INTERNATIONAL

FAO Aids 15 Caribbean Countries

Two fishing training vessels of the Food and Agriculture Organization (FAO) became the first of their kind in November 1966 to cross the Pacific under the white-and-light blue United Nations flag. The "Alcyon" and the "Calamar" docked in San Diego, Calif., in November 1966, after a 30-day crossing from Japan. They sailed later for the Caribbean to study the area's marine resources and to train fishermen as part of a major FAO fisheries project of the UN Development Program.

The steel-hulled vessels were built at Yokosuka, Japan. Each is 81 feet long overall, has a capacity of 137 gross tons, and a maximum speed of 11 knots. Both are equipped for side trawling and have a three-ton trawl winch with a hauling speed of 148 feet per minute.

Accommodation is provided for a crew of 10 with more space for 8 trainee fishermen. A small fish hold has a 1,500 cubic foot capacity and is refrigerated down as far as -5° C. (23° F.) using Freon 12 as a refrigerant.

Outline of Project

The "Alcyon" is based at Kingston, Jamaica, and the "Calamar" at Bridgetown, Barbados, headquarters for the FAO project. Participating states and territories are Barbados, Guyana, French Guiana, Guadeloupe, Martinique, Jamaica, the Leeward Islands, Netherlands Antilles, Surinam, Trinidad and Tobago, Grenada, St. Lucia and St. Vincent, the Dominican Republic, and Puerto Rico. Though 12 of the 15 participants are island countries, or constitute chains of islands, none catches as much fish as it needs. Nutrition is generally poor and quality protein is the element most lacking in the diet.

Present Caribbean fishing methods are usually more picturesque than productive. Marketing and distribution are inefficient. There are not enough trained people to exploit the Caribbean's rich fisheries potential. The aim of the 4-year project, therefore, is to build a sound base for future fisheries development. This is to be accomplished through exploratory fishing, marketing studies, and training.

FAO has subcontracted the exploratory fishing phase of the project to BCF. This part of the project will concentrate on areas considered the Caribbean's most promising: The waters off northeast South America, the southern Caribbean, and the grounds along the island chain running from Grenada to Jamaica.

The marketing studies are designed to improve local methods of processing, handling, storage, and distribution of fishery products. They also will explore the possibilities of a Caribbean export trade.

Training will be of great importance. The FAO experts plan to train officers and master fishermen, both ashore and aboard the project's vessels, with courses organized periodically throughout the area.

Total cost of the project will be US$2.7 million, US$1.9 million of it contributed by the United Nations Development Program and US$800,000 by the governments.

FAO's Growing Fleet

The Alcyon and Calamar are the third and fourth training and exploratory fishing vessels to be built for FAO in Japan and form part of a growing fleet of such boats. The first 2 FAO-UN vessels built in Japan were the "Chin Da Li," a 300-ton tuna long-liner, and the 150-ton trawler "Kae Na Li," both named after Korean flowers. They were completed in 1965 and are now in service with the Deep Sea Fishing Training Centre at Pusan, Korea.

The Pusan project chief has reported that the Chin Da Li, manned by Korean trainees who take turns at all shipboard tasks from deckhand to skipper, has registered an average daily tuna catch above that of commercial vessels from Korea and Japan. It turned in a US$4,000 profit on her first voyage.

Two other vessels are being built in Japan. They are 96-ft. purse seiner/trawlers due for delivery this year. They will be assigned to FAO-UN fisheries projects in the Philippines and East Pakistan.

The cost of the 6 Japanese-built boats is about US$1.3 million, paid for in Japanese yen. ("Fishing News International," Jan. 1967.)

ish Meal Exporting Countries onsider Regional Quotas

The Fish Meal Exporters Organization, ade up of representatives from Peru, Chile, orway, Iceland, Angola, and South Africa, is anning regional quotas for shipments of fish eal. These countries account for about 90 ercent of world exports of fish meal. Only specific amount would be exported to each ntinent, but the quota for the United States open ended.

apan and USSR Exceeded 966 Pacific Salmon Quota

In 1966, Japan caught 101,177 metric tons salmon (zones A & B combined) and the SSR 56,223 tons, according to the Japanese isheries Agency. Japan surpassed by 5.4 ercent the quota of 96,000 tons decided at e 1966 Japan-Soviet negotiations. The USSR ceeded by 12.4 percent its goal of 50,000 ns--the first time since 1956 that it exeeded the planned quantity in an even year, rmally poor for salmon.

In 1966, the Soviets insisted that salmon sources in the Northern Seas were the allest in history due to recurring poor tch years. So the Japanese accepted a stic quota reduction and severe restricns. However, the catches of both nations re high and the coastal fishing of the USSR ecially surpassed the plan considerably. s represents Soviet expansion and also plies that resources were not so scarce thought. These developments will help an in future debates on resources. ("Ni- Keizai," March 2, 1967.)

erman-Greenlandic ear Conflict Increases

Incidents between small Greenland gillters and large German trawlers in interional waters near Greenland appear to be increasing. The skipper of a Greenland vessel recently reported losing 22 long lines and nearly been run down by 2 German trawlers. An official of the Royal Greenland Trade Department notes that Greenland's enforcement vessels cannot intervene because the fishing areas are in international waters. He said protests through diplomatic channels had failed to produce results and, if the incidents recur, Greenlanders will be forced to consider whether to continue fishing in the area. ("Aktuelt," Feb. 27, 1967.)

World Fish Meal Output Rose 13% in 1966

World fish meal production in 1966 increased about 13 percent over 1965. Output rose substantially in Peru, Chile, and Norway, but declined in the U.S. Most principal producing countries submit data monthly to the International Association of Fish Meal Manufacturers.

Country	Nov. 1966	Dec. 1966	Jan.-Dec. 1966	Jan.-Dec. 1965
	(Metric Tons)			
Canada	5,413	8,363	88,344	90,387
Denmark	8,964	4,049	107,915	111,189
France	1,100	1,100	13,200	13,200
German Fed. Repub.	6,265	5,428	73,443	67,555
Netherlands	1/	1/	2/1,510	5,894
Spain	1/	1/	1/	3/ 34,000
Sweden	940	483	6,189	7,076
United Kingdom	6,343	6,004	85,906	80,845
United States	17,026	10,391	4/179,101	4/219,807
Angola	5,917	5,016	54,670	47,668
Iceland	20,520	18,567	181,842	172,073
Norway	18,463	2,172	421,725	309,149
Peru	2,337	187,319	1,470,478	1,282,011
So. Afr. (including S.-W. Afr.)	7,990	1,006	257,565	272,388
Belgium	375	375	4,500	4,500
Chile	2,149	3,872	194,221	70,352
Morocco	1/	1/	5/21,300	19,290
Total	103,802	254,145	3,161,909	2,807,384

1/Data not available.
2/Data available only for January-April 1966.
3/Estimated.
4/Does not include shellfish meal.
5/Data available only for Jan.-Sept. 1966.
Note: Japan does not report on monthly basis at present. In 1965, her production was 356,000 metric tons, according to FAO's "Yearbook of Fishery Statistics, 1965" vol. 21.

FOREIGN

CANADA

TIGHTENS SEALING REGULATIONS

For the Gulf of St. Lawrence sealing season opening March 7, 1967, the Canadian Government planned to have snow vehicles, 4 helicopters, and more protection officers supervising the hunt.

The Minister of Fisheries explained that the sealing regulations had 2 purposes: one, conservation, the other, strictest control over the manner seals are killed.

The types of firearms and ammunition that may be used to shoot adult seals are clearly defined; so too are the weight and length of the hard-wood clubs used in taking young seals. Sealers may carry the traditional gaff for personal safety, but cannot use it as a weapon. One underlined section states that a seal must not be skinned until there is positively no doubt that it is dead.

Quota and Rules Set

If a violation occurs, a fishery officer now can suspend the license of offenders up to 30 days. In the Gulf area, sealing may only take place between 6 a.m. and 6 p.m. daily, thus confining the hunt to daylight hours.

As in 1966, a 1967 quota of 50,000 has been set in the Gulf for young harp seals commonly known as whitecoats. Killing hood seals and adult harp seals on the breeding patches is prohibited.

A protocol bringing harp and hood seals under international control has been approved by the International Commission for the Northwest Atlantic Fisheries. This will lead to international conservation measures outside the Gulf of St. Lawrence. Inside the Gulf, sealing in 1965 and 1966 was exclusively Canadian. (Canadian Department of Fisheries, Ottawa, Feb. 24, 1967.)

* * *

PLANS WEST COAST FISHERY RESEARCH LABORATORY

The Canadian Government has acquired a site in West Vancouver, British Columbia, to develop a major marine research center, the Fisheries Minister announced February 23, 1967. He described the plans of the Fisheries Research Board for the new area as "long-range," leading in the next decade to the development of one of the nation's finest water laboratories. Facilities will be made available for research on live fish in fresh and salt water.

The new laboratory will operate as part of the Fisheries Research Board's Vancouver Laboratory. (Canadian Department of Fisheries, Ottawa, Feb. 23, 1967.)

* * *

HER EXPLORATORY WHALING WITH JAPAN IN ATLANTIC IS SUCCESSFUL

The whaling company Kyokuyo Hogei sent a 750-ton whaling vessel to Newfoundland in May 1966 at the request of the Canadian Government. The vessel took 170 whales (20 above its goal) and produced 2,400 metric tons of meat and oil. The company now plans a joint coastal whaling venture with Canadians in that area.

It was reported in December 1966 that Taiyo also had established a joint whaling company in Canada and would send a 470-ton whaling vessel to Newfoundland. The vessel's target for 1967 (June-September) is 175 blue whales.

LATIN AMERICA

Mexico

FISHERY DEVELOPMENT PLANS

In early 1966, a fisheries advisory commission pointed to the slow increase in the Mexican catch. Its recommendations prompted the government to announce a national development program aimed at raising landings by more than 160 percent--to nearly 500,000 metric tons a year.

The commission observed that Mexican fishing progress has been haphazard and poorly balanced; the industry is too dependent on export markets for shrimp and a few other species.

Shrimp will feature in plans to increase exports from 66,000 metric tons (1964) to 144,000 tons. But Mexico also hopes to increase output of nonfood marine products from 7,000 tons to 61,000 tons. Fish meal will make up nearly 50,000 tons of the 1970 total.

With this drive to increase the catch, Mexico also will encourage its people to eat more fish. Estimates for 1970 put per capita consumption at least at 5.8 kilograms (12.76 pounds).

