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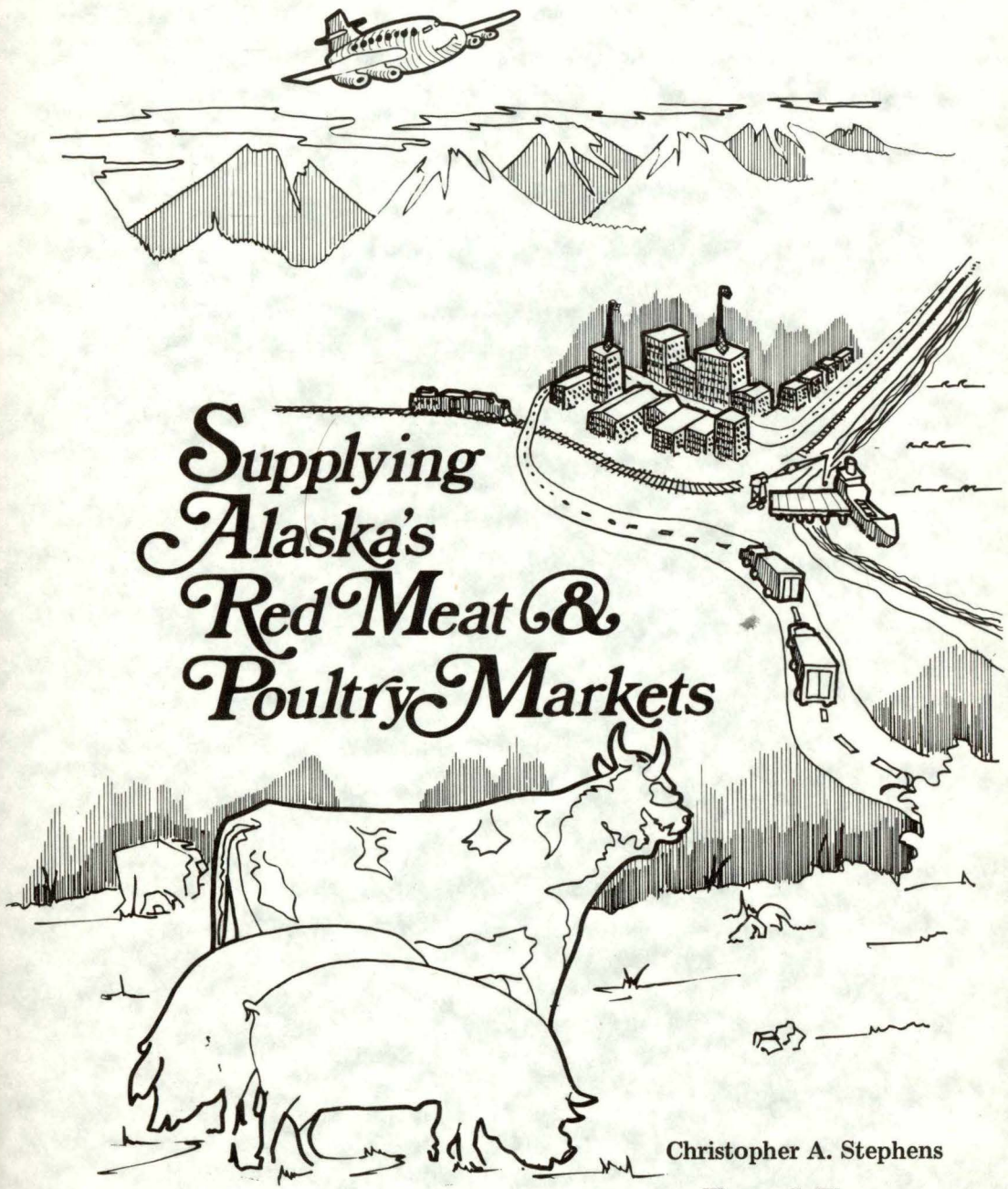

Supplying Alaska's Red Meat & Poultry Markets

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GLOSSARY

Beef Grades — The U. S. Department of Agriculture standards for differentiating between qualities of beef, based upon texture and firmness of lean meat, indications of maturity, the amount of intramuscular streaks of fat (marbling), and conformation. Beef grades also include a yield grade. Each grade level, e.g., USDA Choice, is subdivided into 5 yield grades. Grade 1 has little outside fat on retail cuts. The opposite is true for Grade 5. The yield grades by carcass are determined from (1) amount of external fat, (2) amount of kidney, pelvic and heart fat, (3) area of rib eye muscle, and (4) carcass weight.

Beef Retail Cuts — Brisket (used braised, as pot roast, boiled beef, corned beef); chuck (pot roast, stew, Swiss steak, ground beef, braised); flank (London broil, beef roulades, Swiss steak); loin (T-bone, tenderloin, sirloin steak, roast); plate ("Kosher style" short rib, boneless pastrami navels, trimmings); rib (roast, steak); round (steak, roast, ground beef); shank (chili meat, goulash).

Consolidator — A shipping agent who groups small shipments into larger shipments so as to achieve lower tariff rates.

Containerization — The process of packing and shipping freight in sealed containers or vans rather than as individual items.

Fabricated Beef — The process of reducing or cutting primal cuts into retail cuts.

Hotel, Restaurant and Institution Trade — In its broadest sense, this may be defined to include all eating done away from home. This market ". . . can be broken down into three major categories: (1) commercial feeding, including commercial restaurants of all kinds; (2) semi-commercial feeding, including schools, clubs, common carriers, construction camps, etc.; and (3) other feeding, including hospitals, institutional homes, prisons, convents, Red Cross units, etc." [8, p. 28].

Locker Meat — Meat that is purchased and stored in home freezers or lockers. This is generally sold in quarter, half, or carcass quantities and may be cut, wrapped and frozen.

Manufactured Beef — Beef that is processed and used for such products as hamburger, sausage and luncheon meats.

Pork Retail Cuts — Bacon (from belly); ham (roast, steak); loin (chops, roast); ribs (spareribs, barbecue ribs, Canadian bacon); shoulder (roast, steak).

Primal Cuts — The major cuts a carcass is broken into: round, flank, loin, plate, rib, brisket, chuck and shank.

Red Meat — Includes beef, veal, pork, cured pork, lamb, reindeer and lunch meat.

Chapter I

Introduction

The research reported herein is the second phase of an effort to describe and analyze red meat marketing in Alaska. Previous research was primarily concerned with defining red meat consumption characteristics in urban Alaska [11]. This study provides an overview of the marketing system for red meats consumed in Alaska and considers potential markets for red meat produced in Alaska. [1]

JUSTIFICATION

Interest in and need for a study of this type comes from the large scale economic activity going on in Alaska as well as worldwide problems of food production and distribution.

Interest in Alaska is magnified by development of oil, gas and other resources, increased tourism, government spending, etc. This in turn has caused significant increases in state population and income. Growth in demand for food, especially meat, has been met almost entirely with foodstuffs shipped into the state. During 1972, for instance, 98 percent of the red meat and poultry consumed in Alaska was imported. This study provides for the first time an analysis of the market system which is tied so closely with Seattle. From this study implications are presented which could reduce this dependency.

Markets have two sides: that of demand (consumers) and supply (producers). From a long-run viewpoint, national demand for beef and pork should increase more rapidly than the supply, thus creating an upward price pressure. With expected increases in the state's economy resulting from imminent oil extraction, upward price pressure could be compounded in Alaska. This should result in exceptionally favorable market conditions for

[1] It also provides baseline information (see Appendix A) for a transportation research project in progress which will analyze the physical distribution system between Alaska and Washington.

all meats marketed in Alaska, including meat produced within the state. Therefore, analysis of these markets should aid in increasing the supply from local production.[2]

OBJECTIVES

The specific objectives of this research are:

1. To analyze the retail, wholesale and military markets for red meat and poultry in Alaska.
2. To identify the markets in which Alaska-raised beef and pork can successfully enter the channels of supply.

ORGANIZATION OF STUDY

Analysis of the red meat and poultry market will be presented on a regional basis. Alaska was divided into three geographic regions: Southcentral, Southeast, and Bush (Figure 1). These regions differed in population, modes of transportation available, and market structure.

Southcentral Alaska includes the Kenai Peninsula, Big Delta, Glennallen, Valdez, Cordova, and Chitina, as well as all areas serviced directly by the Alaska Railroad, i.e., Whittier, Anchorage, and Fairbanks.[3] It contained 224,000 people in 1972, which was 69 percent of Alaska's population [2]. Most of the meat and other goods shipped into the region came by water transportation through Seattle. The area had the only completely differentiated retail, wholesale and military market sectors in the state.

The Southeast region extends from Icy Bay in the north to Ketchikan in the south. This region was third in population size in 1972 with an estimated population of 45,000, 14 percent of the state total. It received most of its meat from Seattle via water. Retail and the hotel, restaurant and institution trade made up almost all of the red meat market. A differentiated wholesale sector was not apparent.

