PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL
UNITED STATES COAST GUARD

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Proceedings of the

MERCHANT MARINE COUNCIL

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The
Merchant Marine Council
of the United States
Coast Guard

CONTENTS

COVER PICTURE

Pictured in the harbor at Argentia, Newfoundland, the U. S. Coast Guard Cutter *Duane*, one of largest type cutters used by the Service. Vessels of this type engage in offshore patrols, sea rescues, and duties requiring the utmost in seaworthiness.

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THE MERCHANT SEAMAN AND THE ADMINISTRATIVE PROCESS

Address Delivered by Walter E. Lawlor, Hearing Examiner at New York, N. Y., Before the Initial Fall Meeting of the Council of American Master Mariners on October 15, 1951, at the Maritime Exchange, 80 Broad Street, New York, N. Y.

It was with a deep sense of gratification, that I received your very kind invitation to address this initial fall meeting of the Council of American Master Mariners. My mind returns, once again, to the happy occasion of last year, when I had the privilege of speaking at another meeting of this Council at the New York Athletic Club on the fascinating and interesting subject of shipboard radar. It is my fervent hope that the thoughts expressed by me then, served in some small way to have been of practical value to you, in proportion, at least, to the pleasure and satisfaction I derived in appearing before and addressing so distinguished a Council, whose membership includes so many outstanding and notable masters of the American Merchant Marine.

Almost 3 years have passed since I ceased to be an advocate and proctor in Admiralty, in which capacity I had been engaged for some 12 years in the maritime law field in the city of New York, to accept the position as civilian hearing examiner with the U. S. Coast Guard. In this capacity I have presided, as an administrative judge over formal hearings concerned with the suspension and revocation of seamen's licenses and documents in accordance with the provisions of Revised Statute 4450, as amended. The burden of deciding the issues of law and fact presented in these hearings is a heavy one, more arduous by far than the advocacy of causes on behalf of clients. The advocate in his zeal for his client's interests is permitted infinitely more latitude, even at times approaching contempt, as he argues his cause with zest and ardor, than is allowed to one in the quasi-judicial post as examiner who must ever and under all circumstances, no matter how trying and compelling they might be, evidence and exhibit a judicial poise and temperament, without which no hearing can be fair or examiner impartial. To one who has been in close contact over so long a period of time with merchant seamen

in the practice of maritime law, the position of examiner holds a very definite sense of attractiveness, probably missed by those whose experience has been less extensive in things maritime. The examiner, as the trier of the facts and the applier of the law in Coast Guard hearings, buttressed with his past endeavors in the practice of maritime law, if indeed he should be so fortunate in that regard, acquires a deeper understanding of and insight into the nature and character of those men, both licensed and certificated, who man our ships in the merchant marine. A realization of this type is necessary and most advantageous to him in deciding the issues before him and in formulating and entering just and appropriate orders against their licenses and documents in the light of the statutory duty of the Coast Guard, engaged as it is, in its tireless endeavors to promote and foster the safety of the seamen and the integrity of the ships in the American Merchant Marine. During the course of my labors as an examiner, several matters have come to my attention, some of which I should be pleased to discuss with you this evening, in the short time at my disposal, matters which, I believe, are of interest to all seamen, both licensed and certificated, and which can be more adequately considered under the broad aspect of the merchant seaman and the administrative process.

As you are probably all aware, the basic statutory authority of the Coast Guard to conduct marine investigations and to hold formal hearings of record looking toward the revocation and suspension of seamen's licenses and certificates is to be found in Revised Statutes 4450, as amended (46 U. S. Code 239). Pursuant to the authority of this statute, the Coast Guard has regularly adopted regulations governing the conduct of investigations of marine casualties and accidents which have for their purpose the taking of appropriate measures for promoting safety of life and property at sea. Such investigations determine as closely as possible the following: (1) The cause of the accident or casualty, (2) whether any failure of material (either physical or design) was involved or contributed to the casualty, so that proper recommendations for the prevention of the recurrence of similar casualties may be made, and (3) whether any act of misconduct, inattention to duty, negligence or willful violation of the law on the part of any licensed or certificated seaman contributed to the casualty, so that appropriate proceedings against the license or certificate of such person may be recommended and taken pursuant to the provisions of 46 U. S. Code 239.

The Coast Guard, pursuant to the same basic statutory authority, promulgated regulations outlining the manner in which the formal suspension and revocation proceedings and hearings are to be conducted. The regulations with respect to investigations and to the formal hearings, are contained in 46 Code of Federal Regulations, parts 136 and 137. The Coast Guard has arranged for the publication of these regulations in CG-200, so that they might be readily available to all interested persons, and more particularly, to licensed and certificated seamen for their information and guidance.

In the instances where, by reason of investigation or otherwise, it is determined that there are reasonable grounds to believe that a licensed or certificated seaman has been guilty of misconduct, negligence, inattention to duty, unskillfulness, or has endangered life, or has willfully violated any of the provisions of title 52, Revised Statutes, as amended, or any of the regulations issued thereunder, or is incompetent, the Coast Guard through the medium of an investigating officer, who acts as the Government advocate in the case, causes formal charges to be prepared together with supporting specifications which set forth the ultimate particulars of the offenses and the places where and dates when they are alleged to have been committed, together with the requisite legal authority and jurisdiction. The charge and specifications are served upon the seaman involved directing him to appear at a certain time and place for formal hearing before an examiner. Despite the publication of the regulations by the Coast Guard, as hereinbefore referred to, it is quite surprising that much confusion apparently exists in the minds of seamen, both licensed and certificated which is also true in many instances on the part of counsel, between the investigative or advocacy functions of the Coast Guard and the formal hearings or adjudicative functions of that agency. There are probably many reasons for this situation, insofar as seamen are concerned, not the least of which is undoubtedly attributable to the failure of seamen of all ratings to familiarize themselves with these regulations and procedures until such time as they might, themselves, be involved in such proceedings. This confusion between the two basic functions of the Coast Guard is high lighted oftentimes, by references made in the course of the formal hearings to matters developed on prior investigations by both seamen and their counsel, on the fallacious and mistaken belief that the Examiner presiding over the hearing, is completely aware of and familiar with what occurred during the course of the prior investigation which might well have been the source of the charge and specification forming the basis of the formal hearing. The examiner knows nothing about the matters developed on any investigation. The record of an investigation is not admissible into evidence on the hearing as part of the Government's case over objection taken thereto by the seamen concerned. Moreover, in this connection, it is well to bear in mind that no matters of any kind can be considered by the examiner, in deciding the issues of any case before him, that does not come into the record with the knowledge of the parties to the hearing and subject to proper objection by them. No better way, it would seem to me, could be utilized to clarify the confusion existing in this regard, than to offer a brief, but inclusive explanation of the nature of these formal Coast Guard hearings against seamen's licenses and documents, with particular reference to the Administrative Procedure Act.

The Administrative Procedure Act became law upon the signature of President Truman on June 11, 1946. It was the result of some 10 years of intensive and exhaustive study by eminent jurists, lawyers, scholars, administrators, and committees of the Congress. It is a beacon in the field of administrative law, which, as Senator McCarren has so aptly put it, may be considered as a fourth branch of the Government to take its place with the executive, the legislative and the judicial. This act has set forth a uniform pattern of procedure to be followed by the many agencies of the Federal Government in the pursuit of their varied and sundry activities. It was most essential for the orderly execution of the affairs of Government, and necessary and efficacious for preserving and guaranteeing due process to the many citizens whose conduct and lives have been, and are being regulated and controlled, and increasingly so, by the Federal agencies. Prior to the enactment of the Administrative Procedure Act, the practices and procedures of many of the Federal Agencies were a mystery so to speak, to the countless persons appearing before them, and in not a few instances to lawyers themselves. The rules and regulations governing the procedures of these agencies, were to be found in no reasonable, ready, or designated references, but were to be located, if at all, in disorganized or mimeographed forms, none of which were properly or adequately promulgated, with the result that serious doubt arose that persons appearing before the agencies were receiving fair and adequate hearings or dispositions

of their problems. The provisions of the Administrative Procedure Act prescribe the basic procedure to be followed by all, with very few exceptions, of the Federal agencies. The Coast Guard is one of the agencies which comes within the purview and coverage of the act. By reason of its investigative and adjudicative functions, that agency peculiarly and most appropriately fits in with the orderly and reasonable requirements of the act.

The act is divided basically into two main parts, one called rule making, which may be considered legislative in nature, the other designated as adjudication, which may be thought of as judicial. It is not my purpose this evening to dwell at length on the rule making feature of the act, except to state that it deals with the manner in which agencies shall guarantee to the public an opportunity to participate in the rule making process. With stated exceptions, each agency is required to give public notice of substantive rules which it proposes to adopt, and to grant interested persons an opportunity to present their views on them. No substantive rules, with certain exceptions, may be made effective until at least 30 days after their publication in the Federal Register. The act also provides, that interested persons may petition an agency for the issuance, amendment, or repeal of a rule. Section 3 (a) of the act provides that all agencies of the Government must separately state and currently publish in the Federal Register their organizations, procedures, and substantive rules, and that no person shall in any manner, be required to resort to organization or procedure not so published. The foregoing features of the act were most salutary, aimed, as they were, at the unhealthy situation which existed, as has already been discussed, where agencies' rules and regulations were not adequately promulgated or made available in any reasonable or designated source.

We will concern ourselves in the main, with the adjudicative or judicial functions of the act, insofar as they affect the formal hearings of the Coast Guard concerned with the revocation and suspension of marine licenses and documents. The act establishes a sharp line of demarcation and cleavage between the judicial functions and the investigative or, what may be called, the prosecuting functions of the agency. You will recall, I am certain, that, not too many years ago in the Coast Guard, as had been the situation with its predecessor authority the Department of Commerce, Bureau of Marine Inspection and Navigation, the functions of investigation, of hearing and of appellate procedure were all handled by the basic personnel of that agency. There was a necessary and inevitable commingling of those functions to the extent that the role of investigator, prosecutor, judge, and appellate authority was entrusted to and exercised solely by the officials of those agencies, with the result that it appeared that such system was open, albeit unwittingly, to abuses to the real prejudice of persons appearing before those agencies. Insofar as the Coast Guard was concerned, since the functions of the Bureau of Marine Inspection and Navigation were transferred initially to it by Executive order in 1942, such functions were carried out by its regular and reserve officers. Perforce of the exigencies of the war conditions and of the essential and dire need for the maintenance of proper discipline in the merchant marine, the officers of the Coast Guard acted at times in the dual capacity of examining officer (equivalent at this time to investigating officer) and of hearing officer (equivalent at this time to civilian hearing examiner). By reason of the circumstances prevailing, many of the officers handling these matters were not legally trained and were not too familiar with the maritime field and the merchant marine. There were, however, a few experienced and practicing admiralty proctors who were commissioned specially by the Coast Guard by reason of their peculiar qualifications and training, so that they might be available to hear and determine cases arising out of marine casualties wherein masters, pilots, and licensed officers had been charged with negligence, inattention to duty, or incompetence in all of its phases, and, in addition, to indoctrinate and instruct, insofar as it was possible, other officers in the basic rudiments and principles of maritime law and procedure. To state it mildly, and yet emphatically, a workmanlike job, remarkable under the trying conditions and the general lack of adequately trained personnel, was achieved. However, there were murmurings of discontent in several quarters of the maritime field against the Coast Guard proceeding against seamen's licenses and documents, wherein the same officers were assigned to investigate, to prosecute, to judge, and determine the issues presented. There was no denying the seeming force of this position and contention and the necessity and advisability of establishing a procedure whereby the functions of the investigator and advocate must be separated distinctly and irrevocably from the adjudicative or judicial sphere of the

PRICE OF SURVIVAL

SAFETY can be dull as dish water or mighty exciting if your life is involved. The past few weeks have seen the sea taking its toll of boats once again. Fortunately everyone has got off in time. Just a few points worth remembering.

***INTERNATIONAL ORANGE*—Rescuers at sea have discovered it's much easier to spot drifting dories if they are painted International Orange. Crews on a number of boats have recently painted their dories this color. But there are still too many on the waterfront carrying dories whose faded color could easily be missed bobbing around at sea.**

***RELEASE GEAR*—It is obvious dories should be rigged so they can be released quickly. Still there are quite a few boats with dories carelessly rigged. They would take precious time to launch—if they could be launched at all.**

***RADAR TARGET*—Wooden hulled vessels make a much better target on the radar screen of a searching vessel if they have some large metal object hoisted to the foremast. If you are drifting and waiting for a search vessel to locate you, hoist any large metal object as high up the mast as possible.**

***RADIO USE*—Quick use of radio recently brought help to the *Wind's* survivors in two hours. Proper functioning of radio equipment is all-important today. It should be checked prior to making every trip. It is also a good insurance policy to see that every man aboard knows how to operate the radio and how to transfer from the ship-to-ship frequency to the distress frequency if necessary.**

***THE SEA* probes endlessly for weak points in man's defense of his life. Forehandedness—a few minutes careful checking of detail—pays off in survival.**

Courtesy "Maine Coast Fisherman," December 1951.

agency. Such separation of powers, which was not unwelcomed by the Coast Guard, which has ever striven to afford fair, just and impartial hearings to all seamen of the merchant marine, was accomplished by the Administrative Procedure Act.

This act in section 11, thereof, provides for the appointment, compensation, and tenure of civilian hearing examiners, who preside over and render decisions in the formal hearings authorized by statute. The appointment of examiners is made by and for each agency subject to the civil service and other laws to the extent not inconsistent with the Administrative Procedure Act. Examiners are to serve only as examiners, although in particular instances, especially where the volume of hearings under a given statute, in the case of the Coast Guard the statute being Revised Statute 4450, as amended, is not very great, examiners may be assigned other and additional duties which are not inconsistent with, or which do not interfere with, their duties and responsibilities as examiners. The examiners shall receive compensation prescribed by the Civil Service Commission independently of agency recommendations or ratings and in accordance with the Classification Act of 1923, as amended, with the exception of certain specified provisions thereof which are not applicable.

The question of proper, adequate, and fitting compensation to be paid examiners, is a most serious one, which should be of deep concern to all persons interested in our merchant marine, and, more particularly, to merchant seamen, both licensed and certificated. For, in the absence of such compensation, there is very little probability or likelihood that qualified, competent, and above all, experienced persons can be procured to act as examiners and preside as quasi-judicial officers in the determination of issues of fact and law and in the formulation and entering of just and adequate orders based thereon, which, in many instances, result in the revocation and suspension of seamen's licenses and documents, as a consequence of which the seamen so affected cannot pursue their calling or make a livelihood for themselves and their families aboard American merchant ships. Serious hearings of this nature, with their possible dire consequences, require and demand examiners of the highest possible qualifications of background, integrity, training, and experience. Such persons cannot be obtained, particularly from the lucrative maritime law field, unless fitting and adequate compensation be provided. Representative Walter, in discussing the Administrative Procedure Act in the Congress, recognized this important consideration, when he observed that the compensation paid examiners should be in such amount as not merely to attract good, but superior personnel, to fill those roles. For in the final analysis, not only the prestige of the agency, but, more importantly, the proper execution of the adjudicative provisions of the Administrative Procedure Act, which the Congress views with a jealous and paternal eye in the pardonable pride it takes in this act, which was described by Senator McCarren, as one of the most important measures that has been presented to the Congress of the United States in its history, depends in a large measure on the learned, conscientious, and impartial execution of their duties on the part of the examiners presiding over these formal Coast Guard hearings, which of necessity, are so intimately and inextricably bound up with the lives and fortunes of merchant seamen. That the Coast Guard has a real appreciation of the eminent qualifications of its 14 civilian examiners, who are all members of the bar of their respective States, may be gleaned from the fact that it has assigned to them as additional duties, the onerous and responsible tasks of presiding as chairmen and as the Government representatives on the Tripartite Security Appeal Boards which have been established by Executive Order 10173 and the regulations promulgated thereunder relating to the safeguarding of vessels, harbors, ports, and waterfront facilities of the United States. Besides the chairman, the membership of each of these Boards includes a labor and a management representative. These Boards have the duty of hearing appeals filed by merchant seamen and longshoremen from their classification as security risks made against them by the Commandant of the Coast Guard and to make a report of said appeal to the Commandant, containing a recommendation as to whether the classification as such risks made against said appellants should be retained or rescinded. The importance and difficulty of these duties can be easily appreciated when the present perils confronting the security of our country are considered.

To insure equality of participation among examiners in the hearing and deciding of cases under Revised Statute 4450, as amended, agencies are required to use them in rotation so far as may be practicable. They are removable by the agency involved only for good cause shown, established, and determined by the Civil Service Commission after opportunity for hearing and upon the record thereof.

The examiners in the Coast Guard work directly under the Commandant, whose administrative aide is the Chief Civilian Examiner in Washington, D. C. and are answerable to him alone. They may consult with the Commandant on all matters of law and policy. On the other hand, and in keeping with the provisions of the Administrative Procedure Act, the examiners may not consult with any person or party on any fact in issue unless upon notice and opportunity for all parties to participate. Moreover, the examiners shall not be responsible to or subject to the supervision or direction of any officer, employee, or agent engaged in the performance of investigative or prosecuting functions of the agency nor shall any officer, employee, or agent engaged in the performance of investigative or prosecuting functions for the agency in any case, or in any factually related case participate or advise in the decision to be rendered. The strict line of demarcation between the investigative or advocacy functions and the adjudicative functions, as provided for in the Administrative Procedure Act, and the practical independence of the examiners resulting therefrom, are clearly recognized by the Commandant in his letter of July 15, 1950, forming the foreword to the Marine Investigation Regulations and Suspension and Revocation Proceedings as contained in CG–200 wherein he stated, in the third paragraph thereof:

> General authority over and responsibility for the administration and enforcement of the laws and regulations governing marine investigations and suspension and revocation proceedings in the several Coast Guard districts are vested in and imposed upon the Coast Guard District Commanders in charge of such districts, *except over examiners conducting hearings necessary in adjudication of disciplinary cases.* [Italics is supplied.]

