COMMERCIAL FISHERIES REVIEW

May 1956 Washington 25, D. C. Vol. 18, No. 5

INSURANCE OF FISHING VESSELS: SOME CURRENT PROBLEMS

By Jerome Sachs*

BACKGROUND

Generally speaking, the commercial fishing vessel insurance problem is the problem of safety at sea as viewed from the standpoints of the fishing vessel owner wanting to be insured and of the insurance company being asked to supply the insurance. The insurability of a commercial fishing vessel depends not only on the seaworthiness of the vessel but also on whether or not the crew is "seaworthy." Such considerations are involved as the design and structure of hulls; the installation and maintenance of equipment for safe navigation, for fire fighting, and lifesaving; the conduct and qualifications of the crew, etc.

Table 1 - Fishing Vessel Hull Insurance, 1946-54 (Gross Premiums, Losses Paid, and Ratio of Losses Paid to Gross Premiums)

Year	Gross Premiums Less Returns	Losses Paid Less Salvage	Ratio
	$	$	%
1954 1/	633,523	511,840	80
1953	629,057	526,045	83
1952	601,696	816,884	135
1951	833,447	466,871	56
1950	706,609	417,603	58
1949	637,929	562,150	88
1948	592,970	322,589	54
1947	358,028	268,398	70
1946	307,848	176,532	57

1/ The losses estimated and still outstanding and unpaid as of December 31, 1954, were reported to be $320,847. If one adds this loss reserve figure to the losses actually paid out during 1954 amounting to $511,840, the ratio of losses (incurred) to premiums is 131 percent.

Note: These figures, which were made available by one insurance company, are a recapitulation of fishing vessel Hull-insurance statistics covering a 9-year period (1946-1954). The region included extends from the Gulf to New England, from Brownsville, Tex., to Eastport, Me.

In recent years the experience of insurance companies in their commercial fishing vessel business has been discouraging and caused many of them to get out of the market and others to keep out. Rising costs have beset the fishing industry as regards construction of vessels, repairs to vessel, fishing gear and nets, fuel, wages to crew, etc. Furthermore, court awards in personal injury claims have sharply increased. Both the rise in costs and the increase in awards are reflected in the increased claims that insurance companies have been called upon to pay. The few insurance companies which have remained in the market have reportedly raised their premiums, increased the use of deductibles, and imposed more restrictive coverage. The vessel owners affected are complaining that the insurance coverage has become inadequate and its cost prohibitively expensive.

This general situation of restricted coverage and increased insurance cost to the vessel owners, and of increasing reluctance on the part of insurance companies to provide the needed protection, has become acute within the fishing industry, both from an economic and a humanitarian standpoint.

The Federal Government, as part of its program of aiding the American fishing industry through research and development, is financing a nationwide survey of

* Director, Insurance Staff, Bureau of Foreign Commerce, U. S. Department of Commerce, Washington, D. C.

Note 1: An address delivered at the Annual Meeting of the Virginia Fishermen's Association, Hotel Chamberlin, Old Point Comfort, Va., on February 7, 1956.

Note 2: Also see Commercial Fisheries Review, December 1955, p. 35; August 1955, p. 33.

the problem. I am referring, of course, to the survey being conducted at the present time as to the reasons why so many commercial fishing vessels can no longer obtain insurance coverage on their operations at rates they consider reasonable in terms of their total operating costs, their volume of sales, etc. This survey is being conducted by the Bureau of Business Research in Boston University, in cooperation with the Fish and Wildlife Service of the U. S. Department of the Interior. The results of this survey will not be completed until 1957.

My limited aim in this article will be to offer some comments on certain aspects of the insurance problem and to present some personal current impressions. These comments, for the most part, will be in general terms and not specifically pointed to the different geographical areas or classes of vessels. My work has been in the insurance field generally, not specialized in the insurance of fishing vessels, and it is this general insurance background and experience that I am bringing to bear on the material I have read and on what I have learned from the insurance companies regarding the insurance of these vessels.

