are small operators.

Data on cattle shipments by classes, months and counties of origin are regularly compiled from inspection records of the Livestock Sanitary Board by the Federal Crop and Livestock Reporting Service. However, these data are so affected by large inshipments and the combining of range and fed cattle shipments that they do not give a clear picture of cattle production characteristics of the state. For this reason, it is necessary to rely mainly upon informed estimates for most of the figures used in this summary of production conditions.

Cattle production in Arizona is typically on a cow/calf basis, although cow/yearling and steer pasturing are found in some sections. It is estimated that of all beef cattle produced on Arizona ranches and farms, 60 per cent are calves, 20 per cent yearlings, about 5 per cent older steers or heifers, and about 15 per cent cows and bulls. Calves are marketed mostly in the fall, yearlings about half and half in spring and fall. These proportions vary considerably in different sections of the state, due to such factors as seasonal ranges and time of calving.

Both the size and type of ranching operations vary widely in different sections of the state. The principal areas of cattle production are shown in Figure 5. Section 1, the central mountain and foothill area, contains more than half the cattle in the state.

TABLE 1.—ARIZONA: ALL CATTLE ON HAND, JANUARY 1, 1953; NUMBER ON FARMS BY SIZE GROUPS, BY COUNTIES

All cattle Numbers January 1	Apache	Coconino	Mohave	Navajo	Yavapai	Maricopa	Pinal	Yuma	Cochise	Gila	Graham	Greenlee	Pima	Santa Cruz	Total	Per Cent
0 - 49	5	3	2	13	9	68	8	13	10	2	12	6	4	—	155	47.8
50 - 99	1	1	3	3	5	15	2	3	4	2	1	—	1	1	42	13.0
100 - 199	2	2	2	1	6	15	4	—	9	1	1	2	1	1	47	14.4
200 - 499	5	—	—	—	7	9	2	2	7	—	1	—	1	—	34	10.4
500 - 999	1	2	2	—	5	7	3	—	3	7	—	1	—	3	34	10.4
1,000 +	—	—	2	1	—	3	—	1	2	1	1	—	1	—	12	4.0
															324	100.0

Source: Crop and Livestock Reporting Service, U.S. Department of Agriculture.

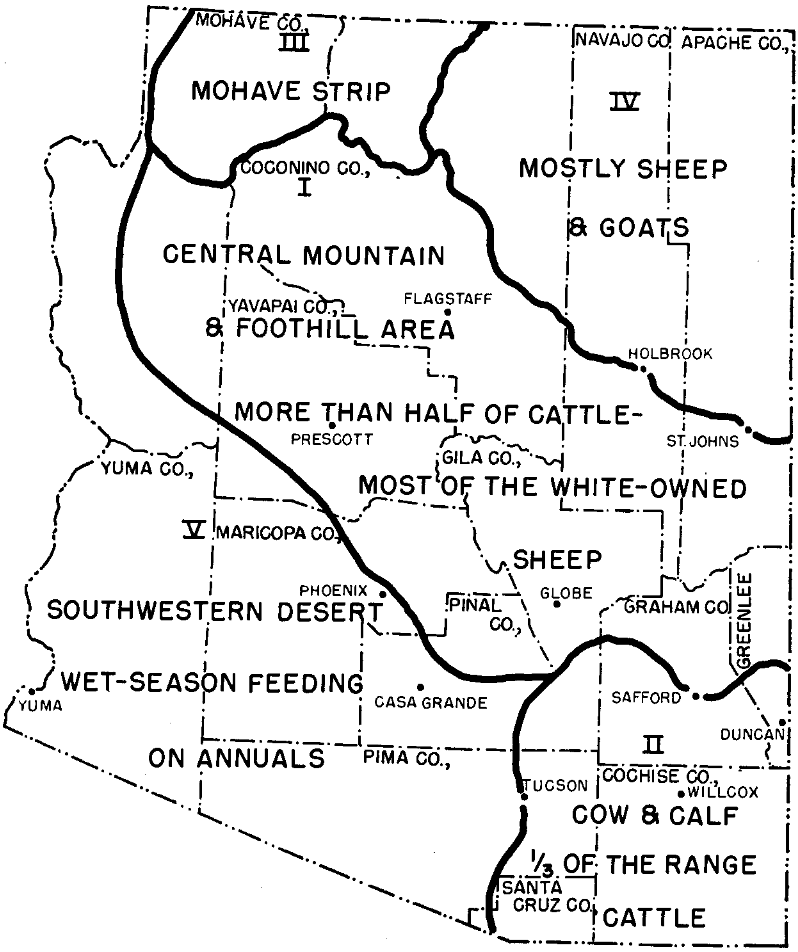

Figure 5.—Cattle producing sections of Arizona (adapted from E. B. Stanley and Walter Armer, Arizona Agricultural Experiment Station)

Varied climatic, topographical and vegetative conditions in this area give rise to all types of ranching. Section II, the southeastern area, has about a third of the range cattle. It is particularly well adapted to the production of early spring calves, and most ranches in the area are of the year-around type, operating on a cow/calf basis. The Mohave Strip (Section III) in the northwestern part of the state, the Navajo and Hopi Reservations (Section IV), and the Southwestern Desert area (Section V) produce limited numbers of cattle, and ranches generally do not operate on a year-around basis. Various grazing operations are adapted to utilization of seasonal forage.

A substantial number of cattle are shipped into Arizona each year for pasturing on seasonal forage or for feeding. In 1953 inshipments totaled 184,000 head of cattle and calves compared with

TABLE 2.—ARIZONA: NUMBER OF CATTLE AND CALVES SHIPPED OUT OF AND INTO THE STATE, BY STATE OF ORIGIN OR DESTINATION, 1952

State of origin or destination	Shipped out of Arizona	Shipped into Arizona
Illinois	706	98
New York	—	—
Pennsylvania	155	—
Ohio	193	1
Indiana	232	—
Michigan	—	—
Iowa	2,286	—
Missouri	984	3,880
South Dakota	2,184	51
Nebraska	4,368	152
Kansas	1,693	2,575
South Carolina	—	—
Florida	237	3,123
Kentucky	721	—
Tennessee	74	—
Alabama	16	—
Arkansas	8	—
Louisiana	96	6,081
Oklahoma	240	9,431
Texas	13,933	128,983
Montana	1,778	5,390
Idaho	1,681	3,353
Wyoming	3,477	2,381
Colorado	9,331	1,808
New Mexico	10,592	30,133
Utah	12,315	4,326
Nevada	1,767	348
Washington	376	12
Oregon	529	2
California	324,670	2,492
Other States	68	51
Old Mexico	621	21,655
Canada	—	—
Total	395,331	226,326

Source: Crop and Livestock Reporting Service, U.S. Department of Agriculture.

a total of 470,000 shipped out of Arizona and 138,000 slaughtered within the state. Of these inshipments, 60 per cent came from Texas, 13 per cent from New Mexico, and 15 per cent from Old Mexico. Figures for 1952 are shown in Table 2.

A much larger proportion of these shipped-in cattle than of range cattle produced in Arizona are two years old or over. In 1952, a third of the cattle shipped out of the state were steers two years old or more. Apparently most of these steers were shipped in from other states, or were yearlings off Arizona ranches, purchased for steer pasturing or feeding. All cattlemen interviewed were in agreement that Arizona ranches produced only a small number of older steers. Some of these older steers are brought into the state for pasturing on wet-season annual weeds in the Southwestern Desert area, where year-around cattle production is not practicable because of lack of water and suitable forage during the dry season.

Many cattle produced on Arizona ranches, as well as those shipped in from outside the state, move from ranch to ranch, frequently from one state to another, before winding up in the feedlot or packing plant. For example, light-weight yearlings from the southeastern part of the state may be shipped to winter wheat pastures in Texas or Kansas, and then to refill feedlots in the following April. California takes a light-weight fall yearling steer to go on winter pasture of cereal grains, irrigated pasture or on range covered with native annuals. Some of these cattle may go direct to packers off grass, or be shipped to feedlots for finishing. Some cattle may be shipped out of Arizona to New Mexico for utilization of spring forage—at the same time that other cattle are being shipped from New Mexico or Texas to Arizona—then later moved back into Arizona for feeding.

Some observers have suspected that a good deal of this movement out and back is uneconomic and unnecessary. However, it must be remembered that each time the cattle move it is because somebody has bought them in the belief that he can add additional weight or finish at a lower cost, taking into account the cost of shipping, than anyone else in the area believes possible. Otherwise, the cattle would have remained in the area. Mostly this movement is a result of differing seasonal forage conditions, which permit grazing certain kinds of cattle in one area better than another at certain times of the year. However, it is entirely possible that some of this back and forth movement merely reflects lack of a means of bringing together potential buyers and sellers who are located closer to each other, or lack of information on supplies of cattle available and feeding or grazing opportunities. Customs and individual prejudices also play a part. For example, a Kansas wheat grower may have had good luck one year with a bunch of cattle he bought in Arizona while on the way to a winter vacation in California, and thereafter goes back to the same place to buy cattle for his winter pasture, even though he might buy to better advantage at some point nearer home.