The formal hearings, as required and provided by Revised Statute 4450, as amended, and over which the examiners preside, are conducted in a fashion not dissimilar to the trial of admiralty causes and civil cases without a jury. The decorum permeating those trials is maintained in the Coast Guard hearings. The issues arising in each hearing are tried in the same judicial manner and with the same dispassionate consideration that is demanded and expected of the Federal judges. The seaman, be he licensed or certified, against whom the charge and specification have been alleged and who is called the person charged, and upon whom the charge and specification have been regularly served by the advocate of the Coast Guard, in the person of the investigating officer, is afforded all the rights and

privileges that are his under the Constitution and the law. He may be represented on the hearing by counsel of his own choosing, who may be a lawyer, shipping or union representative, or friend or relative, or he may voluntarily waive his right to such counsel and represent himself. He has the right to cross-examine any witness who testifies against him and may present his own witnesses and request that witnesses be subpoenaed for him. He also has the right to submit documentary evidence on his behalf and request permission to take the testimony of any absent witness by deposition on written interrogatories. He may testify on his own behalf or remain silent, and if he elects not to testify, such decision cannot be used against him on the issues of the case. He is afforded full opportunity to plead guilty or not guilty to the specification and the charge. If he enters a guilty plea he may make a statement, under oath or not under oath, setting forth any mitigating circumstances surrounding the perpetration of the admitted offense. After all the evidence is in and both sides rest, closing arguments may be made by both the investigating officer and the person charged, with the former opening and closing the argument. Both parties may submit proposed findings of fact and conclusions of law and briefs or memoranda in support of them. The examiner then renders his written decision or reserves making it, if he wishes to consider the evidence at greater length and examine the pertinent authorities, the various statutes, and decisions of the Federal and State courts as well as the decisions of the examiners and of the Commandant. The decision consists of specific findings of the ultimate facts and conclusions, the opinion, and order. If the charge and specification are found proved then the examiner ascertains from the investigating officer if the person charged has any prior record with the Coast Guard or its predecessor authority. Prior to this point in the hearing, the examiner has no knowledge as to whether the person charged has any prior record, lest in possessing it in advance of making his findings and conclusions he might be influenced therein to the prejudice of the person charged, should he have a poor record. It is incumbent on the examiner in each case to write an opinion setting forth at length the basis of his decision, the legal authorities and precedents relied upon, and the resolution of the conflicting evidence. The order is thereafter made and entered which provides for the revocation, suspension outright, suspension on probation, or part outright and part on probation, or an official admonition against the license or document involved, or a dismissal of the specification and the charge. The original decision must be served on the person charged.

It is important to point out that under the Administrative Procedure Act the Government has the burden of proving the charge and specification by competent, probative, and substantial evidence. Substantial evidence is more than a scintilla of evidence and has been defined as evidence, which on the whole record, is clearly substantial, plainly sufficient to support a finding or conclusion. It may be considered as somewhat less than the preponderance required in civil courts. The standards and principles of probity and reliability of evidence should be the same as prevailing in courts of law and equity in nonadministrative case. Lacking such evidence to support a specification and charge they will be dismissed.

If the decision is adverse to the person charged, he has the right of appeal therefrom to the Commandant of the Coast Guard within 30 days after the decision is rendered. The time within which an appeal may be taken cannot be extended, and if it is not perfected within the time prescribed, the right to appeal is irrevocably lost.

The Administrative Procedure Act spells out in full the law and procedure, as it already exists, with reference to judicial review of agency action. Such judicial review, if no statute prohibits it, is available to any person who has suffered a legal wrong because of any agency action or aggrieved by any such action within the meaning of any relevant statute. This appeal may be taken in the form of any special statutory review proceeding relevant to the subject matter in any court specified by the statute, or in the absence of any applicable form of legal action, in any court of competent jurisdiction. It is, of course, a condition precedent to the granting of judicial review that all administrative remedies be first exhausted. As can be appreciated readily, judicial review is the final and most effective checkrein on the administrative process.

Since November 1948, when the first examiners appointed under the Administrative Procedure Act were sworn in at New York by your distinguished member, Capt. William McGuire, who now holds the important and responsible position of director of the ferries of the city of New York, and who was then marine inspection officer for the Third Coast Guard District, some 1,300 formal hearings under Revised Statute 4450 have been conducted in New York. These do not include the many formal hearings held in the Ninth Coast Guard District by the New York examiners, covering the Great Lake ports of Buffalo, Cleveland, Toledo, Detroit, Chicago, Duluth, and St. Ignace among others. I might mention in passing, that I was the first examiner to operate in the Great Lakes area under the Administrative Procedure Act, presiding over some twenty odd hearings in that area in February and March of 1949. Many of these hearings, some of which have been publicized in the leading newspapers in New York and other cities, have been concerned with complex matters of law and fact involving issues, the determination of which, have had far reaching effects in the national maritime field, in the way of the safety of lives and property at sea, and of the maintenance of proper discipline on and of the safe navigation of merchant ships. Many of the decisions of the examiners in New York and in the other ports where civilian examiners are stationed; namely, Boston, Philadelphia, Baltimore, Norfolk, Jacksonville, New Orleans, San Francisco, and Seattle, have been appealed to the Commandant of the Coast Guard, numbering in the neighborhood of some 500 cases. The decisions of the examiners and those on appeal have built up a body of administrative law constituting precedents to be applied and followed in future formal hearings before the examiners. I dare say that in the course of the hearings that have been held, the leading admiralty proctors and attorneys and representatives of the seamen's unions have appeared and acted as counsel on behalf of the seamen involved in New York and in the cities of the Great Lakes' area. The relationship of the examiners and counsel have been almost invariably cordial and pleasant, and, while it is true that counsel have not always been in agreement with the decisions of the examiner, which is to be expected in a judicial proceeding where one side must win and the other lose, they have been of the practically unanimous opinion that the hearings themselves were impartially conducted and the decisions rendered therein in accordance with law and within the four corners of the record without fear or favor. This will be ever so, as the examiners exercise their judicial prerogatives in strict compliance with the provisions of the Administrative Procedure Act.

It has been good, by virtue of the kind invitation of your accomplished and eminent President, Capt. Edward Holden and of Captain McGuire, to have been able to appear and address so distinguished a group of American

master mariners on a subject, which in my opinion, is of the utmost importance to you in your calling as ships' masters, a proper understanding of which will insure that you will be able to approach any hearing, in which you might in the future become involved, with the confidence that is singularly possessed by those aware of their rights under the law. I sincerely trust that in some way, I have clarified for you the nature of the administrative process insofar as it affects you, and at the same time awakened within you a keener interest and desire to inquire further into this subject, to the end, that you, upon whom the progress of our country in peace and her security in war so much depend, will be ever ready to combat effectively and intelligently any effort which might be made to wrest from you the salutary protection and safeguards with which the Administrative Procedure Act envelops you and the priceless licenses that are yours.

UNIFORM TONNAGE MEASUREMENT

By Captain R. T. Merrill
U. S. Coast Guard Reserve (Retired)

Few Naval officers are thoroughly familiar with the terms "gross" and "net" register tonnage unless their work has to do with merchant shipping. These two "tonnages"—of the four used in connection with vessels—are solely measures applied to commercial craft. Further, they are arbitrary measures of no value in the actual working of a ship. Although they have a general relationship to the size of the vessel, they do not express either the capacity of the holds or the amount of weight that the ship will lift. Neither one is a concrete and factual figure, such as displacement tonnage. In fact, gross and net tonnages are not measures of weight at all; they are volumetric units of 100 cubic feet. As such they are wholly empirical yardsticks for purposes of taxation.

Upon one or the other of these two tonnages there will be levied, at some tariff rate per ton, the dues and charges for the use of harbors, canals, wharves, drydocks, and similar facilities throughout the life of the ship and in all parts of the world. In 20 years of active life a ship will incur such charges many, many times. Obviously it is highly desirable that a vessel's register tonnages shall be as small as is consonant with the service for which it is intended. Any qualified naval architect could accomplish this if the governing conditions permitted. Unfortunately, they do not.

As yardsticks for taxation purposes there is more than a little similarity between the rules for arriving at register tonnages and those for determining income tax. Each depends upon an intricate collection of laws, formulas, and interpretations, fully comprehensible only to an expert in the field. Such an expert can secure the least permissible tax base in either case for any given set of rules. But the ship is built for world-wide trading and the naval architect knows that there is no universally accepted system of tonnage measurement. There are, first, the national systems adopted by governments for their respective ships. These are generally similar but may differ in some important respects. Then there are the two canal systems, Suez and Panama, which differ radically from national systems and from each other. If the designer draws his plans to take the maximum advantage of one system of measurement, he is likely to find that he will be penalized under one of the other systems. From the economic standpoint world-wide uniformity of tonnage measurement would be highly desirable.

But, except for his over-all interest in the welfare of the American Merchant Marine, the naval officer has little direct concern with the economics of shipping; what should arouse his professional interest is the fact that all present systems of tonnage measurement tend, in some directions, to limit improvements in design, to "freeze" existing practices, and even to prejudice the safety or seaworthiness of the ship. It is this situation which furnishes the strongest argument for the long-overdue revision of tonnage rules.

To see how this condition came about it is necessary to go back into history because measurement rules, like so many maritime customs, have a long, intricate background and originated under conditions very different from those of today. Back in the 1400's the principal import commodity of England was wine, upon which the king levied his "customs." To make smuggling difficult Henry V decreed that wine would be imported only in casks or tuns of 252 gallons.[1] When taxes were extended to the ship itself they were based upon the number of tuns it could carry. This made necessary a means of determining that figure when the ship was loaded with other commodities.

Initially this was arrived at by multiplying length of keel by beam by depth and dividing the product by 100. Subsequently, because of the difficulty of measuring the depth of hold of a loaded vessel, depth was assumed to be half the beam and the formula became:

$$\text{tonnage} = \frac{L \times B \times B/2}{100}$$

The divisor of 100 was later changed to 94 and this formula, known as "Builders Old Measurement Rule" was adopted by Parliament in 1720. But the difficulty of measuring length of keel of a vessel afloat led to a further modification. Length of keel was arbitrarily assumed to be extreme over-all length of the ship less three-fifths of the beam. In 1773 the formula thus became:

$$\text{tonnage} = \frac{\left(L - \frac{3B}{5}\right) \times B \times \frac{B}{2}}{94}$$

It will be noted that the taxable dimensions were those of length and beam, with no penalty on depth or draft. The natural result illustrated clearly how tonnage rules can affect seaworthiness. Ships became narrow, deep, and cranky. Serious losses could be attributed directly to this rule. Royal Commissions were appointed in 1821, 1833, and 1849 to study the matter and propose improvements. None of these Commissions produced a satisfactory answer.

It remained for George Moorsom, a naval architect and the secretary of the 1849 Commission, to suggest in 1853 the system of measurement which is known by his name. He proposed to measure the entire internal capacity of the ship, using Simpson's rules, and so arrive at a gross tonnage expressed in cubic feet. From the gross tonnage he further proposed to deduct certain nonpaying spaces, such as as sail locker, machinery space, and bunkers, to arrive at a measure of the space available for cargo. This space he called the net tonnage. In order to make the least possible change in the existing tonnages of ships he pro-

[1] Thus is also established the long ton of 2,240 pounds.

posed to adjust his measured capacity by some constant so that the average net tonnage under the new rules would approximate that under the old. By experiment he found this constant to be 98.22 but for convenience he went to the round figure of 100, which is why gross and net "tons" are of 100 cubic feet.

It will be seen that, of the two tonnages, gross was generally a measure of total size of the vessel and therefore of the demand that it made upon the facility—harbor, dock, or whatever—while net tonnage initially at least bore a relation to its earning capacity or ability to pay. The Moorsom System was incorporated in the Merchant Shipping Act of 1854, and its theory was subsequently adopted, more or less intact, by all other maritime states and is still basically in effect. Only additions and amendments have bee nmade from time to time by different countries and by the two canals to meet changed conditions.

It must be borne in mind how enormously different shipping conditions were in 1854. Then there were probably not 100 steam vessels in the world, excluding inland craft, and the great majority were sidewheelers. They burned coal in low-pressure boilers. They had one 'tween deck and none of the intricate upper structures of today. Their bunkers were carried in boarded-off spaces to suit the needs of the voyage. Only a handful were of metal. All other ships of the time were wooden sailing ships. The construction complexities which later arose to make the 1854 rules a nightmare were nonexistent.

The character of the steam plants of a century ago and the variables in the bunker space were responsible for a treatment of the machinery spaces which still exists in United States and other national rules. Moorsom was fearful of a sailing ship with a small auxiliary steam engine as a "rule-beater." He accordingly provided that, if the actual measurement of the machinery space fell between 13 and 20 percent of the gross tonnage of the ship, a blanket deduction of 32 percent of the gross should be allowed for machinery and bunkers in arriving at the net. Otherwise the deduction would be 175 percent of the actual measurement of the machinery space itself.

It will be seen that, if the machinery space measures 14 percent of the ship's gross tonnage, the ship is allowed an automatic deduction in arriving at net tonnage equal to 32 percent of the gross. But if its machinery space measures 12 percent of the gross the deduction becomes only 20

MOPE AND DOPE

"Now I think of it—it would be easier just to fix the ladder."

percent. By this arbitrary allowance a compact, modern machinery space—which can easily be less than 12 percent of the gross—is disproportionately penalized in terms of net tonnage. In addition, the carriage of oil fuel in double bottoms, which are exempted from all measurement, makes the arbitrary bunker allowance rather ridiculous. The 13-percent minimum works against progress in engineering while, on the other hand, bunker allowance is startlingly excessive today.

In 1875 the House of Lords handed down a decision in the case of the small coasting steam *Bear* which had far-reaching effects on ship design. Under Moorsom's rules all enclosed spaces were measured in the gross tonnage. The Lords ruled that a space was not enclosed unless it could be secured watertight against the seas. If an opening was left in a space and could not be closed securely then that space was exempted from all measurement. This gave rise to the "shelterdecker" with "tonnage openings." In present practice if there is an opening in the upper deck of the width of the cargo hatches and 4 feet in length, and if this opening cannot be closed weathertight, all the space under the deck is exempted from both the gross and net tonnage. The same ruling applies to forecastles and poops if they cannot be securely closed with watertight doors. The effect therefore is to penalize the safe closure of a space by including the space in the ship's tonnages.

Less material, although also bearing on the safety of the vessel, is the limitation on the amount of water ballast. Panama rules and those of the United States exempt all spaces which can be used solely for water ballast. Suez rules and those of most foreign nations limit the deduction of ballast tanks above the inner bottom to some empirical proportion of gross tonnage. Since, by definition, ballast tanks cannot be used for any other purpose there is no reason for this limitation which may penalize a vessel for having a ballast capacity essential to her sea-keeping qualities or even her safety.

Some of the defects of the Moorsom rules were early recognized, particularly the machinery space deduction.[2] When the Suez Canal was opened in 1869 it fixed the deduction on a basis of 175 percent of the actual measurement of the machinery spaces and further limited it to a proportion of the gross tonnage. In other ways Suez rules differ from Moorsom's, but the effort to overcome obvious shortcomings only resulted in the creation of another set of highly involved rules of its own.

Our own national rules contain a radical difference from those of other nations in regard to the treatment of passenger ships. Under R. S. 4151 all passenger cabins and staterooms constructed above the first deck which is not a deck to the hull are exempted from inclusion in the gross and therefore, of course, from the net. Maritime countries ordinarily accept a ship's tonnage certificate when assessing dues providing the tonnage was arrived at by a system approximating that in force in the country whose port the ship enters. Our passenger ships' tonnage is arrived at on such a drastically different basis that usually each ship carries an appendix to its certificate showing the spaces exempted under this special United States rule and foreign charges are levied on what would be the foreign measurement. An amusing example occurred in connection with the old *Leviathan*.

As the German *Vaterland* it measured by German rules 23,500 net and 49,000 gross. When it was reconditioned after World War I, Albert Lasker, the Chairman of the Shipping Board, determined that it should be the largest liner in the world (just as it became the fastest by running trials with the Gulf Stream) and so, by not taking advantage of all exemptions, it emerged with a net of 27,700 and a gross of 54,000. Later in private hands, her operators tired of paying port charges on the inflated figure and had her remeasured under American rules which produced a net of 15,800 and a gross of 45,000. Thus, without undergoing any major structural changes and wholly on the basis of different measurement systems, the ship had three widely varying sets of tonnages. However, the Southampton authorities took a dim view of the sudden drop in the net tonnage on which their port charges were based and quite properly insisted on payment on the basis of British measurement.

In 1913, when the Panama Canal was approaching completion, Dr. Emory Johnson devised a set of measurement rules for use by that canal which was intended to avoid many of the defects of the earlier systems. Although based on the Moorsom principles they abolished the exemptions for spaces with "tonnage openings"—the so-called shelter-decker—and imposed no limitations on water ballast. As the most modern set of rules they were probably, as first drawn up, the least objectionable of any rules based on the Moorsom system. In 1938, however, under pressure from American passenger lines, the Johnson rules were modified to include some of the exemptions of passenger superstructures contained in the United States rules. This change seriously weakened the erstwhile position of the Panama rules as being those most likely to gain general acceptance.

In addition to the specific defects in the various systems, which could be clearly pin pointed, a general objection to all systems had arisen out of their complexity and lack of clarity. These had grown as modern naval architecture got further and further away from the simple ships of a century before and required governments constantly to adjust their rules, or the application of their rules, to meet special cases not provided for. This, in turn, led to an increasing number of "interpretations" of rules by the various national measurement officials and these interpretations were often strongly protested by the shipowner affected. The end result was to make tonnage measurement almost an esoteric art, comprehensible only to its professional practitioners.

All naval architects and shipbuilders deplored the situation but no one could propose a means of improving it. The measurement experts clung to the belief that the Moorsom system could be made satisfactory by minor modifications to suit their respective pet theories, although these latter seemed to differ as widely as possible. The shipping industry felt that there was little gain in exchanging one set of technicalities for another, and that what was needed was a sweeping change in the whole approach.

