



International

NORTHWEST ATLANTIC FISHERIES COMMISSION

POLAND ADHERES TO NORTHWEST ATLANTIC FISHERIES CONVENTION:

The Government of the Polish People's Republic, as of November 21, 1961, has effected her adherence to the International Convention for the Northwest Atlantic Fisheries. (The Convention was dated at Washington, D. C., February 8, 1949, and entered into force July 3, 1950.) The adherence of Poland to the Convention was announced by the U. S. Department of State since the United States is the Depository Government for the Convention. This adherence makes Poland a member of the International Commission for the Northwest Atlantic Fisheries. Adherence to the Convention was deposited on November 21, 1961.



The Twelfth Annual Meeting of the Commission, as decided by the Commission in its 1961 Annual Meeting and following an invitation by the U. S. S. R. Government, will be held in Moscow June 4-9, 1962. It will be preceded by meetings of various committees and advisers to panels.

Note: See Commercial Fisheries Review, September 1961 p. 61.

INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION

SOCKEYE AND PINK SALMON FISHERIES REGULATIONS IN CONVENTION WATERS FOR 1962:

The following recommendations for regulations to control the sockeye and pink salmon fishing in Convention waters of the North Pacific for 1962 were issued by the International Pacific Salmon Fisheries Commission on January 25, 1962:

United States Convention Waters:

West of William Head-Angeles Point Line and East of Bonilla-Tatoosh Line:

- June 24 to Aug. 5 - Closed to all net fishing.
- Aug. 6 to Sept. 9 - Gill nets open daily 7:00 p.m. to 9:00 a.m. (PDST) Monday afternoon to Wednesday morning.
 - Purse seines open daily 5:00 a.m. to 9:00 p.m. Monday and Tuesday.
- September 9 - Relinquish control.

East of William Head-Angeles Point Line:

- June 24 to July 22 - Closed to all net fishing except with nets having a mesh of not less than $8\frac{1}{2}$ inches extension measure and under regulation by the Washington State Director of Fisheries.
- July 23 to Sept. 9 - Gill nets open daily 7:00 p.m. to 9:00 a.m. Monday afternoon to Wednesday morning.
 - Purse seines and reef nets open 5:00 a.m. to 9:00 p.m. Monday and Tuesday.
- September 9 - Relinquish control except in the waters westerly of a line projected from Lilly Point on East Point Roberts true south to the International Boundary.

Waters Westerly of a Line Projected from Lilly Point on East Point Roberts True South to the International Boundary:

- Sept. 2 to Sept. 30 - Closed.

Canadian Convention Waters:

West of William Head-Angeles Point Line and East of Bonilla-Tatoosh Line:

- June 24 to Aug. 5 - Closed to all net fishing.
- Aug. 6 to Sept. 9 - Gill nets open daily 6:00 p.m. to 6:00 a.m. Monday afternoon to Wednesday morning.
 - Purse seines open daily 6:00 a.m. to 6:00 p.m. Monday and Tuesday.
- September 9 - Relinquish control.

East of William Head-Angeles Point Line Including Areas 17, 18 and that Portion of Area 19 Lying Easterly of the Referenced Line but not District No. 1:

- June 24 to July 22 - Closed to all net fishing.
- July 23 to Aug. 26 - Open to net fishing 8:00 a.m. Monday to 8:00 a.m. Tuesday.

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- Aug. 27 to Sept. 9 - Closed to net fishing in the easterly part of Area 19 specified above.
- Aug. 27 to Sept. 30 - Closed to net fishing in Areas 17 and 18.
- September 9 - Relinquish control in the easterly part of Area 19 specified above.
- September 30 - Relinquish control in Areas 17 and 18.

District No. I:

- June 24 to July 22 - Open 8:00 a.m. Monday to 8:00 a.m. Wednesday.
- July 23 to Oct. 7 - Open 8:00 a.m. Monday to 8:00 a.m. Tuesday except that the Area Director of Fisheries may authorize the use of gill nets having a mesh of not less than 9 inches extension measure for linen nets and 9½ inches extension measure for synthetic fibre nets during any week of this period that a complete emergency closure is required for the protection of sock-eye salmon.
- October 8 - Relinquish control.

Special Troll Restrictions:

Commercial fishing by hook and line or trolling shall be prohibited during the period from August 12 to October 7, except at such times that net fishing other than with spring salmon nets may be permitted, in any of Canadian Convention waters (Howe Sound not included) lying easterly and inside of a line projected from Gower Point at the northerly entrance to Howe Sound through Thrasher Rock Light thence in a westerly direction to the most northerly point on Valdez Island, thence following the easterly shoreline of Valdez Island to Vernaci Point thence in a straight line to Race Point on Galiano Island, thence following the easterly shoreline of Galiano Island to Mary Anne Point, thence in a straight line to Georgina Point Light on Mayne Island, thence in a straight line towards Point Roberts Light to the intersection with the International Boundary line thence following the International Boundary line to its intersection with the Mainland.

Note: See Commercial Fisheries Review, March 1961 p. 41.

PACIFIC SCIENCE CONGRESS

TENTH CONGRESS RESOLUTIONS
INCLUDE SEVERAL ON FISHERIES:

The Tenth Pacific Science Congress convened in Honolulu, Hawaii, August 21-September 6, 1961. Among the resolutions of the Congress, as approved by the Council of the Pacific Science Association and adopted by the Congress, were the following referring to fisheries:

It is generally recognized that the wise use of chemical pesticides is essential and that those developed and put into general use within the past two decades are more practical and more effective than ever before.

However, these new pesticides pose threats to man and to desirable plants and animals, including fish and wildlife, especially in large-scale control programs. RESOLVED that in all pest-control operations appropriate safeguards be provided to prevent injury to public health and to desirable plants and animals. All interests should be considered in deciding on when and where control is advisable; what materials, formulations, and methods of application are indicated; and what safeguards are necessary.

The milkfish (Chanos chanos) is an important food fish, cultured intensively in the Philippines, Taiwan, Hong Kong, Indonesia, Vietnam, Thailand, and India; and young Chanos are important bait for tuna long-line fishing. Chanos culture in brackish-water ponds is a well-established industry, expansion of which would greatly increase the production of the protein urgently needed for human nutrition throughout these areas; but expansion is deterred by the fact that the adult fish spawns in unknown areas of the Pacific and Indian Oceans and adjacent seas. Fry for stocking ponds must be collected along coastal shores, where fluctuation in the supply is unpredictable because of lack of information about the biology, migration routes, and spawning areas of the fish in its marine habitat. The Congress is aware of the efforts made by the Indo-Pacific Fisheries Council of the FAO to increase the general knowledge on the culture and biology of the milkfish and that it has compiled through its Chanos subcommittee a comprehensive report on the present status of research on this fish, stressing the inadequacy of present information. RESOLVED that the Congress recommends the establishment and financing--through an international commission or some other means, and in cooperation with the governments concerned and with I.P.F.C. (Indo-Pacific Fisheries Commission)--a research group equipped to study the biology and growth of Chanos in its marine environment from the fry stage to maturity and to locate their exact migration routes and spawning grounds. It is further resolved that copies of this resolution be transmitted to the heads of fisheries departments of all governments concerned and to the FAO and I.P.F.C. and other international agencies and scientific or educational institutions interested in the problem.

The marine turtle populations of the world constitute an important aesthetic and economic resource, which is disappearing, particu-

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larly in Polynesia, though it could be increased to form an important protein food source, especially for the South China Sea area. RESOLVED that the attention of governments be drawn to the need for increased protection of marine turtles and for sound management programs wherever turtle populations are exploited for food. The Congress especially urges the need for international cooperative research programs to ensure survival and development of this resource in the Pacific Islands and in the South China Sea area.

Reports indicate that native peoples are dynamiting coral beds in Micronesia, New Caledonia, and other areas of the Pacific and are using poisons to take large numbers of fish. Both practices impair or destroy habitat that includes shelter and environment of food sources for the economic and subsistence species and result in dire consequences to the welfare and existence of island populations. RESOLVED that the Congress directs the attention of the Administration of the U.S. Trust Territory of the Pacific Islands, the Territorial Government of Guam, and other responsible agencies and appropriate governments to the prevalence of these abuses and urges that necessary measures be taken and appropriate legislation passed, with subsequent firm enforcement.

INTERNATIONAL NORTHWEST
PACIFIC FISHERIES COMMISSIONSOVIET-JAPANESE
TECHNICAL TALKS END:

The month-long conference of Soviet and Japanese fishing experts, members of the Science and Technology Committee of the Northwest Pacific Fisheries Commission (Japan-U.S.S.R.), ended in Moscow on December 27, 1961, according to press reports.

The experts discussed the methods of evaluating salmon stocks, the current situation with regard to the stock of these important commercial fish in the northwestern Pacific, and the plans for fishing research for the coming year. The experts of both countries agreed that the salmon stocks, particularly that of its main species, the humpback (pink) salmon, continued to dwindle. Soviet scientists restated their view that this is due mainly to overfishing by Japanese fishermen who take almost two-thirds of the annual catch. The Japanese delegation attributed it

to natural causes. The Soviet side has suggested a number of measures to stabilize fishing and to conserve the salmon stock.

The Sixth Annual Meeting of the Commission convened in Moscow on February 26, 1962. (United States Embassy, Moscow, December 29, 1961.)

INTERNATIONAL NORTH PACIFIC FUR SEAL COMMISSION

FIFTH ANNUAL MEETING:

Senior fisheries administrators of four countries met in Ottawa February 7-10, 1962, to plan the future for the fur seals of the North Pacific Ocean which were once threatened with extinction, but are now being maintained at a healthy population level.



Fig. 1 - St. Paul Island of Pribilof Islands, Several fur seal harems at season when the harems are well-knit, before pups start to move out in large numbers.

The occasion is the fifth annual meeting of the International North Pacific Fur Seal Commission, composed of representatives from Canada, Japan, the U.S.S.R., and the United States. The Commission's Scientific Committee met from January 29 to February 6. The Committee reviewed the research program of the Commission and the preparation of a report to be submitted to the regular session of the Commission on February 7-10.

The story of the Commission demonstrates graphically how wise management through international accord has been successful in saving and expanding a valuable, renewable natural resource which might otherwise have become extinct.

The Commission was established under the provisions of the 1957 Interim Convention on

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Conservation of North Pacific Fur Seals signed at Washington February 9, 1957. The Commission has as its major responsibility the investigation of the fur seal resources of the North Pacific Ocean. The objective of this investigation is to determine the measures which will make possible the maximum sustainable yield from these resources, with due regard for the relation to the productivity of other living marine resources in the area. In accordance with plans developed by the Commission, research agencies of the four participating Governments carry out research at sea. Research and management on the breeding grounds is conducted by the United States on the Pribilof Islands in the Eastern Bering Sea, and by the Soviet Union on the Commander Islands in the Western Bering Sea and on Robben Island in the Sea of Okhotsk.

The main fur seal herds are found on the Pribilofs, a group of five islands north of the Aleutian Archipelago in the Bering Sea. They are named for the Russian navigator Gerasim Pribilof who spent 18 years searching for the breeding grounds of the Alaskan seal herds. His search culminated in the discovery of these grounds on the mist-shrouded islands, of which the two most important areas are St. Paul Island and St. George Island. The island group, with the mainland territory of Alaska, was sold by Russia to the United States in 1867. Breeding grounds for smaller herds are located on the Commander Islands and on Robben Island.

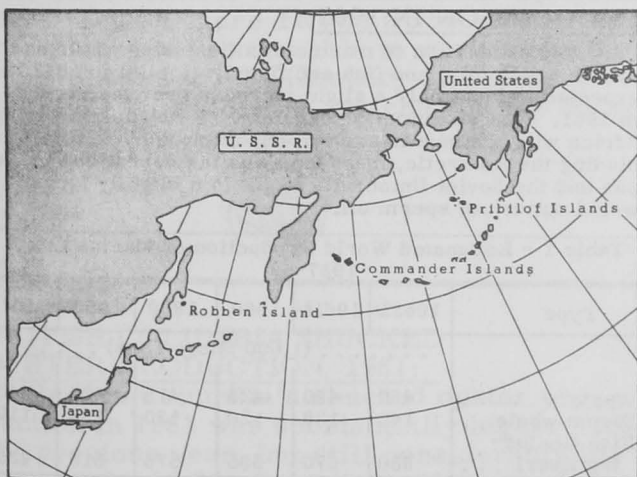


Fig. 2 - Breeding grounds of the northern fur seals: Robben Island (Kaihyōtō or Tyulenyi Island) off Sakhalin; the Commander Islands (Bering Island and Medny or Copper Island) at the Soviet end of the Aleutian chain; and the Pribilof Islands--St. Paul Island, St. George Island, Otter Island, Walrus Island, and Sea Lion Rock.

The early history of the Pribilof seal herds is interspersed with periods of indiscriminate killing and efforts to conserve the seals. The problem of protecting the herds from overexploitation was recognized during the early days of operation and in 1835, when they had dwindled to a dangerously low level, Russia placed a stringent ban on killing. Only males could be taken and females were thus protected. This had the effect of building up the herds which, at the time of the United States takeover of the islands, had been restored to a sizable number.

Under United States jurisdiction the Pribilof seal herds continued to be protected through a ban on killing females and a quota on the number that could be taken on the breeding grounds. However, a new and greater problem was posed in the expansion of pelagic sealing (killing at sea) by fishermen of other nations. This practice was rightly regarded as being both a wasteful and destructive method of taking the animals: wasteful because it resulted in the loss of many seals that were wounded and sank before they could be recovered; destructive because often it involved the killing of pregnant females which resulted not only in the loss of breeding stock but pups as well.

