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CONTENTS

The Cover: A Coast Guard cutter patroling a North Atlantic ice pack

COUNCIL ACTIVITIES

The Council considered minor changes in the regulations for licensing and certificating merchant marine personnel, load lines, marine engineering, and fire-fighting equipment, which have been referred to industry for comment prior to submission to the Commandant for approval.

The new license form proposed is engraved and will replace 11 forms which have been issued in the past when licensing masters, mates, pilots, and engineers for the various classes of waters and types of vessels. For better legibility, this license will be filled out on a typewriter instead of in longhand. In addition, the new license form will be used in place of the lost license certificate as a duplicate license.

A minor change to clarify the application of the requirements of section 61.14 of the Ocean and Coastwise General Rules and Regulations was considered regarding the requirements for fire-fighting equipment on seagoing motor-propelled vessels of 300 gross tons or over.

The regulations for cast iron valves and cast iron sea chests were considered and the amendments proposed cancel certain regulations in the "Load Line Regulations" and the various classes of General Rules and Regulations for Vessel Inspection and the same requirements will be inserted in the "Marine Engineering Regulations." The purpose for these changes was to eliminate duplications.

Editorial changes in the "Load Line Regulations" were considered and a new edition of these regulations will be available for distribution within 2 or 3 months.

Waiver Authority Expires

The authority to grant waivers of the navigation and vessel inspection laws expires on 30 June 1946. The power to waive laws and regulations was granted by Congress because the military situation demanded some relaxation consistent with safety.

Many indications show that people believe the former Bureau of Marine Inspection and Navigation could issue waivers of navigation and vessel inspection laws during peacetime. This belief is erroneous. The authority of the Coast Guard to grant waivers is based on the Second War Powers Act of 1942 which was enacted by Congress to further the successful prosecution of the war. Under section 501 of this act (56 Stat. 180, 50 U. S. C. 635), the power to waive navigation and vessel inspection laws was given to the head of each department or agency responsible for the administration of these laws.

Congress was requested to extend the provisions of section 501 of the Second War Powers Act, as amended, until 31 December 1946. As an aid in the readjustment to post-hostilities conditions, the Second War Powers Act was extended only until 30 June 1946, indicating that Congress is op-

posed to further extensions. If such intent is carried out, many vessels will be denied certificates of inspection if they fail to comply substantially with the applicable legal requirements. In addition, the waivers authorizing substitution of licensed officers and certificated seamen, when qualified personnel cannot be obtained, cannot be granted after 30 June 1946. The failure to comply with all the applicable legal requirements may result in the vessels being denied clearance not only in domestic ports but in foreign ports as well.

The objective of waivers was to make a flexible means of maintaining the proper balance between military necessity and safety at sea at all times and under varying conditions. The statute authorizing waivers insures the full utilization of vessels would not be impeded by the requirements of laws which were designed to regulate the peacetime operations of the merchant marine and brings about this relaxation without the outright repeal of peacetime requirements so that they could be still made applicable in situations in which they did not operate to the detriment of the national interest.

During the transition period from war to peace, the Coast Guard has interpreted the phrase "conduct of the war" to comprehend the conduct of the Government's military and civilian programs in the readjustments to post-hostilities conditions in the United States, its possessions or territories, and in theaters of war, including disposition of personnel and matériel, government of occupied territories, and rehabilitation of liberated areas.

Now that military necessity is waning, it can be expected that the trend will be toward requiring conformance with the statutes and regulations in effect during peacetime. Ship operators may expect that not later than 30 June 1946 vessels granted waivers will be required to be equipped and fitted in accordance with the inspection laws. Steps should be taken immediately to procure the items which are now waived.

Many waivers of matériel and equipment requirements have been granted during the war because of shortage of critical materials. In many cases the reasons for granting waivers to individual ships no longer are applicable as the items which were not available in the required quantity or made in accordance with the required specifications are now available. For example, waivers were issued permitting vessels to make voyages with only one anchor and insufficient anchor chain; nonautomatic lift toilet seats; insufficient toilets, washrooms, showers, partitions, etc.; no medicine chest; and many other critical items.

A study is being made of all the waivers issued during the war and the regulations are being reviewed with the view to permit, for a limited time, certain practices which are necessary in the national interest in the readjustment to post-hostilities operations. The changes in the regulations will probably be referred to the industry for comment prior to their promulgation.

International Ice Patrol Resumed

On 15 March the Coast Guard resumed one of its peacetime functions, the International Ice Patrol. By reason of war conditions the patrol had been terminated on 22 December 1941, although observations and studies of ice conditions in the North Atlantic were maintained throughout the war in order that convoys could be routed properly.

The patrol force will consist of the cutters *Pontchartrain* and *Mendota* and two PB4Y planes (B–24's). As in the past, the vessel on patrol will patrol the area in the general region of the Grand Banks off Newfoundland for the purpose of locating bergs, making estimates of their tracks, and informing shipping of such matters. The planes will be used for scouting purposes to locate bergs and report on the extent and locations of ice fields off the coasts.

In addition to the actual patrol vessels, three other cutters will be engaged in radar research tasks. They will be equipped with various types of radar to determine the relative effectiveness of these types in locating bergs and growlers of different sizes under all conditions of sea and weather.

In addition to the regular work of locating ice and warning passing vessels of the danger limits, weather information will be collected and reported and oceanographic data will be compiled for the construction of current charts.

During the ice season, which usually extends from March to July, heavy fog is prevalent on the Banks. Because of this it often was impossible to report accurately the positions of ice sighted. This year better results will be attainable. Loran will be used by both ships and planes, and regardless of weather and the lack of opportunity for the use of celestial navigation, it will be possible by means of loran to give accurate positions of ice sighted during the patrol.

Planes and ships are based at Argentia, Newfoundland, where the ice patrol commander makes his headquarters. Ice information will be transmitted by the ships and planes to him and the accumulated data will be broadcast twice daily.

The international radio call sign NIDK has been assigned for use by vessels on ice patrol duty with the meaning NIDK—International Ice Patrol. This call will be used by any Coast Guard vessel when on International Ice Patrol in lieu of its own regularly assigned international radio call.

As stated previously, the ice patrol commander will broadcast two daily ice bulletins for the benefit of shipping. The radio call sign NIDK will be used for these broadcasts. Each broadcast will be transmitted twice

Typical Coast Guard cutter assigned to duty on international ice patrol.

with an interval of 2 minutes between the transmissions. Radio silent periods will be observed during these broadcasts at the prescribed time.