The League of Nations struggled for years with the problem and in 1939 brought out a set of rules closely patterned on the British application of the Moorsom system, but the world crisis in 1939 relegated them to the background. In 1945, when the United States commenced its studies in preparation for a Safety at Sea Conference, it placed the subject of revised tonnage measurement on the agenda. Opposition developed from the Panama Canal authorities, who sincerely believed that their rules were the best that could be devised, and from American shipping interests who feared that any change would work to their disadvantage. Accordingly the matter was dropped by the United States as a subject to be handled by the Safety Conference.

In 1946 a conference was held in Oslo between certain North European nations and this conference expressed a guarded approval of the Panama Canal rules as originally written, although preferring the League of Nations' suggestion. In 1947 the United

[2] By which many British tugs had negative net tonnage.

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States sent unofficial observers to another Oslo Conference, to explore the possibility of adopting the Panama rules generally. Because of the 1938 changes these were not acceptable to the conference, which specifically adhered to the League of Nations' system. Nevertheless the United States observers felt that this country was making a mistake in not participating more actively in international tonnage measurement conferences.

In 1948 a third conference was held at Oslo to which the United States sent accredited observers. The Department of State invited the shipping industry to nominate one of these observers and Mr. Howard C. Towle, a distinguished naval architect who had made an intensive study of measurement rules, was selected. As a result of this mission the feeling spread throughout shipping circles that it might be found possible to improve measurement rules without injurious results to American shipping. Similarly,the Panama Canal authorities took a more open-minded view of possible modification of their rules. These were two great forward steps toward the active participation of the United States in the entire problem.

In 1949 the United Nations, through its Economic and Social Council, invited its member nations to express themselves on the desirability of a general adoption of the so-called Oslo, or League of Nations, rules. This request required definite action on the part of this country. Accordingly an interdepartmental working group was set up to draft a reply. This group included representatives of the American Bureau of Shipping, Association of American Ship Owners, Lake Carriers' Association, National Federation of American Shipping, Shipbuilders Council of America, and Panama Canal, as well as of all interested Government agencies.

As a result of this meeting the United States Government advised the Secretary General of the United Nations that it was in favor of uniform tonnage measurement rules provided they did not restrict freedom of design leading to increased seaworthiness and safety, but that the Oslo rules, in its opinion, did not meet this requirement. The United States further stated that, if an immediate proposal was required, it would suggest the Panama Rules, but that it would prefer to postpone action until it had had time to make an intensive study and submit definitive proposals.

The effect of this reply is twofold. First, it shelves the Oslo rules for the time being, since no universal system can be adopted without the participation of the United States. Second it places squarely upon the United States, by its own action, the responsibility of putting forward an alternative and acceptable system within a reasonable time. Failure to do so would be stultifying. There the matter rests. A conference at Stockholm in June 1950, discussed proposed interpretations and reached numerous conclusions, some of which would lead to greater uniformity of existing rules, but suggested few basic changes. The next conference will be held in 1952, at which time we should be able to make positive suggestions.

The basic principles that should govern an improved tonnage measurement system are simple. Obviously it must be internationally acceptable, in order to secure adoption. This will mean the continuance of gross and net tonnages (several proposals have been advanced to have only one tonnage), and the new tonnages must approximate the old, in order that the thousands of tables of charges throughout the world will not be thrown into chaos. Even so, it is probable that existing ships will have to be given the option of accepting the new measurement or of retaining their old ones during the balance of their lives.

A new system must not penalize maximum safety. This would do away with the shelter-deck exemptions and the ballast-tank limitations. It also should not operate against scientific or engineering progress, as does the machinery-space deduction. The rules should be equitable, ship to ship, and should be clear and not subject to individual interpretation. So far as possible the tonnages should be calculable from the ships' plans rather than require tedious actual measurement.

The solution of this problem is a challenge to the best efforts of all interested. It probably can only be found in some radical departure from previous practices. If a solution is reached it will lead to better, safer, and more efficient merchant vessels by freeing designers from some of the restraints presently imposed by tonnage rules. The Navy naturally has a substantial interest in such a result.

CAPE HATTERAS LIGHTHOUSE

On July 10, 1797, Congress appropriated $44,000 "for erecting a lighthouse on the head land of Cape Hatteras and a lighted beacon on Shell Castle Island, in the harbor of Ocracoke in the State of North Carolina."

The Cape Hatteras Lighthouse cost $14,302 to build and the Shell Castle Island Lighthouse was built from part of the surplus. Both were completed in 1798.

The Cape Hatteras light marked very dangerous shoals which extend from the cape for a distance of 10 nautical miles. The original tower was built of dark sandstone and retained its natural color. The original light consisted of 18 lamps; with 14-inch reflectors, and was 112 feet above sea level. It was visible in clear weather for a distance of 18 miles.

In July 1851, Lt. David D. Porter, USN, reported as follows:

"Hatteras light, the most important on our coast is, without doubt, the *worst* light in the world. Cape Hatteras is the point made by all vessels going to the south, and also coming from that direction; the current of the Gulf Stream runs so close to the outer point of the shoals that vessels double as close round the breakers as possible, to avoid its influence. The only guide they have is the light, to tell them when up with the shoals; but I have always had so little confidence in it, that I have been guided by the lead, without the use of which, in fact, no vessel should pass Hatteras. The first nine trips I made I never saw Hatteras light at all, though frequently passing in sight of the breakers, and when I did see it, I could not tell it from a steamer's light, excepting that the steamer's lights are much brighter. It has improved much latterly, but is still a wretched light. It is all important that Hatteras should be provided with a *revolving* light of great intensity, and that the light be raised 15 feet higher than at present. Twenty-four steamship's lights, of great brilliancy, pass this point in 1 month, nearly at the rate of one every night (they all pass at night) and it can be seen how easily a vessel may be deceived by taking a steamer's light for a light on shore." The improvement in the light referred to had begun in 1845 when the reflectors were changed from 14 to 15 inch. In 1848 the 18 lamps were changed to 15 lamps with 21-inch reflectors and the light had become visible in clear weather at a distance of 20 miles. In 1854 a first-order Fresnel lens with flashing white light was substituted for the old reflecting apparatus, and the tower was raised to 150 feet.

In 1860 the Lighthouse Board reported that Cape Hatteras Lighthouse required protection, due to the outbreak of the Civil War. In 1862 the Board reported "Cape Hatteras, lens and lantern destroyed, light reexhibited."

Between 1867 and 1870 Congress appropriated $167,000 in three annual sums, for rebuilding Cape Hatteras

Lighthouse. The new tower, from which the first-order light was first exhibited December 16, 1871, was the highest brick lighthouse tower in the world. It was 193 feet above ground and the focal height of the light 191 feet above water. The old tower "being no longer of any use and in danger of falling during some heavy storm" was blown up and totally destroyed in February 1872.

In the spring of 1879 the tower was struck by lightning. Cracks subsequently appeared in the masonry walls, which was remedied by placing a metal rod to connect the iron work of the tower with an iron disk sunk in the ground. In 1912 the candlepower of the light was increased from 27,000 to 80,000.

Ever since the completion of the new tower in 1870, there had begun a very gradual encroachment of the sea upon the beach. This did not become serious, however, until 1919, when the high water line had advanced to about 300 feet from the base of the tower. Since that time the surf had gnawed steadily toward the base of the tower until in 1935, the site was finally reached by the surf. Several attempts were made to arrest this erosion, but dikes and breakwaters had been of no avail. In 1935, therefore, the tower light was replaced by a light on a skeleton steel tower placed farther back from the sea on a sand dune, 166 feet above the sea, and visible for 19 miles. The old tower was then abandoned to the custody of the National Park Service.

The Civilian Conservation Corps and Works Progress Administration erected a series of wooden revetments which checked the wash that was carrying away the beach. In 1942 the Coast Guard reassumed its control over the tower and manned it as a lookout station until 1945. The old tower was now 500 to 900 feet inland from the sea and again tenable as a site for the light which was placed in commission January 23, 1950.

The new light consists of a 36-inch aviation-type rotating beacon of 250,000 candlepower, visible 20 miles, and flashing white every 15 seconds. The skeleton steel tower has been retained to guard against the time that the brick tower may again be endangered by erosion and thus require that the light again be moved.

MANUAL ARTIFICIAL RESPIRATION

The Holger Nielsen method of manual artificial respiration has been approved by the Commandant for use by the Coast Guard. Detailed instructions will be promulgated which will require the substitution of this method for those described in Manual of Artificial Respiration (CG-139). In the meantime, it is being published herein, in order that all may familiarize themselves with this method as soon as possible. *(Editor's note.)*

Use of artificial respiration.—Artificial respiration is used to induce breathing in persons whose respiration has stopped. The common causes of respiratory failure where artificial respiration has value, are drowning, suffocation, electric shock, and poisoning by illuminating gas or carbon monoxide. Artificial respiration is also used occasionally in certain illnesses, such as poliomyelitis. Poison gases and nerve gases used in warfare may cause respiration to cease. Attempts to start respiration after breathing has stopped, are made either by mechanical or manual methods. Mechanical methods require the use of machines which usually are not on hand when most needed. Manual artificial respiration which can be conducted by anyone familiar with the methods can be started immediately and can be continued until breathing has started or until mechanical respirators become available.

Present method.—The present method of manual artificial respiration used extensively in the United States is the Schafer prone pressure method. This is the method used by almost all lifeguards and industries. It consists of placing the victim face downward and then having the operator compress the victim's chest by pressure on the lower ribs of the back. This pushes air out of the chest and hence is a "push" method. It depends upon the elastic recoil of the chest and internal organs for air to be drawn into the lungs. Since this latter process is not given assistance by the operator, there is no "pull" maneuver in the Schafer method.

Other methods.—There are several other methods of manual artificial respiration which are widely used in Europe and by skilled anesthetists in the United States, but seldom used by lay personnel. These other methods all follow the principle of both pushing the air from the chest, as in the Schafer method, but in addition incorporating a second step which then pulls the air into the chest. These other methods are: (1) The back-pressure, arm-lift method (Holger Nielsen), in which the patient is placed face down with the hands under the cheek and the operator rhythmically presses on the back of the chest and then pulls upward on the arms; (2) the back-pressure, hip-lift, or hip-roll method in which the patient is placed face down and the operator rhythmically presses on the back and then raises the hips or rolls the hips upward on the operator's thigh; (3) the modified Silvester method, in which the patient is placed face upward and the operator rhythmically presses on the abdomen and then manipulates the arms upward.

Comparison of methods.—Recent research activities have led to the following conclusions:

(*a*) The back-pressure, arm-lift method of manual artificial respiration (Holger Nielsen) is the method of choice.

(*b*) The back-pressure, hip-lift method of manual artificial respiration should be used, when indicated, on victims with injuries of the arms.

(*c*) The Silvester method of manual artificial respiration, with the victim lying on his back, should only be used when the victim cannot be placed face down.

(*d*) The Schafer method, which is less effective, should be supplanted by the back-pressure, arm-lift method.

Agencies adopting new method.—As a result of the recent experimental work on manual artificial respiration, the new method has been adopted by the Armed Forces, the American National Red Cross, the Federal Civil Defense Administration, the Public Health Service, the Bureau of Mines, the Boy Scouts and Girl Scouts of America, the American Telephone & Telegraph Co., the Council on Physical Medicine and Rehabilitation of the American Medical Association, and others. Additional national agencies, utilities corporations, fire departments, and police departments will probably adopt the method later.

Effective date.—Although the back-pressure, arm-lift method of manual artificial respiration is being adopted by many agencies, it cannot be taught to all operators overnight. However, it will supplant the Schafer method as rapidly as the adopting agencies can instruct their teachers and operators. Meanwhile, the Schafer method will continue to be used. It must be borne in mind that, although the back-pressure, arm-lift method of manual artificial respiration is considered to be superior, the Schafer method has saved many lives and should not be abandoned until the new method has been learned.

Research leading to adoption of new method.

(a) *Historical.*—Although the Schafer method of manual artificial respiration has been used extensively in the United States for many years, there have been a large number of research investigations into the entire artificial respiration problem. Before World War II, observations by a growing number of investigators cast doubt upon the belief that the prone pressure method was of superior effectiveness. Then during and soon after World War II important contributions to our knowledge of respiratory physiology and of the asphyxial process were made by investigators working under grants from the Armed Forces, particularly the Air Force. This work gave further evidence that a change from the prone pressure method should be made. In 1947, the American Red Cross requested the Council on Physical Medicine of the American Medical Association to review the problem. A committee of the council reported that the prone pressure method appeared to be inferior to certain other methods, but recommended that further study be made before selecting a method to be adopted. Accordingly, the Red Cross made grants during 1948 and 1949 to evaluate various methods of artificial respiration. The work so done was highly fruitful. Meanwhile, the military services were also pursuing problems of respiration and asphyxia. Then, approximately 2 years ago, the Army Chemical Corps had to consider the problem of giving artificial respiration to a large number of people in the event of warfare when poison gas or nerve gas might be used. In view of the growing question of the most effective method of artificial respiration the Chemical Laboratories, Army Chemical Center, Md., requested Dr. David Bruce Dill, scientific director of the laboratories, to organize concerted research into the problem and recommend the best possible method of artificial respiration.

(b) *Research teams.*—Dr. Dill made immediate arrangements with the following experts to organize research teams and to begin research in January 1950:

(1) Dr. Julius H. Comree, professor of physiology, University of Pennsylvania, Graduate School of Medicine.
(2) Dr. Archer S. Gordon, University of Illinois Medical School.
(3) Dr. Peter V. Karpovich, professor of physiology, Springfield College.
(4) Dr. James L. Whittenberger, professor of physiology, Harvard University.

(c) *Type of experimental work.*—Many studies were made using the various methods of artificial respiration. Included in the studies were animals, volunteers holding their breath, freshly deceased cadavers, and sick or injured patients who had stopped breathing. Experiments were also performed upon volunteers who were given drugs which completely paralyzed their ability to breathe for a short period of time. These experiments, which were extremely necessary, were conducted under carefully controlled conditions. The ease and effectiveness of teaching the various methods of artificial respiration and ease or difficulty in administering the various methods of artificial respiration were also tested.

(d) *Results of experimental work.*—The results fell into three main classes:

(1) Experiments to determine which method gave the greatest exchange of air;
(2) which method was the easiest to learn; and
(3) which method was the easiest to perform.

These were as follows: (1) When measurements were taken to determine how much air was exchanged through the mouth in the various methods of manual artificial respiration, it was determined that when the Schafer method was used, only 485 cc.'s, or approximately 1 pint, of air was exchanged with each application of pressure. Compared to this, the push-pull methods, such as the back-pressure, arm-lift, or hip-lift; or the Silvester method with the individual lying on his back, provided an exchange of over 1,000 cc.'s, or over 1 quart, of air with such application of pressure combined with arm or hip manipulation. Inasmuch as the number of cycles of manipulation per minute are essentially the same in all methods, this revealed that the Schafer method was less than one-half as effective as the other methods in the exchange of air. Experiments also revealed that the effectiveness of the Schafer method depended upon the natural tone and elasticity of the victim's muscles. This is due to the fact that the pressure on the small of the back, used in this method, expels air from lungs and it is only when the ribs spring back into place that air is sucked back in. However, when a victim is deeply asphyxiated and near death, there is a loss of natural muscle tone, less elasticity of the chest, and less tendency for air to be sucked in. This makes the Schafer method least effective when most needed.

Many deaths in the asphyxiated, and especially in electrocution, are due to ventricular fibrillation, or heart failure, and sometimes this cannot be avoided. However, it is less liable to happen if there is sufficient oxygen in the blood. The exchange of a large volume of air in manual artificial respiration helps keep the blood oxygen level high; (2) experiments with ease of teaching the various methods of manual artificial respiration indicate the Schafer method is the easiest to teach. However, the teaching of the back-pressure arm-lift and back-pressure, hip-life methods was only slightly more difficult and this method can be taught to most people in a period of approximately ten minutes; (3) experiments relating to ease of operation revealed that both the Schafer method and the back-pressure arm-lift method could be performed by a half-grown child or a woman upon a heavy adult victim without undue fatigue. The back-pressure, hip-lift method, however, was very fatiguing and probably could not be performed by a light individual upon a heavy adult. Experiments with the modified Silvester method of artificial respiration, where the victim is placed on his back, revealed that it had one serious drawback. That was the inability to keep the throat clear. Although the method could be used by skilled anesthetists, it could not be used extensively by lay personnel due to the fact that the victim's tongue, or water and debris might stop up the air passages.

From these experimental results it was determined that the back-pressure, arm-lift method of manual artificial respiration provides for sufficient exchange of air, can be easily taught, and easily performed, and therefore is the method of choice. In addition, inquiry to the Danish and Norwegian Red Cross Societies where this method had been used for years, revealed that there had never been any injuries in the practice of the method or in its actual use in resuscitation of the asphyxiated. The only potential drawback to the use of this method would be in cases where the victim had severely injured arms which could not be raised. In this case, results of the experiments indicate that the back-pressure, hip-lift method should be used. Finally, results of the experiments indicate that the modified Silvester method, or supine method, should only be used when an individual cannot be placed on his stomach; i. e., after operations.

(e) *Action of National Research Council.*—In view of the compelling evidence and the recommendations made to the Department of Defense in the Chemical Corps Medical Laboratories Research Report No. 79, in August 1951, the American Red Cross, in cooperation with the Public Health Service, requested the National Research Council to call a conference of agencies interested in the problem of artificial respiration. At this conference, held on October 1, 1951, top scientists and authorities presented findings of the re-

MY SAFETY PROGRAM

- I WILL work safely on my job.
- I WILL also help others work safely.
- I WILL observe safe practices in my home and will teach safety to my family.
- I WILL check my home periodically, and will correct the hazards I find.
- I WILL be a careful, law-abiding driver, and will teach my family to drive safely.
- I WILL support the safety work of my community.