The conviction that proper management of the fur seal herds could only be conducted by a regulated kill of selected groups on the breeding grounds resulted, after an extended period of negotiation, in the signing of the North Pacific Fur Seal Convention in 1911, by Canada, Japan, Russia, and the United States. This convention remained in force until 1941. From 1942 until 1957 the Pribilof herd was protected by a provisional agreement between Canada and the United States.

The current convention, effective for a six-year period, was signed in 1957 with the four original nations participating. One of the main features of this convention is the prohibition it places on the killing of fur seals at sea except for certain specific numbers that may be taken pelagically by scientists of the member countries for research purposes. Also excepted from the pelagic ban are the operations of aborigines using primitive weapons.

In other respects, as well, the terms of the 1957 convention parallel those of the original treaty. They include a provision whereby Canada and Japan each receive 15

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percent of the seal skins taken by the United States commercial operation on the Pribilofs and, subject to certain stipulations, a similar percentage of the U.S.S.R.'s commercial take on Commander and Robben Islands.

The effectiveness of this cooperative conservation program can best be judged by the fact that from a low point of less than 150,000 seals in 1911, the Pribilof seal herds have been increased to 1.5 million animals, a level which is being successfully maintained. The smaller herds of the Commander and Robben Islands are being built up to a level which will provide the greatest annual harvest year after year.

During the 1961 season the commercial take by the United States on the Pribilofs totaled 95,974 seals made up of 82,099 males and 13,875 females. The female kill forms part of the research and management program approved by the Commission at previous meetings. The Soviet take on the Commander and Robben Islands included 11,970 males and 63 females for a total of 12,033 animals.

The fur seals of the North Pacific are not to be confused with the common hair seals which are widely distributed throughout the world. The difference lies in the soft, velvety underfur that largely accounts for the fur seal's economic importance.

The North Pacific fur seals are mammals that live the greater part of their lives in the sea. The male seals, called bulls, are of considerable size and may weigh up to 700 pounds although 500 pounds is considered average. The females are much smaller, averaging 75 pounds and sometimes reaching a weight of 100 pounds.

The bulls arrive at the breeding grounds early in April or May and establish favorite places along the shore. The females reach the rookeries early in June and within a few days each gives birth to one pup. Mating takes place within a short time and another pup will be born approximately one year later.

The females are vigorously sought after by the bulls and are gathered in harems which may contain as many as 40 females. The bull jealously guards his harem to prevent any of the cows from straying and the

encroachment of other males. At one time it was thought that this vigil on the part of the male was constant throughout the period that the animals spent on the breeding grounds but recent research by Russian scientists on Robben Island indicates that the bulls may make short trips to sea and return to another harem.

As only females and pups are allowed in the harems by the bulls, the young males which have not yet attained maturity, or a harem, are segregated from the rest and band together away from the family groups. It is from these bands of "bachelors" that each year's quota is taken by the commercial killing operation, but a sufficient number is left to provide replacements for the older bulls. As a natural advantage to the propagation of the herds the elimination of these young bulls is desirable. They are very belligerent when they reach maturity at six years. If the breeding grounds were overcrowded with them, many young pups would be crushed to death in the numerous and tremendous battles between the young aspirants to a harem and the tough, older "beachmasters."

In their natural environment the seal herds face danger from various predators especially when, at the age of about four months, they venture into the stormy and treacherous waters of the North Pacific. Killer whales seem to be a principal predator and certain parasitic organisms also take a toll.

MARINE OILS

ESTIMATED WORLD PRODUCTION IN 1962:

World production of marine oils (including whale and sperm whale oils, and fish and fish-liver oils) in 1962 is expected to show only a slight increase over the record in 1961. Fish oil output in Peru and the Republic of South Africa will continue to expand, but much more slowly. Excluding the Antarctic, increased whaling operations by Japan and the Soviet Union will result in a slightly larger world outturn of sperm oil.

Type	1962 ^{1/}	1961 ^{2/}	1960	1959	1958	1957
..... (1,000 Short Tons)						
Whale	450	450	425	415	435	440
Sperm whale ..	140	130	120	130	135	110
Fish (including liver) ...	680	670	565	575	515	485
Total	1,270	1,250	1,110	1,120	1,085	1,035
^{1/} Forecast.						
^{2/} Revised.						

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ATOMIC-PROPELLED MARINE RESEARCH VESSEL

The European Nuclear Energy Agency, OECD's cooperative atomic organization, met in Le Havre, France, on January 25, 1962, to look into the possibilities of building an atomic-propelled marine research vessel. Denmark was represented by an engineer from Burmeister & Wain's reactor division in Copenhagen, according to a report in Berlingske Tidende, January 22. A proposal is being made to build an atomic-propelled vessel, about 330 feet long, especially adapted and equipped for marine research and the education and training of young marine research scientists from many countries. The Danish oceanographer, the late Dr. Anton Bruun, a few years ago, proposed building an international marine research vessel. When he submitted the plans for an atomic-propelled research vessel for an opinion of the Atomic Energy Commission, shortly before his death, he was enthusiastic for the project.

It is now planned that a special committee of experts will be established to develop further the detailed plans like the committee which currently is working with Kockums Mekaniska Verkstads AB in Malmö, Sweden, to prepare plans for an atomic-propelled bulk carrier.

The marine research vessel will be equipped with laboratories, and there is under consideration something wholly new--a large well in direct connection with the ocean, so that the scientists can conduct their research under much more favorable conditions than if they only were able to work along the sides of the vessel. (January 22 report from the Regional Fisheries Attache, United States Embassy, Copenhagen.)



Canada

BRITISH COLUMBIA SHUCKED OYSTER PRODUCTION, 1961:

British Columbia's shucked oyster production in 1961 was substantially higher than the previous year, but still considerably lower than the 92,741 Imperial gallons produced in 1959.

British Columbia Oyster Meats Production, 1960-61		
Imperial Measures	1961	1960
Half-pints	357,866	377,394
Pints	22,605	18,569
Quarts	39,235	24,977
Gallons	47,460	43,701
Total in Imperial gallons	85,971	78,384

Prices to producers for shucked stock in December 1961 were as follows for Imperial measures: half-pints, C\$0.33-0.40; pints, \$0.55-0.75; quarts, \$1.00-1.65; gallons, \$3.15-5.25 (Prince Rupert prices not included). In December 1960 the price for Imperial gallons was \$3.00-5.25, and in December 1959 it was \$4.00-5.25.

The retail price of shucked oysters in Vancouver on January 15, 1962, for an Imperial half-pint was 50-55 Canadian cents as compared to 52-55 cents on January 15, 1960.

Note: See Commercial Fisheries Review, March 1961 p. 47.

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BRINE SHRIMP INDUSTRY IN SASKATCHEWAN:

According to several recent articles in the local press, a small specialized industry, known as the brine shrimp industry, which is devoted to the collection and packaging of tiny crustaceans and their eggs, is being moved from Great Salt Lake in Utah to Lake Manitou, Saskatchewan. These crustaceans, known as brine shrimp, are used as food for aquarium fish.

It has been said that the industry is moving from Great Salt Lake in Utah because the source there is drying up and only Saskatchewan appeared to have lakes with a sufficiently high saline concentration to replace it.

The first United States firm to begin similar operations in Saskatchewan built a plant at Watrous, near Lake Manitou, in the spring of 1961. The firm at the outset employed about 20 persons and expected to double the size of its operation the winter of 1961/62. Since the arrival of that company, the Saskatchewan provincial Fisheries Branch is said to have received inquiries from other firms in Eastern Canada and the United States.

Fisheries authorities believe that expansion up to \$500,000 a year may be expected

Canada (Contd.):

in this industry as there are other lakes in Saskatchewan which have a sufficiently high saline content to produce this type of shrimp. It has been estimated that Lake Manitou alone could produce 10.5 million pounds of brine shrimp annually without endangering future supplies. The company now in operation uses only about 0.1 percent of the Lake Manitou supply. This company is now producing both brine shrimp and eggs for feeding aquarium fish.

The report claims that frozen brine shrimp now have a retail value of approximately \$3.50 a pound and the shrimp eggs about \$80 a pound.

Both the company now operating and the company moving from Great Salt Lake expect to find markets for their products not only in Canada and the United States but also in West Germany and other countries where purchases are expected to expand with the increase in popularity of aquarium fish.

The industry expects to operate on a year-round basis and under this method the shrimp would be collected and frozen during the summer months. In the winter months it would be cleaned and packed for marketing.

According to information received from the Deputy-Minister of Natural Resources in Regina, the press report describes generally the progress of the industry in Saskatchewan during the past summer, but some of the opinions expressed therein are purely generalizations. The possible yield figure, for example, was based on the calculated volume of Little Manitou Lake and a measurement of the abundance of shrimp taken during a sampling in 1960. He has stated that to date there is only one company involved in the development of the industry in the Province and that shipments thus far have been by truck on an experimental basis to the United States distributor. The main source of demand in the past has been the North American Aquarist. Small quantities have also been shipped to Western Europe. However, he anticipates that there will be a large market in government and private fish hatcheries in the future; in particular the commercial hatcheries in warmer latitudes which may very effectively use this food for young fish. There has been no confirmation of the market prices quoted in the newspaper re-

ports. (United States Consulate, Winnipeg, January 2, 1962.)



Ceylon

STATE CORPORATION FOR FISHING INDUSTRY PROPOSED:

The latest state corporation reported under consideration is one to handle all aspects of the fishing industry. According to press reports, this recommendation was made by the Parliamentary Advisory Committee of the Ministry of Agriculture, Lands, Irrigation and Power. The proposed corporation would assume the functions now performed by the Cold Storage plant at Mutwal which is run by the Fisheries Department and the Cooperative Fish Sales Union. It would also undertake deep-sea and trawler fishing.

The Fisheries Department has been making unsuccessful attempts to interest private firms into undertaking the exports of spiny lobster tails for which there is a ready market in the United States. The only large private company now expanding its facilities intends to specialize in tuna fishing. (Report of January 26, 1962, from the United States Embassy, Colombo.)



Chile

UNITED STATES \$5 MILLION LOAN TO CHILE FOR FISHERY PROJECT APPROVED:

A United States loan of \$5 million for a fishery project is included in the Inter-American Development Bank approval on December 21, 1961, of seven loans, totaling the equivalent of \$27,110,000, to finance four economic and social development projects in Chile.

The loan will finance 53 percent of the cost of establishing the fishing enterprise of the Empresa Pesquera de Tarapaca. The project will include the catching, freezing, and canning of fish and the manufacture of fish meal and oil. Fish to be caught include tuna, bonito, mackerel, sardines, and anchovies. Production will be primarily for export and is expected to produce net foreign exchange earnings of \$6 million a year.

Nine United States banks are participating in the early maturities of the loan for a total

Chile (Contd.):

of \$250,000 without the guarantee of the Inter-American Bank.

The loan, which will cover most of the foreign exchange costs of the project, will be used to purchase machinery and equipment for processing the catch and for a fishing fleet of 18 vessels. The company has signed a contract with a marine construction company of Seattle, Wash., for technical assistance and quality control during the early years of operation.

The loan will be granted for a term of 12 years and will bear interest of $5\frac{3}{4}$ percent annually, including the 1 percent commission allocated to the Bank's special reserve. Repayment will be made in 18 semiannual graduated installments, beginning three and one-half years after the signing of the loan contract.

**Denmark****FISHING LIMITS DISCUSSED
BY FISHERIES MINISTER:**

The question of expansion of Denmark's fishing limits has faded into the background with respect to the coming negotiations on membership in the Common Market. But this is not tantamount to a loss of interest in the problem, according to newspaper reports of an interview with the Danish Fisheries Minister after a recent meeting in Copenhagen of the Economic Committee of the Nordic Council.

The Minister stated that Denmark will demand extension of its territorial waters and the fishing limits, if other countries decide on a similar expansion and limit foreign fishing rights. This applies especially to the countries where Danish fishermen have extensive fisheries. Extension of the present three-mile limit would be of importance to the Danish west coast fishermen who, naturally enough, wish to have the profitable common sole fishery to themselves.

Within Danish fishery circles, opinions on an extension of the fishing limits have been divided, according to the Minister. Many believe that fishing rights should be secured as far out as possible with respect

to the Danish coastal fisheries. But others, namely the fishermen who fish near the German and Norwegian coasts, take the view that Denmark should retain the old three-mile limit because it has the advantage that the Danish fishermen also can fish up to three miles from foreign coasts.

The Government has not received any demand for an expansion from the fishermen's side, and the Minister added that his impression is that the matter is quiet. There hardly will be any expansion in the foreseeable future, even if an existing agreement with the other North Sea countries (with the exception of Norway and Sweden) can be terminated with one year's notice.

With regard to the Faroe Islands, the agreement with the British Government is effective until April 1962. This agreement maintains the six-and-six principle so that there are certain areas between 6 and 12 nautical miles where, at certain times of the year, British fishermen cannot fish. The Government is considering whether it should give notice to terminate the agreement in order to effect a full 12-mile limit. Greenland also wants a 12-mile limit. The Government has taken no position yet but it probably will comply with Greenland's wishes.

In his report the Minister mentioned negotiations which have taken place with Norway on the Skagerak area, where Denmark has not been able to accept the Norwegian proposal because it feared an expanded Norwegian fishery in the area. It was the Minister's opinion, however, that agreement would be reached on this problem which, at the moment, is suspended. (January 3, 1962, report from the Regional Fisheries Attache, Copenhagen.)

**Faroe Islands****FISHERY FACTORYSHIP PLANNED:**

Faroese ship owners are negotiating with a ship builder in Bremerhaven, West Germany, for the construction of a fishery factoryship of 1,500 gross tons which will require a capital outlay of 8 to 9 million kroner (US\$1.2-1.3 million), according to Danish newspaper reports.