Large Investments Planned

To achieve its 1970 targets, Mexico plans an investment in fishing of 334 million to 396 million pesos (US$26.7 million to $31.7 million) in the next 4 years. Of the higher sum, 234.3 million pesos (US$18.7 million) will be drawn from current revenue provided by the State; of the remaining 161 million pesos (US$12.9 million) about 60 percent will be sought abroad and 40 percent at home.

The investment will build larger vessels able to work far out at sea and new processing plants and better facilities for handling wet fish; improve export and domestic marketing methods; help apply improved fishing techniques; and train fishermen.

The program also undertakes the reform of laws governing fisheries and fishing cooperatives, and of regulations presently taxing commercial fishing and the fish trade. It seeks the coordination of government agencies dealing with fishing under the National Advisory Commission on Fishing. The Commission will be given executive power to direct the development plans it has outlined. ("Fishing News International," Jan. 1967.)

Brazil

PRESIDENT VETOES
FISHERIES CODE LEGISLATION

On January 18, President Castello Branco vetoed the entire revision of the fisheries code approved by the Brazilian Congress. He said that amendments had so distorted the Administration's original text that partial veto was impossible. Another revision of the obsolete 1938 Fisheries Code is being prepared by the numerous government agencies concerned with the fisheries industry.

The President stated that the bill approved by Congress was contrary to the national interest. He pointed out that Article 8 of the original draft he presented to Congress in September 1966 permitted foreign vessels to fish in Brazilian waters when authorized by Executive Decree. As revised by Congress, Article 8 was limited to firms with headquarters in Brazil that would be permitted to charter foreign fishing vessels for one year, renewable for only another year, then the vessels either were to be nationalized or cease fishing in Brazilian waters. This wording, according to the President, destroyed the flexibility desired by the Administration.

Financial Burden To Government Excessive

The President also stated that the fiscal incentives for investment in the fisheries industry that the original bill provided now would be too great a burden for the Treasury to bear on top of the recently granted 25 percent wage increase for civil servants. To be able to meet that additional new expense, without issuing more currency, the government is reducing fiscal incentives granted other activities under previous legislation. Accordingly, incentives for the fisheries industry are no longer justified. (U. S. Embassy, Rio de Janeiro, Feb. 9, 1967.)

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Brazil (Contd.):

LEAFLET DISCUSSES MARINE FISHING IN NORTHEAST BRAZIL

The fishing industry, like most others in Northeast Brazil, is technologically and commercially far behind those of most developed countries, according to a new leaflet on the region. Many available resources are unexploited; processing and marketing facilities are few. Lobster is found along the Continental Shelf off the states of Ceara, Rio Grande do Norte, Paraiba, and Pernambuco. The report includes catches of various species, development plans of SUDENE (Superintendency for Development of the Northeast) and tables on vessels, processing companies, fishing colonies, warehouses and cold storage plants.

Note: FFL-69, "Marine Fishing in Northeast Brazil," is available free from the Branch of Foreign Fisheries, BCF, Room 8015, U. S. Department of the Interior, Washington, D. C. 20240.

Cuba

MEXICO SEIZES VESSELS

On Feb. 6, 1967, a Mexican Coast Guard patrol boat seized 6 Cuban fishing vessels inside Mexico's territorial waters near Progresso, Yucatan Peninsula. The boats are being held at Progresso while the Mexican Government considers further action.

* * *

FISHES OFF ARGENTINA

The "Guasa," a Cuban freezer trawler recently purchased from Spain, has returned to the new fishing port of Havana after a $2\frac{1}{2}$-month trip to the Patagonian Shelf. Commanded by a Soviet fishing captain, the vessel had 460 metric tons of southwest Atlantic hake.

* * *

CUBA AND USSR AGREE ON SERVICING SOVIET VESSELS

Cuba and the USSR have agreed on the servicing of Soviet fishing vessels by Cuban enterprises of Havana's fishing port. This will improve the work of the Soviet fishing fleet in the southwestern Atlantic and permit full-capacity use of fishing port facilities. The agreement was signed by V. V. Sokolov, representative of the USSR Ministry of Fisheries in Cuba, and Alvaro Lavastida Rosado, director of the Havana fishing port. ("Tass," Feb. 16, 1967.)

Argentina

SOVIET FISHING CAUSES PROBLEMS

Several Argentine high-seas fishing vessels returned unexpectedly to Mar del Plata complaining that the physical presence of large Soviet fishing vessels makes their fishing difficult and hazardous. The Argentine captains lodged a protest with the local National Maritime Prefecture claiming they were unable to fish for the same schools of fish since Soviet fishermen use the "mass concentration of vessels" technique, and that high waves created by larger Soviet vessels endangered the smaller Argentine vessels.

Peru

SETS CLOSED SEASON FOR ANCHOVY FISHING

On February 11, 1967, as a conservation measure to protect the anchovy (Engraulis ringens), the Peruvian Government published supreme decree no. 16. This ordered: (a) current fishing season--September 1, 1966, to August 31, 1967; (b) closed fishing season--February 15, 1967, to March 14, 1967; and (c) financial assistance for small and medium-size fish-meal producing firms during the closed season be given by the Industrial Bank and Ministry of Treasury and Commerce.

A recommendation on limiting the anchovy catch to 8 million metric tons during the current season is expected to be made in May 1967 by the Ocean Institute (Instituto del Mar). Possibly, the Ocean Institute may recommend an increase in catch if environmental factors are favorable. Some producers favor increasing the permissible catch. However, at the current rate of fish meal production,

Peru (Contd.):

and sales allocations by the end of May 1967, stocks may stand at over 750,000 tons. (U.S. Embassy, Lima, Feb. 13, 1967.)

* * *

4 GROUPS WILL SELL FISH MEAL

The independent fish meal producers of Peru account for about 50 percent of the total national production. They were expected to organize into 3 groups similar to the Peruvian Fishery Consortium (Consorcio Pesquero del Peru) to obtain more favorable market prices for fish meal produced. Besides the Peruvian Fishery Consortium, these similar organizations were expected to be functioning soon: (1) The National Union of Fish Meal Producers (Sindicato Nacional de Productores de Harina de Pescado S.A.), (2) the Association of Fisheries (Pesqueros Asociados S.A.), and (3) the Fish Meal Producers Association (Asociacion de Productores de Harina de Pescado S.A.). ("Pesca," Nov. 1966.)

Chile

200-MILE LIMIT RESERVATIONS

A Chilean Foreign Ministry official recently said that Chile's adherence to the 1952 Declaration of Santiago is as firm as ever, but she does not actually claim sovereignty over the 200-mile zone. Rather, she claims jurisdiction for the exclusive purpose of protecting natural resources.

A recent editorial in "Diario Ilustrado" contends that Chile's position must be aligned with that of Peru and Ecuador, which make no reservations in their claim to full sovereignty. It also noted Argentina's recent adoption of a 200-mile maritime jurisdiction. (U. S. Embassy, Santiago, Feb. 1, 1967.)

Ecuador

SEIZES JAPANESE TUNA VESSEL

The Ecuadorean Navy seized the Japanese tuna long-liner "Chiyo Maru No. 15" (410 gross tons) February 17, 1967, on charges of violating the 200-mile territorial waters. On February 24, the Government announced that the vessel owners would be subject to a fine of US$12,777.60--and the vessel would be confiscated if payment was not made by March 1. Also, Ecuador is requiring the purchase of a $2,640 license and a fishing fee of $200 if the vessel desires to continue fishing inside territorial waters.

This is the second Japanese fishing vessel seized by Ecuador on charges of illegal fishing. The first incident occurred 3 years ago. ("Minato Shimbun," Feb. 28 & 19, 1967.)

Colombia

CONSIDERS 200-MILE TERRITORIAL SEA

A Colombian Senate committee has approved a bill extending territorial waters to 200 miles. The full Senate reportedly was scheduled to vote on the bill the week of Feb. 19, 1967. (Bogota, Feb. 16, 1967.)

Panama

REQUIRES SAILING PERMIT FOR FISHING VESSELS

Panamanian Law No. 5, January 17, 1967, requires a "sailing permit" ("zarpe de pesca") for shrimp boats and fishing vessels over 10 gross tons leaving Panamanian ports for shrimp or any other fishing operation. (Foreign ships of this size may be affected.) Although no charge is levied for the permit, tax stamps of US$20 and $40 must be affixed to sailing permit applications for shrimp and fishing vessels using nets, respectively. For other fishing activities, the tax stamp will also be $20 or $40, depending on the fishing operation. Craft under 10 gross tons are exempt.

This sailing permit is no substitute for a fishing license. A valid fishing license must still be held by the operator of a fishing craft.

Applicants must present these documents to support their request: (a) sailing permit application in duplicate; (b) certificate of inspection for vessel; and (c) list in triplicate

Panama (Contd.):

of crew and passengers, if any. Applications will be available from head of Department of Fisheries, Ministry of Agriculture, Commerce, and Industries in the near future. Ship operators will normally obtain applications from the Ministry. The local official of Department of Fisheries in a port will issue the sailing permit; in ports with no Department representative, the Port Inspector, Mayor, or other local magistrate, in order of availability, will be the issuing officer.

Law Designed To Raise Funds

The sailing permits will be valid for 30 days. The law provides for semiannual inspection of all affected craft and enforcement of the sailing permit requirement. Also, for the present, no increase in shrimp vessels licensed to operate will be allowed. The present total is 232, virtually all Panamanian owned. Presumably, the issuance of an operating license to a new shrimp vessel would be possible only if one now active retired.

The law is designed to raise additional funds to "contribute to the realization of" Panama's participation in the 6-year FAO study of Central America's fisheries potential underwritten by the U.N. Development Program. Participating countries, including Panama, have contributed to it. However, the new law does not earmark proceeds of the sailing permit tax stamps in any way. Apparently, Panama's contribution to the study eventually will be taken from the regular budget of the Fisheries Department. (U. S. Embassy, Panama, Feb. 17, 1967.)

El Salvador

1966 SHRIMP LANDINGS WERE RECORD

A new BCF leaflet discloses that during 1966 El Salvador's shrimp fleet landed a record total of over 11.9 million pounds--40% above the previous record of 1961 and 43% above 1965. The catch of fish and other shellfish, taken incidental to the shrimp, also continued to grow; in 1966, it reached a record 3.9 million pounds.

