

PROCEEDINGS OF THE MERCHANT MARINE COUNCIL

UNITED STATES COAST GUARD



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MERCHANT MARINE COUNCIL

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The
Merchant Marine Council
of the United States
Coast Guard

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Division
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CAPTAIN J. C. WENDLAND, USCG
Executive Secretary and Member

Mr. K. S. HARRISON
Chief Counsel

For each meeting two District Commanders and three Marine Inspection Officers are designated as members by the Commandant.

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Cover Picture: S. S. <i>Frederick Lykes</i> , a C3 cargo vessel, built by the Federal Shipbuilding & Drydock Co. in 1940. She has 465' 3" between perpendiculars, a breadth of 69' 6" and a depth of 33' 6".	
Distribution (SDL 44):	
A: a, b, c, d (2 ea.); remainder (1 ea.).	
B: e (35 ea.); c (14 ea.); g, 1 (5 ea.); f (4 ea.); h (3 ea.); d (2 ea.); remainder (1 ea.).	
C: All (1 ea.).	
D: All (1 ea.).	
E: m (1 ea.).	
List 141M.	

COUNCIL ACTIVITIES

SPECIAL PUBLIC HEARING

The Merchant Marine Council met in a special public session on January 30, 1951, at Coast Guard Headquarters. The special public session was held for the purpose of receiving comments on the proposed new regulations for public nautical school ships. In addition to the members of the Merchant Marine Council on duty at Coast Guard Headquarters, the following officers from Coast Guard districts sat as members of the Merchant Marine Council: Rear Adm. Harold G. Bradbury, USCG, commander, First Coast Guard District, Boston, Mass.; Capt. Charles W. Dean, USCG, commander, Eighth Coast Guard District, New Orleans, La.; Capt. Lewis H. Shackelford, USCG, marine inspection officer, Third Coast Guard District, New York, N. Y.; Capt. William W. Storey, USCG, marine inspection officer, Seventh Coast Guard district, Miami, Fla.; and Mr. John P. Tibbetts, marine inspection officer, Twelfth Coast Guard District, San Francisco, Calif.

The proposed new regulations were published in the Federal Register on December 21, 1950. As a result of the special public session the Merchant Marine Council recommended to the Commandant that the proposed new regulations be adopted with a few minor modifications in accordance

with the comments received and considered by the Council. The proposed regulations were not published in the Proceedings.

The nautical school ship regulations provide requirements for the design, construction, inspection, life-saving equipment, fire-fighting and fire-prevention requirements, and number of persons allowed to be carried on nautical school ships.

These new nautical school ship regulations will appear in the Federal Register in the near future.

SEMIANNUAL PUBLIC HEARING

The Merchant Marine Council will hold a public hearing on March 27, 1951, commencing at 9:30 a. m., in room 4120, Coast Guard Headquarters, Thirteenth and E Streets NW., Washington, D. C., for the purpose of receiving comments on the following proposed changes in the navigation and vessel inspection regulations.

The Council will consider all comments of persons having an interest in the revisions summarized below. Copies of the proposed changes in the regulations have been mailed to persons and organizations who had expressed an active interest in the subjects under consideration.

Comments on the proposed regulations are invited and may be sub-

mitted in writing for receipt prior to March 26 by the Commandant (CMC), United States Coast Guard Headquarters, Washington 25, D. C., or presented orally or in writing at the hearing. In order to insure thorough consideration and to facilitate checking and recording of comments, it is necessary that each suggested rewording of a proposed regulation be submitted on a separate sheet of letter-size paper, showing the section number (if possible) and the specific item number; the proposed change; the reason or basis (if any); and the name, business firm (if any), and the address of submitter.

The proposed agenda will include the following:

ITEM I—WARNING SIGNALS FOR USE BY COAST BUOY TENDERS WHILE WORKING BUOYS

It is proposed to amend the various pilot rules by adding new regulations, as 33 CFR 80.33a, 90.15a, and 95.26, containing requirements for special signals for use by Coast Guard vessels while working on buoys. It is proposed to require each Coast Guard buoy tender to display a special signal and to require the pilot or operator of a vessel observing this signal to give the Coast Guard vessel as wide a berth as possible and to reduce the speed of his vessel during passing as much as possible. This requirement is being added in order to reduce the hazards on Coast Guard vessels which are in a very vulnerable position when working buoys and attempting to raise them.

ITEM II—LIFEBOAT WINCHES, LIMIT SWITCHES IN CONTROL CIRCUITS OF

It is proposed to amend sections 59.3a (b), 60.21a (b), 76.15a (b), and 94.14a (b) of the General Rules and Regulations, Ocean and Coastwise, Great Lakes, and Bays, Sounds, and Lakes Other Than the Great Lakes, to require the limit switches functioning in the control circuits of lifeboat winches which were in existence on November 17, 1949, to meet the same requirements as limit switches presently required in lifeboat winches for use in new installations. During the last 5 years the records of the Coast Guard show there have been 30 accidents caused by defective limit switches. These 30 casualties have resulted in 3 deaths, 18 persons injured, and considerable property damage. During this same period two men were killed and seven were injured as a result of being struck by spinning crank handles while in the act of hand cranking the davits to their final position. It is felt that most of these accidents could be eliminated by requiring limit switches in control circuits of lifeboat winches

on existing installations to meet the requirements for new installations. This proposal will extend the application of the regulations so that all installations of limit switches in circuits of lifeboat winches will be the same. In view of the fact that the equipment installed on existing ships is aging, the accident rate from defective limit switches if not corrected may be expected to increase rather than decrease.

ITEM III—INFLAMMABLE LIQUIDS, TRANSPORTATION OF

It is proposed to revise the requirements in the regulations governing explosives or other dangerous articles or substances and combustible liquids on board vessels by amending sections 146.03-9, 146.04-5, 146.21-1, 146.21-14, and 146.21-100 so that the requirements for the transportation of inflammable liquids will be in agreement with the Interstate Commerce Commission's Regulations. Since new inflammable liquids have become commercially important and are now covered by ICC regulations, it is proposed to add similar requirements in table 146.21-100 entitled "Table D—Classification: Inflammable liquids." The ICC has also changed the requirements for some of the containers used in transporting inflammable liquids, as well as authorized the use of a number of new containers; the table has been revised to reflect these changes.

ITEM IV—SPECIFICATIONS FOR FIBROUS GLASS LIFE PRESERVERS, PISTOL-PROJECTED PARACHUTE RED FLARE DISTRESS SIGNALS, AND SIGNAL PISTOLS

At the public hearing held on September 20, 1950, a proposed specification for fibrous glass life preservers was considered. Numerous comments

and suggestions were submitted and the Merchant Marine Council, therefore, decided to reconsider this specification after all the comments previously received had been incorporated into it where possible. In order to provide for additional alternate type of life preserver it is proposed to add a new specification as Subpart 160.005 entitled "Life Preservers, Fibrous Glass, Adult and Child (Jacket Type), Models 51, 52, 55, and 56," to Subchapter Q—Specifications. This specification sets forth the requirements to be followed in manufacturing life preservers using fibrous glass as buoyant material, as well as the inspection and tests required and the procedures for obtaining approval. It is proposed to cancel the present specification designated as Subpart 160.024, which contains the requirements for pistol-projected parachute red flare distress signals and signal pistols, and replace this specification with two new specifications designated as Subpart 160.024 for the pistol-projected parachute red flare distress signals and a new Subpart 160.028 to cover the signal pistols. These specifications as rewritten contain no new requirements except that the cost of qualification tests for type or brand approval must now be borne by the manufacturer. The new specifications cover the requirements to be followed in manufacturing pistol-projected parachute red flare distress signals and signal pistols, as well as the inspections and tests required and the procedures for obtaining approval.

SAFETY

To save a life; to save a ship from disaster; to save cargo from loss or damage; constitute a seafarer's greatest contribution to human society and the stabilization of the shipping industry.

SAFETY AS "COUNTER-ATTACK" AGAINST INEFFICIENCY IN OPERATIONS

Excerpts from a paper delivered by Capt. Edward C. Holden, Jr., USNR, Master Mariner, at the first annual meeting of the Louisiana Safety Association, Marine Section, Hotel Roosevelt, New Orleans, La., December 12, 1950.

A correct viewpoint and analysis shows that accidents are often indicative of "inefficient operations" somewhere along the line. In any event, the most reactionary minded must admit that accidents are symptoms

that something is wrong; otherwise there would be no accidents. The trouble may lie with the method of operation, with supervision, or with employees. That is why safety engineering is needed in business. That is why accident prevention should be an integral part of all operations. In fact, safety is just plain "efficiency in operations." It is doing things the right way instead of the wrong way.

Experience proves that a hard working safety organization together

with a hard hitting supervisory staff will lick almost any accident problem. It will be an effective "counterattack" against inefficiency, incompetency, inattention to duty, negligence and all other elements which may combine to breed accidents. It will help to expose and correct "weak links" in the chain.

Communist agitators can find fertile soil to sow the seed of discontent and disruption only as long as industry disregards its own united front for the safety and protection of all employees.



Courtesy Lykes Fleet Flashes.

Accident prevention is a very personal matter to employees as well as a business responsibility for management. Employees need to be told what is right and it is management's responsibilities to carry on activities that will provide information from which safe working procedures can be developed. What might have been considered sufficient instruction yesterday is inadequate today in the light of our present experience. The more we learn about the causes of accidents and the reasons for these causes, the better qualified we should be to formulate ideas that will tend to maintain the active interest of all personnel and fit in with their natural inclinations.

