



International

FOOD AND AGRICULTURE ORGANIZATION

FISHING GEAR EXPERTS STUDY ITALIAN TRAWL NET: Studies and experiments aimed at improving the Italian trawl net, which is widely used throughout the Mediterranean, are under way by fishing-gear experts of the Food and Agriculture Organization (FAO), Rome, Italy, in cooperation with scientists of the Sea Fisheries Research Station, Haifa, Israel.

The investigations into the design, construction, behavior under water, and efficiency of the net started on December 30, 1957, and continued throughout the greater part of January. FAO experts (Dr. J. Schärfe, fisheries gear technologist, and Norio Fujinama, naval architect, both of the Technology Branch, Fisheries Division) have gone to Haifa to carry out the investigations in cooperation with the Israeli experts.

This is the second step in the investigations of the trawl net, which were initiated by FAO and the Israelis in 1956. The first studies were carried out by FAO experts in collaboration and with the assistance of the Italian Government at Anzio, Italy, in 1956.

"We have a rather full program involving mainly the use of recording instruments for measuring dimensions and shape of the gear when fishing and the forces acting upon it. On the basis of this investigation we hope to be able to recommend improvements to the design of the net," declared Dr. Schärfe, before leaving FAO headquarters for Haifa.

"The Italian trawl net is widely used in the Mediterranean," he added. "It is of a design based on long, practical experience but, with modern methods of gear research it may be possible to introduce some changes which will add to the efficiency of this type of trawl as a fish catching instrument."

The investigations are of special interest to the member countries of the General Fisheries Council for the Mediterranean, whose fishermen all use the Italian trawl to some extent. Most of these countries are paying a good deal of attention to ways and means of developing their fisheries. An improvement in the catching effectiveness of the Italian trawl would be of immediate practical value to all of them.

The FAO naval architect, who will assist Dr. Schärfe, will also record data on the behavior of the vessel being used in the investigations. The angles of roll and pitch and other information of interest to naval architects will be recorded.

INTER-AMERICAN TROPICAL TUNA COMMISSION

TUNA SCHOOLING HABITS: Previous analysis of seiner logbook data by the Inter-American Tropical Tuna Commission has indicated that at least 80 percent, and in some years over 90 percent, of the United States Pacific catch of yellowfin and skipjack is from pure schools. A similar study of the bait-vessel logbooks has

not been possible, because the daily catches of each species are given without a breakdown as to the catch per school. However, as a continuing program, scientists of the Commission have been recording this information on all tagging cruises since early 1956.

Although the bait-vessel coverage is still small, it appears that about 65 percent of the catch is taken from pure schools. The greatest percentage of pure schools is found in the northern and southern Pacific areas, with a tendency toward greater mixing in the central regions of the fishery. This geographical variation is also evident in the schools encountered by the seine vessels, the November-December 1957 "Bimonthly Progress Report" of the Commission points out.

TAGGING OF TUNAS: The Commission's Tagging Cruise No. 16 returned to San Diego on December 11 after releasing 401 tagged yellowfin tuna and 585 tagged skipjack tuna in an area between Asunción Island and the lower tip of Baja California. Tagging Cruises No. 15 and No. 17 were reported fishing off northern Chile during December and had not returned to San Diego at the end of 1957. Four tagging cruises were made from the Commission's laboratory in northern Peru during the period, with 272 yellowfin tuna and 606 skipjack tagged on the first three trips. Results of the fourth trip were not available at the end of 1957.

Many tags were returned during the period from the Baja California area and from the area off Chimbote, Peru. Returns from the experiment with the automatic pliers have been most encouraging, especially for skipjack tagging, as may be seen from the tabulation of recoveries from comparable groups of fish tagged by the new and old methods.

The excellent return of skipjack tagged with the automatic pliers suggests a large reduction of the tagging mortality with an increase in tagging speed. Apparently no such change in tagging mortality results from the increase in tagging speed in yellowfin tuna.

Method	Yellowfin		Skipjack	
	Recovered	Tagged	Recovered	Tagged
Automatic staples ..	9	315	47	455
Hand-clamped	10	258	8	451

During November, one yellowfin tuna which was tagged in February at 15° 57' N. 101° 42' W. was caught at San Benedicto Island about 600 miles to the northwest. A skipjack tagged in June off Chimbote, Peru, was recovered in December 1957 off Cape Pasado, Ecuador, some 600 miles to the north. Many of the tag returns from the local grounds indicated a southward movement, to the Cape Tosco area during the fall, of fish tagged off Asuncion Island during the summer and early fall.

WHALING

SPERM WHALE CATCH IN ANTARCTIC FOR 1957/58 SEASON EXCELLENT: The world catch of Antarctic sperm whales during the 1957/58 season was excellent. The estimated 39,000 long tons of oil yielded was an increase of 5,000 long tons over the 1956/57 season, according to the International Association of Whaling Companies, Sandefjord, Norway. The total Norwegian oil production was about 15,000 long tons, almost 40 percent of the world results, and an increase of about 24 percent over 1956/57. While a few more sperm whales may be caught during the current major Antarctic whaling season, the Association does not expect significant changes in the above figures, the United States Embassy in Oslo reported on January 17, 1958.



Australia

EXPORTS OF SPINY LOBSTERS VALUED AT OVER US\$5 MILLION IN 1956/57: Exports of frozen raw spiny lobster tails and cooked whole spiny lobsters by Australia in fiscal year 1956/57 (July 1, 1956-June 30, 1957) were valued at

Table 1 - Australia's Exports of Frozen Raw Tails and Cooked Whole Spiny Lobsters, 1955/56 and 1956/57

Destination	1956/57		1955/56	
	Tails	Whole	Tails	Whole
(1,000 Lbs.).....			
United States	4,457	266	4,213	216
Hawaii	165	-	176	-
Canada	-	9	8	-
Singapore	6	39	11	78
Other	1	7	3	1
Totals	4,629	321	4,411	295

more than US\$5.1 million and in value exceeded fiscal year 1955/56 exports by almost 20 percent. The quantity of spiny lobster exports also set a new record of 4,950,731 pounds. This total exceeded that for previous fiscal year by 244,790 pounds. Exports of spiny lobster tails amounted to 4,629,348 pounds or about 2 percent less than the record year of 1954/55, but the exports of whole cooked spiny lobsters set a new record of 321,383 pounds. The tremendous increase in Australia's export trade in spiny lobsters is illustrated by the steady in-

Table 2 - Australia's Exports of Frozen Raw Spiny Lobster Tails by Size, 1956/57

Destination	Midget & Small	Medium	Large & Jumbo	Total Exports
		... (Percent 1/) ...		
Western Australia ..	52	28	20	3,428
South Australia	23	27	50	1,034
Tasmania	15	51	34	167
All of Australia	2/43	29	3/28	4,629

1/ Calculated on basis of 4.3 million pounds.
 2/ Divided 19 percent midget and 24 percent small.
 3/ Divided 17 percent large and 11 percent jumbo.

crease in the value from about \$1.0 million in 1948/49 to over \$5.0 million in 1956/57.

Exports of spiny lobster tails by size in 1956/57 varied considerably between the three exporting states. The exports from West Australia ran heavily to midget and small sizes (about 52 percent), from South Australia large and jumbo sizes made up 50 percent of the exports, and from Tasmania 51 percent of the exports were medium sizes. (Australian Fisheries Newsletter, October 1957.)

Table 3 - Australia's Exports of Spiny Lobsters by States, 1948/49 to 1956/57

Fiscal Year	Item	Tasmania	South Australia	West Australia	Total
	(1,000 Lbs.).....			
1956/57	Tails	167	1,034	3,428	4,629
	Whole	65	184	73	322
1955/56	Tails	30	877	3,505	4,412
	Whole	22	172	101	295
1954/55	Tails	14	1,108	3,601	4,723
	Whole	2	12	103	117
1953/54	Tails	98	828	3,244	4,170
	Whole	4	-	62	66
1952/53	Tails	162	956	2,823	3,941
	Whole	77	34	19	130
1951/52	Tails	17	556	3,033	3,606
	Whole	33	-	21	54
1950/51	Tails	107	537	2,221	2,865
	Whole	-	-	71	71
1949/50	Tails	31	614	2,005	2,650
	Whole	28	3	62	93
1948/49	Tails	64	324	1,215	1,603
	Whole	73	48	61	182

In addition to increased exports, good prices were received for most consignments to the United States. The average f.o.b. price for Western Australian spiny lobster tail shipments, or about 74 percent of total Australian exports, was about US\$1.07 a pound. This is a substantial increase over the 1955/56 average price of about US\$0.93.

In estimating total dollar earnings, a price of US\$1.07 a pound was applied to all shipments. However, as parcels of South Australian tails normally fetch higher prices, this average price may be too low. Probably final figures will show that earnings were in excess of \$5.1 million.

