

SAFETY FOR THE COMMERCIAL FISHING VESSEL AND CREW

By John J. Murray*

In 1959, BCF initiated a Fishing Vessel Safety Program for the New England commercial fishing fleet to reduce the accident-frequency rate of crews--and the cost of marine insurance premiums to vessel operators.

The program has concentrated on the major fishing ports of the region--Boston, New Bedford, and Gloucester, in Massachusetts, and Portland, Maine.

Marine insurance always has been and undoubtedly will continue to be expensive. To most fishing-vessel owners, insurance premium costs are the third largest operating item, ranking after wages and fuel. Steadily increasing settlements for claims resulting from personal injury or loss of life have produced corresponding increases in costs of protection and indemnity (liability) coverage. This situation is particularly acute in the New England and North Atlantic areas, where protection and indemnity loss experience has been worse than hull loss experience.

Insurance costs for fishing vessels are based mainly on the vessel's seaworthiness, how well its equipment has been maintained, the owner's operating record, and the craft's loss experience. The insurance premiums are substantial. Often, they represent the difference between profit or loss for the owners on an annual basis.

Insurance is the only one of these three costs susceptible to direct control through a safety program that will detect and correct unsafe conditions and practices.

Insurer Sets Rates

Marine insurance rates are not regulated by state insurance authorities. The rate to a vessel is determined by the insurance company, which weighs certain variables in arriving at it. Hull insurance premiums are based on a percentage of the vessel's appraised value determined by the insurer. For example, if a vessel appraised at \$100,000 is accorded a 4% rate, the owner is assessed a \$4,000 annual premium. Vessel age is a ma-

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major factor in setting this rate. There is a widespread difference between hull insurance premiums for representative vessels over 10 years old and those not over 5:

Vessels Over 10 Years Old					
Vessel	Built	Appraised Value	Annual Premium	Rate Percent	Cost Per \$1,000 Valuation
		\$	\$	%	\$
"A"	1944	60,000	3,300	5.5	55
"B"	1949	20,000	1,600	8	80
"C"	1929	22,000	1,980	9	90
"D"	1949	35,000	3,150	9	90
"E"	1944	25,000	2,500	10	100
Average Rate				8.3	
Vessels Under 10 Years Old					
"A"	1962	80,000	3,200	4	40
"B"	1963	50,000	1,750	3.5	35
"C"	1963	125,000	6,625	5.3	53
"D"	1958	125,000	6,250	5	50
"E"	1960	100,000	4,000	4	40
Average Rate				4.3	



Fig. 1 - New Bedford scalloper built in 1936. Vessels of this age invariably face low appraisal values and high insurance rates. (Photo: Robert K. Brigham)

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Fig. 2 - New Bedford scalloper built in 1966. Such vessels enjoy high appraisal values and reduced insurance rates.

All these vessels are medium-size otter trawlers or scallop dredgers fishing the same areas under similar conditions throughout the year. The major variant is age.

Personal Injury

Protection and indemnity (liability) coverage for claims arising from personal injury to crew members is increasingly expensive to the vessel operator. Claim awards in the New England area have increased greatly, with correspondingly higher premiums.

Protection and indemnity rates are set on a per-capita/per-annum basis for each vessel. For example, an owner who operates a vessel with 10 men may pay \$600 per man, or \$6,000 annually, for this protection. It is customary to provide this insurance for all crew members, but records show instances where certain men are specifically excepted. This is noted generally on family-owned vessels where relatives of the owner or owner-captain are excluded from protection and indemnity benefits. This practice reduces the initial cost to the owner, but often it results in serious legal and financial trouble when an uninsured fisherman suffers a major shipboard injury.

While vessel age plays a part in setting premiums for protection and indemnity cov-

Table 2 - Comparative Protection and Indemnity Costs for Vessels of Different Ages

Vessel	Year Built	Limit of Liability	Number of Crew Men	Annual Cost Per Man
		\$		\$
"A"	1965	300,000	5	275
"B"	1963	300,000	6	340
"C"	1938	300,000	9	555

erage, it is less than that in hull coverage. The role of vessel age in protection and indemnity costs for similar vessels is shown in table 2.