TRAINING FOR SAFETY

A careful study of thousands of accident cases reveals a profound lack of knowledge of "safe work" techniques and of "safe work" habits on the part of supervisory forces, from the top down.

It is too often assumed that masters, chief engineers, officers, and crew members possess correct safety knowledge and techniques. The record proves otherwise; we quote from the records of the Marine Index Bureau of New York for the calendar year of 1949:

131 DEATHS caused by personal injuries aboard ships.
29,098 cases of PERSONAL INJURIES aboard ships.

Furthermore, the record shows that the ratio of frequency of accidents rose sharply following the last war and continued at a high level well into 1950.

In addition to the above record, we quote from the records of the United States Coast Guard—"CASUALTIES TO VESSELS, fiscal year, July 1, 1949, to June 30, 1950":

Vessels involved in—	
Groundings and foundering.....	623
Collisions with other vessels.....	790
Collisions with miscellaneous objects.....	429
Fire and explosions.....	237
Total, marine casualties.....	2,079

In each case, the master, officer, or officers were held responsible for the casualties.

In each case, damage to vessels and cargoes resulted together with loss of life, or personal injuries to crew members; all of which resulted in huge monetary losses.

In view of this unhappy record, can there be the slightest doubt in the mind of anyone that something should be done to prevent these accidents? It is a yearly affair. Unsafe basic conditions do not correct themselves. Concerted safety action is needed.

In recognition of the urgent need for a complete, up-to-the-minute practical safety plan—organization and training—for masters and officers, the United States P. & I. Agency, Inc., has provided the assured companies it represents with "safety handbooks based on accepted "safe practices" for the benefit of the deck, engine, steward's, and radio departments aboard ship entitled:

ACCIDENT PREVENTION FOR PASSENGER AND CARGO VESSELS

ACCIDENT PREVENTION FOR TANK SHIPS

Through the use of the material contained in these safety booklets, it has been found that "accidents can be prevented."

The point to be emphasized and re-emphasized is that masters, officers and crew members need constant safety education in all departments of ship operations. Nothing can be assumed or taken for granted in regard to safety in operations; it must be constantly drilled into the minds of all humans. It is indeed an important function of management to guide and direct an effective safety program for efficiency in operations

if its accident record is to be improved. Nothing improves without a real effort to that end.

UNSEAWORTHY MEN

The accident record aboard ships is aggravated by many "unseaworthy men" suffering from diseases in no manner connected with their employment, such as epilepsy, acute alcoholism and psychoneurosis, plus a liberal supply of dope addicts.

ELIMINATION OF MISFITS

The present exigencies of our national defense should require that unseaworthy men, physical and mental defectives, human derelicts, and alien-minded agitators should be eliminated without delay as being "unsafe" humans aboard any vessel. Their certificates should be withdrawn until they are cured of their diseases of mind and body.

We should all unite in the common effort to make the American Merchant Marine a credit to the United States and not something for which we have to apologize and make excuses.

ELIMINATION OF NEGLIGENCE

The record of cases adjudicated in our Admiralty courts reveal a long list of death and personal injury cases wherein the court found liability on the part of the shipowner because of the "negligence" of the master, chief engineer, department head, or the officer in charge of work, principally for failure to "supervise" in the "right or safe way" of doing things. Translated to legal requirements, the shipowner was found liable for damages because of "failure to provide a safe working place," or for "failure to provide safe tools and equipment" with which to work in death or personal injury cases. Naturally, the shipowner must depend on his masters and officers for their efficient and safe performance of duty in these matters.

The record in the MARINE CASUALTIES involving groundings, foundering, collisions, fires and explosions, etc., shows a long list of derelictions on the part of masters and officers for "inattention to duty"—failure to exercise "due diligence"—and for just plain, ordinary "negligence," in the performance of duties.

The record of cargo losses and damages shows case after case where the court held the shipowner liable because of the "lack of due diligence" and "negligence" on the part of the master and officers in the care and custody of the cargo.

"NEGLIGENCE" has resulted in huge monetary losses to the shipowner as the record clearly shows. It gives the American Merchant Marine one "black eye" after another.

Surely, human negligence should be dealt with most severely when death or disabling injury results. There has been too much laxity in dealing with those whose negligence has resulted in human suffering and misery. Negligence, unlike lightning, does strike twice or more in the same place unless something is done to prevent it. If discipline for safety is needed in order to get RESULTS, let's have it when needed.

AMERICAN-OWNED SHIPS—THE SAFEST IN THE WORLD

It may be correctly stated that American-owned vessels from the point of safety in design and construction are the safest ships in the world today.

In all fairness, American shipowners can be regarded as being vitally interested in the efficient and safe operation of these vessels. In this connection, this meeting of the Marine Section, Louisiana Safety Society, emphasizes this interest for safety in ship operations. Likewise, the Marine section of the National Safety Council is dedicated to the purpose of safety in ship operations on a national level.

There are many American-owned vessels today which month after month and year after year sail the high seas without a disabling injury or death. If one will visit such vessels he will find a truly safety-minded master, officers and crew who work together as an effective and efficient safety team. They are a credit to the Merchant Marine.

It is equally well recognized that nothing is perfect in this world and once in a while there will be a human failure somewhere along the line which will break a good safety record, but that is to be deemed an exception, not the rule, provided safety diligence and vigilance is increased.

On the other hand, there are vessels which are frequently in trouble. The record shows that they get involved in groundings, strandings, collisions, fires and explosions, deaths, and personal injuries. Sometimes these vessels are called "human slaughter houses." If one will visit such vessels, the comparison will invariably prove the case. One will find the gangway improperly rigged, bad housekeeping on deck and in the various departments, men working without proper officer supervision or instruction for the safe performance of the work in question, men working

without safety protection such as safety belts when on stagings, or goggles when performing work involving possible eye injuries, men using meat hooks on boatswain's chairs aloft instead of a proper block and tackle, men working in a tank or compartment which has not been tested for gassy conditions or for lack of oxygen, ladders with missing rungs, wooden hatch boards broken or missing, safety catches out of order on hatch beams, portable power-driven tools in use without safeguards or contrary to the manufacturer's instructions, and a hundred and one other accident-breeding conditions. Here one will often find a slovenly looking master, chief engineer, officers, and crew where the word "safety" is called "baloney." Then too, these are the ones who are usually afflicted with the "30-year disease."—"I have done it that way for 30 years and it is good enough for me" or "I don't want anyone telling me how to run my ship, department, or job." Experience show that these are all ACCIDENT PRODUCERS, hence the need for drastic action for safety.

These comparisons are cited in order to give proper credit to the many honest, efficient, safety-minded masters, chief engineers, officers, and crew members on vessels having continuous good safety records in contrast with those indifferent, careless, slovenly, and negligent-minded masters, chief engineers, officers, and crew members whose alibi when a man is killed or injured is: "What a dumb Cluck! It was his own fault—if he didn't know any better he got what was coming to him," or words to that effect. In short, everyone blames the other fellow and never offers anything but criticism. Such types never have a constructive idea.

These stubborn annual accident tolls will continue until there is a change in the company policy relative to these unsafe-minded individuals as to employment, or a change in their "mental attitudes" toward safety. The one bright spot in such a picture is that experience again shows that many masters, chief engineers, officers, and crew members who, in the past, violently opposed any new ideas, especially for safety, are now the leading proponents for new ideas and safety in operations. However, we still have a long way to go in correcting such matters.

FIVE CARDINAL RULES FOR SAFETY IN OPERATIONS

The Admiralty laws and courts decisions are unanimous in the first two rules; experience proves the wisdom

of the other three cardinal rules for safety in operations:

1. Management must provide a "safe working place" for employees, including a safe means of egress and ingress.

Examples: A safe gangway, staging, hatch covers, ladders, etc.

2. Management must provide "safe working tools and equipment."

Examples: Portable electric or air-driven tools with "guards" and used in accordance with manufacturer's instructions, goggles to prevent eye injuries when performing work involving possible eye injuries, safety belts for men working on stagings, etc.

3. Employees must be physically fit, mentally alert, and competent to work, operate tools and equipment. (Preemployment physical examinations are recommended. Visual problems should be detected as many men are found to have defective vision and become accident prone.)
4. Employees must strictly observe the operating and safety rules that experience and practice have developed. (Too many men are indifferent in these matters.)
5. Everyone—supervisor and supervised—must realize that his own and his fellow worker's safety depends upon his every act. (This situation may be controlled to a considerable degree by participation in safety programs. It is largely a matter of safety education and training. What are you doing to stress the importance of this rule?)

Following the acceptance of the "FIVE CARDINAL RULES FOR SAFETY IN OPERATIONS" it will be necessary to evolve a practical workable plan to develop the interest, cooperation, and participation by employees.

We have found the simplest plan for achieving this objective to be:

1. Publication of a statement of company policy for safety signed by the President or Executive Vice President.
2. Publication of a "PLAN OF ACTION FOR THE PREVENTION OF ACCIDENTS."
 - (a) Designation and duties of the Safety Director or Officer.
 - (b) Outline of the Safety Organization Plan.

