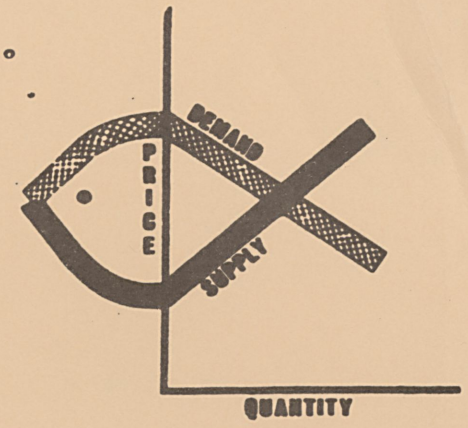

NOT FOR QUOTATION

Report to the Office of Resource Management

on the Disposition of Fur Seal Skins

by

Ernest W. Carlson

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U.S. NATIONAL MARINE FISHERIES SERVICE
ECONOMIC RESEARCH DIVISION

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As a part of its continuing responsibilities under the Fur Seal Program (FSP), the Office of Resource Management (ORM), National Marine Fisheries Service, requested that the Economic Research Division analyze the harvesting and marketing of fur seal skins.

Specifically, the Office of Resource Management desired to analyze:

> The economics of how the skins are disposed of at the present time, or in other words, are we doing business in the best possible way, will be one area of concern. We want also to analyze the continuing viability of the fur seal industry and predict the future market for sealskins.1/

ORM was concerned because for the first time since the fur seal herds had reached maximum productivity the FSP was generating losses. The following is an analysis of some of the questions raised by ORM.

Economic Background

Demand for Furs and Fur Seal

Luxury furs are purchased out of the most discretionary part of discretionary income, so the demand for luxury furs is extremely unstable. Although furs can be used for warmth, they are not cost effective and are subject to changing tastes and styles. For the most part, luxury furs are bought and used because of their

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1/ Memorandum from ORM to Associate Director for Resource Utilization, December 10, 1971

beauty. [2/] [3/]

Total purchases of luxury fur products in the United States have fallen continuously since the late 1940's for reasons that are unknown. The demand for some components of the fur market, such as mink, has risen even as the total has fallen. Other once very popular furs, such as silver fox, are now being produced only in small quantities. Fur seal has almost ceased to be sold in the United States. Most of it is shipped after processing to manufacturers in Europe.

Fuchs (1957) speculated that fur purchases have declined because of disorganization of fur manufacturing and sales. The industry is characterized by many small manufacturers engaged in chaotic competition. It is said that no manufacturer's brand name is recognized by consumers, and thus luxury furs are unique among high valued items. On the retail level, consumers are confronted

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2/ Much of the material in this section is taken from Victor R. Fuchs, The Economics of the Fur Industry. Columbia University Press, New York, 1957.