Table 4 - Australian Landings of Spiny Lobsters (Fresh Whole Weight), 1955/56-1956/57

Year	New South Wales	Victoria	Tasmania	South Australia	Western Australia	Total
1956/57	437	652	2,096	4,300	12,019	19,504
1955/56	438	614	2,802	4,000	10,530	18,384
1954/55	510	832	3,256	4,294	10,906	19,798
1953/54	576	1,163	2,527	3,850	9,224	17,340
1952/53	543	831	2,770	3,500	8,100	15,744
1951/52	685	623	2,242	2,700	8,344	14,594

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IMPORTS FROZEN AND CANNED JAPANESE OYSTERS: Frozen Japanese oysters were scheduled to arrive in Melbourne, Australia, for the Christmas holidays. The frozen oysters were expected to be sold at about 5.6 U. S. cents a dozen in institutional packs to cafes and canners.

Canned Japanese oysters have been on the Australian market for some time. The imported canned oysters sell at retail for about 66.3-72.8 U. S. cents a 10-ounce can as compared with 95.2 U. S. cents a 10-ounce can for Australian canned oysters. Dockside prices for Japanese canned oysters a 10-ounce can are about 21.5 U. S. cents.

Due to the shortage of Australian-produced oysters, the Japanese imports are expected to find a ready market. There are differences in flavor between the native and the imported oysters, but as the Australian production is only about six oysters per capita, many consumers have never eaten a native oyster and would, therefore, not know the difference between the native and the imported oysters. (Fish Trades Review, November 1957.)

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NEW QUEENSLAND SHRIMP GROUNDS PROFITABLE: The new shrimp fishery in Queensland's Tin Can Bay has proved to be profitable. This area was discovered to be rich in shrimp by an Australian Fisheries Division survey in July 1957. An ever-growing number of shrimp trawlers are making a profit and laying the foundation for a valuable export trade. In less than two months, 70 vessels were fishing for shrimp in this area, and the value of the catch was reported to be close to US\$3,584,000 ex-vessel.

The foot-long shrimp known as "king tiger prawns" are especially sought for export. The Australian Fisheries Division is searching for other profitable shrimp fishing grounds off the Queensland coast. The fishermen hope that when the supply in Tin Can Bay becomes exhausted there will be other areas to exploit. (World Fishing, December 1957.)



Canada

FISHERIES RESEARCH DURING 1957 REVIEWED: Canadian fisheries research was reviewed at the annual meeting of the Fisheries Research Board of Canada on January 6, 1958, in Ottawa.

Fresh-Water Fisheries: The effects on Canada's fresh-water fisheries of man-made changes in environment were discussed fully in Ottawa during the week-end preceding the Board meeting by speakers at the 11th annual meeting of the Canadian Committee on Freshwater Fisheries Research. All who took part stressed the need for minimizing the harmful effects on the country's rivers and lakes by foreseeing and counteracting, where possible, the alterations in natural conditions created by human agencies. These include the blockage of passage caused by the construction of dams and other obstacles, the DDT spraying of forest areas, the introduction of harmful substances by industrial effluents and other forms of pollution, the removal of gravel from certain stream beds, and the diversion of water for many industrial and agricultural purposes made necessary by the general development of the country.

In many cases foresight and prompt action have resulted in the protection of fresh-water fishery resources, but in widespread areas throughout Canada great damage has been caused in the past by the growth of forest industries, power development, mining operations, and the ever-increasing need of water by cities and towns and the manufacturing plants which have sprung up along rivers and lakes.

Salmon Studies: An intensified study of the various species of Pacific salmon, now extended to the high seas, was reported at the annual meeting of the Board.

Members of the staff of the Board's Biological Station at Nanaimo, B. C., fishing from chartered vessels, carried out Canada's part of an international program to sample

salmon throughout their range in the North Pacific Ocean. The other countries taking part in the program are the United States and Japan which with Canada are signatory to the International North Pacific Fisheries Convention.

Biological characters have been found which indicate whether Pacific salmon found far from shore are of Asiatic or North American origin. These researches have shown that species of North American origin intermingle with those of Asian origin over a broad area of the central Pacific and the Bering Sea.

Shellfish: Clues to the existence of several promising new shellfish grounds on Canada's east coast have been discovered by exploratory fishing on the ocean floor by the Board's researchers for the Fisheries Department's Industrial Development Service. Stocks of scallops and shrimps have been discovered in inshore and offshore waters around Newfoundland.

In a report on the year's activities at the Board's Biological Station in St. John's, Newfoundland, it was pointed out that several new scallop beds of possible commercial value had been located in St. John's Bay, Ingornachois Bay, Bone Bay, and Bay of Islands along Newfoundland's west coast. Similar finds were made in Fortune Bay, St. Mary's Bay, and Placentia Bay on the south coast, but results were less favorable in the southwest area.

Good shrimp catches were made within a large area in the Gulf of St. Lawrence extending about 100 miles south from Port aux Choix on Newfoundland's west coast. Fair-size stocks of shrimp were found on the southwest coast between Ramea Island and the mainland and from Burgeo to Rencontre West, and small areas in Fortune Bay and Bay D'Espoir also yielded good shrimp catches.

Deep-water exploratory fishing was referred to by the Board's Biological Station in St. Andrews, New Brunswick. Promising new scallop beds were found on the southern part of St. Pierre Bank, following up a similar discovery on the northern part of this bank in 1954. The new beds were described as small but promising, and are in from 24 to 26 fathoms of water. The larger of the two is about 12 square miles in extent, the smaller about four square miles. Commercially-profitable catches of good-sized scallops with large firm meats have been made.

Refrigerated Sea Water: Continued tests of the use of refrigerated sea water for the transport and storage of fish, carried out by the Vancouver Technological Station of the Board, have proved the value of this system to commercial fishermen of the Pacific coast.

Trials made on commercial vessels suggest three possible advantages. Refrigerated sea-water installations allow fishing vessels to operate at great distances from the canneries and other processing establishments, no valuable fishing time is lost by the daily delivery of fish, and some types of fish bring more to the fishermen if delivered directly to the fresh fish market than if sold to a cannery or packer.

In a report to the annual meeting of the Research Board in Ottawa, the Vancouver station said that round sockeye and chum salmon were found to be in excellent condition after a week's fishing and still so after 13 days further storage in refrigerated sea water at the station. Halibut kept in the same manner on the fishery vessel was sold from 8 to 15 days after catching in finest condition, and samples further stored at the station for a total time of 29 days were in good edible condition. The elimination of icing showed promise of greatly increasing the effectiveness of fishing crews, and could possibly provide for a larger catch in periods of heavy fishing.

Preliminary tests have now been made on the storage of live crabs in refrigerated sea water and the results to date indicate that this system also may be adopted to advantage by commercial fishermen.

Herring Fishery: The traditional method for catching herring in British Columbia waters is by use of huge purse seines, but it is now possible for small trawlers to take part in the herring fishery.

Exhaustive tests with various kinds of midwater trawls developed at the Board's Nanaimo, B. C., Biological Station

have proved the efficiency of this type of gear. Such trawls are, under limited conditions, capable of commercial use in the winter fishery for herring. The station also has developed special aluminum otter boards which may be used with the trawl either in midwater or for bottom fishing.

Nets and Netting: All kinds of nets, which are the most important unit of fishing equipment, come under close scrutiny by the Research Board. With the continuing development and improvement of synthetic materials which can be used for nets and lines, fishermen are sometimes at a loss as to how to evaluate their efficiency for the particular kind of fishing they prosecute. Thorough tests are made not only on Canadian materials, but also on materials from the United States, Japan, Germany, the United Kingdom, and Holland.

Producing Salmon: Two million pink salmon eggs are being incubated in a special ten-million-egg hatchery built by the Fisheries Research Board of Canada on Kleanza Creek in the Skeena River system of British Columbia. This large-scale incubation is part of a series of experiments to produce salmon fry with normal behavior patterns, timing, and stage of development under artificial conditions. The object is to increase the numbers of salmon returning to spawning areas after they have been to sea. The two million eggs now being incubated are considered a test run and if the experiment is a success larger numbers will be reared in the future.

The hatchery, which incorporates the most modern equipment for fish culture, is operated under the direction of the Research Board's Biological Station at Nanaimo, B. C. Other research work on salmon in British Columbia included the tagging of 10,000 fish in and near the Skeena fishing areas, the purpose being to discover the routes and timing of the various runs and improve the basis for managing the fishery.

Quality and Season of Catch: The relationship between the season of the year and the quality of fish when landed at a fishing port is under study by the Board. The Board's Technological Station at Halifax has undertaken the year-round job of sampling all the catches of a fleet of seven trawlers. The principal fish under study are cod and haddock. Many factors are taken into consideration in the examination of the catch, including the length of time since the fish were caught, air and sea temperatures, methods of washing and icing, exposure of the fish to the atmosphere, location of the catch in the vessel, and possible physiological changes in the fish prior to being caught, due to spawning and feeding habits. Results have not yet been tabulated.