Broadcasts will be made beginning at 0200 and 1400 Greenwich time on 480 kcs. A2 emission and on 8100 kcs. A1 emission, keying both frequencies simultaneously. Each broadcast will be preceded by the general call CQ "to all" on 500 kcs. and the conventional operating signal QSW to shift to 480 and 8100 kcs. After shifting to these frequencies, a series of Vs and call sign NIDK will be sent for 30 seconds to permit proper tuning of receivers by ship stations. The transmission of ice bulletins will follow immediately after the 30-second tuning signal.

The ice patrol commander may deem it advisable to broadcast ice information at times other than the regular schedules. In such cases the rules for use of the safety signal TTT apply. The general call CQ will be used only with a regular scheduled broadcast of ice information.

Under special circumstances a ship may desire special ice information. In such cases Argentia NWP will furnish this information upon request as a regular SVC message, without charge, using either 480 or 8100 kcs.

Free Medical Message Service

The Coast Guard radio stations are now available for free medical service to ships. A table showing the location of the radio stations by geographic areas, together with call signs and places of the marine hospitals or relief stations, has been made for the convenience of ship masters.

All messages requesting medical advice should state briefly and clearly the symptoms of the person afflicted and should be signed by the master of the ship. Each Coast Guard radio station listed has prearranged direct communication to either a marine hospital or a public health relief station. By this means a rapid handling of MEDICO messages is possible.

The calls should be made direct to the nearest Coast Guard radio station if its call sign is known. If the call sign is not known, the general Coast Guard call NCG (any Coast Guard shore radio station) should be used. The use of CQ for medical messages is discouraged.

The frequencies for the radio stations along the Atlantic, Gulf, and Pacific coasts and Hawaii are 500 kcs., and 8280 kcs. On the Great Lakes the frequencies are 500 kcs. and 8280 kcs., as well as the distress frequency 2182 kcs., for Chicago and Cleveland. For Saulte Ste. Marie only the 2182 kcs. frequency is used.

The emissions for the radio stations along the Atlantic, Gulf and Pacific coasts and Hawaii are A1 and/or A2. For the Great Lakes the emissions are A1 and/or A2 for the regular frequencies and A3 for the distress frequency.

When radio operators are sending medical advice messages, it is requested that they check them—"Number of words, DH MEDICO."

RADIO STATIONS FOR MEDICAL ADVICE

Radio station		Marine hospital or relief station
Location	Call	
Atlantic Coast		
Boston, Mass	NMF	Brighton, Mass.
New York, N. Y	NMY	Stapleton, N. Y.
Norfolk, Va	NMN	Norfolk, Va.
Charleston, S. C	NMB	Charleston, S. C.
Jacksonville Beach, Fla.	NMV	Do.
Gulf Coast		
Mobile, Ala	NOQ	Mobile, Ala.
Galveston, Tex	NOY	Galveston, Tex.
Central American Waters		
San Juan, P. R	NMR	San Juan, P. R.
Pacific Coast		
Long Beach, Calif	NMQ	San Pedro, Calif.
San Francisco, Calif	NMC	San Francisco, Calif.
Westport, Wash	NOV	Seattle, Wash.
Seattle, Wash	NMW	Do.
Ketchikan, Alaska	NMJ	Do.
Pacific Ocean		
Honolulu, T. H	NMO	Honolulu, T. H.
Great Lakes [1]		
Chicago, Ill	NMP	Chicago, Ill.
Cleveland, Ohio	NMD	Cleveland, Ohio.
Saulte Ste. Marie, Mich.	NOG	Saulte Ste. Marie, Mich.

[1] For medical advice by radio on the Great Lakes, the radio stations listed are augmented by other services which are explained in "Radio Aids to Navigation, Great Lakes," 1943, pp. 54 to 56, and published by the Hydrographic Office, U. S. Navy Department.

Radio Beacon Charts

The radio beacon charts for the Atlantic and Gulf coasts, Pacific coast, and the Great Lakes are now available. The charts for the Atlantic and Gulf coasts and the Pacific coast are distributed from Washington. Any person who did not receive a chart may obtain it upon request from the Commandant (OAN), U. S. Coast Guard, Washington 25, D. C.

The radio beacon charts for the Great Lakes are distributed by the district Coast Guard officer at Cleveland, Ohio. If copies of the Great Lakes charts are desired, the request should be sent to the District Coast Guard Officer (OAN) U. S. Coast Guard, 1700 Keith Building, Cleveland 15, Ohio.

"Army Ducks"

Many "Army ducks" are being sold in various sections of the country for use on local waters. When privately owned amphibious vehicles, or so-called "Army ducks," leave the land and enter any of the navigable waters of the United States, such vehicles are immediately classed as motorboats and therefore must comply with the applicable requirements of the Numbering Act of 7 June 1918, the Motorboat Act of 25 April 1940, and the regulations promulgated under these statutes.

A certificate of award of number, numbers displayed on both sides of the bow, life preservers, fire extinguishers, and navigation lights are some of the requirements for these motor-powered craft. An amphibious vessel, while carrying passengers for hire, has to be navigated by a person holding a valid motorboat operator's license. These requirements are issued not only for the safety of the "duck" operator but for the general safety of others using such navigable waters.

For specific information applicable to a particular amphibious vehicle, the district Coast Guard officer or the officer in charge, Marine Inspection, United States Coast Guard, having jurisdiction over the area in which the vehicle is owned may by contacted.

Sea Chests and Valves Reinforced

The removal of the concrete and structural steel reinforcement around cast iron sea chests and cast iron sea valves has been made in some cases without replacing the chests and valves with others of a more ductile material. The last paragraph of section 43.27 in the "Load Line Regulations" (46 C. F. R. 43.27) still requires that where it is not practicable to replace cast iron sea chests and sea valves with chests and valves of a more ductile material, reinforcing with concrete or other approved material in conjunction with structural

bracing shall be fitted in a satisfactory manner.

Before this war, it was found that cast iron sea chests and cast iron sea valves were liable to fracture when the vessel was subjected to shocks, such as coming up hard against a dock or being struck by towboats coming alongside. The experiences encountered during the war have shown that cast iron sea chests and cast iron sea valves were particularly vulnerable to the effects of near misses of mines and bombs. The hazards of striking floating mines is by no means over and the recent sinkings of American vessels in Italian waters bear out this statement.

The reinforcement around cast iron sea chests and cast iron sea valves should not be removed unless it is proposed to replace such cast iron fittings with those of a more ductile material. When the reinforcement is removed for the purpose of examination of the fittings by inspectors or surveyors, the cast iron sea chests and cast iron sea valves are required to be again reinforced upon conclusion of the examination.