While no sales figures are available, personal observation confirms increasing quantities of fish and other seafood in local markets. Probably due to the increased availability of shrimp, less fishing effort was required in 1965 and 1966 than in most previous years. During 1965, an average 65 boats logged about 19,000 fishing days. During the first 11 months of 1966, 67 boats spent 19,000 days fishing.

The leaflet also discusses catch, exports and consumption, prospects, and a statistical table on the shrimp industry.

Note: FFL-113--"El Salvador Shrimp Industry, 1965-1966," is available free from the Branch of Foreign Fisheries, BCF, Room 8015, U. S. Department of the Interior, Washington, D. C. 20240.

Foreign Fishing Vessels Seized Off Latin America

In the second half of February, U. S. tuna vessels were seized off Ecuador and Peru; French vessels were arrested off Brazil; Cuban and U. S. vessels were seized off Mexico; a Japanese vessel was seized about 180 miles off Ecuador; and Soviet vessels off Argentina were required to adhere to the regulations of that nation's unilaterally established 200-mile maritime jurisdiction.

Vessel arrests off Latin American coasts are increasing and posing serious problems for several countries.

MID EAST

Israel

PLANS TUNA FISHING AND PROCESSING

Israel is reported seeking information from Japan concerning the economics of tuna vessel and tuna packing operations. The Marine Research Laboratory in Hiroshima was asked by the Israeli Science and Technology Information Center for data on production capacity and efficiency of tuna vessels, operating costs, types of fishing gear, and estimated investment and space requirements to build a tuna cannery with a processing capacity of 2,000-5,000 tons a year. ("Suisan Keizai Shimbun," Feb. 7, 1967.)

EUROPE

EUROPEAN PURSE-SEINE METHODS SPREAD TO DENMARK AND WEST GERMANY

The success of the Norwegians and Icelanders with the purse seiner has stimulated its increasing use by European fishing fleets. Recently, Denmark and West Germany put into service vessels using large purse-seine nets and power blocks.

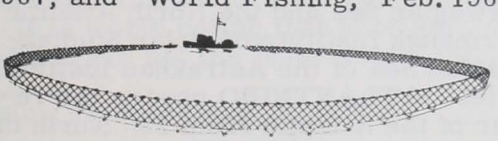
In Denmark, the side-trawler "Else Horne," fitted with purse-seine equipment, has been landing good catches at Hirtshals, her home port. In December 1966, the 140-foot "Caroline Musholm" was delivered to Danish owners by a Norwegian shipyard. She is the first power-block purse seiner built for Denmark and the fishing fleet's largest vessel.

W. Germany Adopts Purse Seiner

In West Germany, the 825-ton trawler "Schellfisch" has been converted into a power-block purse seiner, the world's longest.

The vessel will debut on the herring grounds off Iceland. German trawler operators will then be able to compare the purse seine with the midwater trawl.

Another vessel able to fish purse-seine gear will soon enter service with the same fleet. She is the stern trawler/purse seiner "Milly Ekkenga," just completed at Woubrugge, Holland. Somewhat smaller than the "Schellfisch," she is about 560 tons and has $\frac{3}{4}$ length shelterdeck. She will be able to undertake bottom and midwater trawling operations--and purse seining. ("Fishing News International," Feb. 1967, and "World Fishing," Feb. 1967.)



USSR

SOVIETS FAIL TO REACH 1966 CATCH QUOTA

In 1966, the Soviet catch of fish, shellfish, marine mammals, and other aquatic products amounted to 6 million metric tons ("Pravda," Jan. 29, 1967, p. 2). The 1966 planned quota was 6.2 million metric tons, 10.7 percent more than the 1965 plan.

This is the first time since the 1950s that the USSR failed to fulfill the catch quota. In recent years actual landings surpassed planned catch by an average of about 5 percent, but this average was decreasing during 1964 and 1965.

The Pravda article, prepared by the Soviet Central Statistical Office, claimed fulfilment of the 1966 fishery catch quota by 100.7 percent. However, Soviet Minister of Fisheries A. A. Ishkov, writing in the official organ of the Ministry of Fisheries, "Rybnoe Khoziaistvo," January 1966, page 2, stated: "In compliance with the 1966 Plan for the Development of the Soviet National Economy, confirmed at the 6th session of the Supreme Soviet, the fishing industry will have to increase fishery landings to 6.2 million metric tons and the output of fishery products to 3.05 million tons." So, the 1966 catch reached only 96.8 percent of the originally set quota.

* * *

2.6 MILLION KING CRABS LANDED IN EASTERN BERING SEA

In 1966, the Soviet Union's Far Eastern fishermen landed 2.6 million adult male crabs and produced 104,754 cases (48 8-oz. cans) of canned crab meat. The Soviets fished in the eastern Bering Sea from March to June. They used 3 king crab factoryships accompanied by 9 net-setting medium side trawlers and 33 pick-up boats, the same number as in 1963-1965. Because they fished an additional month, there was a 15 percent increase from the 1965 canned pack of 90,020 cases.

The February 1965 U.S.-USSR King Crab Agreement set a quota of 118,600 cases for the 1965-1966 Soviet Eastern Bering Sea fishery. In 1965, the Soviets reached 75.9 percent of the canned pack quota, and in 1966 about 88 percent. During the recent 1967 negotiations, the U. S. suggested a 15-percent decrease in the Soviet Eastern Bering Sea pack, permitting the USSR to produce 100,000 cases of canned crab meat during the 1967 and 1968 seasons.

The Soviet Union will do her best to reach the quota despite the fact that the Eastern Bering Sea fishery is not very "profitable," especially when compared to highly "profit-

USSR (Contd.):

Soviet Fishing for King Crab in the Eastern Bering Sea (Bristol Bay), 1959-1966

Year	Months Fished	Number of Vessels				Tangle Nets Set	Average Time for Set	Male Adult King Crabs	Canned Pack[3]
		Factoryships	SRT Medium Trawlers[1]	Motor Boats[2]	Total				
						Tons	Hours	Lbs.	No. of Cases
1966	March-June	3	9	33	45	617,195	330.0	2,559,598	52,377
1965	April-June	3	9	33	45	618,689	132.5	2,225,567	45,010
1964	April-July	3	9	33	45	607,459	136.6	2,799,620	72,104
1963	April-July	3	6	33	42	536,139	162.1	3,019,417	76,369
1962	April-July	2	6	22	30	419,667	110.5	3,019,211	72,160
1961	April-July	2	6	21	29	387,976	128.1	3,441,314	73,154
1960	April-July	1	6	10	14	191,559	94.0	1,995,006	37,722
1959	July-Sept.	1	-	8	9	63,950	95.0	620,406	7,961

1/Crew of 22, of which 10 are king crab fishermen.
2/Crew of 12, of which 10 are king crab fishermen.
3/Each case contains 96 $\frac{1}{2}$-lb. cans.
Source: Ministry of Fisheries, USSR.

able" bottom fisheries in the Gulf of Alaska, off the Pacific Northeast, and in the Bering Sea. Canned king crab meat is one of the most important Soviet exports; in 1965, over 10 million rubles' worth were sold to Western European countries, 3 times higher than 1965 caviar exports, and about one-fifth the value of all fishery exports.

* * *

PACIFIC FISHERIES MAKE GEAR ADVANCES

The Experimental Design Bureau of the Soviet Far Eastern Fisheries Administration recently tested a new design for a detachable cod end. Soviet fishermen use detachable cod ends in their high-seas fishery operations. Full cod ends are left floating on the surface to be picked up later by refrigerated fish transports. Meanwhile, trawlers continue fishing.

Detachable cod ends are not used by U. S. fishermen, but West European fishermen use them extensively in high-seas stern trawler operations.

Soviet-made tuna long lines are another recent innovation of the Design Bureau. In the past, the Soviets bought long lines from Japan but, in early February 1967, the fishing gear plant at Nakhodka delivered to the Far Eastern tuna fleets the first tuna long lines made of domestic synthetic materials.

* * *

SCIENTIST DISCUSSES ATLANTIC RESEARCH

The December 1966 issue of the Soviet magazine "Niva" contains an interview with the Deputy Director of the Soviet Atlantic Scientific Research Institute for Fisheries and Oceanography (ATLANTNIRO). Here are some highlights:

"The ocean is not a forest, nor is the fisherman a hunter who can 'comb' a wood in an hour or so in search for game. For this reason a diversified network of specialized scientific research institutes has been set up to help the fishermen. The field of our explorations is virtually boundless--the world ocean which covers more than 70 percent of the surface of the earth. Fishing is a widely developed industry providing employment for at least 100 million people all over the world.

"Soviet fishery scientists have 'divided' the vast expanses of the seas and oceans into several zones: the Pacific Ocean is the province of the Vladivostok Fisheries Institute; the Norwegian Sea and the North Atlantic of the Murmansk Institute of Polar Studies; and the Caspian Sea of the Astrakhan Institute of Fisheries. ATLANTNIRO covers the remainder of the Atlantic from 23° North down to Antarctica. About 15 or 20 years ago we had a staff of only 20 scientists who were engaged in the study of the southern Baltic Sea. Today the catch has increased considerably, consequently our institute has expanded too. . . ."

USSR (Contd.):

It Locates and Studies Fish

"Our institute is a branch institute. Its main object is to locate and study fish. More than 20 specialized research vessels cruise far from home the year-round exploring the seas. But their activity is not limited to exploration alone. Locating fish is not the same as catching fish which migrate in search of zones abounding in food.... Our scientists study the oxygen content in ocean water, they measure its temperature and establish its salinity. This apparently mechanical collection of information, conducted with great patience and care, makes it possible to establish the typical behavior of fish and the dependence of fish on the medium."

"There is a very good term for defining the character of our investigations. It is 'long-term exploration.' It means that the research vessels are sometimes compelled to operate intensively as regular fishing vessels. For instance, if fish has been located in zone A it is necessary to find out what kind of fish, whether there is only one shoal or more, or there are several local shoals. Perhaps, it might be a whole school of fish. To find the answers to these questions the zone is carefully explored. The scientists study the food conditions which are so important in determining the behavior of fish, the relief of the bottom, and the composition of the sea bed. In short, the probable fishery is described in the greatest detail.

"At the same time fishing is conducted on a commercial scale to ascertain the potentialities, the number of vessels that can operate there simultaneously, and the length of the fishing season. It is difficult to overestimate the significance of such recommendations. It is worth noting that economic considerations are not the least important...."