The Bush includes all other areas of the state. It also received meat and other goods by air and water, mainly transshipped through Anchorage. No highway or rail transportation was available to this region. The 1972 population, 17 percent of the state total, was approximately 55,000. Twenty-nine percent of this was concentrated on Kodiak Island and the Aleutian Islands. The retail, wholesale and military sectors are primarily extensions of wholesale and military markets of Southcentral Alaska.

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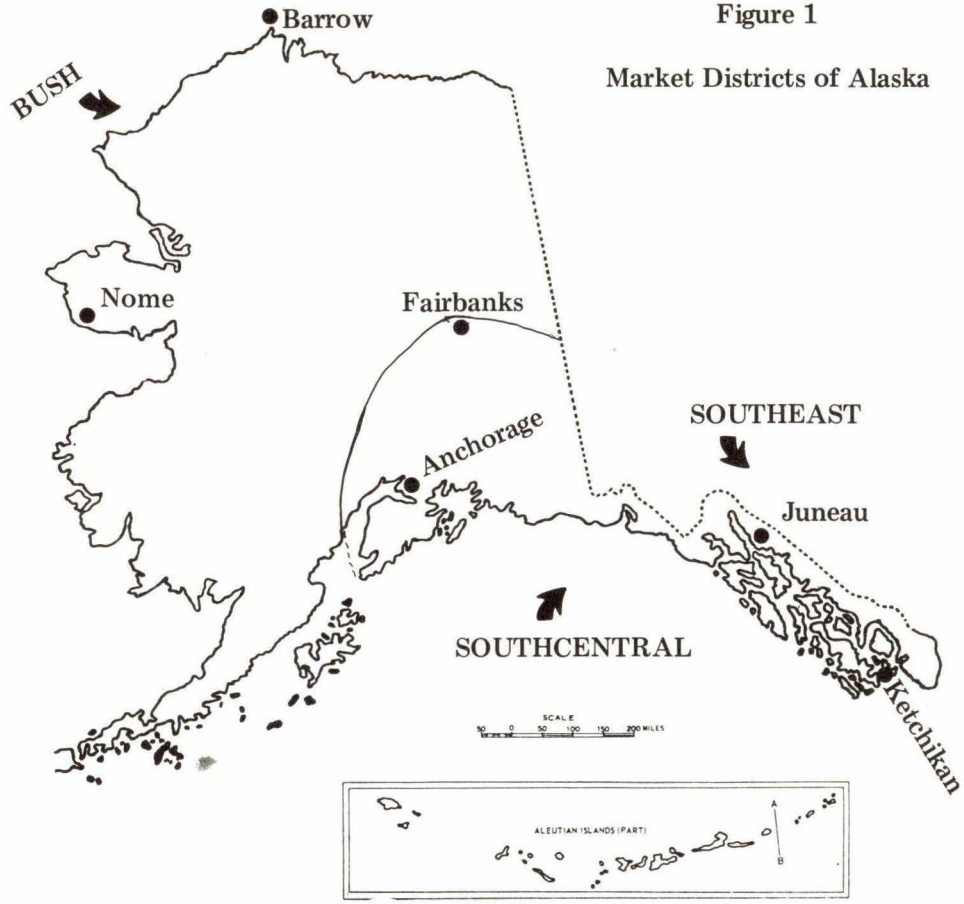
[2]For the interested reader an informative analysis of developmental problems related to Alaskan agriculture is presented by Burton [3].

[3]Fairbanks is considered by many Alaskans to be in a separate region from Anchorage. However, from a red meat and poultry transportation and marketing standpoint the two communities are inseparably linked. Therefore to simplify regional analysis Fairbanks was combined into Southcentral Alaska for this report.

Figure 1

Market Districts of Alaska



SOURCES OF DATA

Data were collected from carriers, from railbelt retailers and wholesalers, from military and state personnel, and from the major consolidator of perishables airfreighted to Alaska. It was possible to check the reliability of the railbelt data by comparing the totals for the amounts of red meat and poultry transported into the railbelt with the totals provided by the railbelt retailers, wholesalers, and military (see Appendix B).

Information on the quantity and type of meat handled was collected when possible for February, May, August, and November, the middle months of each quarter, as representative samples of the quantity of meat handled during the year. Several firms were unable to provide this information by month. In these instances, data were used in the form available and appropriate adjustments were made in the tabulating procedure.

An attempt was made to collect data from each of the twelve carriers of meat to Alaska. This was not always possible. A major air carrier was unable to provide specific information because it carried containerized cargo. Records showed only that the contents of a container were meat. Whether

the container held only meat or only 51 percent meat could not be determined. The type of meat could not be determined either. Records of the non-containerized air carriers to the railbelt gave the quantity of meat shipped but differentiated only between meat and poultry.

Since data from the air carriers were not satisfactory, an alternative source of information was used for air transportation. Information was obtained from the major consolidator for perishable goods air freighted to Alaska. This firm's records showed the quantity of meat shipped by type of meat, i.e., beef, pork, poultry, etc. Therefore, the consolidator's data were used to estimate the quantity of red meat and poultry shipped to Alaska by air in 1972. The quantities were increased by a factor agreed upon by both the carriers and the consolidator to allow for meat not handled by this consolidator.[4]

One water carrier to the Southcentral Alaska area had no records of the quantity of meat it carried. Shipments were thought to be a specific percentage of another water carrier's. This estimated percentage of the second carrier's figures was therefore used.

The quantity of meat shipped to Southeastern Alaska was determined from the records of all regularly scheduled carriers to this area. Unfortunately, detailed data on the types of meat shipped were not available.

Air carriers of meat from the railbelt to the Bush were unable to provide data on the quantity of meat they carried. The quantity of meat shipped to the Bush from Southcentral was estimated by wholesalers and military supplying meat to the Bush. These estimates were combined with data from air and water carriers shipping meat from Seattle to the Bush to determine the total quantity of meat shipped to the Bush. Data on the quantity of different meat items shipped to the Bush were not available.

Retail meat sales in Southcentral Alaska were determined from information obtained concerning operations of the three largest retail chains. Data from two of these gave the quantities of meat handled by type of meat and cut for the middle month of each quarter. Data from the third major chain were available for only one week of the year and differentiated only between fresh and cured meat. The quantity for this one week was multiplied by 52 to arrive at a yearly total. This total was then divided into types of meat and cuts in the same proportion as was found for the two other retail chains. Total retail meat sales were estimated by increasing the combined data for the three largest retail chains by 11 percent. This factor was agreed upon by the retailers surveyed.

Wholesale figures for the railbelt were based upon data provided by the major wholesalers and the state. Since all of the wholesalers in the railbelt were not surveyed, the data were increased by 17 percent, a factor determined by averaging the recommended factors of several wholesalers. The quantity of meat fabricated was determined from data provided by the Alaska Division of Agriculture.

The quantity of meat shipped to the military was determined from data

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[4]In order to meet with the request by individual firms that their data be kept confidential, the factor by which the consolidator's data was increased is not given.

provided by the five major military installations in Southcentral. The quantity of meat going to the military in the Bush was determined from direct military shipments from Seattle to the Bush and shipments from military installations in Southcentral Alaska to the Bush.

Every major carrier, wholesaler, and retailer was interviewed to ascertain transportation problems and the requirements of the Alaskan red meat market. This information was used to determine market requirements for beef and pork.

Chapter II

Market Analysis

In this chapter, the retail, wholesale, and military sectors of the Alaskan red meat and poultry markets are analyzed, both in terms of structure and quantity of different types of meat handled. The various components of the market can be seen in Figure 2. It should be noted that the hotel, restaurant and institution (HRI) trade is a sub-sector of the wholesale market.

RETAIL MARKET

In Southcentral Alaska, more than half of the meat was shipped directly to retailers (see Figure 2). This market was dominated by three supermarket chains which controlled about 90 percent of all retail sales. Most of the outlets of these chains were located in Anchorage. Each chain had a store in Fairbanks and two had stores on the Kenai Peninsula. In addition to these areawide chains, multi-store independent chains operated in Fairbanks and Anchorage. Small independent grocery stores handled limited quantities of meat in most communities of Alaska. Retail sales of locker meat were also part of the retail market, and will be discussed in Chapter III.

All chains ordered their meat from packing houses and wholesalers in the Seattle area. Orders were placed every week and, if shipped by water, took two to three weeks lead time including the transit time. The majority of this meat was shipped as primal cuts in either cryvac (sealed plastic bag) or boxed packages. Small quantities of meat and poultry were ordered from local wholesalers when the quantity demanded exceeded the supply on hand. The small independent stores ordered meat from both local and Seattle suppliers.

Data on the distribution of meat between retail and wholesale markets in the Southeast were not available. Because there were no separate wholesalers in this area and few hotels, restaurants, or institutions, 90

percent of the meat shipped to the Southeast was assumed to have gone to the retail market. The balance was assumed to have gone to hotels, etc. The retail stores were independent operations and some had wholesale operations as a side business. All of these stores ordered their meat from wholesalers and meat packers in the Seattle area and received it in the same form as did Southcentral.