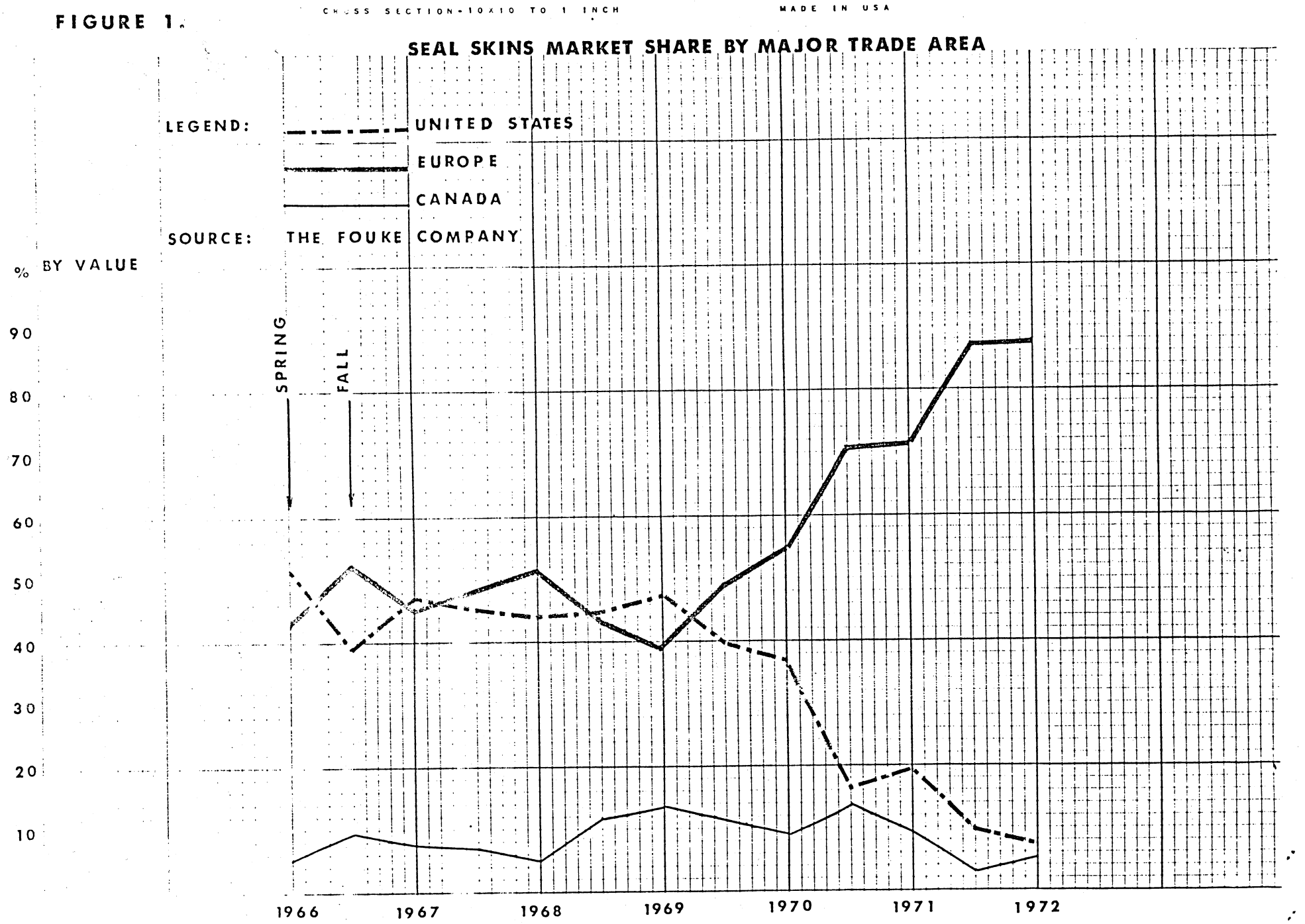
3/ "A fur pelt usually consists of three parts, the leather or skin of the animal, the guard hairs, which are the straight resilient hairs growing out of the skin, and the fur fibres or underfur, which are the fine, soft, and silky hairs constituting the most important part of the pelt. These characteristics are sufficient to merit the term 'fur,' but they are not necessary. Certain types of kidskins, lambskins, and monkey skins do not meet these requirements but are known as fur, nevertheless. Leopard skins are made into fur garments, tiger skins are not. The skin of a Persian lamb two days old is fur; the skin of the same animal taken when the lamb is two months old is not fur. In the final analysis, fashion and end use are the most important factors in determining what is fur." (Fuchs, 1957, p.9.)

with wide price differences for seemingly identical products. The variation can be real based upon expert identification of quality variation in skins, manufacturing, and styling. On the other hand, differences in price may be arbitrary and may function as a trap for the unwary consumer. Such uncertainty results in lack of sales.

Many fur industry spokesmen have attempted to relate declines in fur sales to campaigns of conservation groups to save various endangered species. Campaigns have been waged against the harvest of harp seal pups in Canada, and unfortunately there is an identification of harp seals with fur seals. It is doubtful that these conservation campaigns have much impact upon the purchasers of luxury furs, especially since they are of such recent origin and the decline has gone on so long. It is far more likely that the declines in fur sales in the American market are related to longrun changes in taste and the disorganization discussed by Fuchs.