COMMERCIAL FISHING VESSEL INSURANCE STATISTICS

Statistics on commercial fishing insurance are not readily obtainable because, among other reasons, the insurance companies have not separated out for publication the fishing vessel figures from their marine figures generally. Nevertheless, I have been able to obtain some insurance company figures showing premiums and

Table 2 - Fishing Vessel Hull Insurance by Class of Vessel, 1946-54 (Gross Premiums, Losses Paid, and Ratio of Losses Paid to Gross Premiums)

Class	1954			1953			1952			1951		
	Premiums	Losses	Ratio	Premiums	Losses	Ratio	Premiums	Losses	Ratio	Premiums	Losses	Ratio
	$	$	%	$	$	%	$	$	%	$	$	%
Menhaden:												
Marine	211,201	89,468	42	180,963	103,327	57	169,854	17,199	10	176,312	22,669	13
Fire	-	-	-	-	-	-	-	-	-	300	-	-
Auxiliary Schooners:												
Marine	324,830	329,752	102	328,490	301,979	92	287,799	345,121	120	260,421	110,630	42
Fire	-	-	-	-	-	-	-	-	-	36	-	-
Trawlers:												
Marine	19,983	8,464	42	23,775	7,472	31	25,907	7,367	28	23,038	41,470	180
Fire	-	-	-	31	-	-	1,125	-	-	-	-	-
Miscellaneous:												
Marine	46,410	47,061	101	91,841	66,111	72	18,508	53,818	291	43,431	17,861	41
Fire	128	4,554	3,557	1,122	-	-	705	-	-	684	-	-
Shrimp and Sponge, Diesel:												
Marine	28,880	22,985	80	934	46,012	4,926	95,074	358,258	377	322,907	268,552	83
Fire	1,603	9,500	593	1,244	91	7	1,931	8,057	417	2,527	66	2.6
Shrimp and Sponge, Gas:												
Marine	-	56	-	19	406	2,136	227	23,881	10,520	3,066	5,623	183
Fire	488	-	-	638	647	101	566	3,183	562	725	-	-
Totals:												
Marine	631,304	497,786	79	626,022	525,307	84	579,369	805,644	135	829,175	466,805	56
Fire	2,219	14,054	716	3,035	738	25	4,327	11,240	260	4,272	66	1.5

Class	1950			1949			1948			1947			1946		
	Premiums	Losses	Ratio	Premiums	Losses	Ratio	Premiums	Losses	Ratio	Premiums	Losses	Ratio	Premiums	Losses	Ratio
	$	$	%	$	$	%	$	$	%	$	$	%	$	$	%
Menhaden:															
Marine	161,642	20,019	12	168,785	73,629	44	136,822	52,748	39	83,245	17,000	20	68,867	9,217	13
Fire	333	-	-	1,485	-	-	84	-	-	-	-	-	105	-	-
Auxiliary Schooners:															
Marine	200,204	168,413	84	216,234	340,419	157	212,141	161,483	76	146,461	133,094	91	126,383	69,030	55
Fire	-	-	-	-	-	-	375	-	-	-	-	-	-	-	-
Trawlers:															
Marine	42,044	24,306	58	45,185	28,432	63	81,741	41,889	51	74,707	98,719	132	75,735	88,908	117
Fire	849	-	-	240	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous:															
Marine	48,092	4,357	9	32,881	16,551	50	14,127	378	3	8,193	3,162	39	3,978	2,027	51
Fire	1,011	-	-	485	-	-	2,426	-	-	3,478	5,175	149	3,530	1,793	51
Shrimp and Sponge, Diesel:															
Marine	244,989	179,497	73	164,513	99,136	60	134,038	54,193	40	28,250	8,588	30	17,567	5,492	31
Fire	3,657	9,174	251	2,950	734	25	4,186	245	6	6,536	114	1.7	6,598	-	-
Shrimp and Sponge, Gas:															
Marine	2,261	4,075	180	3,517	3,251	92	6,118	2,658	43	4,529	2,546	56	1,128	-	-
Fire	1,527	7,762	508	1,654	-	-	912	8,995	986	2,629	-	-	3,957	65	1.6
Totals:															
Marine	699,232	400,667	57	631,115	561,418	89	584,987	313,349	54	345,385	263,109	76	293,658	174,674	59
Fire	7,377	16,936	230	6,814	732	11	7,983	9,240	115	12,643	5,289	42	14,190	1,858	13

Note: Sources of these figures, the same as in table 1.

losses which are presented in the statistical tables. These figures shed light on the marine insurance industry's lack of enthusiasm for the fishing vessel business over-all. However, I should like to add that from these figures it appears that in the case of menhaden fishing vessels, the underwriting losses over the last few years have been clearly better than the losses suffered on other classes of fishing vessels. It appears evident that in the accident prevention field, compared to other classes of fishing vessels, menhaden vessel owners have been doing a good job.