Designing Fishing Gear

The Soviet scientist discussed the work of various laboratories and the important role of the Laboratory for the Experimental Design of Fishing Gear:

"The designers, electronic engineers and gear experts have set themselves the following goal: to design fishing gear which would enable the master or engineer to perform all fish-hauling operations from the bridge. The readings on the instruments would show him the depth to which the trawl has been submerged, they would show whether the trawl is open, and whether it has been filled with fish. Despite the fact that the trawl is still the main catching gear, there is still much that we do not know about its operation. For instance, we do not yet know how the fish behaves after it has been caught. To know this you must see the trawl in operation. Our designers are using a special underwater glider equipped with lighting instruments, cameras and movie cameras. When towed, the glider is worked by an operator who observes the behavior of the fish in the trawl and registers it on movies. We have thus discovered very interesting and important details which are essential for the designers of fishing gear...."

* * *

RESEARCH VESSEL RETURNS FROM SOUTHWEST ATLANTIC

The large stern factory trawler "Gizhiga," a research vessel of the Atlantic Scientific Research Institute for Fisheries and Oceanography (ATLANTNIRO), returned to the USSR in January 1967 from a long voyage to the southwestern Atlantic. During the 34,500-mile trip, its scientists studied 16,000 fish, and conducted 440 experimental trawlings and over 300 bottom soundings. Preliminary analysis of the research shows that rich fishery resources exist in the area. ATLANTNIRO intends to continue the studies.

In March 1966, the Gizhiga docked at Aberdeen, Great Britain, for fresh water and stores. The Soviet scientists visited the Marine Laboratory at Torry, where they compared notes on deep-water fishing.

In late summer 1966 Soviet fishing vessels began to exploit fishery resources off Argentina.

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SENDS RESEARCH VESSEL TO NORTHWESTERN ATLANTIC

The flagship "Sevastopol" of the Polar Scientific Institute for Fisheries and Oceanography (PINRO) left Murmansk at the end of February 1967 for a research cruise to the northwestern Atlantic. The main purpose will be to study the locations of commercial concentrations and feeding and spawning habits

USSR (Contd.):

of cod, ocean perch, haddock, and other species off Labrador and Newfoundland. The northern boundary of the warm Gulf Stream and its effect on fish populations also will be studied. The vessel will resupply at St. John's, Newfoundland, where Soviet scientists will meet with Canadian biologists of the local fisheries laboratory.

The Sevastopol traditionally conducts research, with the Soviet research vessels "Neptun" and "Topseda" in subareas 1, 2, and 3 of the International Convention for the Northwest Atlantic Fisheries. In 1965, her scientists studied the biology of cod, ocean perch, and haddock. By counting the young, the PINRO scientists hope to obtain data necessary for long-term catch forecasts.

Note: One of Sevastopol's 1966 cruises was reported in Commercial Fisheries Review, June 1966, pp. 91-92.

* * *

OCEANOGRAPHIC VESSEL VISITS SENEGAL

On January 30, 1967, the newest Soviet oceanographic research vessel, "Akademik Kurchatov," docked at Dakar, Senegal, during her maiden voyage in the Atlantic. A. S. Monin, Director of the Soviet Institute of Oceanology and leader of the scientific party, held a press conference and described the research done. Over 1,000 persons visited the vessel's research laboratories during the 4-day port stay.

During the return trip to her home port of Odessa, the 6,800-gross-ton vessel stopped at Gibraltar, where the scientists met with the famous French oceanographer Cousteau.

Later in the year, according to the U. S. Embassy in Moscow, the vessel will be displayed at the Montreal World's Fair.

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TUNA CONFERENCE IS HELD IN LENINGRAD

In late January, or early February 1967, a conference on tuna fishing was held at Leningrad. Reportedly, it was sponsored by GIPRORYBFLOT, an organization of the Soviet Ministry of Fisheries in charge of new designs for constructing fishing vessels. The participants reviewed the results of Soviet tuna fishing with 5 Japanese-built vessels and discussed the changes needed to improve the operation of the vessels. The conference decided that the Soviet tuna fishery should be developed further and new tuna vessels built.

* * *

HELPS YEMEN SET UP RED SEA PLANT

Yemeni newspapers report that the Soviets are helping Yemen set up a US$11 million fish-processing plant in the Red Sea port of Hodeida. Earlier statements by the Yemen Government said the project would include a fish cannery, a freezing plant with a daily capacity of 55 metric tons, and storage for 1,000 tons of frozen fish.

Reportedly, the Soviets will supply 7 fishing vessels, and 14 to 16 technicians will accompany each vessel to train Yemeni fishermen. The processing plant is expected to provide an export surplus, part of which may go to the USSR as repayment for construction credits. (U. S. Embassy, Sanaa, Jan. 31, 1967, and other sources.)

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STERN TRAWLER SINKS OFF DENMARK

The large stern trawler RTM-7002 "Tukan" sank on February 28, 1967, in the storm-swept Skagerrak Strait, a short distance from the Danish west-coast fishing port of Hanstholm. The 2,368-gross-ton "Tropik"-class vessel, built in 1962, was the second in a series of 67 similar freezer trawlers built for the Soviets in East Germany.

Only 22 of the crew were saved; 57 fishermen died, some after being rescued. Survivors said the ship began to sink after being damaged by a violent cross-wave. The press attaché of the Soviet Embassy in Copenhagen reported that the vessel carried a deckload of heavy timbers which broke loose while crewmen were attempting to don life vests and launch lifeboats. Several crew members were injured by the shifting timbers, some severely. As a result, only 2 lifeboats were launched and many of the crew had to jump into the frigid waters.

The attaché said further that the Tukan will probably be raised.

USSR (Contd.):

Soon after the accident, the Soviet rescue tug "Strogii" took station above the sunken vessel. ("Berlingske Tidende," Mar. 2, 1967.)

Poland

REPORT ON
NORTHWEST ATLANTIC FISHERIES

Poland began to fish in the Northwest Atlantic in 1961. In that first year, about 4,000 metric tons of various species, mostly ocean perch (redfish) and cod, were landed (table 1). By 1965, over 56,000 tons (also mostly ocean perch and cod) were caught--14 times more than in 1961. The Northwest catch made up 20 percent of total landings of 280,097 tons in 1965.

Table 1 - Polish Catches in Northwest Atlantic, 1961-1965

Species	1965	1964	1963	1962	1961
	(Metric Tons)				
Cod	21,720	10,865	7,736	4,161	1,222
Redfish	24,708	21,414	12,975	4,070	2,378
Flatfish	6,338	2,981	2,193	451	300
Other	3,862	2,583	344	439	23
Total	56,628	37,843	23,248	9,121	3,923

The Polish fleet in the Northwest Atlantic consists mostly of large stern factory trawlers (2,600 gross tons) constructed in Polish shipyards. They are equipped with 2,400 hp. motors and automated cod and ocean perch filleting lines capable of processing 50 metric tons of raw fish a day. The maximum freezing capacity of tunnels on a stern trawler is 30 tons of fish a day, while the fish meal plant can absorb about 25 tons of raw fish a day. (These data probably refer to three 8-hour shifts.)

In 1965, 11 stern trawlers caught over 50,000 tons of fish in the Northwest Atlantic--a yearly average of about 4,500 tons (10 million pounds) per stern trawler. The remaining 10 percent of the catch was landed by smaller trawlers which, in 1965, were used mainly in the herring fishery in the Gulf of Maine and off Nova Scotia.

They Fish The Whole Northwest Atlantic

The Poles fish throughout the Northwest Atlantic--from the tip of Greenland and the Davis Strait to Georges Bank off New England. In 1965, the best daily average catches of factory trawlers were made off the coast of Labrador (subarea 1 of ICNAF) and the lowest on the Grand Banks (see table 2). If catches in one area are low during the year, the Poles prefer not fo fish there the next year. This happened in 1962 on Georges Bank, and in 1963 off Nova Scotia. The average daily catch per factory stern trawler in 1965 was 25.9 metric tons (about 57,000 pounds). This high output justifies the expense of building and operating factory and freezer stern trawlers whose sea endurance is 90 days. The cost of building a high-seas fishing factory trawler equals that of 24 large cutters or 4 side motor trawlers operating in less distant grounds. The crew of a factory stern trawler is 11 times the crew of a fishing cutter and 3.5 times a side trawler's.

Table 2 - Catches of Factory Stern Trawlers

Fishing Ground	1965	1964	1963	1962
	Metric Tons Per Day of Fishing			
Greenland (Davis Strait)	-	23.8	17.6	27.2
Labrador Coast	29.1	26.0	23.0	28.9
Newfoundland (Grand Banks)	22.6	26.8	27.9	20.2
Nova Scotia (Sable Island)	-	-	11.1	-
Gulf of Maine and Georges Bank	27.6	21.2	-	11.5
Average	25.9	26.0	26.6	21.8

The annual operating costs of a factory stern trawler are 14 times those of a cutter and 3 times those of a large side trawler operating in the North Sea. Notwithstanding these enormous differences in capital and manpower, the operating costs per unit of production are not greatly different.

What It Costs To Land A Fish

During 1963-65, it cost about 6,000 zloty (US$250.00) to produce 1 metric ton of fish--from nearby Baltic fishing grounds to Polish ports--and only 6,150 zloty ($256.00) to land 1 ton of fish from the distant Northwest Atlantic (table 3). In other words, 1 kilogram (2.2 pounds) of landed fish cost 25 U. S. cents in the Baltic and 25.6 cents in the Northwest Atlantic. The operational costs in the North Sea were much greater (35.4 U. S. cents per kilogram).

Table 3 - Production Cost of 1 Metric Ton of Landed Fish in the Northwest Atlantic and on Short-Distance Grounds in 1963-1965

Fishing Region	Initial Cost	Operating Costs	Manpower Needed
	(Polish Zloty 1/)		
Baltic	15,000	6,000	0.35
North Sea	24,000	8,500	0.45
North-West Atlantic	22,000	6,150	0.20

1/ 24.00 zloty equals US$1.00.

Poland (Contd.):

The "initial"1/ production costs, lowest for small, inexpensive fishing cutters fishing in the Baltic, are much higher in the North Sea ($1,000 per 1 metric ton) and only a little less for factory stern trawlers fishing in the Northwest Atlantic (about $910 a ton).

Higher initial expenses for trawlers, however, are offset entirely by lower manpower needs. During 1963-65, only 2 manpower units were needed to produce 100 tons of fish in the Northwest Atlantic, 3.5 units in the Baltic, and 4.5 units in the North Sea. So it is twice as expensive in salaries, fishermen's benefits, and insurance to fish in the North Sea as it is in the Northwest Atlantic. These costs reflect the average catch per man: in the Baltic, each Polish fisherman catches 30 metric tons; in the North Sea, 22 tons; and in the Northwest Atlantic, 50 tons. (Note: The period during which these quantities were landed is not given in the original text, but it is believed to be 1 year.)

