



FOREIGN

International

EUROPEAN FREE TRADE ASSOCIATION

ACCELERATED TARIFF CUTS PLANNED:

Ministers representing the European Free Trade Association (EFTA) countries (Austria, Britain, Denmark, Norway, Portugal, Sweden and Switzerland) met in Geneva, Switzerland, on February 18-19, 1963. They called for a detailed plan to abolish intra-EFTA tariffs and quotas on industrial products at an accelerated rate by 1966. Britain asked for 1965 as the target date.

Trade in agriculture and fish pose special problems, particularly to Norway and Denmark. (British Record, March 5, 1963.)

FISH MEAL

FISH MEAL PRODUCTION AND EXPORTS FOR SELECTED COUNTRIES, JANUARY-NOVEMBER 1962:

Member countries of the Fish Meal Exporters' Organization (FEO) account for about 90 percent of world exports of fish meal. The FEO countries are Angola, Iceland, Norway, Peru, and South Africa/South-West Africa.

Production and Exports of Fish Meal by Member Countries of the Fish Meal Exporters' Organization, Jan.-Nov. 1962

Country	Nov. 1962		Jan.-Nov. 1962	
	Production	Exports	Production	Exports
 (Metric Tons)			
Angola	4,375	3,434	29,041	28,663
Iceland	1,218	4,421	93,980	63,433
Norway	9,131	10,221	116,370	51,303
Peru	145,543	94,466	964,881	958,331
South Africa (incl. S. W. Africa) ..	800	9,680	201,219	181,641
Total	161,067	122,222	1,405,491	1,283,371

In January-November 1962, Peru accounted for 74.7 percent of total fish meal exports by FEO countries, followed by South Africa with 14.2 percent, Iceland with 4.9 percent, Norway with 4.0 percent, and Angola with 2.2 percent. (Regional Fisheries

Attache for Europe, United States Embassy, Copenhagen, February 6, 1963.)

FISH MEAL AND OIL

EUROPEAN MARKET TRENDS, FEBRUARY 1963:

The European fish oil market was quite firm with further price advances possible in early February this year according to Danish fish oil brokers. Current sales prices in U.S. currency were:

Danish herring oil for summer delivery--\$123 per metric ton (5.58 cents per pound) c.i.f. German and Scandinavian ports.

U. S. menhaden oil for Feb./Apr. delivery--\$116 per metric ton (5.26 cents per pound) c.i.f. Rotterdam.

Peruvian semi-refined anchovy oil for April-July delivery--\$120 per metric ton (5.44 cents per pound) c.i.f. Rotterdam.

Some Icelandic herring oil was reported sold for summer delivery at \$127 per metric ton (5.76 cents per pound) c.i.f. European ports, but it seems to be primarily an asking price. One holder of current stocks of Icelandic oil is waiting for a price of \$141.50 (6.42 cents per pound).

Late in February 1962, Danish brokers stated that the European fish-oil market continued to be firm with few offerings. The same sources also stated that there were indications that some stocks were being held for higher prices. A late February sale of menhaden oil at US\$128 a metric ton (5.81 cents a pound) c.i.f. Scandinavian ports, according to above sources, was below the market, which was nearer the \$132-133 (6.00-6.03 cents a pound) level. The Danish sources feel that the 1963 level of fish-oil prices will be determined by sales of the 1962/63 Antarctic whale-oil production to a large United Kingdom buyer.

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The European market for fish meal was weak late in February and, according to Danish brokers, was unaffected by labor troubles in Peru. Fish-meal brokers in Holland, West Germany, and the United Kingdom confirmed this view of the fish-meal market. A late February sale in the United Kingdom was made at \$131.60 a long ton c.i.f. (\$117.50 a short ton) and fish meal was offered for October 1963-June 1964 delivery at \$130.90 a long ton c.i.f. (\$116.88 a short ton). (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, February 6 and 25, 1963.)

FOOD AND AGRICULTURE ORGANIZATION

FISHERIES DIRECTOR TALKS ON
WORLD FISHERIES DEVELOPMENTS:

The control of stocks of commercially valuable sea fish, the transplanting of fish from the northern to the southern hemisphere, and a forecast of at least doubling the present harvest from the sea in the coming 2 or 3 decades, were some of the prophecies made in a speech by the Director of the Fisheries Division of the Food and Agriculture Organization (FAO). His speech was given at the annual dinner of the Newfoundland Board of Trade at St. John's, Canada.

After tracing the changes in fisheries during the past 40 years, the Fisheries Division Director stated:

"One thing that is basic to such consideration is simply this: fishing is still a hunting operation. Beyond the territorial waters, whatever they may be, it is first come, first served, and devil take the hindmost. I am confident that some day this will change; there are already signs of it coming. For example, the "abstention principle" which is a feature of the North Pacific Fisheries Treaty. But it is my opinion that many years will pass before humankind will be able to achieve such an equity. In the meantime it will be up to nations, while doing their utmost to bring about a more reasonable regime, to adjust themselves to things as they are and to keep up with changes."

On the catching side, he said, there will be continued improvement in the efficiencies of boats and gear and fish finding operations. The use of very high frequencies in echo sounders and ASDIC are already making it possible to locate a single fish half a mile away. Moreover, it is possible to identify the kind of fish giving the echo.

"I think that the time may come when certain species of marine fish will be attracted by some means--for example by light, sound or fenced in by electric impulses or screens of air bubbles--and pumped from the sea," he continued. "Actually this is already being done experimentally by the Soviets. The Germans are doing considerable work with electric impulses. This

works quite well in fresh water, but much more will have to be discovered before the technique can be made economical in sea water. New lightweight, non-deteriorating synthetic fibers will be used in knotless nets. The introduction of transducers into trawls themselves will make trawling a much less chancy operation. The continued study of fish behavior in the ocean will make them easier to catch. Much work in this field is being done by the U.S.S.R., Japan, Canada, and the U.S.A."

The design of new hull shapes will increase stability and safety, and propulsion efficiencies and new mechanized hauling will make it quicker and easier to haul the gear. The amount of capital employed in the floating equipment will tend to move upwards and fisheries are moving away from the "cottage industry" stage to the capitalized industry stage.

He went on to say: "There is another realm of progress which as yet is barely started, and that is fish culture. Coastal oyster culture is well known in many lands. Recently FAO through the Expanded Program of Technical Assistance, has started pearl shell culture in the Red Sea. There are many examples in the Far East and Australia of the culturing of the oyster which yields pearls. All these are true underwater farming operations. But I am not so much concerned with this as with the really exciting work which has been going on, for example, at Lowestoft, in England, on the plaice.

"The female plaice lays its eggs by the hundreds of thousands. But the natural mortality of the young larvae plaice is so great in the first few weeks that less than one thousandth of one percent survive. After this period the chances of survival are better. The English biologists thought that if they could protect the young larvae for from 6 to 8 weeks and get them over the initial critical period, it would greatly increase the yield.

"After many trials and many failures, it seems that they have succeeded. Survival can now be increased to well over 30 percent and possibly more. It does not take much imagination to see what this might lead to: a plaice hatchery on the inlet of the sea, an inlet which could be closed at will; the nurturing of the young fish initially in the hatchery and subsequently in the inlet itself, the waters of which might be fertilized; the subsequent transplantation of the young fish to the natural banks. Biologists are of the opinion that this might at least quadruple the yield of the fishery if proper agreements could be made among the different countries fishing."

Another example he cited is the recent success of a fishery scientist, under FAO Technical Assistance, in breeding the giant fresh water shrimp in Malaya.

Another development is the transplantation of fish. An example is the recent Soviet success in transplanting pink salmon from Siberia to the Baltic which may result in an entirely new fishery.

"Many of the fish that swim in the Northern Hemisphere are permanently barred from the Southern Hemisphere by the belt of high temperature equatorial waters," said the Director. "Some of these might be transplanted by man with the probable result of increased production. An example of this is the transfer of trouts and salmons from the Northern Hemisphere to New Zealand in the Southern Hemisphere. New Zealand has become famous for this and is a mecca for

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ports fishermen. The ample presence of fish food has led to phenomenal growth in the trouts themselves. Thirty- or forty-pound trouts are not unusual.

"Another thing which I am fairly certain will take place is that man will eat many more kinds of fish than he does now," he continued. "In the Northern Hemisphere the kinds of fish consumed by man are relatively few. There are many kinds which he does not eat. Often a change in the name of a fish will bring about demand for it. Ocean perch is an example. In Denmark a demand is being created for filleted dogfish by calling it a different name. I think in the future man will eat them without knowing what he eats. This will come about by introducing changes in product form. For example, many countries have followed the Japanese lead in the manufacture of fish sausages. The Japanese have over a hundred ways of diversifying their products."

There will also be an increase in the use of aquatic plants, perhaps not so much in direct consumption as in food producing industries and in agriculture. There are millions of tons of aquatic plants available.

The Director continued with "The obvious support for believing in increased yields is that certain seas are abundant in fish that are not being caught. Take the Arabian Sea and Indian Ocean, for example. A few years ago a Soviet hydrographic vessel reported steaming for hour after hour in that area through dead floating fish of the mackerel type. It is estimated that there were hundreds of tons of fish. Apparently there are deep layers of water in these seas that contain little, if any, free oxygen. Sometimes these layers are brought to the surface by huge upwellings and fish die of suffocation. There is no doubt that the fish are there. But, as far as we can find out, there is no attempt to fish these waters. The result is a huge, unappreciated resource.

"All this adds up to the increased production of sea fish. . . . Within the next 20 or 30 years I think that harvests from the sea will be at least doubled."

In 1961 about one quarter of the world catch of more than 40 million tons of fish went into fish meal. Today the figure may be slightly more. Fish meal is used in feeding livestock and there is a growing demand for it. A new idea is to manufacture fish meal from fresh material under sanitary and hygienic conditions to produce a wholesome protein concentrate for human consumption. Africa, India, and South Asian countries are examples where this material is used in fish soups and curries, etc., and supplements predominant carbohydrate diets.

"FAO, the Fish Meal Association, and the United Nations Children's Fund (UNICEF) are cooperating in this under the Freedom from Hunger Campaign," he stated. "It is my opinion that large new markets can be opened up for the new product with the consequent increase in consumption of animal protein of high quality."

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FIRST MEETING OF
ADVISORY COMMITTEE ON
MARINE RESOURCES RESEARCH:

The recently established Advisory Committee on Marine Resources Research of

the Food and Agriculture Organization (FAO) met for the first time in Rome on January 28, 1963. The week-long meeting opened with an address by the Deputy Director-General of FAO who pointed out that: "The growth and expansion of highly industrialized sea fisheries are having an increasing impact on the living natural resources on which they depend. At the same time they are leading to an intensified search for new resources. Both these factors reinforce the needs for scientific study of all such resources as a basis for their wise and efficient use." The phrase "wise and efficient use," he said, meant not only the conservation and improvement of present world fish stocks, but also the application of modern scientific knowledge about the biology of fish and their environment "in such a way as to improve catching techniques and fishing operations generally."

Following the Deputy Director-General's address, Dr. A. W. H. Needler, Director, Fisheries Research Board of Canada, was elected Chairman of the Advisory Committee. The two Vice Chairmen elected were Dr. Cyril Lucas, Director of the Marine Laboratory of the Department of Agriculture and Fisheries for Scotland, and Professor Michitaka Uda of the Tokyo University Department of Fisheries.

The Advisory Committee will review FAO's present work in marine resources research and will discuss the research program planned for 1964-1965. (Food and Agriculture Organization of the United Nations, Rome, January 29, 1963.)

Note: See Commercial Fisheries Review, April 1962 p. 65, February 1962 p. 54.

INTERNATIONAL NORTH PACIFIC
FUR SEAL COMMISSION

PROTOCOL TO AMEND INTERIM
CONVENTION DRAFTED
AT CONFERENCE:

The representatives of the Governments of Canada, Japan, the Union of Soviet Socialist Republics, and the United States, the Parties to the Interim Convention on Conservation of North Pacific Fur Seals of 1957, met at the Ministry of Foreign Affairs in Tokyo, Japan, from February 18 to March 1, 1963, in accordance with the provisions of the Convention.

The purpose of the Conference was to consider the recommendations of the Commission made in accordance with the Convention and to determine what further agreements might be desirable in order to achieve the

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maximum sustainable productivity of the North Pacific fur-seal herds.

The Conference adopted a report to the Governments of the Contracting Parties recommending that they amend the present Interim Convention by concluding a protocol conforming to a draft which has been agreed to at the Conference.

If all of the four Governments, after reviewing it, agree to the draft protocol, it will be opened for signature by the four Governments in Washington, D. C.

The text of the draft protocol follows:

The Governments of Canada, Japan, the Union of Soviet Socialist Republics, and the United States of America, Parties to the Interim Convention on Conservation of North Pacific Fur Seals, signed at Washington on February 9, 1957, hereinafter referred to as the Convention,

Having given due consideration to the recommendations adopted by the North Pacific Fur Seal Commission on November 30, 1962, and

Desiring to amend the Convention,

Have agreed as follows:

Article I

The Convention shall be amended by this Protocol as from the date of its entry into force.

Article II

1. After Article II, paragraph 2(f) of the Convention, the following shall be inserted:

"(g) effectiveness of each method of sealing from the viewpoint of management and rational utilization of fur seal resources for conservation purposes;

(h) quality of sealskins by sex, age, and time and method of sealing; and."

2. In Article II, paragraph 2 of the Convention, "and" at the end of sub-paragraph (f) shall be deleted and "(g)" shall be replaced by "(i)".

Article III

Article II, paragraph 3 of the Convention shall be replaced by the following:

"3. In furtherance of the research referred to in this Article, the Parties agree:

(a) to continue to mark adequate numbers of pups;

(b) to devote to pelagic research an effort similar in extent to that expended in recent years, provided that this shall not involve the taking of more than 2,500 seals in the Eastern and more than 2,200 seals in the Western Pacific Ocean, unless the Commission, pursuant to Article V, paragraph 3, shall decide otherwise; and

(c) to carry out the determinations made by the Commission pursuant to Article V, paragraph 3."

Article IV

In Article III of the Convention, "and the Schedule" shall be deleted.

Article V

Article V, paragraph 2(e) of the Convention shall be replaced by the following:

"(e) study whether or not pelagic sealing in conjunction with land sealing could be permitted in certain circumstances without adversely affecting achievement of the objectives of this Convention, and make recommendations thereon to the Parties at the end of the eleventh year after entry into force of this Convention and, if the Convention is continued under the provisions of Article XIII, paragraph 4, at a later year; this later year shall be fixed by the Parties at the meeting early in the twelfth year provided for in Article XI."

Article VI

Article V, paragraph 3 of the Convention shall be replaced by the following:

"In addition to the duties specified in paragraph 2 of this Article, the Commission shall, subject to Article II, paragraph 3, determine from time to time the numbers of seals to be marked on the rookery islands, and the total number of seals which shall be taken at sea for research purposes, the times at which such seals shall be taken and the areas in which they shall be taken, as well as the number to be taken by each Party."

Article VII

In Article VIII, paragraph 2 of the Convention, "the Schedule" shall be replaced by "Article II, paragraph 3."

Article VIII

Article IX, paragraph 3 of the Convention shall be replaced by the following:

"3. In order more equitably to divide the direct and indirect costs of pelagic research in the Western Pacific Ocean, it is agreed that Canada and Japan for three years starting from the seventh year after entry into force of this Convention will forego the delivery of the sealskins by the Union of Soviet Socialist Republics as set forth in paragraph 1 of this Article and the Union of Soviet Socialist Republics will deliver annually to Canada and to Japan 1,500 sealskins each during these three years."

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Article IX

In Article XI and Article XIII, paragraph 4 of the Convention, "sixth" shall be replaced by "twelfth".

In Article XIII, paragraph 4 of the Convention, "six" shall be replaced by "twelve".

Article X

The Schedule annexed to the Convention shall be deleted.

Article XI

This Protocol shall be ratified and the instruments of ratification deposited with the Government of the United States of America as soon as practicable.

The Government of the United States of America shall notify the other signatory Governments of ratifications deposited.

This Protocol shall enter into force on October 14, 1963, if the fourth instrument of ratification is deposited on or before that date, and if the fourth instrument of ratification is deposited after October 14, 1963, on the date of its deposit.

Notwithstanding Article I of this Protocol:

- (a) if this Protocol has not entered into force on or before January 31, 1964, the Convention shall apply with respect to pelagic research for the seventh year.
- (b) even if this Protocol has entered into force after the beginning of the commercial sealing season of the seventh year, Article IX, paragraph 3 as amended by this Protocol shall apply with respect to the said season.

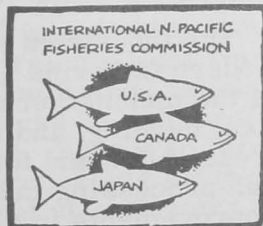
The original of this Protocol shall be deposited with the Government of the United States of America, which shall communicate certified copies thereof to each of the Governments signatory to this Protocol.

See *Commercial Fisheries Review*, January 1963 pp. 72 and 74, May 1962 p. 41, and April 1957 p. 33.

INTERNATIONAL NORTHWEST PACIFIC FISHERIES COMMISSION

JAPAN-SOVIET FISHERIES CONFERENCE DATE SET:

The International Northwest Pacific Fisheries Commission (Soviet Union and Japan) were scheduled to hold a series of meetings beginning March 4, 1963. The Commission sets the annual Soviet and Japanese catch quota for salmon and crab in the Northwest Pacific Ocean. (United States Embassy, Tokyo, January 9, 1963.)



UNITED NATIONS CONFERENCE ON THE APPLICATION OF SCIENCE AND TECHNOLOGY FOR THE BENEFIT OF LESS DEVELOPED AREAS

FISHERY DEVELOPMENT PLANS PROPOSED BY U. S. SCIENTISTS:

Two long-range plans under which emerging nations can convert the unused protein in their coastal waters into food for their hungry were submitted by United States scientists to be incorporated into the proceedings of the February 1962 Conference on the Application of Science and Technology to Less-Developed Areas, held in Geneva, Switzerland.

One plan in the papers submitted for publication pointed the way for the development of fisheries along traditional lines to supply needed protein and to meet the individual tastes for fresh, dried, or canned fish. Another plan showed the possibilities of developing a highly acceptable fish protein concentrate to supply the animal protein needs of those whose diets are lacking in this nutrient. The separate plans would not be in conflict, but would supplement each other--taking into account problems of food distribution and traditional forms of food preparation.

The scientists based their programs upon the proposition that the sea, acre for acre, is potentially as productive as the land; that only about 16 percent of this potential is being harvested; that only about one-fifth of the world's harvest of fish is available to the people in the areas where the shortage of animal protein is most acute.

The plans were prefaced by a review of conditions in many parts of the world. Peru has increased its fish harvest 600-fold in the past 15 years. West Africa has areas in which peoples, a few miles from the coast, are suffering from lack of proper food while the coastal waters teem with protein-packed fish. India has a shortage of harbors which hampers fish landings. There are also social customs there which frown upon the use of fish as food. In many areas, hot weather and poor transportation facilities have erected an impassable barrier to utilization and distribution of fishery resources actually only a few miles away.

The first plan called for a balanced, concurrent development of production, processing and distribution, all of which must necessarily be in accord with the economic,

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technological and social progress of the respective nations. The scientists emphasize any fishery development must be tied closely to the existing base--human skills and industrial facilities. They noted the undesirability of producing more fish than the industry can properly process and distribute; that it would be of no purpose to introduce fishing gear which exceeds the capacity of the available vessels or the present skills of the available workers, and that national customs must be taken into consideration.

According to the United States scientists, the development of these traditional fisheries could well cover a period of ten years or more. The program would include analysis of the economic, social, and religious barriers to fishery development. It would recognize the need for biological, technological, economic and engineering skills for the optimum development of the fishery resource, and it would also begin with the facilities and fishermen at hand and attempt to achieve better utilization of the present facilities by training the fishermen, by making improvements in the lines and nets being used, and by converting to more efficient equipment and methods when the demand increases, skills develop, and processing and marketing methods improve.

The second plan explained how time, temperature and transportation categories, which offer serious problems in the development of the traditional fisheries in certain parts of the world, can be obviated, to a great extent, by the development of a highly desirable fish protein concentrate.

More than 20 nations are interested in the search for a satisfactory fish protein concentrate. The Canadians have developed a product of exceptionally high nutritive quality and several United States industries have developed products which are now under test. The Union of South Africa has developed and tested a concentrate. The United Nations has actively cooperated with the Chilean Government in a pilot plant operation. Researchers in Uruguay, Morocco, India, Russia, Norway, Sweden, Denmark, and Britain, are actively seeking ways and means for preparing the most acceptable concentrate.

The United States Government contemplates an extensive review of the problems

associated with the manufacture of, and use of the concentrate.

Fish protein concentrate will not eliminate the problems of time, temperature and transportation but it will reduce them to a great extent. There will be problems on packaging, marketing, and consumer education, but those problems would be far less challenging than those encountered in expanding the utilization of existing types of traditional fishery products.

This is not to say, the scientists pointed out, that the development of a suitable fish protein would replace other methods of processing for the individual taste remains a potent factor in the market. But with both these plans in operation, such important objectives as expansion of the over-all market for fishery products expansion of the world's fishing effort, and the extension of the dietary benefits of marine resources to nutritionally deficient population groups can be achieved.

A third phase of fishery resource development discussed was the effect industrialization was having upon the fisheries of the older nations. It was pointed out that in America, development proceeded in steps associated with technological advances affecting vessels, fishing methods, techniques of preservation, and facilities for transporting, storing and marketing. Where American fisheries have been slow to develop, the principal retarding influence has been ignorance about the resource, about its possible use, or about techniques for developing it.