- (c) Outline of the Shore and Ship Safety Committee, duties and responsibilities.
- (d) Outline of system for preparation of Minutes of Safety Committees.
- 3. Outline of accepted and recognized SAFE WORK PRACTICES aboard ship.
- 4. Dissemination of accident and safety information, case histories, preventative measures recommended, etc., in order that other vessels of the fleet may profit by some other vessel's experience.
- 5. Stimulation of safety competition.
 - (a) Obtaining of safety ideas, suggestions for improved work techniques, etc.
- 6. Fire Prevention Measures; Fire Fighting Techniques.
- 7. Accidents.
 - (a) Accident Investigation Committee.
 - (b) Immediate and proper conduct of accident investigation.
 - (c) Proper compilation of accident reports.
- 8. First Aid.
 - (a) Treatment of injuries.
 - (b) Keeping of proper records re: Log of treatment in each case.
- 9. Prevention of cargo damage.
- 10. Prevention of collisions.

Great emphasis should be placed on the need for proper "supervision" of work, including use of protective devices, in order to make the safety program "click."

Bearing in mind that safety is in reality "EFFICIENCY IN OPERATIONS" it is suggested that the overall safety efficiency of each vessel of the fleet be classified for each voyage under each master, department head, and officers in each department.

Any casualties should be charged to the departments concerned, the cause and responsibility noted in regard to the officer in charge.

In conclusion, may I point out some self-evident facts which should inspire us to greater accomplishment.

Communists sneer at our belief in human dignity and the supreme worth of the individual. They say it is hypocritical. Can you prove them wrong?

Communists hit us with perfectionism. "If we're not perfect, we're no good"—that's what the Communists would like us to believe. They bury their own imperfections under a blanket of lies and tempt us to do the

same thing; for they know that lies smother freedom, our life breath.

Sure, let's face up to our shortcomings. Let's admit our imperfections. We are not a finished product and we never will be, so long as we are free to grow. We have many imperfections but we are working on them. That is why we have this great Safety Convention at New Orleans.

We must also remember that there is a positive side to this war of ideas. What do we stand for? In our standing for SAFETY IN THE MARINE INDUSTRY we stand for a recognition of human values in our industry.

We recognize the supreme worth of the individual to live and work safely and to help him to do so. We recognize the freedom of the individual to achieve what he can, on his own, without interference—individual initiative and responsibility—and finally, freedom—the touchstone of them all.

Just think of the moral force which would be turned loose in this world if Americans firmly knew—and believed in—the ideas they were fighting for, not just fighting against.

Finally, beliefs must be lived, not simply believed. Action is the key.

You can live your belief in true Americanism by being active for safety in your daily work.

AN "ALERT" FOR SABOTAGE

How secure are our ships, piers, shipyards, and other maritime facilities against Red sabotage?

On the very day that Communists, pinks, Red-Fronters, and/or left wingers were petitioning the Government to make the United States Coast Guard relax its measures for the protection of the shipping industry against sabotage, new documentary evidence was uncovered aboard several American merchant vessels which brought to light the most insidious Communist weapons of subversion, violence and revolution ever to penetrate our ships.

The sabotage documents were written in Spanish and found concealed in sardine cans. The misleading subject of the manual was "Football" (Futbol), and the end page listing the "Small Sport Collection" (Pequena Coleccion Deportiva) of sabotage instructions. The latter included subjects of "official regulations (Reglamento oficial del juego) on hockey (de Hockey), boxing (de Boxeo), tennis (de Tennis), ball (de pelota), and basketball (de baloncesto).

Immediately following the dummy title page was a frontispiece of Stalin, and inside an address delivered by Stalin on February 9, 1946, to the voters of his Moscow constituency.

During the investigation of the "sardine can" documents, crewmen of the vessels concerned related that some of their shipmates, avowed Communists, had continually tried to stir dissension between the masters, officers, and crew members. Incidentally, this type of subversion has been long existent but never before has documentary evidence been uncovered exposing the Communist plot to completely subvert and sabotage our vessels. Each vessel unquestionably has one or more Communist agitators and saboteurs aboard. Therefore, the timely need and emergency to take "Counter-subversive and sabotage measures" to prevent future disruption and/or disaster to our American merchant vessels. Eternal vigilance is the price of safety.

Random excerpts from the manuals are representative of the theme of the entire "sports" library. The "futbol" manual tells how to short circuit electrical lines to cripple the electrical plant; how to burn up vital transformers by tapping their oil supplies; how to disable generators by putting sand in the bearings; how to make vicious delayed-action "Molotov cocktails" to wreak destruction; how to place hidden detonating charges in the desk of "a citizen in whom we are interested in causing harm or death," such as the master or chief engineer of the vessel; how to mix sugar and common chemicals into little hatband bombs whose delayed action will shatter a victim's head; how to murder by stealth, ignite fires without being detected, batter a turbine into uselessness, cripple bottleneck machinery with emery dust, sulfuric acid, or ordinary gasoline; how to cause explosions, etc. In short, a complete catalog of sabotage methods and techniques to blast the productive heart and war potential of a nation.

The "hockey" manual, published, like the others, by the "National Council of Sports," dealt with the manufacture and use of explosives and fuses. "Boxeo" gave additional data on fuses, explosives, caps, and detonating devices. "Tennis" contained further material on construction of charges, bombs, and incendiary grenades. "Pelota," or game of ball, covered electric-ignition systems, the sabotage of batteries and dynamos and the destruction of fire-fighting facilities. "Baloncesto" detailed the sabotage of electrical lines, switchboards, etc.

Besides the sabotage manuals, the sardine cans contained ideological directives, all similarly disguised. One of them, published by "Herboristeria Moderna," or Modern Herb Shop, was titled "25 curas por las plantas"—

"twenty-five cures by plants." These "cures" tell how to pit class against class and mass against mass; in short how to completely break down all systems of productivity, loyalty, and cooperation by terrorist methods—a general undermining of our capitalistic system.

We must NOW invoke counter-measures for self defense and for the detection and prevention of subversive warfare. Time is running out.

PILOT LADDERS FOR SHIPS ENTERING THE PANAMA CANAL

The Panama Canal authorities on August 10, 1950, issued Bulletin No. 101, Panama Canal Marine Safety Rules, regarding pilot ladders. This Bulletin No. 101 is reprinted below for the information of all operators and officers of vessels using the Panama Canal:

Pilot Ladders

All ships entering the Panama Canal in which pilots and other boarding party officials are likely to embark, should comply with the following regulations respecting pilot ladders:

(a) The ladder should be kept in good order and used as far as possible only for embarking and disembarking pilots and other officials while the ship is arriving at or leaving the Panama Canal.

(b) The ladder should be of adequate length and strength.

(c) The treads should be of adequate width.

(d) Two man-ropes, properly secured, should, where circumstances so require, be used in conjunction with the ladders.

(e) Arrangements should be such that the pilot can safely pass from the head of the ladder to the ship's deck.

(f) Spreaders at suitable intervals should be provided to prevent the ladder twisting.

(g) At night, a light shining over the side should be available and used.

(h) A line with life ring attached should be close by the ship's rail.

(i) A ship's officer should be present to receive and assist boarding party officials or no one will board.

NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of undocumented vessels numbered under the provisions of the act of June 7, 1918, as amended (46 U. S. C. 288), in each Coast Guard district by customs ports for the quarter ending December 31, 1950. Generally speaking, undocumented vessels are those machinery-propelled ves-

sels of less than 5 net tons engaged in trade which by reason of tonnage are exempt from documentation. They are also those motorboats and motor vessels of 5 net tons and over used exclusively for pleasure purposes which are not documented as yachts or those of less than 5 net tons which by reason of tonnage, are not entitled to be so documented.

Coast Guard district	Customs port	Total
1 (Boston)	(4) Boston	16,160
	(1) Portland, Maine	11,377
	(2) St. Albans	2,883
	(5) Providence	4,400
		34,880
2 (St. Louis)	(45) St. Louis	17,120
	(12) Pittsburgh	2,427
	(34) Pembina	87
	(35) Minneapolis	6,474
	(40) Indianapolis	4,292
	(42) Louisville	3,942
	(43) Memphis (part)	7,951
(46) Omaha (part)	499	
(47) Denver	6	
		42,798
3 (New York)	(10) New York	48,801
	(6) Bridgeport	8,893
	(11) Philadelphia	21,002
		78,696
5 (Norfolk)	(14) Norfolk	16,349
	(13) Baltimore	23,264
	(15) Wilmington, N. C.	8,608
		48,221
7 (Miami)	(18) Tampa (part)	22,958
	(16) Charleston	1,935
	(17) Savannah	3,395
	(49) San Juan	448
	(51) St. Thomas	85
		28,821
8 (New Orleans)	(20) New Orleans	20,115
	(18) Tampa (part)	805
	(19) Mobile	8,265
	(21) Port Arthur	4,019
	(22) Galveston	10,711
	(23) Laredo	2,094
	(24) El Paso	6
	(43) Memphis (part)	76
		46,091
9 (Cleveland)	(41) Cleveland	14,253
	(7) Ogdensburg	6,573
	(8) Rochester	8,768
	(9) Buffalo	8,282
	(36) Duluth	4,199
	(37) Milwaukee	12,572
	(38) Detroit	29,160
	(39) Chicago	8,443
11 (Long Beach)	(27) Los Angeles	8,883
	(25) San Diego	1,702
	(26) Nogales	103
		10,688
12 (San Francisco)	(28) San Francisco	20,598
		20,598
13 (Seattle)	(30) Seattle	32,828
	(29) Portland, Oreg.	9,764
	(33) Great Falls	1,052
		43,644
14 (Honolulu)	(32) Honolulu	3,458
		3,458
17 (Juneau)	(31) Juneau	6,762
		6,762
Grand total		456,907

CORRECTION

In an article entitled "Some Technical Aspects of Radar as a Collision Prevention Device and Their Practical Application" in the October 1950 issue, the use of the term "Fathometer" as the generic term for depth sounders on page 154 was in error. "Fathometer" is the registered trade mark of Raytheon Manufacturing Co., Waltham, Mass., for depth sounders

of its own manufacture, and not the generic term for depth sounders of all makes.