SO HELP ME!

search, and agency representatives had an opportunity to consider thoroughly the problem of manual artificial respiration. As a result of this conference the following statement was made:

> *"It is the recommendation of the Conference that the method generally preferred is the arm-lift, back-pressure[1] method originally described by Holger Nielsen. That other methods acceptable under special circumstances include the hip-lift, back-pressure method and the modified Silvester method. The techniques of the first two methods recommended are those described in Chemical Corps Laboratories report No. 79, manual artificial respiration, August 1951, except that the first phase will be expiratory rather than inspiratory. The technique of the Silvester method is described in the Bureau of Mines First-Aid Manual."*

(f) *Adoption of new method.*—Because manual artificial respiration is taught and practiced so widely and by so many different organizations including the Armed Forces, Red Cross, various industries, Boy Scouts, Girl Scouts, police and fire departments, and others, it was apparent that the

Fig. 1

To start the cycle the operator places his hands on the victim's back. The thumbs just touch. The heels of the hands are just below a line running between the armpits.

back-pressure, arm-lift method of manual artificial respiration could not be adopted overnight, and that the Schafer method would have to be continued until it could be supplanted by the more effective method. Therefore, on October 2, a meeting of military and civilian representatives of organizations interested in the problem of artificial respiration was held at Headquarters, American National Red Cross, to determine the most effective method of disseminating information on the back-pressure, armlift method to the agencies and personnel, who would use it. Also,

[1] At the implementation meeting held on October 2, 1951, at the American National Red Cross Headquarters, it was agreed that this term should be altered to "back-pressure arm-lift" to indicate that back pressure should be applied first as a means of clearing the airway.

Fig. 2

The operator then rocks forward slowly, keeping the elbows straight, until his arms are approximately vertical, exerting steady pressure upon the chest.

immediate plans were made for teaching and publicizing the newly advocated method. At this time manuals are being printed, instructors indoctrinated, and the back-pressure, arm-lift (Holger Nielsen) method will soon be taught on a large scale.

General instructions for manual artificial respiration.—Certain general principles must always be kept in mind in performing any method of artificial respiration.

(a) Time is of prime importance—seconds count—do not take time to move the victim to a more satisfactory place; begin at once. Do not delay resuscitation to loosen clothes, warm the victim, apply stimulants, etc. These are secondary to the main purpose of getting air into the victim's lungs.

(b) Quickly place the victim in the prone position; that is, on his abdomen with the face turned to one side, the elbows bent, and the cheek resting on the back of the hand.

(c) Quickly sweep your fingers into the victim's mouth, removing froth and debris and drawing the tongue forward.

(d) Begin artificial respiration and continue it rhythmically and uninterrupted until spontaneous breathing starts or the patient is pronounced dead.

(e) As soon as the subject is breathing for himself, or when additional help is available, see that the clothing is loosened (or removed, if wet) and the patient is kept warm. However, do not interrupt the rhythmical artificial respiration to accomplish these measures.

(f) If the victim begins to breathe on his own, adjust your timing to assist him. Do not fight the victim's attempts to breathe. Synchronize your efforts with his.

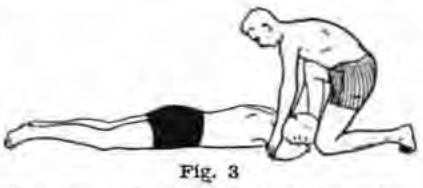

Fig. 3

Then he rocks backward, slowly sliding his hands to the victim's arms just above the elbows.

(g) Do not wait for a mechanical resuscitator, but when an approved model is available use it. A well-performed, "push-pull" type manual method is immediately available and effective and accomplishes adequate ventilation. The mechanical resuscitator is no more effective than a properly performed "push-pull" manual technique. The most important advantage of good mechanical resuscitators are that they require less skill to operate, are not fatiguing and can furnish 100 percent oxygen. There are other advantages. Since the resuscitator need only be applied to a patient's face, it can be employed when physical manipulation of the body is impossible or would be harmful, as during surgical procedures, in accident cases with extensive burns, broken vertebrae, ribs, arms, etc., for victims trapped under debris of excavations, overturned vehicles, etc., and during transportation of the victim. Furthermore, some resuscitators signal when the airway is obstructed, and provide an aspirator.

Fig. 4

Continuing to rock backward, he raises the arms until resistance and tension are felt at the victim's shoulder. Then he drops the arms and thus completes a full cycle.

ARM-LIFT, BACK-PRESSURE (side view). The cycles are repeated 12 times per minute, the compression phases being of equal length, and the release periods of minimum duration.

A standard technique for executing the back-pressure, arm-lift method of artificial respiration. (See figs.)

(a) The victim is placed in the face-down (prone) position. Both elbows are bent and the hands are placed upon each other. The face is turned to one side and placed upon the hands.

(b) Quickly sweep the fingers through the mouth to clear out froth and debris and bring the tongue forward.

(c) Kneel at the head of the victim on either the right or the left knee. The knee is placed close to the arm and just to the side of the victim's

Fig. 5

head. The opposite foot is placed near the elbow. If it is more comfortable, the operator may kneel on both knees, one on either side of the subject's head.

(d) Place your hands on the victim's arms, just above the elbows. He may be gasped anywhere along the arm, up to the armpit. However, the position just above the elbows seems best for most purposes.

(e) Now rock backward and as you do so draw the victim's arms upward and toward you. When doing this, do not bend your elbows; keep your arms straight and as you rock backward the victim's arms will naturally be drawn upward and toward you. Put just enough lift on the arms to feel resistance and tension at the victim's shoulders. The arm lift pulls on the chest muscles, arches the back, and relieves the weight on the chest; this allows air to be sucked in.

(f) Carefully replace the arms on the ground.

(g) Now slide your hands up along the victim's arms and shoulders and allow them to come to rest over the midback, just below the shoulder blades. The fingers should be spread, with the thumbs pointed toward and an inch or two away from the spine. Rock forward and allow the weight of the upper part of the body to exert slow, steady even pressure downward on the hands. This forces air out of the lungs. The elbows should be kept straight and the pressure exerted almost directly downward on the back. Do not exert sudden or too much pressure, nor should you place the hands high on the back or on the shoulder blades.

(h) Release the pressure quickly. This is done by "peeling" the hands from the chest without giving any extra push with the release.

Fig. 6

(i) Rock backward and allow your hands to again come to rest on the arms just above the elbows. You are now ready to repeat the cycle.

(j) This cycle should be repeated about ten to twelve times per minute to the rhythm of (1) lift— (2) release— (3) press— (4) release. Each of these four phases occupies about 1½ seconds, giving a constant steady, uniform rate, at 5 or 6 seconds per cycle.

(k) Remember that either knee, or both knees may be used; or the rescuer may shift knees during the procedure with no break in the steady rhythm. Also note how the rescuer rocks backward with the arm-lift, and forward with the back-pressure. This rocking motion helps keep the rhythm, and adds to the ease of operation.

Where arm injuries render the push-and-pull method inoperative, the back-pressure, hip-lift method may be used. (See figs. 5–8.)

(a) Place the victim in the face-down (prone) position with the elbows bent. Turn the face to one side and rest it on the back of one hand. The other hand is alongside and above the head.

(b) Quickly sweep the fingers through the mouth to clear out froth and debris and bring the tongue forward.

(c) Kneel on either the right or the left knee at the level of the patient's hips. Straddle the victim, and place your foot on the ground near his opposite hip. Thus the heel is directly opposite the kneeling knee.

(d) Place your hands on the victim's hips. This will be several inches below the waist. *Do not grasp the waist.* Just slip your fingers under the hip bones where they touch the floor.

(e) Now lift both hips upward and toward you approximately 4 to 6 inches from the ground. This allows the abdomen to sag downward, the diaphragm descends, and air is sucked into the lungs. Be sure to keep your arms straight as you lift. In this way you do the work of lifting with your shoulder and back instead of with your arms. Do not bend your elbows as you lift the hips.

(f) Carefully replace the hips on the ground in their original position. Do not *just drop* the subject.

(g) Now place your hands, with the fingers spread, on the midback just below the shoulder blades. The two thumbs point toward each other and are 1 to 2 inches from the spine, with the fingers pointed outward. Lean forward and allow the weight of the upper part of the body to exert slow, steady, even pressure downward on

Fig. 7

the hands. This forces air out of the lungs. The elbows should be kept straight and the pressure exerted almost directly downward. Do not exert sudden or too much pressure, nor should you place the hands high on the back or on the shoulder blades.

(h) Then, release the pressure by quickly removing the hands. This is done by "peeling" the hands from the chest without giving an extra push with the release.

(i) As you release, rock backward and allow your hands to again come to rest on the hips. You are now ready to repeat the cycle.

(j) This cycle should be repeated about 10 to 12 times per minute to the rhythm of (1) lift— (2) release— (3) press— (4) release. Each of these four phases occupies about 1½ seconds, giving a constant steady, uniform rate, at 5 or 6 seconds per cycle.

(k) If the knee on which the procedure is begun becomes tired or uncomfortable, it is possible to switch to the opposite knee with practically no break in the steady rhythm. The best time for changing knees is immediately following the press—release.

(l) The operator should continue the method as long as possible. If he becomes tired he should continue the Back-Pressure phase alone, at a slightly faster rate (12 to 15) resuming the hip-lift as soon as possible, or even performing a hip-lift after each second, third, or fourth back-pressure, or as often as possible.

(m) If a second person is available, he can "take-over" with practically no break in the rhythm. He does this by "coming-in" on the side opposite where the present operator is kneeling. After one of the lift-release phases he begins the press-release while the former rescuer moves away. He should be in position by the time

Fig. 8

the next hip-lift phase of the cycle is due.

(n) One must not depend on or spend time seeking any apparatus to supplement or assist these maneuvers. However, if a belt, towel, shirt, rope, etc., is available it may be passed beneath the hips (NOTE.—Not beneath the waist) and used for lifting. This belt or towel should be grasped near the body as this prevents slipping which may occur if the ends are held. Except for the addition of the towel or belt, the method is done as described above.

(o) The hip-lift, back-pressure method can be performed from the standing position. However, this is not advisable since it may result in back strain to the operator during the lift or excessive pressure on the victim's back during the back-pressure phase.

BUCKETS IN DORIES

We recently mentioned the Coast Guard suggestion that fishing boats hoist a metal object to the foremast when they know someone is searching for them with radar.

Now Capt. W. J. Keating, of Salem, master of the collier *Isaac T. Mann* tells us of his experience searching for four survivors of the trawler *Myrna Loy*, recently lost off Cape Henry.

Each time his radar swept the area where the dory was supposed to be two small echoes showed on the screen. By running down the echoes he picked up the dory and the men.

"They had two buckets in the boat," he says. "If they had not been there, we might not have picked them up at all."

It might be a good idea to check your dories and make sure there are a couple of buckets lashed aboard.—*Courtesy, Maine Coast Fisherman, January 1952.*

LESSONS FROM CASUALTIES

STAND BY FOR DISASTER

The study of casualty investigation records of collisions involving vessels underway in fog or reduced visibility, repeatedly indicate that there is a widespread practice of placing the engine order telegraph on standby with little or no reduction in speed. The Pilot Rules and Rules to Prevent Collisions of Vessels are very clear in this situation, and are worded similarly for Inland Waters, Great Lakes and Western Rivers as well as for International Waters. Article 16, Inland and International Rules, quoted in part reads, "Every vessel shall, in a fog, mist, falling snow, or heavy rain storms go at a moderate speed * * *." How ridiculous it seems, to believe that a vessel which was proceeding at full speed before entering fog is a vessel proceeding at moderate speed while actually in fog merely because "standby" was rung up and answered on her telegraph. One may be led to suppose that the purpose of ringing up "standby" is to awaken the engineer or throttleman on watch in the engineroom; otherwise, what useful or preventive action is thereby indicated? On many vessels, placing the engine order telegraph on standby is accompanied by a token reduction in speed, but such reduction fails, in the eyes of existing law, and the practice of good seamanship, to absolve the master or watch officer of responsibility, nor does it protect the vessel, in the light of experience, from possible harm and serious loss of life. The practice of placing the engineroom telegraph on standby when in thick fog with engines at full speed would seem to have about as much efficacy to prevent collisions as breaking out a four-leaf clover or fondling a rabbit's foot. In one instance for example, a liberty ship entered thick fog at full speed and rang up standby on the telegraph without any reduction in speed. The engineer answered the signal and thereafter, with the oiler, checking the steering apparatus, the engineer entered a void space below the engineroom floor plates to check heating coils where he promptly died from suffocation or asphyxiation. His death was not discovered for about an hour.

There are quoted below certain findings of fact from Coast Guard records of investigation into a few collisions occurring in fog. Collision No. 1, Vessel No. 1: "The reason for summoning the master at this time was that fog had set in, reducing visibility to approximately one-half mile. The telegraph was placed on standby * * *." Vessel No. 2: "The master was called to the bridge and the engineroom telegraph was placed on standby. Other than that, no reduction of speed was ordered." Result: One vessel sank, the other vessel sustained $25,000 in damages. No jurisdiction existed with respect to proceedings against one master, the other master was charged with negligence. Collision No. 2: "At 5:41 a. m., fog set in and the telegraph was placed on standby." Result $458,000 in damages. Collision No. 3: "Noticing that the fog had shut in, the master asked the third mate if the engines were on standby. Answered in the negative, he ordered the engines on standby * * *." Results: master and third mate charged with misconduct, $85,000 in damages. Collision No. 4, a catastrophe resulting in great loss of life, millions of dollars damage, the perfect example which teaches that "Standby" on the telegraph may well serve to broadcast to those below "Stand By for Collision". Vessel No. 1: "The voyage was uneventful until * * * fog was encountered at about 0330 * * *." At the time the third officer called the master, he estimated the visibility to be 300 yards. The master arrived on the bridge approximately 5 minutes after being called and after observing the weather conditions he drank a cup of coffee and then put the engineroom telegraph in standby at 0351." Vessel No. 2: "The engineroom telegraph was put on standby at 0314 * * *" and, "the first assistant engineer relieved the watch in the engineroom at 0400. When he relieved the watch, the engineroom telegraph was on standby, and the engine was going full speed ahead and at about 0420 he felt the impact of the collision * * *." It turned out to be quite a substantial impact too, no less than it would have been had the telegraphs registered full speed.

This is a dangerous practice, and results in serious loss of life and vessels. In fog or reduced visibility, slow down to a moderate speed, and proceed with caution.

PORTABLE LAMPS AND CORDS

Portable or extension lamps and electric tools and appliances present both fire and shock hazards. These can be reduced to a minimum if they are recognized and the necessary precautions are observed.

PORTABLE LAMPS

Some portable hand lamps are little more than a metal encased socket to which a metal guard is clamped or screwed. A thin layer of fibre is the only insulation between the connections and the case. Moisture, which is very likely to be encountered in

many places aboard ship in which such lamps are used, may greatly reduce the insulating properties and permit the current to leak into the metal case. It is also possible that the insulation on the cord becomes worn where it enters the case and so makes the case "hot." Under suitable conditions, a man picking up the lamp may be electrocuted.

Portable lamps, either hand or cargo, which present this danger can and should be guarded by providing a ground wire as is done for tools. Three conductor cord can be used or a third wire taped to the original two conductor cord. In either case one end is firmly secured to the metal case and guard of the lamp while the other end is clamped to a bare piece of metal near the outlet socket.

Portable lamps are available in which the bulb socket, the connections to it and the whole length of the wire through the handle are encased in hard rubber or other nonconducting material. The wire lamp guard is thereby completely free of electrical contact with the wires. The two wires may short themselves but they can't energize the lamp guard. On such lamps a ground wire is not needed. It is recommended that only lamps of this kind be used.

Cords

Only heavy duty rubber or waterproof fabric covered cords should be used on portable lamps and tools aboard ship. The fabric covered twisted wire cords are intended only for interior drop lamps where they are subjected to neither moisture nor friction. The lightweight rubber covered household lamp cords are quickly worn out and easily cut. The arc which is likely to occur when a cord is broken may start a fire in oil or other easily combustible material. Even the heavy duty cords should be protected against unnecessary friction, blows, and bending. The cords should be inspected regularly for worn or cracked insulation.

Tension on the connections to both plug and lamp or tool should be avoided, preferably by a clamp which secures the cord to plug and appliance. In some cases a knot can be tied just inside the lamp handle or tool frame. If neither of these methods is practicable, short lanyards can be used to lash the cord to the lamp or tool and to the plug or to a nearby fixed object. Repeated strain on the bare wires at the connections, even though moderate, will eventually cause the wires to part. It is therefore good practice to check the connections of unsupported wires occasionally, cutting off a few inches of wire if fraying of the insulation or weakening of the wires has occurred.

The cords supplied with electric heating elements, such as soldering irons and hot plates, are heat resistant. They have no protection against moisture and little against friction. Therefore it is important that they be handled carefully and kept dry.

Outlets

Where more than one voltage is available through outlets or plug receptacles aboard ship, each voltage should have a different type of outlet. By providing lamps and appliances with the type of plug which will fit only the receptacle furnishing the correct voltage, there will be no danger of burning out a lamp, heater, or motor by feeding it too much current. Signs and color codes are of some value in preventing such accidents, but noninterchangeable receptacles and plugs are inexpensive and dependable.

It is desirable to use three-conductor plugs and receptacles at all places where tools are used frequently so that the ground wire connection will be made automatically as the cord is plugged in.

(Marine Safe Practices Pamphlet No. 47, August 1951, Accident Prevention Bureau of Pacific Maritime Association, San Francisco, Calif.)