The requirement for reinforcing sea chests and sea valves was adopted prior to American entry into the war after several American vessels had been sunk. The hazards of the floating mines and submerged objects are still present in many localities and the removal of this requirement at this time would endanger the lives of many people sailing on vessels required to navigate in waters which were mined.

First-Aid Treatment for Wood Alcohol Poisoning

The dangers of drinking wood alcohol were contained in articles which were published in the "Proceedings" in February and July of last year. In the cases covered by those articles nine deaths occurred as a result of drinking wood alcohol.

Since the publication of these casualty reports an article on the treatment of wood alcohol poisoning was printed in the 12 January 1946 issue of "The Journal of the American Medical Association." The report is one of the treatment used by four Navy medical officers in 31 cases. Good results with this treatment in 26 out of the 31 cases were achieved by Capts. O. A. Brines and M. J. Capron and Commanders W. B. Chew and E. H. Berger. The other five died within 3 hours after being admitted to the hospital in a critically ill state.

The men had drunk wood alcohol in amounts estimated at from about 3 ounces to about 1 pint. Many also had drunk beer ranging in amounts to 21 cans. One of those saved was unconscious for about 12 hours.

Wood alcohol can produce intoxication but its action is slower than that of ethyl alcohol. The symptoms of such intoxication may be delayed as much as from 9 to 36 hours, during which time the drinker may be able to perform his work.

The indications of wood alcohol poisoning consist of a sudden weakness, headache, nausea, and a dimness of vision. Blindness may follow quickly. Labored breathing and cyanosis may also appear with death following shortly thereafter. If death does not take place the victim may go into a coma which may last for several days before there are signs of improvement.

The treatment recommended calls for medications and tests, all of which are not available on the average merchant ship. In short, the treatment is to introduce alkalis into the system in order to overcome quickly the acid condition resulting from the breaking down of the wood alcohol into formic acid and formaldehyde.

The following first aid treatment based upon the treatment followed by the Navy doctors is recommended:

1. Have patient vomit, if possible.
2. Place victim in bed at rest.
3. Administer 4 grams of sodium bicarbonate by mouth every 15 minutes at first—up to 100 grams daily. If the patient is unconscious, give it by a stomach tube.
4. Have patient take plenty of liquids.
5. Give 1 ounce of whiskey every 4 hours for a day or two.
6. Protect eyes from the light.
7. As soon as these measures are carried out collect a urine specimen and test for acidity. Keep administering sodium bicarbonate as directed above until the reaction is alkaline.
8. It is important that the eyes be kept covered at all times until all usual disturbances have disappeared.

LESSONS FROM CASUALTIES

Boilers Damaged by Insufficient Water

The reading and proper interpretation of a boiler water glass appears to be a simple matter, and it actually is; nevertheless, there is an alarming number of casualties reported where the haphazard misinterpretation of such readings results in disastrous consequences. Any licensed engineer knows how quickly tubes can be ruptured and blistered, headers damaged, and furnaces collapsed, if the fires are not immediately "secured" whenever there is insufficient water. It is, therefore, the professional responsibility of the engineer to accurately ascertain the water level in a boiler by more certain methods than visual sighting in a water glass, especially when any doubt about the quantity of water exists. The average layman can usually tell at a glance that the boiler failures in these casualties were caused by insufficient water due to sheer negligence and carelessness to the *n*th degree.

To accentuate the importance of accurate interpretation of boiler water glasses, a glaring example of faulty operation was recently brought to the attention of the Coast Guard, which illustrates such careless inattention to duty, and it is worthy of mention in order that conscientious engineers may direct it to the attention of such engineering personnel as are inclined to be lax in such matters.

This particular vessel was equipped with two Babcock & Wilcox high pressure triple fired boilers. During the course of the voyage as the third assistant engineer was about to assume his regular watch, he was informed by the fourth assistant whom he relieved, that some difficulty was being encountered in maintaining proper water level in the boilers. The third assistant engineer then directed the fourth to locate the first assistant engineer by telephone and inform him of the trouble. Since the first assistant engineer could not be located immediately, he remained below to help the third assistant solve the low water condition.

Shortly thereafter, the first assistant appeared in the engine room and the third assistant informed him of the trouble with the water, and, immediately, the three engineers began to look for the cause of the low water situation. However, approximately 45 minutes later the water level in the port boiler became dangerously low. At this time, the third assistant requested the fourth assistant to put the vertical reciprocating pump on the line, which was done. The third then noted that one of the glasses was about two-thirds full and, about 5 minutes later, he noted that the water glass was either entirely full or entirely empty. Assuming it was full of water, he ordered the fourth assistant engineer to secure the reciprocating pump, which was done approxi-

mately 3 minutes afterwards. Before any sign of water had been observed in the water glass, a tube in the port boiler blew out and steam was lost on the plant. Subsequent examination revealed that all the tubes below the superheater in the port boiler were ruptured and damaged to the extent that removal was necessary. The vessel proceeded to port under one boiler, where long delay and expensive repairs were necessitated.

It is interesting to observe that, in addition to the conventional water gage glass, these boilers were equipped with an approved type remote water level indicator as a secondary means for indicating the boiler water level. However, the testimony adduced in this case revealed that the engineers and engine-room personnel completely ignored the reading of the remote water level indicator, presuming it to be unreliable, although it was later proved that this remote water indicator registered the correct water level during the entire period of the low water difficulty.

In this case, as well as in the majority of reported low water boiler casualties, gross ignorance of the "procedure in case of low water" was displayed. In the first place, they failed in every incident to promptly "secure" the fires in the boilers after losing the water; secondly, they failed to make certain as to whether the indicated water level in the gage glass was true or false by the customary blow-down method, even though it had become apparent that true water level was in doubt. In the third place, they ignored the comparison of the water level of the conventional water glass with that of the remote indicator, which should have been made at frequent intervals prior to the low water trouble. In the last place, they failed to establish the degree of reliability that could have been placed in the remote water indicator if the boilers were operating under normal and subnormal water levels.

Low water is almost invariably the result of the engineer, fireman, or watertender having his attention diverted from his task, or inattention to duty. In most casualties, the records indicate that one of the following has occurred:

(a) Gage glass valves partly plugged.

(b) Drum valves partly plugged.

(c) Gage valves or drum valves inadvertently closed.

(d) Empty glass mistaken for a full one.

In all of the above cases, the true state of the water glass can be ascertained by blowing the gage glass down. Usually men who persist in assuming it to be full instead of empty, immediately restrict the feed water supply to lower the water level into sight again, whereas they actually reduce the water level still further. This is what happened in this case.