The decline in sales of furs in the American market has taken place simultaneously with increased family units and real disposable income per family. Increases in these variables are usually associated with increases in the purchases of desirable items. Since there has been more money to spend, more people to spend it, and the sales of furs have not increased, the declines in sales must be related to an absolute decline in consumer preference for furs over the long term. There has been an increase in the sale of high quality imitation fur in the recent past. Part of these sales

FIGURE 1.


CROSS SECTION-10X10 TO 1 INCH
MADE IN USA
SEAL SKINS MARKET SHARE BY MAJOR TRADE AREA
LEGEND:
UNITED STATES
EUROPE
CANADA
SOURCE: THE FOUKE COMPANY
% BY VALUE
90
80
70
60
50
40
30
20
10
SPRING
FALL
1966
1967
1968
1969
1970
1971
1972

may have diverted people from purchasing furs, especially the less expensive or poorer quality varieties.

There have been, of course, variations about the decline such as might be related to current business conditions or the stock market, but the longrun trend is down. Economists have no methods for predicting when and if the domestic market for fur will start to grow. Although there have been reports in the press that the fur industry is having a good year, there is no way to ascertain whether this is a temporary phenomenon or an indicator of future growth.

The situation in the Western European fur markets is different: sales of furs in general, and fur seal in particular, in West Germany, Switzerland, and Italy have been robust. The Fouke Company estimates that 85 percent of its current sales are to Europe. (See figure 1.) This is in marked contrast to the days when most seal furs were processed in London and then reimported to the United States. As recently as 1955 it was reported that no fur seals were exported. There is no objective reason to believe that present consumption patterns will change.

Supply

The Fouke Company has been processing an average of 116,000 fur seal skins per year over the last 5 years. Approximately half of these skins are northern fur seal and the other half are capes. Finished northern skins sell to dealers at about twice the price of capes.

The sources of northern fur seal are herds in the Pribilof Islands and Komandorski Islands in the North Pacific and the source of capes is the Union of South Africa and Uruguay. The herds in these locations are purported to be managed by the controlling governments so that they will provide their maximum yields. The distribution of skins processed by the Fouke Company by area of origin is shown in table 1. It is unlikely that the supply of fur seal skins to the market will ever be substantially larger than at present; the supplies could be smaller if demand were reduced so that it did not pay to harvest and process them.

Table 1.--Fur seal skins sold by country of origin

Year	United States	U.S.S.R.	Africa	Uruguay	Total
1962	66,878	-	37,092	356	104,326
1963	81,630	-	32,548	2,591	116,769
1964	86,254	-	37,992	-	124,246
1965	75,392	-	39,981	5,252	120,625
1966	62,737	933	45,650	4,641	114,161
1967	63,430	2,498	36,070	1,629	103,627
1968	67,029	1,495	45,167	2,778	116,469
1969	64,117	1,576	52,844	1,343	119,880
1970	54,463	10,539	51,135	3,430	119,567
1971	50,327	7,191	53,422	5,441	116,381

Source: Fouke Company

The Fouke Company processes most of the fur seal skins harvested from all sources. Some skins are processed in Japan, Canada, and Russia, but officials of the Fouke Company believe that the few skins processed in these other countries are of a lesser quality, hence they tend to bring lower prices in the fur market.

Until the 1950's cape fur seal skins were processed by the European firms. One can hypothesize that the business of processing cape fur skins shifted to Fouke for two reasons: the quality of processing and the fur auction (which will be discussed below).

Fouke processed skins are recognized throughout the fur trade as a superior product. The superiority is the result of craftmanship and expertise that has been nurtured since 1915. The process itself, however, does not appear to be too difficult to master. In 1962 the Bureau of Commercial Fisheries, U.S. Department of the Interior, supplied skins to four companies with the intention of developing an alternate source of processing services. One of the companies, Supara, supplied processed skins that were thought to be superior by some experts to Fouke's skins. Without the benefit of generations of expertise, Supara was able to turn out an acceptable product. It would seem likely that, with time, they would have been capable of marketing a product that was as good as Fouke's on a production basis.

