

# INTERNATIONAL

## U. S. and Japan Discuss New U. S. 12-Mile Zone

On January 3, 1967, U. S. and Japanese delegations concluded preliminary talks in Washington concerning the continuation of Japanese fishing operations in the new U. S. fisheries zone established by Public Law 89-658 in October 1966. The new law extends U. S. jurisdiction over fisheries to 9 miles from the 3-mile territorial sea, or a total of 12 miles from the coast. It provides for continuation of traditional foreign fishing in the new zone recognized by the U. S.

The U. S. said the extension of its jurisdiction was consistent with international law. However, it indicated readiness to hear and consider the Japanese views on the law and the continuation of their fisheries in the new zone.

### Japanese Disapprove

The Japanese said they could not approve the unilateral establishment of such a fishing zone. Under international law, they declared, their fishing vessels should not be prevented from conducting fishing activities freely in the zone unless Japan agrees. They presented data which, in their view, indicated that Japan had conducted various kinds of fisheries in the 12-mile zone--in the Bering Sea, the Pacific Ocean, the Gulf of Alaska, and the Atlantic Ocean.

Despite the difference, the delegations discussed possible arrangements concerning Japanese fishing operations in the new zone.

Discussions were expected to resume February 6.



## Central American Fisheries Development Commission

HOLDS FIRST MEETING IN SAN SALVADOR

The Central American Fisheries Development Commission (CAFDC) held its organizational meeting in San Salvador from Novem-

ber 7-10, 1966. Thirty-five delegates and advisors came from Central and South American countries (including Mexico) and the United States and international organizations (such as UN's Food and Agriculture Organization).

CAFDC will manage a 6-year, jointly financed fishery development project. Dr. Vasconcelos, the FAO-designated Project Director, outlined the regional situation, its prospects, and the proposed work plan for the year ahead. Some international experts already are available to carry out parts of the project. The first exploratory fishing vessels have arrived in the area.

A country-by-country rundown of national fisheries developments showed that fisheries to date have been largely neglected. The exception was Panama, which has made considerable progress in recent years, largely because of private enterprise.

Manuel Rafael Arce, El Salvador's Sub-secretary of Economy, was named President of CAFDC, and Rodrigo Salmerón, Nicaragua's Vice-Minister of Agriculture, Reporter.

Regular meetings of CAFDC will be held about every year, but meetings may be called at any time to discuss urgent matters. The next regular meeting will take place in San José, Costa Rica. (U. S. Embassy, Guatemala, Nov. 25, 1966.)



## FAO Conducts Orientation Cruise for Barbadian Fishermen

Barbadian trainee fishermen adjusted satisfactorily to long-line fishing, a method new to Barbados, during the first orientation cruise of the "Calamar," one of two 82-foot multipurpose exploratory vessels provided by the UN's FAO for its Caribbean Fisheries Development Project. Exploratory fishing operations for the entire project are under BCF direction through a contract with FAO.

The Calamar, based in Bridgetown, Barbados, returned with yellowfin and albacore tuna, swordfish, blue marlin, sailfish, and shark.



## Law of the Sea Conventions

### MEXICO AGREES TO ALL 4 CONVENTIONS

Mexico has agreed to the 4 conventions in the Law of the Sea Conventions: on the Territorial Sea and the Contiguous Zone, the High Seas, Fishing and Conservation of the Living Resources of the High Seas, and on the Continental Shelf. (Department of State.)



## Asian Tuna Conference Postponed Until Spring

The Asian tuna conference between Japan, South Korea, and Formosa, originally scheduled for Tokyo December 1966, was postponed until spring 1967 because Formosa could not attend. (Okinawa will attend as an observer.) The conference was proposed by the Japan Federation of Tuna Fishermen's Cooperative Associations (NIKKATSUREN).

The three countries will discuss common fishery problems and seek ways of preventing disruption of tuna prices in the export market. ("Suisan Keizai Shimbun," Dec. 9, 1966.)



## 12th International Congress of Refrigeration

### TO MEET THIS SUMMER

The XIIth International Congress of Refrigeration will be held in Madrid, Spain, August 30-September 6, 1967. The quadrennial Congress will examine the progress made by science, technology, and economics in refrigeration. More than 2,000 participants are expected. Previous meetings were held in Vienna, Chicago, London, Rome,

Buenos Aires, The Hague, Copenhagen, and Munich.

The program will include 3 plenary sessions: 1st session: (a) low temperatures in generation and transmission of electric power; (b) latest developments in insulating materials and techniques; 2nd session: (a) liquefaction, storage, and transport of natural gas; (b) refrigeration as applied to desalination of sea water and brackish water; 3rd session: aids to refrigeration for preservation of perishable foodstuffs.

Also, the 9 scientific and technical committees of the International Institute of Refrigeration will meet to discuss reports to the Congress.

For additional information write: General Secretariat, XIIth International Congress of Refrigeration, Centro-Experimental del Frio, Serrano, 150, Madrid-6, Spain.



## Scandinavian Nations Agree on Access to Skagerrak and Kattegat

Norway, Denmark, and Sweden have signed an agreement that will permit mutual access to nearby waters of the Skagerrak and Kattegat Seas. Each country will be permitted to continue fishing in those waters within 4 nautical miles of the coastal base lines of the other two.

The Norwegian law extending fisheries jurisdiction to 12 nautical miles went into effect January 1, 1967. Denmark has proclaimed coastal base lines and is expected to put into effect a 12-mile fishery jurisdiction early this year. Swedish fishing limits are still 4 miles. (U. S. Embassy, Oslo, Nov. 20, 1966, U. S. Embassy, Copenhagen, Dec. 22 and 29, 1966, and other sources.)



# FOREIGN

## CANADA

### BOASTS NEW RESEARCH VESSEL "E. E. PRINCE"

Memories of fisheries research in its infancy were revived at the christening of Canada's 130-foot research vessel E. E. Prince on September 17, 1966. The vessel, honoring the first head of fisheries research in Canada, will operate on the Atlantic coast out of St. Andrews, New Brunswick.



Christening of research vessel E. E. Prince.

Fishing trials were completed in December 1966. Several short research cruises are planned before the vessel undertakes the high-seas studies for which it was designed.

It will have a maximum range of 3,000 miles and cruising speed of 11 knots. The vessel is capable of stern trawling at various depths, scallop dragging, and long-lining. A modern instrument of fisheries research, it includes laboratories, specialized instrumentation for fish-finding, weather and oceanographic observations, and navigational aids. Unique features include a flume stabilization system that stabilizes the ship at sea. The system will give seamen and scientists an unusually steady platform essential to many research operations at sea.

Specially designed hinged gallows have been installed for lowering and retrieving trawls. Two hydraulic trawl winches, each capable of exerting a pull of four tons at 240 feet per minute, have been fitted to operate in synchronization or independently. A

separate winch has been installed to permit taking oceanographic samples. The propulsion machinery, located amidships, is a non-reversing direct-drive diesel engine rated at 600 British horsepower coupled to a four-bladed, controllable-pitch propeller.

Navigational and fishing aids include two radars, three echo-sounders, gyro compass, automatic pilot, Loran, Decca navigator, and radiotelephones.

The E. E. Prince will have a primary role in deep-sea programs involving pelagic species such as herring, tuna, and swordfish. But she is equipped to perform in many fields of marine research. ("Fisheries of Canada," vol. 19, no. 5, Canadian Department of Fisheries.)

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### EXPANDS EAST COAST FLEET AND PROCESSING FACILITIES

Canada added 15 new stern trawlers to her east coast fleet in 1966 at an average cost of about US\$1 million per vessel. Most of them are 150-155 feet long and can hold about 400,000 pounds of fresh fish. Other vessels included 11 steel side trawlers ranging from 90 to 140 feet, 5 scalloper-groundfish draggers averaging about 110 feet, and 4 wood long-liners averaging 96 feet. Also, two 110-foot vessels were converted into herring purse-seiners. Several vessels under 90 feet also were added. Subsidies up to 50 percent of construction costs aided the fleet's expansion. Processing plant expansion in herring and groundfish industries also stimulated demand for new vessels.

#### And Vessels On Order

Large vessels on order include four 151-foot stern trawlers for a firm planning to open a large groundfish processing plant at Canso, Nova Scotia, in 1967; four 169-foot stern trawlers for the expanding Harbour Grace, Newfoundland, operation of another firm; and several stern trawlers of about 150 feet for a third firm opening a 60-million-pound a year groundfish processing plant near Marystown, Newfoundland.

Canada (Contd.):

The Marystown plant proposes to pay its trawler crews a guaranteed annual wage (from \$3,300 for deckhand to \$12,000 for captain); also, crews would divide a bonus of 15 percent of the gross value of the catch. Crew members would be granted time off without reduction in the guaranteed annual wage on the basis of one trip off in each five the vessel makes to the fishing grounds. ("Canadian Fishermen," Dec. 1965-Jan. 1966 and other sources.)

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BRITISH COLUMBIA CANNED SALMON PACK WAS DOUBLE 1965's

The British Columbia canned salmon pack in 1966 of 1.8 million cases was double the pack of 1965 and the largest since 1962. The pink salmon pack made up 50 percent of the 1966 total and was the largest since 1962; the pack of sockeye salmon was at the highest level since the 1958 record.

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FISHING LICENSES PUT ON FISCAL YEAR BASIS

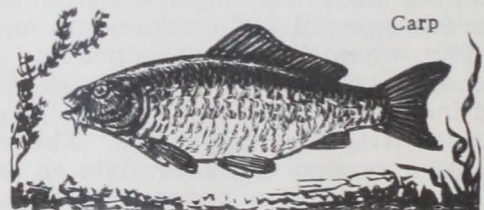
The validity period for the commercial fishing licenses in Canada has been changed from calendar year to fiscal year. Annual licenses in the future will be valid from April 1 to March 31. (Canadian Department of Fisheries, Dec. 21, 1966.)

British Columbia Canned Salmon Pack, 1961-1965						
Species	1/1966	1965	1964	1963	1962	1961
	(Standard 48-Lb. Cases)					
Sockeye . . . . .	407,067	245,798	343,359	158,375	297,717	398,236
King (spring) . . . . .	14,548	18,891	9,127	10,000	7,174	7,927
Steelhead . . . . .	2,478	843	1,262	771	815	979
Blueback . . . . .	21,143	21,300	36,259	11,384	12,097	12,527
Silver (coho) . . . . .	260,276	273,984	168,473	146,099	175,638	234,047
Pink . . . . .	950,555	287,925	464,107	757,452	1,188,661	661,458
Chum . . . . .	160,436	65,216	232,721	119,190	134,483	95,400
Total all species . . . . .	1,816,503	913,957	1,255,308	1,203,271	1,816,585	1,410,574
1/Includes cases packed from salmon imported from the United States as follows: sockeye 23,057; spring 65; coho 857; pink 8,334; chum 966.						
Source: Canadian Department of Fisheries, Pacific Region, Vancouver, B. C.						