Previous loss experience, maintenance standards, character and reputation of the vessel's captain and owner--all influence the insurer at rate-setting time.

Causes of Accidents

BCF has learned much about the nature and causes of shipboard accidents. About 80 of every 100 shipboard accidents are personal injuries. A BCF study of 385 personal injuries over a 4-year period shows:

Cause	Number	Percent
Falls--		
On deck	96	23
Elsewhere	19	7
Hit by objects	86	20
Hit by sea	29	8
Trawl winch operation injuries	22	8
Hand injuries	16	4

The remaining 32 percent includes knife wounds, fish bones in hands, burns, eye injuries, etc.

Nearly 75 percent of the claims stemming from these accidents is less than \$350 per claimant. This large percentage of petty claims is important in setting the level of annual insurance costs to vessel owners.

BCF Recommendations

BCF acted to reduce accidents caused mainly by unsafe conditions. Its Safety Unit strongly urged adoption of the following measures to reduce falling accidents:

1. Instal skid-resistant bridge flooring on deck, winch platform, companionway ladders, and engineroom floors. This measure has been highly successful and widely adopted by the industry.
2. Provide and rig life lines stretching from forecandle aft to breakdeck for use during heavy weather.
3. Instal protective guard rails around deck bollards and in front of trawl winches.
4. Practice good housekeeping to prevent oil and fuel leaks on deck.

5. Provide ladders for boarding and debarking from moored vessels.

The response to these recommendations has been excellent; probably the best results noted were the installation of skid-resistant material on vessel decks. This is now common practice on most small and medium-size vessels.

The need for fishermen to wear safety hats while unloading fish has been stressed. The initial response to this recommendation was the presentation by the Seafood Producers' Association of New Bedford, Mass., of 100 safety hats to local stevedores. While not all 100 hats can be seen today, a fair amount is worn by New Bedford, Gloucester, and Boston fishermen.

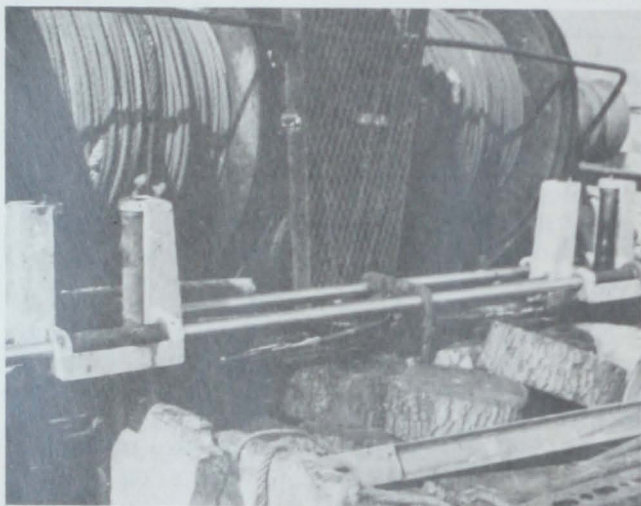


Fig. 3 - Level wire winder on trawling winch of large otter trawler. Winder is operated by winch men and eliminates hazardous operation by fishermen in front of winch.



Fig. 4 - Hand steering wire on trawling winch, the cause of many injuries in otter trawling fleet.

To reduce the hazards of trawl winch operations, installation of level wire winders has been urged particularly in manually steering trawl wire on the drums. Adoption of this measure has been moderately good--mostly confined to newer vessels in the large otter trawl class.

Marine Safety Messages

In 1961, BCF initiated a series of vessel safety bulletins pointing out hazards and potential accident sources and recommending corrective measures.

The messages were circulated widely. Radio Stations WBSM, New Bedford, WESX, Salem, and WHDH, Boston, broadcast the bulletins along with daily fishing information programs. Copies also were mailed to fishing vessel owners and operators and to all newspapers in the major fishing ports. The papers carried the bulletins in their waterfront news columns.