Some figures dug out of Government records also bear illuminatingly on the losses revealed in the tables of insurance company figures. For example, about one-fourth to one-third of all of the more important cases of assistance rendered by Coast Guard operational units to all types of vessels in all sizes are estimated to have involved assistance to commercial fishing vessels. About one-half of the fishing vessels assisted by the Coast Guard in 1955 were above 30 tons burden or above 40 feet in length.

CAUSES OF ACCIDENTS

What are the causes of accidents among commercial fishing vessels? The Government reports on accidents are not sufficiently detailed to determine the exact causes of the founderings, strandings, fires, collisions, etc. A very rough estimate of the situation places a range of about one-fourth to one-third of the accidents as due to undetermined causes; somewhat less than one-fourth of the causes are attributed to heavy weather; a range of about one-half to two-thirds are attributed to personnel and material failures.

LOSS-OF-LIFE RATE

How does the loss-of-life rate among fishing vessels compare with the loss-of-life rates in other occupations? In table 3 the loss-of-life rate for persons employed on commercial fishing vessels was estimated on the basis of the total loss of life over an 8-year period which occurred on fishing vessels as a result of marine accidents, divided by the number of persons estimated to have been employed on fishing vessels. The loss-of-life rates for the seamen serving on United States commercial vessels subject to inspection by the Coast Guard were arrived at in similar manner, by using figures collected during the past 3 years. In each case the figures should be accepted as estimates based on the best available information. The estimated rates were furnished by the Bureau of Labor Statistics and the Coast Guard.

Table 3 - Loss-of-Life Rate For Persons on Commercial Fishing Vessels

Industry	Loss of Life Per Total Employed
Fishermen on commercial vessels	1/1,000
Seamen on inspected vessels	1/1,800
Mining (industry-wide)	1/1,100
Coal mining	1/760
Logging	1/680
Construction workers	1/1,300
Agricultural workers	1/1,700
Steel-mill workers	1/6,000
Manufacturing workers	1/8,400

The comparisons in table 3 tend to lend some support to the conclusion that where emphasis has been placed on safety programs, as it has been in the large industrial organizations, loss of life can be held down even though a particular operation may be of a hazardous nature. Other factors contributing to the high loss of life on commercial fishing vessels come readily to mind, such as the inaccessibility to medical help at sea, etc.

HULL INSURANCE

So far as I have been able to discover, what remains of a fishing vessel Hull insurance market for the whole East Coast, Gulf, and Pacific Coast, is being supplied by four insurance companies. A number of other insurance companies have been in and out of the business during the last few years because of discouraging results. Some insurance companies have continued to supply the coverage in specific cases, despite their reluctance to do so. However, the granting of coverage in such cases is to be regarded as testimony to the skill and resourcefulness of the brokers representing the vessel owners concerned, as well as evidence that these

brokers were probably producing other unrelated business for those insurance companies that was turning out to be profitable.

P & I INSURANCE

There are, at present, I believe, four available Protection and Indemnity (P & I) markets in the United States. Of these, only two write P & I on fishing vessels, but both have pulled out of the New England area. I understand that until recently the P & I market in New England was being supplied by two British insurance companies. Because of persistently bad-loss experience despite what appeared to be a stiff premium rate, one of the two has just pulled out and as of today there is only one British insurance company writing P & I in New England. Again, it should be observed that other insurers, American companies, do have a little P & I in New England written in specific cases as a special favor, etc. But the one insurance company holding itself out as ready and willing to provide "at a price" P & I coverage in New England is one British insurance company.

Turning to the Gulf, the P & I business despite a fairly high accident frequency rate has not, I gather, been bad because claim settlements have been more modest than they are elsewhere. Actually, the P & I loss experience on the Gulf has been better than the Hull, and virtually every insurance company writing P & I on fishing vessels seemingly has a little of this business on the Gulf.

PREMIUM RATES

The operations of insurance companies are regulated by the separate states. However, determining the amount of premium to charge in the case of marine insurance is not regulated but is left to the insurance companies themselves. There is no manual of rates, no statistical rating plan based on a classification or register of fishing vessel risks, to which one can refer to find out what the premium rate will be for a vessel in accordance with class, age, and physical characteristics. It is a matter of negotiation between the vessel owner's broker and the insurance company. In fixing the premium rate, what are the considerations that are taken into account?