ABOUT CARP

The carp, which belongs to the minnow family, was brought into the United States in 1876. Originally native to China, it was transported to Europe in the thirteenth century. In the sixteenth, it was carried to England. Now it may be found anywhere in the world.



Carp

In the Great Lakes, commercial fishermen catch over five million pounds each year.

## LATIN AMERICA

### Brazil

#### EXPLAINS ADOPTION OF 12-MILE LIMIT

In November 1966, Brazil extended its fisheries jurisdiction to 12 miles. The Ministry of Foreign Affairs explained that the new limits are based on international practice and bring the Brazilian territorial sea and fisheries zone into line with those of Uruguay and Argentina. The Ministry stated, too, that the measure was urgently needed to defend Brazilian fisheries interests. Developing nations that possess fisheries resources can no longer permit other nations possessing large and technically advanced fleets to exploit these resources. (U. S. Embassy, Rio de Janeiro, Dec. 6, 1966.)



### British Honduras

#### LOBSTER IS BY FAR NO. 1 FISHERY EXPORT

The export of frozen spiny lobster tails to the U. S. is an increasingly important source of foreign exchange and employment. Of 1965 fisheries exports worth US\$500,000, lobster exports earned US\$455,000. The Government places a quota on the annual spiny lobster catch, which is allocated only to local fishermen organized in cooperatives. U. S. firms handle marketing and, sometimes, finance the coops. The partnership is said to benefit both parties.

The 1966 production was expected to drop due to lower prices and catches down 40 percent from 1965. The spiny lobster season runs from July 15 to March 14 and is closely controlled by the Government. The 1966 export quota of 451,000 pounds of lobster tails was above the 1965 seasonal production of 418,300 pounds.

To date, only spiny lobsters have been exploited. Local fishermen seldom venture beyond the coast's shallow waters, which are protected by the world's second longest barrier reef. Marine scientists believe, however, that other species--shrimp, for example--are potential commercial fisheries.

Deep-sea fishing seems promising but, so far, lack of research data, economic fishing methods, and developed overseas markets have prevented exploitation of these fishes. (U. S. Embassy, Belize City, Nov. 30, 1966.)



### Chile

#### FISH MEAL AND OIL PRODUCTION UP FIRST 8 MONTHS 1966

Production of fish meal during January-August 1966 was 169,200 metric tons, markedly above 1965's 93,100 tons and nearly equal to 1964's record 174,700 tons. Fish oil production during the same period reached 16,600 tons, sharply above the 10,400 tons produced in 1965 and near the 17,600 tons of 1964. The increase reflects a larger catch following the anchovy's return in December 1965. Although prices were lower than 1965, export earnings for fish oil and meal in 1966 were expected to be substantially above 1965.

In 1965, exports of fish meal and oil totaled 66,935 tons and 7,942 tons, respectively--sharply below the 146,450 and 13,710 tons exported in 1964. This decline resulted from a marked reduction in catch because of the anchovy shortage. The most general explanation of the shortage was higher water temperatures due to a warm current.

Because of the anchovy shortage, the Government prohibited, on March 4, 1966, the "extraction, sale, purchase, transport and possession" of anchovy less than 12 centimeters long. It allowed, however, a 20-percent tolerance in the catch. (U. S. Department of Agriculture, Nov. 7, 1966.)



### Venezuela

#### SHRIMP INDUSTRY FALTERS

The expanding shrimp processing industry of the Maracaibo area was shaken by very poor fishing in 1966. The white shrimp (*Penaeus schmitti*), principal species in commercial production, was in short supply.

## Venezuela (Contd.):

Landings of trawlers working in the Gulf through July were a third of the 1965 take; the catch of fishermen on Lake Maracaibo was no more than a fourth of record production. Catches failed to cover trip costs of the trawlers through July. Fishing improved in August and held at break-even level or better through October.

The price of shrimp increased steadily as plants competed for the small supply. The retail price in Caracas climbed to 8 Bolívares a kilogram, heads-on (US\$0.82 a pound).

Principal processing plants remained open through 1966, but production was small. In early November 1966, several were processing sea bobs. Several marginal plants closed but may be expected to reopen when shrimp are plentiful again. The impact was most severe on the thousands of coastal families of the Maracaibo area whose livelihood depends on the industry.

Plant operators are optimistic that the scarcity of white shrimp is a cyclic phenomenon experienced by other countries. Several plants are proceeding with plans to establish their own trawler fleet. Thirteen vessels joined the Punto Fijo trawler fleet since January 1966. Technicians feel confident that the disappearance of the whites was not due to overfishing, though 1965 was a record year. The tagging program designed to establish the migration pattern of the Lake shrimp is underway.

## Government Acts

The Government, recognizing the hardship to coastal area fishing families, has moved to coordinate better its field activities. A new Fisheries Office (Oficina Nacional de Pesca) is being organized in the Ministry of Agriculture. It will take over all activities concerned with exploitation and conservation of marine resources.

The Ministry has agreed to modify the fishing zones of the Gulf of Venezuela. The off-limits line stretching from Punto Fijo to Boca Paijana is to be moved back to Punto Fijo-Puerto Gutierrez; this will increase the trawling area, particularly off the mouth of Lake Maracaibo. Trawlers will continue to be barred from fishing within 8 miles of the coastline, but the Government is permit-

ting small trawlers, up to 15 meters, to work the area between 4 to 8 miles of the coastline. The first 4 miles from shoreline will continue to be reserved for net fishermen. The trawler fishermen long have contended that the off-limit line forced trawlers too far out for effective fishing or even safe navigation (most boats do not have communication equipment) (U. S. Embassy, Caracas, Nov. 9, 1966.)



## MID EAST

## Israel

## MULLET SPAWNED IN CAPTIVITY

An Israeli scientist under contract to BCF, through the Foreign Currency Research Program, has succeeded in spawning grey mullet in captivity and now is rearing the fry in aquaria. This important discovery may stimulate the culture of mullet in estuarine areas.

Biologists in the Middle and Far East had been trying for years to induce the grey mullet to spawn in captivity.



## EUROPE

## USSR

MOTHERSHIP WHALING OFF  
JAPAN DISTURBS INDUSTRY

The extension of Soviet mothership-type whaling operations to the northeastern coast of Japan is disturbing to the Japanese whaling industry because it may have an adverse effect on Japan's land-based whale fishery.

The Soviet fleet (one 20,000-ton class mothership and two catcher vessels) was reported November 23, 1966, near 39°20' N. latitude and 144°16' E. longitude (about 127 nautical miles off northeast Japan). This is an area where mothership-type whaling operations are prohibited under Japanese domestic laws to protect the resource. There is growing belief that the Japanese coastal whale fishery operators should persuade the Japanese Government to permit a shift from land-based to mothership-type operations--particularly since land-based operations over the past several years have become less manageable as distance from base to whaling grounds lengthened. ("Suisan Keizai Shimbun," Dec. 1, 1966.)

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## FISHES OFF MEXICO

Two large stern factory trawlers left the Soviet Far East in mid-November 1966 for the fishing grounds off Mexico's Baja California. Three more vessels were expected to follow. The Soviets were expected to fish for anchovy, sardine, bluefin tuna, and mackerel. A Soviet exploratory fishing fleet during October 1965-March 1966 assessed the abundance of those species and found commercial fishing feasible.

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ORGANIZES BERING SEA  
FISHING EXPEDITION

The Kamchatka Fisheries Administration is preparing to begin flounder fishing in Bristol Bay in mid-December 1966. The Chukhalin Fisheries Administration was getting ready to start herring fishing off the Ribilof Islands. It had dispatched an ex-

ploratory vessel (SRTM-417) to determine the best herring areas. Soviet flounder and herring fisheries in the eastern Bering Sea have been traditional since 1958-1959.

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KINDS AND VALUE OF  
EXPORTS TO U. S. CHANGE

During first-half 1966, the Soviet Union exported to the U. S. 414 metric tons of fishery products worth \$459,000. Frozen shrimp and spiny lobster exports led with 355 metric tons (\$338,000) and 43 metric tons (\$70,000), respectively (table).

Type of Product	Quantity	Value
	Metric Tons	US\$
<b>Fresh, frozen, etc.:</b>		
Shrimp, frozen, shell-on . . .	355.1	337,926
Sturgeon roe . . . . .	2.0	20,110
Spiny lobster tails . . . . .	5.1	17,952
Lobsters <sup>1/</sup> . . . . .	43.0	70,426
Total fresh, frozen, etc. . .	405.2	446,414
<b>Canned:</b>		
Fish <sup>2/</sup> . . . . .	4.6	5,757
Fish in oil . . . . .	1.2	1,541
King crab meat . . . . .	2.8	4,990
Total canned . . . . .	8.6	12,288
Grand total . . . . .	413.8	458,702

<sup>1/</sup>Not otherwise specified, but probably also spiny lobster.  
<sup>2/</sup>Not otherwise specified.

Comparing January-June 1966 with 1965, two trends become apparent: (1) the value of 1966 U. S. imports from the USSR for the first 6 months was already 90 percent of the total value for 1965 (\$505,000); (2) the composition of imports had changed completely--shrimp, whose value in 1965 was only about \$10,000, in 1966 made up two-thirds of the value of all fishery imports. Scallops and cod blocks were not imported in 1966, and traditional canned king crab meat imports were low (\$5,000 in first-half 1966, compared to \$52,800 for all of 1965.)

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## NEW FISHERY PRODUCTS PLANNED

The Far Eastern fisheries export firm DALMOREPRODUKT will produce new specialized fishery products for domestic and

USSR (Contd.):

foreign markets this year. This decision was made after much planning and investment in technological research and manufacturing equipment. Among the new products: canned oysters; smoked mussels in oil packed in glass jars; canned squid in small containers; octopus in tomato sauce in small cans; canned trepang; cooked dried trepang in small plastic containers; canned shrimp; canned roe of sea urchins; medicinal preparations made of sea kale in small glass jars, and other products.

Many of the new products will be exported to Japan. Most seaweeds will be used in domestic agar-agar plants the Soviets are constructing.