The stimulus of science and technology has had both good and bad effects upon the fisheries in the United States. Disposal of chemical wastes into fishery habitat and the blocking of migration streams by huge dams have had injurious effects. On the other hand, such developments as the aqualung has led to intensive biological studies of underwater habitat and to the development of new fisheries through the creation of artificial reefs.

The industries which have made the great modern fisheries are based upon such things as the manufacture of fish meal, oil and solubles, canning, and refrigeration. The increased demand for raw material for the fish-processing industries has stimulated improvements in vessels, vessel equipment, fishing gear and techniques, extension of the

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range of fishing, and general improvements in operations.

Industrialization has also resulted in a tremendous increase in the number of persons fishing for recreation, or for food for their personal use.

Scientists who participated in the preparation of the presentations to the conference included representatives from the U. S. Department of the Interior's Bureau of Commercial Fisheries and Bureau of Sport Fisheries and Wildlife, University of Washington, Seattle, Wash., and research and scientific organizations.



Australia

ABALONE EXPORTS TO HONG KONG PLANNED:

A firm in Tasmania planned to ship about 1,000 pounds of frozen abalone to Hong Kong during early 1963 in an effort to develop a new export market. The abalone consignment to Hong Kong will be marketed as a low-priced product. The Tasmanian firm was also conducting experiments in drying abalone for export. The manager of the firm said that good quality abalone were plentiful in Tasmanian waters. The firm employed two skin divers equipped with scuba gear to harvest them.

Several years ago, an attempt to develop a market for abalone in Sydney, Australia, proved unprofitable. (Fish Trades Review, Australia, December 1962.)

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ANOTHER TUNA FREEZING AND CANNING VENTURE PLANNED:

Following harbor improvements, the New South Wales port of Ulladulla (located about 100 miles south of Sydney) hopes to develop a £500,000 (US\$1,122,000) tuna-fishing industry. The Ulladulla's fishermen's Cooperative believes that in addition to tuna canning that the whole frozen tuna can be sold profitably in the export market. As a step towards developing a tuna-processing industry, the Cooperative has set up a cannery in the nearby town of Milton. One of the Co-

operative's officers is reported to have pioneered canning at Eden some years ago. (Fish Trades Review, December 1962.)

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RESEARCH ON TUNA AND AUSTRALIAN SALMON AIDED BY TAGGING:

Intensive fish-tagging programs on tuna and salmon are being carried out by Australia's Division of Fisheries and Oceanography. The Division's target is to tag 15,000 tuna and 50,000 salmon in 1963 and 1964. The tagging technique is used to gain information on rates of growth, distribution, and movement of the fish.

During the past five years, 7,000 tuna have been tagged of which 108 have been recovered.

In the past, most fish tagged have been caught from vessels owned by the Division or under charter. In 1963, the scientists will work with the fishing fleet and will tag fish caught during commercial fishing operations. Fishermen will be paid the ruling market price for fish which the scientists tag and release.

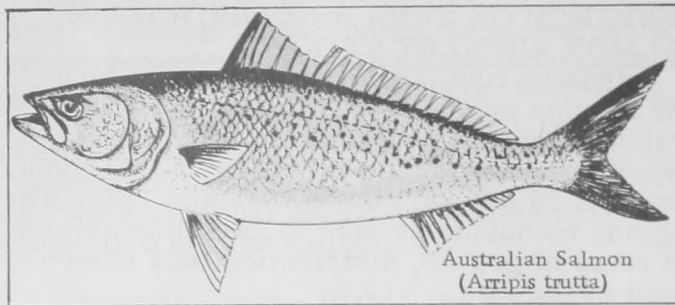
Most tuna fishermen are familiar with the red spaghetti or streamer-type tag used to tag tuna. Some tags now have a yellow tip, which indicates that fish have also been given an injection of harmless terramycin which makes the bones fluorescent. This technique was first tried in Australia in tuna-tagging operations carried out from the chartered vessel Estelle Star in Western Australia in 1962. A number of fish which were injected have been recaptured, and autopsies have shown that while the injection produces a marked local lesion in the muscle tissue at the injection site, this lesion had almost disappeared within four weeks. All calcified structures in the recaptured fish which have been examined show yellow fluorescence in ultra-violet light. The fluorescence is strongest in the outer layers of bone structures. Scales, though small and thin, produce a fluorescence visible to the naked eye.

This "marking" of calcium structures at the time of tagging will greatly assist scientists to measure the growth between tagging and recapture, and aid in determining the age of the fish.

In the last 15 years, the Fisheries Division has tagged 11,783 Australian salmon

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(*Arripis trutta*) of which 1,212 have been recaptured. The internal-type tag is being used to tag the Australian salmon.



One of the present "mysteries" of Australian salmon is whether the fish move out to sea or stay near the coast the whole of the time. If they do move out to sea, the commercial fishermen may be fishing only the fringe of the population, and discovery of the seaward distribution could lead to a considerable expansion of the fishery. An intensive tagging program, particularly tagging of juvenile fish, may give the scientists some of the clues they need to answer the question whether there is a seaward distribution.

The Australian scientists hope to be able to arrange with commercial fishermen to purchase live salmon which they will tag and release. In addition, a scientific team will work in the estuaries of northern Tasmania to tag young fish. (Fisheries Newsletter, December 1963.)

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FISH FREEZING PLANT ON NORFOLK ISLAND PROPOSED:

A plant to freeze fish, and possibly vegetables, may be established on Norfolk Island off the East Coast of Australia by a firm that distributes dairy products in the Australian State of Queensland. The firm's plan was announced in December 1962 and includes the possibility of financial assistance to vessel owners in Norfolk Island in order to insure a steady supply of fish to the proposed freezing plant. The freezing plant would aid the depressed economy of Norfolk Island, which is an Australian territory. (Pacific Islands Monthly, January 1963.)

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RECOMMENDATIONS FOR MANAGEMENT OF SPINY LOBSTER FISHERY ADOPTED:

Management of the southern spiny lobster (crayfish) was discussed in Melbourne, November 27-28, 1962, by a special meeting of Australian Commonwealth and State fishery officers, as recommended by the Commonwealth State Fisheries Conference in September 1962 and approved at a meeting of Australian Ministers responsible for fisheries.

Represented at the Melbourne meeting were the following fisheries authorities: Commonwealth--Department of Primary Industry and Commonwealth Scientific and Industrial Research Organization (CSIRO); States--South Australia, Victoria, Tasmania, and New South Wales.

The conference adopted the following recommendations to the Governments concerned:

Legal minimum length of female crayfish to be reduced from $4\frac{1}{4}$ inches to $3\frac{3}{4}$ inches, the legal length of male crayfish to remain at $4\frac{1}{4}$ inches.

Following scientific evidence from CSIRO, the only closed seasons should be:

1. Male crayfish: Closed season from September 1-October 31 for Tasmania (except the King Island area), Victoria, South Australia, New South Wales, and extra-territorial waters. A closed season for male crayfish in the King Island area from December 15-January 31.

2. Female crayfish: Closed season from June 1-October 31 for Tasmania, Victoria, South Australia, New South Wales, and extra-territorial waters.

States and Commonwealth to adopt a carapace measurement from the mid-point of the anterior dorsal edge to the mid-point of the posterior dorsal edge along the median line of the carapace. If this recommendation is adopted, the recommended legal length will have to be adjusted. (Fisheries Newsletter, January 1963.)

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SHRIMP FISHERY IN SHARK BAY BEING DEVELOPED:

Another shrimp fishing project for Shark Bay, which is located about midway on Western Australia's coast, has

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been announced by the managing director of a Fremantle company. The company plans to handle between 600,000 and 800,000 pounds of shrimp each season.

The company has been granted five licenses to fish for shrimp in the Shark Bay area. It will use five freezer vessels which it has available, but the shrimp will be processed in a new factory to be built at Shark Bay. An automatic machine will peel, devein, grade, and pack the shrimp ready for freezing. Refrigerated trucks will carry the processed shrimp some 600 miles to Fremantle for exporting.

In addition to the new shrimp processing plant at Shark Bay, the company plans to build a cafe, general store, and garage, and to supply Shark Bay township with electric power.

A second company has been granted 10 shrimp fishing licenses for Shark Bay. The company commenced fishing here in May 1962, using three vessels.

Ten shrimp fishing licenses have also been granted to individual vessel owners, making a total of 25 for Shark Bay.

In July last year, the Western Australian Minister for Fisheries announced restrictions on shrimp fishing in the Shark Bay-Carnarvon area. He said he had directed that no shrimp trawler from the eastern States should be issued a license unless it was purchased by, or brought under charter to, an approved local fisherman.

He also issued instructions that no local craft not already operating could enter the fishery in that area without prior approval from the Department. This was done, not only to safeguard the fishery against over-exploitation, but also to protect the fishermen themselves. (Australian Fisheries Newsletter, January 1963.)

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SHRIMP PROCESSORS SURVEY
UNITED STATES MARKET:

A trial shipment of shrimp from Western Australia was consigned to the United States the latter part of 1962 by a firm at Carnarvon. The firm reported that it met with high success. Two directors of the firm made a survey of United States markets and processing methods in late 1962. They reported that there was a good market in the United States for Western Australian shrimp that were properly processed and graded. (Fish Trades Review, Australia, December 1962.)

Note: See Commercial Fisheries Review, December 1962 p. 61, October 1962 p. 46.

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SURVEY OF SHRIMP RESOURCES
IN GULF OF CARPENTARIA PROPOSED:

Fishing interests at Queensland in 1962 began to explore the shrimp resources in the Gulf of Carpentaria. Intense exploitation by Queensland and New South Wales vessels of the shrimp grounds that stretch from the Newcastle area in New South Wales to the Rockhampton area in Queensland has created interest in new shrimp fishing areas.

A representative of a Queensland trawling company was reported by a Brisbane newspaper late in October 1962 as

saying that the company planned to move in a trawler fleet and a mothership, after the wet season, capable of handling 100 tons of shrimp a week. It was also considering air-freighting shrimp.



The Queensland officer, in charge of State fisheries, was reported by another periodical as having said:

"We think there is a lot that can be done with the Gulf, but it will be a big operation.

"The first thing is to find out whether the shrimp and fish resources are big enough to carry an industry. Then, if a proper survey establishes that the potential is really big, a major fishing port will emerge on the Gulf coast. It could be at Weipa, which has a deep water port able to take export ships, or at Karumba, with planes freighting out the shrimp and fish.

"From 100 to 200 vessels could work in the Gulf, with women ashore preparing the catch for the markets of the world.

"The Government is taking the first step by preparing a detailed submission to the Commonwealth stating the case for full survey of resources."

At least £250,000 (US\$561,000) would have to be spent on facilities before a stable fishing industry could be established in the Gulf of Carpentaria, another Brisbane newspaper reported.

The same newspaper reported that there were indications that the Gulf of Carpentaria "could be one of the best tuna grounds in Australia." A seafood processor from the Brisbane area reported after a trip to the Gulf that a six month survey of facilities would have to be made.

Experimental catches of shrimp made by the above seafood processor and his party, using the only trawler in the area, were encouraging. He stated it would be impossible to set up an industry at the Gulf immediately because of the primitive state of the area.

There are no fueling, wharf, or refrigeration facilities; roads are inadequate for the heavy trucks which would be needed; there is no general fresh water or electricity supply; and there is no labor pool, the seafood processor stated.

He added, at least half of the vessels working from Gold Coast ports would not be well enough equipped for the Gulf.

A meeting of the Queensland Licensed Boatowners, Skippers and Trawler's Association on October 26, 1962, reportedly decided to ask the State Government to survey the Gulf's shrimp potential, and ask all professional fishermen's organizations to join it in discussing the proposed survey with the Queensland Minister in charge of fisheries. (Australian Fisheries Newsletter, December 1962.)

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Australia (Contd.):

TASMANIAN SCALLOP LANDINGS IN 1962 SET NEW RECORD:

Scallop landings in Tasmania in 1962 reached a record 1,239,000 pounds (meat weight) as compared with 1,070,000 pounds in 1961 and the previous record in 1956, of 1,198,000 pounds. The Tasmanian Minister for Fisheries said that in 1962 there was a change in the localities where most of the scallops were taken. In the Channel area, production was 460,000 pounds compared with the one million pounds in 1961, but only part of the Channel was open for dredging during May 1962.

The poor Channel results forced fishermen to the east coast areas where some 780,000 pounds were landed, as compared with 22,000 pounds in 1961. Results from Ringarooma Bay were very disappointing.

The Minister said that research work by the Federal Fisheries Division and State fisheries officers was continuing in the Channel area. Late 1962 exploratory fishing indicated great numbers of small scallops in certain areas, and it might be necessary to close that area in 1963. A decision was due to be made after the program of test dredging was completed. (Australian Fisheries Newsletter, December 1962.)



Belgium

EFFECT OF EEC POLICIES ON IMPORTS OF FISHERY PRODUCTS:

Following is a report by the Canadian Embassy in Brussels on the possible effect of European Economic Community (EEC) policies on Belgian imports of fishery products:

Belgium's 9 million people consume about 270 million pounds of fishery products each year. Per capita fish consumption is about 30 pounds a year and over 70 percent of this is supplied by imports.

Table 1 - Belgian Trade in Fisheries Products, 1961

Item	Quantity	Value	
		Million C\$	Million US\$
Fish production	Metric Tons 46,300	11.0	10.2
Fish exports	13,500	5.6	5.2
Fish imports	89,500	37.5	34.8
Fish consumption	122,300	42.9	39.8

The Belgian fishing industry employs less than 2,500 full-time fishermen and shore workers. The main species caught by Belgian vessels are sole, cod, plaice, haddock, and shrimp.



Sorting of fish on board of vessel.

The leading fishery imports by volume are herring, mussels, mackerel, canned salmon, canned sardines, and oysters. On a value basis, canned salmon is Belgium's most important fisheries import.

Changes now taking place in the Belgian market for fishery products as a result of membership in the EEC will affect foreign suppliers.

In the past, Belgium has had relatively low import duties on most unprocessed fishery products and the rates on processed fishery products have at least been lower than those imposed by several other EEC countries. The new common external tariff towards which the EEC countries will move during the next few years represents an average of national rates. The result will be a substantial increase in Belgian import duties on fishery products from countries outside the EEC (see table 2).

Table 2 - Belgian Import Duties on Fishery Products

Product	Rate in Effect in 1962	Proposed Rate for 1970 ^{1/}
. (% Ad valorem)		
Salmon:		
Frozen	4.9	10
Canned	6.0	16
Lobster:		
Live	18.0	25
Canned	6.0	20

^{1/}Common external tariff that EEC countries plan to establish by 1970.

The common external tariff planned for 1970 will inevitably help the position of suppliers within the EEC. It will bear most heavily on suppliers outside the EEC whose products incur high transportation costs. European countries not members of the EEC will improve their market possibilities to

Belgium (Contd.):

the EEC at the expense of such countries as Japan, Canada, and the United States.

Although consumption of fresh and frozen fish will probably increase in Belgium, producers within the EEC will have first chance to service any new demand. National fishing industries in the EEC are being modernized and coordinated to permit them to serve the growing European market on the best possible terms. (Foreign Trade, January 12, 1963.)

Note: See Commercial Fisheries Review, November 1962 p. 60.



Brazil

FISHERIES TRENDS IN RECIFE AREA, JULY-DECEMBER 1962:

The spiny lobster season (to the extent that a "season" exists in northeast Brazil) began in September 1962. By the first of October, 490,607 pounds of spiny lobster tails had been shipped to New York City through the port of Recife at the official price of US\$0.80 a pound, a welcome source of foreign exchange.

During late November and early December last year, customs officers in Recife temporarily impounded several Japanese fishing vessels for investigation, charging them with violations of their agreement with the Brazilian Government. Also, during mid-December last year, port authorities refused to sell fuel to two Japanese vessels, supposedly on the grounds that they had been illegally selling their catches outside Brazil, a violation of the agreement.

In late July last year, two more French fishing vessels fishing for spiny lobster off the Northeastern coast were arrested and brought into port. As in previous cases, they were well outside the three-mile limit, but on the continental shelf. Brazilian authorities again emphasized that for purposes of protection of fisheries and mineral deposits they do not recognize the three-mile limit. Instead they claim jurisdiction out as far as the edge of the continental shelf--in that area about 40 miles offshore. (United States Consul, Recife, January 24, 1963).

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FISHERIES TRENDS IN SOUTHERN BRAZIL, JANUARY 1963:

The government of Santa Catarina State in southern Brazil granted 16 million cruzeiros (US\$33,684) towards the construction of two fishery cold-storage plants in the municipalities of Biguacu and Garopaba. The money will be spent to purchase sites, build warehouses, install refrigeration systems and a water supply, and buy motors.

Fishery experts of the Food and Agriculture Organization (FAO) are going to survey fishing possibilities in coastal waters of Santa Catarina State. The results of their investigation will be submitted to FAO. (United States Consulate, Curitiba, February 19, 1963.)

Note: Brazilian cruzeiros 475 equalled US\$1.00 at the free exchange rate during January 1963.



British Guiana

SHRIMP FISHERY TRENDS, 1962:

Shrimp landings in British Guiana in 1962 probably exceeded 4 million pounds, according to a representative of 1 of 2 United States shrimp firms in the country. In 1962, the active shrimp fleet in British Guiana increased to 55-60 vessels. But there was a decline in the average catch per vessel. It is believed that 90 percent of the shrimp catch was exported to the United States.

Shrimp is British Guiana's only significant fishery export. There is a small-scale fishery for other species for the local market. In 1961, British Guiana imported about 2,257 short tons of fishery products, most of which came from Canada. (United States Consulate, Georgetown, February 17, 1963.)



Canada

FISHERIES COUNCIL PROPOSES 12-MILE FISHING LIMIT:

Spokesmen for the Fisheries Council of Canada (industry organization) met with a committee of the Federal cabinet in Ottawa on January 28, 1963, and urged the Government to take action on declaring national waters, establishing base lines, and adopting a 12-mile fishing limit.

The Council's spokesmen recommended that such major areas as the Gulf of St. Lawrence, the Strait of Belle Isle, Hecate Strait, and Queen Charlotte Sound be declared as Canadian national waters in the same way as Hudson Bay and the Bay of Fundy are now recognized.

Canada (Contd.):

The Council brief suggested that declaration of the new zones take into special consideration the historic rights of France and the United States in Canadian national waters. As a first step, negotiations should begin with those two nations to reach a mutual understanding about their rights in an enlarged Canadian zone.

The brief proposed unilateral adoption of a plan which Canada and the United States jointly sponsored at the Second United Nations Conference on the Law of the Sea (held in 1960). This plan called for a 6-mile territorial sea and an additional 6-mile exclusive fishing zone. It was supported by 54 nations but fell one vote short of approval.

"The rapid increase in world fishing effort and efficiency has focused attention on the fact that, unless adequate safeguards are taken, the marine resources that have played such a vital role in the development of the Canadian economy will be harvested by foreign fishing fleets," the brief said.

Calling for adoption of the 12-mile limit, the brief declared that "unilateral declaration of the Government's policy must be followed immediately by active enforcement . . . and the policing of foreign fishing fleets."

"In the Council's opinion, enforcement is absolutely essential if Canada is to maintain her position in world fisheries."

In keeping with terms of the 1960 proposal, any nation whose vessels had made a practice of fishing in the outer 6 miles of the proposed 12-mile zone for at least 5 years would have the right to continue fishing that area for another 10 years.

But, apart from those special circumstances, foreign fleets would be barred from the exclusive zone. This would permit for the first time an effective program of fisheries management and conservation to preserve the Canadian fishing industry.

Maps of Canada's east and west coasts were attached to the brief showing the Council's proposals for drawing boundary lines of the protected zone. The base line would cut across all major bays and straits, turning them into national waters. (Fisheries Council of Canada, Bulletin, February 1963.)

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LIVE LOBSTERS SHIPPED BY AIR TO EUROPE:

Lobstermen of Canada's Maritime Provinces are finding new markets for their catch in Europe. Live lobsters from New Brunswick are crossing the Atlantic by jet at the rate of about 100,000 pounds a month and are turning up in such places as London, Paris, and Rotterdam. A St. Andrews, N.B., firm is the pioneer in this field and expects to ship about 500,000 pounds to Europe before the end of March. Working with the New Brunswick firm is a Canadian airline whose salesmen were responsible for finding the markets.

"It was no problem to sell Maritime lobsters," a spokesman of the airline stated, "their quality is well known in Europe. The problem was to convince buyers that it was possible to get them there alive."

About 50,000 pounds crossed the Atlantic in 1962 in the first season the airlift was used, and the total is expected to be 10 times greater this year.

The secret of getting live lobsters to the European market is careful packaging and speedy delivery. The lobsters

are put in waterproof, cardboard cartons filled with wood chips or seaweed and dampened with sea water. They are kept at temperatures of 38°-45° F. during transit.

From St. Andrew's to their destination in Europe takes less than 24 hours. The lobsters are trucked to St. John, N. B., where they are placed aboard a shuttle airliner for the flight to Montreal, and transferred to a big jet for the Trans-Atlantic flight. The mortality rate is said to be as low as one-half of 1 percent.

The airline set up a weekly shipping program to Europe that was booked until March 31, 1963. After that it hoped to start shipments from Newfoundland. One Newfoundland fish exporter has expressed interest in the idea so far and other firms also may take part.

The airline official says that the outlook for the future is excellent. Europeans are enjoying unprecedented prosperity and appear well able to afford the tasty shellfish. He also stated that any Maritime lobster dealer interested in the European market need only contact the airline. The airline will send its own salesmen to Europe to find buyers, and then provide the aircraft to get the lobsters safely to their destination. (Canadian Fisherman, February 1963.) 3.)

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BRITISH COLUMBIA'S NEW LICENSING SYSTEM FOR COMMERCIAL FISHING:

British Columbia's commercial fishermen will have only one fishing license number a year under the new policy of the Canadian Department of Fisheries which became effective January 1, 1963. Previously, each license obtained by a fisherman had a different number. Licensing regulations remain the same, requiring fishermen to obtain a separate license for each type of fishing gear or fishery. But under the new system, each license will have the same number as the first one issued. The number must be displayed on every fishing boat.