In general, high cattle prices relative to transportation costs encourage such movements of cattle. Also, when prices are rising the speculative opportunities involved encourage re-purchasing. The decline in prices in 1952-53 has discouraged such movements.

It has been proposed that research in which movements of specific lots of cattle would be traced through to ultimate consumption might disclose many uneconomic channels of movement. The question arises, what could be done about it, even if such facts were uncovered, other than to provide mere information about cattle market conditions, which is desirable in any event?

Dairying, which contributes a large volume of animals to auctions and other marketing facilities in many other states, is of comparatively little importance in Arizona. Only 52,000 milk cows were in the January 1, 1953, livestock inventory. At that time there were 430,000 head of sheep and 26,000 head of hogs. In Arizona, marketing facilities are dependent largely on beef cattle for volume.

CATTLE FEEDING

Most of the cattle, except cull breeding stock, produced in Arizona have required some degree of finishing in the feedlot, although some are marketed direct to slaughters off grass. For example, around Globe, some short yearlings are marketed off grass from January to June. Old cows shipped from Arizona ranches to California farms are frequently pastured on winter ranges and sold as grass fat in April or May.

Some leading ranchers have suggested that more of the good beef-type cattle coming off good pasture in fat condition should go direct to slaughterers, although it is recognized that such cattle represent a comparatively small proportion of all range cattle. These ranchers believe that there is a groundless prejudice on the part of packers and meat distributors against beef that has not been grain fed, but that consumers do not react in the same way. It is suggested that a study be made of consumer acceptance of beef from good beef-type grass fat animals.

There are no data available on the proportion of feeder cattle produced in Arizona that are fed out in the state, since figures on shipments do not separate range from fed cattle, or cattle for feeding from those for slaughter. It is estimated that somewhat over 40 per cent go to feedlots in Arizona, about the same to California farms and feedlots, and the remainder to feeders in other states. Some indication of the relative importance of these other states is given by the destination points of shipped-out cattle, shown in Table 2 (most of the cattle shipped out except those to California, are for pasturing or feeding before slaughter). Probably a considerable proportion of the cattle shipped to states other than California are from the southeastern section of the state, where some ranchers well acquainted with local conditions estimated that in some years up to half of the range cattle produced went to Kansas and other states to the north and east. Some of the Indian cattle from Section IV go to Utah and Colorado. It is probable, also, that a considerable part of the cattle shipped eastward were involved in special situations of Arizona seasonal pasture conditions, or were especially suited to the seasonality of pasturing in other states.

Estimates of the proportion of all cattle fed out in Arizona that originated outside the state varied greatly, even among experienced feeders, so no attempt has been made to average them. The estimates ranged from 20 to 70 per cent. Data on inshipments, outshipments and slaughter indicate that the proportion is larger than many feeders seem to think.

Feeding operations in Arizona are concentrated mostly in the irrigated valleys, particularly the Salt River Valley around Phoenix, where probably 70 per cent of the feeding is done. The Yuma area accounts for about 15 per cent, Casa Grande and Tucson areas 5 per cent each, and Safford-Willcox combined, 5 per cent.

Arizona feedlot capacity has increased greatly during the past decade. The number of cattle on feed in the state has increased about 50 per cent, according to U.S. Department of Agriculture figures, which do not take into account the growth in year-around feeding, which increases the turnover. With expected diversion of cotton acreage to forage crops, providing additional feed despite loss of cottonseed hulls, and with the increasing market for fed cattle on the West Coast, this growth probably will continue, although it has definite limits dictated by the availability of feed supplies produced on the irrigated lands. Research might contribute information needed to determine if the additional feed produced on the diverted acres could best be fed on the farms producing it, or by an increase in custom feeding in established yards, or by an increased volume of operations on the part of established feeders.

Cattle feeding in Southern California, which buys many feeder cattle from Arizona ranchers, also is in the irrigated areas. As in Arizona, the operations are on a much larger scale than in the Corn Belt, where the greater part of the cattle feeding is done. In one feed-yard in Arizona over 200,000 head are received and shipped annually. This yard has in transit at any one time from $50,000 to $75,000 worth of cattle. Obviously, investments are huge. Much more specialized equipment is used than in eastern states. Rations are more varied, designed to utilize the available roughages and concentrates produced locally, including alfalfa, grain sorghums, ensilage, vegetable wastes, barley and cottonseed meal and hulls.

Use of some of these feeds, although relatively economical, leads to some difficulties. Feeders claim there is prejudice on the part of packers against silage-fed cattle, partly because they are said to develop big bellies and do not yield as high as cattle finished on more concentrated feeds, but also because of a fancied difference in the quality of the beef. Likewise, alfalfa feeding results in the production of less highly finished cattle that bring a lower price than cattle fed on grain. Many packer buyers are said to want only cattle that are grain fed. Feeders maintain that the degree of discrimination against some cattle fed on Arizona feeding materials is not justified on the basis of what consumers prefer, and actual dressing percentages. More information on yields and other phases of this problem is needed.

Information is needed particularly on how beef fed to various degrees of finish on Arizona-type feedstuffs meets the actual preferences of consumers. Feeding to a high finish is expensive, especially under Arizona conditions, and there are good reasons to suspect that consumers prefer leaner meats, are not much concerned with the color of the fat, and even with having a high degree of marbling of the lean meat. There is evidence, also, that they do not know what qualities are represented by the various beef grades, and that merchandising policies of many meat packers and retail meat markets are not well adjusted to actual consumer preferences. For example, the discrimination against heifer beef is believed not to be justified by consumer acceptance, although some price differential in the price of live animals may be justified on the basis of possible pregnancy and yield. All of these problems, it has been suggested, should be incorporated in a research project dealing with the consumer acceptance of beef of different qualities in the consuming markets for Arizona-produced cattle.

A considerable amount of custom feeding is done by many Arizona feedlot operators for ranchers who prefer to market their cattle to packers with some degree of finish, and for speculative dealers, packers, chain stores and others. Several suggestions were received that research be conducted on the possibility of adverse effect on the beef and cattle price structure of feeding by chain store operators and packers. It seems doubtful, however, whether such a study would yield any significant results, and nothing much could be done even if the practice were found to have price-depressing effects.

During the years of rising prices and lush profits preceding 1953, some banks made high percentage loans which are said by some feeders to have encouraged feeding by operators with insufficient experience. The latter are said to have gone around the country buying feeder cattle at prices out of line with actual market prospects for fed cattle. As a result they suffered severe losses when prices dropped. These operations, however, did tend to provide good alternative outlets for ranchers' cattle, and to hold feeding margins within bounds during a period when they otherwise might have widened unduly. The opportunities for custom feeding furnish a safeguard against absence of competition among feeders for range cattle, and it would appear that the practice is beneficial to ranching interests of the state.

Most operators of Arizona feedlots are exceptionally well informed, adequately financed, modern businessmen who keep good records covering costs and other phases of their business, and who are good judges of cattle and market conditions. Nevertheless, many opportunities exist for further improving the efficiency of operation of these enterprises.

Some feedlots have entirely too high investments in machinery and equipment for their feeding capacity. One yard, for example, has an investment of $100,000 but can feed only a thousand head. Some of the feed mills are operated only a few hours per day. Capital investment per head of capacity varies widely; obviously, these yards cannot all have the optimum relationship. Similarly, labor costs per head per day vary greatly from yard to yard. Some yards have newer types of equipment, such as mixer trucks and silage loaders, that greatly reduce capital investment or labor costs. There is some evidence that a good many feeders, being more interested in "push-button" gadgets, have been slow to take advantage of the best available knowledge in the field of animal feeding

Custom feeding gives rise to some additional costs for equipment and labor, especially because of the separate accounting for rations that is required. One large custom feedlot operator finds that about 60 per cent of his expenses aside from feed are due to extra services incident to custom feeding. Five feed trucks are required to handle the same number of custom-fed cattle as could be serviced with two trucks if the cattle were owned by him. Some feeders concerned with this problem believe that it would be possible to work out standard formulas that would eliminate the need for weighing feed. One of the largest California feedlots is said to have been able to eliminate detailed records in custom as well as their own feeding.