The factory vessel would be the first of its kind for the Faroe Islands. It would ice

Faroe Islands (Contd.):

and quick-freeze fish and be equipped with filleting machines and fish meal and oil machinery. The catch would be handled below decks. Most of the fishing would be done in Greenland and Newfoundland waters. Delivery would be expected in 14 months. (United States Fisheries Attache, Copenhagen, report of January 2, 1962.)

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EXPORTS OF FRESH, FROZEN, AND SALTED FISH:

As a result of the Danish Government's decision to abolish on January 1, 1961, the approximately 4 percent premium for sales to the dollar area, exports of Faroese frozen fillets to the United States have decreased markedly, according to a newspaper report from Thorshavn. To Faroese exporters the premium amounted to about 14 øre per kilogram (slightly less than 1 U.S. cent a pound). Exporters are now concentrating on increased shipments to the United Kingdom where one firm is receiving substantial quantities of Faroese frozen fish products. Between 150 and 200 metric tons have been shipped to Grimsby in the past month. Exports of fresh fish to the British market also increased considerably in 1961.

Of the 1961 production of 110,000 barrels (11,000 metric tons) of salted herring, 80,000 have been sold on the Danish and Swedish markets, and East Germany has finally agreed to take 20,000 barrels. Faroese export circles hope that Danish and Swedish importers will buy the 10,000 barrels remaining unsold. (United States Fisheries, Attache, Copenhagen, report of December 28, 1961.)



German Federal Republic

FISH OIL MARKET:

According to the leading local fish oil importer, sales of imported oils in West Germany during December 1961 continued to be sluggish, in view of adequate stocks in the hands of margarine manufacturers. The one large British firm which has branches in West Germany has reportedly continued to limit its fish oil purchases to small exploratory transactions. These factors have had a depressing effect on price levels.

The price of United States menhaden oil has decreased from about US\$120 per metric ton (5.4 U.S. cents a pound), c.i.f. Rotterdam, in early December 1961, to about \$114 (5.2 U. S. cents a pound) early in January 1962. The fish oil importer believes that the price of United States menhaden oil will not drop much further, because United States fish oil producers are reportedly increasing their sales in the United States and in Canada.

The price for Peruvian fish oil has declined from about \$116 (5.3 cents a pound) to \$112-113 a metric ton (5.1 cents a pound), c.i.f. Rotterdam, for prompt delivery. Contracts for delivery of Peruvian fish oil in April-May-June 1962 are being negotiated at about \$110 a metric ton (5.0 cents a pound).

German fish oil was quoted as of January 12 at \$112-118 a metric ton (5.1-5.3 cents a pound) ex-factory. (United States Consulate, Bremen, January 12, 1962.)

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FISH MEAL PRICES,
JANUARY 5, 1962:

Prices reported at Hamburg Commodity Exchange as of January 5, 1962, for fish meal delivered ex-Hamburg warehouse, or c.&f. West German sea port were as follows:

Type of Fish Meal	Protein Content (%)	Delivery	DM/Metric Ton ¹ /	US\$/Short Ton
German	50-55	loco/prompt	640.00	145.15
"	55-60	prompt/Jan. 1962	650.00	147.42
"	60-65	January 1962	660.00	149.69
Peruvian	65-70	January 1962	682.50	154.79
"	65-70	February 1962	585.00	132.68
"	65-70	March 1962	565.00	128.14
"	65-70	Apr.-Aug. 1962	557.50	126.44
Angola	65-70	Jan.-Feb. 1962	680.00	154.22
Portuguese	50-55	prompt/Jan. 1962	625.00	141.75
Icelandic herring	70-75	prompt/Jan. 1962	737.50	167.26

¹/Values converted at rate of 4.0 deutsche marks equal US\$1.

Note: "Loco" means where and as it is at the time of sale, and all subsequent expenses to be at buyer's account.

German Federal Republic (Contd.):

Since late November 1961, fish meal prices at the Hamburg Exchange have shown a marked increase. West German fish meal manufacturers and dealers assert that the price increases reflect increasing demand for fish meal not only in West Germany but also in other West European countries. Furthermore, these sources state that fish meal production in several important European fishery nations dropped significantly in 1961. In West Germany, for example, the output of fish meal in 1961 decreased about 22 percent to about 65,000 metric tons. Some sources hold that a more skillful manipulation of fish meal exports by the Peruvians to be partly responsible for the price increases. Others believe that dealers, who refrained from purchasing in view of the speculative elements introduced into the fish meal market in 1961, now find themselves in short supply and have begun rebuilding their stocks, thus creating what is believed to be a temporary increase in demand. (United States Consulate, Bremen, January 12, 1962.)

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GOVERNMENT AID FOR FISHING INDUSTRY:

The progressive deterioration in the financial position of the West German trawler trade has led to a strong plea for expanded government support. In response to a motion adopted by the Bundestag (Parliament), the West German Government has made an investigation and submitted its findings to the Bundestag.

In the first section of its report, the Government compares the status of the West German fisheries with those of other West European fishery nations and arrives at the conclusion that the West German fishery trade, the fourth largest in Western Europe and one possessing a high rate of productivity, like other European fisheries is undergoing structural changes with regard to fishing techniques, shifts in fishing grounds, and processing of fish aboard vessels. The Federal Government further finds that many foreign fisheries enjoy numerous advantages over the German fishing trade, such as more favorable geographical locations, less war loss, no postwar currency devaluation, higher government support, subsidies, tax privileges, more intensive research, protective trade barriers, etc. The Government re-

port emphasizes the extraordinary interdependence of the various sectors of the fish trade and the fact that the value of raw fish increases by an average of 265 percent in West Germany before it reaches the consumer. After describing Norwegian and British support of the fishing trade in some detail, the report points out that important West European countries subsidize their fisheries in order to maintain the basis for secondary industries, which apart from stimulating the economic life in coastal areas, in the final analysis yield taxes surpassing considerably the subsidies granted from government funds.

In assessing the importance of the fish trade within the national economy, the Government reports that a total of 18,300 firms in all sectors of the fish trade employ about 97,000 people and transact a DM 3.8 billion (US\$950 million) business per year. Smaller catches have reduced the share of West German fisheries in the over-all national fish supply from 83-89 percent in the years 1950-1958 to 75 percent in 1959-60. In view of its need for foreign fish supplies, the Federal Government actively supports the development of a liberal fish trade policy within the Common Market (EEC). It also expects that the Common Market will provide additional sales opportunities for the West German fish trade. The merger of the EEC with European Free Trade Association (EFTA) countries would create better conditions for the establishment of a common fishery policy, among other things, aimed at the harmonization of competitive conditions, the promotion of deep-sea fishing, improved cooperation in and coordination of production, and marketing, etc.

In an analysis of the present position of the West German deep-sea fishing trade, the Federal Government, although with a slight shift of emphasis, confirms the reasons for the financial deterioration of the trade advanced by the trade itself earlier in the year. In summary, these causes are: (a) loss of traditional fishing grounds due to the unilateral extension of fishing limits; (b) lower fish catches as the result of changing hydrobiological conditions; (c) high cost of designing and building new types of fishing vessels and adopting new catching techniques; (d) price decline in the fish meal and fish oil markets; (e) higher cost for maintaining and improving fish quality standards in view of the lengthening voyages of fishing boats and the outlawing of certain fish preservatives; (f) distortion of

German Federal Republic (Contd.):

competitive conditions caused by the subsidization of foreign fisheries and the extensive liberalization of fish imports by the Federal Republic.

In 1957, 85 percent of all trawler companies lost money and in 1958 about 50 percent of all firms operated in the red. Net earnings, before taxes, dropped from about 2 percent in 1959 to about 1 percent in 1960. According to the report, medium and long-term debts of the trawler trade currently amount to DM 150 million (\$37.5 million), of which DM 127 million (\$31.7 million) was obtained through commercial loans. Repayment plus interest require DM 28 million (\$7.0 million) annually.

The Government report also reviews the status of the West German lugger and cutter fisheries, which is found to be critical, partly because of the reasons that also led to a deterioration of the trawler trade, partly because of the special features of these fisheries, such as seasonal operations, overspecialization in catching fish for the reduction industry, inefficient marketing systems, slow adoption of new fishing techniques, and a progressive obsolescence of the lugger and cutter fleets.

The Government report on the status of the West German fisheries fails to meet the parliamentary instruction in one important respect, namely "to state whether the budgetary means for promoting the fisheries must be increased, or additional support is required."

Since the publication of the Government report, trade and Government officials have been cooperating in determining the extent of support necessary to tide the fisheries over their present ebb.

The Association of Deep-Sea Fisheries has submitted to the Government a detailed support program for five years, assuming that within such a period it will be possible to harmonize to a significant degree the competitive conditions among the major fishing nations of the EEC and the EFTA. The trade also requests that the extended support be granted equally to all firms, without regard to size or efficiency so as not to hamper a selective development of the trade. The

trade support proposal comprises the following annual expenditures:

	Million DM	US\$ 1,000
1. Subsidies (patterned after the English system) in the amount of 9 percent of the gross proceeds of all landings (possibly differentiated according to catching areas)	17.0	4,250
2. Support of amortization of DM 110 million (\$27.5 million) in ship mortgages .	6.6	1,650
3. Subsidies to lower interest rates payable on DM 110 million (\$27.5 million) from 5 percent to 2 percent	3.3	825
4. Support for the construction of 10 new trawlers at DM 5 million (\$1.3 million) at 5 percent	2.5	625
5. Scrapping premiums of DM 400 (\$100) per GRT for 25 trawlers of 500 GRT .	5.0	1,250
(This amount would be reduced to 15 vessels in the second year and to 10 trawlers in the subsequent three years.)		
6. Sales promotion	3.0	750
(The support would match the amount borne by the trawler trade itself for this purpose.)		
7. Exploration of fishing grounds: Charter of a commercial trawler until new government research vessel will be placed into operation	1.2	300
Total	38.6	9,662

The inclusion of the lugger and cutter fisheries in the above program would raise support requested under the items 1, 2, and 3 as follows:

1. From DM 17 million (\$4,250,000) to DM 25 million (\$6,250,000)
2. " " 6.6 " (\$1,650,000) " " 9 " (\$2,250,000)
3. " " 3.3 " (\$825,000) " " 4.5 " (\$1,125,000)

Hence, total support requested by the German fishing trade amounts to about DM 50 million (\$12.5 million), of which DM 25 million (\$6,250,000) would be for direct subsidies (United States Consulate, Bremen, December 20, 1961.)



Guinea

MARKET FOR CANNED SARDINES:

Among the canned sardine and sardine-like products, only canned sardines are imported by Guinea. Imports of canned sardines in 1960 amounted to 241,000 pounds,

Guinea (Contd.):

valued c.i.f. Port of Conakry at 15,204,000 Guinean francs (US\$61,500), all from Morocco. This is a reduction of about one-third from the average imports of the three previous years. Data on imports for 1961 are not available. All imported sardines are packed in oil.

Canned sardines in Guinea are normally consumed only by the dwindling European community and a relatively small number of Europeanized Africans.

The import duty on all canned fish products is 50 percent of the c.i.f. value. It is doubtful that import licenses or exchange allocations would be granted for canned sardines of United States origin since Guinea has a bilateral trade agreement with Morocco in which canned sardines are included. (United States Embassy, Conakry, January 12, 1962.)



Iceland

FIVE FISH-FREEZING PLANTS FORM NEW EXPORT ASSOCIATION:

Five Icelandic freezing plants representing 5.2 percent of the Icelandic production capacity have left the Freezing Plants Corporation sales organization for a new export organization. The businessman heading the new organization has leased two of the plants and represents the three others as sales agent. Working largely through a group of firms in Great Britain, the businessman has already received licenses to export 3,000 metric tons of frozen fish at a reportedly higher price than that obtained by the two existing frozen fish sales organizations, the Samband and the Freezing Plants Corporation. The latter have hitherto controlled about 20 percent and 80 percent, respectively, of Iceland's frozen fish exports.

The Freezing Plants Corporation concluded contracts in January 1962 with a British firm for the sale of a large amount of frozen unskinned cod fillets at 8 kronur (about 18.6 U. S. cents) per pound. (United States Embassy, Reykjavik, January 11, 1962.)

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NEW FISH PRICING BOARD ESTABLISHED:

On December 16, 1961, the Icelandic Althing passed an act which should make it possible to set fish prices more rapidly. A bill to establish a fish pricing board was introduced into the Althing on December 8, 1961, by the Minister of Fisheries. Main discussion centered on the extent to which representatives of the fishermen's unions should participate in fish pricing negotiations between the processors and the fishing vessel owners. In the past, the labor unions representing the fishermen have been suspicious of prices reached in negotiations between these two groups who are often the same people, as many fish freezing plants and fishing vessels are owned by the same organizations.

Normally, the fish price for the main January through mid-May fishing season is set by negotiations starting the end of December between the groups named, accompanied by charges from the fishermen's unions. Often these negotiations drag on well into the fishing season, leaving uncertainty and division, and sometimes holding up the opening of the main fishing season. The new act establishes a board to fix the minimum prices of all fish species sold for processing in Iceland as well as on those exported in fresh and unprocessed form. The board also obtains information on local fish prices and production costs and foreign market prices, and is instructed to base its pricing on market prices of fisheries products in foreign markets. It should reach agreement on fish prices for one year ahead, if possible, and never for a shorter period than a complete fishing season. The board is empowered to fix the prices for cod, haddock, and other white fish as well as for shellfish and herring. The board is organized in different ways depending on the type of fish involved.

A 12-member group is charged with determining prices for the white fish; 6 of these represent the fish buyers; 3 from the Freezing Plants Corporation, 1 from the Union of Icelandic Fish Producers (saltfish), 1 representing the plants within the Samband, and 1 representing the Union of Stockfish Producers. The following make up the 6 representing the sellers: 3 from the Union of Icelandic Fishing Vessel Owners, 1 from the Icelandic Federation of Labor, 1 from the Icelandic Seamen's Federation, and 1 from the Federation of Merchant Marine and Fishermen. The latter is the officers' union.