The export firm also is sponsoring research conducted by the Pacific Fisheries Institute for Fisheries and Oceanography (TINRO). TINRO and the firm are administratively controlled by the state-owned Main Administration of Far Eastern Fisheries. In August 1966, this research centered on abalone resources near Sakhalin Island; in November 1966, on squid in the Gulf of Tartary between mainland USSR and Sakhalin. Research on seaweed resources was conducted throughout 1966.

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#### DISCOVERS NEW SHRIMP RESOURCES

The research vessel "Kalmar" returned to Vladivostok from a 4-month exploratory trip in the northwestern Bering Sea where it discovered extensive shrimp resources in the Gulf of Anadyr. This is said to be one of the most significant discoveries by Soviet fishery scientists in recent years. Officials of the Far Eastern Fisheries Administration plan to send a shrimp fleet this year to explore the resource.

Another shrimp area was reportedly discovered by the research vessel "Osadkovo" off Northwest Africa. The Osadkovo left Kaliningrad in March 1966 with a party of 5 scientists of the ATLANTNIRO (Atlantic Scientific Research Institute for Marine Fisheries and Oceanography). Most of the research

was done in the Gulf of Guinea and in the Bight of Biafra (off Cameroon). The vessel returned in late August 1966.

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#### RAIL MOVE AIDS KING CRAB TRANSPLANT PROGRAM

Soviet biologists have attempted to transplant Kamchatkan king crab (Paralithodes camtschatica) ever since 1930. They gave up in 1935. In 1960, they tried again and J. A. Misharev succeeded in bringing to Moscow alive, by air, 22 adult male crabs.

Soon, a research program was begun by several VNIRO (All-Union Scientific Fisheries Research Institute for Fisheries and Oceanography) laboratories to develop methods that would insure mass transplantation of king crab eggs, larvae, or adults. During October 1960-April 1961, over 8.2 million crab eggs were shipped overland from Vladivostok to Murmansk; only 1.5 million survived. In August 1961, almost 10,000 young crabs (under 1 year) were shipped; the survival rate is not known. Both attempts were not too successful.

A third attempt was made by air.

King crab specimens were collected at Petropavlovsk-Kamchatskii Laboratories from a local fishing Kolkhoz and transported to the Murmansk Marine Biological Station. The main Administration for Protection and Reproduction of Fishery Resources (Glavrybvod) was the principal Soviet agency concerned with the transport and acclimatization of crabs. Also participating in the studies of transplant results were VNIRO Laboratories in Moscow, PINRO in Murmansk and in Kamchatka, TINRO.

#### Barents Sea Offers Vast Potential

Air transport was costly and had adverse effect on survival rate. Glavrybvod began to look for other transportation means and settled for the old-fashioned Transsiberian Railroad. In November 1966, a specially equipped railroad car carried about 350 adult king crabs on the 10,000-mile journey from the Pacific to the Barents Sea. The crabs arrived in good condition.



## USSR (Contd.):

The Soviets have great interest in the success of these experiments. In 1962, a VNIRO scientist (Iurii I. Orlov) calculated that the potential area of acclimatization of the Kamchatkan crab in the Barents Sea might be 4 times as large as is its present habitat along the Kamchatkan coast. Canned king crab exports are about one-fifth the value of all fishery exports; in 1965, they totaled 10.5 million rubles (\$11.5 million), three times the caviar exports.

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HOLDS CONFERENCE ON  
MARINE MAMMALS

Representatives of fishery research institutes, the fishing industry, and conservation groups participated in the third All-Union Conference on Marine Mammals held in Vladivostok, November 1966. The conference was opened by the Director of Scientific Research of the USSR Ministry of Fisheries, I.P. Zaitsev.

The participants made the following recommendations: (1) Hunting for Pacific whales, walrus, and certain types of seals should be reduced because of diminishing stocks. (2) The potential of Antarctic seal resources should be studied (the Weddel Sea seals and the crab-eating seals in the Antarctic alone number 8 million to 9 million, according to Soviet scientists).

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## METEOROLOGISTS TO HELP FISHERMEN

Weather forecasting centers have been set up on all Soviet factoryships in the Murmansk fishing fleet (Soviet Northern Fisheries Administration). These centers, called "navigational and despatch bases," help fishing vessels avoid stormy areas and find calm seas.

At the time U. S. and USSR fishery officers were exchanged in the Northwest Atlantic--during the 1965 International Commission for the Northwest Atlantic Fisheries--only the factory flagship, with the Commander of the Fleet aboard, had meteorologists. They received their weather data from both Moscow and Washington weather stations. In addition, there was a rudimentary weather reporting

system from fishing vessels to flagship. Apparently this system now has been perfected--probably to cut down time lost by fishing vessels in bad weather.

The introduction of forecasting aboard the Murmansk fishing vessels is not unusual. Almost all advances and innovations are first tried in the Northern Fisheries Administration, the oldest and best organized of the 5 major Soviet Fisheries Administrations; eventually, improvements spread south and east.

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CONDUCTS EXTENSIVE  
PACIFIC FISHERY RESEARCH

The fishery research vessel "Birokan" (SRT 4454) carried out a scientific expedition in the Bering Sea and waters off Aleutian Islands from December 1965-mid-October 1966. Its scientists studied the distribution and seasonal concentrations of Alaskan king crab on the Continental Shelf of the eastern Bering Sea and off Unimak Pass. During a previous cruise, October 1964-July 1965, the Birokan explored fishery and whale resources in the Eastern Pacific between Hawaii and Mexico. It discovered large schools of Pacific mackerel and sardines off Mexico.

In early November 1966, the research vessel "Lira" departed her Siberian home port for an extensive cruise off the Aleutian Islands to determine ocean perch stocks. The Soviet fleet has fished heavily for them in that area for several years; in 1965, 64,500 metric tons were caught.

The "Algama," a fishery research vessel of the Sakhalin Scientific Research Institute for Fisheries and Oceanography, returned to Iuzhno-Sakhalinsk in early December 1966 from a nearly year-long research cruise. The vessel discovered concentrations of commercial species in Tatarskii Strait, Sea of Japan, and on the wide Continental Shelf between the Sakhalin and Kuril Islands.

In late March 1966, commercial concentrations of walleyed pollock were discovered off the southwestern part of Sakhalin; for a short time, the Algama and the exploratory vessel of the Sakhalin Fisheries Administration cooperated in notifying Soviet commercial vessels of the new resource. In April, schools of "redfish" were discovered along

## USSR (Contd.):

the Siberian coast, but not in commercial concentrations. By May, flounder concentrations were encountered between Cape Nelma and Cape Zolotoi below the Siberian City of Sovetskaia Gavan. Exploratory hauls yielded 3 to 4 metric tons of fish each. Other new resources found in the northwestern Sea of Japan off the Soviet Mainland were crabs, ling cod, and walleyed pollock; between Sakhalin and the southern Kurils, important concentrations of Pacific ocean perch were discovered.

In mid-December 1966, the fishery research vessel "Kalmar" departed for the same general areas to confirm Algama's findings and conduct more thorough research.

Early in December 1966, a new exploratory and fishery research vessel, the medium freezer trawler SRTM-8437, arrived at Nevelsk on Sakhalin Island. The vessel was constructed at Volgograd (formerly Stalingrad) Shipyards for the Sakhalin Fisheries Administration.



## Norway

## BUILDS SEVERAL LONG-RANGE FISHING VESSELS

Although Norwegian interest in purse seiners is at peak, considerable demand exists for distant-water freezer trawlers and long-liners.

A 265-ft. factory stern trawler for a Norwegian owner has been ordered from a Trondheim shipyard. It is scheduled to be delivered in September 1967. A shipyard at Aalesund is building a 217-ft. factory stern trawler scheduled for early 1967 delivery. Gross tonnage will be about 1,300 and main engine 2,140 horsepower. Planned for delivery in February 1967 is the 175-ft. freezer trawler "Ole Wirum" equipped with vertical plate freezers, giving 19- to 20-ton daily freezing capacity. A special plant is being built in Kristiansand to thaw and further process the catch of the Ole Wirum which will be frozen in large blocks.

The current trend in long-lining is for vessels operating year-round off Greenland

and for shark fishing in Atlantic waters. The vessels are combined "salters" and freezers. Many are converted whalers with shelter decks so that all fishing and processing operations take place under cover.

## Long Liners Becoming Larger

Like purse seine owners, long-line owners are investing in bigger vessels. Conversion of several 158-ft. whalers was a big step forward. Now a 170-ft. vessel, formerly the "Star VI," built in 1948, has been rebuilt and renamed "Leiv Aarset". It is equipped with vertical plate freezers and a refrigerated hold for about 100 tons of frozen fillets or block-frozen mink fodder. The main emphasis will be on salted fish; 450-500 tons can be stored. The Leiv Aarset began operating off Greenland.

Joining the long-line fleet in February 1967 is the first vessel to be designed exclusively for Greenland fishing in several years and the biggest designed for long-lining. It costs about £150,000 (US\$420,000), has a main engine of 1,000 horsepower, and 2 continuous decks. Its main dimensions: length overall 160 ft.; breadth 29 ft.; depth to main deck 15 ft., and to shelter deck 22 ft. All accommodations are aft on the starboard side with access from a passageway of the port side. The long-line will be hauled from the main deck. The vessel's main task will be salting, but vertical plate freezers are fitted to handle small cod, haddock, ocean perch, and catfish. Total capacity of the holds is 21,500 cubic feet: about 75-percent is for salt fish, the remainder for frozen fillets.

Most long-line vessels do not have splitting or filleting machines. Mainly this is because the catch is brought aboard more slowly than in bottom trawling. However, owners are now considering installation of processing machinery with the eventual aim of having cutting crews. ("World Fishing," Nov. 1966, and "Dansk Fiskeritidene," Nov. 25, 1966.)

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## EXPORTS OF MOST FISHERY PRODUCTS UP IN FIRST 9 MONTHS OF 1966

In January-September 1966, Norwegian exports were up for frozen fillets, frozen herring, fish meal, and herring oil, while total shipments of canned fish were about the same as in the same period of 1965.

## Norway (Contd.):

**Frozen Fillets:** U. S. imports of frozen fish fillets and blocks were over 5,200 metric tons (a gain of 16 percent), according to the U. S. Bureau of the Customs. European countries, however, continued to be the leading markets for Norwegian frozen fillets.