Because of a master's poor judgment in not slowing his vessel down in a heavy sea, a boatswain, while attempting to replace broken cross battens with wire and turnbuckles, was struck by the sea and sustained a fractured jaw.

DANGER

NO JOB IS SO IMPORTANT
NO WORK IS SO URGENT
THAT WE CAN NOT TAKE TIME
TO PERFORM OUR WORK SAFELY

LESSONS FROM CASUALTIES

EXPLOSION AND FIRE ON BOARD TANK VESSEL

A report on an explosion and fire recently suffered by an American tank vessel presents several points of interest to seamen.

The vessel concerned had discharged a cargo of gasoline, and at the time of the casualty, was underway for another port where a program of repairs had been planned. After leaving the discharge port, gas-freeing operations were begun in order to have the vessel ready for repairing upon arrival at the home port. All tanks were opened and aired and were then butterworthed and cleared of concentrated gases, after which cleaning and scaling operations were carried out as necessary. No. 3 tank was the last to have ballast cleared from it and this was accomplished at about midnight. Butterworthing of this tank was begun shortly thereafter and continued for approximately 4 or 5 hours. The hatch trunk was located directly forward of the midship's house while the butterworth opening was located in the inclosed space beneath the quarters amidships. This inclosed space is accessible only through watertight doors forward and aft on either side. At the conclusion of the butterworthing a windsail was lowered into the hatch trunk for the purpose of ventilating the tank through the opening in the shelter deck space. After a certain amount of ventilating the chief officer descended into the tank to check on its general appearance. It was his opinion at that time that the tank was in excellent condition and would require no scaling.

After conducting his examination of the interior of No. 3 tank the chief officer was occupied on deck forward and directly before the explosion was in conversation with the third officer of the ship. At this time the chief officer was standing on the catwalk just forward of the midship house while the third officer was on the port wing of the bridge immediately above and slightly outboard of the open top of No. 3 hatch trunk. Directly thereafter the chief officer descended the port-side ladder forward of the bridge to the main deck and was at the bottom of the ladder when an explosion occurred in No. 3 center tank. The chief officer testified that he heard two different blasts, the second following closely upon the first. Both officers were severely burned but remained at their duties until the fire

was brought under control when they were relieved by the master. Both injured men received principally second-degree burns on the back, arms, and neck. An interesting point here concerns the fact that the third officer was unclothed from the waist up whereas the chief officer was wearing a sleeveless undershirt. Neither person was burned below the waist and the chief officer's burns were but slight underneath the undershirt whereas the third officer was burned equally all over his back. This confirms experiences gathered during the war that even a thin undershirt affords material protection against the effects of flash burns.

Atmospheric conditions around the ship were not conducive to the dissipation of gases vented from the tanks. The ship was proceeding at about 13 knots and as the wind was fair with a force of approximately 3 the vessel was surrounded by almost dead air. With the gases being vented from No. 3 tank into the shelter deck area, conditions were ideal for the accumulation of a dangerous concentration of the gases in that space. The lighting fixtures in this space, as is usually the case on older tank vessels, were of the vapor-proof type. They were shown to be in good condition. No extension lights or electric wires of any kind were in the tank at the time of the explosion. The investigation failed to show what actually touched off the blast but it is thought that the most likely culprit was a spark from the vessel's stack or the galley stack. Such a spark could have been carried forward by wind currents and ignited the gases in the neighborhood of the shelter deck space.

The investigating officer found no reason to blame any of the ship's personnel for contributing to this accident in any way. He did think that when tank-cleaning operations are proceeding during atmospheric conditions such as those experienced by the ship in question, more care should be given to preventing any accumulation of gases in the shelter deck.

The electrical equipment in inclosed spaces adjacent to cargo tanks has been the subject of a great deal of discussion from the safety standpoint. Tank vessels of recent construction are usually equipped in these areas with explosion-proof lights instead of the old vapor-proof type. Electric switches, or for that matter, any kind of circuit-interrupting device, are prohibited.

The possibility of barring all openings into the tank from the space under the midship house has been explored. It was shown, however, that in the present state of development of tank-cleaning measures, it is necessary to have such openings located in this space, for the center-line tank under the house, at least.

The three necessary ingredients for a fire or explosion are: Oxygen, fuel, and a source of ignition. If any one of the three requirements are missing no fire will take place. In this case the oxygen of the atmosphere was present, fuel was present in the form of gases expelled from the No. 3 tank butterworth opening, and, finally, a source of ignition although not positively identified, must have been present. In preventing tank-ship fires it is in most cases impossible to bar oxygen. It is, however, possible to prevent the accumulation of explosive gases and to a lesser extent, to prevent the application of a source of ignition. In the instant case if the gas from No. 3 tank had been expelled from the shelter deck as well as from the tank the explosion would probably not have taken place. The Coast Guard strongly recommends that when cleaning tanks in dead air or fair winds great care should be taken that dangerous concentrations of gas do not accumulate around the ship.

"OPERATION REPAIR"

Here is a subject that provides a wide latitude for discussion. Mr. E. T. Sinnott on December 12, 1950, speaking before the Marine Safety Section of the Louisiana Safety Association Conference held in the Roosevelt Hotel in New Orleans, La., had this to say:

Before discussing this subject it might be well to determine what the operations of a ship-repair yard consist of and what is expected of a ship-repair yard by vessel owners. The operations of a ship-repair yard are unique in that the yard must be able to perform any repair operation on any type of floating equipment from the smallest barge or yacht to the *Queen Elizabeth*. In other words, a repair yard must have all the facilities, skills, trades, etc., you might say, to practically run and maintain a small city, or if you boil it right down practically every facility that a small city has a ship-repair yard must have. A ship-repair yard must be in the position to offer facilities as well as the trained personnel at practically a

moment's notice. At times it is necessary to build up from a few men to hundreds or a thousand or more very quickly and perhaps overnight. As you know, speed in repairs is of the essence—it costs money for a ship-owner to have a vessel laid up. The problems, therefore, of a ship-repair yard at times, because of the nature of the work, are considerably different than practically any other type of business. I believe people not familiar with accident prevention believe that all that is necessary is to have a safety program. The setting up of such a program is relatively easy, but it is actually only the foundation. Some of the many problems that management has are:

(1) *Physical hazards.*—Such as staging, hoisting, fumes, gases, electricity, heat and cold and in some places snow and ice, etc. Under normal conditions, such as the average manufacturing plant work can be planned ahead. The number of supervisors required, from the highest down to the lowest type, can be determined. Men can then be trained in supervision. They can be selected carefully so that when the operation starts all matters from a supervising standpoint can run relatively smooth. This cannot be done in a ship-repair yard. It is true that a yard must maintain a permanent supervising staff on a full-time basis, but it is impossible to keep all supervision required on a 12-month-a-year basis. The decline of work necessarily dictates the elimination from the payroll of certain supervisory employees and, in reverse, increase in work which at times can be sudden, requires management to increase the number of supervisory employees in a given repair yard. Often the men who have done an outstanding job before are then connected with other concerns and would be unwilling to return to the yard now in need of supervising employees. This necessitates, on the part of a ship-repair yard, the appointment of new supervisory employees, in many instances absolutely untrained supervision-wise with very little, if any, time to train them in supervisory activities.

(2) The normal manufacturing operations can be planned in advance and safety provisions planned accordingly. In ship-repair work the time element does not allow this and, in addition, each job presents many new problems which must be taken care of on the spur of the moment, as changes and problems arise. It is impossible for management and the Safety Department to know in advance all of the hazards that they are going to develop and these hazards in many instances have to be

met as they develop. Just a problem of the ship-repair yard!

(3) *Green help.*—The fact that a shipyard is a shape-up industry creates many problems from the standpoint of new employees who have never before worked in a ship-repair yard. The training program to indoctrinate these men is difficult. Although they might be skilled mechanics, never having been in a ship-repair yard before they must be made aware of all the hazards of a yard, they must be supervised very carefully and corrected when necessary. This all entails very close supervision on the part of management and the supervisory employees.

(4) *Proper instruction.*—In order that accidents may be minimized, instruction must be very thorough. This can be accomplished by discussions or meetings. Proper instruction includes the use of specific safety instructions in certain given jobs. Naturally it also includes the general safety booklet containing the safety rules and regulations of the yard. Relative to the "green," or new men the function of management here is:

- (a) Screening and indoctrination by Personnel Department.
- (b) Preemployment physical by Medical.
- (c) General safety instructions by Safety Department.
- (d) Departmental indoctrination and specific job safety instructions by supervisors in the department where new man is assigned with frequent follow-up by the supervisor to reinstruct or advise as the circumstances may call for.

(5) In normal business it has been estimated that manpower failure causes somewhere between 80 and 90 percent of occupational accidents. This figure in itself is alarming. However, in the case of ship-repair work I am inclined to feel, as a result of my discussions with many people and personal analyses, that this figure probably rises to 95 percent. This clearly indicates the absolute necessity for the proper education of employees if a good accident-prevention program is to be maintained. Accident-prevention education of employees is a 365-day-a-year job. It is impossible to give employees pep talks when they first come in the yard and expect this to last as long as they are in the yard.