As for setting prices on herring caught off the north and east coasts, representatives of the sellers of fish will be from the same organizations in the same numbers, while the fish purchasers will be represented along the following lines: 1 from the Freezing Plants Corporation, 1 from the Samband, 2 from the Union of North and East Coast Herring Salters, 1 from the State Herring Reduction Plants, and 1 from the Union of North and East Coast Herring Reduction Plants. The same arrangement will apply for representation of sellers of herring caught off the south and west coasts, but the representation of the buyers will be as follows: 2 from the Freezing Plants Corporation, 1 from the Samband, 2 from the Union of South and West Coast Herring Salters, and 1 from the owners of herring reduction plants on the south and west coasts.

In the event that disagreement occurs within these boards in arriving at fish prices before the time specified^{1/} expires, the question is referred to a 5-member board of arbitration. This board is made up of 2 members from the fish sellers, 1 representing the Union of Icelandic Fishing Vessel Owners,^{2/} and the other from the seaman's unions. Two representatives from the fish buyers will sit on the board, of whom at least one shall be appointed by the aggrieved party. These four members of the board are expected to agree on a neutral fifth member of the board. However, if the board does not select a fifth member within two days, the Supreme Court is to appoint the fifth member of the board of arbitration. This board's decisions are then binding on a straight majority basis.

The pre-February 1960 fish pricing arrangement had left final fish price-fixing powers to the Government, following

Iceland (Contd.):

negotiations between the fishing vessel owners and processors. The Government then set the fish prices and paid the export subsidy required as a result of the unrealistic exchange rate. The economic stabilization program removed the Government from setting fish prices and wages.

Although the procedures voted into being in December 1961 should streamline the former cumbersome methods for arriving at landed fish prices and should allay some union suspicions of vessel owner-processor collusion, it will by no means guarantee an easy price fixing path. The Icelandic Federation of Labor demanded in late December 1961 that the seamen's share of the fish catch be increased from 29-1/2 percent to 34 percent, thereby opening up another aspect of the fish price question. (United States Embassy, Reykjavik, January 4, 1962.)

1/The time permitted the fish pricing boards and board of arbitration for fixing fish prices has not yet been set, but will be the subject of a subsequent regulation.

2/This member must be one without any interest in fish processing plants.

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FROZEN HERRING SALES:

With a glut of herring at the oil and meal reduction plants, Icelandic processors stepped up the freezing of herring. By January 6, 1962, the Freezing Plants Corporation had frozen 11,140 metric tons of herring from the South Coast winter catch. Of this, 3,250 tons had been sold to West Germany and 2,500 tons to Poland. Uncertainty prevailed regarding negotiations to sell the Soviet Union 5,000 tons because of good catches by that country's herring fleet. Rumania was interested in purchasing 1,000 tons, posing a problem of what Iceland could purchase in return. Both the Czechs and East Germans had also expressed interest in frozen herring, but their barter trade balances were already in bad balance.

The remaining frozen herring may well be sold in Great Britain or elsewhere in Western Europe. Further processing of frozen herring was expected to slow up because of the unwillingness of the banks to advance further operational credits until sales contracts have been concluded to cover the product. (United States Embassy, Reykjavik, January 11, 1962.)



Ivory Coast

JAPANESE-ITALIAN JOINT TUNA BASE PLANNED:

A large Japanese fishing company is reported to have entered into an agreement with an Italian firm to establish a joint tuna fishing base at Abidjan, Ivory Coast. Each company will invest 50 percent in the enter-

prise. The Japanese firm reportedly has submitted an application to the Japanese Fisheries Agency for approval of the venture. Detailed information regarding this joint fishing base is not available but apparently the construction of a large freezing plant at Abidjan for storing tuna is included in the plan. (A translation from the Japanese fishery periodical Shin Suisan Shimbun Sokuho, January 26, 1962.)



Japan

PRODUCERS RECOMMEND
100,000-TON QUOTA FOR
FROZEN TUNA EXPORTS TO U. S.:

The two subcommittees of the Export Frozen Tuna Producers Association, one responsible for exports from Japan proper and the other for transshipments, met separately on January 23 and 24, 1962, to draft recommendations governing exports of frozen tuna to the United States in 1962, according to the Japanese periodical Suisan Tsushin of January 25, 1962. The views of the two committees were:

1. Direct shipments from Japan proper:

a. Frozen tuna export quota to the United States for 1962 be set at 100,000 short tons. The Exporters Association is considering an annual export quota of 110,000 short tons, but indications are that frozen tuna exports to the United States in 1962 will only amount to about 95,000 short tons (direct shipments from Japan proper, 68,000 tons; transshipments, 27,000 tons).

b. Frozen tuna exports from Japan proper be allocated as follows:

Species	Recommended Quota	Present Quota
	. . . (Short Tons) . . .	
Albacore	30,000	32,500
Yellowfin	35,000	37,500
Total	65,000	70,000
Tuna loins	4,800	4,800

c. Existing methods of allocating the export quota (i.e. on the basis of past performance records, with reserves held for later allocation to those companies that rapidly consume their quota) be applied to albacore and yellowfin and that the unassigned quota be increased for tuna loins.

d. A special committee be appointed to study the joint sales system.

Japan (Contd.):

2. Transshipments:

a. Continuation of present system and restrictions.

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TUNA PRICES TO CATCHER VESSELS IN MOTHERSHIP FISHERY:

The Japanese Tuna Mothership Association, made up of Japan's three largest fishery firms, has substantially agreed on the following prices to be paid in 1962 to catcher vessels delivering fish to tuna motherships:

Species	Price	
	1962	1961
	(US\$ Per Short Ton)	
Albacore	189	176
Yellowfin, large	113	111
Yellowfin, medium	164	156

(Translated from Japanese periodical Suisan Keizai Shimbun, January 21, 1962.)

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TUNA MOTHERSHIP COMPANIES TO REQUEST LIBERALIZATION OF FISHING RESTRICTIONS:

The three largest Japanese fishing companies which operate tuna motherships in the South Pacific Ocean are planning to submit a petition to the Fisheries Agency requesting: (1) elimination of restrictions on fishing grounds; (2) increase in catch quota; (3) liberalization of restrictions on catcher vessel sizes; (4) revival of use of portable vessels.

According to the three companies, the tuna mothership fleet presently consists of a total of 5 motherships and 196 catcher vessels. Although this represents an increase in the size of the fleet since the beginning of the tuna mothership-type fishery five years ago, the fleet operates on the same fishing grounds due to area restrictions imposed on it. As a result, fishing grounds are crowded and this lowers efficiency.

On the other hand, tuna long-line vessels operating out of base ports are not restricted in their movements and thus are able to operate on the best fishing grounds. Catcher vessels assigned to the motherships possess the same type of fishing license as do the land-based long-line vessels but they are not permitted this freedom of movement, merely because they are serving the motherships. Also, area restrictions placed on the motherships serve only to hamper their mobility, which is their unique characteristic. These restrictions should be abolished so as to permit tuna motherships to operate at 100-percent efficiency. (Tuna motherships are presently restricted to the following areas: North of the equator--area east of 170° W. longitude; equator to 25° S. latitude--area east of 170° E. longitude; and south of 25° S. latitude--area east of 160° E. longitude.)

As for increasing the catch quota, which was raised a year ago to 22,900 metric tons, the tuna mothership companies want the quota to be increased by another 4,000 metric tons or so this year, to 27,500 metric tons. They contend that as a result of the liberalization of the vessel

construction law (effective December 1960) permitting construction of larger fishing vessels, production of land-based tuna vessels in 1961 can be expected to increase nearly twofold over 1954 production, which amounted to about 180,500 metric tons. This is possible since the land-based tuna vessels do not have any catch limits imposed on them. Catcher vessels assigned to the motherships should also be allowed to operate at their full capabilities. Besides, the system of retiring fishing vessels for the purpose of augmenting catches is rather complicated and rather than rely on that method, an outright increase in catch quota is desired. (By retiring a fishing vessel of a certain size for a specified length of time, tuna motherships are permitted to catch a fixed amount of tuna beyond their quota allocation for each vessel taken out of the fishery.)

On the question of vessel size, tuna motherships cannot employ fishing vessels of over 200 tons gross. With bigger vessels being built all the time, the companies are experiencing difficulty in chartering fishing vessels. They want to see this restriction on catcher vessel size liberalized so as to permit utilization of catcher vessels up to 300 tons gross and scout ships up to 350 tons gross.

Concerning use of portable vessels, the tuna mothership companies want up to four portable vessels authorized per mothership. The portable vessels would be used for conducting tests on gear and for making resource surveys. (Translated from Japanese periodical Suisan Keizai Shimbun, January 21, 1962.)

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CANNED TUNA SALES FOR EXPORT TO UNITED STATES:

The Japan Canned Foods Exporters Association held a meeting of its Tuna Sales Standing Committee on January 12, 1962, to discuss the second sale of canned tuna in brine for export to the United States. The Committee decided to sell, at prevailing prices^{1/}, 130,000 cases (No. 1/2, 7-oz. 48's) of canned white meat tuna and 130,000 cases (No. 1/2, 7-oz. 48's) of canned light meat tuna, totaling 260,000 cases, to be shipped to the United States by March 20. For the first sale, 100,000 cases of light meat tuna and 130,000 cases of white meat tuna had been offered.

The chairman of the Tuna Sales Committee stated at the meeting that the packers wanted to raise export prices but he explained to them the difficulty of increasing prices under present market conditions, whereupon the packers agreed not to press for an increase in export prices. (Suisan Tsushin, January 13, 1962.)

^{1/}Prevailing f.o.b. Japan prices for canned tuna in brine for export to the United States are: \$9.95 per case for white meat tuna and \$7.70 per case for light meat tuna.

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EXPORTS OF CANNED TUNA SPECIALTY PACKS:

Data compiled by the Canned Tuna Producers Association show that exports of spe-

Japan (Contd.):

cialty canned tuna products (other than those packed in brine and in oil) totaled 156,234 cases for the period April-November 1961. Exports to West Germany totaled 127,308

Japanese Exports of Tuna Specialty Packs, April-November 1961

Product	No. Cases
Vegetable tuna	89,538
Jelly tuna	41,489
Seasoned tuna	21,100
Curry tuna	3,150
Tuna in tomato sauce	139
Others	818
Total	156,234

cases and to the Netherlands 13,687 cases, according to a translation from the Japanese periodical Suisan Tsushin, January 27, 1962.

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PENANG AND SINGAPORE PROPOSED AS TUNA TRANSSHIPMENT BASES:

The Japanese fisheries company which established the joint Japanese-Malayan tuna fishing and canning company located at Penang, Malaya, held a special stockholders meeting on January 23, 1962, according to translations from the Japanese periodical Suisan Tsushin (Jan. 24 & 29, 1962). Resignations of the officers and directors of the Japanese company were accepted following presentation of reports on the financial status of the Malayan enterprise. Stockholders agreed to place management of the joint Malayan-Japanese enterprise primarily under the control of the Mie (Prefecture) Tuna Cooperative Association, and also voted to redistribute a total of 34,000 unsubscribed shares to members of the Mie Tuna Association and other regional associations.

Members of the National Federation of Japan Tuna and Skipjack Fisheries Cooperative Associations reportedly agreed that the Malayan base should not be managed by the Mie Tuna Association alone but should be developed jointly by all regional cooperative associations. However, since the Mie Association will have to be depended upon heavily for financial support to overcome the present financial difficulties of the Japanese firm operating the Malayan operation, that Association's dominant position in that company's management remains basically unchanged.

In connection with the reorganization of the Japanese firm operating the joint Malayan-Japanese plant, opinions are being expressed that even if that company's Malayan plant should be permitted to export 36,000 cases of canned tuna to the United States, it will be difficult for that company to greatly improve its deficit operations; thus, this will serve to intensify the move to utilize both Penang and Singapore as bases for Japanese tuna vessels operating in the Indian Ocean.

Japanese tuna vessels which primarily operate in the Indian Ocean are estimated to number about 80-100. Of those, about 20 to 30 vessels would like to utilize Penang and Singapore as bases, and officials connected with the Japanese fisheries company operating the Malayan tuna plant are requesting that both Penang and Singapore be designated ports of transshipment so that tuna taken in the Indian Ocean can be exported to the United States from those two bases. At the present time, Japanese tuna long-liners operating in the Indian Ocean reportedly take on fuel at Singapore on their return trip to Japan. Designation of Singapore and Penang as bases of transshipment will mean that those vessels can unload their catches at those ports and return directly to the Indian Ocean fishing grounds, without being required to make the long return trip to Japan to unload their catches.

Present plans call for dispatching 4 to 5 tuna (ice) vessels of 100-150 tons gross to Malaya. Hope is held that catches made by those vessels will be handled under a special quota, like that allotted to the Japanese tuna base at Espiritu Santo, New Hebrides Islands. However, this seems most unlikely since catches made by those vessels for export purposes are expected to be small.

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RESEARCH VESSEL TO EXPLORE INDIAN OCEAN TUNA RESOURCES:

The Japanese Fisheries Agency's research vessel Shoyo Maru (602 gross tons) departed Tokyo on January 10, 1962, on an 80-day exploratory cruise to the southern Indian Ocean to investigate tuna resources. The Shoyo Maru expected to proceed first to Penang, Malaya, and then to Port Louis, Mauritius Island (east of Madagascar Island), from where it will survey the waters south of the fishing grounds now being fished by Japanese vessels to as far south as 40° S. latitude. The Shoyo Maru will not only conduct exploratory fishing for tuna but will also attempt to collect tuna larvae from waters around the Mauritius Island, which is believed to be the spawning area for albacore.