When applying for each commercial fishing license, a fisherman will, as always, have to provide evidence of Canadian citizenship or of active service in Canada's Armed Services.

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NEW DEPUTY MINISTER OF FISHERIES APPOINTED:

The Canadian Prime Minister, on February 26, announced the appointment of Dr. A. W. H. Needler, O.B.E., Ph.D., F.R.S.C., of Nanaimo, B.C., as Deputy Minister of Fisheries to succeed the late G. R. Clark. One of the world's most respected fishery scientists, Dr. Needler for more than 35 years has studied the fishery resources of both the Atlantic and Pacific Oceans upon which the major part of Canada's fishing industry depends.

Canada (Contd.):

Director of the Fisheries Research Board of Canada's Biological Station at Nanaimo, B.C., since 1954, Dr. Needler was also Director of the Board's Biological Station at St. Andrews, N.B., from 1941 until his transfer to the west coast. For a period (1948-1950) he acted in the dual capacity of Assistant Deputy Minister of the Department and Director of the Board's St. Andrews Station.

In January of this year, Dr. Needler was appointed chairman of the recently-established Food and Agriculture Organization (FAO) Advisory Committee on Marine Resources Research, which held its first meeting at FAO's headquarters in Rome from January 28-February 2.

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NEW GOVERNMENT PATROL VESSEL FOR GREAT SLAVE LAKE:

Modern design techniques and building materials will be used in the construction of a new Canadian Department of Fisheries vessel for Great Slave Lake in the Northwest Territories. The 38-foot vessel will have a moulded fiber glass hull and be propelled by a single Diesel engine. It will have such navigational aids as an echo sounder, a directional finder, and a radio-telephone system. The vessel will be operated by a crew of two fisheries officers. Although primarily intended for patrol duties, it will also take part in search and rescue operations when called upon.

Canadian officials feel that the vessel's fiber glass hull is ideally suited for Great Slave Lake. Gill-net vessels of similar construction have been used with a great deal of success by British Columbia fishermen.

A contract for the construction of the vessel at a cost of C\$39,427 (US\$36,547) was awarded to a boat yard in Steveston, B.C., on February 18, 1963. When ready for operation late in the summer of 1963, the new vessel will replace the Mareca. Another vessel, the Marila, is also employed on Great Slave Lake. The lake supports an important commercial fishery for lake trout and whitefish, and in recent years has attracted many tourists and sports fishermen. Department of Fisheries vessels on Great Slave Lake are in service from

the ice break-up in the spring until freeze-up, which is usually from June to September. (Canadian Department of Fisheries, Ottawa, February 18, 1963.)



Ceylon

FOREIGN EXPERTS REPORT ON FISHERIES DEVELOPMENT:

As a result of an appeal made last year by the Government of Ceylon for more foreign aid for fisheries development, two experts sent under the West German aid program have completed a feasibility survey of the fisheries industry. In their press interview on their departure they were reported to have said that Ceylon could become self-sufficient in fish within a few years if their four recommendations were carried out. These entail the development of Galle Harbor as a long-line tuna fishing center, development of the trawler fishing potentials of the San Pedro and Wadge Banks from centers at Trincomalee and Colombo, exploitation of fresh-water and brackish water fisheries, and setting up small canning plants.

Editorials in Ceylon newspapers on the subject of reports by experts over a period of almost 20 years have been critical. These newspapers state that, Ceylon, although surrounded by water, still must import most of one of its basic items of diet (fish). (United States Embassy, Colombo, February 12, 1963.)



Chile

FISHERIES TRENDS, JANUARY 1963:

Representatives of the Corporacion de Fomento de la Produccion de Chile (CORFO) were scheduled to arrive in Arica (located near Peruvian border) in late January 1963 in order to negotiate with the Junta de Adelanto de Arica (JAA) a joint development plan for the next five years. Under the terms of the draft plan, CORFO would match JAA contributions of approximately 500,000 escudos (about US\$475,000 at official rate of exchange) for industrial development projects. CORFO would also supply technical assistance for such projects, which would probably involve mainly fish processing and fish meal plants.

Chile (Contd.):

On December 31, 1962, a Japanese fishing net company was authorized to bring into Chile the sum of US\$225,000 to establish a subsidiary firm for the manufacture of nets, floats, and other fishing gear. The firm will be located in Iquique, Tarapaca.

The pilot of a light plane operating out of Iquique in late December last year reported sighting approximately 20 fishing vessels within "Chilean territorial waters." He identified the vessels as flying the flag of "a North American country which was not Canada or Mexico."

The reported sighting drew an editorial blast from an Iquique newspaper which characterized the "invasion" as a violation of international treaties.

United Nations technicians were scheduled to visit Tarapaca Province late in January, in connection with a study now being prepared on the development of the fishing industry in Chile.

Figures released in January 1963 indicate a considerable increase in landings at the port of Tocopilla for 1962 as compared to 1961. The reported landings for 1962 were 300,286 kilos (662,000 pounds) as compared to 241,058 kilos (531,000 pounds) in 1961. The increase is reportedly due to the increased use of purse seines by Tocopilla fishermen. (United States Consul, Antofagasta, February 1, 1963.)



Colombia

FOREIGN VESSELS FISHING OFF COASTS CAUSE CONCERN:

The controversy over the incursions of foreign (mostly United States) tuna vessels in Colombian waters was the subject of considerable comment in newspapers early in February 1962. Editorials, eye-witness accounts, and editorializing news stories resulted in the Foreign Ministry issuing a statement to clarify misstatements and erroneous conclusions in the newspapers as regards Colombia's international obligations in the field of territorial waters.

An editorial in one of the large Bogota newspapers on February 6, stated that Colombian fishing interests were going to petition the government on the need to preserve the fishing resources of the country from foreign incursions. It stated that "It is inconceivable--as paradoxically happens--that the extensive Colombian waters might be constantly visited by fishing boats of all nationalities in search of the undue appropriation of our riches."

The next day the same newspaper published the first of a two-part "eye-witness" account of the activities of United States tuna vessels off the Pacific coast, written by a retired Colombian Navy captain. It described in particular the activities of a United States vessel which was fishing off Buenaventura and stated that about 40 foreign flag vessels had been fishing in those waters during January, (part of the month of January, 1962). It called for the application of national sovereignty through improved policing measures by the Colombian Navy.

Another news story on February 8, commenting on the Navy captain's comments, quoted a manager of an Atlantic coast fishing cooperative as calling for greater naval vigilance. This source also said that even this would not be sufficient as it was necessary to pass fishing legislation declaring Colombia's autonomy to the 12-mile limit as in the rest of Latin American countries. He declared further that the Geneva Convention had agreed on a 7-mile limit, but only Colombia of the Latin American countries had accepted this solution.

In a letter dated February 11 the Foreign Ministry Secretary-General rebutted this testimony. He said that in the First United Nations Conference on Rights of Sea at Geneva in 1958, four conventions were signed: (1) On the Territorial Sea and Contiguous Zone; (2) On the High Seas; (3) On Fishing and Conservation of the Live Resources of the Sea; and (4) On the Continental Shelf. He wrote that in none of these, nor in any other international agreement or national legislation, was there established a 7-mile limit. In Article 24 of the Convention on the Territorial Sea and Contiguous Zone, he said, there was a disposition which stated that the breadth of the territorial sea and adjacent area together could not exceed 20 kilometers or 12 miles. However, he pointed out that neither this convention nor the one relating to the high sea had ever been presented by the Government to the Congress and consequently the cited norm has never been accepted in Colombia.

The Foreign Ministry's Secretary-General went on to state that the Conventions on Fishing and Live Resources of the Sea and on the Continental Shelf were approved by the Congress in 1961 (Laws 9 and 119) but neither of them contained anything concerning jurisdictional limits. He said that in the Geneva Conference there was never any real agreement on the extent of the territorial sea. He promised that the Foreign Ministry would soon publish the report of the Colombian delegation at the Conference which reviewed the incompatible positions of the various states at the Conference which was the reason that a two-thirds majority on norms for the territorial sea was never attained and therefore never adopted. On the other hand, he added, Colombian legislation in effect (Law 14 of 1923 and Law 57 of 1931 in the Customs Code) relates directly to the exploitation of underwater hydrocarbon deposits and the vigilance of fishing within a jurisdiction of 12 miles or 20 kilometers. (United States Embassy, Bogota, February 15, 1963.)



Cuba

JAPAN DELIVERS FISHING VESSELS:

Three of five modern fishing vessels built in Japan for the Cuban Government arrived in Havana early in 1963, according to reports. The vessels were scheduled to begin fishing off the Brazilian coast with Japanese and Cuban crews. Delivery of the other two vessels was expected in Havana in March 1963.

uba (Contd.):

A Japanese source said that each vessel displaces about 400 tons and carries a crew of 16.

Note: See Commercial Fisheries Review, August 1962 p. 73.



Denmark

FISH FILLETS AND BLOCKS AND FISHERY INDUSTRIAL PRODUCTS EXPORTS, 1962:

Denmark's exports of fresh and frozen fillets and blocks in the year 1962 were 19.7 percent greater than in 1961, mainly because of an increase of 97.1 percent in exports of herring fillets. Exports of flounder and sole fillets increased 8.6 percent, but exports of cod and related species declined 4.6 percent. During 1962 exports to the United States of fresh and frozen fillets and blocks of about 11.1 million pounds (mostly cod and related species) were up from the exports of about 10.5 million pounds in 1961.

Denmark's exports of fresh and frozen fish fillets and blocks during December 1962 were 20.1 percent above exports in the same month in 1961. Of the total exports, about 15,000 pounds (mostly cod and related species) were shipped to the United States in December 1962 as against 14,000 pounds in the same month in 1961. The leading buyer of frozen fillets in December 1962 was West Germany with 48.2 percent of the total, followed by the United Kingdom with 15.3 percent.

Denmark's Exports of Fresh and Frozen Fish Fillets and Blocks and Fishery Industrial Products, 1962 1/2

Product	December		Jan.-Dec.	
	1962	1961	1962	1961
.....(1,000 Lbs.).....				
Fillets and Blocks:				
Cod and related species	1,362	1,491	28,658	30,027
Flounder and sole	1,679	1,493	28,255	26,008
Herring	3,213	2,246	27,511	13,959
Other	85	49	678	1,130
Total	6,339	5,279	85,102	71,124
..... (Short Tons)				
Industrial Products:				
Fish meal, fish solubles, and similar products . .	4,123	1,940	69,623	49,733
Shipments from the Faroe Islands and Greenland direct to foreign countries not included.				

Denmark's exports of fish meal, fish solubles, and similar products in 1962 were 40.0 percent greater than in 1961. Exports to the United States were 110 tons in 1962 as against 28 tons in 1961.

During December 1962, Denmark's exports of fish meal, fish solubles, and similar products were 112.5 percent above the amount shipped out in the same month of 1961. The principal buyers were West Germany and the United Kingdom.

FISHERY LANDINGS AND EXPORTS INCREASE IN 1962:

In 1962, Denmark's record fishery landings of 775,000 metric tons with an ex-ves-

sel value of 460 million kroner (US\$66.6 million) were up 23 percent in quantity and 11 percent in value from the previous year in spite of a two percent decline in the number of Danish fishermen. The increase was due mainly to heavier landings of industrial fish as a result of the improved world fish meal market. A study of fishing profits in 23 Danish ports showed a 5.3 percent return in 1961 on investment in fishing vessels.

Denmark's total exports of fishery products in 1962 reached a record level of 320,000 tons valued at 585 million kroner (\$84.8 million), up 18 percent in quantity and 21 percent in value from the previous year.

In 1962, Danish exports of fishery products to the United States were 4 percent greater than in 1961. There was an increase in shipments to the United States of frozen lobsters (up 42 percent), as well as frozen cod fillets, canned herring, and canned brisling (all up about 10 percent). But shipments of frozen pond trout to the United States dropped 20 percent in 1962 mainly because of better markets in Europe.

In Greenland in 1962 the cod catch was 23,000 tons (up 2 percent from 1961); shrimp landings were 3,300 tons (up 32 percent); and the salmon catch was 250 tons (up 150 percent).

Faroese trawlers landed a record 35,000 tons of salted fish in 1962. Exports of iced, salted, dried, and frozen fish from the Faroe Islands in 1962 were valued at 113 million kroner (\$16.4 million), up 21 percent from 1961. (United States Embassy, Copenhagen, January 30, 1963.)

Note: 6,902 Danish kroner equal US\$1.00.

FISHERIES FOR 1962 REVIEWED BY INDUSTRY LEADER:

Accomplishments of the Danish fishing industry in 1962 and prospects for the future were reviewed at the annual meeting of Denmark's Fisheries Council in mid-January this year. The Council is made up of the eleven major fisheries associations who have joined together to promote and protect the interests of the fishing industry.

The new chairman of the Council (Director of a cooperative which produces and exports a large volume of fishery products to the Continent and the United States), review-

Denmark (Contd.):

ed Denmark's 1962 record production (about 1,708 million pounds valued at about US\$84.8 million) of fish and found that conditions were not as favorable as the statistics suggested. There had been labor shortages both on shore and at sea. Stormy weather had caused heavy losses, and average prices for the more important species, such as plaice, had declined slightly and were not counterbalanced by the increased prices for salmon, eels, lobster, etc. Fortunately, fish meal prices recovered and stimulated fishing for industrial species which lessened competition in the food fish fishery. However, he warned that a balance must be maintained between those fisheries if the Danish fishing industry is to continue to expand.

He was surprised that the fishermen's organizations could not reach agreement on a minimum price regulation for plaice which seems so advantageous to them. He believed it would be welcomed in the export industry if held to the original proposal of about 7 U. S. cents a pound. He believed further, that many of the difficulties hindering effective cooperation in the industry arose from the number of associations involved. The current 12 associations could be curtailed to 2--one to represent fishermen, and one to represent processors and marketing interests.

His criticism of the Government-sponsored Fisheries Commission (established in June 1961 to chart a future course for the Danish fishing industry) was directed mainly at the delayed results of its work. He believed its conclusions might not be wholly satisfactory because the more than 30 industry members could not spend the time required by the numerous committee meetings. Concentration on only a few of the questions might have been more profitable.

The Council's chairman suggested the Commission consider the establishment of a research institute devoted to the study of techniques of preparing, processing, packaging, transporting, and marketing Danish fishery products, possibly through expanding the present technological research laboratory in Copenhagen.

Speaking immediately prior to the breakdown of the European Economic Community and United Kingdom negotiations, he mentioned the general agreement within the fish-

ing industry that Denmark should join the Common Market as soon as possible after the United Kingdom was accepted. Some concern was expressed, however, over maintaining necessary markets in the East Bloc countries especially East Germany, for herring and cod fillets valued at about US\$3 million annually in the latter country alone. Demands of the Common Market would require mergers into larger exporting units and a significant increase in the size of the producing segment of the Danish industry.

Effective market promotion by a joint effort of the Government and the industry was viewed as of the greatest importance in the selling of Danish fishery products, although a satisfactory method for industry contributions had not been found. Although the fishing industry had representation on numerous bodies, he regretted that, despite its standing as the third largest exporting industry, it had not yet been possible to place a representative on the Economic Council.

The Danish Fisheries Minister explained to the meeting the proposed changes in the law governing the Fisheries Bank. These include an increase in capital, loans to the Greenland fishing industry, and an expanded advisory group. He regretted the loss of 43 fishermen, mostly in vessel sinkings in 1962, and hoped that the discussions under way with respect to a Nordic rescue service in the North Sea would minimize future losses. He favored the establishment of a fisheries institute for research in production, marketing, packaging, etc. Criticism of the lack of recommendations from the Fisheries Commission was not justified. Some of the work of the eight subcommittees was hampered because of the uncertainty surrounding the establishment of a joint European fisheries policy. (Regional Fisheries Attache for Europe, U. S. Embassy, Copenhagen, February 6, 1963.)

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FISHERY PRODUCTS MARKETING IN SOME EUROPEAN COUNTRIES REVIEWED:

The Danish Fisheries Attache with headquarters in Bern, Switzerland, and responsibilities for that country as well as France, Belgium, Luxembourg, Italy, Czechoslovakia, and Austria reported that Denmark's exports of fishery products to those countries had increased in value from US\$11 million to over \$17 million in the last four years. He stressed the need for market promotion, for quality,

Denmark (Contd.):

and for product identification with Denmark in order to take the fullest advantage of Denmark's reputation as a quality producer. He reported some confusion by housewives over the illustrations on packaged raw-breaded fishery products. And he suggested again that the industry look into the culture of muskels for export to France rather than sending them to Holland where they are cultured and reexported to France.

He reported that the important question in France is whether it will attempt to produce frozen fillets and itself stimulate their sales in competition with countries already established as frozen fillet producers. Alternatively, France might well concentrate on fresh fillets and leave the frozen fillet market to present producers and to an increased production in its North American island possession, St. Pierre.

His report stated that Danish exports to Italy increased 35 percent in four years. But there are credit problems which indicate the need for a credit information system.

In Belgium, he reports, there are numerous self-service stores and supermarkets but considerable market promotion will be required to reach the large potential market because frozen fish is not yet widely used.

In Austria, according to Denmark's Fisheries Attache, the demand for first-class fish is limited but may increase with greater purchasing power. (Regional Fisheries Attache for Europe, U. S. Embassy, Copenhagen, February 6, 1963.)

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AUCTION OF GREENLAND SEAL SKINS:

The Danish Royal Greenland Trade Department held an auction of Greenland seal skins in Copenhagen on March 6, 1963. At the auction, 13,147 Greenland ringed seal skins, 132 bladdernosed seal skins, 1,386 harp seal skins, and 24 saddle seal skins, were offered for sale. (United States Embassy, Copenhagen, February 20, 1963.)

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NEW FROZEN FISH PRODUCT TO BE MARKETED:

A new fishery product--skinless and boneless plaice--has been developed by a large

Danish filleting and freezing firm in Fredericia, Denmark. The breaded and frozen product has the same appearance as fresh headless plaice. It may be cooked without thawing and served in the same manner as plaice with skin and bones. It was expected to appear on the Danish market in February 1963. Substantial orders for the new product have been received from the United Kingdom and the Continent.

A production of 60,000 boneless and skinless plaice per day is planned on a new processing line when the cold weather moderates and supplies of raw material become adequate. A patent has been applied for on the process. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, January 23, 1963.)

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SOVIET INTERFERENCE WITH FISHING OPERATIONS REPORTED:

In the last year or two the Danish Fisheries Ministry has had 4 or 5 cases of Soviet interference with Danish fishing operations reported to it. All occurred in the Danish salmon fishery in the Eastern Baltic Sea. Since it is difficult to prove responsibility for interference or damage, the evidence was deemed adequate, in only two cases, to present to the Danish Foreign Office for referral to the Soviets. In each of those instances, the Danish fishermen had secured the registered number of the vessels they believed were responsible. In the first case, the Soviets replied that it had no fishing vessel with such a number, which apparently has settled the issue. There has not yet been a report on the second case.

The Fisheries Ministry has stressed the very great difficulty in proving when and how gear was lost and by whom the loss was caused. In the Baltic Sea, for example, it is difficult to distinguish between Soviet, Polish, and East German trawlers.

Danish salmon cutters occasionally are apprehended for fishing in Soviet territorial waters.

Local newspapers reported, in the latter half of 1962, complaints by fishing vessels from Skagen, fishing port at the northern tip of Denmark, that Soviet trawlers discarded worn out pieces of fishing gear in the Kattegat. In several instances, the gear fouled the screws of Danish fishing craft. These com-

Denmark (Contd.):

plaints were not brought to the attention of the Fisheries Ministry for action.

On January 26, 1963, an Esbjerg cutter captain reported to the Esbjerg daily paper that on January 8, while fishing in the Eastern Baltic Sea off the Estonian coast, his cutter lost half its gear--a long-line carrying 900 hooks and 12 lighted buoys used to mark the location of the long line. At the same time a Danish cutter from Bornholm, a Danish island just south of Sweden, lost a long line carrying 600 hooks and 10 lighted buoys. The two cutters had set their gear over a stretch of 25 miles about 16 nautical miles off the coast. When the gear was hauled, the loss of hooks, line and buoys was noted and, later, Soviet trawlers were observed near the remainder of the long line. On board the trawlers, which fish for cod and brisling, buoys similar to those lost were observed. One trawler tossed two of the buoys overboard from which the batteries, lamps, and wiring had been removed. Photographs of the trawlers and their registered numbers were obtained.

The Esbjerg cutter captain planned to report his loss to the Fisheries Ministry in the hope that he may secure permission to enter Soviet ports to seek the lost gear. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, February 8, 1963.)



Faroe Islands

TUNA FISHERY IN CARIBBEAN AND OFF WEST AFRICA PLANNED:

Faroeese fishing interests are planning to use the vessels with which they now catch herring shark (*Lamna cornubica*) to fish for tuna during the off-season for shark. Beginning in January, February, and March 1964, after completing the herring shark season in the Northwest Atlantic off the North American coast, five freezer vessels (4 Faroeese and Norwegian and 1 Danish) will travel south along the United States coast to fish for tuna in the Caribbean. Later they will cross the South Atlantic to seek tuna off West Africa. The freezerships will be equipped with long lines and also with purse seines and power blocks. They hope to fish for tuna 3-6 months in order to keep the vessels operating profitably the entire year.

One 300-ton Faroese freezer vessel is now being built to take part in the combined fishery.

In 1961 Faroese freezerships fished intensively off Newfoundland, catching herring shark valued at US\$362,500 as compared with only \$43,500 in 1960. Most of the frozen shark was exported to Italy.