Feeders were practically unanimous in the opinion that a properly conducted study of their operational efficiency would disclose many economies which would cut operating costs, place them in a better position to compete with California feeders, improve their credit position and operating profits, and return a higher price for feeder cattle purchased from Arizona ranchers. As one large operator said, "It is easy for us to see what is wrong with the other fellow's operation, but not to find out what is wrong with our own." A banker who finances feeding operations has expressed great interest in possible research which would disclose the optimum size of operation under Arizona conditions.

CONSUMING MARKETS FOR ARIZONA CATTLE

Until about 1925 a large part of the cattle produced in Arizona and other western states was shipped to the Corn Belt for fattening, with slaughter and consumption taking place in the eastern part of the country. Since then, the remarkable growth of population in the western states has taken an increasing proportion of cattle production for consumption in these states, particularly the deficit state of California (see Fig. 4). This has gradually moved eastward the "line of east-west movement" (the approximate geographic boundary which marks the predominantly westward and eastward movement of slaughter cattle). It now cuts through the eastern part of New Mexico (see Fig. 6).

TABLE 3.—ARIZONA: NUMBER OF CATTLE AND CALVES SLAUGHTERED IN 1952,* BY COUNTIES AND BY MONTHS

County	Number Slaughtered by Counties	Month	Number Slaughtered by Months
Apache	439	January	7,924
Coconino	265	February	7,702
Mohave	126	March	7,382
Navajo	836	April	7,739
Yavapai	798	May	7,585
Maricopa	77,828	June	8,111
Pinal	2,104	July	6,635
Yuma	250	August	7,327
Cochise	930	September	8,688
Gila	1,741	October	9,932
Graham	6,488	November	9,015
Greenlee	156	December	9,862
Pima	5,750		
Santa Cruz	191		
Arizona	97,902	Total	97,902

* Number of hides inspected by the Livestock Sanitary Board. Includes commercial slaughter, a major portion of farm slaughter, and hides sold by rendering companies.

Source: Crop and Livestock Reporting Service, U.S. Department of Agriculture.

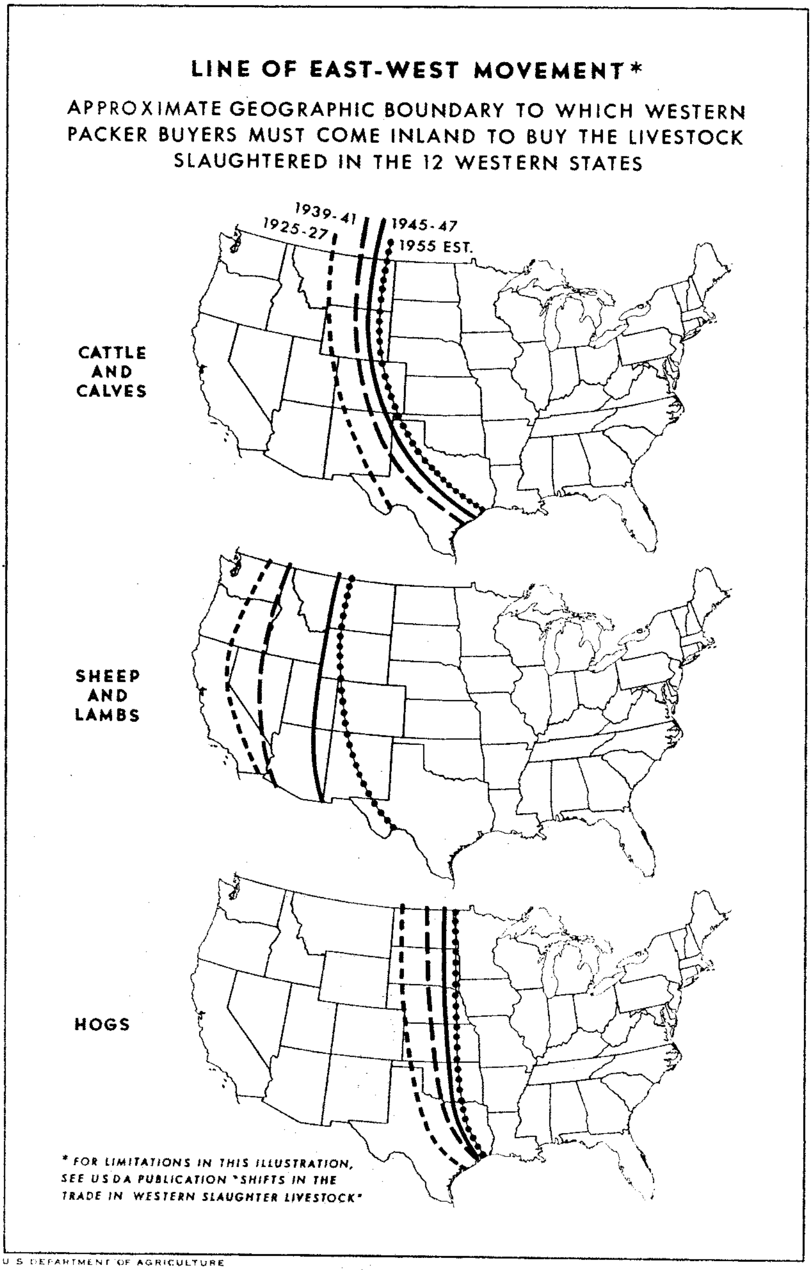

Figure 6.—Line of East-West movement—approximate geographic boundary to which western packer-buyers must come inland to buy their livestock slaughtered in the twelve Western States (Source: Western Livestock Marketing Research Technical Committee)

There are three principal areas of consumption of beef produced from cattle and calves raised or fed out in Arizona; Southern California, Arizona, and states to the north and east. In 1953 a total of 580,000 head was shipped from or slaughtered in Arizona (Table 3 shows slaughter in Arizona by months and by counties in 1952). These include cattle produced in Arizona and approximately 250,000 head shipped into the state for further pasturing or feeding. About 20 per cent of the total was slaughtered in Arizona, almost entirely for consumption within the state (an unknown amount of beef slaughtered outside the state is imported for consumption in Arizona). About 65 per cent of the cattle was shipped to California for immediate or eventual slaughter and probable consumption there, and the remaining 15 per cent went to other states, eventually for consumption somewhere east of the boundary line shown in Figure 6.

As indicated by the several boundary lines in Figure 6, the population of the western states has been increasing rapidly in recent years, particularly in Southern California, the principal market for Arizona cattle. This points to the continued decrease in importance of the remaining eastern markets for Arizona cattle.

The predominantly westward movement of livestock from points west of the boundary line shown in Figure 6 has had a considerable impact on cattle prices in Arizona. But the fact that a substantial number of animals continue to move to the east indicates that the market here is still closely tied to the middle-western feeding and slaughtering areas. The prevailing price for calves throughout the Southwest, except Texas, in the fall of 1953 was 15 cents. Arizona is close to the line where cattle prices represent prices in two market areas less freight, with differences in prices in these areas balanced by differences in transportation costs to them. As the boundary line moves further east, the price in the western consuming market area will rise relative to that in the east (assuming no change in transportation costs), in order to induce westward shipment of cattle over longer distances. Arizona cattle then will sell for more relative to the national average, and a greater proportion will move to the West Coast.

LOCATION OF CATTLE SLAUGHTER

Arizona has eight small non-federally inspected plants slaughtering over 300,000 but less than 2,000,000 pounds liveweight per year. The Arizona plants are limited almost entirely to slaughter for consumption within the state. The one federally-inspected plant located here in 1953, operated by one of the large national packers, limits its distribution to points east of the Colorado River, except for a few towns on the California border.

There are some indications that the entire Arizona-Southern California area is becoming short of packing house capacity. Los Angeles is said to have fewer plants than a decade ago, and the remaining ones are operating generally at capacity. Some of them are approaching obsolescence. The one federally-inspected plant in Arizona operated at practical capacity most of the year 1953.

The general tendency for many years has been in the direction of decentralization of the meat packing industry. This has resulted from the advantages of plants located close to sources of supply, the development of good roads and greatly improved trucking equipment, improvement of market news facilities, and other conditions making possible the by-passing of large terminal markets.

In view of the probable need for replacing some existing packing houses and adding others, in the Southern California-Arizona area, during the next decade, now is a good time to carefully appraise the most desirable location for such plants. Undoubtedly some of the meat packing companies have been giving thought to this problem.

It would appear that additional federally-inspected plants might be located in Arizona, to serve not only this state but also Southern California. Such plants, if economically feasible, would provide an additional competitive factor in the buying of Arizona slaughter cattle. Existing plants apparently buy on the basis of Los Angeles less freight. The addition of one more plant would not necessarily alter this situation materially, but additional packing capacity would tend to provide a more stable market, tending toward the elimination of some of the undesirable conditions described in a later section on the marketing of fed cattle.