Research objectives are: (1) Study geographical distribution and abundance of important species of fish. (2) Study catch composition, catch quantity, and hook rate by fishing ground. (3) Collect data on water depth, water temperature, currents, etc., and relate their effects on fishing. (4) Conduct observations on fishing methods, water color, and vertical water temperature. (5) Collect measurements on lengths and weights of yellowfin, big-eyed, bluefin, and albacore tuna and spearfish. (6) Run stomach content analyses. (7) Collect data on gonad weights and determine sexual maturity. (8) Collect specimens.

At Penang, the Shoyo Maru will survey the fishing base operated by a joint Japanese-Malayan tuna canning enterprise, which reportedly is now faced with financial problems. (Suisan Keizai Shimbun, January 10, 1962.)

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SHRIMP FACTORYSHIP OPERATION PLANNED IN BERING SEA IN 1962:

A large Japanese fishing company is planning to operate the Einin Maru (7,400 gross

Japan (Contd.):

tons) as a shrimp factoryship in the eastern Bering Sea again this year. Accompanying the factoryship will be 5 pairs of two-boat trawlers. Present plans call for sending the Einin Maru fleet to the waters off the Pribilof Islands in the eastern Bering Sea for five months beginning in April 1962.

Einin Maru's production target for 1962 is 300,000 cases of shrimp (24 8-oz. cans to a case). This target represents a fourfold increase of last year's production of 74,000 cases. In 1961, the Einin Maru also packed 5,400 metric tons of frozen shrimp but in 1962 it will concentrate on packing canned shrimp only. To achieve the 300,000-case target, the fleet will be increased by 4 trawlers to a total of 10 trawlers. New shrimp peeling machinery for installation on the factoryship has been purchased, and the production line will be increased by 2 to a total of 4 lines.

Reportedly, the Einin Maru operated in 1961 at a loss of 150 million yen (US\$417,000). This deficit is attributed to an unexpected decline in export prices and high operational costs amounting to about 700 million yen (US\$1.9 million). Expenses for the 1962 season are expected to total about 600 million yen (US\$1.7 million) and a profit of 100 million yen (US\$278,000) is anticipated.

Other major Japanese fishing companies have contemplated engaging in shrimp fishing in the Bering Sea. Indications are that they will not do so this year in view of the tight money situation prevailing in Japan. (Japanese periodical Suisan Keizai Shimibun, January 17, 1962.)

AFRICAN FISHERY INVESTMENTS SOUGHT:

The Japanese Ministry of International Trade and Industry (MITI) is planning to undertake a basic study of fishery investment possibilities in Africa to promote overseas fishery investments during the next Japanese fiscal year (April 1, 1962-March 31, 1963). This survey, which will be the fourth of its kind to be conducted by Japan since 1959 when Pakistan was first explored, will be assigned to the Japanese Overseas Fisheries Cooperative Association.

After completion of the survey, MITI hopes to work out a final plan in cooperation with the Overseas Cooperative Association. MITI is reported to be particularly interested in the West African coast for fishery investments in fiscal 1962. (Suisan Keizai Shimibun, January 11, 1962.)

TRAWLERS FISHING OFF SOUTH AFRICA:

A large Japanese fishing company, which is conducting trawl fishing off the coast of Las Palmas, Canary Islands, has extended its operations to South Africa. In the fall of 1961 it sent two trawlers, Taiyo Maru No. 68 (1,498 gross tons) and another 750-ton vessel, to the waters nearby Cape Town, South Africa. On January 16, 1962, the Taiyo Maru No. 62 was to begin fishing there. Another trawler, Taiyo Maru No. 61, which had been operating in the New Zealand waters, was also scheduled to proceed to South Africa, thus bringing the total number of the company's trawler fleet assigned to the fishing grounds off the coast of Cape Town to 4 vessels.

The firm's trawlers in the South African coast were catching large quantities of sea bream. All fish taken by the trawlers were to be shipped back to Japan, and as of mid-January 3,000 to 3,500 metric tons of fish had been shipped to Japan by means of commercial freighters. (Shin Suisan Shimibun Sokuho, January 17, 1962.)

The 1,500-ton stern trawler No. 10 Daishin Maru was scheduled to be delivered to another Japanese fishing firm on January 25, 1962. Delivery of the vessel marks the beginning of the firm's entry into the distant-water trawl fishery. The Daishin Maru will operate in West African waters. A sistership is scheduled to be completed in May 1962.

Specifications of the Daishin Maru are: Gross tonnage--1,500 tons; length--223 feet; beam--39 feet; engine--2,000-hp. Diesel; maximum speed--14.7 knots; and cruising speed--12.25 knots. (Suisan Keizai Shimibun, January 13, 1962.)

TWO STERN TRAWLERS BEING BUILT:

A large Japanese fishing company is constructing two 1,470-ton stern trawlers--Akebono Maru, Nos. 52 and 53--at a cost of

Japan (Contd.):

400 million yen (US\$1.1 million) each. Upon their completion, the trawlers will be dispatched to northern waters (Japanese term used for the Bering Sea, North Pacific, and the Okhotsk Sea area). If year-round operations in northern waters are not possible, the firm plans to fish off West Africa as well.

Specifications of the trawlers are: Length 236 feet; beam 39 feet; freezing capacity 54,185 cubic feet; and cruising speed 12 knots. (Shin Suisan Shimbun Sokuho, Japanese periodical, January 19, 1962.)

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**GOVERNMENT ASKS FOR MORE
MONEY FOR FISHERY
REGULATIONS ENFORCEMENT:**

The Japanese Fisheries Agency is requesting 146,788,000 yen (US\$408,000) in the 1962 budget (April 1, 1962-March 31, 1963) for fishery enforcement purposes. This represents an increase of 13,210,000 yen (US\$36,700) over the 1961 budget.

The Fisheries Agency plans to operate seven 450-ton-class patrol vessels and one 150-ton vessel to patrol the salmon fishery; assign 7 inspectors to the mothership-type king crab fishery, 24 inspectors to the mothership-type salmon fishery, and a total of 10 inspectors to the Eastern Hokkaido land-based salmon fishery and the Japan Sea pink salmon fishery.

In addition, the Agency plans to arrange to have landings in Japan of salmon processed by the salmon motherships inspected at time of landing, like last year, and station 5 inspectors at the fish ports--Kushiro, Nemuro, Akkeshi, Miyako and Hachinohe--which have been officially designated as ports of landing for the Eastern Hokkaido land-based salmon fleet. (Shin Suisan Shimbun Sokuho, January 19, 1962.)

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**GOVERNMENT LOANS FOR
PROMOTION OF EXPORT TRADE:**

The Japanese Ministry of International Trade and Industry (MITI) reportedly plans to increase and expand the export loan program to include exporters associations, importers associations, and import-export associations for the purpose of promoting ex-

port trade, according to a translation from the Japanese periodical Suisan Keizai Shimbun, January 24, 1962. To implement this program, MITI plans to submit a bill calling for the partial revision of the Commerce and Industry Central Banking Law at the next session of the Diet, whereby exporters associations, importers associations, and export-import associations will be included in the category of organizations eligible to receive financial assistance from the Commerce and Industry Central Bank. Organizations engaged partly in export and/or import but which are not identified as such by name will not be eligible for aid under this program.

Approval of this program has already been received from the Democratic-Liberal Party and MITI hoped to submit it to the Cabinet in January prior to presenting it to the Diet.

Agricultural and fisheries products will naturally be affected by this program, the implementation of which will mean that eligible associations engaged in handling agricultural and fisheries products will now have two sources of funds available to them during periods of depressed business conditions, the other being the Agriculture and Forestry loan fund. For this reason, MITI expects an expansion of trade in agricultural and fisheries products.

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**MORE MONEY FOR SALES
PROMOTION OF FOOD PRODUCTS:**

The Agriculture and Forestry Committee of the Japan Export Trade Promotion Association (JETRO) held a special meeting in Tokyo on January 26, 1962. The Committee reported on its trade promotion activities in 1961 for agriculture, forestry, and fishery products and discussed the 1962 budgetary requirements for promoting exports of those products, according to a translation from the Japanese periodical Suisan Keizai Shimbun, January 28, 1962.

It was stressed that as a result of the Government's policy to promote the national economy, demand in 1961 for canned tuna and frozen tuna continued good as evidenced by conditions in the United States, and the market remained stable. However, the strong demand for fish sausage and fish ham in Japan, coupled with shortage of raw materials for those products (of which tuna is one) has served to restrain exports of tuna. Also

Japan (Contd.):

high prices paid on the domestic market for raw tuna as a result of a strong demand for canning purposes may throw tuna export prices out of balance in the future. Bearing this in mind, JETRO plans to step up its overseas publicity activities in 1962 and hopes to ask the Government to give special consideration to the procurement of raw materials for the production of canned tuna.

JETRO plans to drastically increase its publicity expenses for 1962 to 41,114,000 yen (US\$114,000), an increase of 19 million yen (\$53,000) over the previous year's expenditures. Of that amount, JETRO plans to spend 10 million yen (\$28,000) for publicizing pearl products and 24,250,000 yen (\$67,000) for publicizing Japanese canned tuna and tuna-like products for export to the United States and, as a new undertaking, spend 5 million yen (\$14,000) for pearl publicity in West Germany. The remainder of the fund would be used for publicizing Japanese fresh fruits in Hong Kong, Europe, and the United States.

日本

Malaya

JOINT JAPANESE-MALAYAN TUNA CANNING OPERATION AT PENANG:

The joint Japanese-Malayan tuna fishing and cannery operation at Penang, Malaya, is small and at present is operating in leased quarters. It is reported to be running at a loss. However, it has plans to build its own cannery and to expand production.

Fifty-one percent of the capital of the firm is Malayan, and the remainder is Japanese. The company was organized in 1959 with pioneer status from the Government of the Federation of Malaya. The firm began operations in February 1960. The company leases two canning plants; one is shared by another canned food company and the other is shared by another company. The refrigeration unit is owned by the tuna canning firm.

The tuna used by the cannery are caught in the Indian Ocean by a fleet of 4 Japanese fishing vessels, 2 of which are 100 tons, and the others are 150 tons. The former bring in catches of about 50 tons per vessel, and the latter about 80 tons. Approximately once a week one vessel will return to Penang with a catch. Three types of tuna are caught: albacore or white-meat tuna, yellowfin, and big-eyed; both of the latter are light meat. The average weight of the fish is 80 pounds. In addition, spearfish as well as black, white, and striped marlin are caught, but these are not canned nor is there any demand for them in Penang, so they are shipped to Japan.

Aboard the fishing vessel the fish are stored in refrigerated holds. The hatches are opened and the fish are hauled out in groups and swung over to the pier where the vessel is docked. The fish are hosed. A team of young men then drag the tuna over to be weighed and loaded on to trucks. The trucks take the fish over to the refrigeration warehouse of the canning firm.

The tuna are stored in 3 refrigerated rooms where there is space for 200 long tons of fish and where the temperatures of the rooms are kept at -20 and -25° C. (-4 and -13° F.). These rooms are also used for the storage of sauries (fish of the sardine family) used by the Japanese fishing vessels for bait.

Processing of the tuna for canning is as follows: the tuna are taken from the refrigerators and thawed. Then wedges of meat about 2 feet long, and 6 to 8 inches thick at the widest part, are cut off and placed in wooden frames with wire bottoms. These are placed in steam ovens for cooking. When the meat is cooked, it is removed from the ovens and allowed to cool. Then the bones, dark meat, and skin are removed, and the cleaned tuna meat is put through a slicing machine which cuts it into slices about an inch thick. These slices are passed to girls who then weigh 167 grams (about 5.9 ounces) of tuna meat and place it on metal plates. These are passed to another group of girls who put the meat into 7-ounce cans which are imported from Japan. At another table, 2 girls are putting tuna fish flakes into cans. The weight of the cans is then checked, and they are passed on to have 2.5 grams of salt added and to be filled with cottonseed oil or soybean oil, or sometimes with tomato sauce. Next, the cans are passed on to the operator of a machine which puts tops on the cans. The sealed cans are then steamed for 1 hour and 20 minutes at 7-lbs. pressure and at 112° C. (233.6° F.). After that, the cans are removed, cooled, washed, packed 48 to a case, and sent to a warehouse where labels are attached and the cans stored.

The two canning plants used by the canning firm are rented. One employs approximately 60 persons, and there is a Japanese technician in charge of canning, another in charge of the fish meal manufacture, and a third in charge of tuna-liver oil extraction. At the other plant there are about 52 employees, including one Japanese technician. Ninety percent of the company's employees are women. The local employees are mostly Chinese, but there are a few Malays and Indians.

At the refrigeration plant, there is one Japanese technician in charge of the cold rooms, supervising the work of 6 locals, and another Japanese technician is in charge of the refrigeration machinery and is training 3 locals (a Chinese, a Malay, and an Indian).

The total monthly output of the two canning units is 7,000 cases of 48 7-oz. cans. Five percent is canned tuna flakes and 95 percent is solid pack (4 chunks of meat to a can). In addition, the firm prepares 70 pounds of tuna sausage a day for local consumption. There is also half a ton of fish meal made each day, and this is sold for chicken feed. The fish meal sells for 23 to 24 Malayan cents (7 to 8 U.S. cents) a pound; the company plans to increase production to one long ton a day. Finally, the company produces a small amount of tuna-liver oil which can be added to the fish meal to enrich it, or it can be used in the manufacture of margarine.

At present the company exports its canned tuna to West Germany, Denmark, Austria, Switzerland, Holland, the United Kingdom, and Canada. In 1962 the firm hopes to start exports to the United States. There still is no market for canned tuna in Malaya.

According to the Deputy Manager Director, the firm is losing money. The reasons for this are, he said, the present unit of production is too small in comparison with the overhead fixed costs. In addition, both canning units are in leased buildings. The rents are high and the firm also has to pay all the utility charges for the premises even though only part of such utilities are used by them. Again, each of the 6 Japanese technicians is paid M\$1,000 (US\$333) a month. Each is on a 2-year contract, which is renewable. It is hoped that most of these technicians can be replaced with trained Malaysians, but that will not be possible for a year or more.