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GOOD SOCKEYE SALMON RUN TO ADAMS RIVER PREDICTED FOR 1958: A run of 10 million or more sockeye salmon to the Adams River (Fraser River system) of British Columbia in 1958 is the prediction by the Director of the International Pacific Salmon Fisheries Commission. This predicted run of sockeye salmon should improve the British Columbia pack of canned red salmon after three years of poor or mediocre packs.

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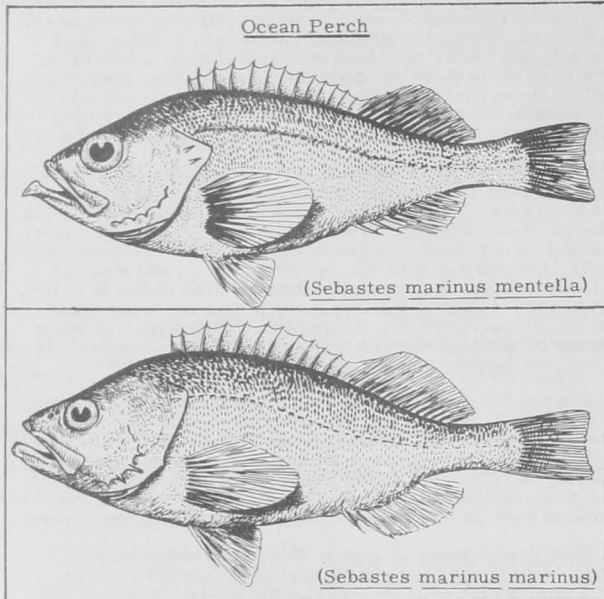
TWO SUBSPECIES OF OCEAN PERCH FOUND OFF NEWFOUNDLAND AREA: Since about the year 1940, European ocean perch or redfish scientists have been aware that there are two varieties of the commercial species *Sebastes marinus* in northern European waters, the Canadian Biological Station, St. John's, Newfoundland, points out in their Note No. 7. One form, which in Europe is known as the common or usual form, is found in the shallower parts of deep water and generally not below 140 to 160 fathoms. It is orange or yellowish red in color, has a relatively small eye, and the bony protrusion of the lower jaw is usually blunt and weakly developed. This form has recently been named *Sebastes marinus marinus*. For convenience we shall refer to fish which resemble this form as marinus-type ocean perch or redfish. The other commercial form is the deep-water ocean perch or redfish which in the European area is usually found below 160 fathoms. It has a bright red color, a relatively large eye, and, particularly in large specimens, a long and pointed bony beak projecting from the chin. Fish which resemble this form, which has recently been named *Sebastes marinus mentella*, will be referred to as mentella-type ocean perch or redfish.

The marinus type, which resembles the subspecies of ocean perch (*Sebastes marinus marinus*) common in Europe and the European catches, has not hitherto been noted in the North American area. We had doubtless seen occasional specimens, but until recently had not been willing to admit that the species *Sebastes marinus* found in the area might be comprised of more than one subspecies.

In 1956, however, we measured body proportions of ocean perch or redfish. In carrying out this work, not only did we look more closely at the individual details of appearance but, in addition to random samples, had opportunity to study closely especially selected samples containing many more large fish than usual. The differences between the two forms were readily evident, particularly in the larger fish. The experimental fishing and the collection of ocean perch samples mentioned in this report were carried out by research vessels of the Station, in Hermitage Bay and Connaigre Bay by the *Marinus* and elsewhere by the *Investigator II*.

While almost all the ocean perch in the general area between Labrador, Flemish Cap, Grand Bank, St. Pierre Bank, and the

Gulf of St. Lawrence were of the bright red, deep-water, large-eyed, and sharp-chinned mentella type, some marinus type, normally orange yellow or golden yellow, small-eyed, round-chinned, and found in shallower water, were usually also present. Except at Flemish Cap almost all of the marinus type were large ocean perch or redfish beyond the usual upper limit of size of the mentella type.



The first definite indications that the two forms existed in the Newfoundland area were found while examining ocean perch from Hermitage Bay on the south coast of Newfoundland in May and June of 1956. In July 1956, when fish caught at various depths north of Flemish Cap were examined, it was clear that at 150 fathoms, although relatively small numbers of ocean perch were obtained, both types were present in all sizes, and indeed the marinus-type ocean perch was the more abundant. At 200 fathoms where most of the ocean perch

were mentella, a few, all large fish (17''-21'' long), were of the marinus type. Below this depth, at 250 fathoms where good ocean perch catches were obtained, and at 300 fathoms, only mentella-type ocean perch were found.

Monthly samples of ocean perch (May to November 1956) from Hermitage Bay have shown that in this area, where ocean perch fishing is usually carried out at 120 to 160 fathoms, there are only a few definite marinus-type ocean perch. In a trip of about 40 sets in which 30,000 or more mentella-type ocean perch are caught, there would be only about half a dozen to a dozen marinus-type fish, these being usually very large. Even these few marinus-type ocean perch are in the shallower water and are much more likely to be present in a set at 120 fathoms than in one at 160 fathoms. In the shallower water (92 to 112 fathoms) of the neighboring Connaigre Bay, the marinus-type ocean perch are somewhat more common, and in a half-hour drag several large marinus-type fish may be caught together with the smaller and much more numerous mentella type.

Examination of fish taken at several depths (110 to 310 fathoms) from an area near the southern end of the southwest slope of the Grand Bank in June 1956, indicated that no marinus-type ocean perch were present. In the many ocean perch drags that were performed in the area all the fish were of the mentella type. South of Green Bank at a depth of about 115 fathoms some marinus-type ocean perch are present, but from this area only casual information is available.

A trip in November 1956 to an area off St. George's Bay in the southeastern Gulf of St. Lawrence revealed a situation similar to that in Hermitage Bay with only the occasional marinus-type ocean perch being present among the much more numerous and smaller mentella type. Marinus-type fish, which were mostly large specimens (15''-20'' long), were present in sets at 100 and 126 fathoms and in 150 to 156 fathoms, but at 200 and at 250 fathoms, all ocean perch were of the mentella type.

A good deal more information is needed before the role of the marinus type in the ocean perch or redfish population of the Northwest Atlantic is fully understood. At the present time this role in the Newfoundland region appears to be a minor one except in the Flemish Cap area. However, the area north of the Grand Bank, where our earlier researches have shown many large ocean perch or redfish, has not yet been fully investigated with regard to the relative numbers of marinus and mentella types.

Chile

DANISH VESSELS TO FISH IN CHILE: Three Danish fishing vessels departed from Denmark the latter part of 1957. The three vessels ordered by a firm in Valparaiso, Chile, are each 53 tons, equipped with Danish 200-220 horsepower engines rated at 450 revolutions-per-minute, and designed for fishing from the stern. Each vessel will have a crew of six men, most of them Danish fishermen who have signed on for three years in Chile. All the fishing gear is of Danish manufacture, according to the December 1957 issue of World Fishing.



Denmark

FISH MEAL AND OIL FACTORY HAS RECORD YEAR IN 1957: The Cooperative Herring Oil Factory in Esbjerg, Denmark, which produces over 50 percent of Denmark's herring oil and meal, announced that 1957 was the most successful in its nine years of existence.

The factory in 1957 processed 117,000 metric tons of fish as against 96,000 tons in 1956, and its profits enabled the factory to pay out to its members a Christmas

bonus of 2.4 million kroner (US\$348,000). The gross turnover in 1957 was 40 million kroner (US\$5,800,000), an increase of 14.8 million kroner (US\$2,143,000) over 1956.

The factory's director, who returned recently from a visit to both coasts of the United States, announced that his trip was most successful in finding customers for fish solubles ("stickwater"), the byproduct of industrial fish reduction which contains useful salts and vitamins.

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REVIEW OF FISHING INDUSTRY FOR 1957: Catches of fishery products by Danish fishermen in 1957 were estimated to be about 520,000 metric tons (1.1 billion pounds), an increase of 14 percent as compared with the 1956 landings of 456,000 tons (1.0 billion pounds). The ex-vessel value of the 1957 catch amounted to 287 million kroner (US\$41.6 million), an 8-percent increase over the value for the previous year. The catch of sand eel (also known as tobis or launce, and used for reduction into meal and oil) declined for the first time in four years from 87,000 tons (165 million pounds) in 1956 to 75,000 tons (165 million pounds) in 1957.

The export market for fishery products was firm during the last quarter of 1957. Preliminary figures indicate exports of all fishery products to be about 300 million kroner (US\$43 million), an increase of 15 percent over 1956. The market for food fish was firm, but the market for fish meal was weaker at the end of 1957.

The Faroe Islands fisheries in 1957 were disappointing. Due to a poor herring fishing season, there was a 15-percent decline in the exports from the Faroe Islands in 1957.

The trend towards a lower per capita fish consumption was believed to have continued through 1957. An advertising campaign was instituted to promote fish sales with the slogan "eat fish and be healthy."