If either the top or bottom connection of the water gage is obstructed by scale or some other matter, a false indication of the water level will result. If any doubt exits concerning the actual water level in the boiler, the gage glass should be "blown through." Blowing through is accomplished by closing off tightly the top valve on the water glass and opening the drain. This will allow water to blow through the bottom gage glass connection and clear it out. The drain should then be closed, the top gage glass valve opened, and the bottom gage glass valve closed. The drain valve should then be opened to permit steam to blow through the top gage glass connection, cleaning it out. When the drain is closed and the top gage glass connection opened again, the water level in the boiler should be clearly indicated in the glass. If either one of the connections does not blow through the drain freely, it is an indication that an obstruction exists in the connection, and steps should be taken to correct this condition because a faulty indication of the water level would result. The gage glasses of most boilers are connected with a blow-down connection, which should be opened at regular intervals, while at the same time observing the water level in the boiler. After the drain has been opened, it will be observed upon closing same that the water level will reappear in the gage glass quickly and will fluctuate somewhat (temporarily). This is an indication that the connections are clear. If, however, after opening the drain and closing same, the water level in the glass reappears slowly, this indicates that the connections to the gage glass are not entirely clear.

Another factor which has a direct bearing on actual causes of dangerously low or high water conditions is improper feeding and firing, particularly with modern water tube boilers. For instance, if firing rate is sharply increased, there will be a definite tendency for the water level in the glass to rise; at the same time, more water is being evaporated and more feed is needed to replace it. In this case, there is a pronounced tendency for the inexperienced fireroom personnel to hurriedly close down on the feed stop valve because of the momentary rise in the water level. The correct action is to expect and accept the initial rise as a natural consequence of increased firing rate, and to open the feed stop still further to meet the increased water evaporation. The reverse takes place when there is a sharp reduction in the firing rate. Again, the inexperienced fire-room personnel has a tendency to open the feed stop valve instead of closing it a certain amount. Therefore, the effect which an increase or decrease in the firing rate has on the water level in the gage glass must be known and expected, and the boiler must be fed in proportion to the steam generated.

The accident described in this article, as well as many others that have come to the attention of the Coast Guard, could undoubtedly have been prevented had the water level been properly checked by the foregoing method. In these modern times where chief engineers are responsible for boilers that generate water into steam at a tremendous rate, they should be very insistent in their demands that water gage glasses be blown down at frequent intervals to make sure the water level, as indicated in the glass, is a true and not a false water level.

The whole story in connection with boiler casualties which are directly attributed to careless operation, cannot be set forth in this article. Investigations are now in progress covering the increasing number of boiler failures occurring on Victory type vessels, and it is anticipated that other articles will soon be released on this subject.

Explosion of Line-Throwing Gun

Since 1791, line-throwing guns have been fired by numerous seamen without resultant disabilities or loss of life. However, freak accidents surrounding the use of line-throwing guns—similar to this peculiar incident—are occasionally reported to headquarters and in view of the disastrous consequences which generally result from someone's carelessness, all such accidents are widely publicized as an integral part of the Coast Guard's campaign to prevent shipboard accidents by persuading all seamen to profit by the mistakes of others.

For years it has been customary to pack black powder for use with line-throwing appliances on United States merchant ships in 5-ounce red flannel bags. In this particular incident, however, when odd shaped white fabric bags filled with smokeless powder of a high nitroglycerin content were mistakenly used as powder charges instead of the uniform red bags of black powder, a line throwing gun burst causing the death of the third assistant engineer.

About 600 miles east of New York, a Liberty type vessel, lend-leased to a foreign country, dropped her pro-

peller and due to extremely heavy weather, the master ordered the crew to assemble the line-throwing gear for projecting a line to an assisting ship. The gun was mounted forward on the bow under a mate's direction with the intention of firing a practice shot without a line attached in order to test the gun's range. After the gun barrel was cleaned, one of the powder charges, in its white cotton bag, was loaded in the gun and the regular projectile inserted in place. While two percussion primers were pulled unsuccessfully, the third primer exploded the charge, disintegrating the gun and a ricocheting fragment hit the third assistant in the head killing him instantly.

Upon arrival in a United States port, a chemical analysis revealed the powder used to be a fine grained, double base, smokeless powder containing 40 percent nitroglycerin combined with nitrocellulose having a little stabilizer and glaze, instead of the usual black powder composed of about 75 percent potassium nitrate (saltpeter) and 25 percent charcoal and sulphur. It doesn't require a scientist to realize the virtual atomic effect of the nitrocellulose combined with nitroglycerin on the design of not only this particular gun, but also on any similar line-throwing appliance.

In the case of this ship, Lady Luck was apparently "looking the other way" when the third assistant was killed, for had the officers and crew exercised due precautions, the third assistant might yet be alive; had the odd sized white cotton bags been casually checked before having been placed in the gun any seafaring man could not have failed to wonder at the absence of the common red flannel 5-ounce bags in which black powder for line-throwing guns is usually contained and a casual examination of the powder would have immediately disclosed the presence of extruded grains of smokeless powder in place of the flakes of black powder; and, since it is more difficult to ignite smokeless powder than black powder, failure of the first two percussion primers to explode the charge should have aroused further suspicion. This sequence of irregularities should have instigated a thorough check of the operation.

Since a thorough inquiry disclosed that fine grain, double base, smokeless powder is almost exclusively used in highly specialized projectiles by United States armed forces, it is most difficult to surmise exactly how this unconventionally packed powder, unobserved by the ship's officers, happened to be on this particular ship illegitimately placed in the proximity of the line-throwing gear. At any rate, when subsequently mistaken for the line-throwing gun's black powder charge, it indirectly caused the third assistant's death.

When correctly handled, line-throwing guns are not actually dangerous weapons or something to fear. Their carriage on most United States ships is mandatory under the provisions of United States regulations. These guns, with their safety factor, although capable of withstanding a shock much greater than that produced by the explosion of the correct charge of ordinary black powder, were never designed to withstand the pressure generated by the burning of double base smokeless powder.

Unique as this accident may seem, it should serve not only as a timely warning to every seaman of the dangerous hazards created by misplaced explosives, but also as an emphatic indication of the necessity for carefully checking preparations for even the simplest shipboard operation.

APPENDIX

Navigation and Vessel Inspection Circular No. 66

Posting of Documents, Forms, and Notices Under Glass and Dimming or Extinguishing Lights on Vessels; Cancellation and Modifications of Waivers

UNITED STATES COAST GUARD

WASHINGTON 25, D. C.