Between January 1961 and October 1967, 23 safety messages were issued to the fishing industry. They covered such subjects as: installation of ladders on scallop booms; annual inspection of dories and lifesaving equipment; annual inspection of fire-fighting equipment; measures to reduce number of shipboard falls; low reaction of wooden vessels to radar detection; annual inspection of overhead rigging; measures to prevent collisions at sea; annual inspection of inflatable life rafts; handling explosives snagged in fishing gear; obtaining medical aid; and other subjects.

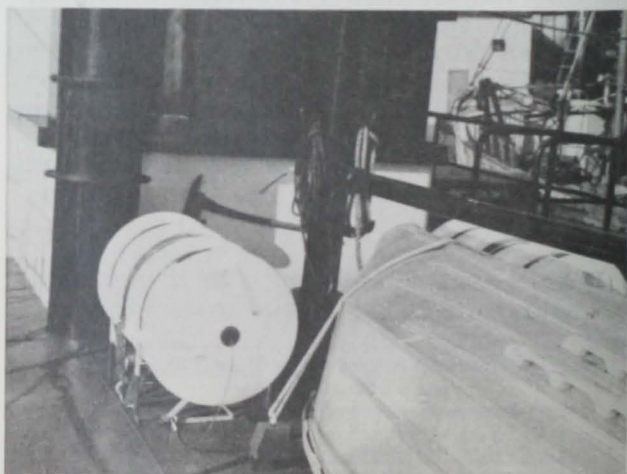


Fig. 5 - Inflatable life raft for 15 men stowed on deck of Boston-based large otter trawler. It is fitted with hydrostatic release mechanism. (Photos: J. J. Murray)

Safety Equipment Demonstrations

Another effective phase of the work has been practical dockside demonstrations of approved marine safety equipment to vessel owners. Displays in trade association halls and marine insurance company offices ranged from 10-man inflatable life rafts to vest-pocket emergency distress flare kits.

In cooperation with the U. S. Coast Guard, the emergency dewatering pump unit used to assist fishing vessels in search-and-rescue operations figured prominently in the demonstrations.

Safety appliances displayed included: emergency dewatering pumps - first aid fire extinguishers, radar targets for use by wooden vessels, safety hats and boots, fire detection and alarm systems, distress and iden-



Fig. 6 - Demonstration of inflatable life raft to fishing vessel owners at New Bedford, Mass. (Photos: J. J. Murray)

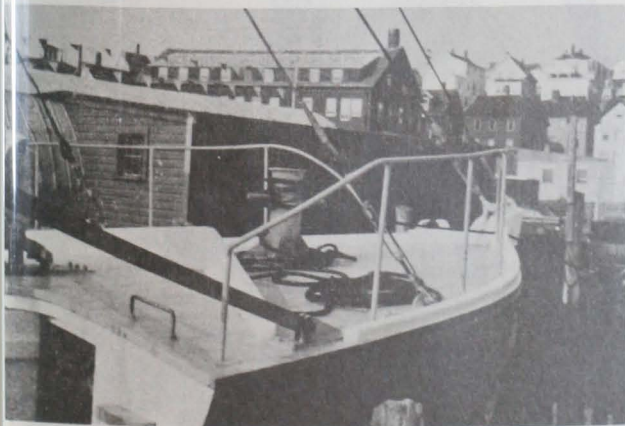


Fig. 7 - Guard rail on forecastle head fully protects fishermen working in this exposed position.

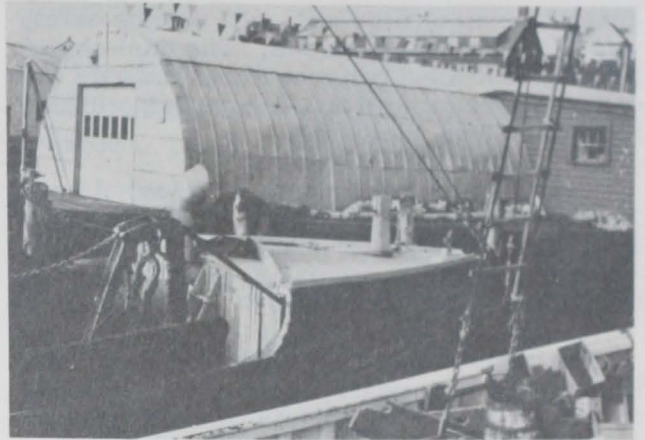


Fig. 8 - Absence of guard rail is hazard on forecastle head of medium otter trawler.