The herring oil industry had a good year. A cooperative factory that accounts for about 50 percent of the Danish production processed a record 117,000 metric tons of herring in 1957. Prospects for better herring catches in 1958 were good, due to evidence of successful spawning in 1957.

During the fall of 1957 Danish officials of the Ministry of Fisheries conducted preliminary negotiations with other members of the North Sea convention preparatory to the revision of that Convention in 1958. Denmark is particularly interested in a continued dispensation on industrial fishing until May 1, 1950. (United States Embassy in Copenhagen, January 9, 1958.)



German Democratic Republic

FACTORYSHIP-TYPE FISHING VESSEL PLANNED FOR 1959: In a year or so the first large factoryship fishing vessel will be delivered to the East German fishing fleet, the Director of the East German Fishery Research Institute at Rostock-Marienehe reported in a press review during a visit to the Swedish port of Kalmar.

The trawler-type vessel will be equipped to catch, process, and freeze the catch at sea. It is planned to have the vessel make trips of about three months to the fishing grounds north of Iceland, the vicinity of Greenland, and the Grand Banks off Newfoundland (United States Consul in Goteborg, January 8, 1958).



German Federal Republic

FIRST FREE-PISTON GAS-TURBINE TRAWLER LAUNCHED: The launching in Bremerhaven, West Germany, of the *Sagitta*, the first fishing trawler to be fitted with a free-piston gas generator turbine engine has aroused considerable interest. The special advantages claimed for the free-piston engines are that they are flexible, easily maintained, and simple to install. They are lighter in weight in relation to power than the normal Diesel engine and occupy much less space.

The *Sagitta*, following recent trends in German trawler design, is built for stern trawling and is powered by an 1,800 horsepower free-piston turbine. The vessel is 180 feet long, has a beam of 31 feet, and has a depth of 23 feet. The fish hold has a capacity of 450 cubic meters (15,900 cubic feet). There is an additional 90 cubic meters (3,180 cubic feet) of refrigerated space forward of the engineroom.

A number of French tugs and naval vessels are equipped with free-piston turbines and have given, it is reported, excellent service. Interest was shown in this type engine by

British trawler owners in the form of an application to the British Whitefish Authority for a contribution towards an experimental installation. It was estimated that costs would exceed £120,000 (US\$336,000) if the installation proved impractical and had to be replaced. The trawling firm owner was offered £20,000 (US\$56,000) towards the cost of the project, but failed to proceed with the experiment. In the sixth annual report of the Whitefish Authority it was stated that free-piston gas turbines should be tried. At the present time there are three gas-turbine trawlers under construction, one of which is for a British firm.

A British engineering firm has the license to manufacture free-piston engines in the United Kingdom and other territories. During Canada's Power Show in Toronto in October 1957, the British manufacturer exhibited a free-piston unit of 350 shaft horsepower suitable for a marine auxiliary unit coupled to an axial flow turbine driving a 200-kilowatt generator. The firm is the first to produce this size free-piston unit and has orders for 60,000 horsepower of free-piston units, states the November 1, 1957, *Fishing News*.



Ghana

DEVELOPMENT OF TUNA FISHING AND PROCESSING CONSIDERED: The Ghana Government is considering the development of tuna fishing and processing for internal consumption. Planning is at such an early stage that only the barest outlines of its intentions are available. In 1956 Ghana imported fish and fish preparations valued at £2,215,737 (US\$6,204,064), and the Government believes this can be considerably reduced by offshore commercial fishing, and freezing or canning the catch. It is likely that the Government will want part ownership of the enterprise and an option to buy the remainder after an undetermined period. A program of training Ghanaians to fill any position in the enterprise would probably also be required. (U. S. Embassy in Accra, report of December 18, 1957.)



Hong Kong

AUCTION PRICES FOR HEADS-ON SHRIMP, JANUARY 1-14, 1958: Shrimp landed in Hong Kong are sold at auction by size groups (heads-on), according to a January 17, 1958, report from the United States Consulate in Hong Kong. Unsorted shrimp are not sold at the Hong Kong auction. Average prices per pound for heads-on shrimp sold at auction from January 1-14, 1958, were as follows: 10-15 count, 26 U. S. cents; 16-45 count, 23 cents; and over 46 count, 7.8 cents. Exporters process and reclassify shrimp before shipping.



Iceland

FISHERIES TRENDS, JANUARY-SEPTEMBER 1957: While Icelandic landings of fish (including herring) for the first nine months of 1957 were almost identical with those for the same period of 1956, the proportion of cod (the most important of the groundfish) declined in each of the past two years.

Utilization points up the steady rise in the proportion of fish frozen, and a corresponding decline in the quantity salted, as the industry became increasingly geared to supplying frozen fillets to Russia.

The catch of the various species of white fish declined (271,300 metric tons compared to 294,400 tons). While the herring catch by weight rose by a corresponding amount, the increase was entirely in the less valuable lean herring for meal and oil processing, while salt herring, which is the more profitable, dropped by 44 percent. The value of the main herring catch in 1957 was, therefore, below that of 1956. Moreover, the catches during the Southwest Coast season through the early part of the fourth quarter of 1957 were characterized as a failure, and there was even a serious question whether sufficient herring could be caught in this

secondary season to provide the bait needed for the winter cod fishing season. If not, herring would have to be imported from Norway.

Although landings were not up in 1957, there was an increase of Ikr. 20 million (US\$1.2 million) in the value of fish exports during the first three quarters of 1957. This was due to the fact that carryover stocks were depleted more rapidly. On September 30, 1957, stocks of export goods (mostly fish products) were lower by Ikr. 99 million (\$6.1 million) as compared to the same date in 1956.

The same applies to the 1957 main summer herring season, in which 233 vessels participated with an average of 47 days of operation. In the summer of 1956 a total of 187 vessels operated an average of 37 days and produced a more valuable catch than in 1957, according to the Finance Minister.

The landing of iced fish by trawlers in British and Continental ports has become both more attractive, with increases in the European price of fresh fish, and more controversial, as workers in relatively idle processing plants in Iceland demanded an even tighter control on fresh fish landings abroad.

Table 1 - Icelandic Catch of Principal Species, January-September 1955-56

Species	1957	1956	1955
..... (Metric Tons)			
Cod	180,961	205,059	222,591
Haddock	15,416	12,811	9,510
Ling	2,362	2,763	3,132
Catfish	8,416	5,027	3,363
Ocean perch	47,438	48,828	47,919
Coalfish	8,931	14,009	6,487
Cusk	2,795	2,829	3,358
Herring	105,342	82,547	45,108
Other	5,009	3,066	2,024
Total	376,670	376,939	343,492

Table 2 - Icelandic Production of Frozen Fishery Products, January-September 1955-57

Product	1957	1956	1955
..... (Metric Tons)			
Cod fillets	26,450	24,950	24,400
Haddock fillets	3,200	2,650	2,450
Ling fillets	100	50	200
Catfish fillets	2,400	1,400	1,000
Ocean perch fillets .	14,150	13,600	14,150
Coalfish (pollock) fillets	600	650	450
Cusk	-	-	100
Flounder and halibut, whole; frozen fillets and steaks	800	350	150
Total	47,700	43,650	42,900

The Icelandic Minister of Finance in the course of his budget speech to the Althing spoke of the unusually large number of fishing boats taking part in the winter season, under the inducement of the more generous subsidies offered the industry in 1957, and the greater number of operational days for the average vessel. In terms of vessels engaged and days of operation, the value of the 1957 winter white fish catch was 29 percent below that of 1955 and 22 percent below the average for the 1954-1956 period. This means, of course, that Export Fund expenditures to support the industry were proportionately higher and that the foreign exchange costs for fuel and upkeep were also higher than in a normal fishing year.

Unions demanded that the per diem subsidy--already lower for trawlers landing fish abroad--be entirely removed. This suggestion was opposed, however, by the Seamen's Union and by trawler owners. One trawler was laid up by its private owner when permission was refused to deliver fish abroad. The owner claimed that deliveries abroad were bringing three times the price of local deliveries.

The combined influence of the 1956 trade agreement with Russia and the lower fish catch resulted in a further rise in the percentage of Iceland's exports going to the Soviet Bloc.

NOTE: VALUES CONVERTED AT RATE OF ONE ICELANDIC KRONER EQUALS US\$0.0615.



Japan

EXPORTS OF SELECTED FISHERY PRODUCTS TO THE UNITED STATES, JULY-AUGUST 1957: During the first eight months of 1957 exports of frozen tuna to the United States were valued at US\$11,070,000, an increase of 12.5 percent as compared with \$9,840,000 for the similar period in 1956. Canned tuna exports January-August 1957 were valued at \$8,572,000, a decline of 5.6 percent from the January-August 1956 value of \$9,080,000.