30 January, 1946

Refs: (a) Order of Commandant 7 January 1946 (11 F. R. 494)

(b) Order of Secy. Treasury 8 January 1946 (11 F. R. 494)

(c) Order of Secy. Treasury 8 January 1946 (11 F. R. 494)

1. Reference (a) cancels order dated 6 April 1944 (9 F. R. 3826) which waived compliance of any Navigation and Vessel Inspection Law or Regulation applicable to ocean and coastwise vessels requiring the posting of forms, notices or other documents under glass.

2. Reference (b) rescinds and vacates as of 1 February 1946 order of 21 March 1942 (7 F. R. 2477) which waived so much of R. S. 4446 as amended (46 U. S. C. 232) as requires master, mate, engineer, or pilot employed on ocean and coastwise vessels to place his certificate of license under glass, in some conspicuous place on the vessel.

3. Reference (c) rescinds and vacates so much of the order dated 19 March 1942 (7 F. R. 2478) as amended by order 23 September 1942 (7 F. R. 7513) as waived compliance with Navigation and Vessel Inspection Laws to the extent necessary to permit conformity with instructions and orders to dim or extinguish lights.

4. Wide publicity should be given to References (a) and (b) in order that vessels may be provided with suitable frames and glass necessary to accomplish compliance with law or regulations requiring certain documents to be posted under glass.

(Signed) J. F. FARLEY,
Commandant.

Equipment Approved by the Commandant

LIFEBOAT COMPASS

Eriksen Stellar compensating compass, Model 1, Assembly Dwg. No. C–113–5–C, revised 2 January, 1946, submitted by Stellar Products, Inc., 71 Murray Street, New York 7, N. Y.

Eriksen Stellar compensating compass, Model 2, Assembly Dwg. No. C–113–5–C, revised 2 January, 1946, submitted by Stellar Products, Inc., 71 Murray Street, New York 7, N. Y.

BUOYANT CUSHIONS FOR MOTORBOATS

Approval No. B–285, 15" x 15" x 2" kapok buoyant cushion filled with 21 oz. kapok, Dwg. No. 2, dated 26 January, 1946, for use on motorboats of Classes A, 1 and 2, not carrying passengers for hire, manufactured by M. W. Fogg Co., 57 Rose Street, New York 7, N. Y.

Approval No. B–286, 15" x 15" x 2" seat; 15" x 15" x 2" back double kapok buoyant cushion filled with 21 oz. kapok in seat and 21 oz. kapok in

back, Dwg. No. 1 of 1, dated 15 January, 1946, for use on motorboats of Classes A, 1 and 2, not carrying passengers for hire, manufactured by M. W. Fogg Co., 57 Rose Street, New York 7, N. Y.

Approval No. B–287, 13" x 20" x 2" kapok buoyant cushion filled with 20 oz. kapok, Dwg. dated 3 January, 1946, for use on motorboats of Classes A, 1 and 2, not carrying passengers for hire, manufactured by Seaway Mfg. Co. Inc., 511 North Solomon Street, New Orleans, La.

Approval No. B–288, 18" x 18" x 2" kapok buoyant cushion filled with 24 oz. kapok, Dwg. dated 3 January, 1946, for use on motorboats of Classes A, 1 and 2, not carrying passengers for hire, manufactured by Seaway Mfg. Co., Inc., 511 North Solomon Street, New Orleans, La.

Approval No. B–289, 14" x 14" x 2" seat; 14" x 18" x 2" back double kapok cushion filled with 18 oz. kapok in seat, 20 oz. kapok in back, Style 49B, Dwg. No. B–70, dated 27 January, 1946, for use on motorboats of Classes A, 1 and 2, not carrying passengers for hire, manufactured by The American Pad and Textile Co., Greenfield, Ohio.

Approval No. B–290, 14" x 18" x 2" kapok buoyant cushion filled with 20 oz. kapok, Style 47B, Dwg. No. B–66, dated 23 February, 1946, for use on motorboats of Classes A, 1 and 2, not carrying passengers for hire, manufactured by The American Pad and Textile Co., Greenfield, Ohio.

FIRE EXTINGUISHING APPARATUS

Insulated discharge horn assembly, Assembly Dwg. No. 80564D, dated 23 July, 1943, revised 7 September, 1945, for 100-pound carbon dioxide hose reel and hose rack fire extinguishing apparatus, manufactured by Walter Kidde and Co., Inc., 675 Main Street, Belleville 9, New Jersey. (11 F.R. 1690, 15 February 1946.)

LIFEBOAT

31' x 11.25' x 4.5' steel motor-propelled lifeboat, 83-person capacity, General Arrangement Dwg. No. 2414, dated 8 March, 1945, submitted by Welin Davit and Boat Division of the Robinson Foundation, Inc., Perth Amboy, New Jersey. (Supersedes approval 28 April, 1943, 8 F.R. 5578 insofar as new construction is concerned.) (11 F.R. 1690, 15 February 1946.)

Amendment of prior documents. In F.R. Doc. 45–18303, published in the FEDERAL REGISTER dated October 3, 1945, as corrected by F.R. Doc. 45–18718, published October 10, 1945, the listing of approval under "Lifeboats", for a 26' x 9' x 3.6' metallic oar-propelled lifeboat, submitted by Imperial Lifeboat and Davit Company, is amended by changing the phrase "50-person capacity" to "46-person capacity" and by changing the phrase "Dwg. No. 2059, dated 6 August, 1945" to "Dwg. No. 2058, dated 6 August, 1945." (11 F.R. 1690, 15 February 1946.)

LIFE PRESERVERS

Approval No. A–304, Standard adult cork life preserver, manufactured by Hudgins-Dize Co. Inc., 121 West Main Street, Norfolk, Virginia.

Approval No. B–272, Model 5 child kapok life preserver, Specification 160.002, manufactured by The American Pad and Textile Co., Greenfield, Ohio.

Approval No. B–273, Model 6 child kapok life preserver, Specification 160.002, manufactured by The American Pad and Textile Co., Greenfield, Ohio.

Approval No. B–291, Model 5 child kapok life preserver, Specification 160.002, manufactured by Atlantic-Pacific Mfg. Co., 124 Atlantic Ave., Brooklyn 2, New York.

Approval No. B–292, Model 6 child kapok life preserver, Specification 160.002, manufactured by Atlantic-Pacific Mfg. Co., 124 Atlantic Ave., Brooklyn 2, New York.

Approval No. B–293, Model 5 child kapok life preserver, Specification 160.002, manufactured by Jurgensen Mfg. Co., 145 West 15th Street, New York 11, N. Y.

Approval No. B–294, Model 6 child kapok life preserver, Specification 160.002, manufactured by Jurgensen Mfg. Co., 145 West 15th Street, New York 11, N. Y.