Seal skins are auctioned semi-annually in Greenville, South Carolina, the primary location for the selling of fur seals. The Fouke Company runs the auction, and buyers from Europe and the United States attend. Brokers may attend to buy for manufacturers, or dealers may attend to buy for speculative purposes, and manufacturers attend to buy for their own accounts. They may buy lots of skins which they then reassemble into "coat graded and sized" bundles for resale to manufacturers or for resale in other markets such as the Frankfurt Fur Fair.

The bulk of U.S. nonseal furs are auctioned in centers such as New York. The standard fee for the services of the auction companies is 6 percent of the sales price. In addition, the auction companies may make separate charges for storage and insurance; Fouke has no separate charge for these services. Furs are typically auctioned in the raw state, whereas fur seals are auctioned ready for manufacture into end products. The fact that seals are processed removes elements of risk that the fur dealers usually have to assume. Fuchs (1957) stated that the dealers perform the following functions:

> ...running risks of market change, giving place and time utility to the pelts, running risks of processing, extending credit, keeping their customers informed about the market place.

Buyers of raw furs must commit capital to put the furs into their inventories earlier in the processing sequence than with fur seals. The later auction (in the processing sequence) reduces the need for borrowed capital by fur seal buyers which is usually only available to the fur industry at very high rates of interest.

Fur dealers have their furs processed by dressers and dyers who typically specialize in one or two furs. The process for most furs is short; seals, on the other hand, take up to 9 months to process. Many furs are processed in the U.S. by only one or two firms, and furs are also processed in Europe. In spite of the fact that dressing and dying for many furs is carried on by monopolies and duopolies,[4/] it is doubtful whether this has been a very profitable business in the recent past. Between 1950 and 1963 (the last year for which data are available), employment in the dressing and dying industry fell from 6,630 to 2,577. All indications are that that trend has continued and that the industry is unprofitable.

Fur Seal and the Theory of Rent

Whenever the production of a good or service is limited by natural factors it can give rise to what economists call rents. Rents will occur whenever people are willing to pay more than the cost of production (including a reasonable return on investment) for the good in limited supply. Fur seal skins were clearly in this category for many years since natural factors limit the amount of fur seals that can be produced from the world's herds on a sustainable basis. The cost of production of fur seals from the

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4/ A duopoly is the condition that exists when only two producers offer identical or nearly identical products. Although there is some element of competition, since neither producer controls the entire supply and the action of one producer can materially influence the other's price, the resulting situation approximates a monopoly and is sometimes called a partial monopoly.

Pribilof herds was clearly below that for which skins were being sold and therefore produced rents.

Under the terms of the Interim Convention on the Conservation of North Pacific Fur Seals (February 9, 1957), 30 percent of the skins harvested are transferred to Japan and Canada. In 1971 and 1972 receipts from the sale of furs exceeded expenditures by $1,493,000 and $1,243,000 respectively. If no skins had been transferred to others, the losses would have still been substantial. Thus beginning in 1971 the fur seal had ceased generating rents, at least under the present accounting system.

In economic theory the group or persons that should receive the rent is indeterminant; i.e., if each factor of production is being paid its proper share (opportunity cost), then payments in excess of this will not increase output. In the case of fur seals, if there were a sole producer of raw skins and there were many dressers and dyers, the sole producer would capture all the rent. If there were many producers of skins and only one dresser and dyer,

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	1972	1971	1970
	--------Thousands------		
Receipts from fur sales	$1,623	$1,373	$2,754
Appropriations for			
Administration of Pribilof Islands	2,866	2,866	2,654*
Payment to Alaska	0	0	104
Total appropriation	$2,866	$2,866	$2,758
Net loss	$1,243	$1,493	$ 4

*Does not provide for pay raise effective July 13, 1969.

