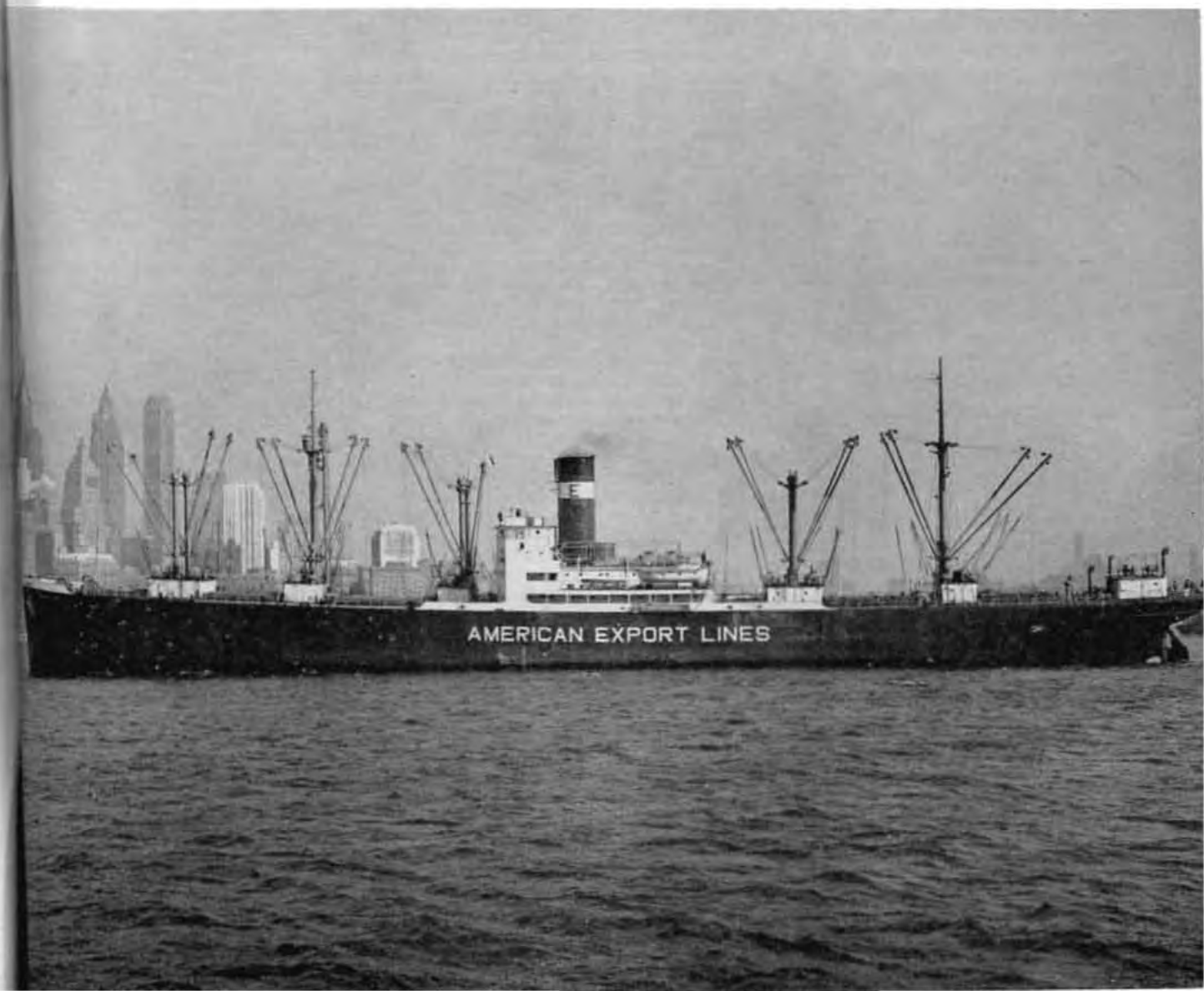
PROCEEDINGS OF THE
MERCHANT MARINE COUNCIL
UNITED STATES COAST GUARD

Vol. 5 March 1948 No. 3



Proceedings of the

MERCHANT MARINE COUNCIL

Published monthly at Coast Guard Headquarters, Washington 25, D. C., under the auspices of the Merchant Marine Council, in the interest of safety at sea. Except for the cover picture and back cover, there are no restrictions on the republication of material appearing in this issue.