An official of the firm planning the new venture states that the freezer vessels are well equipped for handling tuna but he was uncertain where the catches might be delivered. While the Faroese have not caught tuna heretofore they have had experience with longlines and are very good fishermen. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, February 6, 1963.)



Finland

IMPORT LICENSE REQUIREMENTS REMOVED FOR SOME FISHERY PRODUCTS:

Finland has lifted import license requirements from 343 tariff items, according to a report early in 1963 from the United States Embassy in Helsinki. The freed items include certain fish, certain preserved and canned fish, and specified animal oils. Most products entering Finland from the United States are now free of import licensing requirements.

In a related move, the Finnish Government increased remaining import quotas so that in 1963 importers of goods still subject to global quotas may spend up to 20 percent more for their purchases abroad. Most United States products still subject to controls may enter Finland under global quotas. (International Commerce, U. S. Department of Commerce, January 28, 1963.)



German Federal Republic

IMPORTS OF MARINE OILS, 1960-62:

During 1962, West Germany imported 64,816 metric tons of fish oil (exclusive of fish liver oils) or about 2.3 percent more than the 63,379 tons imported in 1961. In 1960, imports amounted to 65,098 tons. Imports of whale and sperm oil (59,044 tons) in

German Federal Republic (Contd.):

1962 declined 11.7 percent from the 66,905 tons imported in 1961, and were down 25.8 percent from the 79,610 tons imported in 1960.

The over-all imports of oil bearing materials (soybeans, cottonseed, copra etc.) increased sharply in 1962 as compared with fats and oils as such. Imports of 568,131 tons of fats and oils in 1962 were down 11.5 percent from the 641,690 tons imported in 1960. Over the same period imports of oil-bearing materials rose from 1,520,486 tons in 1960 to 1,646,275 tons in 1962, an increase of 8.3 percent. (Foreign Agriculture, March 4, 1963.)

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NEW STERN-TRAWLER:

The new stern-trawler factoryship Fritz Homan, which began fishing in late 1962, is one of the most modern vessels in West Germany's fishing fleet. It was built in a Bremerhaven shipyard by prefabricated methods of construction. The principal dimensions of the 1,319-ton all-welded vessel are: length over-all 76.5 meters (250.9 feet); length between perpendiculars 67.8 meters (222.4 feet); breadth 11.0 meters (36.1 feet); draft 7.3 meters (23.9 feet). The main engine is an 8-cylinder 2,100 horsepower Diesel which gave a speed of 16.2 knots during trials. Fuel oil bunkers have a capacity of 290 metric tons and fresh-water tanks hold a total of 106 tons.

The Fritz Homan can freeze 12 tons of fish a day in its two vertical plate freezers. Frozen fish blocks are held at -30° C. (-22° F.). The vessel has 598 cubic meters (about 21 1/2 cubic yards) of fish-holding space, of which all or part can be used for frozen storage. It also has storage space for 70 tons of fish meal and 21 tons of liver oil and fish oil. The vessel's fish reduction plant has a daily capacity of 20 tons of raw material.

The latest fish filleting and heading machines were installed on the Fritz Homan. An interesting feature of the machines is that they can be converted to herring processing. European fishery firms are trying to increase the quantity and improve the quality of herring landings. Several of the

large German stern-trawlers have been fishing for herring recently with apparent success.

The deck layout is similar to that of other stern-trawlers built by the Bremerhaven firm. The trawl winch has a capacity on each drum of 1,200 fathoms. A full range of radio, navigational, and fish finding equipment was installed. The vessel carries two radar sets.

Accommodations are provided for a crew of 50. Ship's officers and engineers have single-berth cabins amidships, while the rest of the crew are quartered in forward cabins. (The Fishing News, December 28, 1962.)

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NEW TYPE FISHING VESSEL DESIGNED FOR "LUGGER" FISHERY:

A new type fishing vessel was designed by a Bremerhaven fishing company in conjunction with a local shipyard for the purpose of increasing the efficiency of the "lugger" or medium-size vessel fishery. The fishing company is thinking of building 6 of these vessels.

The vessel is designed for stern trawling, pelagic pair trawling, purse seining, and for fishing with gill nets. The cost of the new vessel is estimated at about DM 2.6 million (US\$650,000), including fishing gear, but without a purse seine net.

The vessel will be 450 gross tons and about half the size of the stern factory-trawlers built during recent years by trawler companies for fishing on distant fishing grounds, and will accommodate a crew of 22. It will be powered by a 1,200 hp. Diesel engine to give the vessel a speed of about 12 knots. The operating range will be about 8,000 nautical miles. The vessel will be equipped with a variable pitch propeller to increase its maneuverability. It will carry vertical and horizontal electronic fish-finders as well as a fish spotter which can be attached to the head rope of the trawl to permit adjustments of the depth of the net during mid-water trawling. The working space on the starboard side of the vessel will later permit the installation of fish-processing machinery, if so desired.

The construction of the new vessels is part of a program aimed at increasing the

German Federal Republic (Contd.):

efficiency of the German "lugger" fishery. As a rule German "luggers" catch herring in the North Sea with gill nets from about June through December. For the remainder



Lugger-type trawler, engaged principally in fishing for North Sea herring, docked at Hamburg.

of the year the "luggers" are laid up in their home ports. In recent years, the German "lugger" fishery has endeavored to improve its profits by equipping "luggers" for trawling during the off season for herring. It has become evident, however, that the fishery requires a new type vessel, about twice as large as a conventional "lugger" which can fish faster, employ new fishing techniques, and operate in medium-distant fishing grounds (around Iceland) which cannot be reached by conventional "luggers." (United States Consulate, Bremen, February 1, 1963.)



Greece

OUTBOARD MOTORS HELP
GREEK FISHERMEN:

Ten outboard motors manufactured in the United States were delivered by CARE to small fishing cooperatives in the villages of Psarades and Sayades in northern Greece.

The motors are being used to mechanize primitive but sturdy craft which were formerly hand-rowed. Mechanization has eased the hard life of the Greek fishermen who, when they worked their boats with oars, toiled almost 18 hours daily and spent weeks away from home. Using the motors, the fishermen can reach fishing grounds in one-fifth the time it would take to row.

The fishermen were trained in motor handling as well as simple maintenance and repair of the motors. More advanced maintenance instruction will be given one representative from each cooperative that received a motor. (*Fishing News*, December 28, 1962.)

Note: See *Commercial Fisheries Review*, December 1962 p. 70.

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SPONGE LANDINGS, 1962:

Greek sponge landings in 1962 totaled 68.4 metric tons valued at 30.4 million drachmas (US\$1.0 million), as compared with landings in 1961 of 56.5 tons valued at 27.6 million drachmas (\$0.9 million). A total of 56 sponge fishing vessels operated in 1962, while 62 vessels worked the sponge beds in the previous year. The widespread use of echo sounders helped fewer vessels land a larger catch in 1962. In addition, new sponge bearing fields were discovered in international waters, while beds in Greek waters continued to yield a good sponge crop. (*Alieia*, January 1963.)

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FISHERY LANDINGS, 1962:

Greek fishery landings in 1962 were down 4.3 percent in quantity but up 5.0 percent in value from those in the previous year. An increase in the catch in the Atlantic and Mediterranean areas was offset by a decline in the catch from other fishing areas. But the average value of the Atlantic and Mediterra-

Table 1 - Value of Greek Fishery Landings, 1961-1962

Fishing Area	Average Value of Greek Fishery Landings by Fishing Areas			
	1962		1961	
	Drachmas/Kilogram	U.S. Cents/Pound	Drachmas/Kilogram	U.S. Cents/Pound
Atlantic	10.0	15.1	10.2	15.4
Mediterranean	7.5	11.3	9.2	13.9
Middle and near water (trawlers and purse-seiners)	1/ 9.0	13.6	7.3	11.0
Inshore	14.0	21.2	12.5	18.9
Lagoons and lakes	16.0	24.2	15.0	22.7
	Value of Total Greek Fishery Landings			
	Million Drachmas	Million US\$	Million Drachmas	Million US\$
Total landings	869.0	29.0	828.0	27.6
1/Estimated				

Note: 30 Greek drachmas equal US\$1.00.

Greece (Contd.):

Table 2 - Greek Fishery Landings by Fishing Areas, 1961-1962

Fishing Area	1962	1961
	.. (Metric Tons) ..	
Atlantic	17,000	14,500
Mediterranean	10,000	8,500
Coastal and near water		
(trawlers and purse seiners)	48,000	53,000
Offshore	8,000	10,000
Bays and lakes	5,000	6,000
Total landings	88,000	92,000

...ean catch declined, while there was a substantial increase in the average value of the catch from other areas. (Alieia, a Greek fishery periodical, January 1963.)

Note: See Commercial Fisheries Review, August 1963 p. 62.



Iceland

EXPORTS OF FISHERY PRODUCTS, JANUARY-OCTOBER 1962:

During January-October 1962, there was a considerable increase in exports of frozen herring, frozen fish fillets, salted herring, herring oil, herring meal, and frozen whale meat as compared with the same period in 1961, according to the Statistical Bureau of

Icelandic Fishery Exports, January-October 1962 with Comparisons

Product	Jan.-Oct. 1962			Jan.-Oct. 1961		
	Qty.	Value f.o.b.		Qty.	Value f.o.b.	
		Metric Tons	1,000 Kr.		US\$ 1,000	Metric Tons
Salted fish, dried	2,353	47,045	1,091	3,970	75,991	1,869
Salted fish, uncured	25,190	304,649	7,068	27,532	278,011	6,839
Salmon, salted	997	11,446	266	1,290	11,937	294
Salmon fish	8,293	215,573	5,001	8,769	209,861	5,163
Herring on ice	4,899	17,144	398	3,756	9,641	237
Herring fish on ice	31,825	114,863	2,665	24,982	122,880	3,023
Herring, frozen	17,167	94,117	2,184	10,628	49,227	1,211
Herring frozen fish, whole	2,303	28,956	672	1,869	21,404	527
Herring fish fillets	43,425	760,420	17,642	34,057	531,075	13,064
Crab and lobster, frozen	355	36,315	843	399	31,372	772
Crab, frozen	693	13,204	306	540	7,355	181
Salted fish	280	14,841	344	191	12,185	300
Herring-liver oil	4,437	34,072	790	4,824	39,609	974
Herring roes, salted	421	6,411	149	486	8,237	203
Herring roes for food, salted	2,746	37,936	880	2,475	24,960	614
Herring for bait, salted	1,387	8,678	201	1,348	8,131	200
Herring, salted	36,376	335,887	7,793	22,538	205,677	5,060
Herring oil	40,056	177,180	4,111	13,770	77,981	1,918
Herring perch oil	15	59	1	460	2,572	63
Whale oil	1,687	13,660	317	917	6,452	159
Whale meal	19,516	122,314	2,838	26,820	107,666	2,649
Herring meal	39,251	256,554	5,952	24,479	124,323	3,058
Herring perch meal	252	1,440	33	3,581	16,170	398
Crab roes of fish, frozen	6,442	16,867	391	11,004	19,915	490
Herring meal	305	2,029	47	315	1,822	45
Herring and shrimp meal	198	786	18	318	755	19
Whale meal	502	2,713	63	1,342	4,955	122
Whale meat, frozen	2,408	18,167	421	1,547	11,127	274

Iceland's Statistical Bulletin, November 1962. Exports of fish meal, ocean perch meal, frozen fish waste, lobster and shrimp meal, whale meal, and dried salted fish decreased in the first ten months of 1962.

Note: Iceland's exports of fishery products, as shown in Commercial Fisheries Review, Jan. 1963 p. 92, cover January-September 1962 instead of January-October 1962.

FISHERIES TRENDS, EARLY FEBRUARY 1963:

New Center for Fish Processing: An area in the Reykjavik inner harbor will be the site for a new fish-processing center. Several fishing companies have been granted building lots in the area and seven more are reported to be on a waiting list. The construction of two new plants at the center has already begun. The only previous processing plant at the location was a herring reduction plant which has been virtually inoperative since its erection 13 years ago. The new location will be favorable for various types of fish processing, since fish can be hauled from unloading vessels to the plants in three minutes.

New Method of Smoking Salmon: According to Icelandic newspapers, a French specialist visited Iceland in early 1963 to teach a method of smoking salmon more lightly to personnel of an experimental plant of the Federation of Cooperatives. The lighter type of curing, which is popular in Europe and England, requires first quality fish. The product will be marketed in Iceland under a trade name. It will be boneless without fins, but with the skin on, and vacuum packed. In the near future the experimental plant will start marketing other smoked products such as haddock, kippers, trout, and lumpfish. (United States Embassy, Reykjavik, February 8, 1963.)

Note: See Commercial Fisheries Review, March 1963 p. 67.

FROZEN FISH PRODUCTION, 1962:

In 1962, a record quantity of about 82,000 metric tons of fish was frozen in Iceland, up 5.6 percent from the 77,619 tons produced in 1961. The increase was due to greater freezings of herring from the excellent catch off the southwest coast. Frozen herring production amounted to 25,500 tons in 1962, as compared with only 3,733 tons in 1960. Groundfish freezings in 1962 totaled 45,500 tons. Iceland had about 90 freezing plants operating in 1962 with improved equipment which increased their capacity.

Most of Iceland's frozen fish production is exported through the Icelandic Freezing Plants Corporation. Icelandic frozen fish is also exported by a new firm which began operating in 1962, and the Fisheries Department of the Federation of Cooperatives. (United States Embassy, Reykjavik, February 15, 1963.)

Iceland (Contd.):

FISHERY LANDINGS BY PRINCIPAL SPECIES, JANUARY-SEPTEMBER 1962:

Species	January-September	
	1962	1961
	.. (Metric Tons) ..	
Cod	165,719	175,589
Haddock	28,964	27,086
Saithe	8,710	8,374
Ling	4,758	4,034
Wolffish (catfish)	11,554	11,338
Cusk	3,781	3,677
Ocean perch	15,134	23,464
Halibut	1,119	1,214
Herring	412,715	250,805
Shrimp	349	990
Lobster	2,315	1,488
Other	7,397	7,712
Total	662,515	515,771

Note: Except for herring which are landed round, all fish are drawn weight.

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UTILIZATION OF FISHERY LANDINGS, JANUARY-SEPTEMBER 1962:

How Utilized	January-September	
	1962	1961
	.. (Metric Tons) ..	
<u>Herring</u> ^{1/} for:		
Oil and meal	330,953	180,767
Freezing	18,194	10,730
Salting	55,515	55,075
Fresh on ice	7,718	4,119
Canning	336	114
<u>Groundfish</u> ^{2/} for:		
Fresh on ice landed abroad ..	16,540	19,994
Freezing and filleting	118,803	125,506
Salting	68,115	64,532
Stockfish (dried unsalted) ..	32,793	43,028
Home consumption	8,121	6,201
Oil and meal	2,764	3,227
<u>Shellfish</u> for:		
Freezing: Lobster	2,314	1,488
Shrimp	263	747
Canning (shrimp)	86	243
Total production	662,515	515,771
1/Whole fish.		
2/Drawn fish.		

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HERRING LANDINGS DECLINE AFTER MID-JANUARY:

Iceland's unfavorable weather conditions during the third week of January reduced herring landings, but total landings were far ahead of last year's record. As of January 19, total landings amounted to 110,772 metric tons as compared with 88,089 tons on the same date in 1962. Many vessels in mid-January were shifting to line fishing for groundfish. (U. S. Embassy, Reykjavik, January 25, 1963.)

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NEW PROTOCOL TO SOVIET TRADE AGREEMENT AFFECTS FISHERY EXPORTS:

The commodities covered by the new 1963-1965 Protocol to the Icelandic-Soviet Trade Agreement of August 1, 1953, were announced in January 1963. For the first time, Icelandic canned fishery products were included. But Icelandic shipments of frozen fillets to the U.S.S.R. will be reduced substantially by the new Protocol.

Under the new 3-year Protocol, Iceland will deliver annually to the U.S.S.R., 15,000 to 20,000 metric tons of frozen fillets, 12,000 tons of frozen herring, 14,000 to 15,000 tons of salted herring and Kr. 7 million (US\$162,564) of canned fishery products.

The Protocol for 1960-1962 called for Iceland to deliver annually to the U.S.S.R. 30,000 to 32,000 tons of frozen fillets, an unspecified quantity of frozen herring, and 12,000 tons of salted herring. (United States Embassy, Reykjavik, January 25, 1963.)

Notes: Iceland kronur 43.06 equals US\$1.

See Commercial Fisheries Review, July 1960, p. 50.



Ireland

SOVIET VESSEL CONVICTED OF VIOLATION OF TERRITORIAL WATERS:

On January 14, 1963, the Soviet fishing vessel Paltus was convicted in an Irish District Court of a violation of Ireland's territorial waters. The Soviet trawler was prosecuted under Sections 221 (unlawful entry) and 222 (violation after lawful entry) of the Fisheries (Consolidation) Act of 1959 and convicted only under Section 221 of the Act.

The conviction appears to have had no deterrent effect on Soviet intentions to expand fishing in the Irish Sea, for on January 22, a Soviet newspaper is reported to have announced plans to send more fishing vessels to "this promising area of the Atlantic." That official Soviet news agency remarked that the Irish Sea was the 10th fishing area in the Atlantic to be opened up by Latvian ships in the past two years.

The Soviets are not the only nationals showing an interest in the waters off the southeast coast where the herring have been running well. Polish, Dutch, Belgian, and

Ireland (Contd.):

French trawlers have been operating outside territorial waters since Christmas. On January 22, a French trawler was arrested on a charge of infringing Ireland's territorial limit.

Irish fishermen claim that foreign trawlers are catching a large proportion of the fish that would otherwise come further inshore into their own nets. Evidence that this may lead to renewed pressure on the Government to extend the fishing limit to 12 miles was provided by a question to this effect raised in the Dail (Lower House) on January 4, 1963. The Minister for External Affairs replied by regretting that no international agreement had been achieved since the failure of the Law of the Sea Conference in 1960, by assuring the inquiring deputy that "the Government have constantly in mind the question of extending fishing limits by international agreement rather than by unilateral action," and by adding "we are still in touch with a number of Governments with a view to securing a regional agreement as the prospect of securing a world wide agreement seems at present rather remote." (United States Embassy, Dublin, February 1, 1963.)



Israel

NEW DIESEL-ELECTRIC STERN-TRAWLER LAUNCHED:

The 1,500-ton stern-trawler Hiram I, built in Le Havre, France, at a cost of US\$1.5 million for Israeli and Swiss interests, was launched in November 1962. The vessel includes such modern features as Diesel-electric propulsion, blast freezing tunnels, radar equipment, and air conditioned cabins for the 45-man crew. The new vessel is powered by three French-built Diesel engines which generate electric power used to turn the propellers and operate the fishing gear. The Diesel-electric system makes it possible to moderate speeds smoothly, picking up either slowly or quickly to top speed of 15 knots. The engines can be controlled from three positions: the navigation bridge, located about two-thirds of the way forward; the fishing bridge, mounted amidships on the after part of the superstructure with an unobstructed view of fishing operations; and the engine room. The

ship is provided with the usual navigational and fish-finding equipment in addition to radar. The trawl can be operated at depths up to 200 fathoms. Semi-automatic steering is controlled by a British-made gyroscope.

During fishing operations, the trawl is hauled up a stern chute onto the main deck. The fish are dropped through a hydraulically-controlled hatch to the deck below, where they are sorted, cleaned, and prepared for freezing. Two blast freezing tunnels, with a daily capacity of 20 metric tons of fish, freeze the fish at -40° C. (-40° F.). The frozen fish are packed in plastic bags and moved to the fish hold one deck down, where they are stored at -20° C. (-4° F.). Total capacity of the fish hold is 350 tons.

Following a shakedown cruise to the Grand Banks off Newfoundland in February or March 1963, the Hiram I was to begin fishing off the northwest coast of Africa. The vessel's fish catch is expected to be consumed almost entirely in Israel. The Hiram I will be operated by a new fishing company created by the Israeli labor federation, Histadrut, which owns the vessel jointly with Swiss shipping interests. The vessel is reported to be the first of a series of Diesel-electric trawlers, some of which may be built in Israel. (United States Consulate, Le Havre, February 4, 1963.)



Italy

TWENTY-THIRD INTERNATIONAL FISHING FAIR:

The XXIII International Fishing Fair and the VIII Nautical Exposition are scheduled to be held June 22-August 7, 1963, in Ancona, Italy. Included in the exhibits will be fishing equipment and items connected with nautical sports.



Japan

EXPORTS OF FROZEN TUNA, CALENDAR YEARS 1961 and 1962:

Frozen tuna exports to the United States in 1962 increased 24 percent in quantity and 45 percent in value, as compared with 1961. Marked increases occurred also in frozen tuna exports to Europe--up 17 percent in

Japan (Contd.):

Japanese Exports of Frozen Tuna, Calendar Years 1961 and 1962				
Country of Destination	1962		1961	
	Quantity	Value	Quantity	Value
	Tons	US\$ 1,000	Tons	US\$ 1,000
United States and Canada:				
Direct shipments	71,600	26,666	57,386	19,117
Transshipments	38,598	12,370	31,454	7,849
Total (Short Tons f.o.b.)	110,198	39,036	88,840	26,966
Italy	33,417	10,817	26,276	7,308
Yugoslavia	7,731	2,874	9,454	2,901
France	3,415	1,394	-	-
Ghana	834	170	92	17
Tunisia	480	165	606	180
Australia	160	21	-	-
Czechoslovakia	433	162	1,776	463
Spain	50	18	690	158
Cuba	330	83	300	87
Libya	575	190	395	110
Others	-	-	290	77
Total (Metric Tons c.i.f.)	47,425	15,894	39,879	11,301

Source: Suisan Tsushin, February 12, 1963.)

quantity and 40 percent in value. (Suisan Tsushin, February 12, 1963.)