DEATH BY SUCTION

The vessel was approximately 2 days' journey from a southern port enroute to an east coast port. Most of the crew were busily engaged in getting their respective departments shipshape, cleaning, and performing other duties required to be done while at sea. It was one of these cleaning operations that contributed to the tragic death of the wiper. The wiper apparently felt it necessary to obtain some kerosene to use as a cleaning solvent. The wiper proceeded to the storage locker with a bucket and small syphoning hose. One end of the syphoning hose was inserted into the drum while the wiper sucked on the other end of the hose, intending to create a suction which would eventually syphon the kerosene into his bucket. The trick or knack of syphoning apparently had not been taught to this young man for he had sucked in and accidently swallowed a quantity of this kerosene. Gagging, coughing, and strangling immediately followed together with an obvious appearance of rigidity in his arms and hands. Immediate first aid was rendered by the ship's purser, then shortly after vomiting was induced. The wiper's condition gradually improved after a short period of time, however, he complained of sharp pains in his stomach. As time went on the pains seemed to increase and medical advice was obtained and followed. The man improved to such an extent that he himself admitted that he felt much better and was fairly on the way to recovery, however, 13 hours and 55 minutes later death occurred.

This case is a tragic one because of the fact that had a ladle or small bailing vessel been used rather than a syphon the casualty would never have occurred. Unless syphoning is done by mechanical means it should not be done at all.

NAVIGATIONAL KNOWLEDGE IS A MUST

In a small uninspected motorboat four people departed on a fishing trip from an east coast small boat harbor one early fall morning. Late in the afternoon and because fog had set in they decided to weigh anchor and begin their return voyage. Life jackets were brought up from below and placed on deck where they would be available in case of an emergency. The sea was moderate and a light southwesterly breeze was blowing. Visibility varied as the fog had become thick in patches. Speed had been reduced to approximately 2 miles an hour. Whenever the visibility had decreased fog signals were sounded. Approximately 4 hours after departure a loud whistle was heard by the operator and at about the same moment observed a bright white light directed at him from a considerable height, approximately 100 yards off his port bow. Believing the whistle and light to be an aid to navigation he proceeded toward it in order that he might assure himself of his position. As he approached the bright white light disappeared and three vertical white lights appeared. It was then that he realized that the lights were from a tug. An immediate attempt was made to change course. Just before the course was changed the small fishing craft was lifted by a towing cable that caused the boat to heel over approximately 90°, allowing the sea to be shipped in the cockpit. The four members of the fishing party scrambled to the high side, and only two grabbed life jackets. As quick as the boat had heeled over it suddenly returned to its righted position at which time it was realized that the two remaining life jackets had been washed overboard. Suddenly the boat heeled over again causing one member of the fishing party to be thrown over the side into the water. Seconds after that the small craft righted itself again and floated free of the towing cable.

Additional life jackets were obtained and the bilge pump was put into operation. A vain attempt was made to start the motor which had been

stopped by the water. The anchor was dropped and signal flares were lighted together with the aid of the bell and searchlight in an attempt to attract attention. In approximately 2 hours after the casualty rescue facilities were available and an immediate search began for the missing man. His body was recovered 4 days later.

This is another tragedy in the annals of motorboating for pleasure that could have been avoided had the operator allowed himself to become familiar with the various aids to navigation which have been afforded him. These navigational aids have been put there for one reason and one reason only; to guide him to a safe landing.

AN ATTACHED BILGE PUMP EXPLODES

The following is another case which shows the value of checking parts and equipment before it is too late.

The first assistant engineer on a dry cargo Liberty type vessel was engaged in adjusting the forward suction valve of the bilge piping system. The discharge assembly and air vessel on the attached bilge pump burst with such force that he was thrown on the fireroom floor plates. Fortunately, he was only knocked unconscious and suffered minor bruises and contusions.

This bilge pump was standard equipment on the Liberty type, cargo vessel when built, but because of "mothballing" the ship had not been in use for some time. However, the fact remains that upon "demothballing" all equipment and accessories should have been checked and rechecked to insure against any recurrence of accidents such as this engineer suffered.

Upon investigation it was learned that the following parts of the forward bilge pump discharge assembly were found to have been disabled and needed renewals: 3½ inch discharge assembly, air vessel, section of discharge piping and fittings.

It is believed that the discharge end of the air chamber had become plugged by scale or other accumulation during the inactive period; however, no immediate cause for the accident was determined.

In the investigations of similar casualties, it has been brought out that even death has resulted in numerous instances of this type.

Check your working conditions now to make sure no hazards exist. It can mean avoiding a permanent injury and may even save a life.

THE MAN WHO IS WISE GUARDS HIS EYES

MOPE AND DOPE

"... so for our protection we took up a collection and bought you this."

Amendments to Regulations

TITLE 46—SHIPPING

Chapter I—Coast Guard, Department of the Treasury

[CGFR 51-61]

Subchapter Q—Regulations Applicable to Certain Vessels During Emergency

PART 154—WAIVERS OF NAVIGATION AND VESSEL INSPECTION LAWS AND REGULATIONS [1]

VESSELS REQUISITIONED BY THE UNITED STATES FOR EMERGENCY EVACUATION

Pursuant to the provisions of section 1 of Public Law 891, 81st Congress, approved December 27, 1950, the Acting Secretary of Defense on November 21, 1951, requested a general waiver of the provisions of all navigation and vessel inspection laws applicable to vessels which might be requisitioned for the purpose of emergency evacuation if conditions at some future date should make such emergency evacuation necessary.

The purpose of the following waiver order, designated 46 CFR 154.04, as well as 33 CFR 19.04, is to waive the navigation and vessel inspection laws and regulations issued pursuant thereto, which are administered by the United States Coast Guard, to the extent necessary to permit the operation of vessels which might be requisitioned by the United States for the purpose of emergency evacuation.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by the Acting Secretary of the Treasury in his order CGFR 51-1, dated January 23, 1951, and published in the Federal Register dated January 26, 1951 (16 F. R. 731), the following general waiver order is promulgated and shall become effective on and after the date of publication of this document in the Federal Register:

§ 154.04 *Vessels requisitioned by the United States for emergency evacuation.* Pursuant to the request of the Acting Secretary of Defense, dated November 21, 1951, made under the provisions of section 1 of Public Law 891, 81st Congress, approved December 27, 1950, I hereby waive compliance with the provisions of the navigation and vessel inspection laws administered by the United States Coast Guard, as well as the regulations issued thereunder and published in 33 CFR Chapter I or in this chapter, to the extent necessary to permit the operation of vessels which might be requisitioned by the United States for the purpose of emergency evacuation.

(Pub. Law 891, 81st Cong.)

Dated: December 18, 1951.

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

[F. R. Doc. 51-15108; Filed, Dec. 19, 1951; 10:59 a. m., 16 F. R. 12792—12/20/51.]

[1] This is also codified in 33 CFR Part 19.

[CGFR 51-58]

ALIENS SERVING AS LICENSED OFFICERS ON MERCHANT VESSELS

The purpose of the following waiver order designated as 46 CFR 154.15 and the new regulations in 46 CFR Part 155 is to modify certain statutory requirements relating to manning of merchant vessels and to citizenship requirements of watch officers on United States merchant vessels to such extent and in such manner and upon such conditions as are set forth below. The waiver order designated as 46 CFR 154.15 shall also be published as 33 CFR 19.15.

By virtue of the authority vested in me as Commandant, United States Coast Guard, by an order of the Acting Secretary of the Treasury, dated January 23, 1951, identified as CGFR 51-1, and published in the FEDERAL REGISTER dated January 26, 1951 (16 F. R. 731), the following waiver order is promulgated and regulations are prescribed which read as follows:

Part 154 is amended by adding a new waiver order designated as § 154.15, reading as follows:

§ 154.15 *Employment of aliens as watch officers on United States merchant vessels*—(a) *Waiver.* I hereby waive compliance with the provisions of R. S. 4131, as amended, section 5 of the act of June 25, 1936, as amended, and section 302 of the act of June 29, 1936, as amended (46 U. S. C. 221, 672a, 1132), which require that the licensed officers aboard merchant vessels of the United States shall be citizens of the United States and, under certain conditions, shall be members of the United States Naval Reserve to the extent that when properly licensed United States citizen deck or engineer officers are not available to man merchant vessels to allow certain approved alien officers who are holders of letters of authorization to serve as watch officers aboard United States merchant vessels in the grades up to and including second mate and second assistant engineer. I hereby also waive compliance with the provisions in R. S. 4438, 4440, 4441, and 4442, as amended (46 U. S. C. 224, 228, 229, and 214), relating to licenses for mates, engineers, or pilots for officers serving on merchant vessels of the United States to the extent that an alien who becomes qualified under the provisions in 46 CFR Part 155 may be issued a letter of authorization to serve in the capacity designated in the letter on board United States merchant vessels, and such letter of authorization shall be considered the same as a license and shall be subject to the other conditions required concerning the licenses of officers of United States merchant vessels. I hereby find that this waiver is necessary in the interests of national defense.

(b) *Terms and conditions.* (1) The employment of approved alien officers authorized by paragraph (a) of this section shall be permitted only to the extent of the nonavailability of licensed United States citizens officers, but in no case shall approved alien officers be employed in grades above that of second mate or second assistant engineer. The nonavailability of licensed United States citizen officers is to be determined after reasonable efforts have been made by the master, owner, or others concerned with the manning of United States merchant vessels to secure the employment of properly licensed officers.

(2) No approved alien officer shall be employed in the capacity of an officer on board United States merchant vessels unless he is in possession of a letter of authorization from the Coast Guard and no such alien shall be employed in a grade higher than that stated in the letter of authorization held by him. Each approved alien officer, who may be employed on United States merchant vessels in accordance with this waiver, shall present to the master or other responsible officer of the merchant vessel the Coast Guard's letter of authorization held by him and this letter of authorization shall be kept posted under glass on the vessel as required by law for licenses of United States citizen officers.

(3) Before an approved alien officer may be employed on a United States merchant vessel, the master, owner, or others concerned shall make an application and shall obtain

approval under the procedures for effecting individual waivers of navigation and vessel inspection laws and regulations in § 154.01. The employment of any approved alien officer shall be for a single voyage and on a specified vessel and in accordance with the individual waiver issued in accordance with the procedures in § 154.01. For each succeeding voyage an individual waiver shall be required and approved before the approved alien officer may be employed and such individual waiver shall not be issued unless the master, owner, or others concerned with the manning of merchant vessels can show that the same conditions are still present and it is necessary to employ approved alien officers.

(4) The word "voyage" as used in this section shall be construed as meaning the period for which the crew is engaged or signed on and any approved alien officer may be continued in employment until the end of such period of engagement or until the termination of the shipping articles for the voyage.

(5) The words "approved alien officer" shall be construed as meaning a person to whom a letter of authorization has been issued and who continues to qualify to hold such a letter.

(c) *Penalties.* The failure of the master of any vessel sailing with a deficiency in the required complement of qualified licensed United States citizen officers aboard to comply with the conditions required by this waiver shall be considered misconduct within the meaning of R. S. 4450, as amended (46 U. S. C. 239), and shall constitute grounds for suspension or revocation of the license of such master; and shall subject him and the owners to all other penalties provided by law. No penalty shall be imposed as a consequence of any waiver made effective pursuant hereto.

(d) *Requirements for aliens desiring to serve as officers.* The procedures and requirements for authorizing aliens to serve as licensed officers on merchant vessels pursuant to the requirements in this waiver order are set forth in Part 155 of this subchapter. Any alien meeting the requirements set forth in Part 155 of this subchapter may make application for a letter of authorization permitting him to serve as a licensed officer on merchant vessels pursuant to the requirements in this waiver order, but the issuance of the letter of authorization by the Coast Guard will be made on a selective basis, and preference will be given to those aliens who have formally indicated their intention of becoming United States citizens. (Public Law 891, 81st Congress)

PART 155—LICENSED OFFICERS AND CERTIFICATED MEN

REGULATIONS DURING EMERGENCY

SUBPART 155.01—GENERAL

§ 155.01–1 *Purpose of part.* The purpose of the regulations in this part is to specify emergency requirements which may modify the requirements for licensed officers and certificated men in Parts 10 and 12 (Subchapter B—Merchant Marine Officers and Seamen) of this chapter and are found to be necessary in the national defense of the United States.

SUBPART 155.10—ALIEN OFFICERS

§ 155.10–1 *General provisions.* (a) The regulations in this subpart specify the requirements which must be met by aliens applying for letters of authorization to serve in the capacity of licensed deck or engineer officers on United States merchant vessels, as well as the requirements applicable to the issuance and surrender of such letters of authorization. All these requirements are issued in accordance with the waiver order regarding employment of qualified aliens in the capacity of licensed deck or engineer officers in § 154.15 of this subchapter and implement such waiver order. Before an alien holding a letter of authorization may be employed on a United States merchant vessel in the capacity of a licensed deck or engineer officer, the master, owner, agent or other person concerned with obtaining qualified officers for such a vessel, shall make an application to the Coast Guard for a waiver in accordance with § 154.01 of this subchapter and receive permission to employ such an alien.

(b) An applicant for a letter of authorization to serve in the capacity of licensed deck or engineer officer is charged with establishing to the satisfaction of the Commandant of the Coast Guard that he possesses all the qualifications necessary, such as experience, character, nationality, and citizenship status, before he will be granted a letter of authorization. Until an applicant proves his qualifications to the Coast Guard he is not eligible to be issued a letter of authorization.

(c) Where required, an applicant must present authenicated or certified English translations of foreign licenses or other documents presented by him for consideration.

(d) Although any alien meeting the requirements set forth in this subpart may submit an application for a letter of authorization, such an alien does not thereby obtain a right to have issued to him such a letter. Letters of authorization issued to aliens are in the form of a privilege and therefore no appeal procedures are established for review or reconsideration of any action taken in connection with applications. The issuance of the letters of authorization will be made on a selective basis and preference will be given to those aliens who have formally indicated their intention of becoming United States citizens.

§ 155.10–5 *Definitions.* (a) The words "letter of authorization" shall be construed as meaning a letter issued by the Coast Guard to an individual alien granting to him authority to be employed under waiver in the capacity of a licensed deck or engineer officer subject to such conditions as may be set forth therein as well as those conditions set forth in applicable waiver orders in Part 154 of this subchapter and regulations issued to implement such waiver orders.

(b) The words "approved alien officer" shall be construed as meaning a person to whom a letter of authorization has been issued and who continues to qualify to hold such a letter.

(c) The words "merchant vessel" shall be construed as meaning a merchant vessel of the United States.

§155.10–10 *Letter of authorization.* (a) A letter of authorization will state on its face the grade and type of service in which the holder may serve under waiver.

(b) A letter of authorization will not be issued to any person unless the Commandant of the Coast Guard is satisfied that the character and habits of life of the person are such as to authorize the belief that he is a suitable and safe person to be entrusted with the powers and duties of a licensed officer.

§155.10–15 *Applications.* (a) Any alien desiring to have a letter of authorization to serve in the capacity of a licensed deck or engineer officer shall submit a written application in duplicate on Form CG 3253 to any Officer in Charge, Marine Inspection, of the United States Coast Guard. The applicant must appear in person before the Officer in Charge, Marine Inspection, United States Coast Guard, with whom he files his application.

(b) The applicant shall furnish two unmounted dull finish photographs 2 inches by 1½ inches, of passport size taken within one year of the date of the application. This photograph shall show the full face at least one inch in height with head uncovered and shall be a satisfactory likeness of the applicant. The photograph shall be affixed to the application form in the space provided.

(c) The application Form CG 3253 must be signed by three persons who may be former employers or persons

who have personally known the applicant for one or more years and who can certify from personal knowledge that the applicant is a person of good character and temperate habits and recommend him as a suitable person to be entrusted with the duties of the station for which he makes application or the application shall be accompanied by letters of recommendation of recent date. A letter of recommendation submitted must certify from personal knowledge that the applicant is a person of temperate habits and of good character, recommend him as a suitable person to be entrusted with the duties of an officer in the merchant marine, and that the writer has known the applicant for one or more years. Three recommendations, either on the application or by letter, must be submitted with each application.

(d) Fingerprint records of each applicant shall be made.

(e) The application, together with fingerprint records, photographs, and letters of recommendation, if any, shall be submitted to the Commandant for approval.

§ 155.10–20 *Proof of Nationality.* (a) An alien making application for a letter of authorization shall present to the Officer in Charge, Marine Inspection, at the time of application acceptable evidence of nationality. No letter of authorization will be issued to any alien until nationality is established by acceptable evidence.

(b) Any document of an official character showing the country of which the alien is a citizen or subject may be accepted as acceptable evidence of nationality. The following are examples of such a document:

(1) Declaration of Intention to become a citizen of the United States made by the alien applicant after 1929.

(2) A travel document in the nature of a passport issued by the government of the country of which the alien is a citizen or a subject.

(3) A certificate issued by the consular representative of the country of which the alien is a citizen or subject.

(c) An applicant must present an Alien Registration Receipt Card to the Officer in Charge, Marine Inspection.

(d) If the applicant has filed a Declaration of Intention or a Petition for Naturalization, he must present evidence of this fact to the Officer in Charge, Marine Inspection.

(e) Should any doubt arise as to whether or not any document or paper presented by an applicant as evidence of nationality is acceptable, the matter shall be referred to the Commandant of the Coast Guard for decision.

§ 155.10–25 *Physical condition and examination.* (a) The applicant for a letter of authorization shall be required to pass a physical examination given by a medical officer of the United States Public Health Service and present a certificate executed by this Public Health Service officer to the Officer in Charge, Marine Inspection. This certificate shall attest to the applicant's acuity of vision, color sense, and general physical condition. In exceptional cases where an applicant would be put to great inconvenience or expense to appear before a medical officer of the Public Health Service the physical examination and certification may be made by another reputable physician.

(b) Epilepsy, insanity, senility, acute venereal disease, or neurosyphilis, badly impaired hearing, or other defect that would render the applicant incompetent to perform the duties of an officer at sea are causes of certification as incompetent.

(c) An applicant for a letter of authorization to serve as mate must have either with or without glasses at least 20/20 vision in one eye and at least 20/40 in the other. The applicant who wears glasses, however, must also be able to pass a test without glasses of at least 20/40 in one eye and at least 20/70 in the other. The color sense wil be tested by means of the "Stillings" test but any applicant who fails this test will be eligible if he can pass the "Williams" lantern test.

(Continued on p. 45)

DANGER

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

Equipment Accepted by the Commandant

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.