In the Bush, only 29 percent of the meat used for civilian consumption was sold through retail outlets. The Bush retail food stores were small, independent operations which may have partially supplied the local institutional trade. These stores ordered the majority of their meat from Southcentral wholesalers.

Table 1 indicates the quantities of different meat types going to retail outlets by area. Beef was dominant in Southcentral Alaska and amounted to 43 percent of meat retailed in the region. Poultry ranked second at 28 percent, pork was third, at 19 percent.[5] Approximately 7 percent of the meat sold was lunch meat. Insignificant amounts of veal and lamb and mutton were sold. Combined, these latter red meats amounted to less than 2 percent of all meat retailed.

Table 2 indicates the quantities of different beef items ordered by retailers in Southcentral. About 10 percent of the beef was undefined by cut. Approximately 26 percent of the beef ordered was bull and cow meat. About 15 percent was loin, 15 percent chuck, and 12 percent round.

More cured pork than uncured pork was sold in Southcentral Alaska (Table 3). Bacon was the leading item, at 28 percent, and ham second, at 23 percent of all pork sold. Pork loin was the major uncured pork item, amounting to approximately 20 percent of total sales. Pork loin is most commonly used for pork loin chops.

[5]Organ meats are included in these percentages.

Figure 2

Pounds of Red Meat and Poultry Going to Each Sector of the Alaskan Market by Area in 1972

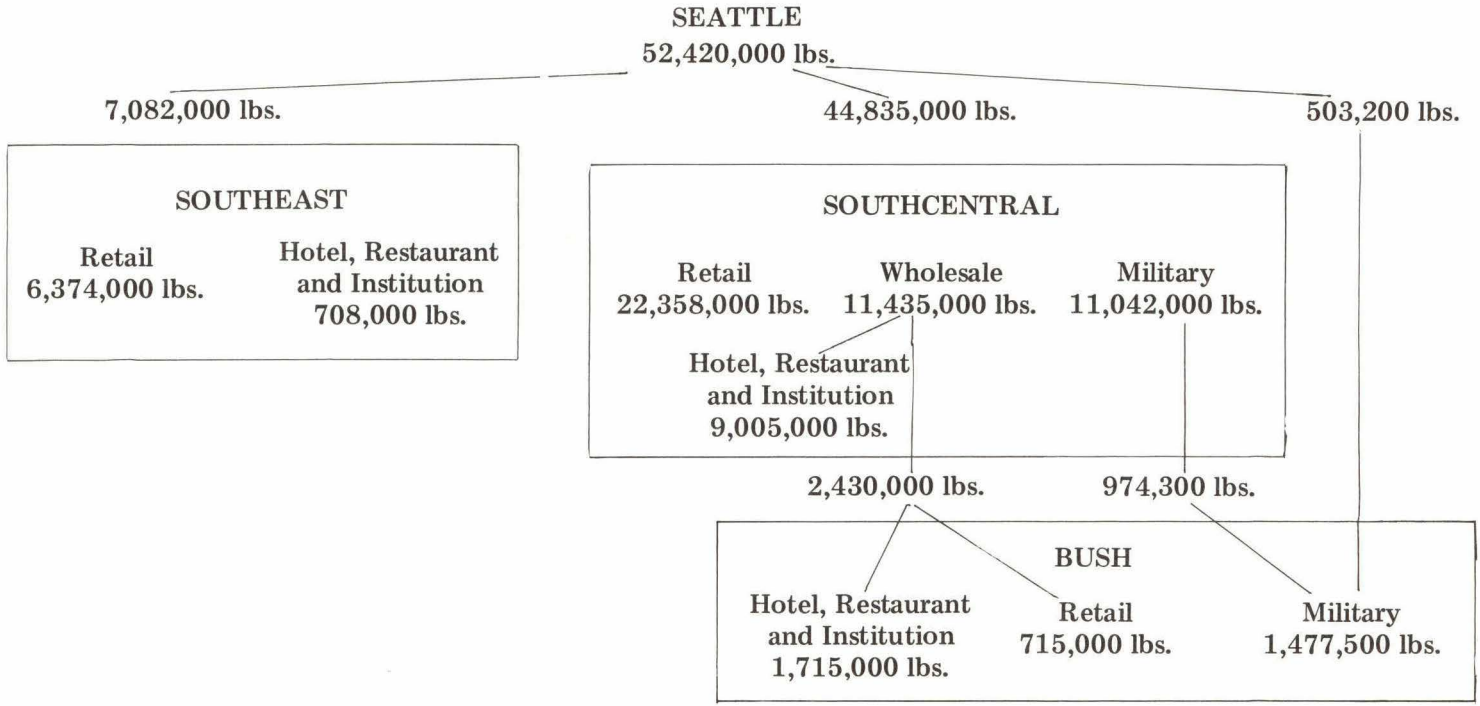

TABLE 1

Estimated Quantity of Red Meat and Poultry Going Retail by Area and Type of Meat in Alaska, 1972

Type of Meat	Southcentral Lbs.	Southeast[a] Lbs.	Bush Lbs.
Beef	9,625,000	2,744,000	629,000
Veal[b]	62,000	18,000	
Pork	4,224,000	1,204,000	22,000
Lamb[b]	315,000	90,000	
Poultry	6,177,000	1,761,000	64,000
Lunch Meat[b]	1,627,000	464,000	
Organ Meats	328,000	93,000	
TOTAL	22,358,000	6,374,000	715,000

[a]Quantities of different types of meat sold in the Southeast were determined from proportions found in the railbelt.

[b]Little if any was retailed in the Bush. Lunch meat was included in the totals for Bush beef, pork, and poultry.

TABLE 2

Quantity of Beef Ordered by Retailers in Southcentral Alaska, 1972

Beef Cuts	Number of Pounds	Percent of All Retail Beef
Carcass, Reg[a]	318,000	3.22
Carcass, SL[b]	177,000	1.79
Round	1,181,000	11.97
Flank	90,000	.91
Loin	1,521,000	15.41
Plate	39,000	.40
Rib	580,000	5.88
Brisket	362,000	3.67
Chuck	1,459,000	14.78
Shank	34,000	.34
Stew Meat	35,000	.35
Ground Beef	208,000	2.11
Bull and Cow	2,542,000	25.75
Organ Meats	246,000	2.49
Suet	54,000	.55
Other	1,025,000	10.38
TOTAL	9,871,000	100.00

[a]Includes regular forequarter and hindquarter.

[b]Includes streamlined hindquarter and back.

WHOLESALE MARKET

The only completely differentiable wholesale sector of the Alaskan red meat market was located in Southcentral. The Southcentral wholesalers supplied meat primarily to the hotels, restaurants and institutions sector in Southcentral and the Bush and to the retail sector in the Bush. They acted as secondary sources of supply for the retail and military markets of Southcentral, but only limited quantities of meat were shipped to these latter markets.

Wholesalers (fabricators and distributors) placed weekly orders with meat packers and wholesalers in Seattle. Delivery including lead time usually took two to three weeks. Distributors who did not fabricate meat ordered meat precut. Fabricators ordered meat precut and as primal cuts, quarters, sides, and carcasses.

Fabricators dominated the wholesale market, handling nearly 83 percent (9,491,000 pounds) of all meat and poultry wholesaled. While there were 11 fabricators, two of these supplied 88 percent of all meat fabricated. The largest fabricator, which was located in Anchorage, handled several times more meat than the second largest fabricator, located in Fairbanks. There were 12 distributors who did not fabricate meat. (They handled 1,944,000 pounds of beef and poultry in 1972.)

Table 4 indicates the quantities of the different types of meat fabricated during 1972. Steaks, chops, roasts, and boneless meat were the major items and 60 percent of all meat fabricated. Ground beef was second at 12 percent.

TABLE 3

Approximate Amounts of Cured and Uncured Pork Ordered by Retailers in Southcentral Alaska, 1972

Cut of Meat	Number of Pounds	Percent Total Pork
Pork Loin	840,000	19.85
Pork Shoulder	179,000	4.24
Pork Spare Ribs	297,000	7.02
Leg	21,000	.49
Sausage	697,000	16.48
Bacon	1,188,000	28.09
Ham, Cured and Smoked	976,000	23.08
Organ Meats	6,000	.14
Other[a]	26,000	.61
TOTAL	4,230,000	100.00

[a]Pigs feet, ears, neck bones, knuckles, hocks, tails, and convenience foods.