It is not believed that an Arizona plant would encounter difficulties because of lack of other species of livestock for slaughter, or irregular seasonal supplies of cattle. Hog slaughtering in this area is said to be generally unprofitable, and although Arizona produces a surplus of sheep, they usually are sold in large lots and are not easily available in suitable quantities on a daily basis for slaughtering. The present federally-inspected plant at Phoenix ships in lambs from Utah and other states. It is believed by some feeders that a plant handling only beef would have certain advantages. With appropriate eastern connections it could act as the distributor for pork and lamb processed elsewhere. Summer feeding of cattle has been increasing in Arizona, some feeders maintaining that it is more profitable than winter feeding. It is believed that fully adequate supplies of cattle would be available throughout the year, except possibly for some lower grades. One plant in Los Angeles handling only beef is said to be very successful.

Although no definite conclusion is possible on the basis of the facts now at hand, particularly with respect to the problems of distributing beef slaughtered in Arizona to consuming markets in Southern California, there is enough favorable evidence to justify research designed to obtain the needed facts. If favorable, the latter then could be utilized by groups in promotional efforts looking to the establishment of such a plant, possibly by one of the larger independent or "interior" packers of the Midwest which might welcome an opportunity to enter the West Coast area. There appear to be adequate yard facilities already available. Most feeders and ranchers interviewed were strongly in favor of such research. However, a representative of the meat packing industry expressed the opinion that it would be a waste of research funds, and that such research should be left to the packing industry.

ORGANIZED MARKETS SERVING ARIZONA CATTLE SELLERS

Arizona farmers, ranchers, feeders, and livestock dealers utilize organized markets much less than those in most other states. Most of the transactions are made as a result of direct negotiation between buyer and seller without any intervening agency. This practice reflects the influence of a number of conditions:

1. The absence of substantial numbers of dairy farms with a large volume of bull calves and culled breeding stock for sale.
2. The comparatively small number of farms with a few head of livestock kept to utilize odds and ends of feed and which are sold a few head at a time to provide ready cash.
3. The relatively large proportions of cattle and sheep that are produced on large ranches which have sufficient volume to entice direct offers from buyers.
4. The highly seasonal nature of most ranching operations, with cattle being sold predominantly in the fall, and to a lesser extent in the spring.
5. The large-scale operations of most Arizona feeders, which makes it possible and profitable for them to deal directly with packers.
6. The comparatively limited number of small speculative dealers who thrive in sections where the reverse of the foregoing conditions prevail, and who utilize auctions and other public markets, where the same cattle may change hands several times before reaching a final destination.

Practically the only terminal market used by Arizona cattlemen is Los Angeles. Cattle which move north and east from the state are almost all bought privately by feeders, order buyers, or dealers. The Denver, Fort Worth, Kansas City, and other markets used by ranchers in other western states are rarely patronized by those in Arizona.

Los Angeles is considered as not being a stocker and feeder market. It is estimated that not more than 10 per cent of Arizona stocker and feeder cattle are sold on that market. Feeders in the state also make comparatively little use of the Los Angeles market, with less than 20 per cent of the fed cattle shipments going there, in the opinion of feeders interviewed.

Although their viewpoint may not be justified, some Arizona ranchers and feeders look upon the Los Angeles terminal as a "junk" market, a place to ship culls, dairy stock, and in general small shipments of miscellaneous cattle. To them, it is something like a large auction market. It is not considered generally as a price-registering market of importance for stocker and feeder cattle. News of what other ranchers or feeders have obtained for their cattle in private sales is considered by many to be a more important barometer of what cattle are bringing. The Los Angeles market, however, does handle a substantial volume of high quality fed cattle, and is more important in the price-registering picture for all cattle than the foregoing opinions would indicate.

Arizona has five livestock auctions (Phoenix, two, Tucson, two, and Casa Grande, one) located within a comparatively small area in the south-central part of the state near the farming and feeding areas. In early 1954 a new auction equipped to handle sizable lots of cattle was established not far from the state's largest packing plant. Sales include lots out of custom feed yards and packer representatives are among the buyers. Occasional use is made of auctions in New Mexico, Texas, and California.

For the reasons previously indicated, some ranchers and feeders pay little or no attention to the auctions, considering that they usually serve the very small ranch units and farmers who have occasional sales of a few animals. The auctions also are used by some ranchers and feeder buyers as an outlet for cut-backs and cull breeding stock. It is estimated that only about 5 per cent of stocker and feeder cattle produced on Arizona ranches, and a very small per cent of the fed cattle, are marketed through auctions. In general, the auctions play a much less important part in the marketing of Arizona cattle than they do in some of the other western states, or for that matter in most other livestock producing states throughout the country.

These conditions point to the lack of good price-registering markets for Arizona cattle, and to the importance of the problem of providing adequate market news to producers and feeders

TRANSPORTATION TO MARKET

To an even greater extent than in some other western states, the method of transportation of stocker and feeder cattle from the ranch to the new range or feedlot is determined by the buyer. This reflects the greater proportion of cattle sold direct to buyers without passing through an organized market.

It is estimated by almost every authority interviewed that about half of the stocker and feeder cattle produced in Arizona are moved by truck. In cases where ranches are located on a railroad the cattle frequently are trailed to the loading pens, but otherwise they are trucked, so that considerably more than half are trucked at least part of the journey. Trailing through other ranches is a disappearing practice.

Somewhat greater use of rail transportation seems to be made in the southeastern section of the state, from which considerable stock moves long distances to pasture or feedlots in states to the north and east. It was estimated that about 90 per cent of Arizona cattle are sold in carload lots or larger, so size of shipment does not have a great effect upon the relative use of truck and rail transportation.

One successful rancher and feeder remarked that truck shipment is nearly always best: "Rail shipments are made only by those who don't know the facts." This seems to be the reaction of many of the younger generation of cattlemen. Some "old timers," on the other hand, stoutly maintain that the newcomers are too much influenced by the convenience and quickness of truck transportation, simply do not want to go to the trouble of shipping by rail. They say that less shrink is involved in trailing to the local shipping point than by truck. Unkind remarks are made about the lack of competence of modern cowmen who do not know how to drive cattle so they will arrive at the pens in good shape. They also point to the practices of some truckers which they say lead to excessive shrink, such as frequent sudden stops going through towns, and crowding. The truck advocates point to conditions of rail transportation that have the same effects, including overnight waits in loading pens adjacent to disturbing train noises, careless car handling, and the much longer time in transit.

These differences of opinion, in many cases obviously based on over-emphasis of some single feature which has impressed the rancher or buyer, indicate that no authoritative information on relative shrink and arrival condition of cattle shipped by truck and rail under Arizona conditions is available. The amount of shrink by both truck and rail varies widely, under differing conditions, and anyone drawing conclusions from a small sample of shipments within his own experience may be easily misled. Some feeders who have kept careful records covering many shipments have a better basis for judging, but even some of these shippers say they are uncertain about relative shrinks under different conditions.

Truck rates are substantially higher than rail rates. Truck rates apparently vary considerably in different parts of the state. In New Mexico, rates in different counties were found to vary from 30 to 65 cents per loaded mile, and costs per hundred-weight based on a loaded truck travelling 100 miles varied from .213 cents to .433 cents for calves and .172 cents to .390 cents for yearlings.[4]

It is estimated that at least 90 per cent of fed cattle are shipped to packers by truck. This higher proportion compared to stockers and feeders is because shrink and condition, and time in transit, are more important for slaughter cattle. Cattle going on pasture or in the feedlot have an opportunity to regain weight lost in transit so that over a period of time the shrink makes little difference. One experienced rancher and feeder expressed the opinion that he would use trucks for all slaughter cattle regardless of destination, but for stocker and feeder cattle would use rail for cattle moving beyond the state borders. This seems to be the general reaction.

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[4] From an unpublished table of rates and costs prepared by Professor H. B. Pingrey, Dept. of Agricultural Economics, New Mexico Agricultural Experiment Station.

A number of the ranchers and feeders interviewed suggested that it would be helpful to have some research designed to show: (1) relative shrink and arrival condition of cattle shipped by truck and by rail, under different conditions of age, class, feed and time standing before loading, season of year; (2) variation in truck rates in different parts of the state; and (3) differences in total costs of transportation for each method under different circumstances. Some of those interviewed, however, believed that they already had the answers from past experience, and that the transportation pattern already is so firmly set that little good would result from such research.

MARKETING RANGE CATTLE

The range cattle producer has a number of marketing decisions to make and problems to solve in marketing his cattle:

1. At what age should the cattle be marketed?
2. At what time of year?
3. Should the cattle be "conditioned" before selling?
4. Which of the several alternative market outlets is best?
5. What is a fair price, or the maximum price that might be obtained?
6. What should be the terms of sale?
7. Is it best to contract in advance of delivery?
8. How can the small rancher find a satisfactory buyer?