The company plans to build its own cannery on the land adjoining the refrigeration unit and to increase production. The cannery and refrigeration unit will then occupy an area of 50,000 square feet. This would mean a considerable capital outlay, but it should also mean a substantial saving in overhead costs. (United States Consulate, Penang, December 22, 1961.)

Malaya (Contd.):



Fig. 1 - One of two canning plants leased by the joint Japanese-Malayan tuna fishing and cannery operation at Penang, Malaya. This is the one shared by another canned food company.

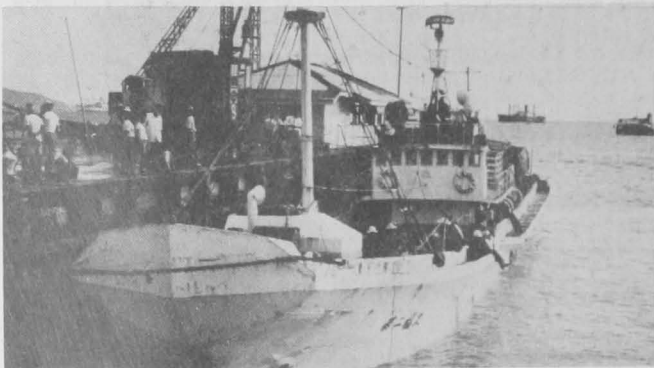


Fig. 2 - Japanese tuna fishing vessel Fuku Maru II that has returned from the Indian Ocean with a catch, alongside a pier in Penang.



Fig. 3 - Japanese fishing vessel; looking toward the bow.



Fig. 4 - Tuna being taken out of the holds of Japanese fishing vessel.

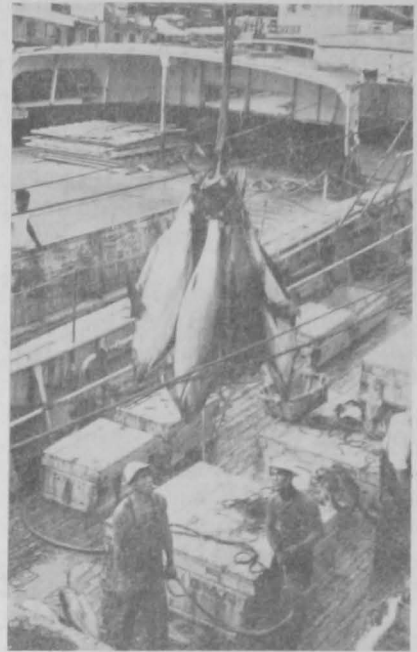


Fig. 5 - Unloading tuna at a pier in Penang.



Fig. 6 - Tuna being hosed on pier before weighing.



Fig. 7 - Tuna being weighed.

Malaya (Contd.):

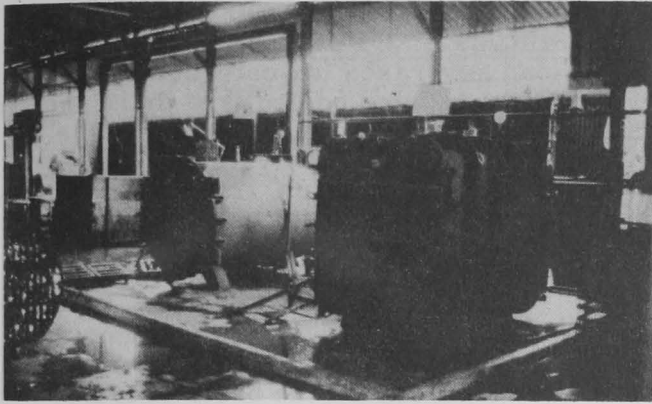


Fig. 8 - Steam ovens for cooking tuna at one of the canneries in Penang.



Fig. 11 - Tuna meat being sliced before canning.



Fig. 9 - Tuna cooling after removal from steam oven.



Fig. 12 - Packing tuna flakes into cans.



Fig. 13 - Cans are weighed before salt and oil is added to the tuna.



Fig. 10 - After cooling, the bones, dark meat, and skin are removed from the cooked tuna.



Fig. 14 - Adding salt to tuna.

Malaya (Contd.):



Fig. 15 - Sealer putting tops on cans. Japanese technician in the left supervises the work.



Fig. 16 - Refrigeration unit for cold-storage plant.

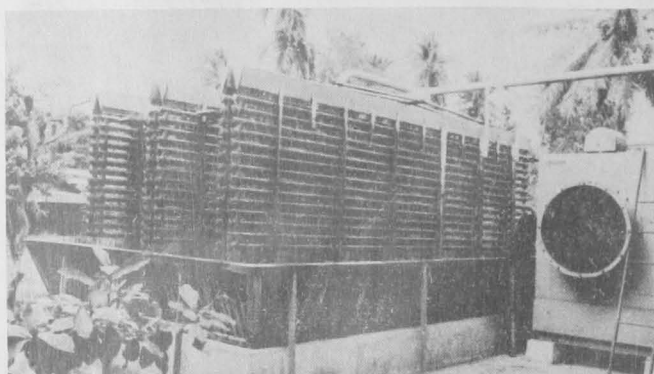


Fig. 17 - Part of refrigeration machinery for cold-storage plant.

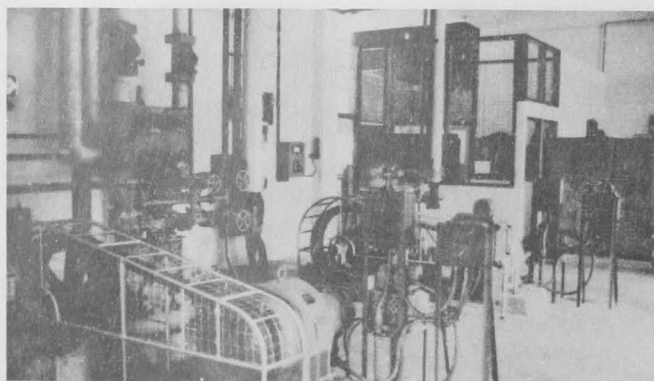


Fig. 18 - Inside control room of refrigeration room.

Mexico

SEVERANCE TAX CHANGED ON SOME SHRIMP PRODUCTS:

Mexican severance tax categories for beheaded cooked, dried peeled, and dried shrimp with shell on were eliminated in the same decree that increased the ad valorem duty on all imports of edible fresh, frozen, dried, or canned fishery products. The decree became effective January 1, 1962 (Diario Oficial, December 30, 1961).

This means that in the future shrimp falling in the categories mentioned above will pay severance taxes on the basis of fresh whole or fresh headless. In essence this means an increase in taxes on the beheaded cooked, dried peeled, and dried shrimp. However, only relatively small amounts of dried and cooked shrimp have been produced in Mexico in recent years. The bulk of the shrimp production in Mexico consists of fresh headless on which the severance tax is 22 centavos a kilogram (about 0.8 U. S. cents a pound). The severance tax on fresh whole or heads-on shrimp is 21 centavos a kilogram (about 0.76 cents a pound). (United States Embassy, Mexico City, January 18, 1962.)

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IMPORT DUTIES ON EDIBLE FISHERY PRODUCTS INCREASED:

An additional ten percent ad valorem duty has been placed by Mexico on all imports of edible fresh, frozen, dried, or canned fishery products. The funds derived from this tax, which is levied on many items other than fishery products, will be used to develop exports of locally-manufactured products. The higher rate of duty became effective January 1, 1962 (Diario Oficial, December 30, 1961).

It is not anticipated that this increase in duties will affect appreciably imports of fishery products from the United States since most of these are luxury items. Total Mexican imports of edible fishery products in 1960 were valued at about US\$1.4 million of which less than \$60,000 worth were from the United States.

The same decree also repealed the last paragraph of Article 5 of the Law of November 17, 1939, which provided for free sport-fishing permits in Baja California. Foreign non-residents of Mexico must now obtain li-

Mexico (Contd.):

censes for fishing in Baja California. The fees are nominal: 6 pesos (about 48 U. S. cents) for a three-day permit; 10 pesos (about 80 cents) for a one-month permit; 25 pesos (about US\$2) for a three-month permit; 50 pesos (about \$4) for a one-year permit. (United States Embassy, Mexico City, January 10, 1962.)



Nicaragua

SHRIMP FISHERY TRENDS:

The focal point of major shrimp fishing activities in Nicaragua shifted during the final quarter of 1961 from the East Coast to the Pacific Coast as a large United States firm operating out of Corinto put 30 vessels to fishing shrimp. These vessels were catching over 200,000 pounds of large shrimp each month as of January 1962. The United States firm is employing some 140 Nicaraguans and as of January had begun the installation of a freezing and packing plant.

Another Nicaraguan fishing company was organized during the quarter and will operate out of Puerto Somoza, also on the West Coast. Puerto Morazan (West Coast) fishermen again complained about Salvadoran fishing incursions.

Operations at Casacrus on the East Coast reportedly picked up in December 1961.

Total 1961 shrimp exports from Nicaragua totaled about 900,000 pounds valued at \$475,000. In 1960 shrimp exports totaled only 515,000 pounds. (United States Embassy, Managua, January 25, 1962.)



Norway

DISMAL PROSPECTS FOR WINTER HERRING FISHERY:

January reports from Aalesund, main fishing port in West Norway, indicate that predictions of another poor winter herring season are all too true. Aalesund, which in late January used to be teeming with fishermen, showed few signs of activity this year. Crews for herring vessels are in short supply. With prospects of a fair catch none too promising, many fishermen have switched to other types of work. Others have obtained jobs on fishing vessels which presently are landing sizable quantities of herring in the Lofoten waters of North Norway. This is a new develop-

ment, for Lofoten has traditionally been known mainly for its cod.

Just how many fishing vessels will be on hand for the long overdue start of the West Norway winter herring season is difficult to say. Local experts guess that no more than about 150 purse seiners will take part. Five years ago, there were 599 purse seiners, besides 1,408 drift netters and 489 auxiliary craft, manned by a total of nearly 30,000 fishermen. Last year, only 254 purse seiners and 789 drift netters showed up, while the number of auxiliary craft dropped to 147.

With further reductions expected this year, hardly more than some 10,000 men are likely to try their luck in the herring fishery off the coast of West Norway. Thus, over a period of five years, altogether some 450 purse seiners and 400 auxiliary craft, plus about 700 drift netters, manned by altogether 20,000 fishermen, have quit the once so profitable herring fishery.

In the same period, the first-hand or ex-vessel value of the herring catch has dropped catastrophically from Kr. 260 million (US\$36.5 million) to slightly over Kr. 18 million (\$2.5 million) last year. Operators and fishermen, at first staggered by the turn of events, have adjusted surprisingly well to the fact that for the present, at least, the abundant herring harvest is a thing of the past. The herring meal and oil processing industry, too, has managed to survive by and large.

Rather than wait for the western herring fishery to pick up, many operators have diverted their vessels to different waters. Quite a few have found profitable fishing grounds in the North Sea. Others are doing well off the Finnmark coast, where landings of herring and caplin have shown a notable increase in the past several years. As of January 1962, some 150 vessels were fishing for cod on the Halten Bank, some 50 nautical miles off North Trøndelag. Enterprising fishermen from the Sunnmøre district were making good catches off the Faroe Islands. Fishing for porbeagle in the North Atlantic has also proved rewarding for some.

Meanwhile, prospects for the West Norway winter herring fishery are the most dismal in many decades. A year ago, ocean researchers said that, granted reasonably fair weather, the total quantity might reach about 200,000 metric tons. However, fierce storms raged during the better part of the season, with the result that fishermen landed only slightly over 69,000 tons, as against more than 300,000 tons in 1960. On the eve of the 1962 season, researchers cautiously warn that the weather will have to be much better than last year to manage a catch of about 100,000 tons. The quantity of mature herring coming to spawn on the coastal banks this year is estimated to be 25 percent smaller than it was a year ago. Next year, however, the fairly plentiful crop of herring spawned in 1959 should help to increase the influx of mature fish. (*News of Norway*, January 25, 1962.)

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FISH FINDER HAS LIMITED USE IN TUNA FISHERY:

Norwegian research in the use of the fish finder ASDIC in tuna fishing began in the 1960 season. The purpose was to determine whether ASDIC could be used in the tuna fishery. The herring ASDIC was used. The preliminary results can be summarized as follows:

Schools of tuna give echoes, but it has not been possible to distinguish any special characteristics of the echo. It is difficult, there-

Norway (Contd.):

fore, to determine whether an echo derives from tuna or from other school fish, if one does not see the fish at the surface. The range of an echo from fish at the surface is about 2,300-2,600 feet. If the tuna break the surface, an observer can see them at a much greater distance. When the fish "striper" (fishermen's term which means tuna barely break surface), it can often be difficult to see them.

The value of ASDIC in the tuna fishery seems to be limited because echoes from other school fish, which naturally enough are abundant where tuna feed, dominate the echogram. The best fishing grounds for tuna off Western Norway (Vestlandet) in 1960/61 yielded a strong interfering bottom echo due to the uneven bottom conditions.

Because of these experiences, it was concluded that the value of ASDIC for expanding the tuna fishery seems to be greatly limited. Meanwhile it must be stressed that all parts of the problem have not been adequately investigated. Tests were not made continuously throughout the entire season, and were limited to the fishing grounds between Bulandet and Espevaer. The experiments will continue, therefore, in 1962, and it is hoped the fishing grounds in Northern Norway may be tested also. (Translated excerpt from the "Report of the Tuna Cruise of M/V Thor Iversen," August 2-September 7, 1960. Original article appeared in the January 25, 1962, Fiskets Gang, Norwegian periodical.)