TABLE 4

Quantity of Meat Fabricated by Wholesalers in Southcentral Alaska, 1972

Type of Meat	Pounds	Percent
Cured or Placed in Cure		
Beef	45,000	.63
Pork	1,000	.01
Smoked		
Hams (water added)	118,000	1.64
Cooked		
Beef	36,000	.50
Steaks, chops, roasts, and boneless meat	4,311,000	60.00
Ground Beef	865,000	12.04
Hamburger	152,000	2.11
Manufactured Beef	529,000	7.36
Locker Beef	13,000	.18
Veal	15,000	.21
Hog Carcass	6,000	.08
Pork Cut	459,000	6.39
Sausage, fresh	101,000	1.41
Lunch meat[a]	310,000	4.31
Miscellaneous[b]	225,000	3.13
TOTAL	7,186,000	100.00

[a]Dried or smoked sausage, franks and wieners, and Polish sausage.

[b]Miscellaneous, canned, and convenience meats, beef suet, edible tallow, and refined pork fat.

MILITARY MARKET

The major military installations in Alaska are Fort Richardson and Elmendorf Air Force Base in Anchorage; Fort Wainwright in Fairbanks; Eielson Air Force Base 25 miles southeast of Fairbanks; and Fort Greely in Delta Junction. The Air Force maintains numerous small installations in the Bush. The U. S. Coast Guard operates stations in Ketchikan, Juneau, and on Kodiak Island. The U. S. Navy operates a base on Adak Island.

All military installations ordered their meat primarily through the Defense Personnel Support Center in Oakland, California. The meat was procured and shipped from the Seattle area. Small quantities of uncured pork, poultry, and cured meat were purchased from local suppliers when needed. Twenty-one percent of the meat shipped to Elmendorf Air Force Base was used to supply Air Force Bush installations. Remote U. S. Coast

Guard and Navy installations in Alaska in most instances also received meat through Elmendorf Air Force Base.[6]

The quantities of the different types of meat shipped to the military are indicated in Table 5. Military personnel used relatively more beef and less poultry than did civilians. In Southcentral Alaska 43 percent of the meat retailed to civilians was beef and 28 percent poultry. For the military, these amounts were 57 percent beef and 14 percent poultry.

[6]Southeast Alaska Coast Guard Stations received their meat and poultry via commercial transportation firms.

TABLE 5

Quantity of Meat and Poultry Shipped to Military Installations in Southcentral and Bush Alaska, 1972

	Consumed in Railbelt	% of Rail-belt	Shipped to Bush From Railbelt	Shipped to Bush From Seattle	Shipped to Bush Total Bush	% of Bush	Total Meat Shipped to Military	Total Per-cent
	pounds		pounds	pounds	pounds		pounds	
Beef	5,747,400	57.09	569,700	244,500	814,200	55.11	6,561,600	56.83
Veal	64,300	.64	—	30,200	30,200	2.04	94,500	.82
Pork	1,469,500	14.60	145,400	134,000	279,400	18.91	1,748,900	15.15
Lamb	23,700	.24	1,400	—	1,400	.10	25,100	.22
Poultry	1,418,800	14.09	119,800	90,600	210,400	14.24	1,629,200	14.11
Lunch Meat	1,337,200	13.28	138,000	3,900	141,900	9.60	1,479,100	12.81
Organ Meats[a]	6,500	.06	—	—	—	—	6,500	.06
TOTAL	10,067,400	100.00%	974,300	503,200	1,477,500	100.00%	11,544,900	100.00

[a]The quantity of organ meats consumed is underestimated as these were sometimes grouped with other meats in the data provided.

Chapter III

Market Potential for Alaskan Beef and Hogs

This chapter discusses the requirements of the Southcentral retail, wholesale, and military markets for certain types of red meat.[7] *Almost all of the beef produced in the South 48 states and shipped to Alaska for sale is USDA graded. No beef produced in Alaska is graded. Alaska beef had little impact in most state markets in 1972. However, what little local beef existed was marketed successfully, primarily as locker beef. The following discussion will emphasize potential markets both for current Alaskan beef production and for an enlarged supply of Alaskan beef.*

Market requirements identified were largely restricted geographically to Southcentral Alaska. This can be justified for two reasons: (1) this area accounts for almost 70 percent of the state's population; and (2) budget restrictions on this research precluded in-depth analysis of Southeast and Bush markets.

RETAIL MARKET

The carcass weight equivalent of the beef shipped into Southcentral Alaska by retailers in 1972 was approximately 13,400,000 pounds (Table 6). By way of comparison, Alaskan beef production was approximately 690,000

[7] Several kinds of red meats plus poultry were excluded from this chapter. The following is a defense for these omissions. (1) Reindeer — Although over 300,000 pounds of reindeer were produced and the great majority consumed in Alaska in 1972, little was available in the major population centers. Reindeer was produced by native peoples of Alaska and the U. S. Government and consumed largely by Alaskan natives. Given many of the current management practices, there is a real question whether reindeer is an economic entity. [6] Expansion of supply does not seem to be a function of available markets or even of cost of production, but is tied on the negative side to customs and government actions, and on the positive side to interest by newly created native corporations. (2) Lamb and Mutton — Little of these red meats is produced in Alaska. Future production could increase but this is more a function of the price of wool than of lamb or mutton. (3) Poultry — Egg production is the primary activity of the Alaskan poultry industry. Changes into poultry meat production in the near future are not expected.

pounds (Table 7).

Most of the fabricated beef purchased by retail stores was USDA grade choice. Small quantities of USDA prime and good were purchased. One firm mixed prime grade with choice grade to "raise the quality" of its product. [10] Another sold good grade in specific markets for discount sales and to satisfy localized consumer demand for lean beef.[8]

Limited quantities of Alaskan beef were fabricated and sold ungraded in retail stores in Anchorage in 1972. A recent Anchorage consumer study indicated a preference for Alaskan red meats, if available. [11] Although the evidence is insufficient, this is a symptom of a "buy Alaskan products first" syndrome. Therefore, increased retail market penetration by Alaskan fabricated beef is not only a function of increased supply but also of market advertising and salesmanship. A corollary to this would be the development of a private differentiated Alaskan beef grade. This method could provide a significant trademark to be used in advertising the local product. Another possibility is to introduce federal grading into the Alaskan beef industry. This would be expensive given the small size of the beef industry.

Large quantities (about 2,500,000 pounds) of imported bull meat were sold in the Southcentral retail market. Much of this meat came from Argentina, Australia and New Zealand. All meat managers interviewed thought that Alaskan beef might be suitable for manufactured beef as long as it did not contain large quantities of body fat (Table 8).

TABLE 6

Estimated Carcass or Wholesale Weight Equivalent of Red Meat and Poultry Going Retail by Area and Type of Meat in Alaska, 1972[a]

Type of Meat	Southcentral	Southeast	Bush	Total
Beef	13,448,000	3,834,000	887,000	35,101,000
Veal	79,000	23,000		102,000
Pork	4,520,000	1,288,000	24,000	5,832,000
Lamb	375,000	107,000		482,000
Poultry	6,177,000	1,761,000	64,000	8,002,000
Lunch Meat	1,627,000	465,000		2,092,000
Organ Meats	328,000	94,000		422,000
TOTAL	26,554,000	7,572,000	975,000	35,101,000

[a]Factors for conversion were obtained from Commodity Economics Division, Economic Research Service, USDA [4]. Approximate wholesale weight is given for pork.

[8]USDA Good beef is available at retail to Kenai Peninsula residents. This seems to be due to a preference for lean meats, both wild and domestic. The same relationship may exist with certain segments of the population in the Bush; however, the grade of beef available to these residents was not determined in this study.

TABLE 7

1972 Meat Production in the Southeast, Southwest and Southcentral Alaska, in Pounds, Dressed Weight

	Beef and Veal	Pork	Lamb and Mutton	Reindeer	Poultry
Southcentral					
Kenai Peninsula	67,000	4,000			1,200
Matanuska Valley	323,000	21,000			64,500
Tanana Valley	27,000	98,000			9,100
Total Southcentral	417,000	123,000			74,800
Southeast	8,000	7,000			700
Southwest	226,000	5,000	30,000	337,000	500
STATE TOTAL	691,000	135,000	30,000	337,000	76,000

Source: Alaska Crop and Livestock Reporting Service, *Alaska Agricultural Statistics*, 1973. [1]

For retailers to increase their use of Alaskan cattle for manufactured beef would require reduction in their standard orders from Seattle suppliers and establishment of standard orders with Alaskan suppliers. (Note this assumes that portions of the present supply of Alaskan beef will be shifted to manufactured beef or the supply of Alaskan beef will increase or both.) However, the situation is not that simple. Traditional patterns are difficult to change. Alaskan retailers with limited storage facilities ordered their beef and pork approximately two weeks in advance of the date it was needed. They therefore considered it essential to maintain reliable sources of supply. Retailers believed they accomplished this by purchasing all of one type of meat from one supplier. They felt that their supply was more secure if they placed regular orders, since their suppliers could then anticipate their orders and prepare for them.