The above figures clearly show that. There is no easy method that I know of to impress upon a man the fact that he must work safely at all times

so that there will not be injuries and that he will not injure others. It is one of those things that must be brought home to him continuously. Any man is likely to occasionally relax his vigilance and with the hazards that exist, in a ship-repair yard one error can be the cause of his death, death of others, or permanent injury to himself or others. I say that safety must be pounded into the minds of everybody from top management down wherever and whenever any unwise act occurs. I don't know what it is that makes men think along the lines that they do but for some reason or other they seem to resent being told that they are working in an unsafe manner. Perhaps it is the little boy coming out of the man who wants to be a big shot and show how brave he can be by standing on a barrel instead of proper staging, by going around without a safety helmet when hazards are there that require his wearing a safety helmet, by disregarding the wearing of goggles when he is in an area where goggles are necessary, such as in sand-blasting areas. Maybe it is the attitude that "it can't happen to me." Frankly, I don't know what it is but people continuously disregard consideration of their own personal safety. Just another problem of management in ship-repair yards!

(6) The proper investigation of accidents is a very serious problem to management. Not only is it a problem but it is one of the most important parts of a good program. It is only by experience in many instances that the cause of accidents can be eliminated and the hazards minimized. Therefore, a thorough investigation has to be made so that the cause of the accident can be determined, and as a result of this cause effective means be taken in the future to eliminate that cause through education, punishment, change of equipment, etc. Some years ago a fatal accident occurred, as follows:

The deceased, another laborer, and a winch operator were engaged in drawing out and folding the anchor chains of a ship on the deck of a drydock for an inspection. They were laying out the port anchor chain when a link in the chain anchorage of a steel snatch block broke permitting the snatch block to fly out and strike the deceased on the head.

The 2-inch manila rigging rope ran from an electrically operated capstan located on the port side of drydock wing, approximately in a line with the vessel's bow, through a snatch block on the top edge of this wing, down to a

snatch block at the head of the drydock and then about 75 feet to the anchor chain. As the winch was drawing out the anchor chain one of the links caught on a checking block rail, throwing an excessive strain on the rigging gear causing a link in the 1/2-inch chain to break and free the snatch block located at the head of the drydock.

An investigation was made and as a result of this investigation it was indicated that the accident was caused by manpower failure. "He was standing in a dangerous place and should not have been there." In this instance, however, the original investigation was pursued by management and this was the result of the second investigation.

The investigation disclosed six distinct unsafe practices or unsafe conditions. Any one of these, if detected and corrected in time, would have prevented this fatality. These are:

1. Incomplete equipment inspection. While a good system of inspection was set up for most equipment, this did not include *snatch block* anchorage (investigation disclosed excessive wear in chain links).
2. Neglect of the supervisor to enforce a definite safety rule. The workman was permitted to stand in the bight of a line under strain.
3. Failure of the workman to comply with a definite safety rule. The workman did stand in the bight of a line under strain although the yard safety rules prohibit this practice.
4. Faulty work planning. The equipment used for the job was inadequate for the strain imposed upon it.
5. Inattention to job on part of winch operator. He failed to notice excessive strain on gear and stop the machine.
6. Inattention to job on part of dock men. They failed to notice the fouling of the anchor chain link in time to signal the operator to stop the winch.

Probably the greatest lesson to be learned from this tragic accident is the large number of contributing causes and the wide latitude of responsibility for their existence. Furthermore, in the investigation of any accident it is necessary to be thorough in order to determine each and every contributing cause if effective corrective action is to be taken.

Just because regulations are established for the inspection of equipment it is of little value unless it includes all critical tools and rigging. That any system of inspection, due to human failures, must be spot-checked frequently by the supervisors in order to insure thorough observance.

I do not think it is necessary for me to say anything more, as you can readily see that there was not one cause but six causes. This is not an unusual case but happens daily so management must be certain that the investigation be thorough and impartial. It is only natural for a supervising employee to attempt to white-wash himself and his men. To allow this to happen is one of the saddest things that management can allow. If they want an efficient prevention program they must make sure that all investigations be thorough and impartial. In this way greater standards will be maintained to eliminate the particular hazards that caused the accident. Just another problem of management!

(7) *Personalities*.—Yes, personalities of individuals are a problem of management in an effective accident-prevention program. The personalities of the men being corrected have to be taken into consideration by supervisory employees as well as the Safety Department. You and I all know that in some cases honey and sugar are all that they need to get what we want. In other cases, the nature of the individual being what it is, it is necessary to make it clear to that individual that you insist that he follow rules at all times. In bringing this subject up I realize it is one of the most difficult to handle, that is the personalities of individuals. I do not intend to insinuate that every supervisor or safety engineer must be a perfect diplomat, but he should try to use the approach to each man that will go over best with each man.

(8) The men in the yard must understand that management is 100 percent in back of the accident-prevention program. The men must feel that any ideas that they have are welcome by management and will not be ignored just because management did not happen to think of them. Innumerable good practical safety suggestions have come from the workmen. Acceptance of the workmen's suggestions increases their interest in safety and makes them better employees. He is going to discuss his suggestion with other men in the yard, thus other men are having safety brought home to them. If his suggestion is accepted he is going to brag a little about it, as well he may. All of this is good. If a man's suggestion is turned down and since he was in-

terested enough to come forward with the suggestion it should be explained to him why his thoughts were rejected and, if possible, at the conclusion of this explanation the man should be convinced that this suggestion was rejected because it was impractical, etc. If such a man is willing to come forward with his suggestion and he leaves in the proper frame of mind after making it, it is very probable that he will continue to think along safety lines. If his suggestion is flatly rejected it means his attitude toward the company as a whole is going to be bad and he is going to leave feeling that the yard gives lip service, only, to safety—they are not really interested in it and although he might not do it maliciously his feelings will be transmitted to other men in the yard, which will not help in the safety program.

(9) It is very rare that a yard is in the position where they can leisurely work on a vessel. In practically all instances the new job is more of a rush job than the old one. As a result safety is inclined to be bypassed. Safety does not and never will hinder production, it enhances production. Whenever there is an accident work stops—men talk about it—they wonder if Johnny is badly hurt—maybe it could happen to him—it is a dangerous place to work. Their minds are taken off the job and you all know that production suffers.

Material shortage.—At times in a ship-repair yard you do not have the material needed for the job at hand so you have to improvise with the material on hand. This can create a very serious hazard. It is not possible to place an order with manufacturers for this particular material and wait until it arrives. This could delay operations for hours, days, or weeks. The material, etc., on hand must be used but care has to be taken that the job is done in the safest manner. Just another problem of management!

A good safety program is of value to management. Time prohibits me from going into this to any great extent. I did, however, want to enumerate certain benefits that will accrue to management that has a well-organized and well-run accident-prevention program and why it is necessary. The elimination or reduction of accidents will reflect directly in the cost of the employer's Workmen's Compensation insurance. Workmen's Compensation rates and premiums are not made by insurance companies or their rating bureaus. They are made by the experience of the industry involved in a particular class of business and also in many instances, depending upon the size of

the premium by the particular corporation itself. The companies or its rating bureaus only develop the required rates needed through the medium of the industry or the corporation's own past experience. An illustration of this is as follows:

Some years ago we acquired a corporation's business. At that time the tariff or rate for the industry as a whole in that state was \$5.01 per \$100 of payroll. This particular corporation had a very unsatisfactory loss record and through the method of what is called experience rating they developed a debit, which debit applied to the tariff rate of the industry as a whole. The result was that the rate they were required to pay for each and every \$110 of payroll was \$8.01. Frankly, the concern had been in business only a few years and ship service was the only attention they had given accident prevention. We discussed the problems with them and showed as a result of the poor experience their corporation's cost was increased annually many thousands of dollars. We suggested to them an accident program with the active cooperation of everyone from the top to the bottom. They were most serious about it and really went to town. Four years later as a result of the improved experience instead of a debit they enjoyed a very substantial credit and the rate was reduced to \$1.75 per \$100 of payroll instead of the \$8.01 per \$100 of payroll. As you can see, a saving to the company for every \$100,000 of payroll amounted to \$6,260. The company itself was not the only one to benefit as a result of this. Employees also benefited, not only from the standpoint of reduced accidents with the resultant reduced personal income, but also by the fact that the employer in all probability was able to obtain certain jobs that they would not have been able to bid successfully at the previous high compensation rate, for the cost of insurance must have a bearing on the bid that they would submit on a job. A sound accident-prevention program benefits the employer by reducing to a minimum costly interruptions and delays, improves the workers morale and makes them more desirous of continuing their employment with the ship-repair yard that is looking out for the workers interest. It helps the training of supervision to do a better job with its workers, it improves housekeeping which also helps production. Part of a well rounded safety program includes the designing of some efficient equipment and buildings and laying out more efficient plants. I had one interesting happening where an effi-

cient safety program prevented a serious work stoppage.

The yard at the time was very busy and had leased an outside pier where they were doing work on several vessels. On a given day a man reported to the dispensary with a rash on his leg and other parts of his body. This rash had the appearance of poison ivy. In short order, in fact within the next 4 days we had something like 115 similar cases. One of the vessels that they were working on at the pier involved had an oriental crew. Immediately rumors spread through the yard about some mysterious oriental disease. It was very, very serious. The Safety Department had been investigating the matter and one of the men in the department called attention to the fact that another vessel occupying a part of the pier now being used by the yard had as part of its cargo cashew nut liquid and some of the drums were broken. The liquid had spread on to quite a part of the area traversed by the men working going to and from the vessel. Some of the men had even sat down or lain on the ground during lunch hour which had been penetrated by this cashew nut liquid. Tests were made and it was determined that the strange oriental malady was caused solely as the result of the particular men's allergy to the cashew nut liquid. This information, of course, was immediately passed out in the yard and the threat of work stoppage eliminated. The affected men were treated by a dermatologist and all the rashes disappeared within about 10 days.