Japan's Exports of Selected Fishery Products to the United States, July-August 1957

Item	Quantity				Value			
	July		August		July		August	
	1957	1956	1957	1956	1957	1956	1957	1956
..... (Metric Tons)								
Tuna, frozen	7,549	7,693	6,005	2,074	2,193	2,800	1,729	599
Tuna, canned	1,909	2,574	1,046	968	1,680	2,310	896	866
Crab meat, canned ..	368	370	382	344	858	800	759	633
Other canned	1,467	312	2,216	200	1,153	260	1,605	154
..... (US\$1,000)								

* * * * *

MINIMUM PRICES, EXPORT QUOTAS, AND OTHER AID FOR TUNA INDUSTRY: Minimum Prices: Japan has "check" or minimum export price controls on frozen tuna (no fresh tuna is exported to the United States), including loins and discs, and canned tuna. The price controls are administered by the Ministry of International Trade and Industry (MITI) and through exporters' associations operating under the supervision of the Ministry. The price controls are designed to prevent the dumping of frozen or canned tuna on the United States market at prices which could result in dumping charges against the Japanese exporters.

Export Quotas: Canned tuna in oil exports to the United States are prohibited by MITI. However, canned tuna in oil has been entering the United States by transshipment from a third country.

Japan prohibits exports to California of frozen tuna loins and discs, but the prohibition is based on measures adopted by the Japan Frozen Food Exporters' Association and not by government measures. MITI, nevertheless, through its administrative power to withhold export licenses has enforced the Association's decision.

Subsidies and Financial Assistance: According to the Japanese Fisheries Agency, the Government currently does not provide any direct subsidies to the tuna industry, including tuna fishing, freezing, and canning sectors of the industry. The Government, however, did appropriate funds to be used for advertising tuna in the United States during fiscal years 1956 and 1957 (fiscal year ends March 31). In fiscal year 1956, of the total of 25,000,000 yen (\$69,500) spent by the tuna industry for advertising in the United States, one-half of the amount was supplied by the Government. In fiscal year 1957, of the total estimated Japanese share of costs for the proposed joint United States-Japan tuna industry advertising in the United States totaling 150,000,000 yen (\$417,000), one-half of the amount was appropriated in Japan's national budget. There is no information at present as to whether the fiscal year 1957 appropriations will be spent during this fiscal year, since United States tuna industry members have not agreed upon the desirability of carrying out joint tuna advertising with the Japanese.

Of greater significance to the Japanese tuna industry than the advertising subsidy, is the long-term low-interest rate loans by the Government. Long-term low-interest rate loans to the freezing, canning, and export sectors of the tuna industry are provided by the Agriculture, Forestry and Fisheries Finance Corporation, which was established in April 1953 pursuant to Law No. 355 of December 29, 1952. The Finance Corporation, which obtained its initial funds from the Central Government and whose funds have been augmented by subsequent budgetary appropriations, provides long-term loans to all sectors of agriculture, forestry, and fishing whenever such credit is difficult to obtain from private financial institutions. Although the Finance Corporation is permitted to make loans at an interest rate as low as 4.5 percent per annum and payable in 25 years, loans made to the tuna industry reportedly have been at 7.5 percent repayable in 15 years, with deferment of initial payment for two years. These loans, furthermore, have been made available to the tuna industry up to a maximum of 80 percent of the cost of building freezing equipment and canning facilities.

Japanese Government assistance to tuna boat builders and owners has been limited since July 1953 to the extension of long term loans with comparatively low interest rates. These loans are made available through local banks and through the Agriculture and Forestry Central Finance Corporation after review and approval by the Agriculture, Forestry, and Fisheries Finance Corporation. These loans are available for up to 60 percent of the construction cost at an interest rate of 7.5 percent annually and are repayable in seven years for individuals, or in six years for associations, after deferred payments for two years. In addition, the Government reinsures 90 percent of the amount covered under vessel insurance. A vessel owner can claim the full amount insured in case of sinking, total loss, unrepairable damage, or seizure, after 30 days.

There is no detailed data readily available to determine how much long-term low-interest rate loans have been made directly to the tuna industry by the Finance Corporation. Estimates made by the Finance Corporation of total loans to the freezing industry in recent years indicate that between 800 and 1,000 million yen (US\$2.2-3.6 million) have been made available annually. Estimates for fiscal year 1957 is that such loans will decline substantially from previous years to about 300 million yen (\$834,000). This is because of the tight money policy of the government and because the industry has built a number of freezing facilities in recent years which have met the most urgent requirements. For the canning industry, current estimates of long-term low-interest rate loans to be made during fiscal year 1957 total about 100 million yen (\$278,000).

Indirect Government aid to Japan's export trade, as of January 1, 1957, consisted chiefly of special taxation measures which permit exporters and manufacturers to deduct a large proportion of their export earnings from income tax calculations, and special low-interest rates on loans to finance exports of finished products and imports of designated raw materials. Beginning in June 1956, exporters have been permitted to deduct 80 percent of the export earnings or one percent of export sales, whichever is smaller, in calculating income subject to tax. The specially favorable interest rates on loans covering exports vary considerably with the type and length of the loan, as well as with the security involved, but they range in general from a minimum of 4.5 percent to a maximum of 8 percent in comparison with the going rate of 8-12 percent per annum for other commercial loans. Other Government promotion measures which involve smaller amounts of monetary assistance, include (1) an extensive export insurance system which covers the bulk of the risks faced by exporters; (2) an export foreign exchange retention system which permits exporters to retain 3 percent of the export earnings to be used for imports of designated commodities and for certain export promotion measures.

Available data do not permit firm conclusions regarding the impact which the above measures have had in financially assisting the Japanese tuna industry in its export trade. Other export promotion measures, such as tax exemption and government insurance, are also available to the tuna industry, states a December 27, 1957, despatch from the United States Embassy in Tokyo.

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NEW ELECTRONIC FISH-FINDER SUCCESSFUL: A new Japanese fish finder, developed by the Agriculture and Forestry Ministry's Fishery Agency, can locate such fish as sea bream, croaker, sharp-toothed eel, flatfish, and king crab. Although based on the principals of the echo-sounder for merchant marine and navy use, the fish finder is technically more involved. It is capable not only of gauging the depth of the ocean, but also of locating even a single fish 300 to 600 feet below the surface of the ocean. The new fish finder utilizes ultrasonic waves as high as 200,000 frequencies (200 kc.), which sharpens the discrimination between the sea bottom and the groundfish. Moreover, this high frequency lessens the attenuation of the sound waves resulting from air bubbles in the water created by a ship in motion, or when the sea is stormy.

This equipment has enabled Japanese researchers to locate many groundfish and king crabs, even during turbulent weather.

Modern electronics is playing an increasingly important role in the Japanese fishing industry, with such scientific aids as direction finders, radar, ultra short-wave equipment, echo sounder, sonar, and fish finders. At the present time 20 percent, or approximately 7,500, of Japanese fishing boats of over five tons are equipped with electronic fish finders. The number of vessels equipped with these instruments increases daily.

The Fishery Agency has recently been engaged in the research of a fish finder which can be used for tuna fishing. Tuna are difficult to locate because of their speed and the dispersals of tuna schools.

The early development of a fish finder which can be adapted for catching this fish is expected.

The increasing use of fish finders is contributing a great deal towards improving the life of the fisherman and also rationalization of fishing operations. At the same time it has proved to be indispensable for conducting surveys for marine resources and for developing new fishing grounds.

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TUNA CATCHES IN INDIAN OCEAN REPORTED LIGHT: The 1,100-ton tuna fishing vessel No. 1 Showa Maru was due to return to Shimizu, Japan, on December 24, 1957, from its first voyage of four months to the Indian Ocean. The vessel sailed from Japan on August 15 and spent about 61 days actively fishing around 2° S., 64° E. for a total catch of 660-700 metric tons of tuna. Smaller catcher boats were carried to the fishing area on the deck of the Showa Maru. Yellowfin fishing was not as good as expected, but a capacity load was finally taken.

The poor fishing in the Indian Ocean and elsewhere is raising some question as to the suitability of having large tuna fishing vessels engaged solely in this fishery the year-round (Nippon Suisan Shimbun, December 9, 1957).

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WINTER ALBACORE TUNA FISHERY CURTAILED: The winter albacore tuna fishing season, which attracts many boats from Shizuoka Prefecture as an activity to fill in on the off-season following the close of the autumn skipjack and saury fisheries, has been slow getting started this season due to unfavorable market conditions. Reports indicated that few boats would engage in this fishery before January 1958.

In 1953 and 1954, when the winter albacore fishery was at its height, about 80 boats from the ports of Shimizu, Mochimune, Yaizu, Omaezaki, Izu-Toda, Tago, and Ito in Shizuoka Prefecture engaged in the fishery, and the number for the whole country was about 375. Beginning in the middle of December fishing was carried on by live-bait and long-lining from off Kinkazan east to 1,000 miles offshore, just as in the summer albacore fishery, and the ports of Yaizu and Shimizu were usually busy with albacore landings from the latter part of December to March.