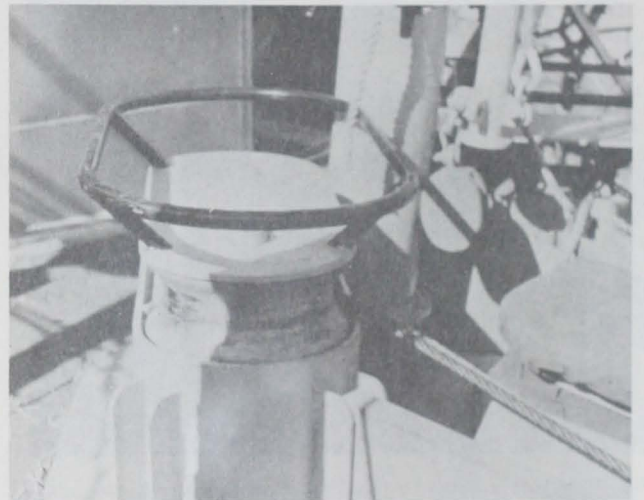


Fig. 9 - Guard around deck bollard of Boston large otter trawler. This safety device is mandatory on European distant-water trawlers. It has recently gained acceptance in U. S.

tification signals, and skid-resistant decking material.

Results have been encouraging. The adoption by the fleet of these devices has been widespread. In the past 3 years, over 150 pieces of marine safety equipment have been installed on New Bedford vessels alone.

Fishermen's Training Program

BCF worked closely with the U. S. Department of Labor in the planning, instruction, and successful completion of 12 on-the-job fishermen training courses in Boston, Gloucester, and New Bedford.

The program aimed at training men for the fisheries. Since it began in 1965, it has added

about 88 men to the fleet. On-the-job safety was stressed in all courses. The dual objectives were to alert trainees to the hazards and dangers of commercial fishing--and to eliminate shipboard accidents.

During 7 training periods--from August 1965 in Boston to November 1967 in New Bedford--instructors from BCF's Fishing Vessel Safety Unit devoted over 100 hours to teaching the fundamentals of marine safety.

The value of the safety instruction was best illustrated by the nearly accident-free record of the trainees during their work aboard the vessels.



Fig. 10 - Author instructing trainees in steering trawl wire on trawl winch at New Bedford. (Photo: Robert K. Brigham)

Further Aid to Fleet

BCF also has worked closely with industry in sponsoring other safety activities. For example, when the revised "International Rules of the Road" were slated to become effective on Sept. 1, 1965, there was some confusion about the possible effect on fishing operations. In cooperation with the U. S. Coast Guard, BCF's Safety Unit documented the rule changes affecting commercial fishing vessels in a safety bulletin and a pamphlet. The publications, which presented a simplified version of selected "International Rules" most important to fishermen, were distributed to U. S. and foreign operators. Over 5,000 copies of the bulletin and 10,000 of the pamphlet were issued.

In September 1967, BCF's Regional Safety Officer issued a bulletin outlining the newly

established "Sea Lanes" for vessels entering or departing New York Harbor; 200 copies were sent to vessel owners. This information is extremely important to vessels fishing or traversing this area, especially during low visibility.

The most recent safety message gives the location of the platform of Texas Tower #2 that foundered on the northern edge of Georges Bank in October 1963. Fishing vessels have reported fouling the structure and suffering substantial loss and damage to their fishing gear.

In cooperation with the U. S. Public Health Service, a bulletin listing the procedure for obtaining a medical advice for injured or ill fishermen was prepared and distributed to vessel operators on the Atlantic Coast and Gulf of Mexico, from Maine to Texas. About 500 bulletins were distributed in the New England area.