First of all the insurance company takes into account its general experience with regard to the class of vessel which the insurance is to cover, as well as the particular area or areas in which the applicant vessel owner will be doing his fishing. Some insurance companies, with their losses in recent years in mind, are now insisting on a complete physical survey of the vessel by a marine surveyor. The survey made also covers navigation, fire fighting, and lifesaving equipment.

The vessel owner's loss record and standing are also taken into consideration. The bad experience of recent years has caused some insurance companies to include a check on the financial standing of the vessel owner. Such matters are gone into as whether the venture is or has been making money, whether the vessel owner is paying his maintenance bills on a current basis, how the vessel is mortgaged, etc. These inquiries have on occasion included checking also on the general reputation of the operating personnel.

Some insurance companies give rate deductions to a fleet based on the number of vessels in the fleet. Other insurance companies do not give so-called fleet credits right off but prefer to let a fleet earn such credits by good experience. Some insurance companies are tending to be increasingly wary of fleet operations in rating vessels. They feel that a number of them are really a loose community of single-vessel ownerships banding together to form a fictitious fleet with the aim of getting preferred rating.

In a case where the insurance company being asked to provide the coverage is not really in the market for the business, but is being pressured by the vessel owner's broker, the broker's general record of premiums and losses on the total business brought by him into the insurance company is also weighed.

With the recent losses in mind, there has been some feeling within the insurance industry that the so-called American Institute Time Hull Form, which is used for large oceangoing tonnage, is not a restricted enough form for small fishing vessels and that it was never designed for small tonnage.

PERSONAL FACTORS TO BE CONSIDERED

From what I have said thus far about the procedures used by insurance companies in determining whether or not to insure and the premium rate to charge, it should be apparent that the character, habits, and mental attitude of the vessel owner and crew--the personal factors--are just as important as the physical nature of

Table 4 - Fishing Vessel Hull Insurance by Class of Vessels, Cumulative Totals for 1946-54

Class	Premiums	Losses Paid	Paid-Loss Ratio	Reserve for Losses Outstanding as of December 31, 1954	Incurred Losses	Incurred-Loss Ratio
	$	$	%	$	$	%
Menhaden:						
Marine	1,357,691	405,276	29	112,850	518,126	38
Fire	2,307	-	-	-	-	-
Auxiliary Schooners:						
Marine	2,102,963	1,959,921	93	187,605	2,147,526	102
Fire	411	-	-	-	-	-
Trawlers:						
Marine	412,115	347,027	84	9,200	356,227	86
Fire	2,245	-	-	-	-	-
Miscellaneous:						
Marine	307,461	211,326	68	11,092	222,418	72
Fire	13,569	11,522	84	-	11,522	84
Shrimp and Sponge, Diesel:						
Marine	1,037,152	1,042,713	100.5	-	1,042,713	100.5
Fire	31,232	27,979	89	-	27,979	89
Shrimp and Sponge, Gas:						
Marine	20,865	42,496	203	-	42,496	203
Fire	13,096	20,652	157	100	20,752	157
Totals:						
Marine	5,238,247	4,008,759	76	320,747	4,329,506	83
Fire	62,860	60,153	95	100	60,253	95

Note: Totals of data in table 2.

the risk. The fact that the vessel will stay afloat is not enough. In evaluating a risk the mental attitudes of the vessel owner and crew are of crucial importance. This aspect of the risk is not limited to the personal or business ethics of the owner and crew, or to dishonesty on their part. Carelessness, which is a matter of mental attitude, most decidedly contributes to a risk and yet does not involve either business ethics or dishonesty.

Let us run over quickly some types of personal conduct and attitudinal factors that make a vessel an unattractive risk to the insurance companies. These include such factors as poor seamanship and poor shipkeeping; carelessness in equipment maintenance; failure on the part of the captain, mate, and engineer to spend more time on safety matters in sessions with the crew, especially at the beginning of the fishing season; failure to train new men in the handling of the purse boat and other small auxiliary craft; maintaining the decks in bad condition; permitting overloaded or poorly-insulated circuits; using gasoline in wood-burning stoves to get fires going more quickly in cold weather; failure to check fuel tanks periodically against leaks; smoking in the engineroom where a gas engine is in operation; discharging

crankcase oil into the bilges, thus increasing the fire hazard; using all personnel on the vessel to help bring in the net, leaving no one on watch in the engineroom; allowing drunks to get on board; venturing out too far looking for new fishing banks considering the size of the vessel and its equipment; staying out until the last moment despite weather conditions, etc.