Peru

FISH MEAL INDUSTRY TRENDS:

At the end of 1961, the official count of enterprises in the fisheries manufacturing industry (freezing, canning, salting, fish meal and fish oil) was 129 companies operating 269 processing plants (114 of them producing fish meal).

Fish meal production and exports continue to constitute the major activity of the industry. An estimate of Peru's fish meal production for 1961 of 640,000 metric tons, made in November by the Fisheries Service of the Ministry of Agriculture, was somewhat lower than the 680,000 to 700,000 tons estimated earlier by the industry.

Data have not yet been made available on fish meal exports for 1961. When released, they are likely to show a considerable increase over the 600,000-ton quota originally assigned to Peru by the international fish meal producers group.

As the new year opened, Peruvian producers were anticipating somewhat higher production than last year, but as of the end of January persistent early morning fogs had hampered anchoveta fishing. Also a week's strike of fishermen in Chimbote was expected to reduce January production. Also a short strike by truckers and a Government decree closing 33 plants in Chimbote on February 1 because of the odor problem further curtailed fish meal production. But information early in February indicated the labor disputes had been settled and plants were operating again. As of the first part of February fishing continued poor.

The situation apparently influenced the fish meal marketing organization (Consortio Pesquera del Peru, S.A.) to announce that it temporarily would not accept new orders, since those on hand were expected to exhaust available supplies. The organization was to reassess the situation from time to time, in order to maintain a reasonable balance between total supplies and total sales. Meanwhile, world demand for fish meal is said to be rising and prices to be holding up well. (United States Embassy, Lima, report of January 30, 1962.)

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MOST FISH MEAL PLANTS REPORTED SHUT DOWN:

The Consortio Pesquera del Peru S.A. (marketing organization for fish meal producers) announced the first part of February 1962 that about 80 percent of Peru's fish reduction capacity has been curtailed due to (1) a series of strikes by truck drivers since January 1, 1962, (2) renewed fishermen's tie-ups effective January 29, and (3) a Government decree closing 33 plants at Chimbote on February 1 because of odor problems.

These developments have affected February delivery schedules of fish meal contracts with United States buyers to the extent that the Consortio has declared "Force Majeure" (circumstances beyond control of seller). A later report states that these developments will also affect March delivery schedules.

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Peru (Contd.):

FISH MEAL PLANTS OPERATING AGAIN:

Information received as of mid-February 1962 indicates that the labor disputes affecting truck drivers and fishermen in Peru have been settled. These labor disputes were affecting the production of fish meal. Also, the plants in Chimbote closed on February 1 by a Government decree because of odor problems are operating again, but fishing early in February was reported poor.



Philippines

GOVERNMENT'S ECONOMIC REFORM AFFECTS FISHERY PRODUCTS IMPORTS:

The Philippine Government announced that it would revise the dual exchange rate system by abolishing the official rate and establishing a single free rate of exchange, according to a translation from the Japanese periodical Suisan Tsushin of January 23, 1962. This means that decontrolled items, such as canned sardine and canned salmon heretofore imported into the Philippines under the official exchange rate, will hereafter be transacted under the free rate. So far as the effect on canned sardines is concerned, this measure virtually amounts to devaluating the currency and will inevitably push up the sardine market price. As a result, sales of canned sardines are expected to decrease. On the other hand, the Government's action will eliminate differences in exchange rate between canned sardines on the one hand and canned saury and canned jack mackerel on the other, which the Philippines have always imported under the free trade.

According to the Suisan Tsushin of January 26, the Japan Canned Foods Exporters Association received a detailed report regarding changes in the Philippine exchange rate. Gist of this report follows:

1. After January 22, all imports will be carried out under the free exchange rate (also referred to as the "floating rate").
2. The Philippine Government has provisionally discontinued levying the marginal tax and plans to formally abolish it in the future.
3. The Philippine Bank Association will establish the new free rate. Present outlook is that the exchange rate will fluctuate between 4 to 4.6 pesos for each US\$1.
4. Import tariff rates will be drastically revised. Tariffs will be reduced for essential goods and increased for nonessential goods. The current 15-percent tariff on canned sardines and canned corn beef will be lowered to 8 percent; tariffs on canned saury and canned jack mackerel will most likely remain at the present rate of 15 percent.
5. Bond rate for importers was reduced from the previous 50 percent to 25 percent for decontrolled items, such as canned sardines, canned saury and canned mackerel, but was increased to 150 percent for nonessential goods.

Views of the Japan Canned Foods Exporters Association concerning the above economic reform carried out by the Philippine Government are essentially as follows:

1. Import duty on canned sardines has been lowered to 8 percent. Should canned sardines be imported into the Philippines at the new exchange rate of over 4 pesos to a dollar, as

compared with the previous rate of 2.5 pesos to a dollar, the import price of that product would be about twice that of the former price. Sales of canned sardines will be slow until the new price gains consumer acceptance. At this time of the year, African fish canners are out of stock, but the confusion brought about in the Philippines by the currency reform virtually eliminates the opportunity of introducing Japanese products into the Philippines at this time.

The Philippine Government has issued new import licenses, but all earlier trade negotiations pending issuance of new licenses are expected to be cancelled.

2. Canned saury is no longer subject to the marginal tax and this has saved this product from becoming a completely hopeless trade item. However, the new tariff rate on canned sardines is 7 percent below that of canned saury, and canned sardines will now sell for about the same price as that for canned saury, although the import price of canned saury is presently 200 yen (55 U.S. cents) less per case than that for canned sardines. This does not make canned saury attractive to the Philippine buyers. Some hope could be held out for canned saury if the Philippine Government would reduce the tariff on that product to the same level as that for canned sardines. Even then, it would be extremely difficult for Japanese canned saury to compete pricewise with South African fishery products.



Portugal

CANNED FISH PACK, JANUARY-SEPTEMBER 1961:

Portugal's total pack of canned fish in oil or sauce for the first 9 months of 1961 was up 15.3 percent as compared to the same period in 1960. The sardine pack accounted for 70.2 percent of the total, followed by tuna (9.4 percent) and anchovy fillets (8.6 percent). There were substantial increases in 1961 in the packs of anchovy fillets, sardines (up 11.1 percent), and mackerel. There was a decrease of 12.6 percent in the pack of tuna.

Product	January-September			
	1961		1960	
	Metric Tons	1,000 Cases	Metric Tons	1,000 Cases
In Oil or Sauce:				
Sardines	29,651	1,561	26,677	1,404
Chinchards	1,987	104	1,770	94
Mackerel	2,766	110	410	16
Tuna and tuna-like . .	3,957	140	4,525	162
Anchovy fillets	3,638	364	2,666	267
Others	211	11	545	29
Total	42,210	2,290	36,593	1,972

During the first 9 months of 1961 sardine landings in Portugal totaled 69,164 metric tons. The bulk of the sardines landed are used for canning. Of the other species used for canning, there were landings of 1,614 tons of tuna, 108 tons of bonito, 4,123 tons of mackerel, 7,344 tons of anchovies, and 30,038 tons of chinchard. (Conservas de Peixe, November 1961.)

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Portugal (Contd.):

**CANNED FISH EXPORTS,
JANUARY-SEPTEMBER 1961:**

Portugal's exports of canned fish during the first 9 months of 1961 were 16.6 percent more than in the same period of 1960. Sardines accounted for 81.0 percent of the 1961 exports, followed by anchovy fillets with 7.6 percent, and tuna with 5.4 percent. In 1961, exports were up 13 percent for sardines, 16 percent for tuna, and 29.1 percent for anchovy fillets as compared to 1960.

Product	January-September			
	1961		1960	
	Metric Tons	1,000 Cases	Metric Tons	1,000 Cases
In Oil or Sauce:				
Sardines	40,281	2,120	35,654	1,876
Chinchards	1,733	91	1,135	60
Mackerel	1,060	42	378	14
Tuna and tunalike	2,689	96	2,318	83
Anchovy fillets	3,770	377	2,920	291
Others	186	10	243	12
Total	49,719	2,736	42,648	2,336

Portugal's principal canned fish buyers during the first 9 months of 1961 were Germany with 11,097 metric tons, followed by the United States with 5,667 tons, United Kingdom with 5,345 tons, Italy 4,249 tons, France 3,379 tons, and Belgium-Luxembourg 3,097 tons. (Conservas de Peixe, November 1961.)

**Spain****TUNA FISHING INDUSTRY:**

The summer tuna fishing season in Spain ended in October 1961 with a catch some 10 to 15 percent below that of the previous year in quantity. But because of higher prices, the value was the same.

Between the end of the summer tuna season and the beginning of the anchovy season in March, local fishing largely is limited to sea bream ("besugo"), round pompano ("palometa"), and mackerel. During the fourth quarter of 1961 the catch of those species was very light, with round pompano practically nonexistent and with sea bream making its appearance only after the first week of December. Consequently, wholesale prices of those species rose about 20 percent over the previous year.

Given the now perennial scarcity of fish in local waters during the winter months, it has become customary for the larger fishing vessels of Vizcaya to go to the South Atlantic to fish tuna until the spring or summer. This winter 16 vessels (2 more than last year, but 3 less than the 1959-60 record) with 350 crew members entered into a contract with a large California tuna canning firm. The contract is for 3 months from the beginning of December 1961 and it may be renewed on mutual agreement for another 3 months. The

vessels were to make Freetown, Sierra Leone, their base until the end of December when they would transfer their operations to Abidjan Ivory Coast. Reports indicate that the catch by those vessels as of early January, 1962 has been good--some 933 metric tons of lower-grade tuna ("serrucho") during the 22 fishing days of December--and that facilities for receiving the catches on shore are better than last year.

Undoubtedly in imitation of the Vizcayan tradition, some 100 other vessels from various ports in the district have gone to Algeciras or other nearby Spanish ports to fish for "melva" (similar to tuna) in nearby Atlantic and Mediterranean waters. There have been reports of disappointment, and some of the vessels have returned.

There is considerable concern with the need to modernize the fishing fleet and to increase the cold-storage capacity of both the fleet and shore installations. Reports of plans to build long-range tuna vessels with cold-storage facilities have been circulating, but realization of such plans seem to be awaiting a more generous flow of ship construction credits which may occur in early 1962. (United States Consulate, Bilbao, January 8, 1962.)

**Sweden****HERRING BONING MACHINE:**

A British firm in 1961 received a Swedish-built machine for the beheading, tailing, and filleting of herring. Fish from 6 $\frac{3}{4}$ to 13 inches (17 to 33 cm.) in length can be handled. Only one operator is required, who should be able to put through about 60 herring per minute.

The machine is provided with a feed table on which there is a single enclosed knife. The fish is held against the knife to remove the tail, and is then pushed forward to be caught by one of 4 rotating arms which pushes the fish on to a circular knife, removing the head. The herring then follows a groove down the feed table to be caught between 2 rubber belts, which convey the fish under 2 horizontal knives. The belly is cut, and then the fish is gutted by a rotating pulley. Rotating knives further remove the back and side-bones leaving 2 connected fillets. The machine may be adjusted to leave single fillets. Constant flushing removes all residue, and once the operator has held the fish against the first knife for trimming the tail, his hands are free to deal with the next fish. (Food Processing and Packaging, vol. 30, no. 62 (1961), p. 353.)



Taiwan

FISHERY LANDINGS CONTINUED TO INCREASE IN 1961:

Taiwan's fishery landings in 1961 reached 312,439 metric tons as compared to 259,140 tons in 1960. They exceeded the 1961 target of 270,000 metric tons by over 42,000 metric tons. The large increase was the result



Auctioning of tuna in the Kaohsiung Fish Market, Taiwan.

of (1) unusually good catches of sardines and moonfish, (2) an increase in the number and tonnage of fishing vessels, and (3) fair fishing weather.

Taiwan's Fishery Landings, 1957-61					
Type of Fishery	1961	1960	1959	1958	1957
	(Metric Tons)				
Deep-sea . . .	106,147	85,210	76,411	61,160	52,223
Inshore . . .	117,405	94,856	91,240	81,720	71,552
Coastal . . .	31,533	30,044	32,183	38,267	38,468
Fish culture . .	57,354	49,030	46,493	48,530	45,878
Total . . .	312,439	259,140	246,327	229,677	208,121

* * * * *

NIGHT FISHING WITH PURSE SEINES SUCCESSFUL AT SUAO:

From the important inshore fishing port of Suao, fishermen tried night fishing with purse seines. Using fish finders to locate the fish and mercury lamps to bring the fish schools to the surface, both supplied by the Joint Commission on Rural Reconstruction (JCRR), one pair of purse seiners caught 30 tons of moonfish in one night. Other fishermen followed suit with the result that the catch of moonfish in 1961 was the biggest ever made in Taiwan.

* * * * *

LOAN FOR CONSTRUCTION OF TUNA LONG-LINERS:

The JCRR extended a loan for the construction of 12 145-ton long-liners in 1961. The boats as of February 1962 were under construction in shipyards in Taiwan and were expected to be available for use early in 1962. They will operate from the port of Kaohsiung and are expected to add about 5,000 metric tons of tuna to the Island's fish catch. Taiwan's 1961 export of frozen tuna amounted to 1,116 metric tons valued at US\$347,679.

All articles under Taiwan are by --T. P. Chen, Chief, Fisheries Division, Joint Commission on Rural Reconstruction, Taipei, Taiwan.

Note: See Commercial Fisheries Review, April 1962 p. 85.



U.S.S.R.

FISHERY CATCH SETS NEW RECORD IN 1961:

The Soviet Union's 1961 catch of 3.7 million metric tons exceeded the record 1960 catch of almost 3.1 million tons.



Fig. 1 - Russian fishery factorship operating in Bering Sea. Home Port, Bladnoctok.