Some meat managers also felt that they were very small customers (for fabricated as well as manufactured beef) of suppliers who served the much larger Seattle market. These managers suggested that this put them at a distinct disadvantage in competing for the limited amount of higher quality choice grade beef available from suppliers. They believed that they improved their competitive position for receiving the better quality meat by placing regular orders. This argument should be investigated further. One Seattle supplier said that the higher quality choice grade beef requested by his Alaskan retailer customer was actually a problem for him to sell because most of his Seattle customers did not want meat of that high a quality.[9]

Retail stores brought approximately 4,224,000 pounds of pork into

[9]Evidence, though insufficient, suggests that Anchorage households may not wish to consume as high grade beef as retailers are currently offering. [11]

TABLE 8

Market Requirements for Beef
in Southcentral Alaska, 1972

Market	Market Requirements	
Retail	Fabricated	Good, Choice, Prime
	Manufactured	Lean and dry beef[a]
Wholesale	Fabricated	Choice and Prime
	Manufactured	Lean and dry beef
Military	Fabricated	Good, Choice, Prime
	Manufactured	Lean and dry beef
State	Fabricated	Good, Choice, Prime
	Manufactured	Lean and dry beef
All Markets		Uniform quality, Competitive price, Reliable source of supply

[a]"Dry" refers to meat with a relatively low moisture content.

Southcentral Alaska in 1972. This represents 4,520,000 pounds in dressed carcass weight, if organ meats are excluded (Table 6). Alaskan production was about 135,000 pounds, dressed carcass weight (Table 7). Little knowledge of Alaskan pork was exhibited by retailers. If it is price and quality competitive and available on a more or less continuous basis, it could enter the supply channels of most retailers.[10]

THE RETAIL LOCKER MARKET

Approximately ten different firms sold locker meat regularly, including the major wholesale fabricators in the state. These firms sold choice beef, although good grade was provided if requested and was sold in discount sales. In addition, occasional sales of locker meat were held by some of the retail stores. Data on the quantity of meat sold as locker meat could not be broken out from the totals of the retail and wholesale markets.

Locally produced pork has been sold as retail locker meat in Alaska for many years. Pork is currently available in Fairbanks and in Palmer (near Anchorage). Alaskan beef is sold as locker beef to local populations by ranchers on the Kenai Peninsula, Kodiak and the Aleutian Islands, and by Matanuska Valley farmers. Sales of pork and beef are limited by small local

[10]Alaskan pork has been retailed successfully in Southcentral Alaska. The major problem has been limited supply.

production. A major expansion of Alaskan beef or pork in the locker market probably would require an increased awareness by Alaska consumers of the quality or price advantages of local meat (thus creating a differentiated product).

THE WHOLESALE MARKET

The wholesale market was composed of two large fabricators plus 12 meat distributors. Nine additional food processors produced sausage and other specific meat items or carried out small fabricating operations. Wholesalers handled 14,291,000 pounds of red meat and poultry (on a carcass equivalent basis) during 1972.

Quality requirements for beef entering the wholesale market were established by the markets wholesalers served. For this reason, requirements for fabricated beef are discussed under the hotel, restaurant and institution market. For manufactured beef, fabricators desired lean beef provided in a boned-out, frozen form. They felt that Alaskan beef would be suitable for manufactured beef and one fabricator had on occasion used cull dairy cows from Palmer. Fabricators processed meat in such large quantities that storage of Alaskan beef, which was available only in November or December (excluding cull dairy cows), would not be a problem. Wholesalers also displayed none of the concerns about disturbing reliable sources of supply expressed by retailers.

Each of the wholesalers interviewed said he would purchase Alaskan pork, but that none was available.

THE HOTEL, RESTAURANT AND INSTITUTION MARKET

The Southcentral and Bush hotel, restaurant and institution market used 11,548,000 pounds (on a carcass equivalent basis) of red meat and poultry in 1972. This market can be separated into three areas: commercial feeding, semi-commercial feeding, and other feeding (see Glossary for definitions). The following discussion is limited because disaggregated data on the quantity of red meat and poultry going to each area were not available, with the one exception that data on State of Alaska meat purchases were obtained.

Commercial feeding is more commonly referred to as the hotel and restaurant trade. Fabricated meat was ordered primarily from local wholesalers, broken down into cuts suitable for serving. At least choice grade and often prime grade beef was required. None of the wholesalers saw any possibility that Alaskan beef could enter this market as fabricated beef until it graded at least choice.

Similar reasons were given for private groups and institutions and construction camps. This is especially true of the latter because of the added significance food has for people working in these camps, particularly the remote ones.

Fabricated beef purchased by the state for institutions in the semi-commercial and other categories was grade good or better. The state also

requests bids for ungraded hamburger with a requirement that the meat be supplied in patty form. This then is a potential market for Alaskan beef.

The state purchased meat on a quarterly basis. Bids were sent to prospective suppliers, specifying a specific destination and the quantity, type and form of the meat to be delivered. All bids were FOB point of destination. The dollar value of state purchases of beef was estimated to be $158,750 in 1972 [7]. Translated into pounds, based on an estimated average cost per pound of $1.19, the state purchased approximately 133,400 pounds of beef in 1972.[11]

THE MILITARY MARKET

Most of the beef (8,025,000 pounds on a carcass equivalent basis) used by the military installations in Alaska was supplied through the Defense Personnel Support Center in Oakland, California, and shipped from Seattle. The military purchased prime, choice, and good grade beef for fabrication and lesser quality for hamburger.

The commissary officer's requirements for Alaskan beef paralleled those of civilian retail meat managers: Alaskan beef would be acceptable if it were similar in price and quality to that shipped to Alaska. The military has federal beef grade procurement requirements. Since Alaskan beef is currently not graded, it is excluded from this market except as manufactured beef.

The military is a potential market for Alaskan pork. In 1972, it used approximately 1,893,000 pounds of pork (carcass equivalent), plus an undetermined amount of pork and cured meat purchased from local suppliers on a "need" basis. Pork carries no formal US meat grade; also it is purchased by weight class and carcass cutout characteristics. This makes entry simpler for Alaskan pork producers than for beef producers.

REVIEW OF MARKETS FOR ALASKAN BEEF AND PORK

1. The *manufactured beef market* offers a significant opportunity for expansion of Alaskan beef production at its present level of quality because, in a marketing sense, it does not require development of a differentiated product. Alaskan beef can match market requirements for leanness and dryness. Wholesale fabricators expressed significant interest in using Alaskan beef for manufactured beef. Fabricators also had facilities for processing and storing large quantities of meat. In 1972 Southcentral Alaska fabricators used the equivalent of 4,092 carcasses for manufactured beef (Table 9).

While retailers handled more manufactured beef than did wholesalers (Table 9), the requirements of retailers were not so well suited to those of Alaskan producers. Retailers had more limited storage capacity and could

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[11]The average price of beef is based on the average Seattle retail price for beef during 1972 of $1.15 per pound. This retail figure was converted to wholesale and transportation costs to Anchorage were added.

only order meat for immediate sale. They indicated that they wanted a more regular source of supply of already boned-out and frozen meat.

TABLE 9

Quantity of Manufactured Beef Handled by Southcentral Alaska Retailers, Wholesale Fabricators, and Military in 1972

	Pounds	Number of Animals[a]
Retail[b]	2,542,000	5,844
Wholesale Fabricators	1,780,000	4,092
Military[c]	84,000	193
TOTAL	4,406,000	10,129

[a]These figures assume a potential of 435 pounds of salable beef per animal.

[b]This figure is probably an overestimate.

[c]Most meat used for manufacturing purposes by the military was good grade or better. Limited quantities of bull meat were purchased from local wholesalers. The figure given is probably a minimum amount.

The military handled small quantities of manufactured beef. As it was purchased from local suppliers only on a "need" basis, the military was not a reliable buyer. Like retailers, the military required that the beef be supplied boned-out and frozen.

The State of Alaska purchased manufactured beef, but purchases were quite small and the meat was required to be in patty form.

2. Retail, wholesale and military *fabricated beef markets* in most cases require a minimum USDA good grade. The exception is that non-graded Alaskan produced beef has been sold as fabricated meat in retail markets. Unless local beef has federal grading (which seems unlikely in the near future because of the high cost of grading and low volume of slaughter) market expansion must come from differentiating the product. Alaskan beef could be labelled with a private grade like "Alaskan premium quality," placed on the retail market and advertised as such. This should enhance consumer acceptance.

The military, by its requirement for graded beef, is out of reach for ungraded or privately labelled fabricated Alaskan beef.

3. There appears to be a significant *market for Alaskan pork* in Southcentral retail and wholesale markets. It was estimated that 31,000 carcasses were handled in these markets in 1972. If the military were added, the Southcentral market would be increased to 42,000 carcasses. If Alaskan pork producers could be price and quality competitive (sparse evidence indicates that they could be), then there should be a large enough pork

market to justify a medium-sized slaughter plant in Alaska (assuming a corresponding increase in the supply of Alaskan pork).