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	
Aleo Valve Co., St. Louis, Mo.:					
Solenoid valve, types S155 and S120, 24 to 230 volts a. c. and 6 to 250 volts d. c., dwg. No. F1145A, rev. A	x	x			6/6/51
Automatic Switch Co., Washington, D. C.:					
Bulletin X8025 2" solenoid valve, 300-lb., flanged-steel body, watertight, 440 volts a. c., dwg. No. JV 31-200, rev. 0	x	x			11/13/51
Bethlehem Steel Co., Quincy, Mass.:					
Distribution panel, 3-phase main, 4, 6, 8, 10, 12, 16, or 20 single phase branch circuits, 50-ampere per branch circuit maximum, 240 volts a. c. maximum, 125/250 volts d. c. maximum, dripproof, dwg. No. EL4176, alt. 4	x	x			11/13/51
Carpenter Clamping Devices, Ltd., Los Angeles, Calif.:					
Carpenter cable clamp hanger assembly, dwg. No. 1050, alt. 0	x	x			7/23/51
Control Instrument Co., Inc., Brooklyn, N. Y.:					
Salinity indicator panel, types 55-D-1 and 55-D-2, dwg. Nos. 23191, alt. 0 and 23192, alt. 0	x	x			7/27/51
General Electric Co., Washington, D. C.:					
Limit switch for use with gravity type lifeboat winches, control circuit type, double pole, 550 volts maximum, type C R 9440 LS 442-AA, catalog No. 5726776-AA with catalog No. 2879404 G5 roller lever. Drain opening to be provided at installation	x	x	x		10/19/51
Henschel Corp., Amesbury, Mass.:					
Electric telegraph combined transfer and constant ringing relay panel, 115 volts 60 cycles a. c., dwg. No. 60-215, alt. 2	x	x			6/18/51
Electric telegraph transmitter-indicator, 12", double face, single engine, pedestal mounting, 115 volts, 60 cycles a. c.	x	x			6/18/5

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	
Henschel Corp., Amesbury, Mass.—Continued					
Electric telegraph transfer relay, double (2 double pole double throw relays) 115 volts, 60 cycles a. c., dwg. No. 60-211-1, alt. 0	x	x			7/6/51
Rudder angle indicator with red illumination, 115 volts, 60 cycles a. c., dwg. No. 10-1052-4, alt. 0	x	x			7/25/51
Shaft speed transmitter, types RH and LH, 115 volts, 60 cycles a. c., dwg. No. 10-1001-2, alt. 0	x	x			7/27/51
Shaft-speed indicator with 8-figure counter and red illumination, types B & P, 115 volts, 60 cycles a. c., dwg. No. 10-1057-2, alt. 0	x	x			7/27/51
Whistle-control switches, types A and B, 115 volt maximum, watertight, dwg. No. 60-210-1, alt. 3	x	x	x		9/14/51
Vibrating bells, 6", 8", and 10", waterproof, 6, 12, 24, 32, 48, or 115 volts d. c. and 115 volts a. c., dwg. No. 20-163, alt. 4	x	x	x		9/4/51
Engine order telegraph wrong direction signal contact maker, 115 volts maximum, watertight, dwg. No. 60-151, alt. 0	x	x			10/17/51
Running light panel, 4-circuit, combined with 4-circuit auxiliary signal light switches, dwg. No. 40-036-2, alt. 0	x	x			11/13/51
Hotpoint, Inc., Chicago, Ill.:					
Cooking range, Model No. R173, dwg. Nos. SH2922-1, Change 1 and 11389-1c/2c/3c/4c/5c/6c/7c, Change 1, Cat. Nos. 141, 241, 341, 151, 251, 351, 161, 261, 361, 171, 271, 191, 291 and 391 followed by R173, 230 volts a. c. and Cat. Nos. 142, 242, 342, 152, 252, 352, 162, 262, 362, 172, 272, 192, 292, and 392 followed by R173, 230 volts d. c.	x	x			10/30/51
Cooking top, Model No. R174, dwg. Nos. 14257-1/2/3, Change 1, Cat. Nos. 141, 241, 341, 151, 251, 351, 161, 261, 361, 191, 291, and 391 followed by R174, 230 volts a. c., and Cat. Nos. 142, 242, 342, 152, 252, 352, 162, 262, 362, 192, 292, and 392 followed by R174, 230 volts d. c.	x	x			10/30/51
Cooking range, Model No. R180, dwg. Nos. 7721-9A/10A/10B, Change 1, Cat. Nos. 101, 201, 111, 211, 121, and 131 followed by R180, 115 or 230 volts a. c. and Cat. Nos. 102, 202, 112, 212, 122, and 132 followed by R180, 115 or 230 volts d. c.	x	x			10/30/51
Cooking range, Model Nos. R200 and HRG200, dwg. Nos. 13720-1B/2B/3B/1A/2A/3A, Change 1, Cat. Nos. 151, 251, 161, 261 followed by R200, 115, or 230 volts a. c.; Cat. Nos. 152, 252, 162, and 262 followed by R200, 115 or 230 volts d. c.; Cat. Nos. 251 and 261 followed by HRG200, 115 or 230 volts a. c.; and Cat. Nos. 252 and 262 followed by HRG200, 115 or 230 volts d. c.	x	x			10/30/51
Cooking range, Model No. R179, dwg. Nos. R179-1G/2G/3G/4G/5G/6G, Change 0, WD2781, Change 5 and WD2954, Change 1, Cat. Nos. 112, 212, 312, 132, 232, and 332 followed by R179, 115 volts d. c.	x	x			10/30/51
Cooking range, Model No. HRG7, dwg. Nos. HR7-1G, Change 1, HR7-2G, Change 0, HR7P1, Change 5, HR7P2, Change 2, and HR7P3/4, Change 0, Cat. Nos. 151 and 161 followed by HRG7, 230 volts a. c. and Cat. Nos. 152 and 162 followed by HRG7, 230 volts, d. c.	x	x			10/30/51
Cooking top, Model No. HRG9, dwg. Nos. HR9-1G/2G, Change 0, HRG9P1, Change 2, HRG9P2, Change 3, HRG9P3/4, Change 0, Cat. Nos. 151 and 161 followed by HRG9, 230 volts a. c. and Cat. Nos. 152 and 162 followed by HRG9, 230 volts d. c.	x	x			10/30/51
Cooking backshelf broiler, Model No. R161, dwg. No. 11389-14, Change 1, Cat. Nos. 121, 221, and 131 followed by R161, 230 volts a. c. and Cat. Nos. 122, 222, and 132 followed by R161, 230 volts d. c.	x	x			10/30/51
Cooking backshelf broiler, Model No. HRG167, dwg. Nos. R167-1G/2G, Change 0 and WD1833, Change 4, Cat. No. 201HRG167, 230 volts a. c. and Cat. No. 202HRG167, 230 volts d. c.	x	x			10/30/51
Cooking griddle, Model No. G28, dwg. Nos. G28-1/2/4, Change 1, Cat. Nos. 101, 111, and 211 followed by G28, 115 or 230 volts a. c. and Cat. Nos. 102, 112, and 212 followed by G28, 115 or 230 volts d. c.	x	x			10/30/51
Cooking griddle, Model Nos. G47 and HGG47, dwg. Nos. G47-1/2/2A, Change 1, G47, 1G, Change 0 and G47P1/2, Change 0, Cat. No. 101G47, 115 or 230 volts, a. c., Cat. No. 102G47, 115 or 230 volts d. c., Cat. No. 211HGG47, 115 or 230 volts a. c., Cat. No. 301HGG47, 115 or 230 volts a. c. or d. c. and Cat. No. 401HGG47, 115 or 230 volts a. c.	x	x			10/30/51
Cooking griddle, Model G48, dwg. Nos. 7721-1A, Change 2, 7721-2A, Change 1 and G48P1/2/3, Change 0, Cat. Nos. 101, 111, 301, and 411 followed by G48, 115 or 230 volts a. c., Cat. Nos. 102 and 112 followed by G48, 115 or 230 volts d. c. and Cat. Nos. 302 and 311 followed by G48, 115 or 230 volts a. c. or d. c.	x	x			10/30/51
Cooking fry kettle, Model No. K32, dwg. Nos. K32-1/2/3/5, Change 1, Cat. Nos. 341 and 441 followed by K32, 115 or 230 volts a. c. and Cat. Nos. 342 and 442 followed by K32, 115 or 230 volts d. c.	x	x			10/30/51
Cooking fry kettle, Model Nos. HKG5 and HKG6, dwg. Nos. HKG4-G, Change 1 and HKG4P2, Change 1, Cat. Nos. 201, 211, 221, and 231 followed by HKG4, 230 volts, a. c.	x	x			10/30/51

(d) An applicant for a letter of authorization to serve as an engineer officer must have either with or without glasses at least 20/30 vision in one eye and at least 20/50 in the other. The applicant who wears glasses, however, must also be able to pass a test without glasses of at least 20/50 in one eye and at least 20/70 in the other. The color sense of the applicant shall be examined only as to his ability to distinguish the colors red, blue, green, and yellow.

(e) No waivers of the physical requirements for applicants will be granted.

§ 155.10–30 *Professional requirements.* (a) An applicant for a letter of authorization must be able to read, write, speak, and understand the English language sufficiently to carry out the duties of a licensed officer on merchant vessels relative to matters ordinarily arising in the daily routine work aboard ships, as well as orders involving fire drills, boat drills, the handling of boats, or emergencies that may be expected to arise in the handling, operating, or navigating of a merchant vessel.

(b) The applicant for a letter of authorization must possess a currently valid United States seaman's document in the rating of lifeboatman.

(c) An applicant for a letter of authorization must possess a license issued by a foreign government for service as a deck or engineer officer, or, in the event the applicant does not hold a foreign license, he must pass the professional examination prescribed for the grade and class (deck or engine) of license for which he is making application. Before such professional examination may be given to the applicant, he must present evidence of service on United States or foreign vessels equivalent to that required of a United States citizen for an original license in the grade and class for which he applies. The applicant may present evidence of specialized experience or training which will be given consideration towards the establishment of his professional qualifications.

(d) An applicant for a letter of authorization must present a certificate from the United States Public Health Service that he has passed a satisfactory examination based on the contents of "The Ship's Medicine Chest and First Aid at Sea" or other manual arranged for the same purpose and having the approval of the United States Public Health Service.

§ 155.10–35 *Issuance of letter of authorization.* A letter of authorization will be issued to an alien only after the Commandant of the Coast Guard has approved his application. No letter of authorization will be is-

sued, nor a temporary permit granted to permit an alien to serve in the capacity of a licensed officer during the time the application is being considered by the Coast Guard.

§ 155.10–40 *Professional classification.* (a) The highest grade for which an applicant for a letter of authorization will be approved may be subject to change from time to time and this upper limit of grade, if changed, will be duly published in the Federal Register. No alien will be approved to serve in the capacity as master or as chief engineer.

§ 155.10–45. *Surrender of a letter of authorization.* (a) When it is determined by the Commandant of the Coast Guard that a person to whom a letter of authorization has been issued is no longer eligible therefor under the provisions of the regulations in this subpart or applicable waiver orders in Part 154 of this subchapter, such person will be so notified in writing and he shall immediately surrender to the Coast Guard the letter of authorization held by him.

(b) Letters of authorization shall be surrendered upon demand of the Coast Guard in the following cases:

(1) Where reliable derogatory information is developed concerning the holder of a letter of authorization which was not available at the time of issuance of such a letter.

(2) Where suitable indication of ineligibility on the part of the holder to carry out the required duties of a licensed deck or engineer officer on United States vessels is received.

(3) Where suitable indication or evidence is presented that the approved alien officer is no longer physically qualified to carry out the required duties of a licensed deck or engineer officer.

(4) Where any seaman's documents held by the approved alien officer are revoked or suspended, or suspended with probation, as a result of a hearing under R. S. 4450, as amended (46 U. S. C. 239).

§ 155.10–50 *Rejection of applications.* Applicants who fail to qualify for letters of authorization will be notified in writing to this effect. Although no appeal is allowed to change this action, rejected applications will be reconsidered by the Commandant of the Coast Guard upon the submission by the applicant of additional pertinent information which was not before the Coast Guard at the time his application was rejected.

Dated: December 14, 1951.

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

[F. R. Doc. 51–15010; Filed, Dec. 17, 1951; 8:53 a. m., 16 F. R. 12704—12/18/51.]

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	
Hotpoint, Inc., Chicago, Ill.—Continued					
Cooking fry kettle, Model Nos. K46 and HKG46, dwg. Nos. 17319-1/2/3, Change 1, HK46-1G, Change 0, HKG46P1, Change 0 and WD 2919, Change 3, Cat. Nos. 111K46, and 211K 46, 230 volts a. c., Cat. Nos. 112K46 and 212K46, 230 volts d. c., Cat. Nos. 121K46 and 221K46, 115 volts a. c., Cat. Nos. 122K46 and 222K46, 115 volts d. c., Cat. No. 231HKG46, 230 volts a. c. and Cat. No. 232HKG46, 230 volts d. c	x	x			10/30/51
Cooking broiler, Model Nos. B19 to B22, inclusive, and HBG19 to HBG22, inclusive, dwg. Nos. B19P1, Change 0, WD 2728, Change 2, WD 2388, Change 8, WD2756, Change 3, WD2787, Change 4, WD2906, Change 2, B17-1G, Change 0, B17P1/2, Change 1, HN6P5/6, Change 3, HN7P4/5, Change 0, and HR5P1, Change 1, Cat. Nos. 101B17, 201B17, 301HBG17, 351N163, 351N163, 101HN6, 201HNG6, and 101HNG7, 230 volts a. c., Cat. Nos. 102B17, 202B17, 302HBG17, 352N163, 352N163, 102HN6, 202HNG6 and 102HNG7, 230 volts d. c. and Cat. Nos. 311R162, 331R162, 101HR5, and 201HRG5, 230 volts a. c. or d. c	x	x			10/30/51
Cooking warming oven, Model No. N180, dwg. No. 9711-10B Change 1, Cat. Nos. 201N180 and 211N180, 115 volts a. c. and Cat. Nos. 212N180 and 312N180, 115 volts a. c. or d. c	x	x			10/30/51
Cooking bake oven, Model No. N140, dwg. Nos. 17659-1A/2A/3A/4A, Change 1, Cat. Nos. 101,111, 201, and 301 followed by N140, 115 or 230 volts a. c. and Cat. Nos. 102, 112, 202, and 302 followed by N140, 115 or 230 volts d. c	x	x			10/30/51
Cooking bake oven, Model No. N141, dwg. Nos. 17659-1A/2A/3A/4A, Change 1, Cat. Nos. 101, 111, 201, and 301 followed by N141, 115 or 230 volts a. c. and Cat. Nos. 102, 112, 202 and 302 followed by N141, 115 or 230 volts d. c	x	x			10/30/51
Cooking ovens, Model Nos. N162, HNG162, N166, HNG 166, N167, and HNG167, dwg. Nos. 167-1B/2B/3B/4B/5B/6B/7B/8B, Change 1, HNG163P10, Change 0, HNG7P10, Change 0, HN6P1, Change 2, HN6P2, Change 3, HN7P4/5, Change 0, Cat. Nos. 341N163, 341N164, 341N165, 111HN6, 211HNG6, and 101HNG7, 115 or 230 volts a. c. and Cat. Nos. 342N163, 342N164, 342N165, 112HN6, 212HNG6, and 102HNG7, 115 or 230 volts d. c	x	x			10/30/51
Cooking ovens, Model Nos. N221 to N229, inclusive, and HNG221 to HNG229, inclusive, dwg. Nos. 14182-3/4/5/6, Change 1, 14182-3G/4G, Change 0, N205P1, Change 0 and N205P2, Change 2, Cat. Nos. N202P300, 201N202, 301HNG202, 111N205, 201N205, and 301HNG205, 115 or 230 volts a. c. and Cat. Nos. N202P400, 202N202, 302HNG202, 112N205, 202N205, and 302HNG205, 115 or 230 volts d. c	x	x			10/31/51
Cooking ovens, Model Nos. N241, N242, N243, HNG241, HNG242, and HNG243, dwg. Nos. 13726-10/11/12/13, Change 1, 13726-10G/11G, Change 0 and N204P4/5, Change 3, Cat. Nos. N204P300, 201N204, and 301HNG204, 230 volts a. c. and Cat. Nos. N204P400, 202N204, and 302HNG204, 230 volts d. c	x	x			10/30/51
Cooking ovens, Model Nos. N261, N262, N263, HNG261, HNG262, and HNG263, dwg. Nos. 15670-1/2, Change 1, 15670-1G, Change 0 and N206P4/5, Change 2, Cat. Nos. H206P300, 201N206, and 301HNG206, 230 volts a. c. and Cat. Nos. N206P400, 202N206, and 302HNG206, 230 volts d. c	x	x			10/30/51
Lovell-Dressel Co., Inc., Arlington, N. J.:					
Switch, reciprocating, single pole, 10 ampere, 250 volts, waterproof, Cat. No. 2718, dwg. No. M-5458, alt. 0	x	x	x		10/3/51
Receptacle, 10-ampere, 125-volt, single-phase, grounded, waterproof, Cat. No. 1814, dwg. No. 1814, alt. 2	x	x	x		10/3/51
Receptacle, angle type, 10-ampere, 125-volt, single-phase, grounded, waterproof, Cat. No. 1838, dwg. No. 1838, alt. 1	x	x	x		10/3/51
Receptacle, double, angle type, 10-ampere, 125-volt, single-phase, grounded, waterproof, Cat. No. 1839, dwg. No. 1839, alt. 1	x	x	x		10/3/51
Junction box, aluminum, without cover, for use with bulkhead-mounted fixtures mounted on aluminum bulkheads, Cat. No. 2093					10/3/51
Blinker light, watertight, 6 T8–11 lamps, Cat. No. 950 M. C., and anchor light, watertight, 1 60-watt A–19 lamp, dwg. No. M-5376, alt. 4	x	x	x		10/23/51
E. W. Mink and Associates, Inc., Dayton, Ohio:					
Fluorescent ceiling fixture, nonwatertight, fixture Nos. C–11022 (2 64" lamps), C–11023 (2 42" lamps), C–11024 (2 42" lamps), C–11025 (1 42" lamp) and C–11026 (1 42" lamp), 115 volts a. c. only, dwg. No. 50G2313, rev. D	x				6/6/51
Fluorescent desk lamp, nonwatertight, fixture No. L16008, 1 T8 12-watt lamp (115 volts a. c. only), dwg. No. 49G1622, rev. B	x				6/8/51
Illuminated sign, nonwatertight, 1 40-watt lamp maximum, dwg. No. 50D1953, rev. A	x				7/30/51