Source: Report of the Bureau of Commercial Fisheries, U.S. Department of the Interior, July 24, 1969.

the dresser and dyer would capture all the rent. The actual situation in fur seals is a hydrid. The supply of fur seal skins through the Fouke Company is controlled by six governments of which 75-80 percent is jointly controlled by the United States and the Republic of South Africa. The dressing and dying and fur auction is controlled by the Fouke Company. The distribution of the rent in this situation, if these were private companies, would be indeterminant, but would depend upon the relative bargaining power of the participants. Given the bargaining power of the U.S. Government, the bulk of rent had gone to it. The Fouke Company has probably shared part of the rents generated by the fur seals in that it has been profitable even as the fur industry has declined. 6/

In the future, if FSP costs are in excess of receipts, then the U.S. Government will have to bear the loss. It is unlikely that the Government will be able to terminate the program because of treaty obligations and implied social obligations to the Pribilof natives. Further, it is unlikely that much of the loss can be shifted to the Fouke Company, especially given the tradition of covering all of Fouke's costs.

6/ Unaudited income statements of the Fouke Company for 1970 and 1971.

Discussion of Selected Problems

The following section discusses problems that ORM wished to have analyzed. The first section discusses the effects on Government revenues from the sale of fur seal skins in the raw state rather than processed. The second section discusses the consequences of setting minimum bids that the Government will accept for its skins.

Economic analysis of auctioning raw fur seal skins

If a raw auction system were adopted, there is no reason to suppose that the price of finished furs would change to the manufacturer. We, of course, have no information on what the manufacturers pay for seal furs, but it would normally include a broker-dealer's fee above purchase cost at Greenville for holding, shipping, grading and sorting, plus a normal profit. It will be assumed that finished furs in a dealer's inventory will be valued at the present auction prices. In a recent report, the Office of Audits, Department of Commerce, accepted a projected average value of finished furs for contract negotiations of $96.80 per skin. This price will be used to make illustrative calculations even though the average price over the last five auctions was only $84.09.

There is no reason to suppose that if skins were auctioned raw to dealers that the Foulke Company would process them for a smaller charge than it does now. There are good reasons to believe that the Fouke Company would be in a position to charge more for processing if the skins were auctioned in a raw state. As a first approximation, however, assume that its charge would not change. Under the prior contract Fouke's charge to the Government would be $40.32 for processing the furs if the furs sold for $96.80.[7] The difference between $96.80 and $40.32, or $56.48, would be available to a dealer to pay for and hold the furs.

At the present time furs are held for about 30 months from the harvest period before they are auctioned. Given a 9 month processing time, it is approximately 21 months before processing is begun on the average fur. If there were no change in this historical pattern and furs were auctioned in December of the year they were harvested (at Fouke's plant in South Carolina to standardize transportation charges), we might ask how much dealers would bid for a skin that they expected to be valued at $96.80 approximately 24 months later, after deduction of a processing charge of $40.32. If the dealer made no charge for profit or risk but simply deducted his cost of borrowing money, at 18 percent per year,[8]

7/ Payment to Fouke is based on the number of skins and the price for which they are auctioned.

8/ Historically this charge was 18 percent per year. At the present time it is probably higher because of changed money conditions but the 18 percent will be used for purposes of illustration.

he would be willing to bid $40.56 for a fur. Thus the Federal Government would have an apparent reduction in revenues of $15.92 per skin.[9/]

It is unlikely that dealers would tolerate a 15-month lag between the purchase of their furs and the start of processing. If processing were begun immediately and the furs averaged 1 year between the auction and sale to manufacturer, dealers would be willing to bid (in a riskless environment) $47.80 for a skin.[10/] This would imply a reduction in the revenues to the Government of $8.68 per skin.

Neither of the above figures takes into account risk factors or the need for a dealer to make money in order to operate. If a dealer bid $47.80 for a skin, he would in effect make no money as compensation for assuming a substantial risk other than the 18 percent on his own capital. The need for him to make more than this is illustrated by the fact that a dealer could loan money to another dealer for 18 percent. He would receive the same income on his own money but would have substantially less risk because he would have the cushion of the other dealers equity. The reduction in governmental revenue discussed above would only be the minimum to be expected because of carrying charges.