The data show clearly that the profitability of fishing in areas greatly distant from home ports depends on a consistently high rate of landings. The Poles have achieved this in the Northwest Atlantic and intend to further expand their fishery there. ("Polish Maritime News," Dec. 1966, and other sources.)

1/Possibly means "capital investment."

Denmark

1966 CATCH REACHED 1965 LEVEL

The 1966 Danish fish catch reached the 1965 level of about 800,000 metric tons despite a slow start. Generally, higher prices enhanced the catch value. Exports of fishery products were slightly greater than 1965's record US$124 million, although quantity was slightly less.

Cod Fillets and Blocks: Danish exports of fresh and frozen fillets and blocks of cod and cod-like fish totaled 48 million pounds in 1966 and 46 million pounds in 1965. Exports to the U. S. increased sharply in 1966.

Prices for cod fillets and blocks weakened considerably during the second half, which could divert supplies to European markets and reduce their exports to the U. S.

Pond Trout: Exports totaled 22 million pounds in 1966 and 23 million pounds in 1965. Shipments to the U. S. accounted for 1.8 million pounds in 1966 and 1.5 million pounds in 1965.

Purse-seine Gear: The industry has taken initial steps to enter the new purse-seine fishery for herring and mackerel. Excellent success with the new gear late in the year points toward increasing participation in those fisheries during 1967. (U. S. Embassy, Copenhagen, Jan. 27, 1967, and other sources.)

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GREENLAND AND DENMARK HAVE COD MARKETING PROBLEMS

Declining prices for frozen cod fillets and blocks in the U. S. market continue to trouble the Danish fishing industry. Danish sellers say the price declined about 25 percent over the winter--and they are seeking other markets. For example, Danish exporters recently signed contracts to sell cod fillets to Hungarian and Czechoslovakian markets, although these markets will in no way compensate for U. S. sales.

Danish fishermen find prices in British ports somewhat better than at home and they now seek to land more fish in Britain.

Sweden also is affected by the problem. Her dealers claim that Denmark is exporting cod fillets to Sweden at prices considerably lower than those Swedish fishermen must receive.

Reports also indicate concern about decreasing Faroese exports of frozen cod fillets to the U. S. and of iced fish to Great Britain.

Greenland Industry Suffers Price Decline

During the winter, the Greenland fishing industry experienced a price decline of 6 U.S. cents a pound for frozen cod fillets. The Royal Greenland Trade Department is working on plans for various countermeasures, including a change in the type of product. Since the price of a fully finished product would be more stable, consideration is being given to changing over to production of deep-fried fillets for export. ("Vestkysten," and "Dansk Fiskeritidende," various dates and "Børsen," Feb. 16, 1967.)

* * *

Denmark (Contd.):

CONFERENCE CONSIDERS
NEW RED SHRIMP PRODUCTS

The Danish Fisheries Ministry invited leaders of the country's shrimp industry to a symposium in late March to consider rising use of deep-water red shrimp (Pandalus borealis). The annual catch in Danish and Greenland waters passed 10,000 metric tons in 1965. Catches are expected to rise further during the coming year, particularly in Greenland. There, important new shrimp grounds have been found at Disko Bay and at several locations on the southern part of the west coast.

The largest part of the catch is now being canned, but vacuum-packed frozen shrimp have recently become important. The variety in shrimp products will increase during the coming months with the appearance on the market of vacuum-packed pasteurized shrimp in both frozen and chilled forms. ("Dansk Fiskeritidende," Feb. 17, 1967.)

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COD ARE SCARCE IN NORTH SEA

The cod fishery in the North Sea normally peaks in January and February, but the catch this year has dropped significantly from recent years. Many Danish fishing captains after cod have given up completely. However, the poor catches have not resulted in higher prices on the West Jutland fish auctions because of the high level of frozen stocks on the world market. Danish cod in overseas markets are meeting hard competition, especially from Canada and Iceland. ("Politiken," Jan. 29, 1967.)

Greenland

LAUNCHES RESEARCH VESSEL

The 200-gross-ton steel research vessel "Adolph Jensen" was launched at Frederikshavn, Denmark, on January 31, 1967. The vessel was built for fishery research in Greenland waters. It will have special equipment, including laboratory space and accommodations for 6 biologists.

The new vessel, which replaces an older, much smaller research cutter of the same name, will permit investigations in the large fishing banks off Greenland's west coast, where the most important fisheries are found. ("Børsen," Jan. 28, 1967.)

* * *

ORDERS STERN TRAWLER FROM NORWAY

The Royal Greenland Trade Department (RGTD) has ordered a stern trawler of 499 gross tons from a shipyard in Florø, Norway. It will be 50 meters (164 feet) long and 9 meters (29.5 feet) wide, carry a crew of 28, and fish in the Atlantic north of 59° N. latitude. Twin engines will produce a total of 2,200 horsepower. Delivery will be made in early 1969.

The RGTD has studied thoroughly the productive potential of a larger trawler in Greenland waters and the capabilities of other-sized vessels for this operation. ("Børsen," Feb. 17, 1967.)

Norway

1966 NORWEGIAN EXPORTS
UP 10% OVER 1965

The value of Norwegian exports of fishery products in 1966 was a record US$225 million, about 10.5 percent over 1965. In 1966, exports were up for frozen herring and herring fish oil, while exports of frozen fillets, canned fishery products, and fish meal were about the same as in 1965.

Frozen Fillets: Shipments of cod fillets, the leading item in the group, were about the same in both years. In 1966, there was an export gain in haddock and herring fillets that offset a shipment decline in fillets of coalfish and other species.

Canned Fish: Higher exports of canned brisling partly offset a drop in small sild shipments; 1966 was a good brisling season, but there was a shortage of small sild supplies early in the year.

Industrial Products: The increase in herring oil exports reflects the increase in out-

Norway (Contd.):

put of the reduction factories. Fish meal production rose sharply in 1966, although actual shipments of fish meal were about the same as 1965. This resulted in a stock buildup toward the end of 1966, which led to a ban on industrial fishing in November and December. However, sales contracts for stocks on hand had been arranged by late 1966, according to the Norwegian reduction industry. ("Fiskets Gang," Jan. 26 & 27, 1967, and other sources.)

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REDUCES EXVESSEL PRICES FOR INDUSTRIAL FISH

Norwegian exvessel prices in 1967 for reduction fish were reduced one-third or more from 1966 prices by the fishermen's marketing organizations and the processors. The new basic prices for the 3 most important species are:

Winter herring (fat content 18 percent) US$23 a metric ton.

Capelin (fat content 2.7 percent) US$10.25 a metric ton.

Mackerel (fat content 18 percent) US$27.50 a metric ton.

Prices will be adjusted for fat content differing from the specified basic content. For each percent of fat per metric ton, the adjustment will be $1.28 for winter herring, $1.18 for capelin, and $1.21 for mackerel.

The price cuts were made because of reduced prices on the world market for fish meal and oil. According to press reports, the announcement of the reductions has caused concern in Norwegian fisheries circles. Fishermen representing 400 purse seiners have sent a resolution to the Fishermen's Union asking state subsidies for fish delivered to the reduction plants. (U. S. Embassy, Oslo, Feb. 5, 1967.)

Iceland

BANS TRAWLING WITHIN 12-MILE FISHING LIMIT

Iceland's Fishery Minister said in a newspaper interview on January 25 that the large Icelandic trawlers will not be allowed to fish within the 12-mile fishery limit.

When Iceland extended its fishery limit to 12 miles, it excluded its own trawlers, although other Icelandic fishing vessels were allowed inside. The large trawlers lost some of their most important fishing banks because they were located inside the new limit.

A committee of the Alting (Iceland's legislature) recently adopted a resolution that would permit large trawlers to fish within the limit, but the resolution has met hard opposition and is expected to be defeated. ("Børsen," Jan. 27, 1967, and U. S. Embassy, Reykjavik, Feb. 2, 1967.)

West Germany

"METEOR" SAILS ON ATLANTIC OCEANOGRAPHIC CRUISE

The West German research vessel "Meteor" sailed from Hamburg, February 13, on an oceanographic expedition that is part of a broader UNESCO program. She carried 86 scientists, including specialists from Spain, Portugal, United Kingdom, and West Germany.

The Meteor will conduct 2 major investigations in the Atlantic between the Azores and the Canary Islands during the 6-month cruise. One study concerns the variability in physical and chemical characteristics of the ocean strata and currents. In particular, scientists will examine the effect of dense, high salinity Mediterranean Sea water as it enters the Atlantic.

The second major effort will be to explore the tops of certain underwater mountains, especially the Great Meteor Seamount, which rises from depths of 4,000 meters to within 300 meters of the ocean surface. The specialists will study animal life on this and other seamounts. (Some scientists believe underwater mountains are slowly sinking and that organisms are gradually being conveyed to deeper parts of the ocean.)

The research plan also includes a determination as to whether the sea bottom around the Canary Islands shows evidence of once having been part of the African land mass.

West Germany (Contd.):

Modern underwater TV cameras and drilling machines will be used. ("Vestkysten," Feb. 13, 1967.)

Spain

MAY PROCLAIM 12-MILE FISHING LIMIT

The Spanish Government is considering a law for a 12-mile fishing limit measured generally from the low-water mark along the coastline. However, provisions also are made to draw straight base lines between nautical points less than 24 miles apart. Further, provision is made to negotiate agreements with foreign governments whose fishermen claim traditional fishing rights off Spain.

Under the proposed law, Spain would gradually phase out foreign fishing in the 3-6 mile zone. Traditional foreign fishing in the 6-12 mile zone might be continued, at a level not exceeding the habitual catch, providing reciprocal rights were granted. (U. S. Consul Bilbao, Feb. 11, 1967.)

Italy

CANNED TUNA SALES ARE SLOW

According to the Italian Tuna Packers Association, domestic consumption and exports of canned tuna have declined in recent months. This was attributed to the difficulty of promoting sales in Italy because the rising cost of tuna since late 1966 has increased production costs of packers. The lifting of restrictions on meatless Fridays by the Roman Catholic Church also has contributed to the problem. To overcome depressed sales, the Association will try to hold down raw material costs and promote sales vigorously this year. ("Suisancho Nippo," Feb. 16, 1967.)