**Canned Fish:** "The Norwegian Cannery Export Journal," October 1966, summarized the canning situation:

Following an above-average brisling fishing season, Norwegian exports of canned brisling were at a record level in the first 9 months of 1966. Larger shipments to England offset a decline in exports to the U. S. The Norwegian factories froze a quantity of brisling for canning after the October 15 close of the brisling fishing season. This reserve, combined with stocks on hand, were expected to provide adequate supplies to satisfy export demand.

Sild and Shellfish Exports Down,  
Herring Oil Up

The decline in small sild exports was due partly to a shortage of supplies earlier in 1966. Heavy canning of small sild in the fall raised stocks to about 250,000 standard cases in late September 1966.

Shellfish exports were down due to sharp drop in shipments of canned shrimp.

Norwegian Exports of Selected Fishery Products, January-September 1965-1966		
Product	Jan. -Sept.	
	1966	1965
	. . . (Metric Tons) . . .	
<b>Frozen fillets:</b>		
Haddock . . . . .	10,912	7,336
Cod . . . . .	20,792	20,371
Coalfish . . . . .	13,512	14,509
Herring . . . . .	8,207	3,252
Other . . . . .	4,674	6,447
Total frozen fillets . . . . .	58,097	51,915
Frozen herring . . . . .	13,552	9,932
<b>Canned fishery products:</b>		
Brisling . . . . .	5,619	4,947
Small sild sardines . . . . .	8,784	9,833
Kippers . . . . .	2,429	2,560
Shellfish . . . . .	568	922
Other . . . . .	3,452	2,871
Total canned fish . . . . .	20,852	21,133
Fish meal . . . . .	183,121	170,279
Herring oil, crude . . . . .	49,195	3,611

**Fish Meal and Oil:** The U. S. became a significant buyer of Norwegian fish meal for the first time in recent years with imports in January-September 1966 of 13,700 metric tons (U. S. Bureau of Customs data). However, the leading market continues to be the United Kingdom.

The sharp rise in exports of crude herring oil reflects the increased output of the reduction plants. With record herring catches, 1966 production of 200,000 tons of fish oil and 400,000 tons of fish meal were forecast. ("Fiskets Gang," Oct. 27 and 28, 1966.)

\* \* \*

GOOD MARKET FOR FISH MEAL AND  
OIL IN DECEMBER 1966 REPORTED

Most of Norway's fish meal and oil has been sold, reported Norsildmel, the centralized sales organization for the fish reduction plants. The record stocks of fish meal (230,000 metric tons) and oil (120,000 tons) at the beginning of November 1966 will have been shipped to customers at home and abroad before the end of March 1967. Substantial future sales of the 1967 production of fish meal also have been concluded.

The Norwegian ban on fishing for the meal and oil industry was lifted at the end of 1966. (U. S. Embassy, Oslo, Dec. 11, 1966.)

\* \* \* \*

FIRM TO MAKE HIGH-PROTEIN  
FISH MEAL

A Norwegian plant is scheduled to start producing high-protein herring meal in May 1967. Its annual output will be 12,000 metric tons. The producers claim their product will contain less than 1 percent fat and 80-83 percent protein, compared to 70-75 in regular herring meal.

Petroleum solvents will be used to draw the fat out of the meal, but none of them will remain in the finished product. The estimated price will be higher than the price for regular meal. It is claimed, too, that the high-protein meal will be a good mink food--and that it can be fed to pigs right up to the day they go to the slaughterhouse, without affecting the taste of pork. (Export Council of Norway, Dec. 1966.)

\* \* \* \*

## Norway (Contd.):

## FISH MEAL AND OIL SUPPLIES WERE HIGH IN FIRST 10 MONTHS OF 1966

Due to heavy production of fish meal and oil in the first 10 months of 1966, Norway banned industrial fishing from November 5 to December 31, 1966. The ban reflected the oversupply in the international fish meal market. Norwegian stocks of herring meal in early November 1966 were 200,000 metric tons, about twice November 1965 stocks.

Record catches resulted from exceptionally rich occurrences of herring, favorable fishing conditions, and a purse-seine fleet almost trebled in catching capacity during 1966. Total deliveries to fish reduction plants for first 10 months exceeded 20 million hectoliters, compared with about 16 million hectoliters for all of 1965. Official estimates of 1966 fish meal production were about 400,000 metric tons (309,000 tons in 1965). Production of fish oil was expected to exceed 200,000 tons (167,000 tons in 1965).

## Exvessel Prices Were High

Despite declining export prices for herring meal, exvessel prices in Norway were maintained at very high levels during 1966. This was made possible by transfers of more than 100 million kroner (US\$14 million) from the Herring Price Regulation Fund (Sildfondet). The Fund stood at 138 million kroner (\$19 million) prior to the first price reduction in summer 1966 for fish delivered to reduction plants.

The ban on fishing for the fish meal and oil industry was widely accepted in fishing circles as necessary to bridge the gap between production and sales of fish meal. (U. S. Embassy, Oslo, Nov. 13, 1966.)

Note: One hectoliter equals 220.46 lbs. or 26.4 gals.



## Iceland

## EXPORTS OF FISH MEAL AND OIL WERE UP, FILLETS AND STOCKFISH DOWN

During January-July 1966, Iceland's exports of fish meal and oil increased sharply over the 1965 period, according to the periodical "Hagtidindi," August 1966. But ex-

Exports of Selected Fishery Products, January-July 1965-1966

Product	Jan.-July 1966			Jan.-July 1965		
	Qty.	Value f.o.b.		Qty.	Value f.o.b.	
	Metric Tons	1,000 Kr.	US\$ 1,000	Metric Tons	1,000 Kr.	US\$ 1,000
Salted herring . . . . .	12,129	150,481	3,495	10,546	114,232	2,653
Other salted fish . . . . .	24,001	460,264	10,689	26,133	442,490	10,276
Stockfish . . . . .	3,006	95,403	2,216	6,216	180,448	4,191
Herring, frozen . . . . .	13,444	87,061	2,022	15,803	100,271	2,329
Fish fillets, frozen . . . . .	23,638	624,727	14,508	29,895	680,695	15,808
Shrimp & lobster, frozen . . . . .	659	84,498	1,962	311	37,249	865
Fish and whale oil . . . . .	54,734	438,361	10,180	43,554	368,074	8,548
Fish meal . . . . .	81,284	616,930	14,327	64,806	450,056	10,452

Note: Values converted at rate of 1 krona equal 2.32 U. S. cents.

ports of frozen fish fillets and stockfish decreased in the first 7 months of 1966.



## Denmark

## MODERN PURSE-SEINE VESSEL ACQUIRED

The "Caroline Musholm," the first Danish fishing vessel specifically designed to use modern purse-seine gear, was scheduled to be completed in Norway in mid-December 1966. The vessel will carry a 12- to 15-man crew and work the Greenland and Faroese fisheries. Displacing 450 tons, it is nearly 43 meters (141 feet) long, and is propelled by an 800-horsepower engine. It is the first Danish fishing vessel to employ side-thrust propellers fore and aft. Its fish pump can empty a 300-ton catch within an hour. ("Vestkysten," Dec. 9, 1966.)



## Greenland

## FISHERIES PROCESSING PLANT IS BEING BUILT

A private company is constructing a processing plant at Jacobshavn. The plant will cost about 1.5 million Danish kroner (US\$217,000) and process shrimp, salmon, and halibut. The primary emphasis will be on freezing shrimp. The plant will employ 60-70 persons when it begins operations after October 1967. ("Berlingske Tidende," Dec. 12, 1966.)



## France

### PLANS TO ASSIST FISHING INDUSTRY

Programs authorized in 1967 to subsidize construction and modernization of fishing vessels will go from 3.5 million to 8.7 million francs (US\$707,000 to \$1,757,400). For other aid and supports, 2.9 million will be increased to 7.12 million francs (US\$385,800 to \$1,438,200). The aid will be directed towards research and training activities, investment, and market organization.

The Government is asking industry to make a special effort to finance developments that will spur the organization of markets. Consolidation of firms is encouraged to meet competition from other European Economic Community (EEC) countries. Those unable to consolidate or too small to compete will be assisted to leave the industry.

### Funds for Laboratories and Fleet

The funds allotted for the Fisheries Institute will complete the laboratories at Sete and La Trinite-sur-Mer, and construction of one at Nantes. The operating funds permit recruitment of technicians. Two training vessels will be built and the training schools fully equipped. Greater efforts will be made in social welfare.

To modernize fleet, the Government plans to increase aid to fishing and vessel industries. Probably, assistance will be based on vessel size. The larger ones, capable of remaining or becoming competitive in the EEC, will receive subsidies up to 15 percent. Also, they will benefit from long-term credits and tax reduction. But Government aid will not extend beyond 1967. For small craft fishing, aid will augment loan facilities. The small-scale fishermen will benefit from relocation plan funds. ("Maree de France," Dec. 1966.)

\* \* \*

### TUNA LANDINGS WERE 10% OF FISH PRODUCTION

The French tuna fishery produced about 42,000 metric tons of tuna in 1965. This accounted for 10 percent of France's total fish production and 14 percent of the marine fish production. ("Revue Generale du Froid," August 1966.)



## German Federal Republic

### IMPORTS 80% OF CANNED TUNA IN OIL FROM JAPAN

West Germany buys from Japan about 80 percent of her imports of canned tuna in oil. In 1965, she imported 14,271 metric tons: 11,550 tons from Japan, 1,816 tons from Yugoslavia, and 597 tons from Peru, and the remainder from another source.

Imports during first-half 1966 were 5,777 tons: 4,331 tons from Japan, 967 tons from Peru, and 318 tons from Yugoslavia, and the remainder from another source. The sharp decline from Yugoslavia was attributed to that country's almost complete suspension of production due to rising costs of frozen tuna from Japan. At over US\$500 a metric ton, they made profitable operations impossible. ("Kansume Nippo," Nov. 15, 1966.)



## Italy

### FROZEN TUNA IMPORT QUOTA INCREASED 5,000 TONS

According to the Japanese Embassy in Rome, the European Common Market agreed to let Italy increase the quantity of frozen tuna she could import from nonmember countries under the lower tariff of 0.5-percent ad valorem from 40,000 to 45,000 metric tons for the current fiscal year.

Italy had requested a 10,000-ton-quota increase because Common Market nations could not supply adequately growing domestic demand. ("Suisancho Nippo," Dec. 26, 1966.)