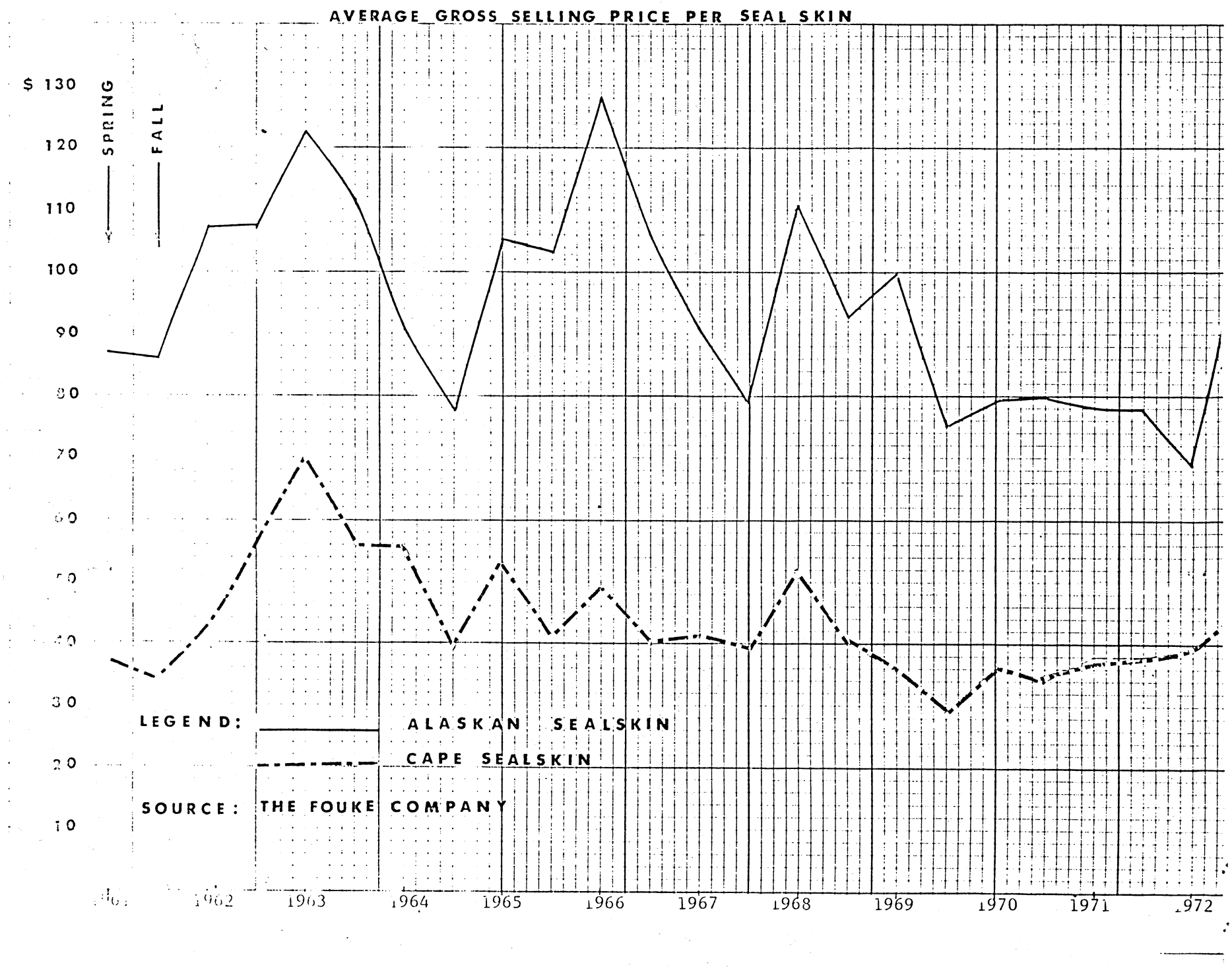
9/ This is simply the solution of $(96.80 - 40.32) = (1.18)^2X$, when X would be the riskless bid price or $40.56.

10/ $(96.80 - 40.32) = 1.18X$ where $X = \$47.80$.

There are two types of risk that a dealer will have to consider before he takes a position in fur seal skins. One type of risk relates to level of prices to be expected at particular auctions and the other relates to the price paid for a particular skin at an auction. Let us call the former risk, price level risk, and the latter quality risk. Both types of risk will lower the bids that will be made by broker-dealers. The Government at present bears both types of risk, but the risks are less important since miscalculation poses no threat of bankruptcy or loss. In addition, the Government owns all of the skins, therefore, it always receives the average price. A dealer, unless he buys many skins, would face the risk of his being worth less than average; but, of course, the larger the position he takes the less this risk becomes because of the law of large numbers.