A project underway involves the use of identification banners for fishing vessels requiring assistance at sea. Use of these banners is advocated by the Coast Guard, which reports the problem of identifying fishing vessels in distress and awaiting assistance on the fishing banks.

In May 1967, the Coast Guard accorded official recognition to the Canadian small craft-to-air distress identification signal. This consists of a 72- by 45-inch, fluorescent, orange-red, cloth panel bearing an 18-inch black square and 18-inch black circle, 18 inches apart, on the flag's major axis. A

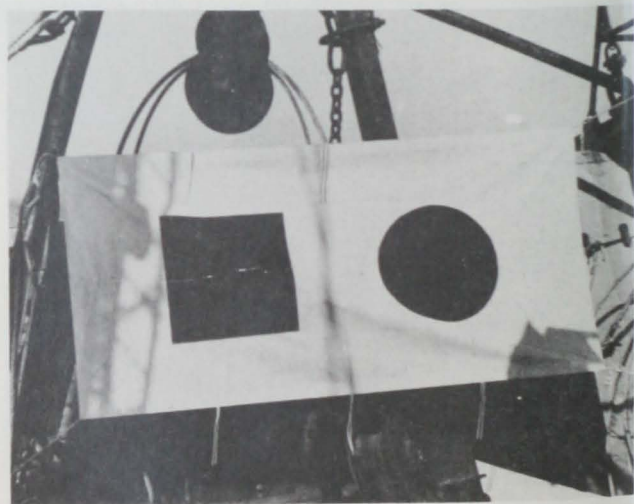


Fig. 11 - Small-craft distress identification signal. (Photo: J. J. Murray)



Fig. 12 - Emergency dewatering pump used by Search-and-Rescue Division of U. S. Coast Guard in assisting sinking fishing vessels. Gasoline-operated pump is packed in steel drum with intake and discharge hoses and lowered from helicopter or parachuted. (Photos 12, 14: J. J. Murray)

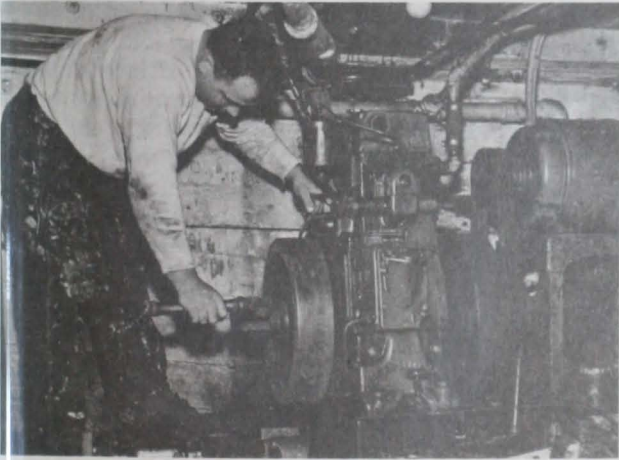


Fig. 13 - Unsafe conditions in engine room of fishing trawler. Cramped quarters for starting generating unit, unguarded V belts, naked light bulb, and poor housekeeping create extreme hazards.

BCF safety message has recommended this signal to U. S. fishermen and vessel operators.

Currently, a photo identification file of all documented fishing vessels in the First Coast Guard District is being compiled for the Coast Guard Search and Rescue Branch. The file will include information on physical characteristics, fishing methods, and areas normally worked.

This is a facsimile of information card attached to each photo:

VESSEL: <u>Pelican</u>	OFFICIAL NO.: <u>254 482</u>
PORT: <u>Boston</u>	FISHERY: <u>Otter Trawl</u>
OWNER: <u>John B. Doe, 18 South St., Boston, Mass. 02210</u>	
TONNAGE: GROSS <u>138</u>	NET: <u>65</u>
CONSTRUCTION: <u>Wood</u>	
DIMENSIONS: LENGTH: <u>90</u> BREADTH: <u>21</u> DEPTH: <u>10</u>	
FISHING AREAS: <u>Georges Bank - South Channel</u>	

Federal Regulations

Commercial fishing vessels are subject to navigation and inspection laws stated in "Rules and Regulations for Uninspected Vessels," Coast Guard pamphlet CG 258. These requirements cover navigation lights and shapes, whistles, fog horns and fog sound signal devices, life preservers and other life-saving equipment, fire extinguishing equipment, carburetor flame arresters for gasoline engines and ventilation rules for tanks and engine spaces. Requirements concerning lights and sound signal devices are primarily concerned with insuring proper navigation and identification of the type of vessel to reduce risk of collision.