## United Kingdom

### FISHERY LOAN INTEREST RATES ANNOUNCED

The British White Fish Authority announced that its rates of interest on loans made from October 22, 1966, would be:

Fishing vessels, new engines, nets, and gear: on loans for not more than 5 years  $7\frac{5}{8}$  percent, decrease  $\frac{1}{8}$  percent; on loans for more than 5 years but not more than 10 years  $7\frac{1}{2}$  percent, decrease  $\frac{1}{4}$  percent; on loans for

## United Kingdom (Contd.):

more than 10 years but not more than 15 years  $7\frac{5}{8}$  percent, decrease  $\frac{3}{8}$  percent; on loans for more than 15 years but not more than 20 years  $7\frac{3}{4}$  percent, decrease  $\frac{1}{8}$  percent.

The rates for loans to processing plants--for not over 20 years--remain unchanged at  $7\frac{3}{4}$  percent. ("Fish Trades Gazette," Nov. 5, 1966.)



## Greece

### LANDINGS ROSE IN FIRST 9 MONTHS OF 1966

The Atlantic freezer trawler fleet landed 22,547 metric tons of frozen fish in the first 9 months of 1966, compared to 18,818 tons in the same period of 1965. The increase was partly due to unusually heavy arrivals in September 1966, which raised stocks of frozen fish in Greece to about 7,000 tons. Wholesale frozen fish prices showed some decline in September; they stabilized at about 9 to 10 drachmas a kilo (13.7 to 15 U. S. cents a pound).

Greek trawlers have been moving farther south along the African coast because of declining catches off more northern areas of Africa. The area around  $10^{\circ}$  N. latitude has become an important fishing ground for Greek trawlers. Two trawlers reported plans to transship catches either from Las Palmas or directly from transport vessels on fishing grounds.

Several are fishing for shrimp in the Persian Gulf. ("Alieia," Oct. 1966.)



## Romania

### FISHES OFF AFRICA

The Romanian freezer stern trawler "Galati" left home port for her 6th fishing trip to the Cape Verde Plateau off Africa's northwestern coasts (between the Canary Islands and Dakar). Previously, the Galati fished on Georges Bank in the Northwest Atlantic.

A second stern trawler, the "Constanta," will join the Galati in the African fishing grounds after its overhauling in a Rotterdam shipyard is completed.



## Bulgaria

### HAS AMBITIOUS 5-YEAR PLAN

The Bulgarian 5-Year Plan (1966-1970) provides a 500-percent increase over the 1965 fish landings of 17,300 metric tons. Most of the 87,000 tons planned to be landed in 1970 will come from Bulgarian high-seas operations, conducted mainly in the Atlantic off South-West Africa. Bulgaria has 4 or 5 large stern trawlers (3,200 gross tons each), but the USSR is committed to sell her 20 such trawlers by 1970. ("Rabotnicheskoe Dele," Nov. 27, 1966.)



## Poland

### WILL PRODUCE FISH PROTEIN CONCENTRATE

The scientists of the Polish Sea Fisheries Institute, Swinovjskie Branch, have produced several kilograms of odorless and tasteless fish protein concentrate. Commercial production on a small scale is expected to begin this year. ("Polish Maritime News, No. 97, Sept. 1966.)

\* \* \*

### FIRST FISHERY FACTORY-MOTHERSHIP SAILS FOR NORTH ATLANTIC

The M/S "Gryf Pomorski" (Pomeranian Griffin) sailed in January from Szczecin for the Atlantic fishing grounds between Labrador and Georges Bank. Its launching introduced the "factory-mothership" concept to the Polish deep-sea fishing fleet. It represents a significant advance for the deep-sea fishing industry. While Polish vessels are not newcomers to the northwest Atlantic fishing grounds, only in recent years has the area assumed real importance. In 1960, for example, Poland had only one factory trawler in the northwest Atlantic; annual catches were under 3,000 metric tons. By

## Poland (Contd.):

1965, the catches had increased to 56,000 tons.

The vessel was built at the Gdansk shipyards for the Dalekomorskie Bazy Rybackie (Overseas Fishing Bases) of Szczecin. It has these features: shelterdeck; gross weight of 13,000 tons and dead weight of 9,200 tons; length: 165.5 meters (542 feet), breadth: 21.3 meters (70 feet); speed: about 15 knots; and her 5 holds have total capacity of 10,130 cubic meters (357,690 cubic feet). Four holds are immediately refrigerated to -25 degrees C. (-13° F.) at an external temperature of +30° C. (80° F.). The fifth hold will be used for storage of fish meal; the ship will produce daily 20 metric tons of meal, 20 tons of ice, and 48 tons of water.

## 9 Trawlers Accompany Her

Gryf Pomorski is accompanied by 9 trawlers able to unload 150-200 tons of fish every 24 hours. When it returns to port in early March, it will carry about 4,800 tons of frozen fish, 800 tons of fish meal, and 200 tons of oil. Of the 257-person crew, 136 are producing the products listed. Present plans call for four or five 75-day trips a year.

In addition processing and storage functions, Gryf Pomorski will provide social and cultural amenities for her own and the trawler crews. It is fitted with movie hall, reading room, hospital, laundry, and barber shop.

The Gdansk shipyard will complete in late 1967 a second ship of this type. A third is due before the end of 1970.



## Czechoslovakia

### TO IMPORT BRITISH FROZEN FISH

State-owned import firms have contracted to buy US\$840,000 worth of frozen fish a year from the British frozen seafood consortium. The fish will be shipped from the fishing ports of Grimsby and Hull via Hamburg. ("Fishing News," Dec. 9, 1966.)



## Ireland

### EXTENDS FISHERIES ZONE TO 12 MILES

The law extending Ireland's fishery limits from 6 to 12 nautical miles has become effective. The Irish will recognize traditional West European fisheries (France, Belgium, Netherlands, Spain, and West Germany) in the outer 6-mile zone, but those nations will not be allowed to open up new fishing areas or change the traditional type of fishing.

Other countries that used to fish within the 12-mile zone, including the Soviet Union and Poland, will be barred there in the future. ("New York Times," Jan. 5, 1967.)

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### BCF EXPERTS TO AID IRISH FISHERIES

John B. Glude, Deputy Regional Director of BCF's Seattle office, and John Peters, fisheries technologist of BCF's Gloucester (Mass.) laboratory, left for Dublin in mid-February to assist the Irish Government in setting up a program to improve the fishing industry.

They will help Irish officials implement recommendations of the U. S. survey team in a 1964 report on Ireland's fishing problems. Glude, a leader of that team, said the study followed a request by the then Irish Prime Minister, Sean Lemass, to the late President Kennedy.

According to Glude, the Irish Government is particularly interested in a three-phase program: Improvement of boats and gear; Development of shellfish resources, such as oysters, mussels, clams and lobsters; and Fish quality control, which involves improvements in care and handling of fish after they are caught.

"Ireland's fishing industry is relatively small, but the potential is there for a sizeable increase," Glude stated. Ireland exports some fish, especially to England and France, and there is considerable opportunity to expand both domestic consumption and the export business. Glude noted that Ireland has much to learn about proper care of fresh-caught fish.

"For example, it is common practice not to ice fish after they are caught because many Irish consumers believe that fish must not be fresh if it has to be placed on ice," he said.

Glude and Peters expect to be in Ireland 4-6 months. The Irish Government is paying their expenses.



## ASIA

### Japan

#### CURBS PORT CALLS BY FOREIGN VESSELS

Starting December 12, 1966, Japan began to implement a new ordinance affecting foreign fishing off her coast and fish landings in her ports:

- **Prohibition of Fishing:** Foreign nationals and corporations are not permitted to fish within territorial waters. Japan presently adheres to 3-mile territorial sea limit.

- **Restrictions on Fish Landings:** Foreign nationals are not permitted to land their catches or processed fishery products in Japan--except: (1) shipments from foreign countries accompanied by certificates of shipment; (2) catches of Japanese fishing vessels landed legally by foreign residents in Japan; (3) imports authorized under Import Trade Control Ordinance; and (4) fish landings approved by the Minister of Agriculture and Forestry.

- **Halt Orders to Vessels:** The Minister of Agriculture and Forestry is authorized to issue halt orders to vessels observed violating provisions of this ordinance.

The ordinance also contains penalties: Maximum of two years in prison, fine not exceeding 50,000 yen (US\$139), and confiscation of vessel and fishing gear. ("Suisan Keizai Shimbun", Dec. 7, 1966.)

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#### HAS \$6.4 MILLION OVERSEAS FISHERY INVESTMENTS

Japanese capital in overseas fishery ventures, as of October 1, 1966, totaled about US\$6.4 million--0.8 percent of total Japanese investments abroad--invested in 32 corporations in 28 countries. This was disclosed in late 1966 by the Japanese Fisheries Agency in its report: "Present State of Investments in Overseas Cooperative Fishery Ventures."

Investments in Central and South America (10 countries) led with \$2.85 million in 11 companies, followed by southeast Asia (9 countries) with \$1.77 million in 11 companies,

Africa (4 countries) with \$344,000 in 4 companies, and Near East, Europe, and North America (5 countries) with \$1.4 million in 6 companies. Japan's average capital outlay of \$200,000 per invested company represents an investment ratio of over 50 percent to the average paid-up capital of about \$361,000 per company.

Of the 32 corporations, 8 are engaged in land-based cold storage operations (they lead all others in value of investment); 10 in bottom trawling; 8 in tuna fishing; and one in whaling. Those firms operate 86 vessels: 58 trawlers, 17 tuna vessels, 6 whaling vessels, and 5 "other."

#### Overall Landings Trending Downward

Fish production by the joint companies (based on reports from 11) in 1965 totaled 22,000 metric tons: 14,300 tons of bottom-fish; 5,500 tons of tuna and tunalike fish; and 2,200 tons of shrimp. About 1,000 whales were landed. While shrimp and whale production have gradually increased, overall fish landings have been trending downward since 1964 due to the leveling off of the trawl catches and a decline in tuna production.

Japanese employees assigned to overseas companies number slightly over 600, about 20 percent of the estimated 3,000 employed by those firms. Of the 25 companies reporting on their 1965 business conditions, 7 showed profits, 11 losses, and 7 were either not yet operating, idle, or in unknown financial position. ("Suisan Keizai Shimbun," Dec. 12, 1966, and other sources.)

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#### GRANTS \$9 MILLION TO S. KOREA FOR FISHERIES DEVELOPMENT

In December 1966, Japan and S. Korea agreed that Japanese grants to S. Korea will include US\$2,615,000 to promote fishing and \$6,473,500 to introduce, construct, or remodel fishing vessels--a total of \$9,088,500. This is the second series of grants under the Japan-South Korean Fisheries Cooperative Program. The first series totaled \$13,530,000. No money can be spent for vessels or facilities to be used in the North Pacific salmon fisheries.