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ENTERS OFFSHORE TUNA FISHERY

As more Italians accept frozen fish, and the demand for tuna products continues to rise, the industry is disturbed by the need for large imports. Most imported tuna comes from Japanese vessels fishing off west Africa. Now Italy has plunged into deep-sea tuna fishing with the completion of her first 2 oceanic tuna vessels.

These 860-gross-ton vessels were built in Venice for the Societa Italiana Pesca Atlantica Tonno (SIPAT) and are named "Albacora" and "Albacora Secondo."

Overall length is 66.7 meters (219 feet), moulded breadth 10.6 meters (35 feet), and depth 5.24 meters (17.2 feet). The main power unit is a diesel of 1,300 hp., at 350 r.p.m., which drives directly a single propeller for a top speed of 14.5 knots. Fuel-oil tanks have a 388-ton capacity and fresh-water tanks 62 tons. Each vessel can accommodate 24 persons.

The fish hold has a capacity of 750 cubic meters and is refrigerated to a temperature of -25° C. (-13° F.). A tunnel-freezer installation can freeze 15 metric tons of tuna a day. ("Fishing News International," Feb. 1967.)

United Kingdom

DIRECTORY OF FISHING VESSELS AND SUPPLIERS PUBLISHED

The "Fishing News Directory and Equipment Guide, 1967," recently published, is a comprehensive directory of British fishing vessels. It lists names and addresses of owners, equipment suppliers, fishery associations, and Government fishery authorities (administrative and research).

Also listed are vessels and owners for main ports, builders and their facilities, vessels recently completed, under construction, or on order.

The outfitters mentioned include suppliers of marine engines; propulsion, transmission, and steering gear; electronic equipment; and catching and hauling gear. Suppliers of marketing and processing equipment are included.

Associations are divided into those of vessel owners, catchers, fishermen, labor unions, processors, boatbuilders, insurance, and others. Its publisher: Arthur J. Heighway Publications, Ltd., Ludgate House, 110 Fleet Street, London EC4, England. Price £1 10s (US$4.20) a copy.

Fig. 1 - "Tokei Maru," Japanese factory fishing vessel, processes king crab for food.

Fig. 2 - The deck of this Japanese vessel in the North Pacific is covered with bottom fish. (U. S. Coast Guard photographs)

ASIA

Japan

BECOMES BIG IMPORTER OF FISH

Japan, which thinks of itself as the world's leading fisheries nation, has become a large importer of fish.

In 1959, fish imports totaled only US$7,700,000, but by 1966 had jumped to $160 million--and this year are likely to hit $200 million. The reasons: people are eating more fish and the domestic catch is leveling off.

Japan is the world's largest consumer of fish and consumption is rising steadily because of a rising standard of living. High meat prices also have stimulated fish buying.

Surveys show that farm households now eat as much fish as urban families. Western methods of cooking fish have made it more acceptable to younger people, who have been impressed in school with the need for more animal protein in their diet.

Imports Many Species from Near and Far

Controls on fish imports were lifted in 1961. The result has been a constantly growing inflow of shrimp, sea bream, tuna, herring, salmon roe, and cuttlefish, mostly frozen.

Heavy sellers in the Japanese market include neighbors like South Korea, the Soviet Union, and Taiwan, and more remote fisheries nations like Peru, Mexico, Spain, and Australia. The big Japanese fisheries companies also have become leading importers. Imports have been further stimulated by reciprocal deals, in which Japan sells vessels, equipment, and supplies technical aid in exchange for fish.

Meanwhile, Japan's own fish catches have leveled off sharply. Its total catch in 1965 was 6,880,000 tons--only 20,000 tons more than in 1962. Offshore fishing has declined markedly. ("Asahi," Feb. 3, 1967.)

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PER-CAPITA CONSUMPTION OF FISH AND SHELLFISH ROSE IN 1965

Per capita fish and shellfish consumption in Japan in 1965 averaged 76 grams a day (about 2.6 ounces a day or 60.2 pounds a year), according to data of the Japanese Ministry of Agriculture and Forestry. This is a 4.5-percent increase over the 1960-64 average and 11.8-percent over 1964.

Year	Fish and Shellfish Consumption	Increase
	Grams 1/	%
1965	76.0	-
1964	68.0	11.8
1960-64 avg.	72.3	4.5
1955-59 avg.	65.5	15.3

1/One gram is equal to about 0.035 ounces.

This increase was attributed primarily to the record high fish landings in 1965 of 6.5 million metric tons. Per capita protein consumption in 1965 was 77.6 grams a day--53 grams (68.3 percent) from vegetable sources and 24.6 grams (31.7 percent) of animal protein. Fish constituted 12.6 grams (51.2 percent) of the animal protein. ("Nihon Suisan Shimbun," Feb. 8; "Suisancho Nippo," Feb. 6, 1967.)

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WILL PROMOTE DOMESTIC EATING OF CANNED TUNA AND SALMON

The Japan National Canned Food Wholesalers Association plans to promote the sale of canned red salmon and canned lightmeat tuna packed in oil on the domestic market to make up for depressed canned red salmon exports to Great Britain and declining domestic sales of canned soy-sauce-seasoned tuna and saury. The Association will conduct the campaign with the Japan National Federation of Fishermen's Cooperative Associations (NIKKATSUREN). In 1966, NIKKATSUREN launched a drive to promote domestic consumption of canned whitemeat tuna in oil. ("Suisan Tsushin," Feb. 21, 1967, and other sources.)

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Japan (Contd.):

FROZEN TUNA EXPORT PRICES ARE DROPPING

As of early March 1967, good yellowfin catches by California tuna fishermen and the slowdown in canned tuna sales in the U. S. have depressed sales of Japanese frozen tuna to U. S. packers to the lowest level in recent years. The result is a sharp decline in Japanese frozen tuna export prices. The early February price offered by U. S. packers for gilled-and-gutted yellowfin for direct export was US$430 a short ton c.i.f. Prices for direct albacore exports to the U.S. also are expected to decline below $500 a ton c.i.f., heretofore maintained.

In the Atlantic, where most of the Japanese tuna fleet continues to concentrate on albacore, export prices are expected to weaken further. Current prices of Atlantic-caught albacore are not known because virtually no new sales to U. S. packers have been made since mid-January. Then, the price was $440 a ton, f.o.b. Atlantic transshipment port. Prices may have fallen below $420 a ton.

Japanese Watch Market Changes

In the Indian Ocean, Japanese vessel operators now fishing mainly for yellowfin are greatly concerned about recent market developments, especially dropping California yellowfin prices. The $320 a ton recently offered by California packers for domestic yellowfin landings is comparable to the Japanese export price of $410 a ton c.i.f. If the U. S. exvessel price drops to $300 a ton, the Japanese export price may drop to below $400 a ton. The Japanese also are concerned over growing tuna operations in the Indian Ocean by Formosa and other countries. They fear this may further disrupt prices.

Another problem facing the tuna industry is Italy's reduced tuna imports from Japan in recent months. Italy had provided a good market to which Japanese Atlantic and Indian Ocean-caught yellowfin could be diverted when U. S. market conditions were unfavorable. ("Suisan Tsushin," Feb. and Mar. 1967.)

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1966 SAURY PRODUCTION WAS DISAPPOINTING

The 1966 Japanese saury production fell below expectations--landings of 237,800 metric tons worth 9,877,500,000 yen (about US$27.4 million). This was an increase of 3 percent in quantity and 4 percent in value over 1965, but it failed to attain the 250,000-300,000 metric-ton level predicted for the season. Exvessel prices averaged 41.5 yen a kilogram (US$104 a short ton). ("Nihon Suisan Shimbun," Feb. 8, 1967.)

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ADOPTS 1967 FROZEN TUNA TRANSSHIPMENT QUOTAS TO ITALY AND U. S.

The Japanese Frozen Tuna Producers Association set new frozen tuna export quotas for business year 1967 (April 1967-March 1968). A quota of 44,000 metric tons was set for export to Italy, and 4,000 short tons for Indian Ocean transshipments to the U. S. The Italian quota is 14,000 tons over the duty-free quota of 30,000 metric tons established by the European Economic Community. The Indian Ocean transshipment quota for the U. S. is the same as BY 1966. ("Katsuo-maguro Tsushin," Feb. 17, 1967, and other sources.)

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SET PLANS FOR 1967 NORTH PACIFIC TRAWLING

Tentative 1967 plans for Japanese trawling in the North Pacific were announced in mid-January. The fleets will total 14 with about 210 trawlers. Five fleets will fish all year and every company is planning on greater landings.

The Japanese trawl fisheries in the Bering Sea lost money after 1958--but recently, due to improved operations, they are beginning to make a profit. One feature of this year's plans is the increase in production of minced meat aboard motherships.

The extent of this fleet's operations in waters south of the Gulf of Alaska is not known yet. Apparently, the exploratory fishing last fall was not profitable, but the results are still being studied to see if the operations can be made more efficient.

Japan (Contd.):

For minced meat production, the fishing would focus on Alaska pollock found in the more northern waters of the North Pacific. (Fishery Attaché, U. S. Embassy, Tokyo, Feb. 3, 1967.)

* * *

FIRST ATTEMPT TO BUY MEXICAN FROZEN SHRIMP MEETS DIFFICULTY

The Japanese trading firm Mitsui Bussan recently contracted with a Mexican shrimp fishing firm to buy frozen shrimp for direct shipment to Japan. Heretofore, all Mexican shrimp exports to Japan were handled through a U. S. broker and shipped from Los Angeles or San Francisco. Mitsui Bussan could not obtain more than 30 of the 300 metric tons it had planned to buy for the initial shipment to Japan.

The firm faces considerable financial loss because it rented refrigerated space for 300 tons on the freighter scheduled to depart Mazatlan in late February. Despite this setback, the firm intends to continue this venture because, eventually, it may cut costs of shipping Mexican shrimp to Japan by 80 yen a kilogram (US$0.099 a pound). ("Suisan Keizai Shimbun," Feb. 27, 1967.)

* * *

WILL STUDY TERRITORIAL SEA LIMITS OF OTHER NATIONS

The Japanese Foreign Ministry plans to send Treaty Bureau Chief Fujisaki and Investigator Kawakami to South American, European, and South African countries on a 3-week trip to study the laws, treaties, and views of those nations on territorial sea limits and exclusive fishing zones. The two-man team, scheduled to depart February 22, plans to visit Mexico, Peru, Chile, Brazil, Argentina, Spain, Union of South Africa, and Kenya.