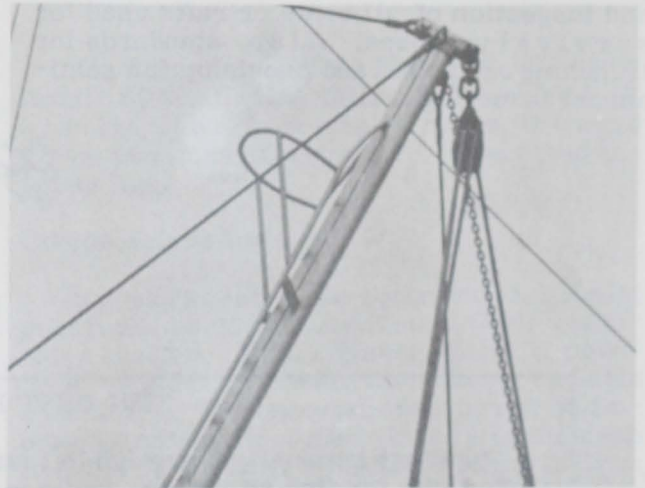


Fig. 14 - Safety ladder on boom of New Bedford scallop dredger.

The documented fishing vessels of 200 gross tons and up are subject to more requirements of licensing deck and engine room personnel.

The absence of any regulations concerning the installation, certification, or inspection of lifeboats, life floats, and similar debarking equipment is a serious gap in the safety standards of the fishing fleet. Examination of the

Japanese Seek to Negotiate Mauritania's 12-Mile Limit

The Japan Distant-water Trawlers Association invited the Mauritanian Agriculture Minister to visit Japan in May 1968. The purpose was to solicit the Minister's view on a bilateral agreement to permit Japanese fishing inside Mauritania's 12-mile exclusive fishing zone.

Mission to Mauritania

In summer 1967, the Association sent a mission to Mauritania for preliminary talks. Later, it offered to cooperate in building and operating cold storages--and in experimental fishing for Mauritania. In exchange, it asked for the right to fish within the restricted zone. The proposal was stalled by Mauritania's silence.

The Japanese Fisheries Agency also sounded out Mauritania on opening government-level talks in May 1968. As of mid-April, it had no response.

Restraint Urged on Trawlers

In view of the preparations for talks, the Trawlers Association urged restraint on its member vessels to avoid irritating West African coastal countries. ("Shin Suisan Shimbum," Apr. 22, and "Minato Shimbum," Apr. 18, 1968.)



U. S. Joins Indian Ocean Fishery Commission

The U. S. became an official member of the Indian Ocean Fishery Commission (IOFC) on April 8, 1968. IOFC's first session is planned for Sept. 1968.

The Commission was formed following a recommendation of the 48th Session of the FAO Council in June 1967. Its purpose is to develop and use the Indian Ocean area's fishery resources. (U. S. Embassy, Rome, April 11, 1968.)



1967/68 Antarctic Whale Catch

The "Norwegian Whaling Gazette," Mar.-Apr. 1968 issue, reported the 1967/68 whale catch in the Antarctic:

Expedition	Catch of Blue Whale Units	Production in Barrels			Material	
		Whale Oil	Sperm Oil	Total Oil	Floating Factories	Catchers
Norway:						
1967	292	31,720	2,520	34,240	1	5
1966	801	79,500	26,500	106,000	2	-
Japan:						
1967	1,493	171,400	4,411	175,811	4	43
1966	1,633	182,623	11,754	194,379	4	-
USSR:						
1967	1,016	1/	1/	1/	3	49
1966	1,069	1/	1/	1/	3	-
Total:						
1967	2,801	1/	1/	1/	8	97
1966	3,503	1/	1/	1/	9	-

1/Not available.