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International vs. Inland Systems of Whistle Signals

One of the most important questions on Rules of the Road to be studied at Coast Guard headquarters during recent years is the relative merits of the two systems of passing signals used to enable approaching steam vessels to avoid collision. The first system appeared in the Pilot Rules and was used in the various inland waters of the United States as early as 1872. It consisted essentially of an intention signal of one or two blasts by one vessel to indicate the side on which she would pass, and an answering signal by the other vessel signifying agreement to carry out the proposed maneuver. It is the system used, with very slight variations, in four United States jurisdictions today: inland waters generally, the Great Lakes area, the Mississippi and Warrior River systems, and the Panama Canal.

The other system was adopted by the Conference of 1889 and became effective in 1897, not only on the high seas but on most of the inland waters of the world, those of the United States and her territories excepted. Prior to that time whistle signals except in fog had been on a purely optional basis. The earlier International rules of 1864 and 1885 do not mention clear weather whistle signals. These International rules applied on all public navigable waters, including our own inland waters where they were supplemented, as explained above, by Pilot Rules providing for whistle signals. But on the high seas compulsory whistle signals first came in with the act of 1897 validating the Rules of the Road adopted by the 1889 Convention, and provided that:

> The words "short blast" used in this article shall mean a blast of about one second's duration.
>
> When vessels are in sight of one another, a steam vessel under way, in taking any course authorized or required by these rules, shall indicate that course by the following signals on her whistle or siren, namely:
>
> One short blast to mean "I am directing my course to starboard." Two short blasts to mean "I am directing my course to port." Three short blasts to mean "My engines are going at full speed astern." (Article 28, International Rules.)

A critical examination of this rule reveals several significant implications in its wording and interpretation. "I am directing my course to starboard" means, of course, "I am changing course to the right." "I am directing my course to port" means "I am changing course to the left." The interpretation that either of those phrases may be used to describe a maneuver without change of course is entirely erroneous. Continuing present course is directing it neither to port nor to starboard. The only possible alternative meaning, "I am directing my course to starboard *of the other vessel*" falls down if the other vessel is either meeting or crossing. In either case "directing course to starboard" would be going to port of the other vessel, and only in the overtaking situation would it mean to starboard of that vessel. Article 28 must be obeyed by a steam vessel whether the approaching vessel is ahead, abeam, or astern; and whether that vessel is a steam vessel with a whistle or a sailing vessel without one. The rule means that one and two short blast signals are rudder signals, to be used by a steam vessel whenever, and only when, that vessel is making a

lawful change of course with another vessel in sight. It means that the rudder and the whistle are used together *only if the change of course made is a proper one*: i. e., one which is "authorized or required by these rules." It means that there is no answering signal as such; the second vessel (if steam) does not whistle unless she also changes course. And it means that if a steam vessel makes a second change of course because she alters too little the first time—a tragically frequent cause of collision—she must repeat her whistle signal.

The three short-blast signal has been interpreted by our courts to be a requirement not only when the engines are at full speed astern, but when they are at any speed astern if another vessel is in sight. This is no doubt because full speed astern is a decidedly indeterminate quantity, differing on vessels of the same outward appearance but with dissimilar power plants, and differing on the same vessel at different times under varying conditions of load, trim, steam pressure, and wind and weather. This part of the rule and its interpretation are identical in the present Inland Rules; but it does not apply on the Great Lakes or on the Mississippi system where three blast signals are used for entirely different purposes.

It is significant to this discussion that article 28 must be obeyed by steam vessels not only on the high seas but wherever the International Rules apply. The rules hold not only on the limitless waters of the ocean but on thousands of miles of restricted inland waters, such as the Inside Passage to Alaska, the Inside Passage along the coast of Chile, the Fjords of Norway and Denmark, the Skagerack, the Strait of Dover, the lower St. Lawrence, the Amazon, the Plate and many other of the world's important rivers which carry, at times, a great volume of traffic, seagoing as well as inland. An intelligent appraisal of the merits of the two systems of signaling, therefore, must test their usefulness on all kinds of public navigable waters, including bays, sounds, straits, channels, and rivers where sea room is restricted, traffic is relatively congested, and collision hazard more often present than at sea.