Lately, however, according to reports published by the fisheries section of Tokei University, the boats which in normal years would be making preparations for sea at Yaizu and Shimizu are not in evidence at all, and judging from the way things are moving in Mie and Ibaraki prefectures, it was expected that for the first time since the war there would be no landings of albacore before the end of 1957.

The reasons for this lack of interest in the winter albacore fishery are the effects of the low prices of the 1957 summer, the lack of good prospects for exports, and the fact that the trend to larger boats (a trend most marked at Omaezaki,

Shimizu, and Yaizu) has made it possible to fish the southern tuna grounds, eliminating the need for working in rough northern waters. This tendency to ignore the winter albacore has been growing stronger from year to year, and some elements in the industry are worried that it may be an obstacle to plans for export of albacore tuna to the United States. Present trends indicate that the winter off-season will find the boats shifting from winter albacore fishing to pole-and-line fishing for mackerel, to long-lining for yellowfin on the nearer southern grounds, or to southern skipjack fishing. The industry is pinning its hopes on landings at Yaizu and Shimizu after the middle of January by the approximately 60 small long-liners from Kagoshima Prefecture, which are putting their main effort into the winter albacore fishery. In industry circles, it is considered, in view of recent prices for southern albacore, that large fish will bring \$167 to \$200 per metric ton ex-vessel and they are pinning hopes particularly on buying by fresh fish dealers to bring the price up. However, according to some there is a need, in view of the tendencies in the fishing fleet in recent years, to make a major correction in attitudes toward winter albacore fishing, and the feeling is strong in the industry as a whole that since 1957 has been right up to the end a year of many troubles for the albacore fisheries, that 1958 will see a change for the better. (Nippon Suisan Shimbun, December 9, 1957.)



Mexico

MAZATLAN AREA SHRIMP FISHING TRENDS: The shrimp fishing season in Mazatlan area of Mexico's west coast as of December 1, 1957, was below average, although landings during September were up from the preceding months. The hurricane that hit this area the latter part of October resulted in the loss of 30 shrimp fishing vessels. The Mexican Government granted loans to help overcome the effects of the storm, but many of the smaller vessel owners had insufficient collateral to qualify for loans.

The hurricane hit Mazatlan at a time when the shrimp fishing industry was in the process of expanding. A new freezing and packing plant was ready to open and new plans had been made for shipping shrimp by refrigerator car over the rebuilt Pacific railroad. Use of these new facilities has been delayed. At the present time it is doubtful if the shrimp industry in the Mazatlan area will recover from the effects of the hurricane before the summer of 1958.

The shrimp industry producers and packers are satisfied with current market conditions. The marketing agency set up in San Diego, Calif., by Mexican shrimp processors is reported to be operating satisfactorily, the United States Consul at Nogales reported on December 17, 1957.

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NEW FISH-LIVER OIL PLANT: A new plant, producing refined oils from fish livers, started operations about December 16, 1957, in Guaymas, Sonora, on the west coast of Mexico. The livers from sharks, tuna, and totoaba will be the chief sources of supply. The plant is rated at a capacity of about one ton of refined fish-liver oils daily. The investment in the plant, exclusive of fishing gear and working capital, is reported to be about US\$40,000, states a December 18, 1957, dispatch from the United States Embassy in Mexico City.

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NEW SHRIMP FREEZING PLANT ON EAST COAST: A new shrimp freezing plant, the first for Frontera, Tabasco, on the Bay of Campeche, was due to begin operation by the end of December 1957. This plant has a daily freezing capacity of 10,000 pounds of shrimp, 20 tons of ice, and a storage capacity of 150,000 pounds.

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SHRIMP FISHERMEN ADOPT TWO-TRAWL TECHNIQUE: The two-trawl fishing technique introduced over a year ago in the Gulf of Mexico by United States fishermen is beginning to be adopted by Mexico's Gulf of Mexico shrimp fishermen. This technique consists of towing simultaneously two trawls, 40 or 45 feet at the mouth, instead of using one large trawl of 90 or 100 feet. Each trawl is connected to a separate tow cable by a bridle. The trawls, one slightly in advance of the other, are towed, one from the port and the other from the starboard towing booms. Upon hauling, the trawl nearest the boat is hauled first. Some boat owners claim that shrimp catches with the new technique are as much as 30 percent greater than those with the single large-trawl method, a December 10, 1957, dispatch from the United States Embassy in Mexico City reports.

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SPINY LOBSTER CATCH IN ENSENADA AREA GOOD: The spiny lobster fishing season in the Ensenada area (off the west coast of Baja California a short distance from the United States border) which opened on October 1, 1957, was off to a promising start with a two-month catch of 800,000 pounds (valued at US\$364,000). Fisheries officials in Ensenada predict that the season, which ends on March 15, 1958, will be the best on record due to efforts at conservation and stricter enforcement of regulations, states a January 7, 1958, dispatch from the United States Consul at Tijuana.



New Hebrides

TUNA FREEZING AND CANNING PLANT ESTABLISHED: During the last half of 1957 six Japanese technicians arrived at Santo, New Hebrides, to install processing and refrigeration equipment in a new tuna plant.

The plant was due to be completed by the end of 1957 with the freezer reported to have a holding capacity of 2,000 tons of frozen tuna. Seven 100-ton Japanese fishing vessels were scheduled to arrive later (Pacific Islands Monthly, November 1957).



Norway

FISH CATCH IN 1957 DOWN 22 PERCENT FROM 1956: The total Norwegian fish catch in 1957 of 1,556,402 metric tons was lower by 22 percent as compared to the 1,986,300 metric tons in 1956, according to the Norwegian Directorate of Fisheries. The ex-vessel prices in 1957 were somewhat higher than in 1956, however, and the total value of the catch was only 14 percent lower than in 1956. The value of 610.9 million kroner (US\$85.5 million) for 1957 was the second best year on record on the basis of value.

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FISHERMEN WAIT ARRIVAL OF WINTER HERRING SCHOOLS: Early in January 1958 the Norwegian west coast port of Aalesund was teeming with fishermen waiting for the fat winter herring schools. Altogether some 26,000 fishermen, manning about 2,600 purse seiners and drift netters, were ready for the new season. In addition, the transport vessels used to carry the herring from the fishing grounds to oil and meal plants were ready to go.

The ocean research vessel G. O. Sars, cruising some 200 nautical miles off the coast, had not reported a major herring shoal as of January 11, 1958. However, another research vessel, the Peder Ronnestad, sighted some herring much closer to the shore.

Between Egersund and the southern border of Trondelag province, 51 herring oil reduction plants are ready for day-and-night operation. These plants can process over 40,000 metric tons a day, and have a storage capacity of about 750,000 tons. Approximately 80 percent of the total catch goes to these plants, while the rest is salted, frozen, or iced.

In 1957, Norwegian fishermen landed 1,017,402 metric tons of herring and brisling, valued at Kr. 255.6 million (US\$35.8 million) ex-vessel. The fishermen hope to make out better this year.

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FROZEN FILLET PRODUCTION LOWER IN 1957: Operations of the Norwegian frozen fish fillet plants were very limited in 1957 because of a short supply of raw material, according to the Norwegian Ministry of Fisheries. The dried fish industry was the largest competitor of the frozen fish industry for the available fresh fish. Total production of frozen fish fillets in 1957 was expected to amount to about 13,000 metric tons, 27 percent less than in 1956. (United States Embassy dispatch from Oslo dated November 29, 1957.)

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RESTRICTIONS BY SWEDEN ON FISH IMPORTS PROTESTED: Following the failure of Norwegian and Swedish officials to reach an agreement concerning a Swedish import tax on Norwegian frozen fish fillets, the Norwegian Government sent a strongly-worded note to Sweden protesting this tax.

The note pointed out that Norwegian exports of frozen fillets to Sweden were increasing rapidly until the imposition of the import tax; but dropped sharply in 1957 to almost 30 percent below the previous year's level. The note also asked Sweden to free the import of Norwegian mackerel (mackerel is already on the Norwegian Free List), and to reclassify Norwegian frozen fish balls and fish sticks at a lower rate of duty.

The note concluded by emphasizing that the Norwegian Government was greatly concerned by the increasing distortion in favor of Sweden of import balances, a January 3, 1958, dispatch from the United States Embassy in Oslo reports. The range of Norwegian exports to Sweden is limited and frozen fish fillets were one of the few Norwegian products which gave promise of expanded sales on the Swedish market.

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REVIEW OF FISHING AND WHALING INDUSTRIES FOR 1957: Fishing. Poor weather during the 1957 winter herring season and the scarcity of cod on the Lofoten fishing grounds reduced substantially Norway's 1957 fish landings. Estimates

placed 1957 results at 1,550,000 metric tons, or 300,000 metric tons below the Norwegian National Budget forecast for 1957 and about 160,000 metric tons below the five-year average for 1952-1956.

The winter herring catch was only 70 percent of the total for 1956; deliveries to the oil and meal industry were down to only 64 percent of the amount for 1956. Consequently, the 1957 production of oil and meal was reduced to 62,000 metric tons and 162,000 metric tons, respectively, compared with 104,000 tons and 245,000 metric tons, respectively, for 1956.