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	
E. W. Mink and Associates, Inc., Dayton, Ohio—Con.					
Ceiling fixture No. C–11046, nonwatertight, 2 60-watt lamp maximum, dwg. No. 51D609, rev. 7	x				8/7/51
Ceiling fixture No. C–11047, nonwatertight, 2 60-watt lamp maximum, dwg. No. 51D610, rev. 9	x				8/7/51
Ceiling fixture No. C–11048, nonwatertight, 2 60-watt lamp maximum, dwg. No. 51D611, rev. 8	x				8/7/51
Fluorescent ceiling fixtures with 1 40-watt incandescent lamp, watertight, fixture No. C–11042, 2 14-watt lamps, No. C–11043, 2 15-watt lamps; No. C–11044, 2 20-watt lamps; No. C–11045, 2 30-watt lamps; 115 volts, 60 cycles, a. c. only, dwg. No. 51G606, rev. O	x	x			8/7/51
Bulkhead or ceiling fixture, nonwatertight, 1 100-watt lamp maximum, dwg. No. 50D2252, rev. D	x				8/10/51
Ceiling fixture No. C–11049, nonwatertight, 1 60-watt lamp maximum, dwg. No. 51D613, rev. O	x				10/2/51
Bed lamp, swivel shade type, nonwatertight, 1 60-watt lamp maximum, fixture No. B–5663, dwg. No. 51D604, rev. C	x				10/23/51
Adjustable arm fixture, nonwatertight, fixture No. L–15148, dwg. Nos. X46D2176 Chg. A and X46D284 Chg. A	x				10/29/51
Tilt-top bridge lamp fixture No. L–16005, nonwatertight, 2 60-watt lamps maximum, dwg. No. 51J677, alt. A	x				11/19/51
Table lamp No. L–16015, nonwatertight, 1 100-watt lamp maximum, dwg. No. 51J620, alt. A	x				11/19/51
Table lamp No. L–16014, nonwatertight, 1 100-watt lamp maximum, dwg. No. 51G619, alt. A	x				11/19/51
Table lamp No. L–16013, nonwatertight, 1 100-watt lamp maximum, dwg. No. 51G618, alt. A	x				11/19/51
Table lamp No. L–16012, nonwatertight, 1 100-watt lamp maximum, dwg. No. 51G617, alt. A	x				11/19/51
Galley range light, vaportight, 1 60-watt lamp per unit maximum, dwg. No. 51G622, alt. A	x	x			11/19/51
Murlin Manufacturing Co., Philadelphia, Pa.:					
Reflector box light, nonwatertight, 4 60-watt lamp maximum, dwg. No. 1520, alt. 0	x				8/6/51
Lowered front step light, nonwatertight, 1 25-watt lamp maximum dwg. No. 1208-A, alt. 0	x	x			8/8/51
Piezo Manufacturing Corp., New York, N. Y.:					
Main line emergency disconnect switch for lifeboat winches, type LBSS, a. c., 3-pole, 600 volts a. c. maximum, 30 horsepower maximum, type LBSS, d. c., 2-pole, 230 volts d. c. maximum, 25 horsepower maximum, dwg. No. P-953, alt. D. Drain opening to be provided at installation	x	x	x		10/23/51
Pilot Marine Corp., New York, N. Y.:					
Salinity indicator panel, 5-cell, type SNA–5, 3000 series, dwgs. Nos. PM–3001, alto 0, and PM–3000 alt. 0	x	x			8/27/51
Raymond Rosen Engineering Products, Ind., Philadelphia, Pa.:					
Running light indicator panel, 5-circuit, for 50-watt navigation lights, 115 volts, 60 cycle a. c., dwg. No. 6-0531, rev. B	x	x			6/26/51
Russell and Stoll Co., Inc., New York, N. Y.:					
Duplex convenience receptacle, nonwatertight, 2-wire, 3-pole, 15-ampere, 125 volts, for use where nongrounded type receptacle permitted, Cat. No. 3166 Special, dwg. No. F–14554, alt. 1	x				9/13/51
Emergency disconnect switch for lifeboat winches; watertight, 2-pole; 240 volts a. c. maximum, 12-horsepower single phase maximum; 125-250 volts d. c. maximum, 15 horsepower at 250 volts and 7½ horsepower at 125 volts, maximum, dwg. No. X–8120, alt. 6. Drain opening to be provided at installation	x	x	x		11/1/51
The Simes Co., Inc., College Point, N. Y.:					
Hood light, nonwatertight, 2 60-watt lamps maximum, dwg. No. 44376, chg. 1	x				6/5/51
Recessed downlight, nonwatertight, 1 100-watt lamp maximum, dwg. No. 44404, alt. 0	x				10/11/51
Westinghouse Electric Corp., Washington, D. C.:					
Special HDN pushbutton station with starwheel handle for use as lifeboat winch master switch, watertight, 600 volts maximum, dwg. No. 25–B–4672, sub. 2	x	x	x		10/16/51
Wheeler Reflector Co., Boston, Mass.:					
Floodlight, watertight, 500-watt maximum, Cat. No. S–2511, dwg. No. SK–35950, alt. 3	x	x	x		11/7/51

[CGFR 51–54]

APPROVAL OF EQUIPMENT

By virtue of the authority vested in me as Commandant, United States Coast Guard, by Treasury Department Order No. 120, dated July 31, 1950 (15 F. R. 6521), and in compliance with the authorities cited below, the following approvals of equipment are prescribed and shall be effective for a period of five years from date of publication in the FEDERAL REGISTER unless sooner canceled or suspended by proper authority:

BUOYANT CUSHIONS, KAPOK, STANDARD

NOTE: Cushions are approved for use on motorboats of Classes A, 1, or 2 not carrying passengers for hire.

Approval No. 160.007/108/0, Standard kapok buoyant cushion, U. S. C. G. Specification Subpart 160.007, manufactured by Stearns Manufacturing Co., West Division Street at Thirtieth, St. Cloud, Minn.

Approval No. 160.007/109/0, Standard kapok buoyant cushion, U. S. C. G. Specification Subpart 160.007, manufactured by Elvin Salow Co., Boston, Mass., for B. & L. Harris & Son, 2163 Coney Island Avenue, Brooklyn 23, N. Y.

Approval No. 160.007/110/0, Standard kapok buoyant cushion, U. S. C. G. Specification Subpart 160.007, manufactured by O'Malley Sailmakers, 1818 Purdy Avenue, P. O. Box 743 Miami Beach, Fla.

Approval No. 160.007/111/0, Standard kapok buoyant cushion, U. S. C. G. Specification Subpart 160.007, manufactured by Farber Brothers, Inc., 821–841 Linden Avenue, Memphis, Tenn.

(R. S. 4405, 4491, 54 Stat. 164, 166, as amended; 46 U. S. C. 375, 489, 526e, 526p; 46 CFR 25.4–1, 160.007)

BUOYANT CUSHIONS, NON-STANDARD

NOTE: Cushions are approved for use on motorboats of Classes A, 1, or 2 not carrying passengers for hire.

Approval No. 160.008/443/0, 13" x 18" x 2" rectangular buoyant cushion, 21-ounce kapok, Dwg. No. S–101A, dated September 20, 1951, and revised October 8, 1951, manufactured by Stearns Manufacturing Co., West Division Street at Thirtieth, St. Cloud, Minn.

Approval No. 160.008/444/0, 12" x 48" x 2" rectangular buoyant cushion, 51-ounce kapok, American Pad & Textile Co. Drawings Nos. A–391 dated October 8, 1951, and C–358 dated October 8, 1951, manufactured by The American Pad & Textile Co., Greenfield, Ohio, for Montgomery Ward & Co., Inc., Chicago 7, Ill.

Rectangular buoyant cushions manufactured by The American Pad

PACK A LIGHT

& Textile Co., Greenfield, Ohio; General Assembly Dwg. No. C–198, dated November 1, 1946, revised October 11, 1951, in the following sizes with the amount of kapok indicated for each size:

Approval No.	Size (inches)	Kapok (ounces)
160.008/445/0	12 x 20 x 2	21¼
160.008/446/0	12 x 23 x 2	24½
160.008/447/0	12 x 26 x 2	27¾
160.008/448/0	12 x 29 x 2	31
160.008/449/0	12 x 32 x 2	34¼
160.008/450/0	12 x 35 x 2	37½
160.008/451/0	12 x 38 x 2	40¾
160.008/452/0	12 x 41 x 2	43¾
160.008/453/0	12 x 44 x 2	47
160.008/454/0	12 x 47 x 2	50¼
160.008/455/0	12 x 50 x 2	53¼
160.008/456/0	12 x 53 x 2	56½
160.008/457/0	12 x 56 x 2	59¾
160.008/458/0	12 x 59 x 2	63
160.008/459/0	12 x 62 x 2	66¼
160.008/460/0	12 x 65 x 2	69¼
160.008/461/0	12 x 68 x 2	72½
160.008/462/0	12 x 71 x 2	75¾
160.008/463/0	15 x 20 x 2	26¾
160.008/464/0	15 x 23 x 2	30¾
160.008/465/0	15 x 26 x 2	34¾
160.008/466/0	15 x 29 x 2	38¾
160.008/467/0	15 x 32 x 2	42¾
160.008/468/0	15 x 35 x 2	46¾
160.008/469/0	15 x 38 x 2	50¾
160.008/470/0	15 x 41 x 2	54¾
160.008/471/0	15 x 44 x 2	58¾
160.008/472/0	15 x 47 x 2	62¾
160.008/473/0	15 x 50 x 2	66¾
160.008/474/0	15 x 53 x 2	70¾
160.008/475/0	15 x 56 x 2	74¾
160.008/476/0	15 x 59 x 2	78¾
160.008/477/0	15 x 62 x 2	82¾
160.008/478/0	15 x 65 x 2	86¾
160.008/479/0	15 x 68 x 2	90¾
160.008/480/0	15 x 71 x 2	94¾
160.008/481/0	18 x 20 x 2	32
160.008/482/0	18 x 23 x 2	36¾
160.008/483/0	18 x 26 x 2	41½
160.008/484/0	18 x 29 x 2	46½
160.008/485/0	18 x 32 x 2	51½
160.008/486/0	18 x 35 x 2	56
160.008/487/0	18 x 38 x 2	60¾
160.008/488/0	18 x 41 x 2	65½
160.008/489/0	18 x 44 x 2	70½
160.008/490/0	18 x 47 x 2	75¼
160.008/491/0	18 x 50 x 2	80
160.008/492/0	18 x 53 x 2	84¾
160.008/493/0	18 x 56 x 2	89½
160.008/494/0	18 x 59 x 2	94½
160.008/495/0	18 x 62 x 2	99¼
160.008/496/0	18 x 65 x 2	104
160.008/497/0	18 x 68 x 2	108¾
160.008/498/0	18 x 71 x 2	113½

WINCHES, LIFEBOAT

Approval No. 160.015/44/0, Type H lifeboat winch for use with mechanical davits, fitted with wire rope not more than ½ inch in diameter and with not more than 7 wraps of the falls on the drums, approved for maximum working load of 6,600 pounds pull at the drums (3,300 pounds per fall), identified by Left Hand Assembly Dwg. No. L–22321–E dated April 8, 1949, and revised June 20, 1951, manufactured by the Marine Safety Equipment Corp., Point Pleasant, N. J.

(R. S. 4405, 4417a, 4426, 4488, 4491, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 375, 391a, 404, 481, 489, 1333, 50 U. S. C. 1275; 46 CFR 33.10–5, 59.3a, 60.21, 76.15a, 94.14a, 160.015)

LIFE FLOATS

Approval No. 160.027/22/0, 7.0' x 3.17' (9" x 9" body section) rectangular solid balsa wood life float, 10-person capacity, construction and arrangement Dwg. No. 31951 dated March 19, 1951, revised August 14, 1951, manufactured by Winner Manufacturing Co., Inc., Trenton, N. J.

Approval No. 160.027/23/0, 7.5' x 4.0' (11" x 11" body section) rectangular solid balsa wood life float, 15-person capacity, construction and arrangement Dwg. No. 31951, dated March 19, 1951, revised August 14, 1951, manufactured by Winner Manufacturing Co., Inc., Trenton, N. J.

Approval No. 160.027/24/0, 9.0' x 5.08' (12" x 12" body section) rectangular solid balsa wood life float, 25-person capacity, construction and arrangement Dwg. No. 31951 dated March 19, 1951, revised August 14, 1951, manufactured by Winner Manufacturing Co., Inc., Trenton, N. J.

Approval No. 160.027/25/0, 10.67' x 6.17' (13" x 13" body section) rectangular solid balsa wood life float, 40-person capacity, construction and arrangement Dwg. No. 31951 dated March 19, 1951, revised August 14, 1951, manufactured by Winner Manufacturing Co., Inc., Trenton, N. J.

Approval No. 160.027/26/0, 12.0' x 7.58' (15" x 15" body section) rectangular solid balsa wood life float, 60-person capacity, construction and arrangement Dwg. No. 31951, dated March 19, 1951, revised August 14, 1951, manufactured by Winner Manufacturing Co., Inc., Trenton, N. J.

Approval No. 160.027/27/0, 9.0' x 5.08' (13" Dia. body section), rectangular hollow aluminum life float, 25-person capacity, Dwg. No. 3348–2, dated June 28, 1951, manufactured by Welin Davit & Boat Division of Continental Copper & Steel Industries, Inc., Perth Amboy, N. J.

(R. S. 4405, 4417a, 4426, 4481, 4488, 4491, sec. 11, 35 Stat. 428, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 375, 391a, 404, 474, 475, 481, 489, 1333, 50 U. S. C. 1275; 46 CFR 160.027)

DAVITS, LIFEBOAT

Approval No. 160.032/117/0, Mechanical davit, crescent sheath screw, Type C–60, approved for maximum working load of 12,000 pounds per set (6,000 pounds per arm), identified by general arrangement Drawing No. 3310, dated November 23, 1949, manufactured by Welin Davit & Boat Division of Continental Copper & Steel Industries, Inc., Perth Amboy, N. J.

Approval No. 160.032/128/0, Mechanical davit, straight boom sheath screw, size A–7–O, S, approved for maximum working load of 8,000 pounds per set (4,000 pounds per arm), using 2-part falls, identified by general arrangement drawing No. 619.S dated January 3, 1951, manufactured by C. C. Galbraith & Son, Inc., 99 Park Place, New York, N. Y.

(R. S. 4405, 4417a, 4426, 4481, 4488, 4491, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 375, 391a, 404, 474, 481, 489, 1333, 50 U. S. C. 1275; 46 CFR 160.032)

LIFEBOATS

Approval No. 160.035/91/1, 18.0' x 6.0' x 2.6' steel, oar-propelled lifeboat, 18-person capacity, identified by General Arrangement and Construction Dwg. No. 49R–1815, dated August 8, 1951, revised September 4, 1951, manufactured by Lane Lifeboat & Davit Corp., 8920 Twenty-sixth Avenue, Brooklyn 14, N. Y. (Supersedes Approval No. 160.035/91/0 published in the Federal Register dated July 31, 1947.)

Approval No. 160.035/98/1, 22.0' x 7.50' x 3.17' steel, oar-propelled lifeboat, 31-person capacity, identified by General Arrangement and Construction Dwg. No. 49R–2217C, dated Aug-

ust 8, 1950, and revised November 17, 1950, manufactured by Lane Lifeboat & Davit Corp., 8920 Twenty-sixth Avenue, Brooklyn 14, N. Y. (Supersedes Approval No. 160.035/98/0 published in the Federal Register dated July 31, 1947.)

Approval No. 160.035/214/1, 20.0' x 6.5' x 2.67' aluminum, oar-propelled lifeboat, 20-person capacity, identified by Construction and Arrangement Dwg. No. 20–2, dated December 24, 1947, revised September 4, 1951, manufactured by Marine Safety Equipment Corp., Point Pleasant, N. J. (Supersedes Approval No. 160.035/214/0 published in the Federal Register dated February 19, 1949.)

Approval No. 160.035/246/1, 22.0' x 6.5' x 2.67', steel, oar-propelled lifeboat, 23-person capacity, identified by Construction and Arrangement Dwg. No. 22–3, dated April 12, 1949, and revised August 29, 1951, manufactured by Marine Safety Equipment Corp., Point Pleasant, N. J. (Supersedes Approval No. 160.035/246/0 published in the Federal Register dated July 27, 1949.)

Approval No. 160.035/258/1, 20.0' x 6.5' x 2.67' steel, oar-propelled lifeboat, 20-person capacity, identified by Construction and Arrangement Dwg. No. 20–3, dated August 19, 1949, and revised August 27, 1951, manufactured by Marine Safety Equipment Corp., Point Pleasant, N. J. (Supersedes Approval No. 160.035/258/0 published in the Federal Register dated November 3, 1949.)

Approval No. 160.035/268/0, 36.0' x 12.33' x 5.25' aluminum hand-propelled lifeboat, 140-person capacity, identified by Construction and Arrangement Dwg. No. 3353, dated June 25, 1951, manufactured by Welin Davit & Boat Division of Continental Copper & Steel Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/269/0, 36.0' x 12.33' x 5.25', aluminum, motor-propelled lifeboat with radio cabin, 133-person capacity, identified by Construction and Arrangement Dwg. No. 3354, dated January 23, 1950, manufactured by Welin Davit & Boat Division of Continental Copper & Steel Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/274/0, 22.0' x 6.75' x 2.92' aluminum, oar-propelled lifeboat, 25-person capacity, identified by Construction and Arrangement Dwg. No. 22–1C, dated November 22, 1950, and revised October 2, 1951, manufactured by Marine Safety Equipment Corp., Point Pleasant, N. J.