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EXPORT QUOTAS FOR FROZEN TUNA, FISCAL YEAR 1963:

The Tuna Committee of the Japan Frozen Foods Exporters Association met on February 5, 1963, for the third time, and considered quotas of frozen tuna for export to the United States (includes Canada) and Europe (mostly Europe, but includes shipments to North Africa and a few other areas) in the 1963 fiscal year (April 1963-March 1964).

The April 1963-March 1964 frozen tuna export quotas are: (1) to the United States and Canada, 110,000 short tons (unchanged from 1962 fiscal year); (2) to the European area, 70,000 metric tons; and (3) frozen tuna loins, 6,000 short tons (mostly to the United States).

The shipments of frozen tuna (exclusive of tuna loins) under the quotas for the Japanese 1963 fiscal year will be made in three periods--April-September, October-January, and February-March. Members of the Association will be required to turn over to the Association 30 percent of their allotments. This amount becomes a "free quota." Any frozen tuna export quota unused at the end of a period shall become part of the free quota for the following period. The free quota can be used in any of the three periods

within the fiscal year by exporters who have exhausted their allotment without limitation as to quantity.

The method of allocating the exports of tuna loins was not decided at the Association's February 5 meeting. (Japanese newspaper, February 7, 1963.)

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NEW BASES FOR ATLANTIC OCEAN TUNA FISHERY UNDER CONSIDERATION:

With the increasing number of Japanese tuna vessels operating in the Atlantic Ocean, the tuna fishing bases in West Africa are crowded. Japanese tuna vessels operating in the Atlantic number about 120 per year, including 73 vessels belonging to the Prefectural Skipjack Tuna Fishermen's Association and 19 vessels from other fisheries cooperatives. The fishing bases in Africa including Las Palmas, Dakar, Freetown, Abidjan, Accra, Tema, and Lagos are playing an important role as transshipping points for direct exports of tuna to Europe and the United States.

The increasing number of vessels using those bases are making local facilities inadequate and tuna vessels are looking for new overseas bases. According to information received by a large Japanese fishing company recently, Sao Vincente Island of the Cape Verde Islands (Portugal) is beginning to attract the attention of tuna vessel owners.

The following is the report received from the Azuma Maru No. 16 (439 tons):

The Cape Verde Islands comprise nine islands of a volcanic group around 16°52' N. lat., 25° W. long. in the Atlantic off the south west coast of Africa, one of which is Sao Vincente Island and its deep harbor of Port Grande. The first Japanese tuna vessel to stop at this port was the Shinyo Maru, followed by the Azuma Maru No. 16, Azuma Maru No. 23, and the carrier Banshu Maru No. 2.

Port Grande is surrounded by mountains in three directions, opening in the west. Quays are used for customs purposes, taking on oil, and for fish landings. Two more docks are under construction, 400 meters (437.4 yards) and 150 meters (164.0 yards) in length, plus 3 cranes will be ready in a few months. Longshoremen are not experienced, but are capable of landing 6.4 tons of frozen tuna in an hour.

Japan (Contd.):

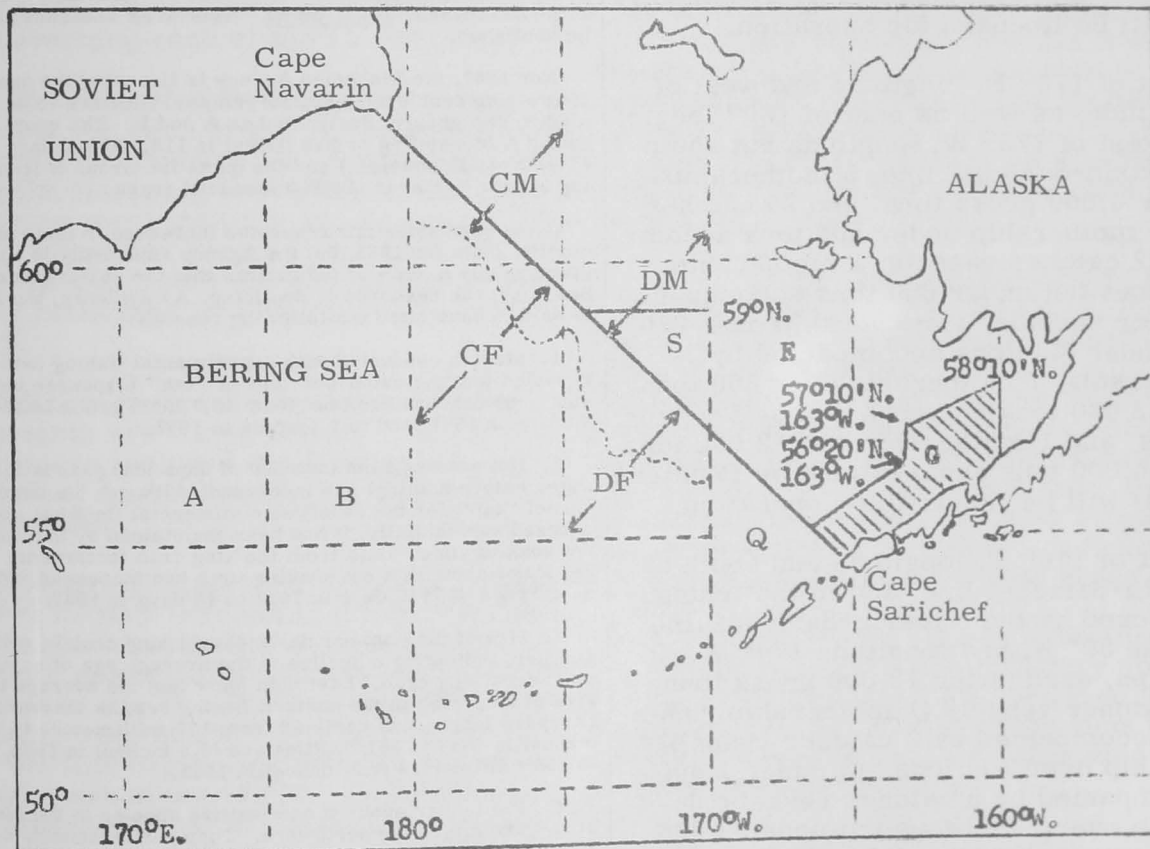
A local fishery company owns 2 of the 45-ton, 3 of the 35-ton, and 4 of the 125-ton vessel classes plus 1 of the 150-ton class equipped with radio telephone and capable of fishing for skipjack tuna with hook and line, long lines, and purse seine. A cold storage plant has a capacity of 6,000 tons and can maintain temperature of -20° to 25° C. (-4° to 13° F.) Ice-making capacity is 3 tons a day which is expected to be increased to an 80-ton capacity in a year or two. A packing plant will be completed in two months.

The advantages of Port Grande as a base are: (1) simplicity of quarantine and customs clearance, (2) labor is cheap, (3) tariffs are low, (4) suitable for anchoring, (5) it takes only four days to reach fishing grounds

and is located within short range of a seasonal fishery for yellowfin and big-eyed tuna, and (6) overtime is available. Among the defects are: (1) prices of commodities are high including water and provisions, and (2) there are only a few repair shops available. (Japanese newspaper, February 1, 1963.)

BERING SEA BOTTOMFISHING AREAS SET FOR 1963:

A total of 19 motherships (includes 2 winter fleets), accompanied by 252 catcher vessels and 8 portable catcher vessels, will be permitted to conduct bottomfishing in the Bering Sea in 1963, the Japanese Government announced on February 26, 1963. This represents a substantial reduction in fleet size compared to 1962.



Based on the area division, fishing areas shall be assigned as follows:

A. Mothership-type bottom trawl fishery:

- (1) Fish meal factoryship - Areas CM, IM, and E.
- (2) Fish-meal-oil factoryship - Areas CF, DF, and Q.
- (3) Freezer factoryship - Areas A, B, CF, DF, Q, and S.
- (4) Closed to trawling - Area G.

B. Mothership-type long-line and gill-net fisheries. Mothership fleets operating long lines and gill-nets are authorized to operate in Areas A, B, and CF.

Japan (Contd.):

The 1963 Bering Sea area license regulations are:

1. Between 180° longitude and 170° W. longitude at depths of less than 150 meters (492 feet) and the area east of 170° W. longitude and north of the line extending from Cape Navarin to Cape Sarichef, Unimak Island (hereafter referred to as the Navarin-Sarichef line), 2 motherships and 47 catcher vessels (1 mothership under 10,000 gross tons accompanied by 17 catcher vessels, and another mothership of 10,000-12,000 gross tons accompanied by 30 catcher vessels) will be licensed for operation.

2. East of 180° longitude and south of the Navarin-Sarichef line, one mothership under 12,000 gross tons accompanied by 27 catcher vessels will be licensed for operation.

3. East of 170° E. longitude and west of 180° longitude, as well as east of 180° longitude and west of 175° W. longitude but south of the Navarin-Sarichef line, 5 motherships, each under 4,000 gross tons, and 24 catcher vessels (1 mothership under 500 tons accompanied by 2 catcher vessels, 1 mothership over 500 tons but under 650 tons accompanied by 2 catcher vessels, 1 mothership over 650 tons but under 800 tons accompanied by 3 catcher vessels, 1 mothership over 800 tons but under 2,000 tons accompanied by 5 catcher vessels, and 1 mothership over 2,000 tons but under 4,000 tons accompanied by 12 catcher vessels) will be licensed for operation.

4. East of 170° E. longitude and south of the Navarin-Sarichef line, and in the triangular area bound by the Navarin-Sarichef line and latitude 59° N. and longitude 170° W., 9 motherships, each under 12,000 gross tons, and 135 catcher vessels (1 mothership under 700 tons accompanied by 2 catcher vessels, 1 mothership over 700 tons but under 1,500 tons accompanied by 5 catcher vessels, 1 mothership over 1,500 tons but under 2,500 tons accompanied by 12 catcher vessels, 1 mothership over 2,500 tons but under 3,500 tons accompanied by 9 catcher vessels, 1 mothership over 3,500 tons but under 4,500 tons accompanied by 14 catcher vessels, 1 mothership over 4,500 tons but under 6,000 tons accompanied by 18 catcher vessels, 1 mothership over 6,000 tons but under 9,000 tons accompanied by 28 catcher vessels, 1 mothership over 9,000 tons but under 11,000 tons accompanied by 21 catcher vessels and

carrying 6 small portable fishing vessels, and 1 mothership over 11,000 tons but under 12,000 tons accompanied by 26 catcher vessels and carrying 2 portable vessels) will be licensed for operation. (Suisan Keizai Shimbun, February 27, 1963.)

Note: See Commercial Fisheries Review, June 1962 p. 56.

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BERING SEA KING CRAB REGULATIONS FOR 1963 ANNOUNCED:

The Japanese Fisheries Agency announced on January 21, 1963, king-crab fishing regulations for the Bering Sea. According to this announcement, the Agency will permit the packing of canned king crab by those companies which were previously licensed to pack frozen king crab only. Instead of the split two-season system (spring and fall), there will be only one fishing season extending from April to November 30.

In previous years, king crab freezer vessels operating in the eastern Bering Sea in the fall were not permitted to operate in the area fished in spring and summer by the canned crab factoryship Tokei Maru. This area restriction will be abolished.

For 1963, the Fisheries Agency is licensing the operation of two king crab canning factoryships. They are to be operated by two groups, designated as A and B. The quota for Group A (consisting of five firms) is 115,000 standard cases (6-1/2-oz. 48 cans/cs.) and the quota for Group B (consisting of four firms) is 120,000 standard cases.

Some companies had requested increases in their production quota for 1963, but the Agency reportedly is not granting any in view of indications that the eastern Bering Sea king crab resource is declining. As evidence, the Agency is said to have cited the following reasons:

1. Studies conducted with experimental fishing nets have revealed that the catch-per-unit of "tan" (Japanese unit of king crab net) has declined from 13.7 male crabs in 1960 to 7 crabs in 1961, and to 4.1 crabs in 1962.

2. Net soaking time (number of days that gear is left in water before hauling) has increased. Although the catch-per-unit of "tan" for the Japanese commercial fleet has not changed substantially, it has been maintained by increasing net soaking time. Data from the king crab factoryship Tokei Maru show that net soaking time has increased from an average of 7-10 days in 1957 to 18 days in 1962.

3. Size of the commercially-caught king crab is getting smaller, indicating a decline in the average age of commercial-sized king crab. Past data show that the average body size of king crab in the eastern Bering Sea, as measured by carapace length, has declined from 170 millimeters (6.7 inches) in 1953 to 161 millimeters (6.3 inches) in 1959, and to 158 millimeters (6.2 inches) in 1962.

4. The tanner crab--a competitive species to the king crab--are migrating northward. They can be considered as having invaded the habitat of the king crab, as the king crab declined in abundance.

5. King crab attain commercial size after eight years. Thus, high catches can be maintained for a number of years even in cases when stocks are overfished, for high catches do not immediately affect recruitment. However, if the brood stock continues to decline in abundance and this effect is manifested in recruitment, then the resources will decline rapidly and will take a very long while to recover.

The Japanese fishing companies are reported to have requested that the fishing season be advanced 15 days, to commence from March 15, and it appears that the agency will act favorably on this request.

Japan (Contd.):

The fishing companies in Group A are reported to be planning on dispatching the factoryship *Dainichi Maru*, while those in B are expected to utilize the factoryship *Kei Maru*. (Suisan Keizai Shimbun, January 22 and Suisan Tsushin, January 22, 1963.)

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FISHERIES AND LICENSING
POLICIES DESIGNATED
BY CENTRAL FISHERIES
COORDINATION COMMISSION:

The Japanese Government's Central Fisheries Coordination Commission (which serves an advisory capacity to the Minister of Agriculture and Forestry on such matters as licensing and fishing regulations) approved on January 16, 1963, the draft of the ordinance relating to designation of the Japanese fisheries into 18 categories and the licensing policy governing each of the 18 fisheries.

The 18 designated fisheries and vessel requirements for each of the 18 fisheries were made public on January 16. Regulations concerning the licensing policy for each of the 18 fisheries were publicly announced on February 1, when they became effective. Press reports indicated that the regulations were severely criticized by different segments of industry.

The 18 designated fisheries and vessel requirements are listed below. The term Pacific Ocean includes the Bering Sea, Chukotsk Sea, Japan Sea, Yellow Sea, and East China Sea.

1. Offshore Bottom Trawl Fishery: Bottom trawl fishery (excluding the bottomfish fisheries specified in Items 5 and 17) conducted with powered fishing vessels over 15 tons gross in the Pacific Ocean north of 25° latitude, west of 153° E. longitude, and east of the line beginning from the Korean mainland south along 128°30' E. longitude until it intersects 34° N. latitude, and connecting the points 34° N. latitude-128°30' E. longitude; 33°09'15" N. latitude-128° E. longitude; 33°09'15" N. latitude-128° E. longitude; and 33°09'15" N. latitude-128°30' E. longitude, and extending south along longitude 128°30' E. south of latitude 33°09'15" N.

2. East China Sea Bottom Trawl Fishery: Bottom trawl fishery (excluding the bottomfish fishery specified in Item 5) conducted with powered fishing vessels over 15 tons

gross in the Pacific Ocean north of 25° N. latitude and west of the line described in Item 1.

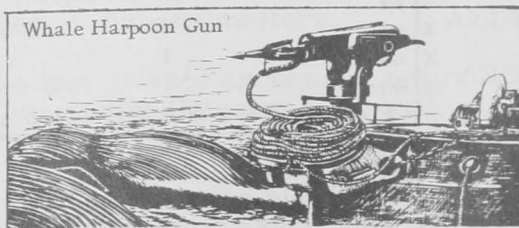
3. Distant-water Trawl Fishery: Bottom trawl fishery (excluding the bottomfish fishery specified in Items 5 and 17) conducted with powered fishing vessels over 15 tons gross in the Pacific Ocean, but not including the area north of 25° N. latitude and west of 153° E. longitude.

4. Northern Water Long-line and Gill-net Fishery: Long-line and gill-net fisheries (excluding those fisheries specified in Item 5 and Items 11-17) conducted with powered fishing vessels in the Pacific Ocean north of 50° N. latitude and east of 170° E. longitude.

5. Mothership-type Bottomfish Fishery: Bottom trawl, long-line, and gill-net fishing operations (excluding those fisheries specified in Items 12, 13, 16, and 17) conducted by mothership fleets. A mothership is a vessel equipped with production, refrigeration, and processing facilities, and is accompanied by a fleet of catcher vessels, as specified in Paragraph 1, Article 52 of the Japanese Fishery Law.

6-7. Large- and Medium-Class Surrounding Net Fishery: Surrounding net fishery conducted with powered fishing vessels over 40 tons gross. However, in the area south of the line running due east from the point midway between Cape Esan in southeast Hokkaido and Cape Shiriya in Aomori Prefecture and east of the line running due south from the lighthouse at Cape Nojima in Chiba Prefecture, the surrounding net fishery conducted with powered vessels over 15 tons gross.

8. Large Whale Fishery: Whaling operations (excluding the whale fishery specified in Item 10) conducted with powered fishing vessels equipped with harpoon guns for harvesting whalebone whales (excluding Minke's whale) and sperm whales.



9. Small Whale Fishery: Whaling operations (excluding the whale fishery specified in Item 10) conducted with powered fishing

Japan (Contd.):

vessels equipped with harpoon guns for harvesting Minke's whale or toothed whales (excluding sperm whales).

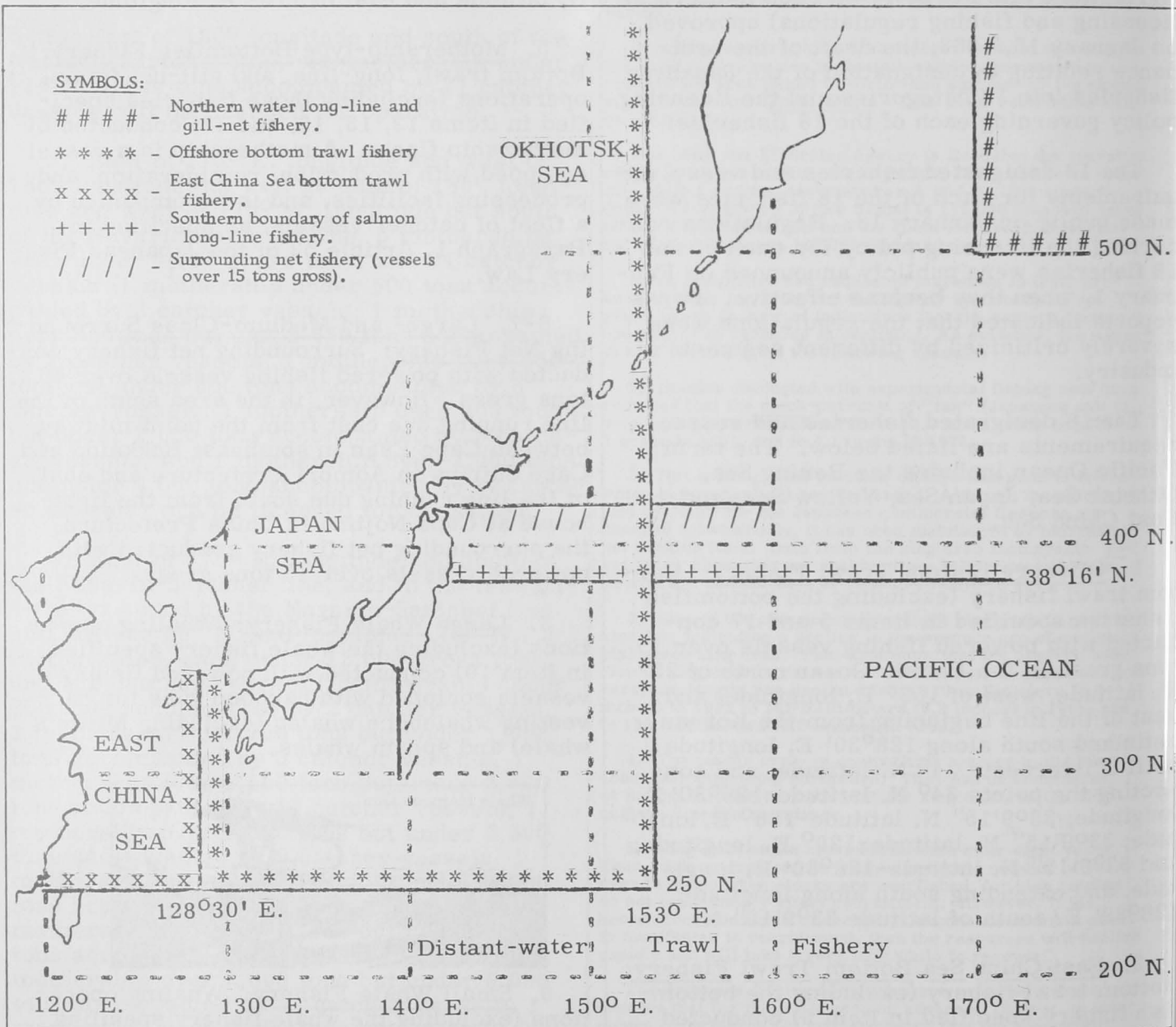
10. Mothership-type Whale Fishery: Mothership-type whaling operations in which harpoon guns are used to harvest whales.

11. Distant-water Tuna Fishery: Long-line and pole-and-line fisheries (excluding the fisheries specified in Items 12 and 13) conducted with powered fishing vessels (over 40 tons gross) for harvesting tuna, spearfish and shark. (Tuna vessels in the 40-99 ton range were formerly classified as medium-

class tuna vessels and those over 100 tons as distant-water vessels.)

12. Portable-vessel-carrying Mothership-type Tuna Fishery: Mothership-type fishery conducted with powered portable catcher vessels for harvesting tuna, spearfish, and shark with long-line or pole-and-line gear. (Portable catcher vessels are normally carried by the mothership except during actual fishing operations.)