Age of Cattle Sold

Production conditions such as type of range, climate and supplemental feed available are the most important considerations affecting the age at which cattle should be sold. But market conditions also must be taken into account. Relative prices of calves, yearlings and older cattle change substantially from year to year. A policy best under one set of market conditions may not be best under another situation.

Light-weight calves frequently bring a higher price per hundredweight than do heavy calves. Calf prices usually are higher than yearling steer prices. However, these differentials vary with relative and absolute feed and cattle prices. The plus margin narrows or disappears entirely when feed prices are high in relation to cattle prices. During the past decade or more of high prices for cattle, relative to feed prices, the differential between calves and yearlings widened, accelerating the movement toward sale of calves rather than older animals.

These relationships arise from the fact that a feeder buyer looks upon an animal as representing three things: (1) beef on the hoof that can be resold; (2) flesh already on the animal that can be converted to a higher grade and price class by means of proper finishing; (3) a frame upon which to build flesh by utilizing feed. The lighter the animal, the more important is the third of these considerations, the less important the other two. The higher the price of beef, the more important become the first and third of the three conditions. The greater the differential between grades, the greater is the importance of the second condition. During the past year or more, cattle prices have declined both absolutely and relative to feed prices, and grade differentials have widened. This has made older and heavier animals relatively more advantageous for feeding than before.

A study of conditions affecting the best age at which to sell under the varying conditions encountered in Arizona and under different market situations, and of actual practices of Arizona ranchers in relation to these factors, might turn up some useful information.

Time of Selling

The time of marketing has two aspects: (1) the season of the year (fall, spring); (2) the earliness or lateness of marketing in the fall or spring season.

Like the best age for selling, the best time of the year to sell will depend to a considerable extent on production considerations: the time of calving, range forage conditions, etc. But marketing conditions also are a factor.

There is a distinct seasonal variation in marketings and prices of stocker and feeder cattle as well as of slaughter cattle. In some seasons producers who marketed early benefited, while in others those who hung on until late in the season had the advantage. This seasonal variation changes from year to year in response to conditions such as feed supplies. This subject is dealt with in a study recently published by the Arizona Agricultural Experiment Station.[5]

Some well informed observers say that ranchers should make more of an effort to avoid the highly seasonal operations characterizing the past. The southwestern states should be able, because of more favorable climatic conditions, to do a better job along this line than other western states, despite the preponderant calf movement. Various set-ups, including operation of range of more than one type, contribute to this end. Twice a year marketing, instead of the yearly round-up, should be possible for more ranchers.

Conditioning Cattle before Sale

Some ranchers believe that they can get more for their cattle by putting them in good condition prior to sale by means of some kind of feeding. Some have a place in the valley where the cows, thin stuff, late calves and other cattle which cannot be brought to selling condition on the range can be brought up on alfalfa or some other cheap feed. Others for whom this is impracticable, may put their cattle in the feedlot for a brief warm-up before selling. Without some conditioning along these lines, cattle of this sort cannot be sold to regular buyers and will not bring much on the auction.

With custom feedlot facilities increasingly available, and with the possibilities of renting irrigated pasture and of supplemental feeding on the ranch before sale, an extension report dealing with the experience of ranchers already operating along these lines might be helpful to others.

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[5]Seltzer, R. E.; *Seasonal Variation in Prices and Shipments of Arizona Beef Cattle;* Arizona Agr. Exp. Sta. Bull. 251; 1953.

Alternative Markets

In deciding upon the market to be used, livestock producers in most states have two separate choices: (1) what kind of a market to use, and (2) which individual market of the type selected? In Arizona, such a dual choice generally is not possible. If a terminal market is to be used, Los Angeles is the only one considered except in rare instances. There are not many auction markets within easy trucking distance. There are no cooperative shipping associations. Numerous dealers and truck buyers do not scour the country for stock. As a consequence the rancher may discuss possible sale with only one or a few buyers.

It is estimated that of all stocker and feeder cattle produced in Arizona, at least 45 per cent are sold direct to feeders; 25 per cent to order buyers, who receive a small commission (one or two dollars a head) from the buyer; not more than 15 per cent to dealers; 5 per cent or less through auctions; and about 10 per cent through terminal markets. However, some well-informed cattlemen put the percentage sold by private negotiation direct to feeders, order buyers, and dealers at somewhat higher than the above, around 90 per cent. This view probably is centered too much on the larger ranches, and underemphasizes the considerable volume of cattle produced on small ranches and farms. In any event, however, direct sale is the dominant method for marketing Arizona range cattle.

The percentage sold direct is materially higher than in most other western states, where it was found that about 65 per cent of range cattle moved direct. In these other western states a much larger percentage (39 per cent) was sold to dealers. This study also showed that a much larger proportion of calves than steers, heifers, and cows was sold direct to other ranchers and feeders. This is one reason for the higher proportion of direct sales in Arizona, where ranching is typically on a cow/calf basis[6]

The foregoing study of stocker and feeder cattle marketing in the western states found that in New Mexico seventeen out of fifty-five ranches made a complete change of outlet from one year to another, twenty-four made a change for some shipments, and only fourteen made no change.[7] In Colorado, six of fifteen ranches reporting made a complete change, one a partial change. In Wyoming, eight ranches reported a complete change of outlet, four a partial change, and fourteen made no change. It seems probable, on the basis of limited information, that Arizona ranchers do not shift as often from one type of outlet to another, partly because many are larger ranchers with well-established buyer connections, partly because there are fewer alternative outlets, and partly because a large proportion of the animals are calves, less adaptable to shifts in marketing.

Many Arizona cattlemen are highly individualistic in nature, and prefer to keep complete control of the final sales decision.

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[6] Stevens, I. M., R. T. Burdick, H. G. Mason, H. P. Gazaway; *Marketing Western Feeder Cattle;* Western Livestock Marketing Research Technical Committee; Wyoming Agr. Exp. Sta. Bull. 317, June 1952, p. 21.

[7] *Ibid,* p. 56.

They frequently are suspicious of what goes on in the terminal markets, and of selling practices at auctions.

Many Arizona ranchers hardly follow market conditions in the possibly available markets, such as Kansas City, Fort Worth, Denver, and the large feeder cattle auctions at Roswell and Amarillo, except in a general way as a means of checking on price trends during the year. They prefer to get their more concrete ideas about cattle prices, in relation to their own selling, by watching sales of cattle by individual ranchers in the community. Some wait for the annual fall Indian Sale before selling, to get an idea of the way prices are going.

Some observers consider this neglect of careful comparisons of prices in alternative markets to be poor business. They maintain that every rancher, even if he intends to sell direct, should know as exactly as possible what his cattle would be likely to bring in other available markets. For example, farmers and feeders from Texas, Kansas, and Nebraska purchase many cattle in the southeastern section of Arizona, in preference to buying at Kansas City, Fort Worth, or other markets. They do this partly because they want to know more about the cattle they buy to put on winter pasture or feed, as they can learn by visiting the ranches personally or through an order buyer. Yet the direct purchases may reflect a belief that the cattle can be obtained in this way at a lower net cost. Merely as a check on prices received on direct sales, it would seem that ranchers should know more about the net prices they could get at various markets.

In order to make valid comparisons of probable net prices in the several alternative markets, a rancher must have: (1) detailed market news showing prices at the markets by class and grade; (2) the grade of his own cattle; (3) transportation costs per hundredweight to the markets; (4) probable shrinks in shipments to these markets; (5) marketing charges at these markets.

Leading cattlemen interviewed were practically unanimous in the opinion that Arizona ranchers do not have such knowledge. Many ranchers rely on their radio for their principal source of market news. This is satisfactory for following trends, but is not very reliable for making exact comparisons. Detailed market news reports have not been available from the auctions generally. Most ranchers are said to be unable accurately to determine the grade of their cattle, partly because of natural prejudice in favor of their own cattle, and partly because of lack of technical information. Few, if any, except some of the largest ranchers who have kept extensive records of past shipments, know much about relative shrinks and transportation and marketing charges to the different markets.

It has been suggested that it would be helpful to have a research project designed to assemble the required information on shrinks and marketing costs. Such research by some of the other western states already is underway. Some of the ranchers and feeders interviewed, however, felt that most ranchers were not in a position to use such information effectively, because of lack of knowledge of grades and inadequate market news reports. For cattle, the prices reported for any one class and grade usually cover such a wide range as to make it difficult for the rancher to determine where his cattle would fall even if he is generally familiar with the grade of his cattle. However, this objection would usually be even more true of any other price comparison, and the rancher may not wish to be left in the position of merely accepting the best price offered by buyers coming to his gate.