Approval No. 160.035/281/0, 26.0' x 9.0' x 3.83' steel, oar-propelled lifeboat, 53-person capacity, identified by Construction and Arrangement Dwg. No. 26–9, dated July 3, 1951, and revised September 6, 1951, manufactured by Marine Safety Equipment Corp., Point Pleasant, N. J.

(R. S. 4405, 4417a, 4426, 4481, 4488, 4491, 4492, 35 Stat. 428, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 375, 391a, 396, 404, 474, 481, 489, 490, 1333, 50 U. S. C. 1275; 46 CFR 33.01–5, 59.13, 76.16, 94.15, 113.10, 160.035)

LIGHTS (WATER): ELECTRIC, FLOATING, AUTOMATIC

Approval No. 161.001/5/0, automatic floating electric water light (with bracket for mounting), Dwg. No. E-951, Alt. 1 dated July 13, 1951, Sheets 1 and 2, manufactured by C. C. Galbraith & Son Electric Corp., 450 Avenue of the Americas, New York 11, N. Y.

(R. S. 4405, 4417a, 4426, 4488, 4491, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 404, 481, 1333, 50 U. S. C. 1275; 46 CFR 161.001)

BOILERS, HEATING

Approval No. 162.003/120/0, Smith-Mills Series "100" heating boiler, cast iron sectional construction, maximum design pressure 15 p. s. i., approval limited to bare boiler, manufactured by the H. B. Smith Co., Inc., Westfield, Mass.

Approval No. 162.003/121/0, Smith-Mills Series "200" heating boiler, cast iron sectional construction, maximum design pressure 15 p. s. i., approval limited to bare boiler, manufactured by the H. B. Smith Co., Inc., Westfield, Mass.

Approval No. 162.003/122/0, Smith-Mills Series "250" heating boiler, cast iron sectional construction, maximum design pressure 15 p. s. i., approval limited to bare boiler, manufactured by the H. B. Smith Co., Inc., Westfield, Mass.

Approval No. 162.003/123/0, Smith-Mills Series "1100" heating boiler, cast iron sectional construction, maximum design pressure 15 p. s. i., approval limited to bare boiler, manufactured by the H. B. Smith Co., Inc., Westfield, Mass.

Approval No. 162.003/124/0, Smith-Mills Series "1500" heating boiler, cast iron sectional construction, maximum design pressure 15 p. s. i., approval limited to bare boiler, manufactured by the H. B. Smith Co., Inc., Westfield, Mass.

(R. S. 4405, 4417a, 4418, 4426, 4433, 4434, 4491, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended, 46 U. S. C. 367, 375, 391a, 392, 404, 411, 412, 489, 1333, 50 U. S. C. 1275; 46 CFR Part 52)

FIRE EXTINGUISHERS, PORTABLE, HAND, CARBON-DIOXIDE TYPE

Approval No. 162.005/40/0, "Model R10 Marine Use," 10-pound carbon-dioxide type hand portable fire extinguisher, Parts List Dwg. No. 754 dated February 7, 1946, Rev. 10 dated October 8, 1951, Assembly Dwg. No. 735 dated December 7, 1945, Rev. No. 7 dated October 8, 1951, and Nameplate Dwg. No. 922 dated November 19, 1947, Rev. No. 4 dated October 8, 1951, manufactured by Randolph Laboratories, Inc., 8 East Kinzie Street, Chicago 11, Ill.

NOTE: This approval does not in any manner affect the withdrawal of Approval No. 162.005/25/0 for a "Model R–10" fire extinguisher. The "Model R–10" extinguisher must be removed from all vessels subject to the inspection laws administered by the Coast Guard. The manufacturer has agreed to replace all "Model R–10" fire extinguishers required to be removed from such vessels with approved fire extinguishers.

Approval No. 162.005/41/0, "Model R15 Marine Use," 15-pound carbon-dioxide type, hand, portable fire extinguisher, Parts List Dwg. No. 755 dated April 19, 1947, Rev. No. 9 dated October 8, 1951, Assembly Dwg. No. 675 dated July 30, 1945, Rev. No. 9 dated October 8, 1951, Nameplate Dwg. No. 922 dated November 19, 1947, Rev. No. 4 dated October 8, 1951, manufactured by Randolph Laboratories, Inc., 8 East Kinzie St., Chicago 11, Ill.

NOTE: This approval does not in any manner affect the withdrawal of Approval No. 162.005/26/0 for a "Model R–15" fire extinguisher. The "Model R–15" extinguisher must be removed from all vessels subject to the inspection laws administered by the Coast Guard. The manufacturer has agreed to replace all "Model R–15" fire extinguishers required to be removed from such vessels with approved fire extinguishers.

(R. S. 4405, 4417a, 4426, 4479, 4491, 4492, 49 Stat. 1544, 54 Stat. 165, 166, 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 375, 391a, 404, 463a, 472, 490, 526g, 526p, 1333, 50 U. S. C. 1275; 46 CFR 25.5–1, 26.3–1, 27.3–1, 34.25–1, 61.13, 77.13, 95.13, 114.15)

FIRE EXTINGUISHERS, PORTABLE, HAND, DRY-CHEMICAL TYPE

Approval No. 162.010/4/0, Alfco Model 5P1–30, 25-pound dry chemical type, hand, portable fire extinguisher, Assembly Dwg. No. 33X–1011 dated December 1, 1947, Rev. H dated February 1, 1949, Nameplate Dwg. No. 33X–26 dated December 12, 1947, Rev. P. dated February 22, 1949, manufactured by American-LaFrance-Foamite Corp., Elmira, N. Y.

(R. S. 4405, 4417a, 4426, 4479, 4491, 4492, 49 Stat. 1544, 54 Stat. 165, 166, 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 375, 391a, 404, 463a, 472, 489, 490, 526g, 526p, 1333, 50 U. S. C. 1275, 46 CFR 25.5–1, 26.3–1, 27.3–1, 28.3–5, 34.25—1, 61.13, 77.13, 95.13, 114.15)

APPLIANCES, LIQUEFIED PETROLEUM GAS CONSUMING

Approval No. 162.020/28/1, Magic Chef gas range, Model No. HD–10,

equipped with or without automatic pilot for oven burner, approved by the American Gas Association, Inc., under Certificate No. 11–22–5.901 and Supplement Serial No. 10, dated January 18, 1950, for liquefied petroleum gas service, manufactured by the American Stove Co., 4931 Daggett Avenue, St. Louis 10, Mo. (Supersedes Approval No. 162.020/28/0 published in the Federal Register dated November 11, 1950.)

Approval No. 162.020/29/1, Magic Chef gas range, Model No. HD–11, equipped with or without automatic pilot for oven burner, approved by the American Gas Association, Inc., under Certificate No. 11–22–5.901 and Supplement Serial No. 10, dated January 18, 1950, for liquefied petroleum gas service, manufactured by the American Stove Co., 4931 Daggett Avenue, St. Louis 10, Mo. (Supersedes Approval No. 162.020/29/0 published in the Federal Register dated November 11, 1950.)

Approval No. 162.020/30/1, Magic Chef gas range, Model No. HD–16, equipped with or without automatic pilot for oven burner, approved by the American Gas Association, Inc., under Certificate No. 11–22–5.901 and Supplement Serial No. 10, dated January 18, 1950, for liquefied petroleum gas service, manufactured by the American Stove Co., 4931 Daggett Avenue, St. Louis 10, Mo. (Supersedes Approval No. 162.020/30/0 published in the Federal Register dated November 11, 1950.)

Approval No. 162.020/42/1, Magic Chef gas range, Model No. HD–12, equipped with or without automatic pilot for oven burner, approved by the American Gas Association, Inc., under Certificate No. 11–22–9.901 and Supplement Serial No. 4, dated January 18, 1950, for liquefied petroleum gas service, manufactured by the American Stove Co., 4931 Daggett Avenue, St. Louis 10, Mo. (Supersedes Approval No. 162.020/42/0 published in the Federal Register dated January 19, 1951.)

Approval No. 162.020/43/1, Magic Chef gas range, Model No. HD–14, equipped with or without automatic pilot for oven burner, approved by the American Gas Association, Inc., under Certificate No. 11–22–5.901 and Supplements Serial Nos. 5 and 10, dated January 18, 1950, for liquefied petroleum gas service, manufactured by the American Stove Co., 4931 Daggett Avenue, St. Louis 10, Mo. (Supersedes Approval No. 162.020/43/0 published in the Federal Register dated February 17, 1951.)

Approval No. 162.020/44/1, Magic Chef gas range, Model No. HD–15, equipped with or without automatic pilot for oven burner, approved by the American Gas Association, Inc., under Certificate No. 11–22–9.901 and Supplement Serial No. 4, dated January 18, 1950, for liquefied petroleum gas service, manufactured by the American Stove Co., 4931 Daggett Avenue, St. Louis 10, Mo. (Supersedes Approval No. 162.020/44/0 published in the Federal Register dated January 19, 1951.)

(R. S. 4405, 4417a, 4426, 4491, 49 Stat. 1544, 54 Stat. 1028 and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 375, 391a, 404, 463a, 489, 1333, 50 U. S. C. 1275; 46 CFR 32.10–1, 61.25, 95.24, 114.25)

DECK COVERING

Approval No. 164.006/40/0 "Hill Brothers C G Base Coat" and "C G Red Top," magnesite type deck covering identical to that described in National Bureau of Standards Test Report No. TG10210–1787: FP3069 dated August 30, 1951, approved for use without other insulating material to meet Class A–60 requirements in a 1½" thickness, manufactured by Hill Brothers Chemical Co., 2159 Bay Street, Los Angeles 21, Calif.

(R. S. 4405, 4417a, 4426, 49 Stat. 1384, 1544, 54 Stat. 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 369, 375, 391a, 404, 463a, 1333, 50 U. S. C. 1275; 46 CFR 164.006)

STRUCTURAL INSULATION

Approval No. 164.007/28/0, "48 Panther Insulating Cement," plaster type structural insulation identical to that described in National Bureau of Standards Test Report No. TG10210–1782:FP3061 dated August 10, 1951, approved for use without other insulating material to meet Class A–60 requirements in a 2½" thickness; manufactured by Forty-eight Insulations, Inc., Aurora, Ill.

(R. S. 4405, 4417a, 4426, 49 Stat. 1384, 1544, 54 Stat. 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended, 46 U. S. C. 367, 369, 375, 391a, 404, 463a, 1333, 50 U. S. C. 1275; 46 CFR Part 144)

FIRE INDICATING AND ALARM SYSTEMS

"Detect-A-Fire," Type 7020–2, Fire Alarm Thermostat, having temperature ratings of 140° F., 160° F., and 225° F., for use with approved closed-circuit type Fire Indicating and Alarm Systems. Approved as affording protection of an area where no point on the overhead is more than 17.5 feet from the thermostat except that where beams or girders of over 12 inches in depth are employed, the overhead on each side of the beam or girder shall be considered as separate areas for the purpose of this spacing limitation; the space limitation appearing on the drawing shall be disregarded for the purpose of this approval. Identified by Drawing No. 27020–2, Revision F, dated January 12, 1951, manufactured by Fenwal, Inc., Ashland, Mass. (Supersedes approval appearing in the Federal Register dated July 25, 1950.)

"Detect-A-Fire," Type 7021–2, Fire Alarm Thermostat, having temperature ratings of 140° F., 160° F., and 225° F., for use with approved open-circuit type Fire Indicating and Alarm Systems. Approved affording protection of an area where no point on the overhead is more than 17.5 feet from the thermostat except that, where beams or girders of over 12 inches in depth are employed, the overhead on each side of the beam or girder shall be considered as separate areas for the purpose of this spacing limitation; the space limitation appearing on the drawing shall be disregarded for the purpose of this approval. Identified by Drawing No. 27021–2, Revision E, dated January 3, 1951, manufactured by Fenwal, Inc., Ashland, Mass. (Supersedes approval appearing in the Federal Register dated July 25, 1950.)

(R. S. 4405, and 4426, as amended, 49 Stat. 1544, 54 Stat. 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 375, 404, 367, 1333, 463a, 50 U. S. C. Supp. 1275; 46 CFR 61.16, 61.17, 77.16, 77.17, 95.15, 95.16, 114.16, 114.17)

Dated: December 2, 1951.

[Seal] A. C. RICHMOND,
Rear Admiral, U. S. Coast Guard,
Acting Commandant.

[F. R. Doc. 51–14544; Filed, Dec. 6, 1951; 8:53 a. m., 16 F. R. 12306—12/7/51.]

AFFIDAVITS

The following affidavits were accepted during the period from October 15 to December 15, 1951:

Harrisburg Machine Co., Inc., Houston, Tex. Valves.

Hamer Oil Tool Co., Long Beach 6, Calif. Fittings.

Rasmussen Manufacturing Co., 12305 Industrial Ave., Hollydale, Calif. Fittings.

CERTIFICATION OF ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of Ships' Stores and Supplies certificated from October 26 to December 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:

Independence Chemical Co., 9 South Letitia St., Philadelphia 6, Pa., Certificate No. 338, dated November 2, 1951, "Sterine."

Turco Products, Inc., Terminal Annex, Los Angeles, Calif., Certificate No. 339, dated December 13, 1951, "Turco 3447."

Fine Organics, Inc., 211 East 19th St., New York 3, N. Y., Certificate No. 340, dated December 14, 1951, "FO–128."

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 November 15 to December 15, 1951, is as follows:

The Lunkenheimer Co., P. O. Box 360, Annex Station, Cincinnati 14, Ohio. Heat Nos. 410, 411, 413, 414 through 417, and 419 through 422.

Merchant Marine Personnel Statistics

INVESTIGATING UNITS

Coast Guard Merchant Marine Investigating Units and Merchant Marine Details investigated a total of 757 cases during the month of October 1951. From this number, hearings before examiners resulted involving 15 officers and 88 unlicensed men. In the case of officers, 1 license was revoked, 3 were suspended without probation, 4 were suspended with probation granted, 1 license was voluntarily surrendered, 4 were dismissed after hearing and no hearings were closed with admonitions. Of the unlicensed personnel, 8 certificates were revoked, 12 were suspended without probation, 37 were suspended with probation granted, 9 were voluntarily surrendered, 4 were closed with an admonition and 22 were dismissed after hearing.

Headache is a sign that the body is not functioning as it should.

The discomfort of headaches can cause accidents. If you suffer from frequent or prolonged headaches, see a doctor. Let him find the cause and help you cure it.

WAIVER OF MANNING REQUIREMENTS, OCTOBER 1951

Waivers	Atlantic coast	Gulf coast	Pacific coast	Great Lakes	Total
Number of vessels	222	59	46	16	343
Deck officers substituted for higher ratings	1				1
Engineer officers substituted for higher ratings	8			3	11
O. S. for AB	276	78	30	12	397
Wiper or coalpassers for Q. M. E. D	123	18	59	12	212
Total	408	96	89	28	621

NOTE.—In addition, individual waivers were granted to permit the employment of 29 able seamen holding certificates for "any waters—12 months" in excess of the 25 percent authorized by statute.

ORIGINAL SEAMEN'S DOCUMENTS ISSUED DURING OCTOBER 1951

Type of document	Atlantic coast	Gulf coast	Pacific coast	Great Lakes and rivers	Total
Staff officer	61	11	30	1	103
Continuous discharge book		13			13
Merchant mariner's documents	2,028	461	1,170	1,029	4,688
AB any waters unlimited	254	98	88	17	457
AB any waters, 12 months	104	21	77	63	265
AB Great Lakes, 18 months	7	2	5	32	46
AB tugs and towboats, any waters					0
AB bays and sounds [1]	2				2
AB seagoing barges					0
Lifeboatman	240	60	205	70	575
Q. M. E. D	266	68	66	121	521
Radio operators	5	3	6		14
Certificate of service	1,827	442	1,086	969	4,324
Tankerman	15	12	4	25	56

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

NOTE.—The last 8 categories indicate number of endorsements made on United States merchant mariner's documents.

MERCHANT MARINE OFFICER LICENSES ISSUED

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DECK

Classification	Original	Renewal
Master:		
Ocean	29	168
Coastwise	1	14
Great Lakes		4
Bays, sounds, and lakes	6	51
Rivers	2	20
Radio officer licenses issued	47	
Chief mate:		
Ocean	29	58
Coastwise		4
Mate:		
Great Lakes		
Bays, sounds, and lakes	10	5
Rivers	5	7
Second mate:		
Ocean	35	59
Coastwise		
Third mate:		
Ocean	32	53
Coastwise		
Pilots:		
Great Lakes	3	4
Bays, sounds, and lakes	74	167
Rivers	47	34
Master; uninspected vessels	1	6
Mate; uninspected vessels		
Total	321	654
Grand total	975	

ENGINEER

Classification	Original	Renewal
STEAM		
Chief engineer:		
Unlimited	20	164
Limited	2	82
First assistant engineer:		
Unlimited	27	71
Limited	3	5
Second assistant engineer:		
Unlimited	39	85
Limited		1
Third assistant engineer:		
Unlimited	28	95
Limited		
MOTOR		
Chief engineer:		
Unlimited	3	48
Limited	13	70
First assistant engineer:		
Unlimited	4	4
Limited	9	2
Second assistant engineer:		
Unlimited		15
Limited		
Third assistant engineer:		
Unlimited	1	82
Limited		2
Chief engineer; Uninspected vessels	3	5
Assistant engineer; Uninspected vessels	3	1
Total	155	732
Grand total	887	

It is unwise to store dynamite in a powder magazine unless the magazine is bulletproof, nor to store flammable materials, oil paints, carbide, metal tools, or other material with explosives.

Take every precaution to protect your eyes.

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