Let's be frank about this whole safety set-up in ship-repair yards. There always have been and always will be hazardous operations in a ship-repair yard. We cannot and do not attempt to say that all hazards can be eliminated. This would be foolish. The approach to accident prevention must be practical. It might be possible in certain jobs to reduce some of the hazards but not all. No safety engineer is going to ask that impossible steps be taken. He must and will be practical and should approach every problem in a calm and sensible way. A true safety program means everyone, and I mean everyone, must put their shoulders to the wheel. There cannot be any weak links. There cannot be any jealousy. The absolute cooperation of everyone from top management down to the lowest employee must be enjoyed. It must be one team. Top management is and should be the quarterback. The supervisory personnel carry the ball but the men in the yard have got to do the playing in the line. Accident pre-

vention is a team game. What can be accomplished, when all hands understand each other and cooperate, was illustrated a few weeks ago in Philadelphia when Navy won over Army. I was not at the game but watched it on television. The thing that impressed me about Navy was not any individual star, but the way the team worked together as a unit. It might have been the job of the right side of the line to take care of a certain Army ball carrier, but that was not Navy's attitude. They said nuts to that—we are a team—the left side of the line just came right over to be of help if needed. That is what we have to do and that is one of the problems of management to have a well oiled, cohesive, hard-hitting team with everyone doing the job assigned to him and doing a little bit more than set out in safety rules.

In closing, I would like to list the major factors in an accident-prevention program for a ship-repair yard:

1. Management must make it clear to all concerned that they will *insist* on full cooperation by all concerned.
2. All those in supervising capacity must understand that they, and only they, can execute the program.
3. By the written and spoken word, all employees must be taught that the accident-prevention program is for *their* safety, and can succeed only if they realize that.
4. Complete, unbiased investigations of accidents must be made regardless of the time required. Only in that way, through honest investigation, can the real cause, not the apparent cause, be discovered. That information must then be used constructively and thoroughly.
5. Someone must be delegated to keep constantly in touch with equipment, so that the best, most modern, practical equipment will be available, and used.
6. The Safety Department should be impartial, not favoring management, supervisors, or yard employees, and place the responsibility for each accident right where it belongs, regardless of whose feelings they hurt. Only by having that freedom can a Safety Department aid the Accident-Prevention Program.

Mr. Careless Worker was soon to be married. He went down the aisle—not walking but carried.

FAILURE OF LOW-PRESSURE-OIL ALARM

A casualty has been recently reported to the Coast Guard which, while it did not result in extensive damage as such things go, presents some points of interest to engine room personnel.

A steam-turbine-propelled tank-ship was en route to Houston, Tex., when the engineer on watch noticed that there was no lubricating oil flowing through the bull's-eye on the telltale. Upon investigating it was discovered that the fuse had burned out on the motor-driven lube-oil pump and the low-pressure-oil trip had not operated. The engineer, of course, immediately shut down the main turbine and started the standby lubricating oil pump. As soon as the lube oil gravity tanks were filled the main unit was started up. By running at moderate speed the engineers were able to keep the vessel underway until arrival at Houston. During this period one of the bearings showed an increased operating temperature of between 6° and 7°.

When the vessel arrived at Houston the main engine bearings were examined and the following damage was found:

- (a) HP forward and aft main bearings wiped.
- (b) LP forward and aft main bearings wiped.
- (c) LP turbine thrust three shoes fractured.

It was found that the lubricating-oil alarm did not function until the gravity tank was empty. It proved impossible to adjust this alarm to operate satisfactorily. A float alarm was installed in the lubricating-oil gravity tanks, new bearings were placed at both ends of both turbines and three new bearing shoes were installed in the LP turbine thrust. Neither gears nor any of the remaining bearings were damaged.

From experience in the past, when lubricating oil stoppage has not been detected until turbine blade damage or severe misalignment of the gears occurred, it is evident that this type of accident can result in very heavy and expensive repair bills besides crippling the ship completely. It seems that in this case an alert engineer on watch detected the oil stoppage almost as soon as it occurred and took prompt remedial measures. The point of particular interest here is the failure of the low-pressure-oil alarm. There is a tendency for engineering personnel to depend upon such alarms to an extent not justified by their reliability. The Coast Guard has in its files accounts of many instances where such alarms have failed. Sometimes the resulting damage is

extensive and sometimes, as in this case, the lube-oil failure is detected by sight before extensive damage can be done.

Conditions encountered at sea, viz. salt air, dampness, motion of the ship, etc., seem to have a bad effect on automatic control devices. Experience has shown that they cannot be depended upon to the extent that they can ashore where conditions are more stable than on shipboard. Accordingly, it behooves the engine-room personnel to keep a very close eye on the lubricating-oil system when in operation. The audible low-oil alarm should not be depended upon entirely but a close watch should also be kept on flow indicators such as bull's-eyes, spinning indicators, etc., in order to catch any possible failure of the lubricating oil system as soon as possible.



LIQUOR

Scattered here and there among our accident reports are isolated instances of shipboard fights, accidents and other unpleasant episodes, all due to a single cause—intoxication. Numerically they don't amount to much in our total accident picture; but even their infrequent occurrence serves as a warning that perhaps all is not well with our safety control. For even one drunken man aboard ship creates a

potential hazard that cannot be calculated in terms of injuries. It goes far beyond that.

The reason this is so is because no member of a ship's company, whether licensed or unlicensed, is ever really off duty aboard ship. An emergency—fire, collision, man overboard, etc.—can happen at any time, whether at sea or in port. Only clear heads and quick action by all hands can cope with a real emergency, and if these qualities are not available, or are only partially available, the consequences can be disastrous and shameful.

There is only one effective method of keeping liquor off a ship. Stop it at the gangway. Doing so is an unpopular and thankless job, we know; but failure to do so usually leads to even more unpopular and thankless jobs—handcuffing or logging a drunk, for instance. Or making out an injury or hospitalization report—or worse.

Liquor that does get aboard soon makes itself known, even behind closed doors. Again it is an unpleasant but necessary duty to find and confiscate it. As for drunks who are likely to be dangerous to themselves or others, they should be confined—aboard or ashore—till they sober up.

None of this is new. It is merely a statement of the established duty of every shipmaster. Some of them carry it out forcefully and effectively. Others become veritable Captain Milquetoasts when faced with the liquor problem—and their crews are not long in finding this out. The former we wish to compliment and encourage. The latter—if we have any such—are advised to give this matter their serious attention.

Courtesy, Farrell Lines, Safety News.

“They Said It...”

“... because we know that the modern weapons of mass destruction could bring about large-scale movements never before attempted, we must not put our hopes in a fast-moving conversion of the nearest vessel at hand, usually of the existing dry-cargo variety, and thus wrestle futility with grave questions of design safety.”

**THERE IS NOTHING PRACTICAL
ABOUT A PRACTICAL JOKE**

APPENDIX

Amendments to Regulations

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

CHAPTER I—COAST GUARD, DEPARTMENT OF THE TREASURY

[CGFR 51-4]

EMPLOYMENT OF PERSONNEL ON MERCHANT VESSELS; AND EDITORIAL CORRECTION

Pursuant to the proviso in 33 CFR 6.10-1 to Executive Order 10173 (15 F. R. 7007), the Commandant may designate categories of merchant vessels of the United States to which the requirements of 33 CFR 6.10-1 regarding the employment of personnel on merchant vessels do not apply. The purpose of the following new regulation designated 33 CFR 121.02 is to indicate the categories of merchant vessels of the United States to which the provisions of 33 CFR 6.10-1 do apply. The editorial amendment to 33 CFR 125.27 is to delete the reference to any "Temporary Identification" issued by the Coast Guard as a substitute for the Coast Guard Port Security Card since this reference was left in the original regulations through oversight and there is no so-called "Temporary Identification" provided in the regulations. Because of the national emergency declared by the President it is found that compliance with the notice of proposed rule making, public rule making procedure thereon, and effective date requirements of the Administrative Procedure Act is impracticable and contrary to the public interest.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by Executive Order No. 10173, the following regulations are prescribed which shall become effective upon date of publication of this document in the **FEDERAL REGISTER**:

Subchapter K—Security of Vessels

PART 121—SECURITY CHECK AND CLEARANCE OF MERCHANT MARINE PERSONNEL

Part 121 is amended by adding a new § 121.02, reading as follows:

§ 121.02 *Employment of personnel on merchant vessels.* The employ-

ment of merchant marine personnel on merchant vessels of the United States is subject to § 6.10-1 of Subchapter A of this chapter and the proviso at the end thereof authorizes the Commandant to exempt certain categories of merchant vessels. All categories of merchant vessels of the United States shall be exempt from the requirements of § 6.10-1 of Subchapter A of this chapter except the following:

(a) All merchant vessels of the United States of 100 gross tons and upward engaged in the foreign trade.

(b) All merchant vessels of the United States of 100 gross tons and upward engaged in trade to the Dominion of Canada, the West Indies, or Mexico.

(c) All merchant vessels of the United States of 100 gross tons and upward engaged in the intercoastal trade.

(d) All merchant vessels of the United States of 100 gross tons and upward engaged in the coastwise trade, including those vessels engaged in trade to Alaska or the Hawaiian Islands.

(e) All merchant vessels of the United States of 100 gross tons and upward engaged in trade on the Great Lakes.