Chapter IV

Summary and Implications

SUMMARY

This report describes red meat and poultry marketing in Alaska in 1972. It is specifically concerned with analyzing the various subsectors of the meat and poultry market, and identifying the market potential for Alaskan beef and hogs. Recommendations for the marketing of the present as well as an increased supply of Alaskan beef and hogs were made in the light of the findings.

The raw data used in this study were obtained from the major consolidator of perishables airfreighted to Alaska, from carriers of meat shipped to Alaska, from the major retailers and wholesalers, from the military, and from individuals familiar with Alaskan meat production. Personal interviews were conducted with the above to determine the characteristics of the industry and its products along with various transportation implications.

The market analysis was presented on a regional basis. The regions were Southcentral, Southeast, and Bush Alaska.

Retail and wholesale markets in Southcentral Alaska were dominated by three chain retailers and two wholesale fabricators. Bush retailers and restaurants were primarily supplied by the Southcentral wholesale sectors. The Southcentral military market forwarded meat to remote installations in Bush Alaska. The Southeast contained independent local stores and was the only region of the state that did not receive red meat or poultry through any Southcentral market channels.

Beef was the main type of meat sold by retailers and wholesalers. Poultry and pork ranked second and third. Wholesalers sold more steaks and chops than any other meat item.

The Alaskan beef industry produced and successfully marketed very

limited quantities of beef, none of which was graded beef in 1972. Alaskan beef was mainly sold as locker beef. Ninety-eight percent of the red meat and poultry used by Alaskans was transshipped through Seattle, Washington. Excluding manufactured beef, all beef from Seattle sold in the state was USDA graded. Increased local penetration of the retail market might be possible if a private grade was developed for Alaskan beef (or USDA grading instituted) and a significant marketing effort made. There is also potential for ungraded Alaskan beef to be sold as manufactured beef in the retail market. The wholesale market generally specified USDA graded beef, which reflected the demands of the hotel, restaurant and institution market; and in the case of the military, USDA graded meat was required by their procurement regulations. Both purchased ungraded manufactured beef for processing. Therefore, ungraded Alaskan beef could enter wholesale and military markets as manufactured beef. Wholesalers sold approximately 2,000,000 pounds of manufactured beef in 1972. The total Alaskan beef production was 691,000 pounds.

There is an ample market at all levels for Alaskan pork since official live grading standards are not used for any pork produced in the U. S. In 1972 an estimated total of 9,865,000 pounds, in dressed carcass weight equivalent, of cured and uncured pork were sold in Alaskan markets. Total Alaskan production was only 135,000 pounds, dressed carcass weight.

IMPLICATIONS

Given the market information presented in this paper certain implications for growth of the Alaskan livestock industry are evident. The following considers both potential policy actions as well as defines areas for further research.

1a. The state should consider funding a program which provides for a percentage cost allowance to wholesalers or retailers for marketing Alaskan produced beef and pork. This allowance would be an incentive to change current supply patterns in favor of Alaskan produced products.

1b. A requirement that state agencies purchase Alaskan beef and pork in preference to imported products for use in state institutions has potential benefits to Alaskan livestock producers. This would be a means of guaranteeing a market for locally produced livestock.

1c. Another possibility would be to provide state funding for a red meat incentive program which would be similar to the current grain incentive program (which ends in 1975). Producers would be subsidized by state payments over and above the market value received at time of sales. This would tend to provide increased operating and reinvestment capital for local producers.

1d. Before any of the above programs are instituted the following researchable issues must be considered: i) What size of cost allowance and/or subsidy would be required to significantly affect production and marketing? ii) What would be the nature and significance of various positive and negative aspects of each of the above programs? iii) What would be the cost of such programs to the state and its citizens — consumers?

2. Alaskan beef producers should make a concerted effort to establish a reputation for uniformity in product quality. They should develop and enforce quality standards for the industry. This would make Alaskan beef more desirable to Alaskan consumers, retailers, and wholesalers.

3. Alaskan beef producers should be able to market additional quantities of beef through the manufactured beef market. From an ease of market entry standpoint, Alaskan-produced manufactured beef should initially be marketed through the wholesale market. Fabricators have the skilled labor and equipment to perform deboning and grinding operations, plus sufficient storage capacity to purchase large quantities of beef at one time.

4. A management systems research program should be developed to investigate the economically efficient techniques for producing cattle for the manufactured beef market. Included should be analysis of slaughter, deboning and freezing near the production area (this is especially important if production is planned in remote areas of the state). A similar study is needed to identify and analyze the various components required for the production of Alaskan cattle for the fabricated beef markets. Included should be a review of the advantages and disadvantages of a state-funded federal meat grading program for Alaska. Finally, additional research is needed to determine the positive and negative aspects of state supported slaughter/processing facilities.

5. Pork research should concentrate on better defining a management systems approach for confinement feeding, including related marketing infrastructure and feed production components. One important specific study should be a cost feasibility analysis for construction of a large scale hog slaughter plant in Alaska including implications of either private or public ownership.

Appendix A

MODES OF TRANSPORTATION FOR SHIPPING RED MEAT AND POULTRY TO ALASKA

INTRODUCTION

This Appendix describes the transportation network which was used to supply red meat and poultry to Alaska in 1972. It is presented as baseline information for further study and not as a rigorous analysis.

Transportation movements to Alaska have three striking characteristics. First, Alaska's meat is supplied primarily through one city, Seattle, Washington. Alaska is therefore extremely vulnerable to any changes that occur in this transportation corridor. For example, labor disputes in the transportation sector between Seattle and Alaska can seriously disrupt the flow of supplies.

Second, the great distances involved result in comparatively long transit times for shipments to Alaska. Juneau, Anchorage, and Point Barrow are 909, 1445, and 2033 air miles from Seattle, respectively. Because of the relatively high cost of air transportation, most meat is shipped by water, meaning transit times of approximately 84 hours (3½ days) to Anchorage.[12] This in turn extends the lead time required for supplies shipped to Alaska, which increases the need for forward planning by merchants and others within the state.

Third, shipping rates to Alaska have remained high because few commodities are available for shipment from Alaska back to Seattle. The back haul consists primarily of fresh, frozen and canned fish, ores and concentrates, and forest products. In 1972, 1,888,992 tons of goods were shipped into the port of Anchorage while only 96,132 tons were shipped out [9]. Revenues generated by transporting goods to Alaska must cover the return transport of nearly empty carriers. It is unlikely that significant

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[12]Time in transit for truck transportation was similar to that for water. Because of higher transportation costs, only limited quantities of meat were shipped by truck.

reductions in freight rates will occur until back hauls develop.[13] It has been estimated that with a full back haul, northbound rates could be reduced by one-third [12].

Among the factors affecting a wholesaler's or retailer's choice of transportation are the relative importance of time in transit, which affects the quality of meat, and the cost of maintaining inventories. Shelf life is lost when fresh pork and veal products are shipped by water. For beef, however, time in transit does not have the same disadvantage because if handled correctly it does not deteriorate during the transit time involved.

SOUTHCENTRAL

Water Carriers

Ninety-three percent of all meat shipped to Southcentral Alaska was shipped by water (Table 10), primarily because of the comparatively low cost of water transportation (Table 11). The water carriers included three water/rail carriers and a containerized truck/ship carrier (Table 12). Water/rail carriers shipped to Whittier, from which the Alaska Railroad hauled the cars to Anchorage and Fairbanks. The containerized truck/ship carrier went directly from Seattle to Anchorage.

Two of the water/rail carriers used barges. The Alaska Hydro-Train, Inc. shipped from Seattle twice weekly, following the Inside Passage, and took approximately six days in transit. The second barge operation, Canadian National Railway, Inc., departed from Prince Rupert, British Columbia, approximately every ten days, and took four days in transit to Whittier. Both of these carriers brought very little meat to Alaska.

The third water/rail carrier, the Alaska Trainship Corporation, Inc., carried rail cars from New Westminster, British Columbia, to Whittier. The ship made one voyage a week, via the Inside Passage and Gulf of Alaska, leaving every Thursday and arriving on Saturday. The ship had a total capacity of approximately 50 non-refrigerated rail cars and 12 refrigerator cars. The number of refrigerator cars was limited by the electrical power supply of the ship.

The containerized truck/ship carrier, Sea-Land Service, Inc., provided shipping from Seattle to Anchorage twice a week, Kodiak Island once a week, and Adak Island once every two weeks. Sea-Land delivered meat to Cordova on the return from Anchorage to Seattle. Time in transit from Seattle to Anchorage was three and one-half days. Each ship could hold 370 vans, refrigerator or dry. These were transferred either to Sea-Land trucks or to flat-bed rail cars. Service was provided to Fairbanks both by road and rail.

The selection of a water/rail carrier or a containerized truck/ship carrier depended on numerous factors including problems with handling and rehandling the commodity once it arrived in the designated city. The

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[13] An additional point is that the primary Alaskan outbound shipments, which are raw materials, require specialized cargo vessels. It may be that only after Alaska becomes industrialized will back haul become a significant factor in reducing transportation rates.