The Foreign Ministry reportedly hopes to use the team's findings to reexamine Japan's position on territorial sea limits and contiguous zones. At present, Japan and a few other nations adhere to the 3-mile concept--despite the growing trend among coastal states toward extending their territorial sea limits and exclusive fishing zones. ("Suisan Tsushin," Feb 21, 1967.)

* * *

ARGENTINA'S 200-MILE LIMIT WILL AFFECT JAPANESE FISHING

Argentina's recent decree extending her maritime jurisdiction to 200 nautical miles--and her sovereignty over the adjacent continental shelf up to the 200-meter isobar--is expected to affect Japanese trawl, tuna longline, and whale fisheries. In particular, Japanese trawl operations aimed at developing the abundant merluza (hake) resource off Argentina will be impaired considerably by this decree.

The Japanese Government is concerned over this development. It is reported to have lodged a strong protest with the Argentine Government claiming it cannot recognize Argentina's unilateral extension of territorial sea limits--and that the extension has no effect internationally. ("Suisan Keizai Shimbun," Feb. 1, 1967.)

* * *

GOVERNMENT ASKED TO PREVENT S. KOREA FROM HIRING JAPANESE FISHERMEN

On January 31, eight organizations concerned with northern seas fisheries asked the Japanese Ministries of Agriculture-Forestry, Foreign, and Transportation to control legally the hiring of Japanese crewmen by Republic of Korea (ROK) fishing vessels. ROK, which is attempting to start salmon fishing operations in the northern seas, is recruiting Japanese instructors at Toyama and Nemuro.

The 8 organizations argued: (1) the ROK action violates the Japan-Soviet Fisheries Agreement and the Japan-U.S.-Canada Fisheries Agreement; (2) ROK fishing for salmon will disturb the fishery order; and (3) considering the condition of resources, the entry of a third power cannot be approved. ("Sankei," Tokyo, Feb. 1, 1967.)

* * *

BANS ITS FISHERMEN FROM FOREIGN SALMON VESSELS

On February 13, the Japanese Government partially revised the Fisheries Licensing and Control Ordinance to prohibit its nationals from salmon fishing aboard foreign vessels. The new ordinance, which also sets penalties for violators, will render it impossible for Japanese fishermen to work for the South

Japan (Contd.):

Korean fleet planning high-seas salmon operations in the North Pacific. Earlier, the Government used the Passport Law to curb their travel abroad.

As a result, South Korea's recruitment of Japanese salmon fishermen has virtually ended. However, a problem has arisen concerning cancellation of provisional employment contracts signed earlier by 22 Japanese. Three of the 22 have cancelled their contracts. But the remaining 19 have spent all the advance pay of 30,000-50,000 yen (US$83-139) received from the South Korean fishing firm and are having trouble returning the money.

The Korean firm reportedly plans to sue the 19 for nonperformance if they fail to pay. Meanwhile, the Seasonal Fishermen's Union in Toyama Prefecture (Japan Sea coast), to which the fishermen belong, is seeking Government help to solve this problem. The union claims the new ordinance infringes on human rights. It is considering a civil suit against the Government if the distressed fishermen are not helped. ("Minato Shimbun," Feb. 16, 1967.)

* * *

STUDY TUNA BASE ON WESTERN SAMOA

The Japanese fishing firms now supplying tuna to American Samoa are considering establishment of a tuna base at Apia, capital of Western Samoa, which became independent in 1962. The firms are Taiyo Gyogyo, Nichiro Gyogyo, and Nippon Reizo. They face growing difficulty in negotiating tuna prices for deliveries to American Samoa because U. S. packers there are relying more heavily on landings by Formosan and South Korean vessels.

The Japanese firms believe that a base at Western Samoa would be more advantageous even if prices for tuna delivered there were 10 percent below American Samoa's because they would not face the problem of tuna rejects. Two possible uses of the bases are being considered--cold-storage and tuna-packing operations. If a tuna base is set up, its primary use will likely be as a cold-storage point for tuna exports to Hawaii and mainland U. S. The Government of Western Samoa is reported interested. ("Suisan Keizai Shimbun," Feb. 16, 1967.)

* * *

RESEARCHERS SEE POTENTIAL USE FOR FUR SEAL CARCASSES

Researchers at Keio University in Tokyo reported finding amino acids (polypeptides) in fur seal muscle. These acids are said to have a beneficial effect on high blood pressure, and in promoting skin smoothness by dilating surface blood vessels. Their report has caused Japanese firms to be interested in buying seal carcasses from St George Island in the Pribilofs.

* * * *

PRICE AGREEMENT REACHED FOR INDIAN OCEAN TUNA

The Japanese Overseas Fishery Company, which operates the tuna bases at Penang, Malaysia, and Port Louis, Mauritius Island, in the Indian Ocean, reached a price agreement with vessel owners for February landings there. The prices for large albacore and yellowfin represent a 10-yen a kilogram (US$25 a short ton) decrease from December 1966-January 1967 prices.

February 1967 Tuna Delivery Prices for Penang, Malaysia, and Port Louis, Mauritius Island

Species	Penang		Port Louis	
	Yen/Kg.	US$/Short Ton	Yen/Kg.	US$/Short Ton
Albacore, round:				
Lge. (over 24 lbs.)	172	434	152	383
Sml. (under 24 lbs.)	117	295	102	257
Yellowfin, gilled & gutted:				
Lge. (over 117 lbs.)	160	402	145	365
Sml. & med. (23-117 lbs.)	155	391	135	340
Big-eyed, gilled & gutted:				
Over 64 lbs.	105	264	95	239
23-64 lbs.	80	202	70	176
Bluefin, gilled & gutted	75	189	60	151

Tuna fishing in the Indian Ocean is reported slow. Catches average 2-3 metric tons a vessel per fishing day. ("Katsuo-maguro Tsushin," Feb. 8, 1967.)

日本

Republic of Korea

INTERESTED IN NORWEGIAN VESSELS

A 3-man Norwegian delegation recently returned from South Korea after studying the pos-

Republic of Korea (Contd.):

sibilities of selling Norwegian-built trawlers, tuna boats, and marine equipment. Negotiations are continuing and prospects of Norwegian sales in excess of 100 million kroner (US$14 million) are excellent. ("Fiskaren," Jan. 25, 1967.)

Taiwan

TAIWAN AND SOUTH KOREA PLAN TUNA FLEET EXPANSION IN AMERICAN SAMOA

According to information received by Japanese trading firms, Formosa (Taiwan) and South Korea plan to expand their Samoan-based tuna operations this year. Formosa reportedly plans to add 100 vessels and South Korea 10 to their Samoan fleets. If these plans materialize, Formosa will have by year's end 168 tuna vessels operating out of Samoa, and South Korea 68 vessels.

Japan's tuna fleet based on that island in late December 1966 numbered 25 vessels. Its landings accounted for only 23.6 percent of Samoan tuna landings. ("Suisan Keizai Shimbun," Feb. 16, 1967.)

* * *

EXPORTS ALGAE PRODUCTS TO JAPAN

A factory for processing green algae (chlorella) into edible products has been set up in Taiwan. Using green algae as raw material, the factory produces green algae powder and extracts for export to Japan. It also produces monthly 1.2 million pounds of green algae-soybean "milk" and "milk powder" for local consumption. Food products made from this seaweed are rich in protein and fat. The location or ownership of this plant were not given in "Taiwan Industrial Panorama," Vol. 5, No. 11 and 12, December 1966.

FISH-BREEDING IN JAPAN

It is recognized that few of the world's fishing grounds are able to withstand increased exploitation, and indeed that many are already overfished. It is interesting, therefore, to learn of one reaction of the Japanese, the world's leading fishing nation, to this situation from the following extract from the Japanese "Times."

"OSAKA--Thirteen prefectures along the Inland Sea coast have disclosed a joint fish-breeding project to combat the dearth of fishing resources. The program aims at preventing the decrease of expensive fish such as sea bream, cuttlefish, prawns, octopi, and swellfish due to sewage from coastal industrial areas, according to the announcement. The prefectures participating in the joint project, include Osaka, Hyogo, Hiroshima, Miyazaki, and Kochi. The announcement said fish are to be hatched at nurseries along the Inland Sea coast and be sent to each prefecture, where they are kept in fish reserves for a month before being released into the sea. Two nurseries are expected to be completed in Oita and Okayama prefectures besides the two existing ones in Kagawa and Ehime prefectures. The operation cost of the joint project is estimated at ¥6 million, which will be appropriated by participating prefectural governments." ("Scottish Fisheries Bulletin.")

Note: 363 yens equal US$1.

SOUTH PACIFIC

Australia

RESTRICTS SHRIMP IMPORTS FROM INDIA

The "Financial Express," Bombay, India, reported on January 25, 1967, that quantities of Indian shrimp were being held up in Australian ports after strict import quality standards were imposed. This was causing heavy losses because the Indian shrimp are suitable only for the Australian market.

Indian shrimp imports to Australia consist mainly of cooked peeled whole shrimp bought mainly by Chinese restaurants. (U. S. Foreign Agriculture Service, Bombay, Jan. 25, 1967.)

New Zealand

PLANS JOINT FISHING VENTURE WITH JAPANESE

The Japanese fishing firm Tokushima Suisan and a New Zealand firm, the East Coast Fisheries Products Company, are planning a joint fishing venture in New Zealand. The proposed company would engage in sea bream and tuna long-line fishing in the South Pacific. The president of the Japanese firm was scheduled to visit New Zealand in late April to conduct preliminary talks. ("Minato Shimbun," Feb. 17, 1967.)

Fiji Islands

FISHING INDUSTRY IS GROWING

Since 1963, the Pacific Fishing Company Ltd., predominantly Japanese controlled, has been operating in the Fiji Islands from a freezing and storage base at Levuka on Ovalau Island. The company has concentrated on catching, freezing, and exporting tuna--mainly to Japan and the United States.

Since its establishment, the company has operated under special legislation exempting it from income and export taxes. Legislation also barred any competitive operation in the Colony. The Government of Fiji is reviewing this status because it wants to encourage investment from outside and to diversify industry. (U. S. Consul, Suva, Feb. 3, 1967.)

RARE SPECIES OF WHALE SAVED BY SKINDIVERS

On the New South Wales coast, skindivers drove a mother whale and her calf out of Sydney Harbor--and so may have saved the last of a rare species known as the "Southern Right." The name "Southern Right" originated during the 1800s because this species was considered the "right whale" to catch. Dr. W. H. Dawbin of Sydney University identified the species from underwater photographs taken by the skindivers.