13. Regular Mothership-type Tuna Fishery: Mothership-type fishery conducted with catcher vessels (other than portable catcher vessels) for harvesting tuna, spearfish, and shark with long-line or pole-and-line gear.



Areas of operations of certain Japanese fisheries.

pan (Contd.):

14. Medium-class Drift Gill-net Salmon Fishery: Drift gill-net salmon fishery (excluding mothership-type fishery specified in item 16) conducted with powered fishing vessels over 30 tons gross.

15. Medium-class Long-line Salmon Fishery: Long-line salmon fishery (excluding mothership-type salmon fishery specified in item 16) conducted in the Pacific Ocean north of 38°16' N. latitude (excluding Japan Sea) with powered fishing vessels over 10 tons gross.

16. Mothership-type Salmon Fishery: Mothership-type fishery connected with the taking of salmon.

17. Mothership-type Crab Fishery: Mothership-type fishery connected with the taking of king crab and Abura crab.

18. Shellfish Fishery: Fishery conducted with powered fishing vessels over 20 tons gross for harvesting certain designated species of shellfish with diving equipment.

Vessel requirements for the designated fisheries listed above are as follows:

1. Northern Water Long-line and Gill-net Fishery: Vessel must be over 100 tons gross.

2. Mothership-type Bottomfish Fishery: Motherships must have refrigeration equipment. Catcher vessels must be over 50 tons gross.

3. Large Whale Fishery: Catcher vessels must be over 100 tons gross and equipped with direction finder.

4. Mothership-type Whale Fishery: Motherships must be over 10,000 tons gross and equipped with whale processing and whale-manufacturing facilities, as well as with direction finder, loran, and radar. Catcher vessels must be over 300 tons gross and equipped with radar and direction finder.

5. Portable-vessel-carrying Mothership-type Tuna Fishery: Motherships must have refrigeration equipment. Portable fishing vessels must be under 20 tons gross.

6. Regular Mothership-type Tuna Fishery: Motherships must be over 3,000 tons gross and have refrigeration equipment.

7. Medium-size Salmon Drift Gill-net Fishery: Vessels must be equipped with direction finder, and with either wireless or radiophone.

8. Medium-size Salmon Long-line Fishery: Vessels must be equipped with direction finder and with either wireless or radiophone.

9. Mothership-type Salmon Fishery: Motherships must be over 5,000 tons gross and equipped with refrigeration and canning facilities, direction finder, loran, and radar. Catcher vessels must be over 50 tons gross and equipped with direction finder and with either wireless or radiophone.

10. Mothership-type Crab Fishery: Motherships must be over 2,000 tons gross and equipped with automatic counter, canning equipment, direction finder, loran, and radar. Catcher vessels must be over 50 tons gross and equipped with direction finder and with either wireless or radiophone. (Nihon Suisan Shimbum, January 18 and February 2, 1963; and other sources.)

* * * * *

INDUSTRY MISSION SEEKS FISHERY AGREEMENT WITH COMMUNIST CHINA:

A 5-man fishing mission led by the president of one of the largest Japanese fishing companies (also chairman of the Japan-Communist China Fishery Council), returned to Tokyo, February 2, this year, after a 3-week visit in Communist China. At an airport press conference the Mission's leader predicted that a private Japan-Communist China fishery agreement would be signed next fall.

While in Peiping, the Mission signed a memorandum with the Communist Chinese in which the parties confirmed the possibility of concluding private agreements between Japan and Communist China on fishing problems, the desirability of meeting again before the end of the year to discuss fishery problems in the Yellow and East China Seas, and their intention to carry out technical exchanges on fishery matters.

The last private agreement between Japan and Communist China was entered into in 1955 and was renewed annually until 1958 when it expired as a result of the breakdown in Japan-Communist China trade relations. The 1955 agreement established six fishing zones off the Chinese mainland, limited the entry into those zones of Communist Chinese and Japanese fishing vessels, and provided for emergency ports of call.

Japan (Contd.):

Although the memorandum is little more than a statement of intentions, it has significance in that it represents the establishment of one more in the growing number of contacts between the Japanese and Communist Chinese. (United States Embassy, Tokyo, February 21, 1963.)

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MIDWATER TRAWLING FOR SHRIMP SHOWS PROMISE:

Excellent results have been reported from a new midwater trawl fishery for shrimp. Large quantities of shrimp are now caught in the East China, Yellow, and Bering Seas, and the North Pacific by both pair trawlers and side trawlers. These vessels tow large polyethylene knotless nets which have a headline spread of up to 200 feet (250 feet at the footrope) for the pair trawlers, and up to 160 feet headline spread for an 850 hp., side trawler. Each pair trawler has an engine of about 350 hp.

This new fishery, in which the shrimp are taken 10-15 fathoms from the bottom, has been developed entirely through the use of the highly sensitive 200 kilocycle echo sounder, which is very efficient up to depths of 100 fathoms. Over half the echo sounders sold in Japan during the past 12 months have been of this high frequency type, although some firms are offering sets which are adaptable from 200 to 50 kilocycles. Many of the vessels which are fishing for shrimp are fitted with a "Net-sonde" telemetering device attached to the mouth of the trawl.

The doors in use with the big four-seam nets are high curved boards which are claimed to offer less resistance. (World Fishing, January 1963.)

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NEW STERN-TRAWLER TRAINING SHIP:

The new Japanese training ship Oshoro Maru, built for Hokkaido University by an Osaka shipyard, has the features of a modern stern-trawler. The 1,150-ton vessel can also be used to train fishermen in drift-net and long-line fishing. In recent years, the Japanese have built a number of training ships in order to give their fishermen a sound background in the use of modern navigational and fishing equipment. The Oshoro

Maru has accommodations for 60 trainee-cadets and 9 fishery instructors, as well as a normal complement of 12 officers and 27 crewmen. The extra accommodations were provided by limiting the fish-holding space of the vessel to 46 cubic meters (60.1 cubic yards).

The main dimensions of the vessel are: length between perpendiculars 60.5 meters (198.4 feet); breadth 11.0 meters (36.1 feet); molded depth 5.4 meters (17.7 feet). It is powered by a Diesel engine of 2,000 h.p. at 260 r.p.m., giving a maximum speed of 14.5 knots and a cruising speed of 12.5 knots. Fuel-oil tanks have a capacity of 327 cubic meters (427.7 cubic yards). Fresh-water tanks have a capacity of 246 cubic meters (321.7 cubic yards). The fish hold is refrigerated by two 20 h.p. Freon units.

The vessel's oceanographic equipment includes three powerful sounding machines and a geomagnetic electro-kinetograph. (Fishing News, December 21, 1962.)

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ANTARCTIC WHALING FLEETS ATTAIN ONE-THIRD OF QUOTA:

During the 1962/63 whaling season the Japanese had seven fleets operating in the Antarctic. The 7 fleets, which are owned by 3 Japanese fishing companies, were allotted 6,111 blue-whale units (873 units for each firm) at the July 1962 meeting of the International Whaling Commission. A blue-whale unit equals 1 blue whale, or 2 fin whales or 2½ humpback whales, or 6 sei whales.

At the July 1962 International Whaling Commission meeting, a basic quota of 15,000 blue whale units was set as the allowable catch for the five Antarctic whaling nations. Originally, Japan was allocated 33 percent of the over-all quota, but the quota was increased to 41 percent upon the acquisition of 2 whaling fleets, one each from the United Kingdom and Norway. Calculated on this basis Japan's 1962/63 allotment of the over-all quota was 6,150 blue-whale units. It was agreed, however, that The Netherlands would receive, in addition to its 6 percent of the 15,000 units additional bonus units from the Japan, United Kingdom, and Norway quota. In order to meet this obligation Japan set a quota of 6,111 units for its Antarctic fleet.

From the beginning of the baleen whaling season on December 12, 1962, to January 21

Japan (Contd.):

1963, the Japanese fleet had captured 4,478 baleen whales (4,443 finbacks, 18 seis and 7 humpbacks). In terms of whale units the fleet had taken about 36 percent of its allocated quota of 6,111 units on January 26.

The fleet had taken 1,629 sperm whales prior to January 26 this year. The catch of this species is not restricted by the International Whaling Commission. (Fisheries Attaché, United States Embassy, Tokyo, February 1, 1963.)



Republic of Korea

MODERN FISHING VESSELS TO BE OBTAINED FROM ITALIAN-FRENCH GROUP:

On January 21, 1963, six Italian and two French businessmen signed a contract with the Government of the Republic of Korea to supply Korea with 159 modern fishing boats valued at approximately US\$58 million. The Italian group will provide about \$26 million equipment including marine motors and other machinery. The French firm will supply equipment valued at about \$32 million, including vessel hulls and fishing equipment. (United States Embassy, Seoul, January 26, 1963.)



Morocco

FISHERY PRODUCTS INCLUDED IN TRADE AGREEMENTS:

During 1962, the Government of Morocco concluded or extended bilateral trade agreements with a number of countries. Many of these agreements included provisions for trade in such fishery products as fish meal, canned sardines, fresh fish, frozen sardines, oysters, and other fishery products. Under the agreements, Morocco will export fishery products to 18 countries, and will import fishery products from 6 countries. (United States Embassy, Rabat, December 19, 1962.)



Netherlands

AGREEMENTS ON ANTARCTIC WHALING SUBMITTED TO PARLIAMENT:

On January 13, 1963, The Netherlands Government submitted the text of two whaling agreements to Parliament for ratification. These agreements, signed on June 6, 1962, provide for an allocation among the signatory countries of the maximum number of blue whale units to be caught by each in Antarctic waters. The Netherlands is allocated 6 percent of the total (15,000 blue whale units) and may under certain conditions be able to catch more. A public debate on these agreements in the Second Chamber has been requested by the Socialist Party.

The Netherlands Whaling Company has announced that the 1962/1963 season got off to a relatively good start, with whale oil production so far running considerably ahead of 1961-62. (United States Embassy, The Hague, January 26, 1963.)

TRAWLERS TO ENTER DISTANT-WATER FISHERIES:

Under a new project supported by the Netherlands Government, about 10 Dutch trawlers will soon be fishing off Iceland, the Lofoten Islands, and in the White Sea. The trawlers, which will fish for cod, whiting, haddock, and other fish in those areas, will receive a Government subsidy of one million guilders (US\$278,000) annually for the next three years.

The first Dutch trawler to take part in the project left early in February to fish off Iceland. One fishing firm in Ijmuiden is reportedly planning to purchase 6 large stern trawlers from Poland, which it intends to use off Iceland, in the Bering Sea, and possibly off Newfoundland.

The entire project is meeting opposition from Dutch fishermen, however. The three principal fishermen's unions have advised their members not to sign on trawlers sailing to those new areas. (U.S. Embassy, The Hague, February 9, 1963.)



New Hebrides

EXPORTS OF FROZEN FISH, 1958-1962, AND FISHERY TRENDS, EARLY 1963:

The New Hebrides in the South Pacific gained an important new export industry in 1958 when a fish freezing plant was established in Palekula near Santo. Since then, their exports of frozen fish (mainly tuna) have been: 1958--3,509 metric tons; 1959--3,710 tons; 1960--4,133 tons; 1961--3,675 tons; and 1962--4,289 tons. The value of their 1962 frozen fish exports was estimated at £470,000 (US\$1,316,000). The United States received about 84 percent of the total exports of frozen fish from the New Hebrides during 1958-1962, with most of the remainder going to Japan and France.

In 1963, an estimated 7,250 tons of frozen fish will be produced at the Palekula plant which is being expanded. In addition, the wooden wharf at the plant will be replaced with a concrete dock where 450-ton vessels can land. The plant is operated by a joint Japanese-United States-Australian company.

The base employs 40 Japanese and 75 local workers ashore. It is served by 11 Japanese long-liners manned by crews of 23 to 25 men. The vessels usually spend 25 days at sea. Their catch averages about 55 percent albacore, 15 percent yellowfin, and 5 percent bigeyed tuna. The remainder of the catch consists mostly of black marlin, swordfish, and sharks.

The Japanese vessels in the New Hebrides fish their long lines to a depth of 200 meters (656 feet). Baited hooks are set on each long line at intervals of 20 meters (65.6 feet). On the average, only 3½ percent of the baited hooks can be expected to take fish, according to an Australian investor in the Palekula base. He said that the efficiency of United States tuna vessels using purse seines and power blocks had reduced United States tuna prices and made it more difficult for his company to compete in the United States market.

The Government of the New Hebrides imposes a general 3 percent export tax on frozen fish, and an additional 3 percent levy on shipments to France as a charge for a certificate of origin. The New Hebrides authorities have waived the 17½ percent import duty on equipment brought in to operate the shore base at Palekula. Negotiations

were going on in early 1963 to reduce the import duty on long lines and other fishing gear used in the fishing operation. (United States Consulate, Suva, February 24, 1963.)

Note: See Commercial Fisheries Review, June 1960 p. 57.



New Zealand

FIRM CONSIDERS BUILDING FREEZE-DRYING PLANT FOR FISH:

An Invercargill, New Zealand, firm which owns what is claimed to be the only commercial size accelerated freeze-drying plant for meat in the Southern Hemisphere, is considering building a plant at Timaru to freeze-dry fish.

The plant's managing director claims to have made some highly successful experiments in the freeze-drying of minced fish, oysters, and crayfish. He also claimed that potential overseas markets exist for his products.

Plans by the New Zealand firm include the offering in 3 or 4 years, of an "Accelerated Freeze-Drying Plant" suitable for installation aboard vessels to process fish at sea. Such installations would enable vessels to land much larger catches without the need of refrigeration.

Accelerated freeze-drying of food (cooked or uncooked) is a method of freezing and then drying in a vacuum. The frozen moisture is converted directly to water vapor and evaporated as such, bypassing the liquid stage. It is claimed that this method of food preservation has the least adverse effect on flavor, texture, nutritive value, appearance, and color.

Shrimp have been preserved by freeze-drying in the United States for several years (Australian Newsletter, December 1962.)

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NEW FISH EXPORTING COMPANY PLANNED IN AUCKLAND:

A new fishing company working exclusively for the export market will be organized in Auckland, New Zealand, with a paid up capital of £125,000 (US\$350,000), according to plans announced in late 1962. The proposed new company hopes to have 4 large trawlers and 2 medium-sized vessels operating with-

New Zealand (Contd.):

2 years. Under the organization plan, the public will be offered 154,500 shares at 10s. (1.40) par in the new firm. The remaining 65,500 shares will be issued to shareholders in a frozen food distributing firm which will become a wholly-owned subsidiary.

The distributing firm that will become a subsidiary has shipped New Zealand fish by air to the Sydney Fish Market in Australia when prices have been attractive. The firm also ships sharks and shark livers to Australia and Malaya. In late 1962, the distributing firm acquired its own trawler, the 60-foot Southern Cross Stars. On its first trip under its new owner, the vessel returned with 100 sharks. (Fish Trades Review, Australia, December 1962.)

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SPINY LOBSTERS EXPORTED TO FRANCE:

In late 1962, a shipment of about 15 metric tons of frozen cooked spiny lobsters valued at over £5,000 (US\$14,000) was exported to France by three fishery companies in Dunedin, New Zealand, working in association with an Australian exporter. The shipment was aimed at expanding the market for New Zealand spiny lobsters to European countries, particularly France, Germany, and Switzerland.

Unlike the considerable quantity of New Zealand spiny lobsters exported to the United States in the form of raw frozen tails, the French shipment consisted of whole cooked spiny lobsters. They were cooked in boiling water for about 10 minutes and then cooled in cold water. After cooling, they were drained of surplus water and frozen in polyethylene bags. (Fishing News, December 21, 1962.)



Nicaragua

LICENSE AND TAX PROVISIONS OF FISHERIES LAW:

A basic law designed to regulate the fishing industry was promulgated by Nicaragua under Decree 346 effective March 6, 1961. The law pertains to all fishing in the marine, continental, and insular waters that cover the continental shelf and underwater zones belonging to Nicaragua; fishing in internation-

al waters by vessels of Nicaraguan registry and vessels operating under Nicaraguan license; and fishing in lakes, bays, and rivers that are public property.

Following are important license and tax provisions under the law:

Commercial fishing licenses are granted by the Nicaraguan Ministry of Economy for a period not exceeding 20 years, although they may be extended for another 10 years. Only those enterprises which have constructed or plan to construct onshore installations in Nicaraguan territory will be considered for licenses. A plant must be of sufficient size and capacity to produce fishery products for the export market. This qualification will be determined by the Minister of Economy. If a plant is not constructed, the license will be canceled. Floating processing plants are prohibited from operating in Nicaraguan waters, but enterprises that produce exclusively for the Nicaraguan market are exempt from this provision of the law.

Requests for fishing licenses must contain detailed information on plans and plant capacity, amount and value of materials and machinery needed in construction, size and type of building to be used for the plant and related housing, method of financing, and vessels and fishing equipment to be used.

Prior to applying for a commercial fishing license, the requesting organization must make a deposit to the order of the Nicaraguan Treasury in the Banco Central de Nicaragua ranging from US\$500 to \$1,000. The amount of the deposit will be determined in each case by the Director General of Natural Resources. In addition, guarantee compliance with the obligations set forth in the license provided under the Natural Resource Law, a bond ranging from \$1,000 to \$10,000, will be required. The amount of the bond will depend on the importance and value of the enterprise to be licensed.

Fishing enterprises are taxed on the basis of the fishing capacity of the vessels belonging to the enterprise. Vessels up to 16 feet long and 4 feet wide are taxed \$10 annually. Larger vessels pay an additional annual fee of \$1 for each foot of length over 16 feet. Fishing enterprises are also subject to a Nicaraguan profits tax.

Holders of commercial fishing licenses are exempt from the payment of import duties and consular fees on all materials imported

Nicaragua (Contd.):

by them for fishing or for the improvement of their business. But each exemption must be requested individually from the Nicaraguan Customs office. Holders of commercial licenses are subject only to those taxes enumerated in the law. ("Investment in Nicaragua," Overseas Business Reports, December 1962, Bureau of International Commerce, U. S. Department of Commerce.)

Note: See Commercial Fisheries Review, June 1961 p. 76.



Norway

FISHERIES TRENDS, JANUARY 1963:

Whaling: In the first 32 days of the 1962/1963 whaling season, Norway's 4 Antarctic whaling expeditions processed a total of 76,800 barrels of oil, including 47,600 barrels of whale oil and 29,200 barrels of sperm oil. A year ago, Norway operated 7 Antarctic whaling fleets, which produced

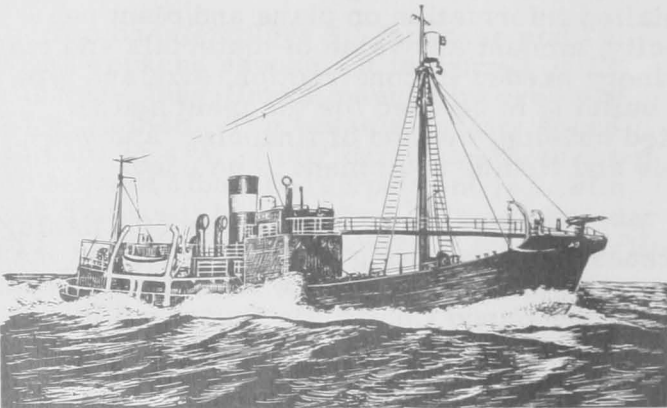


Fig. 1 - Type of catcher boat used by Norwegians during Antarctic whaling expedition.

114,875 barrels of oil, including 91,490 barrels of whale oil and 23,385 barrels of sperm oil, in the first 33 days of the 1961/1962 Antarctic season. Only four factoryships are active this pelagic whaling season as compared with seven in the 1961/62 season. Norway's quota of 32 percent of the total international quota of 15,000 blue whale units was reduced to 28 percent with the sale of the factoryship Kosmos III to Japan.

Lofoten Cod Fishery: The temporary ban against purse-seining in this fishery of North Norway will be extended through 1963.

Fisheries Economic Study: Thirty European fisheries researchers participated in an international seminar on fisheries eco-



Fig. 2 - Sorting the catch--Lofoten cod fishery.

nomics, held January 28-February 22, 1963, in Bergen, Norway, under auspices of the Norwegian School of Economics and Business Administration. (News of Norway, February 7, 1963 and United States Embassy, Oslo, February 12, 1963.)

* * * * *

FISH-PROCESSING COMBINE
ESTABLISHES DISTRIBUTION BASE
IN THE NETHERLANDS:

A Norwegian combine of 160 fish-processing plants with its own fishing fleet has announced that it will establish a distribution center for frozen fish in Amsterdam, The Netherlands. This center, which will start operations in 1964, will supply all of the Norwegian sales organizations in Western Europe. The combine has similar distribution centers in the United States and Australia. (United States Embassy, The Hague, January 26, 1963.)

* * * * *

FIRST STERN-FISHING
FACTORY TRAWLER LAUNCHED:

Another step forward in the modernization of Norway's distant-water fishing fleet was taken when the Longva, the first stern-fishing factory trawler to be built in Norway, was handed over to her owners.

The 1,092 gross ton vessel is equipped to produce frozen fillets, animal food, salt cod and cod liver oil. She has the following main dimensions: length over-all 208 feet (175 feet between perpendiculars), breadth moulded 32 feet 10 inches, depth to main deck 16 feet 1 inch, and depth to shelterdeck 23 feet 8 inches. The vessel is smaller than the British and other vessels upon which she was modeled and her layout is extremely compact.

way (Contd.):

Everything seems to have been done to provide the largest possible storage capacity, with the result that the vessel will be able to land about 400 tons of frozen fishery products per trip.

One of the methods employed to obtain storage capacity has been the positioning of the engineroom at the extreme aft end of the ship. Increased crew accommodation space has been obtained by fitting a whale-back--an unusual feature on a stern trawler. The position of the engineroom has been a contributing factor to the layout of the bridge superstructure. Two extensions to the bridge close the forepart of the trawl deck and house the 2 lifeboats and engine exhausts.