TABLE 10

Pounds of Red Meat and Poultry Reported Shipped to Southcentral, Southeast, and Bush Alaska by Water, Air, and Road Carriers in 1972

	Southcentral	Percent Southcentral	Southeast	Percent Southeast	Bush[a]	Percent Bush	State Total	Percent Total
Water	39,936,000	92.78	6,630,000	93.62	503,000	100.00	47,069,000	92.97
Air	3,007,000	6.99	452,000	6.38			3,459,000	6.83
Road	100,000	0.23					100,000	0.20
TOTAL	43,043,000	100.00	7,082,000	100.00	503,000	100.00	50,628,000	100.00

[a]These amounts are for air and water shipments from Seattle. Additionally, 2,430,000 pounds of red meat and poultry were shipped from Southcentral wholesalers to the Bush. Remote military installations received 974,300 pounds of the total sent to the Bush from Anchorage.

TABLE 11

Average Air, Water and Road Transportation Rates[a] From Seattle to Anchorage and Fairbanks, Per 100 Pounds

Minimum Weight	Air			Water		Road
	Non-Containerized Anchorage-Fairbanks		Containerized Anchorage-only[b]	Anchorage	Fairbanks	Anchorage or Fairbanks
100	$14.70	$17.85	$185.00	$7.63	$9.31	$10.88
1,000	13.65	14.70	18.50	7.63	9.31	
2,000	13.15	14.20	9.25	7.63	9.31	
5,000	12.10	13.15	7.89	7.41	9.08	10.65
10,000			7.40	—	—	10.42
20,000			6.47	4.65	5.84	
30,000	8.15		6.16	4.21	5.37	
40,000			6.01	4.21	4.94	
50,000			5.92	4.21	4.94	
60,000			6.16	3.88	4.88	
70,000			6.07	3.75	4.74	
80,000			6.01	3.65	4.64	
90,000			6.16	3.48	4.46	
100,000			5.92	3.42	4.41	

[a]Rates as of January 1973.

[b]The inconsistent reduction in rate is due to weights which are not evenly divisible by 3,125 (the maximum weight per container). In such instances it was assumed a partially full container would be shipped.

Source: Information provided by carriers.

containerized carrier had higher rates (see Table 13) but shipped the container directly to the individual firm receiving it. The water/rail carrier could provide an intact rail car to individual businesses only if an adjacent rail siding was available. If not, rehandling was necessary and added to shipping costs. (These conditions specifically relate to meat and poultry products.)

TABLE 12

Carriers of Red Meat
and Poultry to Alaska
1972

	Name	Type	Shipped From	Shipped To
Water	Alaska Hydro-Train	Rail/Barge	Seattle	Whittier
	Alaska Outport	Barge	Seattle	Southeast
	Alaska Train Ship	Rail/Ship	New Westminister, B.C.	Whittier
	Canadian National	Rail/Barge	Prince Rupert, B.C.	Whittier
	Foss Alaska Lines	Barge	Seattle	Southeast
	Northland Marine	Barge	Seattle	S.E./Bush
	Sea-Land, Inc.	Ship	Seattle	Southcentral/ Bush
Road	Lynden Transfer	Truck	Seattle	S.E. (road/water)/ Southcentral
Air	Alaska Airlines	Airline	Seattle	Southeast/ Southcentral/ Bush
	Northwest Orient	Airline	Seattle	Anchorage
	Pan American	Airline	Seattle/ New York	Fairbanks
	Western Airlines	Airline	Seattle	Anchorage

Road Carriers

One trucking company, Lynden Transfer, occasionally brought meat up the Alaska Highway from Seattle to Fairbanks and Anchorage. While time in transit over the road was approximately equal to that for water, rates were not. Water rates for loads above a 20,000-pound minimum were approximately half those for road carriers in January 1973 (Table 11).

The small quantity of meat that was shipped by truck in 1972 was reportedly shipped during a temporary stoppage of Sea-Land by labor disputes. Truck shipments over the road appear to have been a secondary mode of transportation that was only used when other modes were not available.

Air Carriers

In 1972 only 6.79 percent of the meat shipped to Southcentral Alaska came by air. Northwest Orient Airlines, Inc., and Western Airlines, Inc., flew from Seattle to Anchorage. Alaska Airlines flew from Seattle to Anchorage and Fairbanks and to Cordova and Valdez, both from Anchorage and Juneau. Pan American World Airlines, Inc., flew direct from Seattle to Fairbanks.[14]

Containerized air freight has significantly reduced air freight rates to Alaska through "increased utilization of equipment," as well as reducing other incidental costs, such as handling, paperwork, packaging, and pilferage [5, p. 42].[15]

A significant portion of the meat air-freighted to Fairbanks in 1972 was shipped to Anchorage first because of the lower container rate (see Table 11).

Of all meat ordered by retail outlets in the railbelt, approximately 17 percent of the pork was shipped by air, 11 percent of the veal, 9 percent of the lamb, 6 percent of the poultry, and 3 percent of the beef. Pork was most often shipped by air for two reasons (Table 14). First, it deteriorates more rapidly than beef, and therefore time in transit is critical. Second, when the military purchased pork, cured meat, and poultry from local vendors, wholesalers often made bids to the military without having any stock on hand. When a bid was accepted, the wholesaler had to air freight the product from Seattle to meet the delivery requirements of the bid.

Poultry, like pork, cannot be stored for several weeks without being frozen. Several retailers shipped poultry by air on a regular basis in order to offer fresh poultry. Beef was shipped by air freight mainly when demand was greater than anticipated and when transportation disputes occurred.

SOUTHEAST

Water Carriers

Three barge operations and the Alaska Ferry system provided water transportation from Seattle. The first barge operator, Alaska Outport, Inc., sailed to small ports within Southeastern Alaska. These included the ports of Hydaburg, Craig, Klawock, Kake, Angoon, Chatham, Hoonah, and Pelican. There was one sailing a month from November to February and a sailing every three weeks from March to October. Time in transit was 12 to 14 days from Seattle to the various ports.

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[14]Pan American's daily flight from New York to Tokyo made a refueling stop in Fairbanks. Northwest Orient's daily Chicago to Tokyo flight made a refueling stop in Anchorage. Insignificant if any amounts of meat were shipped to Alaska on these flights.

[15]January 1973 rates indicate that containerization reduced air freight rates to Anchorage from Seattle from $8.15 to $6.16 per hundred weight for 30,000-pound minimum loads (see Table 11).

TABLE 13

Water Tariff Rates from Seattle to Anchorage and Fairbanks[a] by Type of Carrier Per 100 lb. Rate

TYPE OF CARRIER	FRESH						CURED						FROZEN meat & poultry	
	RAIL				OTHER		RAIL				OTHER		OTHER	
Carrier	Trainship		Hydrotrain		Sea-Land		Trainship		Hydrotrain		Sea-Land		Sea-Land	
	Anch.	Fbks.	Anch.	Fbks.	Anch.	Fbks.	Anch.	Fbks.	Anch.	Fbks.	Anch.	Fbks.	Anch.	Fbks.
WEIGHT														
Min.	$—	$—	$—	$—	$8.89	$10.57	$—	$—	$—	$—	$6.22	$7.89	$7.78	$9.46
5,000	—	—	—	—	8.45	10.34	—	—	—	—	5.90	7.56	7.45	9.12
10,000	3.87	4.86	3.95	4.96	—	—	3.64	4.29	3.71	4.38	—	—	—	—
20,000	—	—	—	—	8.23	10.12	—	—	—	—	4.59	7.12	4.59	8.16
30,000	—	—	—	—	5.61	7.00	—	—	—	—	4.16	5.27	—	6.84
40,000	—	—	—	—	—	—	—	—	—	—	—	4.43	—	4.66
50,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—
60,000	3.54	4.53	3.61	4.62	4.45	—	3.31	3.97	3.38	4.05	3.77	4.89	4.00	5.11
70,000	3.32	4.32	3.39	4.41	—	—	3.10	3.75	3.16	3.83	—	—	3.95	5.06
80,000	3.16	4.15	3.22	4.23	—	—	2.93	3.59	2.99	2.94	—	—	—	—
90,000	3.11	4.10	3.17	4.18	—	—	2.88	3.53	3.66	3.60	3.19	4.30	3.43	4.54
100,000	3.05	4.04	3.11	4.12	—	—	2.82	3.48	2.88	3.55	3.11	4.22	3.35	4.46

[a]Rates as of January 1973.
Source: Information provided by carriers.

The second, Foss Alaska Lines, Inc., with two barges, had weekly scheduled sailings throughout the year to Petersburg, Ketchikan, Metlakatla, Wrangell, Juneau, Sitka, Skagway, and Haines. One barge left Seattle every Thursday, taking approximately five days to reach all ports.