As in the last two seasons, sei whales comprised the bulk of the catch. In the 1967/68 season, 8 floating factories with 97 catcher boats were operated. This was one factory-ship less than the previous year; the Norwegians sent only one fleet this season.



Canadian Conference on Fishing Vessel Construction Materials

Jan-Olof Traung, Chief of the Fishing Vessel Section of FAO, will discuss new thinking on the use of materials for building fishing vessels at a Canadian conference in Montreal, Oct. 1-3, 1968. He will provide the keynote for more than 30 papers by Canadian and world experts.

The Conference on Fishing Vessel Construction Materials is sponsored by Canada's Federal-Provincial Atlantic Fisheries Committee.

Many Speakers & Subjects

The conference will hear the views of Canadian naval architects, boatbuilders, materials suppliers, fishing vessel operators, and government specialists--and of specialists from the U. S., Japan, South Africa, and the leading European fishing nations. The speakers will discuss significant developments and

trends in the use of traditional and newer materials. These will include steel, wood, plywood, laminated wood, resin and glues, single-skin and cored plastics, and concrete.

Construction Techniques

Construction techniques will be the subject of several papers. Comparative assessments of the various materials and their economic possibilities will be submitted at the final session. The views of the fishing industry on the materials for future vessels also will be presented. (Canadian Department of Fisheries, Apr. 30, 1968.)



Japan to Build Fish Harbor in East Pakistan

The East Pakistan Fisheries Development Corp. (EPFDC) and Mitsui and Co. of Japan agreed April 19 on the construction of a fish harbor in the Sadarghat area of Chittagong (between 22°35' and 22°49' N. latitude and between 91°27' and 90°22' E. longitude). Construction costs will be about US\$6.9 million. Foreign exchange costs are reported to be equivalent to US\$2.56 million, financed by a Japanese yen credit to Pakistan.

The contract calls for completion of the project within 21 months of the April 19 signing. And, when completed, the fish harbor will provide berthing facilities for 68 sea-going trawlers capable of handling 76,000 metric tons of sea fish annually. Reportedly, preliminary work has begun on a 110-acre plot of land.

Harbor Long Planned

Pakistan has considered construction of a fish harbor for Chittagong since the Second Plan Period. Until now, however, lack of financing, and disagreement within the Government of East Pakistan over a site, have delayed the project. It was finally approved by the Executive Committee of the National Economic Council on Aug. 30, 1967.

This agreement with a Japanese firm follows a recent Japanese shrimp-purchasing team's visit to East Pakistan. The aggressive efforts of the Japanese would seem to point to a concerted effort to gain a foothold in Pakistan's fisheries industry. This is particularly true of shrimp exports which, until now, have gone largely to the U. S. (U. S. Consul, Dacca, Apr. 24, 1968.)



Norwegians and Danes Disagree Over Salmon Fishing

Norwegian anger over Danish salmon fishing continues. The Norwegians claim research has established that salmon fished in international waters off Norway are either on their way to the coast to spawn or are young fish that will not spawn until 1 or 2 years later.

Norwegians claim that Danish and Swedish fishermen reap the benefit of extensive cultivation work and conservation regulations carried out by Norwegians. The Norwegians say the Danes have doubled their salmon fleet this year, which means an even heavier exploitation of northern salmon stocks.

The Danish View

Denmark says fishing off the north Norway coast is legal; the fleet has not doubled but actually decreased; Danes adhere to international regulations on minimum size; they fish 200 nautical miles from the coast, even though fishing as close as 12 miles would be legal.

The Danish view is that the Norwegians want as many salmon as possible to enter their lakes and rivers so fishing rights can be leased to wealthy foreigners.

There has been no indication of any steps toward negotiation of an international agreement to regulate salmon fishing off the Norwegian coast. (U. S. Embassy, Copenhagen, Apr. 26, 1968.)