The risk of price fluctuation in the fur seals is high. Since 1968 the average price of a seal skin dressed, dyed, machined, and finished has fluctuated between $68.32 and $109.50; and the trend in prices, if anything, has been down. (See figure 2.) The unweighted mean was $89.00 with a standard deviation of $13.00. The mean price change from auction to auction was -$2.37, and the standard deviation of price changes was $16.74. This indicates that the price of fur seal is unstable and that holding them is subject to a high degree of risk.

The economic literature on the measurement of risk premiums is of limited use in this situation, but as a first approximation



we might let the standard deviation of price be the risk premium. If this is done, the dealer will reduce his bid for raw skins by the amount of the risk premium. In this case, even if he believed that the future price of furs would be $96.80, he would act as if he expected it to be $83.80. This $13.00 would be an additional deduction from what he would be willing to bid. The dealer would then be reducing his probability of loss from price fluctuations (assuming a normal distribution of price changes) from 0.5 to 0.16. There would be a probability of 0.84 of the price being above $83.80. Buyers would then bid, assuming a 1-year holding period, $36.85 11/ which would entail a reduction in revenues per skin of $19.63 or 35 percent.

Quality risk can be illustrated by use of bid prices from the fall 1972 auction of the skins. Fouke assembles skins into uniform, small lots according to its estimates of the above factors. At the fall auction mataras (one particular color), without respect to quality or size, brought prices of from $141.00 per skin to $25.00 per skin. If consideration was restricted to large regular mataras, the range of prices was from $141.00 to $107.00. This range of prices reflected the buyers' refined evaluation of the skins even beyond the grading done by Fouke's experts. To some extent it also reflected transfer of information about expectations of future conditions among buyers as successive lots were knocked down.

The Fouke Company indicates that it is extremely difficult to determine the quality of a skin until the guard hairs have been

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11/ $(96.80 - 40.32 - 13.00) = 1.18X$
X, the bid price, would be $36.85.

removed, which is, of course, along in the processing sequence. If raw furs were auctioned, buyers would have to protect themselves against buying skins that were of lower quality than average after they were processed. They would do this by lowering their bids even below that suggested above, with further lowering of Government revenues. Quantification of quality risk would be difficult. However since it can already be seen, from factors already discussed, that there would be massive reduction in Government revenue if a system of raw auction were adopted, it would serve no purpose to continue in this vein. On economic grounds the present ownership-processing-auction system should be maintained.

Economic Analysis of Setting of Floor Prices for Skins

The suggestion has been made that the Government place a floor price on each lot of skins. That is, prior to the auction each lot of skins will have a minimum value attached to it such that if the value is not reached in the bidding the lot will be withdrawn. This device is commonly used in the auctioning of raw furs. The presumption that lies behind the setting of minimum bids must be that markets are subject to excesses of speculative enthusiasm and depression as reflected in the bids; and while excess enthusiasm doesn't hurt the seller, excess depression certainly may.

Speculative excesses do occur in many markets. One might attribute speculation to lack of information, but it occurs in

markets in which much information is available as well as markets where little is available. One need look no further than the current stock market which is suffering a depression, or current commodity markets which are probably rising far beyond real value, to observe speculative excesses.

Speculation does have a real value in our economic system. It helps keep market prices from falling excessively as speculators take positions in hope of price rises. And it helps to keep price rises moderate as speculators sell from their inventories. At times this system seems to go out of control; but on the whole, it is the considered judgment of most economists that speculation helps keep markets functioning more smoothly than they would without the speculation.

At the fur auctions, we would expect to observe speculative behavior. Brokers, dealers and manufacturers would attempt to buy as many furs as possible at low prices for resale at a profit. It is likely that at times during the auction the bidders as a group would become pessimistic and certain lots would be sold at less then what might be considered fair value. If, at the auction, a single person supplied only a small portion being sold, he might wish to protect himself against losses by setting a minimum acceptable bid. At the fur seal auction the bulk of the skins are owned by two sellers, the United States and the Union of South Africa. Their position as large suppliers is different from that of single small suppliers. In effect, they get the benefits of excesses of

enthusiasm and costs of depression in the bidding process.