Determining a Fair Price

A rancher frequently may not even make an effort to contact a number of potential buyers, in attempting to arrange a satisfactory direct sale. The sale may take place in some such informal and unpremeditated manner as meeting a buyer on the street when in town on a shopping trip, passing the time of day, asking if the buyer wants his cattle again this year, pondering the price for a few minutes; and then calling it a deal.

Such a way of selling may seem like extremely poor management to anyone from outside the industry. Actually, the two men making a deal in this way may have been dealing together for years. The rancher has found the arrangement satisfactory in past years, after he has had an opportunity to compare returns from his cattle with those received by others in the community. He knows that the feeder must continue to meet such a test if he is to continue getting the rancher's cattle. He has confidence in the integrity of the feeder. Similarly, the feeder knows the quality of the cattle produced by that particular rancher, knows the condition the cattle will be in when weighed. The arrangement is advantageous to both.

In many other cases, however, the rancher has not established such relationships with a buyer. The latter will want to look at the cattle. He may not offer his best price, either because he hopes to "average down" by getting the cattle of this rancher at a lower price, or because he is uncertain about the quality, and the amount of shrink before they settle down in the feedlot. Cattle, even of the same breed, class and grade, may perform quite differently in the feedlot. There is room for bargaining.

How can the rancher determine whether or not he should accept the price offered? He does not have much to go on. The Arizona Cattle Growers Association gets out a weekly market report and news letter, and a weekly radio report, which serve a very worthwhile purpose. In the news letter are brief summaries of various cattle markets, and reports from individual ranchers telling about their cattle sales. However, accurate details of quality, condition, cutback, weighing conditions and other factors affecting the price received are not generally given by the reporting members. Also, there is not much way of knowing how representative are the reported sales. The stockman who gets a low price is not likely to advertise that fact.

The rancher also keeps track of sales in his own community, and talks with other cattlemen he meets in town. Again, however, it is difficult for him to judge the comparative value of his own cattle from the sales information received in these ways, because he is not in good position to judge the quality of the cattle sold by others and may not know the conditions of sale.

Some ranchers seem more interested in getting as much as, or more than, their neighbors than they are in the absolute price. This is a very natural human reaction. Buyers say that each rancher thinks his own cattle are as good as, or better than, his neighbor's. He may be insulted if the price offered him is less than that received by his neighbor.

All of the foregoing conditions lead inevitably to a rather uniform, "customary" price in the community so long as general market conditions remain unchanged. A few ranchers with whom the buyers have been dealing for some years, who have choice cattle, whom the buyers know will not try to fill their cattle with water just before weighing or engage in other practices which are undesirable from the buyer's standpoint, and who are otherwise trustworthy, may get a half cent or more higher price than others in the same community. A few ranchers are especially good salesmen, and may take a new buyer for a price higher than the customary community price even though his cattle are no better than average. Some ranchers with very poor cattle or who are considered likely to engage in sharp practices will receive less than the average price.

The buyer, however, finds it very difficult or impossible to pay a price for the cattle commensurate with actual differences in market value based upon grade and other factors. He cannot pay what should be the top price to everybody; yet those who should be getting considerably less will be antagonized, or withhold their cattle, if the buyer offers less. So the strong pressure is toward a "standard" community price, which is established frequently by the first sizable sale or two made in the area. This price may hold only a week or two, or it may prevail throughout the season if market conditions do not change radically. The range in prices paid in any community during any period of time certainly is far less than the range in prices on a well-patronized feeder cattle market where differences in quality are more fully reflected in prices.

Some observers have pointed out that this situation is an open invitation to price manipulation. For example, an order buyer who intends making numerous purchases in the community may find some rancher who knows his cattle are not of good quality and who is badly in need of cash. These cattle may be bought at what is really a low price considering current market conditions. The news of the sale spreads rapidly and the buyer then is able to obtain the better cattle of other ranchers at the community price so established until some other buyer hears about the sales and comes in to establish a price more in line with market conditions.

There is reason to believe, however, that such instances, if they do in fact exist, are only scattered. Historically, competition among buyers has been so keen that the general level of prices paid ranchers with good-size lots of cattle to sell probably has been well in line with market conditions. The real harm from such community pricing and "price leadership" is that the too uniform prices so established do not provide sufficient differentials reflecting differences in quality. This is inequitable as among different growers, and discourages the production of quality cattle.

The problems presented in connection with the determination of fair and equitable prices for stocker and feeder cattle, under present direct selling, are obvious but extremely difficult of solution. It has been suggested that research to more fully estabilsh the facts, followed by concerted efforts to educate buyers and ranchers to adopt recommended buying and selling practices, might be helpful. Another suggestion is that some way be found to provide more complete, detailed, and accurate information on sales at country points. Still another suggestion is that ranchers, who are busy with production problems and generally are not proficient as salesmen, employ a trained and well-informed cattle salesman at a small fee per head to do the selling for them, in the same way that some farmers and feeders employ order buyers to do their buying. Research could furnish answers to some of these questions.

Terms of Sale

The most important terms of sale are: (1) the weighing conditions or shrink allowance; (2) the percentage cut-back permitted and taken, and (3) the physical bases for cutting.

It is generally accepted among buyers and ranchers that cattle should be in "standard weighing condition" on delivery. This means after a twelve-hour overnight stand at the ranch without feed and water before weighing. A few ranchers, however, attempt to take advantage of buyers by filling their cattle with water just before weighing. In other cases it is impracticable to meet the standard weighing conditions because of time of arrival of truck, etc. Hence, the practice has grown up of making a more or less arbitrary allowance, sometimes called a "pencil shrink," of 2 to 4 per cent, generally 3 per cent, to "shrink" the cattle, theoretically, to standard weighing condition. Actually, the allowance frequently is made even if the cattle are trailed or trucked to the local shipping or weighing point. Apparently this practice is more widespread in Arizona than most other western states, where recent research has indicated that about 60 per cent of the sales were made with shrink allowance.[8]

Some buyers and sellers have come to look upon the shrink allowance as a sort of sharing of the shrink from ranch to feedlot, rather than a means of putting the cattle in a theoretical standard weighing condition. Obviously, however, the actual shrink will vary greatly depending upon circumstances, and the 3 per cent allowance would not represent such an equal sharing.

Actually, the amount of the shrink allowance has become such a matter of custom that it is merely a hidden adjustment of the price, or a trading point. A seller will say "O. K., the price is right. Now what are weighing conditions?" If in all sales the allowance were 3 per cent, it would mean nothing at all, except that the actual price was 3 per cent lower than the nominal price.

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[8] *Ibid*, p. 42.

It would appear to be much better practice if the shrink allowance were made to actually accomplish, as nearly as practicable, its ostensible purpose of placing the cattle on a standard weighing condition basis. This would mean that ranchers with cattle not in that condition would be willing to make an allowance calculated as nearly as possible to equalize the condition, regardless of whether or not his neighbor was making a smaller or greater allowance. It would mean that feeders and order buyers would try to adopt shrink allowances truly measuring the different conditions for different lots of cattle. It means common agreement, among cattle raisers and feeders, which might be expressed through agreement of their organizations, as to just how "standard weighing condition" is to be defined; for example, is it at the ranch before loading or at a local shipping point after a trail or truck haul? And finally, as a basis for such judgments and agreements, research would be needed to determine what are the actual shrinks from ranch to local weighing facilities to feedlot, under various conditions.

Every bunch of cattle includes some animals that are undesirable for one reason or another. They include cripples, "spooky" or one-eyed cattle, dwarf cattle, long noses, rangy cattle, and those with narrow backs, late calves, thin stuffs, off-color animals, and in general cattle which do not make good feeders. The four principal bases for distinguishing such animals are size, color, type, and uniformity or lack of it. If the buyer takes these animals at all, it will be only at less than the agreed upon price. Sometimes the buyer will buy the cutbacks in a separate deal and then send them to an auction, central market, or packer. In other cases, the rancher may keep them for additional pasturing before sale, or he may sell them to a local butcher or on the nearest auction.

A maximum percentage of cattle that may be cut out usually is agreed upon at the time the price is agreed upon. The most commonly encountered amount is 10 per cent. But it may be as high as 25 per cent. This does not necessarily mean that the buyer will actually cut the permitted number of cattle. This depends upon the quality of the cattle and other factors. If prices are rising and cattle are scarce, the buyer may be very liberal in exercising this privilege. If prices have declined since the price agreement was made, or the buyer for any other reason is dissatisfied with his purchase, he may be very strict and take full advantage of the cutting privilege. For example, "red-necks," "line-backs," and cattle with ears badly torn from marking, may get by at one time or be excluded at another time or by a different buyer. Thus, the cutback to a certain extent is used as a means of adjusting the agreed-upon price, although ostensibly the cut is made for other reasons. Some buyers, of course, will follow the same standards in cutting regardless of conditions.