The list could obviously be extended. The point is that these are the kinds of personal factors that make for injuries, for destruction, and loss of vessels, and thereby for increased losses to the insurance companies.

CAREFUL MEN ARE GOOD INSURANCE RISKS

The nature of insurance is such that it requires the utmost good faith between the parties. The so-called Sue and Labor Clause which appears in every marine insurance policy means in substance that in dealing with an accident or with a loss, the insured vessel owner should act as if he were uninsured. Insurance companies like their policyholders to be not only men of good faith but cautious and careful. It has been said that the best safety device after all is a careful man. Insurance underwriters may be pleasurably excited by risks and chances taken in the movies or on television, but when they catch on to the fact that a policyholder of theirs has a habit of taking unnecessary chances, the show is over; they prefer to let him gamble with his own money and not with the insurance company's.

Table 5 - Fishing Vessel Protection and Indemnity Insurance, 1950-54

Year	Gross Premiums Less Returns	Losses Paid Less Salvage	Paid-Loss Ratio	Reserves for Outstanding Losses as of December 31, 1954	Incurred Losses	Incurred-Loss Ratio
	$	$	%	$	$	%
1954	72,797	6,507	9	30,900	37,407	51
1953	68,250	19,797	28	15,800	35,597	52
1952	47,286	45,814	96	23,800	69,614	149
1951	89,101	69,634	79	9,900	79,634	89
1950	85,873	88,141	102	-	88,141	102
Totals	363,307	229,893	63	80,400	310,393	85

Note: These figures, made available by an insurance company, are a recapitulation of fishing vessel P & I insurance statistics covering a 5-year period (1950-1954). While the region included under these figrures extends from the Gulf to New England, about 90 percent is estimated to represent menhaden vessels.

The life of a fisherman is a rough one. It draws courageous and self-confident men; rugged individualists who think of themselves as lone operators and able to take care of themselves in any situation; men with a strong streak of fatalism in their characters. However, men of this kind tend frequently to be disdainful of precaution and to carry around deep within themselves the feeling that it is demeaning ("chicken") to worry about safety--and a waste of time to pay attention to accident-prevention procedures. Therefore, solving the insurance problem becomes for the fishing industry the problem of getting men with these character traits to observe safety precautions persistently and continuously. It is the problem of getting these men to view accident-prevention procedures and equipment on the boat as an essential and integral part of the boat's successful operation, not just as something "extra." Accidents on a vessel not only affect its insurance rate but have an unmistakable and large bearing on the fishing vessel's efficiency.

MEASURES NEEDED TO INSURE SAFETY

The practical question which those interested in the general welfare of the fishing industry (and more specifically in its insurance difficulties) have to face up to is what should be done to get vessel owners to maintain the vessel, its fixed equipment, and safety equipment in as good condition, let us say, as the fishing gear. What courses of action should be taken in an effort to reduce accidents and thereby the losses of insurance companies? Are corrective regulatory safety measures needed? What should be done to keep down court awards in personal-injury actions by members of the crew?

One suggestion that has been made is that Congress should take fishermen out of the Jones Act and enact a fishermen's compensation act to parallel the workmen's compensation legislation that governs the amounts paid for death and injuries to workmen in industrial plants on shore. This would be a statutory approach to fixing a ceiling on amounts paid for death and injuries to fishermen.

Another method for dealing with the problem that has been mentioned is that commercial fishing vessels should be made subject to Government construction and maintenance standards with periodic inspection and certification by recognized surveyors, and that seagoing personnel on fishing vessels should also be made subject to official qualification standards. The aim of these official standards would be to see to it that the commercial fishing vessel is seaworthy, properly equipped for safe navigation, properly equipped with fire-fighting apparatus and lifesaving gear, and properly manned. This course of action would have fishing vessels made subject to the same regulations, more or less, as passenger and cargo vessels.

At present, fishing vessels are subject only to the requirements of the Motorboat Act administered by the Coast Guard. Those motorboat regulations are limited to requiring compliance with certain regulations concerning navigation lights, fire extinguishers, and lifejackets and apply to all motorboats under 150 tons which are not licensed to carry passengers. These regulations have nothing to do with the design and construction of fishing craft. The inspections are not periodic but of a spot-check character. In sum total, these regulations are the same as those which apply to small pleasure craft although the Motorboat Act also contains a few other special provisions, including one requiring officers of seagoing vessels of more than 200 tons to be licensed and a fishing vessel of that tonnage would be subject to such requirement.