## Japan (Contd.):

The grants are part of Category 1 of the Japan-Korean Settlement Agreement. Under the grant program, \$40 million is for fisheries. To date, \$22,618,500 has been allocated--about half. ("Suisan Tsushin," Dec. 1, 1966.)

\* \* \*

## PROFITS RISE FOR MEDIUM AND SMALL FISHERY FIRMS

A summary of the latest economic report of the Ministry of Agriculture and Forestry's Statistics and Survey Division appeared recently in a periodical. Titled "Economics of Medium and Small Fishery Establishments for 1965," it points out:

(1) The gross receipts of small and medium fishery enterprises increased for all sizes of vessels. They were especially marked for the 50- to 100-, 100- to 200-, and 200- to 500-ton vessels.

(2) Expenses also increased for all sizes, but the rate of increase for gross receipts exceeded the increase in expenses. So, there was more profit.

(3) The greatest cost increase was for labor. This report is in line with others expressing industry concern over the increasing cost of labor.

Depreciation increased slightly for the 30- to 50- and 50- to 100-ton categories and decreased in the others. Purchase of fixed assets for vessels decreased in 1965. This is viewed with some alarm since it means a stagnancy in equipment investment and will lead to inefficient operation. The decrease in equipment investment is a new aspect which could affect Japan's future position among fishing nations. ("Suisan Keizai Shimbum," Dec. 2, 1966.)

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## ALBACORE PRICE STABILIZATION IS SUCCESSFUL

The first year's operation of the Japan Federation of Tuna Fishermen's Cooperative Associations' (NIKKATSUREN) 3-year albacore price stabilization program, launched in October 1965, is showing good results. The program was designed to promote canned

albacore consumption in Japan and to purchase and store summer albacore landings to adjust supply. It has contributed much toward keeping prices relatively high. Under the plan, when the summer pole-caught albacore prices drop below exvessel 150 yen a kilogram (US\$378 a short ton), the organization buys and stores the catch. The basic price of 150 yen a kilogram was based on production costs.

The 1966 price increase was due primarily to reduced supply; albacore production, including domestic landings and transshipments, during September 1965-August 1966 totaled about 110,000 metric tons, down 30,000 tons, or 22 percent, from the preceding 12 months. The program helped stimulate the upward trend. This resulted in rise of domestic exvessel albacore prices to an average of 160.25 yen a kilogram (\$403 a short ton). Thus, during the program's first year, there was no need to adjust the supply.

## The Program's Rationale

This is the program's premise: If prices of albacore, which comprise about one-fifth of Japan's total tuna landings, could be maintained at a minimum level, particularly in the summer, when large quantities are harvested during a short period and exported mainly to the United States--it would also stabilize prices of other tunas. Thus, the Federation adopted the policy of promoting domestic demand to divert more supply to it, and also to store summer landings to counteract price decline. The program was established with a budget of 38 million yen (\$105,555). This will be met by assessing vessel owners 80 sen per kilogram (\$2 per short ton) for ship-frozen tuna landed in Japan, and 70 sen per kilogram (\$1.80 per short ton) for fresh tuna landings. ("Minato Shimbum," Nov. 7, 1966.)

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## UNIFIED TUNA FISHERY ADMINISTRATION UNDER STUDY

The Japanese Fisheries Agency is trying to improve management of the tuna fishing industry. It is considering means of consolidating administration of the coastal, distant-water, portable-boat-carrying mothership, and regular mothership fisheries, which presently are directed separately.

## Japan (Contd.):

conditions, vessel owners now operating profitably by themselves prefer not to charter their vessels to mothership firms. Taiyo conducted two mothership operations in the South Pacific in 1964, one in 1965, but in 1966 could not send an expedition because of the catcher-vessel problem. ("Minato Shimbun," Nov. 27, 1966, and other sources.)

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## COASTAL WHALE KILL WAS 2,348.

As of November 30, 1966, the 4 fishery firms conducting coastal whaling had produced this record:

Company	Finback	Sei	Sperm	Total
	. . . . . (No. of Whales) . . . . .			
Taiyo. . . . .	59	123	412	594
Nihon Suisan . . . . .	1	83	926	1,010
Nitto Hogeï. . . . .	18	48	337	403
Kinkai Hogeï. . . . .	26	57	258	341
Total . . . . .	104	311	1,933	2,348

Compared with the 1965 kill, Taiyo showed a slight decrease, Nitto and Kinkai about the same, and Nihon Suisan about 300 more whales. The season closed on December 15. Because of sea conditions, little change was expected in the catch data.

## Soviets Enter Fishery

A Japanese periodical reported in early December on the effect of the Soviet whale fleets on the Japanese coastal whaling installations. The first Soviet whaling fleet was sighted by a Japanese vessel November 23, 1966, off Kinkazen (39°29' N. and 144°16' E.). The fleet consisted of 1 mothership (20,000-ton class) and 2 catcher boats. The 4 Japanese firms operating coastal stations are expressing alarm and anticipate additional fleets in the near future.

The companies are much concerned about the future of the resource. They are studying the possible ways to deal with the Soviet entry--an event that will decrease the number of whales coming inshore to the Japanese. One way would be to convert the land-based fishery to a mothership operation: to take the whales offshore in the area fished by the USSR. ("Suisan Tsushin," Dec. 2, and "Suisan Keizai Shimbun," Dec. 1, 1966.)

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LICENSES ONLY ONE FIRM FOR  
1967 ARCTIC SALMON OPERATION

The Japanese Fisheries Agency, which has been studying a licensing policy for the 1967 salmon fishing in the Arctic Ocean, is permitting only one firm to operate there. The operation again is licensed on a trial basis. The firm selected is the one that sent the "Darin Maru No. 8" to the Chukchi Sea in July 1966.

The vessel harvested about 85 metric tons of chum salmon between 66°-68° N. latitudes. Some observers deduced from this that the area could become a new fishing ground. The Fisheries Agency received license applications from major operators involving 21 salmon vessels. In selecting only one firm, the Agency reasoned: (1) salmon resources in the Arctic Ocean are not very abundant; (2) while the area lies outside the International North Pacific Treaty waters, increased operations would irritate the U. S. and the USSR.

Some industry members believe that industry alone should not conduct the operations--that the Government should guide and supervise the operations, and confirm and publish the results. These members believe, too, that if the Government permits the operation of four 200-gross-ton vessels (their combined catch would not be over 400 metric tons), it would not hurt the resources, irritate other nations, and would help resource assessment. ("Suisan Tsushin," Dec. 9, 1966, and "Suisan Keizai Shimbun," Dec. 8, 1966.)

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SWORDFISH EXPORTS TO  
U. S. AND CANADA ARE STEADY

Frozen swordfish validated for export to the United States and Canada during April-September 1966 totaled 2,301.9 short tons valued at US\$1,751,649. During the same period in 1965, 2,285.3 tons worth \$1,684,299 were exported. ("Suisan Tsushin," Oct. 31, 1966.)

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FROZEN TUNA EXPORT VALIDATIONS  
WERE STEADY IN 1966 PERIOD

Frozen and fresh tuna validated for export during April-October 1966 were virtually the same as in the 1965 period:

## Japan (Contd.):

Frozen and Fresh Tuna Exports, Apr.-Oct. 1966 with Comparisons				
	Exports to:			Total
	U.S.- Canada	Overseas Bases	Other Countries	
	.. (Short Tons) <sup>1/</sup> ..	.. (Metric Tons) ..		
<u>Tuna:</u>				
Albacore 2/	29,858	7,637	2,846	36,861
Yellowfin 3/	25,711	4,905	23,589	51,364
Big-eye 3/	1,677	818	6,704	8,968
Skipjack 2/	5,089	9	1,479	6,104
Bluefin 3/	-	-	1,318	1,318
Tuna loins	3,398	-	-	3,083
Apr.-Oct. 1966	65,733	13,369	35,936	107,698
Apr.-Oct. 1965	75,298	7,036	34,139	108,832

Frozen and Fresh Tuna Export Validations, October 1966				
	Exports to:			Total
	U.S.- Canada	Overseas Bases	Other Countries	
	.. (Short Tons) <sup>1/</sup> ..	.. (Metric Tons) ..		
<u>Tuna:</u>				
Albacore 2/	3,698.5	573.0	656.0	4,531.1
Yellowfin 3/	3,549.8	871.5	5,515.3	9,526.3
Big-eye 3/	142.1	-	542.6	671.5
Skipjack 2/	332.6	-	475.0	776.7
Tuna loins	525.0	-	261.9	738.2
Oct. 1966	8,248.0	1,444.5	7,450.8	16,243.8
Oct. 1965	8,928.0	1,747.6	2,013.5	11,698.5

1/To convert short ton to metric ton, multiply by 0.9072.  
2/Round fish.  
3/Gilled and gutted, dressed, and fillets.

("Suisan Tsushin," Nov. 25, 1966, and other sources.)

\* \* \*

## ALBACORE EXPORT PRICE DECLINES

Japanese frozen albacore export prices for direct shipment to the U. S. have been weakening since mid-December 1966 because of lack of buying interest by U. S. packers and good catches in the Indian and Atlantic Oceans. Frozen round albacore of over 30 pounds which, in early December 1966, sold for US\$550 per short ton c. & f. U. S. west coast delivery, dropped by \$5 in mid-December and then declined further by \$15-20 a ton. Some Japanese observers view this price weakening as a temporary condition resulting from the completion by U. S. packers of their first round of albacore buying for Lent. ("Suisan Tsushin," Dec. 21, 1966.)

\* \* \*

## 70 TUNA LONG-LINERS IN ATLANTIC

About 70 Japanese tuna long-liners were operating in the Atlantic Ocean in mid-December 1966. Most were fishing in the western Atlantic off Brazil, taking mostly albacore tuna, with landings averaging 2-3 tons a vessel a day. Other vessels were operating in the Caribbean Sea, North Atlantic off the Azores, and the central Atlantic Ocean.

Landings in the Caribbean were averaging 3-4 tons a vessel a day, with catch composition gradually shifting from yellowfin to albacore. Fishing off the Azores was good, with daily catch per vessel averaging 4-5 tons; catches consisted mostly of albacore mixed with big-eyed. In the central Atlantic, where yellowfin and big-eyed were being taken, fishing was slow. Since late November 1966, catches in the Atlantic gradually trended toward albacore. ("Suisan Tsushin," Dec. 16, 1966.)