The vessel's main and aft masts are a tripod and bipod respectively, giving the upper an uninterrupted view of the trawl deck from the bridge.

The main purpose of the vessel will be to produce frozen packaged fish. The owner proposes to produce animal food instead of fish meal, as there is a considerable saving in space in not installing a fish meal plant, while the resulting byproduct will meet with a stable market.

The factory deck procedure follows usual lines. After manual bleeding and cleaning, the fish are washed mechanically and passed through the two-line filleting machinery. This consists of 2 German made heading and filleting machines for fish of 50-120 centimeters (about 20-47 inches) in length and for fish of 40-70 centimeters (about 16-28 inches). These operate in conjunction with skinning machines at a rate of 18-22 and 35-40 fish per minute, respectively. The fish are then taken on conveyor belts to packing and weighing tables, and the packed cartons then placed on trays for freezing in either a horizontal contact freezer or an elevator-type cold air freezer.

The Longva is powered by a 300 r.p.m., 500 hp. Diesel engine coupled to a controllable pitch propeller. Three auxiliary engines drive three 180 k.v. auxiliaries. A hydraulic trawl winch is part of the deck equipment.

Navigational aids include an echo sounder and a fischlupe, plus a radio, two radars,

ASDIC, gyro, autopilot, and electronic log. (World Fishing, February 1963.)

LOFOTEN COD FISHERY ATTRACTS FEWER VESSELS IN EARLY 1963:

Only about 900 fishing vessels were on North Norway's Lofoten cod banks when the fishery opened early in 1963. A total of 2,836 vessels and 9,681 men took part in the fishery in 1962, according to a final report. In good seasons in the past, 30,000 men participated in the fishery. (News of Norway, February 14, 1963.)

PROPOSED INCREASE IN FISHING VESSEL CONDEMNATION SUBSIDY:

The Norwegian Government has proposed a supplementary appropriation of Kr. 5 million (\$700,000) to subsidize condemnation of outmoded fishing vessels. It has also proposed that the Fishermen's Bank be authorized to increase this year's condemnation subsidy grants by Kr. 2 million (\$280,000). This would raise to Kr. 7 million (\$980,000) the limit on those grants. (News of Norway, February 21, 1963.)

Note: Norwegian kroner 7.15 equals US\$1.00.



Pakistan

KARACHI FISH HARBOR AND MARKET:

The Karachi fish harbor and market was opened on October 2, 1959. Built by the Government of Pakistan at an estimated cost of Rs. 15 million (US\$3.1 million), it has become an important fisheries center which has speeded the growth of West Pakistan's fisheries. The United States provided equipment valued at Rs. 2.5 million (\$0.5 million) and technical assistance to help build the harbor.

Karachi harbor was developed by building a jetty (1,740 feet long) and dredging a channel and turning basin, so fishing vessels could land directly at the market. Formerly, fishermen had to unload their catch on the open beach and then carry it miles to market by camel or donkey cart.

Buildings housing the Karachi fish market were built on 50-foot piles. The market complex now includes a wholesale fresh and dried

Pakistan (Contd.):



Fig. 1 - Dried fish ready for auction in the Karachi fish market.

fish market, cold storage and ice-making facilities, curing sheds, a workshop and slipway, a marine fisheries laboratory, net working sheds, offices and stores for the fishermen's cooperative society, rest rooms, a seafood restaurant and fishermen's cafe. It also includes housing for the principal staff of the market who must begin work at 3 a.m.

A certain amount of space at the market was set aside for private industry. So far, six fishery firms have located at the market with processing equipment to freeze, can, and dry fish, as well as extract shark liver oil.

A Government sponsored fishermen's cooperative society is the agent for the wholesale distribution of fish at the market. Fish are actually sold by 24 auctioneers, known locally as "mole holders," who are licensed by the cooperative. A modest fee is charged for the service, half of which is paid to the

cooperative and half to the auctioneers. The auctioning system under the cooperative protects the fishermen from any squeeze on prices by middlemen and provides the cooperative with an income of Rs. one million (about \$0.2 million) a year, according to the Deputy Director of the Central Fisheries Department of Pakistan. Describing the disposition of



Fig. 2 - Fresh fish being auctioned in the Karachi market. The man with the document who is holding up his hand is one of the licensed auctioneers.

that income, he said, "Usually, some 5 to 15 percent is paid out by the society to the fishermen (about 1,600) all of whom are members of the cooperative. The rest of the money is used for the welfare of the fishermen, such as financing easy credit for the purchase of boats, engines, gear, and equipment; for building schools; bringing fresh water to the villages, looking after families in distress through death and injury; caring for the old and infirm; and providing scholarships for children."

In West Pakistan, fishery landings and exports, as well as fishermen's earnings have increased substantially since the market opened. A stable market for fish and easy credit terms have enabled some fishermen

Pakistan (Contd.):

to mechanize their vessels. In addition, new vessels are being built in boat yards on the open beach adjoining the new Karachi harbor. A Food and Agriculture Organization (FAO) representative reported that over 30 new

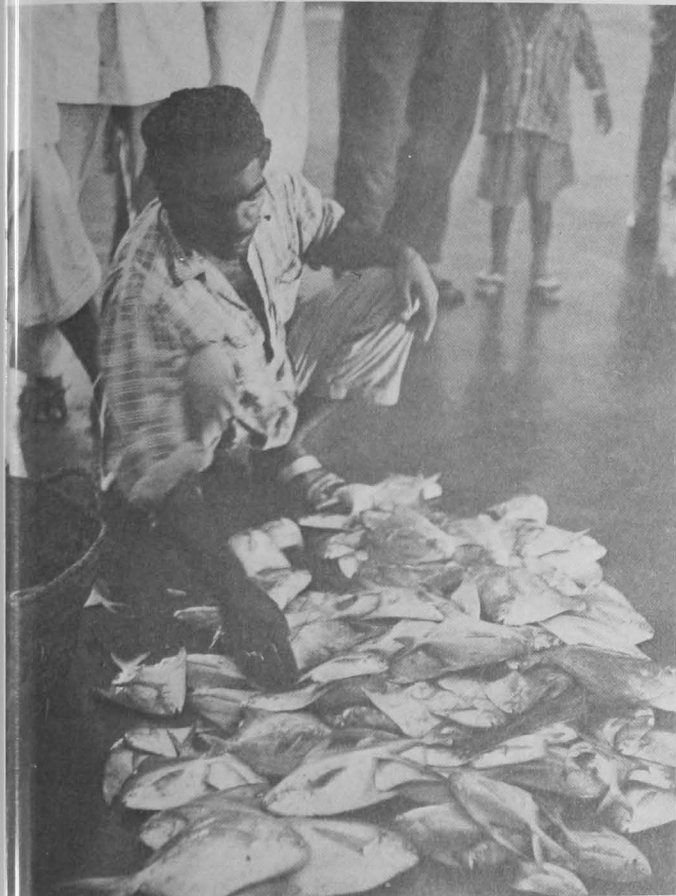


Fig. 3 - A Karachi fish buyer takes a closer look at the fish he has bid for successfully.



Fig. 4 - Shrimp sorting and handling at the Karachi market. Shrimp are a valuable part of Karachi's fishery landings.



Fig. 5 - Shrimp being processed in Karachi for freezing and packing for export.

mechanized fishing vessels 40 to 50 feet long, were being hand-constructed in those yards in early 1963. West Pakistan's fishing fleet of 5,000 vessels now includes 431 mechanized vessels. The Government has aided mechanization by exempting engines, fishing gear, and other equipment from certain taxes.

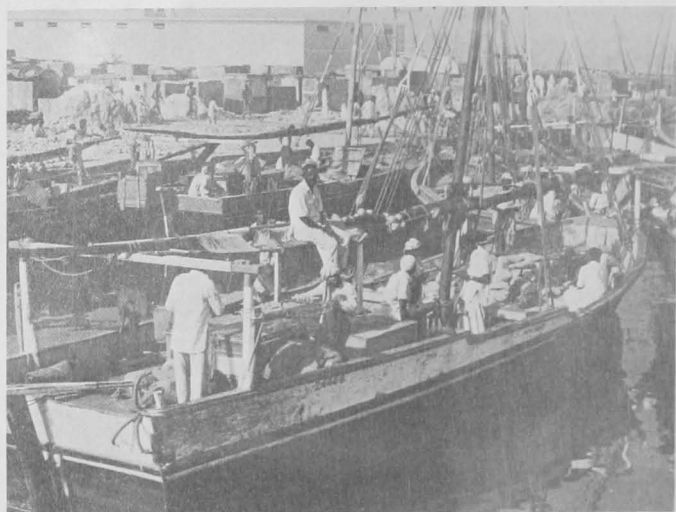


Fig. 6 - Mechanized fishing vessels alongside the landing dock of the Karachi market.

The Deputy Director of the Central Fisheries Department said, "Mechanization of the boats and the use of nylon nets and other improved gear has had a big impact. Under sail alone, boats would take perhaps 8 hours to reach the fishing grounds and 8 to return, leaving only a third of the 24 hours for fish-

Pakistan (Contd.):

ing. Powered boats do the voyage in an hour each way and can fish for 22 hours a day.



Fig. 7 - Sail-powered Pakistani fishing vessels in foreground.

"Nylon nets," he continued, "are not only finer, more easily handled, and last 4 to 5 years against the 6 months of the local cotton nets, but also catch more fish."

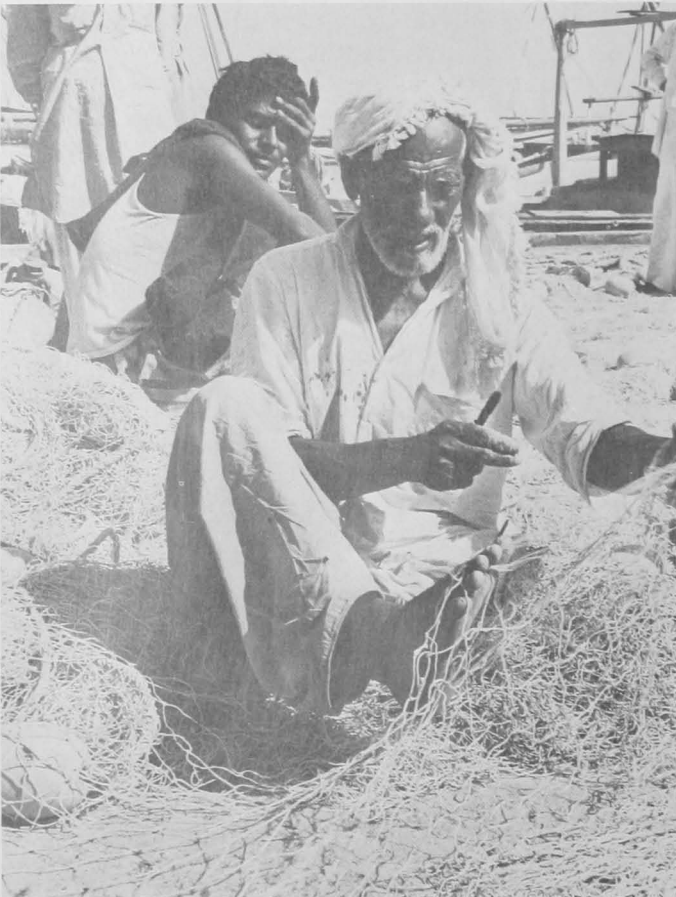


Fig. 8 - A veteran fishermen repairing his net.

But he pointed out that, although impressive progress has been made, there was still a lot of room for improvement. Less than 10 percent of West Pakistan's fishing fleet has been mechanized. Government plans to aid the fisheries include a project to bring roads and electric power to the Karachi boat building area. This would enable the builders to use power tools and machinery and cut their vessel construction time from 6 to 2 months.



Fig. 9 - Boat building in an open-beach yard near the Karachi market.

The Karachi boat yards hope to attract foreign orders. Their vessels are built of durable teak imported tax free from Burma. The cost of building a vessel in West Pakistan is one-half to one-third cheaper than in most countries. The Deputy Director said that FAO naval architects have carried out exhaustive tank tests on the vessel design used in Karachi and concluded that it cannot be improved.



Fig. 10 - A new fishing vessel ready for launching in Karachi. It will be pushed, hauled, and lifted to the sea by about 100 men.

Pakistan (Contd.):

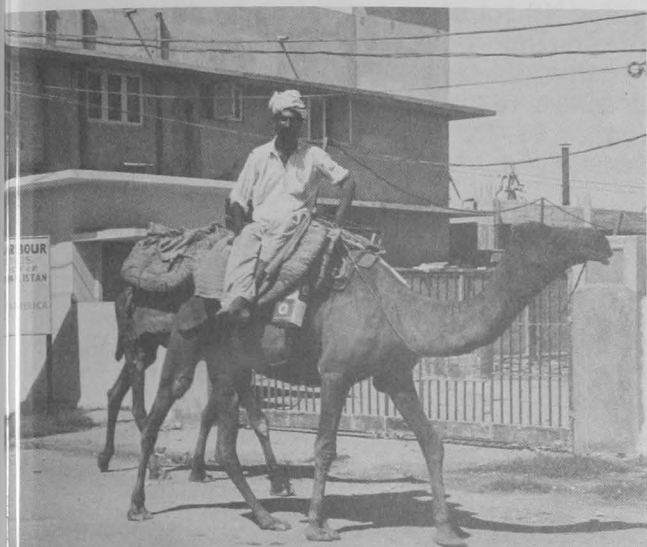


Fig. 11 - The old and the new in Karachi.

The Government also hopes to expand the domestic market for fish. At present, most of West Pakistan's fisheries catch is exported. Frozen shrimp and spiny lobster are shipped to the United States, canned shrimp is sold to the United Kingdom, and dried fish is marketed in India and Ceylon.

The Deputy Director said, "The main drawback to developing the domestic market has been the lack of distribution facilities. If we can organize quick distribution of fresh fish, I think we can develop the market, but to do this needs a well organized 'eat-more-fish' campaign, using all modern methods of education and persuasion. We're planning such a campaign for the future which will include a special drive to persuade children to eat more fish, and will demonstrate the tastiness of fish through the use of fleets of mobile fish fryers." (Features Section, Food and Agriculture Organization of the United Nations, February 10, 1963.)

- Notes: (1) Pakistan rupee 4.782 equals US\$1.00.
- (2) See Commercial Fisheries Review, January 1960 p. 82.

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NEW FIRM PLANS TO PACK AND EXPORT FROZEN FISHERY PRODUCTS:

A firm in Karachi interested in exporting frozen fishery products was going ahead with plans about the end of 1962, to install the latest quick-freezing and processing machinery. The firm will have the capacity to pack and freeze 3,600 metric tons of shrimp or 800 tons of fish fillets a year, and is reported to have made an agreement with a

leading United States importer of fishery products assuring the sale of its entire output. The Karachi firm expects to earn about US\$5.6 million in foreign exchange annually. It has an authorized capital of about \$1.1 million, with shares offered for public subscription. It has received the necessary licenses from the Government of Pakistan to import needed equipment. (Foreign Trade, Ottawa, December 1, 1962.)



Panama

SPINY LOBSTER EXPLORATORY FISHING PROJECT:

M/V "Pelican" Cruise 8 (December 6-20, 1962): A one-year exploratory survey for spiny lobsters along the Caribbean and Pacific coasts of Panama was started on August 27, 1962, when the M/V Pelican, a chartered commercial fishing vessel, arrived in Colon, Panama. The survey is being conducted by the U. S. Bureau of Commercial Fisheries through an interagency agreement with the U. S. Agency for International Development (AID) Mission to Panama as an Alliance for Progress program.



M/V Pelican, commercial fishing vessel under charter to U. S. Bureau of Commercial Fisheries for exploratory work off Panama.

The Pelican, which has been outfitted with specialized equipment for exploratory spiny lobster fishing, is a 72-foot steel hull shrimp vessel capable of 21 days of continuous operation, with accommodations for a 10-man crew and staff. A 17-foot outboard-powered skiff is available for shoal-water work.

During cruise 8, exploratory lobster fishing was extended along the southeastern Pacific coast of Panama and 97 trap stations were completed. A total of 568 traps was

Panama (Contd.):

fished for intervals of 1, 2, and 3 days, for a final fishing effort of 1,049 trap days. The highest catch rates were obtained in and near Santelmo Bay, Del Rey Island, where a 2-day 77-trap set during the dark-moon period yielded 33 spiny lobsters (Panulirus gracilis). During the full-moon period, a 3-day set of 69 traps yielded only 24 spiny lobsters. Spiny lobsters caught in the Del Rey Island area averaged 20 ounces in whole weight. The sex ratio was 1.3 male to 1.0 female.

Other areas fished during the cruise were San Jose Island, San Miguel Gulf, and Pinas Bay. Only one lobster was caught in an 84-trap set at San Jose Island. Thirty-six traps set in San Miguel Gulf produced no lobsters. Strong current conditions in that area complicated fishing trials. The Pinas Bay area produced 15 spiny lobsters in a 140-trap set.

The commercial lobster traps used during the cruise were made of wood slats, wire, and woven reed. The over-all catch rate (in number of lobsters per trap per day) of wood slat traps was twice as high as that for reed traps, and three times greater than the catch rate of wire traps.

Seven bottom trawling stations were sampled with a 40-foot shrimp trawl. Two drags near the trapping area at Del Rey Island caught 15 rock lobsters (China lobsters, Family Scyllaridae), but no spiny lobsters. The other drags were made in the Pinas Bay area and caught no spiny lobsters.

M/V "Pelican" Cruise 9 (January 21 to February 9, 1963): Explorations along the Caribbean coast of Panama were attempted during the first week of cruise 9, but severe sea conditions interfered with fishing operations. The Pelican crossed the Panama Canal on January 30, and Pacific explorations were continued in the Chiriqui Gulf around Parida, Bellanos, and Berracos Islands. Eighty trapping stations were sampled, using traps of wood slat, wire, and reed construction. A total of 477 individual sets were made with 1 to 3 traps fished at each set for a total effort of 823 trap days.

The traps caught a total of 148 spiny lobsters. The wood slat traps and the reed traps produced at about twice the catch rate (.2 lobster per trap day) as did the wire traps (.1 lobster per trap day). The highest catch

rate occurred on a 57-trap 3-day set which yielded 45 lobsters. The next highest rate was obtained on a 94-trap 2-day set producing 39 spiny lobsters. The whole weight of the lobsters averaged 21 ounces (males 22.7 and females 13.2). The sex ratio was 5 males to 1 female.

Bait used in the traps included shark and sawfish meat and trawl scrap. Crushed conchs were also used as an experimental bait. Bait trawling on a narrow strip of mud bottom between Bellanos and Parida Islands in 5 to 10 fathoms yielded 3 rock lobsters.

Initial trials with a 60-fathom nylon tangle net were unsuccessful in catching lobsters.

Fishing in the Chiriqui Gulf was conducted during the half- to full-moon period. Coverage of the area during the dark-moon phase was planned during Pelican cruise 10, which began February 20, 1963.

Note: See Commercial Fisheries Review, January 1963 p. 109.



Peru

FISH-MEAL INDUSTRY
CONTINUES TO EXPAND:

The anchoveta fishing season is at its height each year during a 6-8 month period beginning about October, and Peruvian fish-meal plants operated at full capacity in the fourth quarter of 1962. At times, plants had to refuse to buy fish from independent vessels because they could not process it with available equipment. Peru's total 1962 fish-meal production was 1,120,796 metric tons, according to data compiled by the National Fisheries Society, up 33 percent from the 1961 production of 839,800 tons reported by the Ministry of Agriculture. Many existing plants are doubling their facilities rapidly and numerous new plants will be coming into production within the next few months. With the increased capacity, another million tons could be added annually to Peru's fish-meal production by 1964. But one limiting factor is the availability of fishing vessels. Although local construction of fishing craft is a booming industry and some prospective buyers are even seeking vessels in other countries, the scarcity of fishing vessels is expected to restrict the increase in production. A conservative forecast of Peru's 1963 fish-meal production is 1,350,000 to 1,400,000 tons.

Peru (Contd.):

Total Peruvian fish-meal exports for 1962 are expected to be close to 1.1 million tons with a value of about \$110 million, a substantial increase over the 1961 fish-meal exports of about 708,000 tons valued at \$49.2 million.

In 1962, fish-meal prices were steady at about US\$100 per metric ton f.o.b. Peruvian ports. Some spot sales were made in November and December 1962 at \$109 f.o.b. Peruvian ports. (United States Embassy, Lima, January 24, 1963.)

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NEW TAXES INCREASE FISH-MEAL PRODUCTION COSTS:

It is estimated that new taxes levied by Peru will increase fish-meal production costs by about US\$10.00 per metric ton. A tax of about \$1.05 per metric ton on anchoveta used for industrial purposes was imposed by Government Decree No. 14265 effective the end of December 1962, according to the Fish Meal Exporters Organization. At a ratio of 16 tons of anchoveta to 1 ton of fish meal, the tax adds about \$5.90 to the cost of producing a ton of fish meal. In addition, a new tax has been imposed on fuel oil used in factories or for transportation, and taxes on income and profits have been increased. The fish-meal industry and other industries are protesting the taxes. A reduction of the taxes is hoped for but cancellation of them is not expected.

So far, there have been no reports of an increase in the price of Peruvian fish meal handled by the Consorcio Pesquero del Peru S.A. (Fisheries Consortium of Peru). The Consortium is the marketing agency for about 80 percent of Peru's fish-meal exports. In early January 1963, the Consortium actually dropped its prices slightly in London. Although it is believed that a substantial part of Peru's 1963 fish-meal production has been sold, the pressure of unsold stocks in the world market is influencing fish-meal prices. In spite of the situation, some Peruvian producers who do not belong to the Consortium have increased their fish-meal prices by \$1.50 to \$3.00 per ton. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, January 16, 1963.)