The Southern Right whale was the foundation of the Australian and Antarctic whaling industry in the 1800s and they were slaughtered by the thousands. In the Antarctic, 200,000 were killed by American whalers alone. By 1900, the herds had been decimated, and the Australian whalers had to turn to the sperm whale in eastern states and the humpback in Western Australia. In 1929, the Australian State Governments decided to put the species under total protection because sightings of the Southern Right whale were almost nonexistent. This delayed step to save the species was followed by other governments throughout the world. However, protection did not produce new herds and the species seemed doomed. ("Science News.")

AFRICA

Ghana

JAPANESE RESUME TECHNICAL AID

Japanese training of Ghanaian vessel crews in trawl operations has been resumed after a year of negotiations between Nihon Suisan and the Ghanaian Government Fishery Corporation. Nihon Suisan concluded its first technical cooperation agreement with Ghana in 1964. Recently it agreed to provide 15 Japanese nationals to man the 1,980-ton trawler built in domestic shipyard for Ghana. The vessel was scheduled to depart on February 4, pick up 30 local trainees, and conduct trawling off Angola. Four more 1,900-gross ton Japanese trawlers are reported scheduled for delivery to Ghana. ("Minato Shimbun," Jan. 31, 1967.)

Mauritania

EXTENDS ITS TERRITORIAL WATERS FURTHER

On February 13, the Government of the Islamic Republic of Mauritania (GIRM) extended its territorial waters to 12 nautical miles. It also increased greatly the waters claimed for its jurisdiction in which trawling will be permitted.

The new law, effective in mid-March, abrogates the previous GIRM claim to a modified 12-mile limit: a 6-mile limit of territorial waters, and fisheries jurisdiction in the 6-mile contiguous zone beyond. The territorial waters claimed are further increased by establishing a straight line from Cape Blanc to Cape Timiris as the base from which to calculate territorial jurisdiction. On the southern Mauritanian coast, the base reference point still is the low-tide mark.

Waters Opened to Trawlers

All of Mauritania's territorial waters, except the Bay of Levrier, now are opened to GIRM-authorized trawlers. Previously, the GIRM had permitted trawling only in the 6-mile zone over which it claimed fisheries jurisdiction. Trawling permission now may be granted on a boat-by-boat basis to vessels of nations that conclude bilateral agreements with GIRM, or to Mauritanian-flag vessels. To qualify for Mauritanian registry, vessels must be manned by at least 50 percent Mauritanian nationals or "assimilees." An "assimilee" is a French national considered "Mauritanian" for purposes of GIRM nationality requirements by a special long-standing protocol between GIRM and France. (U. S. Embassy, Nouakchott, Feb. 21, 1967.)

South Africa

LIVE SPINY LOBSTER TRADE GROWS

A central marketing body has been set up to coordinate the activities of the 6 South African companies holding concessions to sell live spiny lobster in Europe. Eighty percent of the live lobster are sold in Paris and Nice. During the first 5 months of 1966, 139 tons worth about US$425,000 were exported. The 1966 catch was limited because of adverse fishing conditions.

The export by air freight of 175 short tons of live spiny lobster to Europe in 1965 was a marked increase over the 1964 figure of 17½ tons, according to the Cape Lobster Exporters' Association.

In 1964, 1½ tons of whole fresh frozen lobster were exported; in 1965, 64 tons. Export of tails is worth about $11,900,000 a year. ("South African Digest," Feb. 10, 1967.)

South-West Africa

PILCHARD QUOTAS REMAIN THE SAME

Pilchard quotas of 90,000 tons for each of the eight factories in Walvis Bay (South-West Africa) remain unchanged for the 1967 season.

At Walvis Bay and Luderitz, during October 1966, output of fish products was:

Fish meal (short tons)	3,524
Fish oil (gallons)	70,112
Canned fish (1,000 lbs.)	

South-West Africa (Contd.):

At Luderitz, during November 1966, production and exports of fish meal and canned spiny lobster were:

	Weight	Value
	Lbs.	US$
Fish meal	4,256,000	175,500
Canned spiny lobster	9,400	14,800
Total	4,265,400	190,300

The Fish Meal Picture

An interim report by the Oceana Group of fishing companies reveals that the overall return from fish meal sales in 1966 was considerably better than 1965's. In recent weeks, however, international markets have changed rapidly and 1967 returns will be lower. There was heavy production in Peru in second-half 1966; the year also was exceptionally productive for Scandinavia and Iceland.

The report also states that if consumption is to be boosted to a point where the world export surplus can be readily absorbed, prices should remain realistic. If the volume of production in South Africa and South-West Africa can be maintained, world fish meal trends would not be considered disturbing. ("Barclay's Trade Review," Johannesburg, January 1967.)

South Africa Republic

CONDUCTS FISHING TRAINING

A Cadet Course for young men who intend to take up commercial fishing in the inshore fishing industry as a career is being held for the first time at the South African Merchant Navy Academy at Granger Bay, Cape Town.

When they complete the course in November-December 1967, all candidates will be required to take examinations; the successful ones will win a "Diploma Certificate--Fishing Cadet." The Department of Transport will allow certain "sea time service" reductions in favor of such certificate holders so that later they can take examinations for mate and skipper certificates of competency.

Fees are about US$540 for the full year, including board and lodging. The course started on Jan. 23, 1967.

The fishing cadets will be trained in elementary applied mathematics and physics, theory of navigation, practical and theoretical seamanship, practical navigation, ship construction and stability, and electronic equipment. Also, they will study elements of engineering and refrigeration, radiotelephone procedure, marine biology, history of the fishing industry, and fish preservation. ("Namib Times," Walvis Bay, Dec. 23, 1966.

Kenya

ISSUES LICENSE REGULATIONS FOR SHELLFISH BUSINESS

The Government of Kenya issued, December 20, 1966, the Fish Protection (Crustacea) Rules 1966, which bring under license the selling, marketing, and processing of crustacea, including all species of shrimp, prawn lobster, crawfish, and crab.

The intent of the rules is to give the Kenya Inshore Fisheries Limited, formed in June 1966, a trading monopoly in these products. The firm has equity participation from the Government, a British firm, and local businessmen.

In 1965, the exports of fresh crustacea amounted to 15,700 pounds worth about US$10,000. Those exports will grow considerably during 1967 because the firm has all the facilities to process and export them. (U. S. Embassy, Nairobi, Feb. 3, 1967.)

Zanzibar

STUDENTS COMPLETE FISHERIES TRAINING IN EAST GERMANY

About 20 of the 70 fisheries trainees Zanzibar sent to East Germany in 1965 for training have returned home. They studied ship engineering, ship handling and other aspects of seamanship. They plan to continue their studies and to teach their new skills to other

Zanzibar (Contd.):

tudents. Only 10 of the 70 were awarded certificates" for completing the course. ther students, only partially trained, are ing returned to Zanzibar to go to work in e fishing industry and continue their stud- s concurrently.

Two fishing vessels are on the way to anzibar. "Teachers" from East Germany e accompanying the students and will car- on their work until the students can do eir jobs unassisted. The teachers also will arry out further investigations into the local shing industry and the canning of fish. (U.S. onsul, Zanzibar, Feb. 21, 1967.)

panish Sahara

RENCH FISH FOR SPINY LOBSTER

The Brittany coast and the Bay of Biscay own to the Spanish border long have been xcellent French fishing grounds. But the emand for certain fish sometimes exceeds upply and compels fishermen to travel further.

One very specialized operation is fishing r the Green Mauritanian spiny lobster alinurus regius). This crustacean dif- rs from the ordinary English variety, own as "Red" lobster in France. It is ught mainly in shallow water off Spanish hara, in 12 to 18 ft., along a small stretch coast called "Rio de Oro," near St. Etienne. tching and bringing them back alive was st devised by Breton fishermen. Now that belongs to Spain, Spanish authorities make ne attempt to control fishing. Their first ve was to restrict fishing to March 1-Au- st 31. Foreign fishermen may be excluded together in the near future.

ecial Vessels Used

Vessels built in Douarnenez and Camaret ere designed to spend up to 6 months at sea, ore catches in open holds, and so bring them ck alive.

Of 30 small vessels now operating, the 0-ton "Ar Bec" is typical. Built 10 years o of timber, the hold contains 200 cu. m. sea water and can take 20 tons of lobster. e is not meant for speed. In heavy weather, e slows down because the pressure of wa- ter entering and leaving hundreds of slits and holes, when she rises and falls, can damage the fragile cargo. The Danish 240-hp. diesel normally drives her along at 7 knots. Considering her length of 90 ft., 25-ft. beam, and 13-ft. draught, this is reasonably good.

The hold's interior is protected with an inch-thick coating of cement, reinforced by steel rods laid over the Iroko planking. Usually, this lasts up to 10 years before requiring inspection and replacement. On being slipped, straw is burned in the hold to kill various growths and parasites.

The vessel has a working life of 25 years, depending on upkeep. Sometimes, this is complicated by a traditional system of having up to 100 shareholders. Disagreements occur, especially after a poor catch. The crew of 11 men and a boy work on a shareout basis. Usually, 52 percent goes to the vessel; 48 to the crew--the skipper has $2\frac{1}{2}$ shares to any of the crew's one.

How They Fish

The "Mother" ship first is based in a safe anchorage. Then, using two 25-ft. sea-going launches with 18-hp. diesels, the men go out to set their nets. Each man lays 30 at a time. The nylon nets are about $3\frac{1}{2}$ ft. wide. One side is kept on the bottom by lead weights; the other is kept upright by a string of small floats.

Because this is done near rocks, there is much damage to nets. Every morning, each man picks up his 30 nets and lays down another 30. Then, he returns to vessel, untangles spiny lobsters, each weighing $\frac{3}{4}$ to $1\frac{1}{2}$ pounds, and repairs damage for next morning's work. About 140 nets are allocated to each man per voyage. The hold, subdivided into 5 sections, is inspected by using an "Aqualung" to remove any dead lobster.

Back in port, a large nylon tarpaulin is laid under and around the hull, while large capacity pumps remove the water so the lobsters can be unloaded.

Conditions on board are good. Hours are, as the captain aptly put it, "100 percent." Average earnings are about £1,200 (US$3,400) a year, with a month off after each voyage. But it's a life of swiftly changing fortunes. The cargo has to be sold on arrival because the chances of fatalities, which cannot be sold, increase for every day in port. A 25 percent drop in price is not unusual from one day to the next. ("Fishing News International," Feb. 1967.)