\* \* \*

CANNED TUNA SALES IN  
FIRST 10 MONTHS 1966 ABOVE 1965

The Japan Tuna Packers Association offered for November 1966 sale 300,000 cases of canned tuna in brine for export to the U. S. This concluded the canned tuna in brine sales to exporters for the business year ended November 30, 1966. Sales through October 1966 totaled 2,060,000 cases. In 1965, through October 31, 1,840,000 cases were sold; through November, 2,170,000. ("Suisan Tsushin," Nov. 8, 1966.)

\* \* \*

## TUNA PRICES HIGHER IN LEADING PORT

Landings at the leading Japanese tuna fishing port of Yaizu in November 1966 totaled 7,152 metric tons worth 1,114,810,000 yen

Yaizu Fish Landings and Average Values with Comparisons, November 1965 & 1966						
	Quantity			Average Price		
	1966		1965	1966		
	Nov.	Oct.	Nov.	Nov.	Oct.	Nov.
	.. (Metric Tons) ..			(US\$/Metric Ton) <sup>2/</sup>		
<u>Tuna:</u>						
Bluefin <sup>1/</sup> ..	3,009	4,056	3,971	675	646	492
Albacore ..	520	731	264	506	514	401
Skipjack ..	2,348	4,500	1,559	236	220	254
Mackerel ..	669	771	1,222	95	101	74
Others ..	606	876	847			
Total ..	7,152	10,934	7,863			

<sup>1/</sup>Includes yellowfin and big-eyed tuna.  
<sup>2/</sup>To convert \$/metric ton to \$/short ton, multiply by .907.

Japan (Contd.):

(US\$3,097,000). Compared with November 1965, landings were down 711 tons but value was up \$355,000. Average exvessel prices, per short ton, compared with 1965 were: albacore \$459 (up \$96); skipjack \$212 (down \$18); mackerel \$86 (up \$20). ("Kanzume Nippo," Dec. 2, 1966.)

\* \* \*

#### 1966 POLE-AND-LINE SKIPJACK TUNA LANDINGS WERE APPROACHING NEW HIGH

Excellent skipjack tuna landings by the Japanese pole-and-line fishery in 1966, totaling 165,582 metric tons as of mid-September 1966, seemed headed to top the post-war record of 170,284 tons in 1962. About half the live-bait skipjack fleet ended fishing around mid-October 1966. The remaining vessels off Japan--in the area of 38°-40°20' N. latitudes and 144°-146° E. longitudes in late October--met concentrations of bird-associated schools. Some vessels landed up to 20 tons a day. Pole-caught skipjack landings over the past five years were: 1960--78,608 tons; 1961--144,327 tons; 1962--170,284 tons; 1963--112,887 tons; 1964--166,763 tons; and 1965--119,700 tons.

Exvessel skipjack prices in Japan averaged 90 yen a kilogram (US\$227 a short ton) in January 1966, rose to 100 yen a kilogram (\$252 a short ton) in March and April, began tapering off in May and June and, in July, dropped to 65 yen a kilogram (\$164 a short ton)--down 30-35 percent from prices a year ago. ("Suisancho Nippo, Oct. 26, 1966.)

\* \* \*

#### SKIPJACK TUNA FISHERY IS REGAINING STRENGTH

The Japanese pole-and-line skipjack tuna fleet has been building up, stimulated by good fishing in recent alternate years and growing demand. The fleet had begun to dwindle after 1956 as vessels were transferred to the then prospering long-line fishery. Although the present fleet still is far below 1965's peak year, the fishery is attracting increasing attention because of the declining catch rate in the tuna long-line fishery.

The pole-and-line skipjack operations based at Yaizu, Shizuoka Prefecture, Japan's

leading fishing port, illustrate the growing activity of this fishery. Skipjack vessels registered there, close to 50 in 1958, dwindled to a low of 8 in 1963, but gradually increased to the present 20; 3 more vessels are scheduled to be added this spring.

#### Factors Aiding Fishery Growth

Other factors contributing to the renewed interest in the fishery were the adoption of a brine-freezing system on skipjack vessels, and the later development of new fishing grounds in Pacific waters south of the Marianas. The improved keeping quality of fish taken from distant waters and growing acceptance of brine-frozen fish in Japan, coupled with increasing exports of frozen skipjack to the United States, have increased demand for the species. The result has been that the price instability of earlier years has been greatly reduced. ("Suisan Keizai Shimbun," Jan. 5, 1967.)

\* \* \*

#### INCREASES YELLOWFIN DIRECT-EXPORT QUOTA FOR U. S.

At its November 17, 1966, meeting, the Japan Frozen Tuna Producers Association increased the yellowfin export quota for direct shipment to the U. S. and Canada for the business year ending March 1967--from 30,000 short tons to 35,000 tons. Direct yellowfin exports from April to November 1966 totaled 22,500 tons, averaging about 3,000 tons a month. At that rate, it was felt, the existing quota would be consumed by the end of 1966. Direct albacore exports to the U. S. up to early December 1966 totaled about 20,000 tons, 15,000 below the established quota. ("Suisan Keizai Shimbun," Nov. 23, 1966.)

\* \* \*

#### FISHERY CATCH SETS NEW HIGH IN 1965

Fishery production, excluding whales, in 1965 hit a record 6,907,671 metric tons, according to data released November 8, 1966, by the Statistics and Survey Division, Ministry of Agriculture and Forestry. The 1965 production exceeds by almost 9 percent 1964's 6,350,706 metric tons; it exceeds by 0.6 percent the previous peak of 6,864,000 metric tons set in 1962. Squid and cuttlefish production marked a 51-percent increase over

## Japan (Contd.):

1964; mackerel and sardines also showed substantial gains. But skipjack landings fell 18 percent below 1964. ("Suisan Tsushin," Nov. 10, 1966.)

1965 Catch of Principal Species by Type of Fisheries,			
Production by Type of Fishery	Quantity		Change from 1964
	1965	1964	
	.. (Metric Tons)..		Percent
Grand total .....	6,907,671	6,350,706	9
Sea fisheries:	6,381,629	5,868,732	9
Fish:			
Alaska pollock .....	690,895	683,880	1
Mackerel .....	668,574	495,664	35
Horse mackerel .....	526,885	496,451	6
Sardines .....	405,906	295,897	37
Saury .....	231,377	210,689	10
Skipjack tuna .....	136,067	166,763	-18
Albacore " .....	127,341	116,487	9
Yellowfin " .....	123,589	123,493	0
Big-eyed " .....	110,486	112,256	-2
Bluefin " .....	55,904	61,026	-8
Salmon .....	145,662	117,378	24
Others .....	1,855,544	1,955,125	-
Molluscs & crustaceans:			
Clams .....	293,339	287,367	2
Squid & cuttlefish .....	499,367	329,374	51
Shrimp & prawn .....	67,863	79,433	-15
Crab .....	63,568	53,512	18
Octopus .....	78,057	66,975	17
Others .....	46,291	66,579	-
Mammals .....	2,277	1,679	36
Seaweeds .....	252,637	248,724	2
Shallow Sea Culture .....	379,800	362,993	5
Inland Water Fisheries ..	113,148	89,201	27
Inland Water Culture .....	33,094	29,780	11



## South Korea

## EXPLORES FISHING GROUNDS IN SOUTH CHINA SEA

A 150-gross-ton Government research vessel left Pusan on December 15, 1966, to explore and develop new fishing grounds in the East and South China seas. The 84-day, 9,000-mile cruise calls for trial fishing with trawl and long-line gear in waters off northern Taiwan, Hong Kong, Thailand, Singapore, Borneo, and the Philippines.

The vessel was sent by South Korea's Fishery Development Board and the Fisheries Agency in an attempt to compensate for the declining coastal and offshore fishery re-

sources. ("Suisan Keizai Shimbun," Nov. 23, 1966.)

\* \* \*

## UNABLE TO ENTER HIGH-SEAS MOTHERSHIP SALMON FISHERY

The Republic of Korea (ROK) may not be able to enter the mothership-type salmon fishery in the North Pacific this year, according to the Japanese Embassy in Seoul. ROK's proposed purchase of an 8,000-ton refrigerated factoryship with part of the US\$20 million fishery loan she is now negotiating with Norway may not be approved by that Government.

In 1966, ROK had planned to order an 8,000-ton mothership from Japan with part of the \$90 million commercial loans to be provided under the Japan-ROK Economic Cooperation Agreement. But the plan was abandoned because Japan decided not to help build vessels that might be used in the high-seas salmon fishery. So South Korea's salmon fishing this year will likely be limited to small-scale, land-based operations. ("Suisan Keizai Shimbun," Nov. 30, 1966.)



## Taiwan

## SEEKS LARGER WORLD BANK LOAN TO BUILD VESSELS

Taiwan, which is vigorously promoting development of its high-seas fisheries, is negotiating with the World Bank to increase its second loan application from US\$10.9 million to \$23 million. If approved, Taiwan hopes to expand its original program of purchasing sixteen 250-ton tuna vessels and four 1,500-ton trawlers. In 1964, the Government signed the first loan contract with the World Bank for \$7.8 million, with which to buy three 1,400-ton and thirteen 300-ton tuna vessels from Japan. All of these vessels are now in operation. Taiwan has about 55 tuna vessels operating out of American Samoa, 40 in the Indian Ocean, 4 at Espiritu Santo (New Hebrides), 6 at Port Louis (Mauritius Island), and 3 large vessels in the Atlantic Ocean scheduled to be reassigned to the Indian Ocean. ("Suisan Tsushin," Nov. 1, 1966.)



## AFRICA

### Ghana

#### STATE HAS 26 TRAWLERS

The trawler fleet of Ghana's State Fishing Corporation numbers 26, including 8 operated by Mankoadze Fisheries. The vessels were constructed in 4 countries: Soviet Union, 18; Japan, 3; Norway, 3; and the United Kingdom, 2. Total crew requirements are about 340. Recent discussions with the Norwegian Akers group may result in that group managing the Corporation's vessels. The group would also train Ghanaian personnel, a task formerly handled by Soviet technicians.

#### Japanese Trawler Contract Revised

Construction has been suspended on 5 of the twelve 750-ton trawlers contracted with Japan in 1965 for US\$1.6 million each. Four of the remaining 7 will be completed for Ocean Fisheries, a company owned by a Ghanaian businessman to whom the original Japanese credits are being extended. (U. S. Embassy, Accra, Dec. 15, 1966.)