Results from the brisling herring fishing showed a substantial improvement over the previous years. The total pack in 1957 was expected to exceed 500,000 cases, compared with only 197,000 cases in 1956.

Exports: Norwegian exports of fish during the first three quarters of 1957 were slightly higher than during the same period of 1956 despite the poorer returns from the cod and herring catches. An increase in exports of canned brisling and sales from stocks of frozen fish carried over from 1956 were mainly responsible. However, the total for all exports of fish and fish products (including meal and crude and processed fish liver and body oils, and whale and sperm oils) were about 90 million kroner (US\$12,640,000) below the same period of 1956. One-half of this decrease was caused by lower herring meal exports, the other half by delays in whale oil sales this year as compared with 1956.

About 24 percent of total Norwegian foreign currency earnings from commodity exports came from exports of fish and fish products (including marine oils) during the first nine months of 1957, compared with about 29 percent during January-September 1956.

The markets for Norwegian fish and fish products remained virtually unchanged during 1957. The Soviet bloc countries took about two-thirds of total herring exports and about one-third of total exports of frozen fish fillets. In addition, a major portion of the exports of hardened fats went to the Soviet Union under the bilateral trade agreement.

Outlook for 1958: The outlook for the 1958 fishing season is uncertain. Participation in the winter herring operations is expected to be larger than ever. A forecast by the Directorate of Fisheries in Bergen at the end of November 1957 on the availability of winter herring was about 75 percent of the estimate for 1956. This estimate is more than adequate for another record-breaking year if the weather is favorable during the relatively short herring season.

It is also expected that the herring season will be lengthened during 1958 by greater participation than in 1957 by Norwegian fishermen in the operations off the coast of Iceland after the close of the season along the Norwegian coast. The catch from the Icelandic waters goes to the Norwegian herring meal and oil plants, thus extending their operating season.

Decisions should be reached during 1958 on the unresolved problems from 1957 relating to guaran-

teed prices and centralized exports. A special committee formed by the Government has been given the mandate to make recommendations for a

Table 1 - Norwegian Winter Herring^{1/}
Catch and Utilization, 1954-57

	1957	1956	1955	1954
	(Metric Tons)			
Total Catch	795,615	1,145,853	965,433	1,092,192
Utilization:				
Exported fresh	106,299	101,649	116,064	84,072
Salted	81,003	107,508	111,600	104,997
Canned	14,601	11,997	11,067	11,439
Oil and meal	584,970	913,074	717,402	883,872
Bait	4,278	6,417	4,929	3,255
Marketed fresh	4,464	5,208	4,371	4,557

^{1/}DOES NOT INCLUDE FAT HERRING, SMALL HERRING, AND BRISLING.

long-range solution to the economic problems of the fishing industry. This report is to be completed by the summer of 1958. Statements to date by government leaders indicate a preference for a solution that entails rationalization of the fishing industry rather than price subsidization. It has been suggested that this rationalization be accomplished through more ocean-going vessels that can operate throughout the year.

The North Norway fishermen are the major source of demands for government action to solve their price and export problems. Largely small fishermen, they suffered most from the poor winter cod season of 1957 because their equipment restricts them largely to the coastal waters. Their dissatisfaction has a longer history, however, because it stems from their inability to adjust their costs to the downward trend of world fish prices during the past few years.

They have also asked the government to solve the problem of losses to their nets caused by trawler operations. They have demanded that the government take steps to extend the fishing boundary to 12 miles from the current 4 miles. Ocean-going fishermen, as well as Norwegian shipowners, do not share this viewpoint, however.

Whaling: Norway had an especially successful 1956/57 Antarctic whaling season with oil production amounting to 1,003,694 barrels (includes 904,453 bbls. of whale oil and 99,241 bbls. of sperm oil), compared to 852,168 barrels (includes 719,706 bbls. of whale oil and 132,462 bbls. of sperm oil) in 1955/56. Prices were favorable in relation to the previous season.

Norwegian policy continued to favor more effective international regulation of whaling in the Antarctic. Some of the concern expressed during 1956 over failure to achieve agreement on the steps to be taken over alleged violations by a few of the whaling countries largely disappeared during 1957. As a result of this and other developments, Norwegian whaling circles approached the 1957/58 season with more confidence than had been evident for some time. Even the potentially crippling whaling fleet strike of October was resolved in time through Government action to permit the whaling fleet to depart after only a short delay (U. S. Embassy in Oslo, dispatch dated November 29, 1957).



Peru

FISH PROCESSING PLANTS AND WHALING STATIONS: There were 85 fish-processing plants and 4 whaling stations in Peru as of July 1957, some of which were not operating, according to the Peruvian Bureau of Fish and Game. Many plants carried on multiple operations, such as fish canning and fish meal and oil production. According to this same source, there were 54 canneries, 45 fish-meal plants (one of which was afloat), 31 oil plants, 13 freezers, 11 salting plants, 5 whaling stations, and 2 smoking establishments.

On the other hand, the National Fishery Society listed 37 canneries and 36 fish-meal plants. Most of these were believed to be in operation, a December 3, 1957, United States Embassy dispatch from Mexico points out.



Philippines

CANNED FISH RETAIL AND WHOLESALE PRICES, DECEMBER 1957: Retail and wholesale prices on December 2, 1957, for canned sardines and canned salmon in Manila were as shown in table.

Product	Wholesale	Retail
	US\$/cs.	U. S. ¢/can
Canned sardines:	(48 15-oz. cans)	
U. S. brand	13.75	32.5-35
Japan brand	11.15	22.5-25
Canned salmon:	(48 16-oz. cans)	
U. S. brand	31.25	70-72.5
Japan brand	31.50	70-72.5



Singapore

JAPANESE-SPONSORED FISH PLANT AND TUNA CANNERY PLANNED: Details of a Japanese-sponsored fish processing plant and tuna cannery were made public in a statement to the press by the Singapore Minister of Commerce and Industry. If the plans materialize, it is expected that the plant will process tuna and other fishery products obtained from the Indian Ocean and elsewhere. The plant, a multimillion dollar investment, will be equipped for freezing, processing, and canning. A large part of the output is destined for export. It is also contemplated that the Japanese Antarctic whalers will land part of their catches for processing at Singapore.



Surinam

FISHERIES SUFFER FROM UNUSUAL CLIMATIC CONDITIONS: As of November 30, 1957, the fisheries for shrimp and fish in Surinam (Dutch Guiana) had declined seriously due, it is believed, to high water temperatures, high salinity, and the excessive growths of algae in the coastal waters and estuaries. The situation in the fish ponds at Mattapica and in the Nickerie area was also abnormal. The effect was to remove shrimp (seabob) and most of the local varieties of fish from the retail markets. In addition, the one shrimp processing plant was idle during the period of peak production, the United States Consul in Panamaribo reported on November 30, 1957.

The Director of the Surinam Fisheries Service described the situation as follows:

(1) The algae, believed to be a type called "nostoc" (classification is uncertain), causes an oil-like scum on the surface for two days and then sinks to the bottom. This type of algae normally occurs in Surinam waters in limited quantities during the month of September. In 1957 it was present from May to November. It collects on nets and affects the bait of the handline fishermen. The shrimp do not enter coastal and estuarine waters while the water is heavily infested with this algal growth.

(2) The shrimp were also kept offshore by the unusually high water temperatures. Temperatures were estimated to be about 8° F. above normal. The area of abnormally high water temperatures extended as far as 20 miles off the coast.

(3) The salinity of the water increased (due to the lack of rainfall and high water temperatures) to about 38.5-40.4 parts per thousand from a normal of 29.4-33.0 parts.

(4) The situation as to abnormal water conditions was believed to extend into British and French Guiana.

(5) The last good catches of seabob shrimp occurred in April 1957. The stocks of this species were believed to be about 20 miles offshore.

(6) The usual sea trout and other finfish found in estuarine waters disappeared in recent months.

(7) Conditions in the fish ponds were the worst since 1929. Tarpon (which are smoked for local consumption) and other predatory fish were killed off to a large extent, but the same was true of more desirable varieties such as snook. The salinity of the ponds was about 45 parts per thousand. In the Government control ponds at Mattapica it was estimated that about 800 pounds of snook were lost. In private ponds in the area the losses were close to 2,200 pounds.

(8) Tilapia, however, seemed to continue to thrive in the Mattapica ponds despite the heavy salinity.

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SHRIMP FISHERY TRENDS: The United States-owned shrimp trawler Coquette, which had been under charter to the Government of Surinam for a fisheries survey, was sold to the Government for US\$32,500 on November 18, 1957. The vessel has now been chartered to a Surinam-American company for a period of 12-18 months. The Coquette, manned by a United States crew, left for its first trip on November 25.