(E. O. 10173, Oct. 18, 1950, 15 F. R. 7005. Interprets or applies 40 Stat. 220, as amended; 50 U. S. C. 191)

Subchapter L—Security of Waterfront Facilities

PART 125—IDENTIFICATION CREDENTIALS FOR PERSONS REQUIRING ACCESS TO WATERFRONT FACILITIES OR VESSELS

Section 125.27 is amended by deleting the phrase "Temporary Identifi-

fication or" from the last sentence so that the section will read as follows:

§ 125.27 *Notification of denial or revocation of Coast Guard Port Security Card.* When it is determined by the Commandant that a person who has applied for a Coast Guard Port Security Card or a person to whom a Coast Guard Port Security Card has been issued is not eligible therefor within the meaning of §§ 125.29 or 125.31, such person shall be so notified in writing, and in the latter event he shall immediately surrender to the Coast Guard any Coast Guard Port Security Card held by him.

(E. O. 10173, Oct. 18, 1950, 15 F. R. 7005. Interprets or applies 40 Stat. 220, as amended; 50 U. S. C. 191)

Dated: January 24, 1951.

[SEAL] **MERLIN O'NEILL,**
Vice Admiral, U. S. Coast Guard, Commandant.

[F. R. Doc. 51-1475; Filed, Jan. 29, 1951; 8:52 a. m.; 16 F. R. 817-1/30/51]



NOTICE

OFFICE OF THE SECRETARY

[CGFR 51-1]

Commandant, U. S. Coast Guard, and Commissioner of Customs

DELEGATION OF WAIVER AUTHORITY WITH RESPECT TO NAVIGATION AND VESSEL INSPECTION LAWS

By virtue of the authority vested in me by the provisions of section 2, Reorganization Plan No. 26, 1950, 15 F. R. 4935, I hereby confer and impose upon the Commandant, United States Coast Guard, with respect to the navigation and vessel inspection laws administered by the Coast Guard, and

the Commissioner of Customs, with respect to the navigation laws administered by the Bureau of Customs, all the rights, privileges, powers, or duties to waive compliance with the provisions of the navigation and vessel inspection laws in the interest of national defense, which were vested in me by virtue of the act of December 27, 1950 (Public Law 891, 81st Cong., 2d Sess.).

Dated: January 23, 1951.

[SEAL] **E. H. FOLEY,**
Acting Secretary of the Treasury.

[F. R. Doc. 51-1274; Filed, Jan. 25, 1951; 8:52 a. m.; 16 F. R. 731-1/26/51]

Equipment Approved by the Commandant

WELDING ELECTRODES

The following types of electrodes have been tested in accordance with the requirements of ASTM designation A233-48T for mild steel arc-welding electrodes in the presence of an American Bureau of Shipping Surveyor and the test reports indicate that the requirements were met.

Harnischfeger Corp., 4400 West National Avenue, Milwaukee 14, Wis., *Harnischfeger Corp.* (manufacturer), PFA, E6012.

Operating Positions and Electrode Sizes

The type E6012 $\frac{3}{32}$ "", $\frac{1}{8}$ "", $\frac{5}{32}$ "", and $\frac{3}{16}$ " diameter electrodes will be allowed for all position welding on alternating and direct current. The $\frac{7}{32}$ " and $\frac{1}{4}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding on alternating and direct current. The $\frac{5}{16}$ " diameter electrode will be allowed for flat position welding on alternating and direct current. (Not stress relieved.)

Air Reduction Sales Co., Forty-Second Street, Opposite Grand Central, New York 17, N. Y., *Arcrods Corp.* (manufacturer), Airo 78E, E6010.

Operating Positions and Electrode Sizes

The type E6010 $\frac{1}{16}$ "", $\frac{3}{32}$ "", $\frac{1}{8}$ "", $\frac{5}{32}$ "", and $\frac{3}{16}$ " diameter electrodes will be allowed for all position welding on direct current. The $\frac{7}{32}$ " and $\frac{1}{4}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding on direct current. The $\frac{5}{16}$ " diameter electrode will be allowed for flat position welding on direct current. (Not stress relieved.)

General Electric Co., Schenectady, N. Y., *Arcrods Corp.* (manufacturer), W-22, Type E6010.

Operating Positions and Electrode Sizes

The type E6010 $\frac{1}{16}$ "", $\frac{3}{32}$ "", $\frac{1}{8}$ "", $\frac{5}{32}$ "", and $\frac{3}{16}$ " diameter electrodes will be allowed for all position welding on direct current. The $\frac{7}{32}$ " and $\frac{1}{4}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding on direct current. The $\frac{5}{16}$ " diameter electrode will be allowed for flat position welding on direct current. (Not stress relieved.)

Metal and Thermit Corp., 120 Broadway, New York 5, N. Y., *Arcrods Corp.* (manufacturer), Murex Type R, E6010.

**Don't be half safe—try safety; it will add
years to your life and life to your years**

Operating Positions and Electrode Sizes

The type E6010 $\frac{1}{16}$ "", $\frac{3}{32}$ "", $\frac{1}{8}$ "", $\frac{5}{32}$ "", and $\frac{3}{16}$ " diameter electrodes will be allowed for all position welding on direct current. The $\frac{7}{32}$ " and $\frac{1}{4}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding on direct current. The $\frac{5}{16}$ " diameter electrode will be allowed for flat position welding on direct current. (Not stress relieved.)

Wilson Welder & Metals Co., Inc., Lincoln Building, Forty-second Street and Grand Central, New York, N. Y., *Arcrods Corp.* (manufacturer), Wilson 98N, E6010.

Operating Positions and Electrode Sizes

The type E6010 $\frac{1}{16}$ "", $\frac{3}{32}$ "", $\frac{1}{8}$ "", $\frac{5}{32}$ "", and $\frac{3}{16}$ " diameter electrodes will be allowed for all position welding on direct current. The $\frac{7}{32}$ " and $\frac{1}{4}$ " diameter electrodes will be allowed for horizontal fillet and flat position welding on direct current. The $\frac{5}{16}$ " diameter electrode will be allowed for flat position welding on direct current. (Not stress relieved.)

Babcock & Wilcox Co., The, 85 Liberty Street, New York 6, N. Y., *The Babcock & Wilcox Co.* (manufacturer), B & W Croloy 2, (2CR. $\frac{1}{2}$ MO).

OPERATING POSITIONS AND ELECTRODE SIZES

The type E7015 $\frac{3}{32}$ "", $\frac{1}{8}$ "", and $\frac{5}{32}$ " diameter electrodes will be allowed for all position welding on direct and reverse polarity current. The $\frac{5}{16}$ " diameter electrode will be allowed for horizontal fillet and flat position welding on direct and reverse polarity current. (Stress relieved.)

Harnischfeger Corp., 4400 West National Avenue, Milwaukee 14, Wis., *Harnischfeger Corp.* (manufacturer), APV and 70LA-2.

OPERATING POSITIONS AND ELECTRODE SIZES

The type E6010 $\frac{3}{32}$ "", $\frac{1}{8}$ "", $\frac{5}{32}$ "", and $\frac{3}{16}$ " diameter electrodes will be allowed for all position welding on direct current. The $\frac{7}{32}$ " and $\frac{1}{4}$ " diameter electrode will be allowed for horizontal fillet and flat position welding on direct current. The $\frac{5}{16}$ " diameter electrode will be allowed for flat position welding on direct current. (Not stress relieved.)

The type E6016 $\frac{3}{32}$ "", $\frac{1}{8}$ "", and $\frac{5}{32}$ " diameter electrodes will be allowed for all position welding on alternating and direct current. The $\frac{3}{16}$ "", $\frac{7}{32}$ "", and $\frac{1}{4}$ " diameter electrodes will be allowed for horizontal fillet and flat

position welding on alternating and direct current. The $\frac{5}{16}$ " diameter electrode will be allowed for flat position welding on alternating and direct current. (Not stress relieved.)

FUSIBLE PLUGS

The Marine Engineering Regulations and Material Specifications require that manufacturers submit samples from each heat of fusible plugs to the Commandant for test prior to plugs manufactured from the heat being used on vessels subject to inspection by the Coast Guard. A list of approved heats which have been tested and found acceptable during the period from December 15, 1950, to January 15, 1951, is as follows:

The Lunkenheimer Co., P. O. Box 360 Annex Station, Cincinnati 14, Ohio. Heat No. 377.

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of Ships' Stores and Supplies certificated from December 26, 1950, to January 25, 1951, inclusive, for use on board vessels in accordance with the provisions of part 147 of the regulations governing explosives or other dangerous articles on board vessels, are as follows:

Motor Chemical Corp., 840 North Michigan Avenue, Chicago 11, Ill., Certificate No. 326, dated January 8, 1951. "PD-5."

AFFIDAVITS

The following affidavit was accepted during the period from November 15 to December 15, 1950:

Malleable Iron Fittings Co., Branford, Conn. Casting.



ELECTRICAL APPLIANCES

The following list supplements that published by the United States Coast Guard under date of May 15, 1943, entitled "Miscellaneous Electrical Equipment Satisfactory for Use on Merchant Vessels," as well as subsequently published lists and is for the use of Coast Guard personnel in their work of inspecting merchant vessels. Other electrical items not contained in this pamphlet and subsequent listings may also be satisfactory for marine use, but should not be so considered until the item is examined

and listed by Coast Guard Headquarters. Before listings of electrical appliances are made it is necessary for the manufacturer to submit to the Commandant (MMT), United States Coast Guard Headquarters, Washington 25, D. C., duplicate copies of a detailed assembly drawing, including a material list with finishes of each corrosive part of each item.