To show that the average price bid for skins at an auction was incorrect, one would have to show that the bidders either were systematically misjudging the market for fur garments some months hence, or that they engaged in some conspiracy among themselves to manipulate prices. It is quite likely that the bidders frequently misjudge the ultimate value of skins in the garment market. However, to show that something was amiss at the auction one would need to show a consistent bias. The type of statistical information that would be needed to show or infer such a bias does exist. My guess is that such a bias does not exist.

The existence of a conspiracy to hold down prices at the auction is also unlikely. There are two primary reasons for this; the first is that a conspiracy of more than a few bidders would be very difficult to organize and maintain over a long period, the second is that it is illegal and in this particular market it would be extremely visible to the Government. Bidding conspiracies, as they have existed in the past, have often been conspiracies of sellers, where they colluded by taking turns in submitting winning bids. Even when these conspiracies were maintained by large companies, they were often quite transparent and failed quickly.

On the whole it would seem that the establishment of a system of minimum acceptable bids for each lot would not raise the level of average prices at the auctions. If bargain lots of skins were

no longer available, the bidders would be less inclined to bid excessively for other lots. The net result of this would be only the accumulation of unsold skins. The unsold skins could be a good investment by the Government if prices of skins at subsequent auctions rose faster than the cost (including interest) of holding them and a bad investment if prices declined. As prices have been on a downtrend over the last few years, a policy of minimum prices could have resulted in losses of revenue to the Government.

Review and Recommendations

The Fur Seal Program has, over the years, evolved a system of disposing of skins that is optimal from the standpoint of generating revenue for the Government. The preceding analysis has suggested that auctioning raw skins would decrease the revenues to the Government substantially. Further, it has suggested that the setting of minimum acceptable bids would not increase revenues, but would only create unwanted inventories of processed skins. There appears to be no way within the present scope of operations to increase revenues. One could argue that the Government through Fouke could become more involved with manufacturers and retailers in trying to promote seal than at present. The Program might get involved by, for example, commissioning garment designs which then might be made available to manufacturers. In this way small manufacturers' costs of handling a nominal amount of skins could be significantly

reduced and thus higher bids might be forthcoming at the auction. It is not clear however that this is an appropriate activity for the FSP.

The major fault that can be found in the Program is that the skins are held for an excessive period before processing is begun. The large inventories that are held would not be held if these skins were privately owned. It costs the Government no less to hold them than a private firm. It only appears less because of the faulty bookkeeping systemsused by the Government. The reasons advanced by Fouke and accepted by FSP for holding these large inventories are probably without foundation, and even if they had some substance the same objectives could be obtained at less cost.

It is recommended that the number of raw skins in storage prior to the receipt of the summer harvest be on the average about 25 percent of a typical harvest. In this way if a harvest is small the work-flow could be augmented from inventory, and if it is above average inventory could be augmented. In order to minimize the disruptions caused by the reductions in inventory, it is further recommended that these reductions take place over 3 years.

Historically FSP generated profits for the Treasury so it was apparently not felt necessary to have a businesslike accounting system. In a period when FSP is losing money, it would seem appropriate that an accounting system be established on a conventional basis in order to establish the true status

of the Program. In this accounting system distinctions should be made between, say, management related research and "scientific research." It is recognized that the distinction is not always clear, but an approximation is better than not doing it at all. Expenses for operations on the Islands should be partitioned into expenses necessary for operating the FSP and everything else. Lastly, depreciation schedules should be maintained so that equipment and other improvements are properly charged to the periods in which they are used.

The above accounting system would become a very useful bargaining tool if and when the convention is renegotiated. At such negotiations it would be in the interest of the Government to share the net profits from the FSP rather than the skins themselves, as is done at present. It would appear reasonable that Canada and Japan should share the costs as well as the rewards from the Program. Of course it may not be possible to negotiate a different compensation scheme but the attempt should be made.