It was admitted, however, that this catch "still far from satisfied the population's present demand" for fish, and that the composition of the catch leaves much to be desired. The gross catch figure includes "a certain quantity" of nonfood species as well as an oversupply of "hors d'oeuvre" species--sprat, sardelle, khamsa (anchovy, Engraulis encrasicolus), etc., which have only a limited demand. On the other hand, the catch of fresh

U. S. S. R. (Contd.):

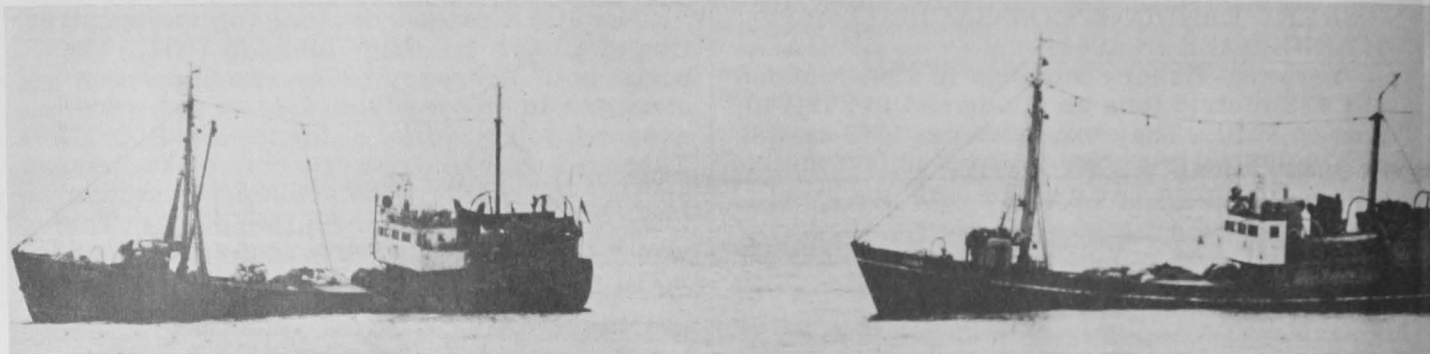


Fig. 2 - Two Russian fishing trawlers operating in Bering Sea. Approximate length 70 feet.

water species, which have a "basic demand" (i.e., pike, sazan or wild carp, carp, bream, sheatfish, etc.), and "by the availability of which the population judges the works of the fish industry," has decreased somewhat in recent years. (Translation from *Rybovodstvo i Rybolovstvo*, No. 1, 1962.)

Note: See *Commercial Fisheries Review*, February 1962 p. 94.



United Kingdom

EXPORT COMBINE FORMED BY TEN LEADING FISH PROCESSORS:

Ten leading British fish-processing and quick-freezing firms, all headquartered in the Hull-Grimsby area, have combined in a drive for the export of frozen fish in "catering" packs, according to a January 2, 1962, announcement. The combine has taken over the name of a firm formed four years ago when two firms joined forces to sell frozen fish to Eastern Europe. Substantial exports of frozen fish to Iron Curtain countries have been made under the British label in the last four years from the fishing ports of Hull, Grimsby, and Fleetwood, Lancashire.

The registered office of the new export combine firm is at Grimsby, Lincolnshire, and each of the ten firms has a representative on the main board of the company. In addition, day-to-day administration is carried out by a committee of four.

The Chairman of the new combine states that the organization has been set up to counter "the nationally organized fishing industries of other countries."

The company works closely with the British Trawlers Federation, which is attempting to develop a world market for British fish. Bulk purchasing of all raw materials, streamlining of administration, and centralization of sales effort will, it is anticipated, stabilize marketing. Stringent quality control specifications for products have been laid down and plants of member firms will be inspected regularly to see that these standards are being observed.

In the first year, the organization anticipates total shipments of frozen fish to be about 10 million pounds, worth

about £750,000 (US\$2,100,000). The principal markets aimed at will be Eastern Europe (all types of fish) and Australia (sea bream). The home market for sea bream has been disappointing, but small-scale exports from Hull to Australia during the summer of 1961 have given members of the trade an opportunity for testing the overseas market. A Hull spokesman said "There are very substantial sales of bream in Australia and we are hoping to develop them." (United States Consulate, Manchester, England, January 4, 1962.)

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UNDERWATER REMOTE CONTROL CAMERA DEVELOPED TO STUDY FISH BEHAVIOR:

A simple self-contained camera and flash unit, using dry batteries and operated by a clockwork timer, which can take about 200 exposures at preset intervals (actually 1-minute and 3-minute intervals have been used) has been developed by the Scottish Home Department Marine Laboratory at Torry, Aberdeen.

The camera has been used in two ways: (a) Attached near the headline of a trawl, so as to photograph the groundrope, or the zone immediately in front of it. The first sets of results, in depths up to 65 fathoms, confirm frogmen observations that fish in that region are normally swimming away from the groundrope and are therefore aware of the fishing gear. These observations will be continued to determine more exactly the influence of depth and light. (b) Placed on a heavy tripod and left on the sea-bed for subsequent recovery by means of a buoy rope. When used in this way there is less chance of fish being disturbed from their normal behavior than when the camera is swinging below a vessel. A first set of experiments was made using this technique in March 1960 on Ballantrae

United Kingdom (Contd.):

Bank, in the Firth of Clyde. This technique showed that most of the fish then present near the bottom were herring, that their numbers and schooling pattern on that occasion did not vary with the time of day or night, and that the fish were present in small schools of 12 to 20 fish. A local population density of about 2,000,000 fish/sq. mile was estimated from the known lens angle and limits of visibility. (Nature, vol. 188 (1960) p. 333.)

* * * * *

INFORMATION ON LONDON TRADE CENTER AND BRITISH FOOD FAIRS FOR EXHIBITING U. S. FISHERY PRODUCTS:

The United States Trade Center in London has good facilities for a commodity exhibit. It is located in the neighborhood of Piccadilly Circus at 57 St. James Street, London, S.W.1.

The next food exhibition is for fruit in late October or early November 1962. Since fruit may not need the full month allotted, it might be possible for fish to utilize the latter part of the allocated time. The next general exhibition for food is planned for about March 1963, unless the fruit plans fall through, in which case the general food exhibition might be moved up in its place. Fish, of course, could participate in the general food exhibition.

Exhibitions at the U. S. Trade Center provide excellent publicity, a presentation of products to buyers, and an opportunity to make sales. At the American Food Exhibition at the Center, September 6-22, 1961, about 2,000 trade representatives attended. A sample check of exhibitors indicated all would participate again. Freeze-dried shrimp, as a new and unique United States product, was the hit of the show. Exhibitors of this product found participation in the food exhibition very helpful in introducing their product to a great number of trade people quickly and at little cost.

The U. S. Trade Center offers no special facilities for showing films but they could be shown at luncheons. Ties between fish and agricultural products might be arranged, for example, fish and rice. Exhibition at the Trade Center would reach representatives interested in both the home consumption market and the large catering or institutional trade. When their imports are on display, London trade circles usually cooperate by having local sales representatives at the exhibits.

From May 8 to 20, 1962, there will be the 30th annual Grocery Fair at Manchester. It will have food exhibits from the United States for the first time. Six other countries also will be represented. The location is in the Midlands, not far from the import center of Liverpool, and in a large industrial food consuming area. Grocery Manufacturers of America are to handle the United States food exhibits in a self-service food store where foods can be purchased. Fish could be exhibited.

The British Food Fair in London will run from August 22 to September 12, 1962. It is larger than the Manchester fair. Grocery Manufacturers of America plan to use the same exhibit as at Manchester with appropriate changes. In general these fairs will offer (1) an opportunity to display products, and to sell them in a self-service market in the case of the GMA exhibit, (2) a demonstration area for commodity groups--e.g., canned fish--where there can be sampling, demonstration of recipes, etc., and (3) a trade lounge where contacts can be made with buyers and trading conducted.

If participation were considered for either of the latter two fairs, the pattern of other successful efforts might be followed. This would include having a United States home economist available to supervise demonstrations, and a per-

son familiar with United States processing and the products. A person familiar with fish products is required to handle the exhibit and those inquiries relating to products for which there are no British representatives, for example, for those United States packers seeking entry to the market and local representatives.

Eight representatives of London fish trade circles were interviewed. Represented were importers of United States or other foreign products, importers of United States products sold under the United States label, and distributors of fish products in multiple stores. In general the interviews revealed:

The great proportion of canned fishery products consumed in the United Kingdom, especially salmon, is sold under 5 or 6 national brands. The owners of the brands may use fish from any one of several sources under one brand name. For example, a dominant salmon brand may contain salmon from the United States, Canada, or Japan. Thus, exhibiting in such a manner as to promote the United States salmon used in such a brand is difficult or impossible. The source of the salmon is not readily obvious to the consumer since the actual country source is not designated as such but in general terms such as "empire packed" for Canada and "foreign packed" for the United States. So it does not help to ask the consumer or buyer to look for a U. S. source on the label.

Nor is it effective to push the national label itself because such promotion would also aid the Canadian and Japanese products used under the same label. In fact, since those products supply a greater share of the market they would be aided to a greater degree. Those interviewed were unanimous in agreeing that exhibiting at trade fairs by packers of United States salmon which were distributed under the dominant national brands would be an ineffective procedure. It is less true for other United States canned fish products, some of which are distributed under United States brands.

All agreed that if U. S. fish were sold in Britain under a U. S. label, exhibiting the product at food fairs was a type of promotion which would be helpful. However, they pointed out that substantial advertising in various media, competitive quality and prices, and local stocks were more important in promoting sales.

All agreed, also, that if a U. S. product seeking to enter the British market, would be backed by advertising, be competitive in price and quality, and adequately stocked, exhibiting at a food fair would be helpful.

All agreed, further, that a U. S. product that was so unique or individual that it would maintain the U. S. identity, even though under a national label, would benefit from exhibition at a food fair. An example of such a product might be one produced by a U.S.-controlled process--freeze-dried shrimp, for example--or one for which the dominant or only source was the U. S.

There was fairly general agreement that the best way to promote U. S. canned fish in Britain under a U. S. label was to choose one of the half dozen or so large importers or buyers, who had good connections with the multiple store groups, as a British representative. Very substantial funds would have to be expended on advertising in all forms. Quality and prices would have to meet those of other sources. And substantial local stocks would have to be available. All emphasized this was a very costly process.

Salmon, shrimp, and crab seem to offer the best possibilities for exhibition. The current demand for each is good. Importers said there seemed to be little demand for canned oysters or clams and that an extensive publicity campaign probably would be needed to expand the market. The pilchard market is dominated by South Africa. Tuna moves very slowly. Most said the consuming public was slow to change and just did not seem to have much taste for tuna. U. S. salmon must compete with Japan, Canada, and Russia. Shrimp competes primarily with Norway, and crab with Russia and Japan.

At present, there is a good demand for salmon, shrimp, and crab of competitive quality and at competitive prices.

United Kingdom (Contd.):

The potential is materially affected by price and quality. There were several adverse comments on the quality of U. S. products. (Based on a report of a survey made in January 1962 by the Regional Fisheries Attache, United States Embassy, Copenhagen.)

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FISHERY LOANS INTEREST RATES REVISED:

The British White Fish Authority announced that as a result of changes in the rates of interest charged to them by the Treasury, their own rates of interest on loans made as from December 28, 1961, are:

Fishing vessels of not more than 140 feet, new engines, nets and gear: on loans for not

more than 5 years, $6\frac{1}{2}$ percent (increase $\frac{1}{8}$ percent); for more than 5 years but not more than 10 years, $6\frac{5}{8}$ percent (increase $\frac{1}{8}$ percent); for more than 10 years but not more than 15 years, $6\frac{7}{8}$ percent (increase $\frac{1}{4}$ percent); for more than 15 years but not more than 20 years, 7 percent (increase $\frac{1}{4}$ percent).

Processing plants: on loans for not more than 15 years, $7\frac{5}{8}$ percent (no change); for more than 15 years but not more than 20 years, $7\frac{1}{2}$ percent (no change).

The rates on loans made before December 28, 1961, are unchanged. (Fish Trades Gazette, January 6, 1962.)

Note: See Commercial Fisheries Review, January 1962 p. 64.



JAPANESE CROSSBREED SALMON AND TROUT

A new variety of fish has been developed by crossbreeding ocean salmon and fresh-water trout. The new breed was produced by a group of scientists in the Hokkaido Fishery Incubation Station, Japan.

The creation of the new breed is significant in two ways. First of all, the newly-developed fish promises to be a species which will taste just as good as the ocean salmon the Japanese are so fond of. But more important, it can be spawned and raised in fresh water.

Salmon migrate during the spawning season to fresh-water streams in the Soviet Union, the United States, Canada, and Japan. When the young fish are hatched, they descend the streams and swim toward the sea. Since they were spawned in the rivers of various countries, it is hard to determine the various countries' respective fishing rights.

The new variety was developed by crossbreeding male ocean salmon with a fresh-water trout popularly known as the "sockeye" or blueblack trout. Scientists at the incubation station obtained 3,500 fish eggs from the fresh-water trout and put them into an experimental tank. Ocean trout were then released in the tank to fertilize the eggs. When the incubation period was over and young fish began to emerge, the scientists found that 50 percent of the eggs had been successfully incubated.

The crossbreeding proved to be a success and the newly-hatched fish can live in fresh water. When fully developed, the fish are expected to grow larger than trout, which normally attain a length of about 38 cm. (15 inches). A great number of "sockeye" trout is now being raised in the fresh water tanks that abound in Japan. Trout will eventually be used to provide the eggs for the development of the new salmon-trout breed of fish.

The development of a new variety of fish which can thrive in fresh water maybe called a sort of ichthyological breakthrough. By developing the new breed of fish, a way has been opened toward the hatching of salmon-type fish in landlocked waters. (Japanese Information Office, Bangkok, July 1, 1960, and IPFC Current Affairs Bulletin, December 1960.)