Because of many bad cross currents and the fact that the Straits of Magellan are unsafe for sailing during bad weather, most sailing vessels navigate around Cape Horn.



Foresight will provide that "ounce of prevention."

Merchant Marine Personnel Statistics

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 512 cases during the month of December 1950. From this number, hearings before examiners resulted involving 12 officers and 38 unlicensed men. In the case of officers, no licenses were revoked, 2 were suspended, 7 were suspended with probation granted, 2 were voluntarily surrendered, 1 case was dismissed after hearing and 2 hearings were closed with an admonition. Of the unlicensed personnel, 3 certificates were revoked, 8 were suspended, 21 were suspended with probation granted, 8 were voluntarily surrendered, none were closed with an admonition and 4 were dismissed after hearing.

Manufacturer and description of equipment	Location apparatus may be used				Date of action
	Passenger and crew quarters and public spaces	Machinery, cargo, and work spaces	Open decks	Pump rooms of tank vessels	
The Adalst Mig. Co., Cleveland, Ohio: Ceiling fixture, watertight, with guard and globe, 1 200-watt lamp maximum, dwg. no. ME-0200, rev. A, cat. nos. ME-227, ME-327, and ME-427	X	X	X ¹		11/30/50
Ceiling fixture, watertight, with guard and globe, 1 200-watt lamp maximum, dwg. no. ME-0200K, rev. B, cat. nos. ME-227K, ME-327K, and ME-427K	X	X	X		11/30/50
Wall fixture, 90° type, watertight, with guard and globe, 1 100-watt lamp maximum, dwg. no. MLE-0100, rev. A, cat. no. MLE-2197, MLE-3197, and MLE-4197	X	X	X ¹		11/30/50
Wall fixture, 90° type, watertight, with guard and globe, 1 100 watt lamp maximum, dwg. no. MLE-0100K, rev. B, cat. no. MLE-2197K, MLE-3197K, and MLE-4197K	X	X	X		11/30/50
Wall fixture, 90° type, watertight, with guard and globe, 1 200-watt lamp maximum, dwg. no. MLE-0200, rev. A, cat. nos. MLE-2297, MLE-3297, MLE-4297	X	X	X ¹		11/30/50
Wall fixture, 90° type, watertight, with guard and globe, 1 200-watt lamp maximum, dwg. no. MLE-0200K, rev. B, cat. nos. MLE-2297K, MLE-3297K, and MLE-4297K	X	X	X		11/30/50
Wall fixture, 90° type, watertight, with guard and globe, 1 100-watt lamp maximum, dwg. no. MWJE-010, rev. A, cat. nos. MWJE-217, MWJE-317, MWJE-417	X	X	X ¹		11/30/50
Wall fixture, 90° type, watertight, with guard and globe, 1 100-watt lamp maximum, dwg. no. MWJE-010K, rev. B, cat. nos. MWJE-217K, MWJE-317K, and MWJE-417K	X	X	X		11/30/50
Wall fixture, 90° type, watertight, with guard and globe, 1 200-watt lamp maximum, dwg. no. MWJE-020, rev. A, cat. nos. MWJE-227, MWJE-327, and MWJE-427	X	X	X ¹		11/30/50
Wall fixture, 90° type, watertight, with guard and globe, 1 200-watt lamp maximum, dwg. no. MWJE-020K, rev. B, cat. nos. MWJE-227K, MWJE-327K, MWJE-427K	X	X	X		11/30/50
Pendant type fixture, watertight, with guard and globe, 1 100-watt lamp maximum, dwg. no. MA-0100, rev. C, dwg. no. MA-217, MA-317, and MA-417	X	X	X ¹		11/30/50
Pendant type fixture, watertight, with guard and globe, 1 100-watt lamp maximum, dwg. no. MA-0100K, rev. D, cat. nos. MA-217K, MA-317K, and MA-417K	X	X	X		11/30/50
Pendant type fixture, watertight, with guard and globe, 1 200-watt lamp maximum, dwg. no. MA-0200, rev. D, cat. nos. MA-227K, MA-327K, and MA-427K	X	X	X		11/30/50
Pendant type fixture, watertight, with guard and globe, 1 200-watt lamp maximum, dwg. no. MA-0200, rev. C, cat. nos. MA-227, MA-327, and MA-427	X	X	X ¹		11/30/50
Marine type junction box, watertight, dwg. no. MJ-LC, rev. 0, cat. nos. MJ-2LC, MJ-3LC, and MJ-4LC	X	X	X ¹		11/30/50
Marine type junction box, watertight, dwg. no. MJ-LCK, rev. 0—cat. no. MJ-2LCK	X	X	X		11/30/50
Control Instrument Co., Inc., Brooklyn, N. Y.: Salinity indicator, types 55-C-1 and 55-C-2 dwgs. nos. 22987, alt. 1, and 22988, alt. 0	X	X			12/15/50
Salinity valve and cell assembly, dwg. no. 22995, alt. 0	X	X			12/15/50
Crouse-Hinds Co., Syracuse, N. Y.: Searchlight, non-magnetic, with pilot house control, 1,000 watts maximum, type DCX-18, cat. no. 44552, dwg. no. 91-KH2, alt. 0	X	X	X		12/10/50

¹ For Great Lakes vessels only.

MERCHANT MARINE LICENSES ISSUED DURING DECEMBER 1950

DECK OFFICERS

		Region								Total	
		Atlantic coast		Gulf coast		Great Lakes and rivers		Pacific coast			
		O	R	O	R	O	R	O	R	O	R
Master	Ocean	6	95	3	24	0	3	4	66	13	188
	Coastwise	1	12	1	3	0	0	0	1	2	16
	Great Lakes	0	0	0	1	1	25	0	0	1	27
	B. S. & L.	8	49	0	4	0	1	0	9	8	63
Chief mate	Rivers	0	5	0	3	2	13	0	0	2	21
	Ocean	11	41	5	9	0	1	5	30	21	81
Second mate	Coastwise	0	0	0	0	0	0	0	0	0	0
	Ocean	10	37	4	4	1	3	3	25	18	69
Third mate	Coastwise	0	0	0	0	0	0	0	0	0	0
	Ocean	62	51	2	12	0	4	3	25	67	93
Mate	Coastwise	0	0	0	0	0	0	0	0	0	0
	Great Lakes	0	0	0	0	0	0	0	0	0	0
	B. S. & L.	2	6	0	1	0	0	3	3	5	10
Pilots	Rivers	0	0	1	0	2	4	0	0	3	4
	B. S. L. & R.	50	130	8	24	37	63	12	49	107	266
Master	Uninspected vessels	1	0	0	0	0	0	1	5	2	5
	Uninspected vessels	0	0	1	0	0	0	2	0	3	0
Total		151	426	25	85	43	118	33	214	252	843
Grand total		577		110		161		247		1095	

ENGINEER OFFICERS

Steam	Chief engineer:												
	Unlimited	12	128	5	24	1	15	8	81	26	248		
	Limited	1	53	1	15	0	43	0	7	2	118		
	First assistant engineer:												
	Unlimited	14	52	3	10	1	1	5	22	23	85		
	Limited	0	2	0	0	0	4	0	4	0	10		
	Second assistant engineer:												
	Unlimited	17	72	0	7	2	17	6	41	25	137		
Limited	0	0	0	1	0	3	0	0	0	4			
Third assistant engineer:	Unlimited	56	121	5	27	1	23	9	51	71	222		
	Limited	0	0	0	0	0	0	0	0	0	0		
Motor	Chief engineer:												
	Unlimited	1	29	0	4	0	2	0	15	1	50		
	Limited	3	37	1	9	2	7	5	23	11	76		
	First assistant engineer:												
	Unlimited	1	2	1	0	0	0	1	0	3	2		
	Limited	4	2	1	0	4	2	0	1	9	5		
	Second assistant engineer:												
	Unlimited	1	4	0	1	1	0	1	4	3	9		
Limited	1	0	0	0	0	0	0	0	1	0			
Third assistant engineer:	Unlimited	45	106	0	10	0	26	2	60	47	202		
	Limited	0	0	0	0	0	0	0	0	0	0		
Uninspected vessels	Chief engineer	0	1	0	0	0	0	5	3	5	4		
	Assistant engineer	0	0	0	0	0	0	2	2	2	2		
Total		156	609	17	108	12	143	44	314	229	1174		
Grand total		765		125		155		358		1403			

RADIO OFFICERS

Total.....41

ORIGINAL SEAMEN'S DOCUMENTS ISSUED MONTH OF DECEMBER 1950

Region	(1) Staff officer	(2) Continuous discharge book	(3) U. S. merchant mariner's documents	(4) AB any waters unlimited	(5) AB any waters 12 months	(6) AB Great Lakes 18 months	(7) AB tugs and tow-boats any waters	(8) AB bays and sounds ¹	(9) AB sea-going barges	(10) Lifeboat man	(11) Q. M. E. D.	(12) Radio operators	(13) Certificate of service	(14) Tanker-man
Atlantic coast	26		469	131	35		2			94	70	2	384	7
Gulf coast	7	12	165	40	15	2				20	29	4	151	27
Pacific coast	16	1	509	47	21					66	62	1	447	1
Great Lakes and rivers			176	32	20	12				26	29		145	22
Total	49	13	1,319	250	100	14	2	0	0	206	190	7	1,127	57

¹ 12 months, vessels 500 gross tons or under not carrying passengers.

NOTE.—Columns 4 through 14 indicate endorsements made on United States merchant mariner's documents.