### South-West Africa

#### FISH MEAL PLANTS COMPLETE 1966 PILCHARD QUOTAS

The last of the 7 pilchard processing factories at Walvis Bay completed its 1966 quota during the first week of October. Each fish meal factory took its 90,000-ton quota with ease. ("The South African Shipping News and Fishing Industry Review," Nov. 1966.)



### Foreign Fishing Off U. S. Coasts, December 1966

#### IN NORTHWEST ATLANTIC

Soviet: There were no Soviet fishing vessels on Georges Bank and vicinity during December 1966. A marked decline in mid-November was followed by a complete withdrawal

of all vessels by month's end. Since then, more than five weeks, no vessels were sighted. This is the first time in several years that the Soviet fleet has left Georges Bank for so long.

About 35 Soviet vessels were on Georges Bank and off southern New England during December 1965.

No Polish, East German, or Romanian fishing vessels were sighted on Georges Bank during December 1966.

#### MID-ATLANTIC BIGHT

Soviet: One medium trawler, sighted repeatedly off New Jersey and Virginia coasts, was presumed on exploratory trip.

#### IN GULF OF MEXICO

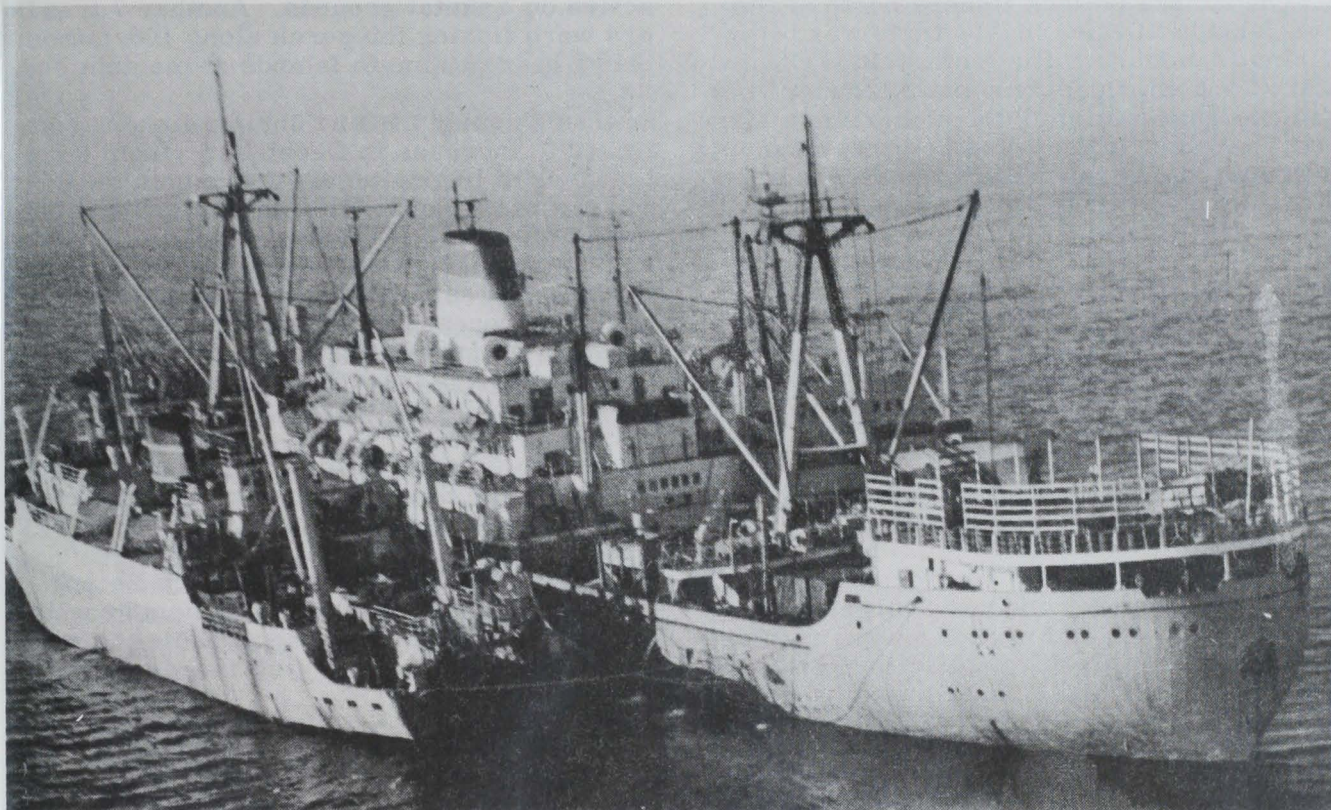
Soviet: No fishing vessels were sighted near U. S. coasts.

Cuban: Numerous vessels, mostly small, were sighted fishing in Straits of Florida and nearby channels and keys.

#### OFF CALIFORNIA

Soviet: Fishery research along California coasts has been conducted for several years. In early 1966, several research and exploratory fishing vessels were sighted--mainly in transit to and from newly exploited fishing grounds off Mexico (in Gulf of California and along Baja California) and in other Pacific areas.

In the first week of December, the 60-vessel Soviet fishing fleet off the Pacific Northwest since early April 1966 (8 months) left. It caught about 140,000 metric tons of Pacific hake and an undetermined amount of Pacific ocean perch. Most vessels sailed north to Hecate Strait area off British Columbia; some returned to Gulf of Alaska perch fishing grounds; some steamed to their Siberian home ports for repairs, overhaul, or change in crews. But about 20 moved south. They were reported on December 8, 1966, about 25 to 35 miles southwest of San Francisco: 9 large stern factory trawlers, 6 medium side trawlers, and 4 support vessels. They were fishing north of Cordell Bank and south of Farallon Islands along the 100-fathom curve, about 25 to 40 miles off California's northern coast (between San Francisco and Año Nuevo Point).



SOVIET VESSELS OFF SANTA BARBARA, CALIFORNIA: left, 3,000-gross-ton stern factory trawler "Ulianovsk" (crew of about 100); right, 10,000-gross-ton fish carrier and base ship "Arman" (crew of about 250).

There is no information on species fished but the area is traditional grounds for U. S. trawler fishermen seeking primarily rockfish.

By the end of December, almost all vessels returned north; only 4-5 large stern trawlers and one 10,000-gross-ton refrigerated fish carrier remained.

#### OFF PACIFIC NORTHWEST (Washington and Oregon)

Soviet: Fishing activities were lowest since Soviet fleets appeared in April 1966.

During surveillance flights by U. S. Coast Guard during first 2 weeks in December, no Russian vessels were found. When area was checked the following week (Dec. 22), however, vessels were sighted. Two were off Washington and remainder off Oregon: 8 large stern trawlers, 2 medium side trawlers, and one support vessel. All were seaward of 12-mile contiguous fishing zone.

By December's end only 5 large stern trawlers remained off Oregon coast. When

sighted, their catch was primarily Pacific ocean perch.

#### OFF ALASKA

Japanese: Fishing activities increased during December. By month's end, there were 19 vessels.

The "Takachiho Maru" fished for perch off Southeastern Alaska until late December, then was replaced by the "Kirishima Maru." The "Ryuyo Maru" terminated perch operations on Albatross Bank about mid-month; it joined "Zuiyo Maru No. 2," "Kyoshin Maru No. 55", and "Tenyo Maru No. 3" and her accompanying trawler fishing for perch south of Fox Islands in eastern Aleutians. The "Taiyo Maru No. 82" and "Aso Maru" from Japan also joined this fleet at about same time. By late December, the Kyoshin Maru No. 55, Aso Maru, and Tenyo Maru No. 3 and her accompanying trawler departed--the Kyoshin Maru No. 55 returning to Japan, and the others switching to the pollock fishery north of the eastern Aleutians.

The Alaska pollock fishery north of the Fox Islands in eastern Aleutians was begun during December. The factoryship "Chichibu Maru" accompanied by about 8 trawlers began operations in mid-December; Aso Maru and Tenyo Maru No. 3 and her accompanying trawler from perch fishery south of Fox Islands arrived in late December.

Two long-liners fished for sablefish off Southeastern Alaska in late December.

Soviet: From 14 in early December, the Soviet fleet increased to 103 by month's end. This large increase resulted from transfer of vessels from hake and Pacific ocean perch fisheries off Pacific Northwest to perch fishery in the Gulf of Alaska and start flounder fishing in eastern Bering Sea.

In the Gulf of Alaska, in December 1966, Soviet perch operations were largest since June 1966. By month's end, many vessels had returned to Gulf from Pacific Northwest, and 20 trawlers and 10 support ships were

active on Yakutat grounds. Another 7 trawlers were fishing for perch along 100-fathom curve near Shumagin Islands at month's end.

The Shumagin Island shrimp fishery continued to increase in December--from 9 trawlers at beginning to 18 at month's end, the most trawlers in the fishery since it began in May 1965. With the arrival of a newly constructed 12,700-gross-ton canning factoryship, "Vasilii Putintsev," in late December, the processing method was changed from freezing shrimp in the round aboard trawlers to hand-peeling them for canning aboard factoryship.

An exploratory medium trawler was sent to the Bering Sea to conduct reconnaissance fishing for herring off the Pribilof Islands.

The Soviets began their eastern Bering Sea flounder fishery about one month earlier than usual: 10 vessels began fishing in mid-December. By month's end, there were over 50 vessels.



#### SEARCH AND RESCUE BY THE U. S. COAST GUARD

Modern search and rescue is a complex function, involving the closest cooperation between Coast Guard air, sea, and shore units. Most current means for attaining this coordination is the Automated Merchant Vessel Reporting program (AMVER) established in 1958. Nerve center for AMVER is the Coast Guard's Rescue Coordination Center in New York City. The program has proved so successful that it will soon be extended to the Pacific. Under AMVER procedure, vessels voluntarily report their positions periodically to the Coast Guard at New York. The data are processed by an electronic computer and provide the most current information for Coast Guard rescue coordination centers. Thousands of foreign and U.S. vessels are taking part in the program and the number is growing steadily.

Offering great promise in search and rescue is the new datum marker buoy. This is a device similar in size to a droppable sonarbuoy. It carries a small, battery-powered radio transmitter incorporated in a bomblike container. It can be dropped from aircraft at a height of 1,000 feet. On entering the water, the buoy floats and transmits a signal on UHF. This makes it possible for search and rescue aircraft to home in on it, using UHF direction finders.

The buoy has been successfully tested and is now undergoing operational evaluation. Recent studies show that the buoy can be operated for over 50 hours and its signal can be picked up by aircraft at a distance of 50 miles. (Release No. 16-65, U. S. Coast Guard, Washington, D. C.)