The third, Northland Marine Lines, Inc., provided barge service to Juneau and other ports in the Southeast. Barges were operated to Juneau on a regular schedule, with one departing each week. Time in transit to Juneau was approximately 4 days.

Lynden Transfer, Inc., made weekly shipments to Juneau via the Alaska State Ferry System. Meat was picked up in Seattle, shipped via highway to Prince Rupert, B. C., transshipped via the Alaska Ferry, and off-loaded in Juneau for delivery. The quantity moved by truck was insignificant.

Air Carriers

Alaska Airlines was the only regularly scheduled air carrier to the Southeast. It made direct flights to Ketchikan, Juneau, Sitka, and Yakutat. Connecting flights were made to smaller towns. About the same percentage of meat was shipped to Southeastern by air as to Southcentral (Table 10).

BUSH

Water Carriers

Northland Marine Lines, Inc., which also serviced the Southeast, made monthly barge shipments during May and June and two shipments during August from Seattle to the Aleutian Islands, Bethel, Platinum, Dillingham, Nome and Kotzebue. Sea-Land provided the only water transportation from Anchorage to the Bush, making weekly sailings to Kodiak Island and biweekly sailings to Adak Island from Seattle via Anchorage.

Two government agencies supplied meat to the Bush. The Bureau of Indian Affairs operated a ship out of Seattle which supplied coastal Native schools. This ship carried negligible quantities of meat. The Air Force chartered barges to supply its coastal and river Bush installations.[16]

Nome, Bethel, Kotzebue, Kodiak Island, and the Aleutian Islands were supplied both by air and water. Since water transportation was significantly less expensive than air, it could be expected that these areas received most of their meat by water.

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[16]The Yutana Barge Lines operated barges during the summer from Nenana via the Tanana River to villages along the Yukon River. This barge carried meat to military installations along the Yukon River.

TABLE 14

Quantity of Red Meat and Poultry Shipped to Southcentral Alaska by Air in 1972

	Beef	Veal	Pork	Lamb	Poultry	Cured Meat	Undetermined Meat	TOTAL
Retail - lbs	318,200	6,800	735,600	27,700	355,200	19,900	3,200	1,466,600
% retail - air	21.69%	0.46%	50.16%	1.89%	24.22%	1.36%	.22%	100.00%
% all air	1.58%	0.22%	24.46%	.92%	11.81%	.66%	.11%	48.76%
Wholesale - lbs	41,900	—	440,400	—	—	65,500	1,200	549,000
% wholesale - air	7.63%	—	80.22%	—	—	11.93%	.22%	100.00%
% all air	1.39%	—	14.65%	—	—	2.18%	.04%	18.26%
Military - lbs	500	—	916,200	900	37,600	34,600	—	989,800
% military - air	.05%	—	92.56%	.09%	3.80%	3.50%	—	100.00%
% all air	.02%	—	30.47%	.03%	1.25%	1.15%	—	32.92%
Hotels & Insts. - lbs	—	—	1,700	—	—	—	—	1,700
% hotels, insts. - air	—	—	100.00%	—	—	—	—	100.00%
% all air	—	—	.06%	—	—	—	—	.06%
							TOTAL	3,007,000 lbs
Amount of meat shipped by air as a percent of all meat shipped to Southcentral								6.99%

Air Carriers

Alaska Airlines flew from Seattle to Anchorage and Fairbanks, and from Anchorage to Unalakleet, Nome and Kotzebue. Reeve Aleutian Airlines provided air service from Anchorage to the Aleutian Islands. Wien Consolidated Airlines flew from Anchorage and Fairbanks to Bush communities. Communities south of Galena were supplied from Anchorage, those north of Galena, from Fairbanks.

Appendix B

RED MEAT AND POULTRY DATA RELIABILITY

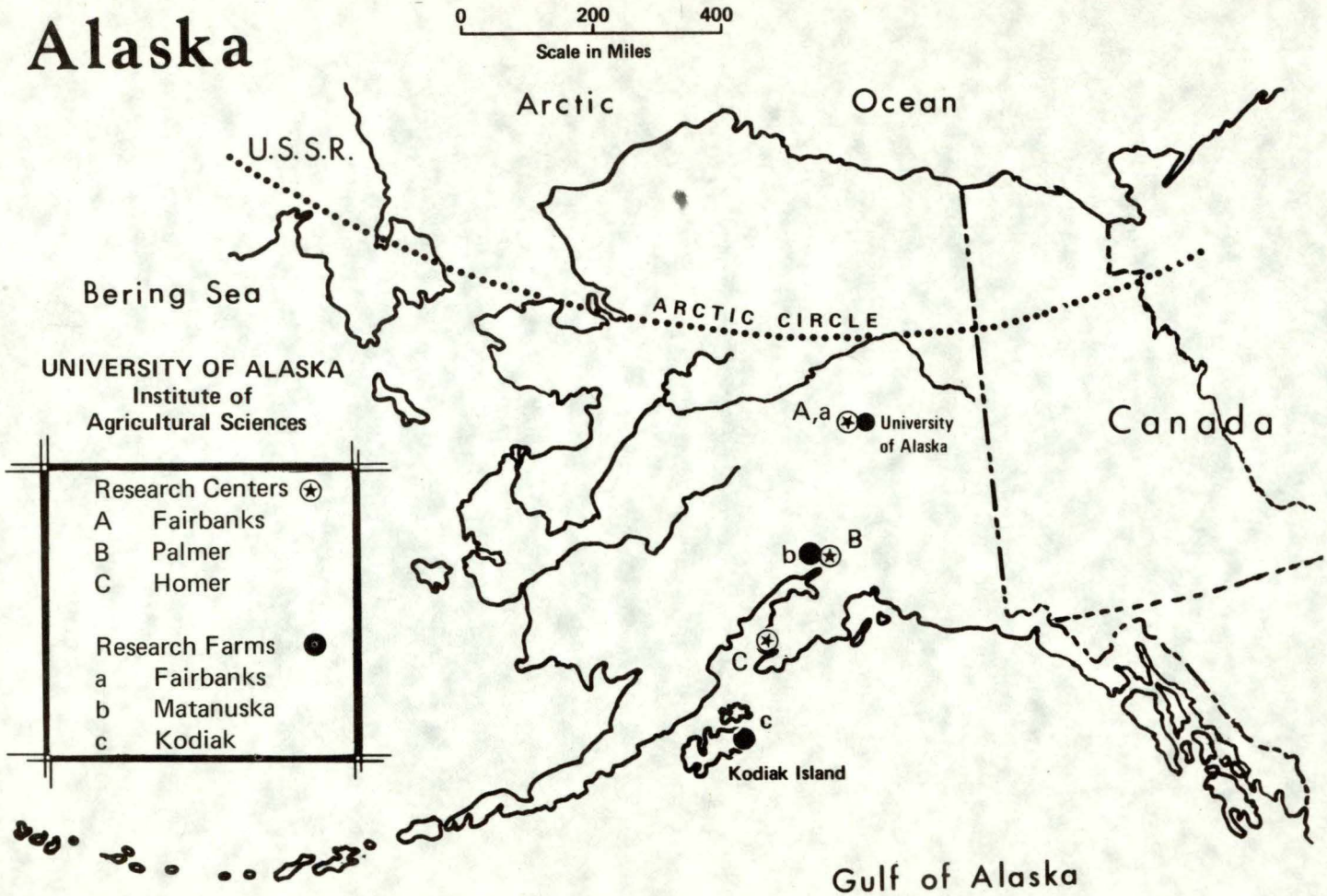
TABLE 15

A Comparison of Red Meat and Poultry Shipped from Seattle Versus Handled Through Market Sectors in Southcentral Alaska

	Pounds of Red Meat	Percent	Pounds of Poultry	Percent	Total	Percent	
Quantity Shipped to Southcentral[a]							43,043,000
Retail	16,181,000	45.01	6,177,000	69.51	22,358,000	49.87	
Wholesale[b]	10,265,000	28.55	1,170,000	13.17	11,435,000	25.50	
Military[b]	9,503,000	26.44	1,539,000	17.32	11,042,000	24.63	
TOTAL	35,949,000	100.00	8,886,000	100.00	44,835,000	100.00	
Discrepancy as a Percent of Quantity Shipped to Southcentral							4%

[a]Quantity represents red meat and poultry shipped to Southcentral plus meat shipped to Bush from Southcentral.

[b]Quantity represents red meat and poultry handled by retail, wholesale and military including items moved through these markets to the Bush.


Alaska
0
200
400
Scale in Miles
Arctic
Ocean
U.S.S.R.
Bering Sea
ARCTIC CIRCLE
Canada
UNIVERSITY OF ALASKA
Institute of
Agricultural Sciences
Research Centers
A Fairbanks
B Palmer
C Homer
Research Farms
a Fairbanks
b Matanuska
c Kodiak
A,a
University
of Alaska
B
b
C
c
Kodiak Island
Gulf of Alaska