Under the charter arrangement the vessel will trawl for shrimp and fish (mainly sea trout) for export. The company will continue to process and handle the small shrimp--sea bobs--caught in the inshore waters. The supply of sea bobs has been poor in recent months due to unusual climatic conditions.



Sweden

GROUP LIFE INSURANCE FOR WEST COAST FISHERMEN: Swedish west coast fishermen will benefit from group life insurance policies in an amount of 1,500 crowns (US\$290) for each fisherman. The policies are effective with the beginning of 1958. Those insured comprise all active commercial fishermen who will not be over 65 years of age in 1958. The number of fishermen who qualify is estimated at 4,400. The premium on the group policy will be paid by the West

Coast Fishermen's Central Association, the United States Consul in Goteborg reported on December 16, 1957.

Provision has been made to increase the amount of the individual policies to a total death benefit of 3,000 crowns (US\$579) subject to the wishes of the various local member groups of the Association. In such cases, the Association will pay the part of the premium which exceeds 10 crowns

(US\$1.93) per member. The total amount of premiums to be paid by the Association is about 50,000 crowns (US\$9,650) yearly.

The Association has about 7,000 members, including 4,400 active fishermen under the age of 65, 600 active fishermen over 65 years, and 2,000 who fish on a part-time basis.

The present group insurance plan is a test project and if successful it is probable that at a later date a proposal will

be made to the Association that the age limit be raised to 67 years.

The plan covers insurance in case of death. Swedish west coast commercial fishermen are already covered by accident or in-line-of-duty insurance. Originally this protection was afforded by special governmental accident insurance. This was discontinued, however, in 1954 and since the beginning of 1955 the Association has carried group accident insurance for all members with The National Insurance Institution.

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LIGHT CATCHES OF SPRAT REDUCE CANNED PACK: The catches of sprat (*Clupea sprattus*) by Swedish fishermen were very light, both during the early part and fall of 1957. This situation has caused some reduction in working hours for the workers in west coast fish-canning-plants.

Canning company officials were quoted during the latter part of November as predicting that if sprat catches did not improve there was danger of more extensive lay-offs by the fish-canning industry during the early part of 1958. One plant manager reported that due to the shortage of sprat his firm kept workers busy packing the larger herring to the extent that there may be difficulty in selling the product. It is possible that sprat catches will improve early in 1958 as they did early in 1957. If so, sprat canning could be resumed by the middle of January.

Some sprat has been imported from Denmark, but catches in that country have also been poor, according to a December 4, 1957, dispatch from United States Consul in Goteborg.

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NEW POLISH-BUILT TRAWLER DEMONSTRATED: A modern trawler-type fishing vessel, designed especially for use in the Baltic and built by a shipyard in Poland, recently visited a number of fishing ports on the east coast of Sweden for the purpose of exploring sales possibilities for this type of vessel.

The craft's length is 17.45 meters (57.2 feet), its width is 5 meters (16.4 feet), and its draft is 2.44 meters (8.0 feet). The boat is described as being made entirely of steel with a reinforced bow constructed particularly for operation in ice. It has a large hold. Spacious tanks for fuel oil and water make possible fishing trips of up to 14 days.

Powered by a Danish Diesel engine of 110 horsepower, it also has echo-sounding equipment and radio telephone, both of Polish manufacture. The Polish shipyard, however, is prepared to deliver the boat with a Swedish motor, Swedish radio equipment and optional echo-sounding equipment if the purchaser so desires.

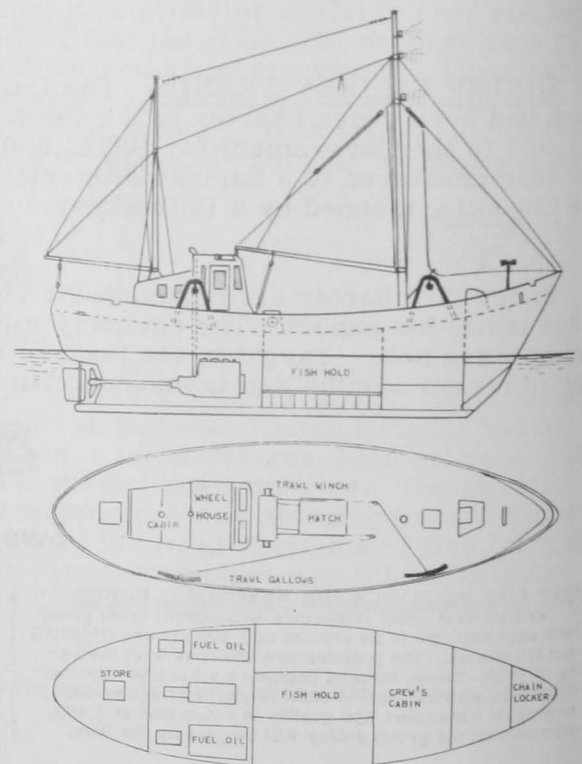
The wheelhouse is located aft and over the engineroom and there is a radio and navigator's cabin in the stern connected with the wheelhouse. In the stem there are cabins and a galley.

The price of the boat is 220,000 Swedish crowns (US\$42,460) sea-ready on delivery and including machinery, a 500-watt radio plant (telephone plus direction finder), echo-sounding apparatus, central heating, powerful and well-dimensioned electrical equipment with generators and batteries of good capacity, steel masts with sails of the Marconi type, main-yard sail, "fishing sail" mizzen, and 1,000 meters of steel wire.

In commenting on this Polish-built fishing boat, the author of the article says that the price is very reasonable measured by Swedish conditions. He states further that even though objections might be made to "certain details," the craft is a great step forward in technical fishing developments. The boat, he says, is very well suited for trawl fishing for Baltic herring and cod. It is also well adapted for mobile salmon fishing with hooks and nets.

In noting that the Polish boat is reinforced for operation in ice, the author mentions that ice in the Baltic and the Gulf of

Bothnia paralyzes fishing completely for long periods practically every year. In order to overcome this adversity a type of fishing boat is needed, he says, that is not so easily hampered by ice and snow as are most of the boats presently in use on the east coast. (December 12, 1957 dispatch from the United States Consul in Goteborg.)



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PROTESTS INDIA'S EXTENSION OF TERRITORIAL WATERS: The Swedish Government, through its Embassy in New Delhi, has protested intentions on the part of the Government of India to regulate all fishing activities within 100 nautical miles from the outer limits of Indian territorial waters. In two proclamations issued in November and December 1957, India promulgated measures to enforce customs, fiscal, immigration, and sanitary regulations within a distance of 12 miles from the coast, and to regulate all fishing activities within 100 nautical miles from the outer limits of Indian territorial waters.

The Swedish note points out that the rules of international law relative to the sea will be considered at a conference on the "law of the sea" to be held in Geneva late in February 1958. Pending an international agreement on the many questions involving territorial waters and other controversial matters pertaining to the "law of the sea," the Swedish Government put forward its reservations against any measures aiming at limitation of the freedom of the seas outside of accepted territorial waters.



United Kingdom

NEAR-RECORD TRIP LANDED BY BRITISH TRAWLER:

The trawler St. Britwin landed close to 578,000 pounds (valued at US\$45,886) of fresh fish at Hull, England, during the middle of November 1957. The near-record trip was caught in seven days (22 days dock to dock) fishing off Cape Farewell, Greenland. The catch created tremendous interest in the trade because for many weeks landings at Hull had been light. The vessel's skipper said the weather conditions while fishing "were not good, but it did not stop our work and fishing was consistently good all the time."

The catch would have brought more, but for a maximum quota regulation which stipulates that any landings in excess of a prescribed amount per vessel must go to the fish-meal plants and the proceeds devoted to the Hull Fishermen's Widows and Orphans Fund. The maximum quota for the St. Britwin was 532,000 pounds; the surplus of about 46,000 pounds was sold for the benefit of the Fund.

After some speculation as to whether or not the trip was a fresh-fish landing record for Hull, it was determined that

the trip of the St. Bartholomew, landed in February 1956, was still the highest on record. That vessel after a 22-day trip to the Norwegian coast landed 591,000 pounds of headless fish, the equivalent of 770,000 of whole fish. This catch brought US\$48,446. The trip of the St. Bartholomew was landed during the period of controlled prices, but before maximum quota regulations were introduced. Another large postwar trip landed at Hull was that of the Northella with a stock of US\$44,882.

The value of the St. Britwin trip was almost double that of the Cape Trafalgar, which had the second highest return on the day that the St. Britwin landed. After a White Sea trip the Cape Trafalgar grossed US\$24,657 for 268,100 pounds of fish.

Other landings at Hull during the middle of November 1957 did not fare so well as the St. Britwin. In the same week the St. Elston landed at Hull and grossed only US\$9,495 from a Bear Island trip--this was only a little more than one-half the expenses for the trip (Fishing News, November 22, 1957).



TREATING SPINY LOBSTER MEAT PRIOR TO CANNING

Treatment of spiny lobster meat with dilute citric acid solutions before canning showed a slight improvement in color after canning, while texture and flavor were unaffected.

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