Portugal

TREND TOWARDS EXPANSION OF TERRITORIAL WATERS AFFECTS FISHERIES:

The following is a translation of an editorial published in the Portuguese periodical, Jornal de Pescador, February 1963:

It is public knowledge that fishing is being intensified throughout the world in view of the increasing consumption demand.

Studies are constantly being made, fishing methods improved, vessels developed both for greater speed and improved storage facilities, and large sums are being spent on such improvements as training of fishermen and oceanographic research.

One grave problem, however, arises which impedes profitable fishing. It is the problem of territorial waters which, as far as we Portuguese are concerned, affects us considerably. As concerns cod fishing, but more especially trawl fishing, our fleets encounter increasing difficulties every day. In fact, the countries in whose waters our vessels have traditionally operated are progressively increasing the limits of their territorial waters thus forcing us either to seek more distant fishing grounds, which, obviously prejudices our activities, or to diminish substantially the volume of our catches with ruinous results and a decrease in domestic supply.

It would appear that this problem should be carefully studied by our authorities since it is of the greatest importance to the national economy.

We are even tempted to think that the only favorable solution for the Portuguese would be to attempt separate arrangements with several countries whose maritime areas are included in our fishing activities.

How these arrangements are to be achieved is a matter for authorities at a higher level. We do know, however, that other countries have accomplished such arrangements either by mutual concessions or by means of paying for a fishing license or making indemnization payments. This procedure, of course, would be followed until such time as a more uniform and rational formula is found internationally for solution of the problem. (Translated by United States Embassy, Lisbon, February 13, 1963.)



Senegal

TUNA INDUSTRY TRENDS, DECEMBER 1962:

The French-Senegalese agreement for the November 1962 to May 1963 tuna-fishing season allows a quota of 10,000 metric tons of tuna to be canned in Senegal and exported to France under a special, duty-free provision (the French duty on imported canned tuna is 25 percent ad valorem). The 10,000-ton quota is to be filled exclusively by Senegalese and French boats. The Government of Senegal, which has no tuna vessels at present, has contracted to have 5 tuna vessels built in France for the Senegalese fleet, 2 of which should be ready to take part in next year's fishing.

The 10,000-ton tuna quota agreed to for the 1962/63 season corresponds with previous amounts allotted to Senegalese canneries—all French owned and operated. It falls far short of annual cannery capacity, estimated to be about 30,000 tons. No effort to fill the gap is to be made, although attempts in the past were made to sell to other than the French market. The French tuna clippers will be leaving as soon as the quota has been reached, and the Senegalese, as yet, have no other means of catching tuna. It is not known whether the canneries are expressly forbidden to purchase and can tuna taken by other than French or Senegalese craft.

On December 31, 1962, a total of 61 French vessels landed 450 tons of tuna at Dakar, the largest single catch ever unloaded at that port. This raised the current season's tuna catch to about 3,300 tons. On December 7, 1962, the tuna catch for the 1962/63 season amounted to 1,100 metric tons, compared with 120 tons on the same date the previous year. But only 21 vessels participated during the 1961/62 season when 7,000 metric tons of tuna were caught. (United States Embassy, Dakar, January 15, 1963.)



Taiwan

FISHERIES PRODUCTION INCREASES AGAIN IN 1962:

Production by the Taiwan fishing industry in 1962 amounted to an estimated 327,239 metric tons, an increase of 4.7 percent over the production of 312,439 tons in 1961. Since 1958 total production of fishery products has increased 42.5 percent.

Taiwan's Fishery Production, 1958-1962

Type of Fishery	1/1962	1961	1960	1959	1958
	(Metric Tons)				
Offshore and deep-sea fisheries	113,788	106,147	85,210	76,411	61,160
Outer coastal fishery	132,525	117,405	94,856	91,240	81,720
Inner coastal fishery	32,286	31,533	30,344	32,183	38,267
Fish culture and shellfish	48,640	57,354	49,030	46,493	48,534
Total	327,239	312,439	259,140	246,327	229,677

1/Estimated.

The 1962 increase would have been larger had not fish culture production dropped as a result of the cholera epidemic. Production was also affected by depressed domestic fish prices which discouraged trawlers. By mid-January 1963, all of the 12 tuna long liners whose construction was started in December 1961 had been launched and a few will be put into service by February this year. Those vessels originally designed at 145 tons now range from 160 to 220 tons in order to permit the installation of freezing equipment.

During 1962, a Chinese fisheries firm put into service two new 550-ton tuna long-liners. Those boats are now operating in the west Indian Ocean. The firm estimates that exports in 1962 of frozen tuna amounted to 1,800 tons and expects to export about 3,400 tons in 1963. A small amount of frozen tuna and dolphin fillets were exported by independent fishing companies from Kao-hsiung during the year, and were handled by a Japanese firm. The Japanese firm has also signed a preliminary agreement with private boat owners to operate tuna boats in the waters off American Samoa. The catch will be processed by a cannery located on that island. Operations are expected to begin in July and as of February, about 15 Chinese fishing boats have been signed up. (United States Embassy, Taipei, February 1, 1963.)

Note: See *Commercial Fisheries Review*, March 1962 p. 55.



Turkey

TERRITORIAL WATERS AND FISHING LIMITS EXTENSION PROPOSED:

Legislation was introduced early in February this year to extend Turkish territorial waters from 3 miles to 6 miles and her fishing limits from 3 miles to 12 miles. (*Fish Trades Gazette*, February 9, 1963.)



U.S.S.R.

FISHERY DEVELOPMENT TRENDS, EARLY 1963:

Facilities for the Soviet fishing industry are included in the new port complex at Odessa on the Black Sea. The port has dock space for large ocean-going trawlers and even Soviet whaling vessels, including the 32,000-gross-ton mothership *Sovetskaja Ukraina*. Odessa also has a new fish-processing plant and a new refrigeration plant. (Various sources.)

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

The Soviet Union was negotiating with a leading Japanese shipyard for a large number of fishing vessels when the Japanese Government indicated that the long-term credit extended to the Soviets by the shipyard was too liberal. (Press reports.)

FISHING ACTIVITIES IN GULF OF MEXICO AREA:

Since early October 1962, Soviet trawlers have been using the port of Veracruz, Mexico, for food supplies and to provide shore leave for their crews. Seven vessels have visited Veracruz, 2 of them on 2 separate occasions.

Local residents have talked to the Soviet crews, but the Soviets have always declined to speak directly about their fishing operations. The steel vessels are equipped for

However, no Cubans have been reported aboard the vessels upon their arrival at Veracruz. The vessels employ a crew of between 20-30 men, including technicians, instructors, and fishermen. The vessels measure 507 metric tons gross and 174 tons net. (United States Consulate, Veracruz, January 23, 1963.)

LANDINGS, IMPORTS, AND EXPORTS OF FISHERY PRODUCTS, 1960-1961:

Soviet fishery landings in 1961 amounted to 3.25 million metric tons, up 6.6 percent from landings of 3.05 million tons in 1960. Bottomfish landings, which showed the greatest increase, totaled 1.04 million tons in 1961, as compared with 0.94 million tons in 1960.

In size of catch, the Soviet Union ranked fourth among the world's fishing powers in 1961, surpassed only by Japan with a catch of 6.7 million tons, Peru with 5.2 million tons, and Mainland China with 5.0 million tons (estimated).

Soviet imports of fishery products in 1961 were down 48.8 percent in quantity and 38.4 percent in value from the previous year. A decline in imports of fresh and frozen fish and

Soviet Imports and Exports of Fishery Products, 1960-1961

Item	Imports				Exports			
	1961		1960		1961		1960	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
	1,000 Metric Tons	US\$ 1,000	1,000 Metric Tons	US\$ 1,000	1,000 Metric Tons	US\$ 1,000	1,000 Metric Tons	US\$ 1,000
Fish, fresh or frozen	18.7	5,117.0	58.1	13,675.0	-	-	-	-
Fish, dried, salted, or smoked	8.6	1,922.0	28.1	3,986.0	31.3	5,928.0	43.1	8,159.0
Fish products, in or not in airtight containers	1/0.1	806.0	0.1	880.0	22.3	22,004.0	18.6	18,429.0
Shellfish products, in or not in airtight containers	-	-	-	-	3.7	9,435.0	3.7	8,598.0
Fish oils and fats	28.9	7,415.0	23.6	6,228.0	17.4	4,101.0	35.4	7,282.0
Fish meals and solubles	-	-	-	-	4.9	623.0	4.0	538.0
Total imports and exports of fishery products	56.3	15,260.0	109.9	24,769.0	79.6	42,091.0	104.8	43,006.0

1/Consists of caviar from Iran.

Source: Yearbook of Fishery Statistics, 1960-61, Vol. XIII, Food and Agriculture Organization of the United Nations.

side-trawling operations. However, no nets have been seen on the decks of the vessels.

It is reported that the vessels carry refrigeration equipment for preservation of the catch and processing is handled by a factoryship. The existence of such a factoryship has not been confirmed.

Mexican newspaper accounts state that one of the purposes of the trawler fleet is to establish a fisheries training facility in Cuba.

dried, salted, or smoked fish was only offset partly by an increase in imports of fish oil and fats.

Soviet exports of fishery products in 1961 dropped 24.0 percent in quantity and 2.1 percent in value from the previous year. There was a decline in exports of the lower-valued dried, salted, or smoked fish and fish oil and fats. But there was an increase in exports of the higher-valued canned and prepared fish products, most of which was shipped to countries in Eastern Europe. (Food and Agriculture Organization Feature.)

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

OFFICIAL CLAIMS FISHING FLEET IS WORLD'S LARGEST:

In an address before a conference of workers of the fishing industry in Riga, Latvia, the Chairman of the State Fishing Committee announced that the Soviet Union's fishing fleet was the largest in the world. He said that this fact has been acknowledged by the United States and Norway which are countries with highly developed fishing industries. He claimed that the Soviets have modern vessels which can catch and process fish, whales, and other marine products over a period of 6 or more months without entering port. Moreover, the vessels are equipped with refrigeration which enables them to operate in both the equatorial Atlantic as well as in the North Atlantic, the Arctic, and Antarctic.

In the next few years, the Soviet fishing fleet is due to be supplied with modern refrigerator ships and floating factories. Most are to be of Soviet construction; however, some of the new vessels will be made under special agreements in West Germany, Denmark, Norway, and Japan. These will include whaling factoryships; fish-processing refrigerator ships; and others.

According to the Chairman, the large Soviet ocean fishing fleet enables the Soviets to catch up to 4.2 million metric tons (about 9.3 billion pounds) of fishery products at the present time. (United States Embassy, Moscow, February 1, 1963.)

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NEW FACTORYSHIP COMPLETES SEA TRIALS:

The new Soviet 17,000-ton factoryship, Vladiwostock, recently completed sea trials in waters off Norway. The vessel, which was built in Kiel, West Germany, is powered by a five-cylinder engine of 6,250 British horsepower supplied by a firm in Copenhagen, Denmark. The new factoryship is equipped with a complete fish cannery. It also has engineering workshops which enable it to function as a repair ship for Soviet trawlers. Specifications of the Vladiwostock are: length 535 feet; maximum breadth 78 feet; depth 56 feet; and draft 29 feet. The vessel will have a crew of 400.

A sister ship, the Daljnij Wostock is now under construction in Kiel, West Germany.

(Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, February 6, 1963.)



United Kingdom

COMPARATIVE TESTS MADE AT SEA WITH NEW TYPE AND CONVENTIONAL TRAWLS:

The new trawl developed under a British White Fish Authority project was tested in comparative trials with conventional trawls under normal fishing conditions in the Arctic Ocean by the Grimsby trawlers Royal Lincs and Coldstreamer. These vessels are sister ships, which was one of the conditions necessary to make the trials really comparative. The vessels sailed together from Grimsby on January 10, with 11 scientists on board. Heading the party was a scientist from the Scottish Department for Agriculture and Fisheries Marine Laboratory.

In order to minimize differences between the vessels and their crews in the results of the trials, the two trawlers were to fish in company and, as far as possible, for the same lengths of time. Both vessels carried conventional trawls and new trawls and were to fish the trawls interchangeably. The results of the hauls and all other data was to be carefully recorded.

This is the first time in the history of fishing that an effort has been made to create a fishing instrument on a scientific basis. The results of the trials could have great and lasting benefit to the whole of the British industry.

The two trawlers were to make a fishing voyage of normal length to the Barents Sea and then revert for several trips to ordinary fishing. Later they would carry out several more special testing trips. (Fish Trades Gazette, January 19, 1963.)

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MINIMUM LANDING SIZES FOR COD AND HADDOCK INCREASED:

A new Order, effective January 1, 1963, increases the minimum landing sizes permitted for cod and haddock caught in that part of the distant waters lying north of 66° N. latitude and east of the Greenwich meridian. For that area (which includes the Barents Sea and

United Kingdom (Contd.):

waters around the north Norwegian coast and near Island) the new minimum sizes are 34 centimeters (13.4 inches) for cod and 31 centimeters (12.2 inches) for haddock.

The new Order carries out a recommendation of the Permanent Commission of the International Fisheries Convention, 1946.

The sizes laid down for all other species in the Sea-Fishing Industry (Immature Sea-fish) Order 1961 remain unchanged. The sizes laid down in that Order for cod and haddock continue to apply to fish of those species caught elsewhere than in the north-eastern waters.

The changes in minimum landing sizes have a bearing on the increase in the minimum size of mesh for nets in the same area, which also became effective on January 1.

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PROPOSED EXTENSION OF FAROESE FISHING LIMITS THREATENS ABERDEEN FISHING INDUSTRY:

At the Scottish port of Aberdeen, trawler owners and trawl fishermen early in February of this year, were anxiously awaiting the outcome of talks in Copenhagen on the proposed extension of the fishing limit for British trawlers off the Faroes from 6 to 12 miles.

The Faroese Prime Minister and the Minister of Finance and Fisheries were in Copenhagen to discuss with the Danish Government the islanders' demand to increase the limit.

The Secretary of Aberdeen Fishing Vessel Owners' Association, Ltd., said: "If the limit is extended off the Faroes to 12 miles it could mean that Aberdeen is finished as a major fishing port. There is no doubt about that." He added that some Aberdeen trawlers are already losing more than £7,000 (US\$19,600) per year.

A forecast of the effect that the extension of the Faroese limits might have upon the Humber ports was also made by the Secretary of the Hull Trawler Officers' Guild.

He stated: "Many Faroese-owned ships and their catches at Grimsby, and I am

afraid that they will not be welcomed there if British vessels have to fish further from the Faroese coast.

"If Grimsby refuses to have Faroese-owned vessels, we do not want them in Hull. We want to make that quite clear.

"For most of the year the Hull market is oversupplied, and official returns last year showed that despite heavier landings in 1962, revenue was down by between £800,000 and £1,000,000 (US\$2,240,000-2,800,000).

"Why should we aggravate this depression and further undermine the economic stability of our market by allowing landings by foreigners to whom no quota import restrictions apply?"

"As discharges in England by Icelanders are restricted to certain quantities in specific months of the year, they can never be regarded as a serious threat to the livelihood of our own fishermen.

"The Faroese, however, are under no landing restrictions and their fishing fleet is still growing.

"If the Faroese fishing limits are extended, Aberdeen will just about be written off as a fishing port.

"Virtually all of the vessels operating from there have been built for Faroese fishing and I don't know what they are going to do.

"An extension of the Icelandic limit was bad enough, but the Faroese threat will make the position even worse.

"So far as Grimsby is concerned, a large fleet from there fishes the Faroe grounds.

"We in Hull, specializing in larger vessels, concentrate on more distant-water fishing."

On February 8, 1963, the British Ministry of Agriculture and Fisheries called a meeting of representatives of various sections of the industry, including the British Trawlers' Federation and the Scottish Trawlers' Federation, to review the Faroese situation. (Fish Trades Gazette, February 9, 1963.)

Note: See Commercial Fisheries Review, July 1962 p. 61.

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United Kingdom (Contd.):

TRAWLERS EXPERIMENT WITH ANTIBIOTIC ICE TO PRESERVE CATCH:

Two Grimsby trawlers in February 1963 were engaged in an investigation to determine whether the use of antibiotics in ice has value in the preservation of the catch.

Experiments and research into the use of antibiotics have been carried out by the Torry Research Station of the Department of Scientific and Industrial Research in recent years following the introduction of their use in Canada, where it was found that the application of a few parts per million definitely slowed down bacterial spoilage.

Large quantities of fish are treated every year in Canada where it has been found that two antibiotics (chlortetracycline and oxytetracycline) were particularly effective.

Up to last year, however, the use of antibiotics in Britain was of little more than scientific interest, for existing food regulations did not permit fish which had been treated with those substances to be sold for human consumption.

Last year the situation was changed by the passing of the Preservatives in Food Regulations which permit the use of tetracyclines on raw fish.

Before there was any real possibility of tetracyclines being employed by the British fishing industry, it had to be discovered whether or not their use under conditions of catching and distribution offered any definite advantage in improvement in the quality of the fish and whether it was an economic proposition.

In order to try and obtain the necessary information a full-scale trial, supervised by scientists from the Torry Research Station, is at present being carried out by the Grimsby trawlers Ross Renown and Northern Sea.

Each of the trawlers was supplied with 20 tons of ice treated with the two antibiotics, the ice being specially prepared by the Grimsby Ice Co. Ltd. One vessel carries one variety of antibiotic ice while the other has the second type. In addition, both ships carry their usual tonnage of normal untreated ice.

A member of the Torry Research Station is on board each trawler to obtain accurate

scientific data of the progress of the experiment. The two ships will fish, as far as is practicable, in the same vicinity at the deep-water fishing grounds.

They will fish in the usual way except that the early part of the catches will be divided, half being stowed in ordinary ice and half in antibiotic ice.

When the trawlers land their catches at Grimsby, the fish will be laid out with the antibiotic ice and normal ice preserved fish side by side for comparison purposes. The fish will be displayed on the fish market so that all interests in the industry will be able to see the results and form their own judgment. (Fish Trades Gazette, February 9, 1963.)

TRAWLER SOMERSET MAUGHAM WINS SILVER COD TROPHY FOR 1962:

The 1962 winner of the Silver Cod Trophy in Great Britain was the Hull trawler Somerset Maugham. The vessel's skipper, who is only 30 years old, was presented the trophy at the British Trawler's Federation annual dinner on March 7, 1963.



The British silver cod trophy to be presented annually to the distant-water trawler with the largest total catch for the year.

The winner of the trophy joined the fishing fleet in March 1961. During 1962, the vessel was at sea 338 days and landed a total of 46,560 kits (6,518,400 pounds) valued at £146,182 (US\$409,130). The landings by the Somerset Maugham were the second highest since the competition began nine years ago. The record is held by the Kirkella, which landed 46,589 kits or 6,522,460 pounds in 1955. (Fish Trades Gazette, January 12, 1963.)

United Kingdom (Contd.):

VALUE OF IMPORTED FISHERY PRODUCTS AMONG WORLD'S HIGHEST:

Only the United States pays more money for fish and fish products than the United Kingdom, according to figures gathered by the Food and Agriculture Organization (FAO). In 1961, the British spent close to US\$175.4 million for 607,200 tons of fishery imports. The United States in 1961 spent about \$361.4 million for 715,100 tons, an all-time world high in both quantity and value.

West Germany in 1961 actually imported slightly more fishery products (655,800 tons) than the United Kingdom, but because of differences in the types of imports, spent only about \$113.8 million.

Although the cost of fishery products imports to the British in 1961 was second to that paid by the United States, it was still less than what they have been paying since 1958. In that year the British paid \$190.7 million for 484,500 tons. In 1959, they paid even more--\$202.2 million for 489,000 tons and in 1960, the cost was down to \$189.5 million for 554,100 tons.

At the same time the United Kingdom was importing more fish and at a higher cost, her fishery exports were dropping in volume, but the value stayed about the same over the 4-year period.

In 1961, the United Kingdom exported 800 tons valued at \$20.7 million. This was less than the 54,900, 61,700, and 58,800 tons she exported in the years 1958, 1959, and 1960 although her import earnings for all those years were approximately the same.

In 1948, the United Kingdom exported 96,800 tons of fishery products valued at \$23.5 million.



Venezuela

BASE FOR FOREIGN FISHING VESSELS:

In a speech made on January 22, 1963, at Barcelona, the Venezuelan Minister of Agriculture noted that the Japanese tuna fleet was now fishing in the Atlantic Ocean and that they had obtained port facilities in Brazil. He then stated that he thought it would be good if Venezuela were to offer similar facilities. His reasoning was that the Japanese would need supplies, fuel, possibly other merchandise, and that the fishermen would require recreation.

He also pointed out that there are fish canneries in Cumana which are not using their available canning facilities because the sardine catch is not sufficient to keep the canneries fully occupied.

This suggests that vessels from other nations might be able to use Venezuela as a base and sell part of the catch to the canneries in Cumana. While this would require intergovernmental agreements as well as private arrangements between the fishing vessels and the canneries, there is an indication that such an arrangement is possible. (United States Consul, Puerto La Cruz, January 23, 1963.)



FLOOD FORECASTS WILL BE IMPROVED BY NEW RAIN MEASURING DEVICE

Rainfall as far as 100 miles away can be measured by a new radar device. When it is ready for operational use, the device will improve river and flood forecast substantially. From a single, convenient location, it will provide instantaneous measurements of precipitation at many points over a broad area. The measurements will be used in modern computers to prepare river and flood forecasts.

To be tested by the U. S. Weather Bureau, the "Radar precipitation integrator" converts the intensity of radar echoes at 150 points over a river basin into quantitative terms. The information can then be sent to River Forecast Centers.

The device was developed and constructed by the Stanford Research Institute. Tests of the equipment will be conducted at the Weather Bureau's Radar Research Laboratory in Norman, Okla. (Science News Letter, February 2, 1963.)