MOTION PICTURE PROJECTOR

35-mm motion picture projection equipment, Navy Type "D", Mazda lamp equipped, semiportable unit;

ELECTRICAL APPLIANCES

The following list supplements that published by the United States Coast Guard under date of 15 May 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 (EMM), U. S. Coast Guard, Washington 25, D. C., duplicate copies of a detail assembly drawing, including a material list with finishes of each corrosive part, of each item. An examination of the drawings submitted will be made and, if necessary, tests conducted on such appliances to determine their suitability for marine use.

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	
Crouse-Hinds Co., Syracuse, N. Y.:					
Lighting fixture, for deck or hold, type RMC–8, waterproof, catalog No. 43720, drawing No. 876–EH8, alteration 8	x	x	x		1–14–46
The Dayton Manufacturing Co., Dayton, Ohio:					
Ceiling lighting fixture, non-watertight, 2 75-watt lamps maximum, catalog No. C–10698–A.V., drawing No. 1524–1, revision 0	x				12–18–45
Berth light, non-watertight, 25 watts maximum, catalog No. B–5532, drawing No. 1882, revision 2	x				12–17–45
Berth light, non-watertight, 25 watts maximum, catalog No. B–5508, drawing No. 1679, revision 2	x				12–17–45
Faraday Electric Corp., Adrian, Mich.:					
Horns, high intensity, non-resonated, watertight, U. S. Navy types H–1, 115 volts, direct current; and H–2, 115 volts, alternating current; drawing No. Q–171000, alteration 0 dated 11–24–45	x	x	x		12–27–45
Horns, high intensity, resonated, splashproof, U. S. Navy types H–3, 115 volts, direct current; and H–4, 115 volts, alternating current, drawing No. Q–174000, alteration 0 dated 11–24–45	x	x	x		12–27–45
Motorboat horn, high intensity, non-resonated, watertight, U. S. Navy types H–5, 6 volts, direct current; and H–5a, 24 volts, direct current, drawing No. Q–17000, alteration 0 dated 11–24–45	x	x	x		12–27–45
Lovell-Dressel Co., Inc., Arlington, N. J.:					
Receptacle, three gang, waterproof, 10 amperes, 125 volts, catalog No. 1797, drawing No. 1797, alteration 0	x	x	x		12–27–45
Oceanic Electric Products Corp., New York, N. Y.:					
Bracket lighting fixture, waterproof, 100 watts maximum, catalog No. 5951, drawing No. 2484, alteration 0	x	x	x		1–9–46

for use in fire-resistive booth only; Dwg. No. 2812, Rev. O, projector assembly with parts lists, Sheets 71 and 75, and Wiring diagram, Sheet 37; Dwg. No. W–1334, Rev. 9–9–45, Model 2804 amplifier, wiring diagram; submitted by DeVry Corporation, 1111 Armitage Avenue, Chicago 14, Illinois.

Termination of Approval

Coast Guard approval of the following item of equipment has been terminated, as the manufacturer no longer produces the same:

LIFE PRESERVER

Termination of approval of Model No. 2 adult kapok life preserver, CG Dwg. No. F–49–6–1 and Specifications dated 10 June 1944, as amended, Approval No. B–268, manufactured by Waterhouse Company, Webster, Mass. (Approved 5 July 1945, 10 F. R. 8331. Notwithstanding this termination of approval, any life preservers manufactured, inspected and stamped in accordance with the terms thereof, may be continued in service as long as in good and serviceable condition.)

Certification of Articles of Ships' Stores and Supplies

Articles of Ships' Stores and Supplies certificated 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:

Shell Ship-Tox, Shell Oil Company, Suite 1120, Shoreham Building, Washington 5, D. C. Certification No. 189, 20 February 1946.

MCP Insecticide "A," Mill Creek Products, Mill Creek Building, 4638 Mill Creek Blvd., Kansas City 2, Missouri. Certification No. 194, 14 February 1946.

Cancellation of Certification

Shell DDT Ship Spray #1, Shell Oil Company, Suite 1120, Shoreham Building, Washington 5, D. C., Certificate No. 189, 11 October 1945, published in the November 1945 issue of the Proceedings of the Merchant Marine Council, is canceled.