It would be desirable, from the standpoint of equity among different buyers and sellers, to standardize the various bases for cutting as far as is practicable, so that all buyers would be following the same practices. In this way, the cutback would be made entirely legitimate. Research might contribute to this end by disclosing differences in present practices and developing the bases for standardized procedures that might be considered and adopted or rejected by cattle growers' and feeders' organizations.

Contracting for Sale in Advance

It is estimated that at least half of Arizona range cattle are sold by contract, usually thirty to sixty days ahead of delivery. This is higher than for most other western states, where the average was 25 per cent. However, New Mexico reported 63 per cent, and in most states a larger proportion of calves than of other classes were contracted. (Arizona has a higher proportion of calf sales than most western states.) Contracting also is found to a greater extent where ranching operations are on a large scale, as in Arizona.

The proportion contracted varies considerably from year to year, depending on market conditions. Relatively few were contracted in 1953, due to the uncertain price situation. Feeders were hesitant to commit themselves, and ranchers were hoping that the market would pick up later. In 1952 the situation with respect to contracting was about normal, and in 1951 a higher than usual proportion was contracted.

When the contract is executed a down payment is made. This varies, but commonly is 10 to 15 per cent. This down payment is what makes contracting attractive to many ranchers in the summer when their cash is at the low point of the year, and they have pressing debts to pay off. Contracting also appeals to some ranchers from a security angle: they then know that they will have a buyer and a satisfactory deal when the cattle are ready for delivery. After a year in which cattle prices declined sharply in the fall and buyers were not easy to find, contracting appears especially attractive to the ranchers.

Feeders also like to have the security of knowing that they are going to have enough cattle to fill their pens and are particularly anxious to tie up in advance those ranchers known to have high quality feeder cattle. In years prior to 1952, with new feeders entering the picture and bidding up the price of cattle, some established feeders found it difficult to acquire the number of cattle needed for efficient operation, and this stimulated contracting.

There are many ranchers, however, who prefer to wait and see what the market is like when the cattle are ready. They may hope to play one buyer against another, or to take advantage of some temporary favorable break in the market situation. Also, contracting tends in the direction of "customary" prices that are not sufficiently flexible to reflect fully the differences in actual market value of different bunches of cattle.

These differences of opinion regarding contracting indicate that the last word on this subject has not yet been spoken, and that research to disclose actual results under varying conditions might throw useful light on the practice.

The Small Ranchers' Problem

As shown in Table 1, over 60 per cent of farms and ranches in Arizona had less than 100 head on inventory in January, and nearly 50 per cent had less than 50 head. Only 15 per cent had 500 head or more. Although the large ranchers accounted for the bulk of the cattle sold, there are large numbers of small producers who have only a few head of cattle for sale each year.

Many of the small ranchers with only a few up to several hundred cattle for sale find that potential buyers will not go out of their way to buy such a small number. Buyers do not want cattle with many different brands, in case of possible mixup. They are not familiar with the quality of the cattle owned by the smaller ranchers. An order buyer who receives a dollar or two a head cannot afford to spend a day looking up a small bunch of cattle. Under such circumstances, many of the smaller producers must wait until a larger neighbor sells his cattle, when the buyer may be induced to take his at the same time. On the other hand, his cattle may not be of the quality wanted by the buyer, who may take them but disposes of them elsewhere rather than put them into his feedlot. The buyer views the transaction merely as an accommodation. These conditions obviously do not place the smaller producer in an enviable bargaining position.

The results of these conditions were not so bad in years of high and rising prices, when marginal feeders competed with established outfits to obtain cattle and almost anything could be sold anywhere at any time. With the recent changes in cattle market conditions, however, many small producers have encountered much difficulty in selling. In some communities, Naco and Bisbee, for example, there were not enough cattle in sufficiently large groupings to attract a competitive number of buyers. Some pretty good cattle are said to have sold in the fall of 1953 for as low as 11 and 12 cents.

There is a preponderance of small operators in the northern and southwestern parts of the state. Many ranchers are stuck away back in the mountains with thirty to fifty calves to sell. To them marketing is a real problem. There are several possible solutions to the problem. One is the establishment of more auctions in the state. Serious obstacles that would be encountered by additional auctions have been discussed in a preceding section. However, it is possible that a few additional ones in certain localities with large numbers of small producers might have sufficient volume to be successfully operated. Research would help to determine if additional auctions are feasible.

Another suggestion is that annual or semi-annual sales be held, with or without pooling. The "Indian sales" held each year receive a surprising amount of attention by both small ranchers and buyers. In 1953, the prices received at San Carlos, varying between \$15 and \$18.75 for yearling steers, seem quite good in comparison with those received by small producers elsewhere in the state. Of course, these cattle have taken a big shrink by the time they are weighed, which accounts to some degree for the prices received.

Although these sales meet the needs of the Indians quite well, they do not appear to be adequate for the purposes described above.

One possible solution is to provide some form of pooling whereby buyers would be able to obtain uniform lots of graded cattle. These could then be sold either by auction or by an appointed salesman or sales committee through private negotiation. Many potential advantages of such an arrangement could be cited, but it must be admitted that some small ranchers with exaggerated ideas of the relative quality of their cattle would object to the grading, even if it were done by a person or committee with undoubted experience and integrity.

Another possibility is a "conducted tour" of the smaller ranches in a community. A committee of ranchers would obtain the names, addresses, and cattle to be offered by participating producers, and arrange them in order for most convenient inspection by buyers. With appropriate publicity, buyers would be assembled as if for a sale, and then be conducted from ranch to ranch. After viewing all the cattle for sale, buyers would make purchases by private negotiation.

A modification of this proposal is for a committee of ranchers to line up participating producers with complete information regarding the cattle for sale, then have an experienced cattle grader make the rounds, determining the grade of the cattle, after which the complete information would be sent to as many potential buyers as possible.

Any of these arrangements would be of benefit to buyers as well as sellers, since they would be glad to get the cattle of these smaller producers if this could be done at reasonable expense and trouble.

Research to develop information needed before any final appraisal of these suggestions is possible would be very helpful. Practically all of the leading ranchers and feeders interviewed recognize the problem, approved of the idea of trying to deal with it, but thought that the individualistic nature of the small ranchers, their lack of knowledge of quality factors influencing the true market value of their cattle, and just plain inertia, would be likely to defeat the purposes of the project. Undoubtedly it would require the active backing of cattle growers' and feeders' organizations.

MARKETING FED CATTLE

Cattle feeders of Arizona generally are experienced businessmen, well financed, and with an excellent knowledge of cattle and market values. They could not remain in such a business long if they did not have these qualities. Cattle feeding on the scale practiced in Arizona is no business for the amateur or shoestring operator. Many of these feeders feel that they have no personal marketing problem of importance. Some, however, have pointed out a number of problems.

It is estimated that of the cattle fed out in Arizona, about 75 per cent are sold direct to packers, 5 per cent are sold to order buyers, very few to dealers, and nearly 20 per cent through the Los Angeles terminal market. Thus, sale by direct negotiation with the buyer is the preponderant method of sale.

Nearly all of the feeders prefer to make outright sales of live animals. They are opposed to sale on consignment on a "rail basis," i.e., on the basis of carcass weight and grade with price determined by beef prices when the cattle are dressed or sold. Local bankers are opposed to this practice by feeders who are financed by them. Yet a considerable proportion of the fed cattle are sold on this basis, indicating that marketing arrangements are not as satisfactory as is desired. Such sales usually are made only when a satisfactory outright sale on a liveweight basis is not feasible. The tougher the general market condition, the greater is likely to be the number of sales made on a consignment basis. One large feeder who much prefers to sell outright said that in 1953 about 90 per cent of his finished cattle were sold on consignment with price open. When things got rough, most small feeders told the packers to take their cattle. Some of the larger feeders held out for outright sale, and as a consequence lost out because of the drop in prices.

Packers' opinions of purchasing on a "rail basis" vary. One large firm is opposed. However, one independent packer in Los Angeles has built up a good reputation for satisfactory dealings on this basis. During periods of declining prices, some packers probably seek to pass back to feeders the risk of price declines between agreement on purchase and sale of the carcass. In most cases, however, it appears that the tendency to buy and sell on consignment is a result of the fact that feeders and packer buyers cannot agree on the probable yield, grade, and value of the cattle. When such differences of opinion occur, the feeder takes a chance that his judgment will be vindicated when the cattle are dressed out.