FISHING VESSEL SAFETY MEASURES IN OTHER COUNTRIES

I thought it would be of interest to refer briefly in this connection to the course of action other countries have taken in an effort to control accidents and losses on fishing vessels. On looking into the matter I find that many maritime nations, perhaps a majority, have in effect laws and regulations governing the construction, maintenance, and safety of operations of fishing vessels. I should like to sketch briefly the situation existing in this regard in Canada, Great Britain, the Netherlands, and Belgium.

In Canada a fishing vessel in excess of 15 tons gross tonnage is subject to inspection of the hull, machinery, and safety equipment in the manner set out in the Canada Shipping Act and Regulations thereunder. These regulations were prepared in consultation with the Canadian fishing industry. The enforcing Government Department is the Canadian Board of Steamship Inspection.

In Great Britain the laws pertaining to fishing vessels appear to take as their beginning point the background fact that Lloyd's inspects and classifies the larger fishing vessels, for the purpose of fixing rates, in accordance with type of hull structure, physical characteristics, etc. Unless a vessel is constructed in accordance with Lloyd's specifications for that particular class, insurance is unobtainable from a British insurer, or practically so, since the rates quoted without such classification become prohibitively high. With this situation in the background the Government does not, it appears, concern itself with fishing vessel classification or inspection certificates. The only laws and regulations applicable by their specific terms to fishing vessels pertain to fire-fighting and lifesaving equipment. These vessels are not subject to periodic inspection but are inspected at indefinite intervals to see to it that the fire-fighting and lifesaving equipment is as required. If on the occasion of the spot check of the fire-fighting and lifesaving equipment the vessel is noted by the inspector to be in unseaworthy condition, operation is prohibited until the deficiencies are corrected. Despite the absence of a legal require-

ment that these vessels have inspection certificates, the Ministry of Transport nevertheless has general authority to step in to prevent the unseaworthy fishing vessel from operating and generally does so by notifying British customs to withhold clearance.

In the Netherlands, all fishing vessels except undecked vessels fishing within sight of the coast are subject to inspection and require a seaworthy certificate issued by the Shipping Inspection Service of the Ministry of Traffic and Public Works. New construction must be approved. Classification Society Survey Certificates (of approved societies) are accepted in lieu of Government inspection. General examination of hull, machinery, launching gear, radio, outboard fittings, and sea valves is required annually. Manning requirements are specified for seagoing fishing vessels of over 50 tons, based on size and type of vessel and length of voyage. A minimum number of qualified men for watch on deck at sea is also specified.

In Belgium all seagoing fishing vessels are subject to inspection. Certificates are good for 1 year. If a vessel is classified by an approved classification society, its seaworthy certificate is recognized. If not so classified, the inspection service conducts the examination but permits the owner to select the rules of a recognized society which are then used to govern the inspection. In its operational details the scope of inspection and control exercised seems to be closely similar to the setup in the Netherlands. Manning scales are established. Documents are issued for skippers (three grades); qualified sailors, and deck apprentices; and for engineers, assistant engineers, engineer apprentices, and motor operators. Sometimes documents are issued to qualified deck personnel in small fishing vessels not required to have engineers.

CONCLUSION

In conclusion, one thing appears quite clear, and that is if ever laws extending inspection and safety requirements to fishing vessels should be adopted in this country, the system should be reasonable and have as its objective the retention of the bulk of equipment which the fishing industry now has while making it safer for the men. Corrective regulatory measures ought not to place an undue economic burden on the commercial fishing boat owner. Clearly, too, the details should be worked out in consultation with the fishing industry. Consultation with industry was the approach employed in developing the regulations applicable to the other commercial vessels in the American Merchant Marine.

The whole problem of technological change is one of the most disruptive factors to any occupational group. When the change is initiated from within the group, e.g., by suggestions from the industry, there is less chance of disruption. One of the bits of acquired wisdom in regard to introducing technical changes is to introduce them not whole hog, but to gage the rate and speed of change in such a way that the timing takes into account and allows for two types of adjustment: (1) economic adjustment, that is absorption of the cost of safety equipment, etc.; and (2) attitudinal adjustment, the effect on the habits and feelings of the people affected. Therefore, to introduce suddenly and completely a large number of safety regulations would seem undesirable.