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	
Oceanic Electric Products Corp., New York, N. Y.—Con.					
Bracket lighting fixture, key type, waterproof, 100 watts maximum, catalog No. 5956, drawing No. 4019, alteration 0	X	X	X		1-9-46
Halyard light, waterproof, 100 watts maximum, catalog Nos. 2210, 2211, 2212 and 2213, drawing No. 2197, alteration 0	X	X	X		12-27-45
Chartboard light with adjustable shutter, nonwatertight, with portable cord, catalog Nos. 4910 and 4911, drawing No. 2185, alteration 0	X				1-23-46
Paulutin Electric Mfg. Co., Inc., New York, N. Y.:					
Indicating pilot lights, waterproof, drawing No. 881, revision 0:					12-27-45
Catalog No. 881, single-gang	X	X	X		
Catalog No. 882, two-gang	X	X	X		
Catalog No. 883, three-gang	X	X	X		
Catalog No. 881–2, single-gang	X	X			
Catalog No. 882–2, two-gang	X	X			
Catalog No. 883–2, three-gang	X	X			
Switch and indicating pilot light, waterproof, 10 amperes, 125 volts, drawing No. 889, revision 0:					12-27-45
Catalog No. 889	X	X	X		
Catalog No. 889–2	X	X			
Russell & Stoll Company, Inc., New York, N. Y.:					
Receptacle, waterproof, 10 amperes, 440 volts, alternating current and 250 volts, direct current; 20 amperes, 125 volts, direct current, drawing No. F–10615, alteration 0:					12-20-45
Catalog No. 3763, 2-wire, 3-pole	X	X	X		
Catalog No. 3764, 3-wire, 4-pole	X	X	X		
Plug, male, waterproof, 10 amperes, 440 volts, alternating current and 250 volts direct current; 20 amperes, 125 volts, direct current, drawing No. F–10536, alteration 3:					12-20-45
Catalog No. 3720, 2-wire, 3-pole	X	X	X		
Catalog No. 3730, 3-wire, 4-pole	X	X	X		
Receptacle, waterproof, 20 amperes, 440 volts, alternating current and 250 volts, direct current, drawing No. F–9736, alteration 2:					12-20-45
Catalog No. 3773, 2-wire, 3-pole	X	X	X		
Catalog No. 3774, 3-wire, 4-pole	X	X	X		
Plug, waterproof, 20 amperes, 440 volts, alternating current and 250 volts, direct current, drawing No. 10646, alteration 0:					12-20-45
Catalog No. 3750, 2 wire, 3-pole	X	X	X		
Catalog No. 3760, 3-wire, 4-pole	X	X	X		
Ever-Lok receptacle, heavy service type, weather-tight, 30 amperes, 250 volts, direct current and 440 volts, alternating current:					12-20-45
Catalog No. 8403, 2-wire, 3-pole	X	X			
Catalog No. 8404, 3-wire, 4-pole	X	X			
Ever-Lok plug, heavy service type, 30 amperes, 250 volts, direct current and 440 volts, alternating current, drawing No. B–4711, alteration 0:					12-20-45
Catalog No. 8407, 2-wire, 3-pole	X	X			
Catalog No. 8408, 3-wire, 4-pole	X	X			
Wiring devices:					
Marine safety switch, interlocked, waterproof, 10 amperes, 250 volts, drawing No. B–5674, alteration 7:					
Catalog No. 806, 2-wire, 2-pole	X	X	X		2-6-46
Catalog No. 807, 2-wire, 3-pole, grounded	X	X	X		
Plug, male, 10 amperes, 440 volts, alternating current, and 250 volts, direct current; 20 amperes, 125 volts, direct current, drawing No. F–10536, alteration 2					2-6-46
Catalog No. 3716, 2-wire, 2-pole					
Catalog No. 3720, 2-wire, 3-pole					
Simplet Electric Co., New York, N. Y.:					
Wiring devices, nonwatertight, drawing No. MC–125, alteration 0					1-24-46
Switch, single-pole, 10 amperes 125 volts, catalog No. PFS–101	X				
Switch, three-way, 10 amperes, 125 volts, catalog No. PFS–103	X				
Switch, single pole, 10 amperes, 125 volts, catalog No. PSS–101	X				
Switch, three-way, 10 amperes, 125 volts, catalog No. PSS–103	X				
Switch, 2-gang, single pole, 10 amperes, 125 volts, catalog No. PFS–201	X				
Switch, 2-gang, single-pole, 10 amperes, 125 volts, catalog No. PSS–201	X				
Receptacle, 2-wire, 2-pole, 15 amperes, 125 volts, catalog No. PFR–102	X				
Receptacle, 2-wire, 2-pole, 15 amperes, 125 volts, catalog No. PSR–102	X				
Receptacle, 2-gang, 2-wire, 2-pole, 15 amperes, 125 volts, catalog No. PFR–202	X				
Receptacle, 3-wire, grounded, 15 amperes, 125 volts, catalog No. P–DF	X				
Receptacle, 3-wire, grounded, 15 amperes, 125 volts, catalog No. P–DS	X				
Junction box, with terminal block, catalog No. P–BS	X				

Merchant Marine Personnel Statistics

MERCHANT MARINE LICENSES ISSUED DURING JANUARY 1946

DECK OFFICERS

Region	Master										Chief mate										Second mate									
	Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	37	120	7	16	.....	.....	13	61	.....	10	73	19	2	3	.....	.....	1	8	.....	1	70	16	.....	2	.....	.....	.....	.....	.....	.....
Gulf coast	4	20	1	1	.....	1	5	.....	.....	7	5	4	.....	1	.....	.....	1	.....	1	.....	23	3	.....	.....	.....	.....	.....	.....	.....	.....
Great Lakes and rivers	2	5	.....	.....	14	54	.....	.....	2	8	.....	.....	.....	.....	.....	.....	.....	.....	2	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pacific coast	38	50	2	1	.....	1	6	12	.....	1	41	6	1	.....	.....	.....	4	2	.....	.....	55	7	.....	.....	.....	.....	.....	.....	.....	.....
Total	81	195	10	18	14	56	24	73	2	26	119	29	3	4	.....	.....	6	10	3	12	148	26	.....	2	.....	.....	.....	.....	.....	.....

Region	Third mate										Pilots						Master mate				Total		
	Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Great Lakes		B. S. & L.		Rivers		Uninspected vessels, high seas				Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	293	11	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	48	164	.....	7	2	6	.....	.....	546	445	991
Gulf coast	29	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	14	3	6	.....	.....	.....	.....	84	60	144
Great Lakes and rivers	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14	63	11	20	19	17	.....	.....	.....	.....	64	178	242
Pacific coast	91	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	33	50	.....	1	3	10	1	.....	275	144	419
Total	413	17	.....	1	.....	.....	.....	.....	.....	.....	14	63	104	248	22	31	5	16	1	.....	969	827	1,796

ENGINEER OFFICERS

Region	Chief engineer, steam				First assistant engineer, steam				Second assistant engineer, steam				Third assistant engineer, steam			
	Ocean		Inland		Ocean		Inland		Ocean		Inland		Ocean		Inland	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	78	152	6	55	115	40	2	16	138	43	1	.....	404	26	.....	.....
Gulf coast	17	20	.....	13	17	6	.....	4	43	4	.....	.....	33	9	.....	.....
Great Lakes and rivers	3	18	6	77	3	6	3	31	8	5	3	15	8	3	.....	2
Pacific coast	47	56	2	8	37	15	.....	4	70	10	.....	1	82	4	.....	.....
Total	145	246	14	153	172	67	5	55	259	62	4	16	527	42	.....	2

Region	Motor vessels								Uninspected vessels				Totals		
	Chief engineer		First assistant engineer		Second assistant engineer		Third assistant engineer		Chief engineer		Assistant engineer		Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	50	57	24	17	23	6	313	3	.....	2	.....	1	1,154	418	1,572
Gulf coast	6	10	6	3	3	.....	9	1	.....	.....	.....	.....	134	70	204
Great Lakes and rivers	7	12	3	5	.....	.....	3	.....	.....	.....	.....	.....	47	174	221
Pacific coast	13	33	9	7	8	5	50	6	4	7	2	1	324	157	481
Total	76	112	42	32	34	11	375	10	4	9	2	2	1,659	819	2,478

ORIGINAL SEAMEN'S DOCUMENTS ISSUED, MONTH OF JANUARY 1946

Region	Continuous discharge book	Certificate of identity	A. B., green, 3 years [1]	A. B., green, 9 months emergency [1]	A. B., blue, 18 months, 12 months [1]	A. B., blue, 6 months emergency [2]	A. B., blue, 6 months emergency [3]	Lifeboat, 12-24 months [4]	U. S. Mer. Mar. Doc.	Q. M. E. D., 6 months	Q. M. E. D., emergency	Radio operators	Certificate of service	Tanker man	Staff officer	Total
Atlantic coast	3	0	93	117	162	8	3	740	5,970	351	629	16	5,510	6	437	14,045
Gulf coast	85	0	12	37	14	0	0	113	1,760	170	216	1	1,625	9	60	4,102
Pacific coast	14	14	70	125	91	0	0	263	4,150	284	268	10	3,373	2	238	8,902
Great Lakes and rivers	19	1	26	9	37	5	1	39	255	114	48	0	257	0	7	818
Total	121	15	201	288	304	13	4	1,155	12,135	919	1,161	27	10,765	17	742	27,867

[1] Unlimited.
[2] Great Lakes, lakes, bays, and sounds.
[3] Tugs and towboats and freight vessels under 500 tons (miscellaneous).
[4] 12 months deck or 24 months other departments.