To some of those who object to direct sale to packers on open consignment, the terminal market at Los Angeles seems to be no better alternative, because of the marketing costs involved. These feeders figure on a Los Angeles price less freight only. Whether they always get it, by selling on consignment to packers, is another matter. However, most feeders have a good knowledge of shrink, marketing and transportation costs, as well as of the probable grade and yield of their cattle, and are equipped to make comparisons of net returns received in alternative markets. Many of them experiment with different outlets from time to time, as a check.

The main objections offered by feeders to selling on a "rail basis" are:

1. Under this arrangement, the feeder in effect is financing the packer, who they say does not pay promptly for the cattle. Sometimes ten days to several weeks may elapse before payment is received.

2. Carcass grading may be dishonest or incompetent. Even if done by a federal grader, it is necessarily a matter of fallible human judgment. There are many "borderline" carcasses. The

grade assigned to a carcass at 4:30 P.M., when the grader is tired, may not be the same as at 8:30 A.M., when he is fresh. Opportunities for bribes, or strong personal friendship or other pressures, are suspected by feeders. Small packers cannot afford to employ federal graders.

3. The feeder cannot be sure even of the yield figures given by the packer. They also object to the use of the chilled carcass weight which they say frequently shows too much shrink from the warm weight.

4. Packers are said to use any excuse to dock for warble damage and other defects.

5. Packers are believed to have less incentive to try hard to get the carcass graded high and to "fight the beef market" for a good price if the cattle are on open consignment with the beef market to determine the price. They naturally are suspected of selling their own beef to customers paying the highest prices, and the feeders' beef to customers to whom some price concession must be made.

6. Some experienced feeders have much confidence in their own skill and experience in judging cattle, acquired over the years. They do not wish to lose the advantage which they believe they derive from pitting their ability against that of packer buyers. If everybody sold on a rail basis, the experienced seller would have little or no advantage over the inexperienced man.

7. Bankers, some of whom keep in close touch with the operations on which they carry loans, do not like to have their collateral liquidated without definite advance knowledge of what it will bring.

There are many experienced livestock marketing men in other parts of the country, however, who believe that the carcass grade and weight basis is the most equitable and satisfactory method of selling. Sales made by this method return to the individual seller more nearly what his cattle are worth on the beef market. They avoid the admitted errors of human judgment involved in judging yield and grade in buying live animals. They eliminate the incentive to "fill" animals before sale. Sale by description would be facilitated, and the bargaining power of sellers should be strengthened by the greater opportunity to compare prices offered by different outlets, assuming a definite price basis at the time of sale for a given yield and grade. Other advantages of this method have been cited[9] Proponents of the method would be able to offer what appear to them to be satisfactory answers to each of the numbered objections listed above. Some even claim that the marketing of carcasses rather than live animals eventually will be the accepted general method of selling livestock.

Regardless of the correctness of these conflicting claims, it seems that Arizona feeders are running into circumstances that may result in forcing them to sell a considerable proportion of

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[9] Dowell, A. A., G. Engelman, E. F. Ferrin and P. A. Anderson; *Marketing Slaughter Cattle by Carcass Weight and Grade;* Minnesota Agr. Exp. Sta. Tech. Bull. 181, Feb., 1949, pp. 58-59.

their cattle on a carcass basis in the future. If this is so, it might be advisable to direct some of the research work in cattle marketing toward the finding of answers to the questions which have arisen in connection with this practice. There seems to be reasonable hope that at least partial solutions could be found.

REDUCING MARKETING COSTS AND CHARGES

Some livestock producers who are impressed with the difference between retail prices for beef and prices received for live animals have suggested that the most important thing that could be accomplished by research in livestock marketing is to show what happens to the consumers' dollar spent for meat. They believe that packers and other middlemen make large profits, and that if these large profits could be spotlighted they would be decreased.

Actually, numerous careful, exhaustive studies of middlemen's margins and profits have been made over the years. In practically all cases it has been found that the margins taken were justified by existing costs, and that profits were not an important factor determining marketing charges. In every case it has been found that the only way to materially reduce marketing charges is to reduce the costs of performing marketing services or to eliminate the services.

Both costs and charges for marketing livestock and meat have been substantially reduced over a long period of years, after taking into account changes in the services performed and in cost rates such as wage rates. A generation ago, although meat was "cheap," the retail margin as a percentage of the retail price was about twice as high as it is today. Retail meat handling has been made vastly more efficient than it was, and percentage margins in the larger retail super-markets are lower than anyone would have believed possible a few decades ago. The effect of increased physical efficiency on dollar margins, however, has been more or less offset by increased wage rates of meat cutters and other cost rates.

The only way materially to reduce marketing costs and charges is to find more efficient ways of performing the marketing services, all the way from the producer to the consumer, in the same way that production costs have been reduced on farms and ranches. This means painstaking research of the detailed operations of marketing, followed by educational efforts to obtain adoption of the improved practices so discovered. The retail chain store organizations, meat packers, state agricultural experiment stations and the federal government have been and now are engaged in such work. Much of this investigation is on a very informal trial and error basis. Practical research of this kind has paid off in many individually insignificant but collectively important economies.

In order to make large savings in marketing costs, it is necessary to deal with those segments of the marketing system where the major costs are incurred. These segments are shown by studies that have been made of the distribution of the consumer's dollar. The proportion of the consumer's dollar going to the various types of middlemen or marketing functions vary for the different species of livestock, because of differing labor requirements for processing and retail cutting, difference in waste, and other factors.

It is evident that the greatest possibilities of reducing the over-all margin between the producer and the consumer do not lie in increasing the efficiency of marketing of live animals, but in increasing the efficiency and reducing the costs of meat packing, wholesaling and retailing, particularly the latter. Retailing, despite great strides in improving efficiency since the introduction of super-markets, still takes about as much of the consumer's dollar as do meat packing and the marketing of live animals combined.

Public institutions, such as the agricultural experiment stations, have found it difficult to carry their investigations beyond the marketing of live animals. Both meat packers and retailers frequently feel that they know their business better than anyone else and naturally are not very receptive to outsiders coming in to study their operations. Some large retail organizations, however, have found that they can benefit from such work, and have extended hearty cooperation.

One field of research of this kind that seems promising is the merchandizing of frozen meats. Meat packers have had under wraps for many years methods of processing and packaging frozen meats that at one time were thought by some to be capable of revolutionizing the industry. For one thing, they would make it possible for many small stores to handle a variety of meat cuts not possible now because of small volume. This would tend to expand the over-all demand for meat. Even more important, the meat would be cut and packaged by assembly line methods and cheaper labor in the packing plants, thus reducing the big cost of meat retailing, the wages of the retail meat cutter. The importance of this can be appreciated by considering the cost per pound or per dollar of purchased meat for labor alone, if a housewife takes five minutes of a butcher's time in making a purchase, with the butcher receiving $2.75 per hour. With frozen meats, self-service selection from uniformly packaged cuts would be made. Pre-packaging has realized part of this labor-saving feature of frozen meats, but the cutting still is done by high-priced labor on a small scale.

Frozen meats never have been introduced except on a high-cost, specialty-item basis, because of opposition from retail butchers and fears that the new form of meat would not meet with consumer acceptance. Locker plants, home freezers, increased popularity of other frozen foods, pre-packaging in retail stores, and other comparatively recent developments would seem to have gone a long way toward conditioning consumers to the acceptance of frozen meats. It appears that the time is about ripe for some good research on this subject, which might be appropriate for work by the state agricultural experiment stations of the western states.

RECOMMENDED RESEARCH

Each rancher and feeder interviewed in the course of this survey was asked to express his opinion of some of the possible research projects which have been discussed in the foregoing sections. The projects are shown below, listed in the order of preferences expressed. All projects received some favorable reaction, but approval was practically unanimous for the first two. The only one to which a majority of those interviewed was definitely opposed is the last one.

Project Description	Approximate Percentage of Opinions		
	Favorable	Unfavorable	Neutral
1. Study of consumer preference for beef of different grades and having different degrees of finish and different physical characteristics, and of retailer and wholesaler beef merchandising policies as related to these preferences	100	0	0
2. Analysis of feedlot operational costs, and methods of increasing efficiency	90	0	10
3. Adequacy of outlets for small producers of stocker and feeder cattle	75	0	25
4. Economics of slaughterhouse location	65	10	25
5. Pricing conditions and practices in selling stocker and feeder cattle, including terms of sale and information necessary for comparing alternative market outlets	45	30	25
6. Relative costs, advantages and disadvantages of shipping cattle by truck and by rail	35	45	20
7. Price basis for selling finished cattle from Arizona feedlots (yield and carcass grade)	30	35	35
8. Study of the possibilities of reducing costs of distribution and increasing demand for beef by marketing in frozen form	25	20	55
9. Analysis of costs of marketing of cattle and beef from ranch to consumer	25	55	20