NOTE.—There were 68 Panamanian Employment Cards issued.

WAIVERS OF MANNING REQUIREMENTS FROM 1 JANUARY TO 31 JANUARY 1946

Authority for These Waivers Contained in Navigation and Vessel Inspection Circular No. 31, Dated 13 March 1943 and Navigation and Vessel Inspection Circular No. 37 Dated 6 July 1943

Region	Number of vessels	Deck officers substituted for higher ratings	Engineer officers substituted for higher ratings	Able seamen substituted for deck officers	Ordinary seamen substituted for able seamen	Qualified members of engine department substituted for engineer officers	Wipers or coal passers substituted for qualified members of engine department	Wipers, coal passers or cadets substituted for engineer officers	Ordinary seaman or cadets substituted for deck officers	Total
Atlantic coast	902	254	464	58	2,632	138	575	33	31	2,585
Gulf coast	299	105	174	36	872	72	315	1	12	587
Pacific coast	357	140	223	47	1,123	139	582	16	15	2,285
Great Lakes	2				1		2			3
Total	1,560	499	861	141	4,028	349	1,474	50	58	6,460

CREW SHORTAGE REPORTS FROM 1 JANUARY TO 31 JANUARY 1946

These Reports Submitted in Accordance With Navigation and Vessel Inspection Circular No. 34, Dated 1 May 1943

Region	Number of vessels	Ratings in which shortages occurred												Total
		Chief mate	Second mate	Third mate	Radio	Able seamen	Ordinary seamen	Chief engineer	First engineer	Second engineer	Third engineer	Qualified member engine department	Wiper or coal passer	
Atlantic coast	51	1	7	9		40	23		3	4	12	33	14	146
Gulf coast	45	2	5	5		31	14	3	5	4	7	24	11	111
Pacific coast	13			3		2	4		1	1	4		2	17
Great Lakes	14			1		6	12		1	1	5	6	5	37
Total	123	3	12	18		79	53	3	10	10	28	63	32	311

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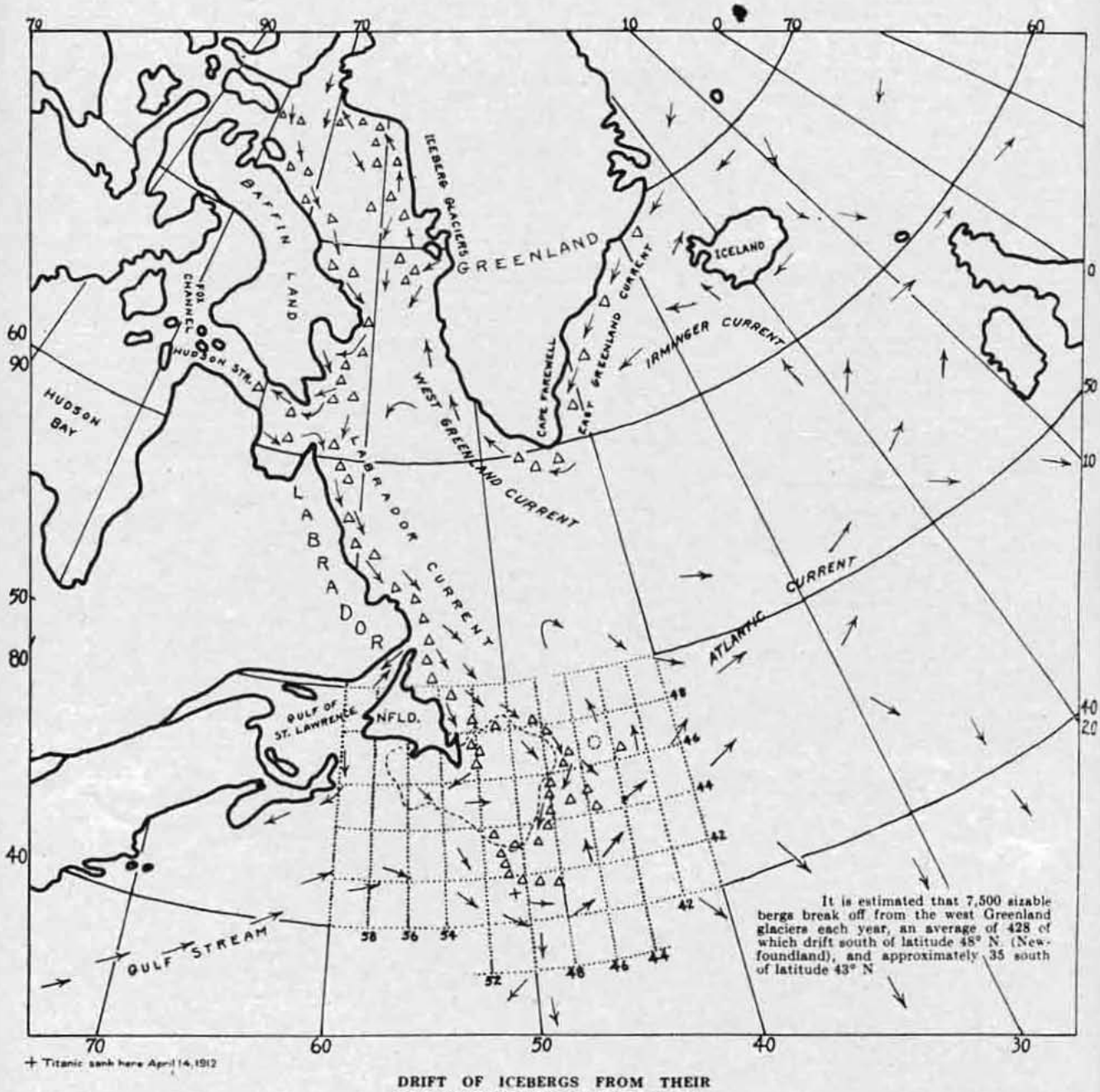
U. S. GOVERNMENT PRINTING OFFICE 1946



DRIFT OF ICEBERGS FROM THEIR SOURCE INTO THE NORTH ATLANTIC