But even if we accept the fact that rules for preventing collision must work in restricted, as well as in open, waters there is very little point to comparing the two systems purely on the basis of experience. Both have been in use for a long period of time, both have been followed by all classes of steam vessels, over extensive areas, under all sorts of navigational conditions, and both have their enthusiastic adherents. Both have been widely disobeyed in practice with the regrettable, but undeniable, result that most collisions occur not from following the rules, but from failure to observe them. In this respect it would be difficult to choose between the two systems. We shall, therefore, discuss them in the light of which would seem to be preferable if both were scrupulously followed in the waters where they respectively apply.

The approaches of steam vessels are normally classified in accordance with their respective courses, as meeting, overtaking, and crossing. In most cases the language of the rule specifies its application if the vessels are approaching "so as to involve risk of collision." The term "risk of collision" does not necessarily indicate that at the moment one vessel is aimed at the other, or even that one is approaching the other on a steady bearing. The term, as interpreted by the courts, means much more than this. As a matter of fact, it is unusual to have a collision which is not preceded by "risk of collision." As stated by the Supreme Court in 1869:

> Rules of navigation such as have been mentioned (as to the duties of two vessels approaching each other) are obligatory upon such vessels when approaching each other from the time the necessity for precaution begins; and they continue to be applicable as the vessels advance so long as the means and opportunity to avoid the danger remain. They do not apply to a vessel required to keep her course after the approach is so near that collision is inevitable, and are equally inapplicable to vessels of every description while they are yet so distant from each other that measures of precaution have not become necessary to avoid collision.

Another Federal court, referring to the same decision, amplified it in the following unmistakable language:

> Risk of collision begins the very moment when the two vessels have approached so near each other and upon such courses that by departure from the rules of navigation, whether from want of good seamanship, accident, mistake, misapprehension of signals, or otherwise, a collision might be brought about. It is true that prima facie each man has a right to assume that the other will obey the law. But this does not justify either in shutting his eyes to what the other may actually do or in omitting to do what he can to avoid an accident made imminent by the act of the other. I say the right above spoken of is prima facie merely, because it is well known that departure from the law not only may, but does, take place, and often. Risk of collision may be said to begin the moment the two vessels have approached each other so near that a collision might be brought about by any such departure and continues up to the moment when they have so far progressed that no such result can ensue. But independently of this, the idea that there was no risk of collision is surely exploded by the fact that there was a collision.[1]

With this interpretation, it must be clear that rules purporting to cover situations involving risk of collision apply not only to approaches where collision might occur, or where it might almost be expected to occur, but where it could occur. This is after all not merely a legal interpretation but the only common sense interpretation. The real function of rules for preventing collision is to prevent collision, whether under the circumstances collision is to be expected or not.

One final preliminary comment, intended in no way to be facetious, refers to the whistle itself. It is said that early locomotives were equipped with a valve to permit the escape of hissing steam, the resulting serpent-call serving as an alarm to the unwary trespasser on the railroad track. After the invention of the resonant steam whistle a much more effective warning was available. Now in the case of a steamship the whistle is not provided as a smokestack ornament. It is not primarily a musical note. It was not designed for purposes of friendly or military salute. Its installation from the beginning was for the more important purpose of furnishing notice of the presence of a vessel to other vessels which might be within hearing. Compulsory whistle signals to all practical intents and purposes mean compulsory notice of presence and/or action of one steam vessel to another.

Let us now consider the International system of whistling as applied to the three situations:

1. *Steam vessels meeting.*—We may roughly characterize meeting steam vessels as being on substantially opposite courses so that their respective headings, unless at least one of them is changed, will bring them into close enough proximity to involve risk of collision. From the practical viewpoint of preventing collisions we really have five meeting situations, rather than one, though they all have in common the factor of the two steam vessels being on opposite, or nearly opposite, courses. In the first situation they are exactly head and head, and each vessel being required to alter course to starboard by article 18, signifies such action by blowing one short blast. In the second situation they will be a little port to port, but not enough to clear, and again each vessel is required to alter course to starboard and to blow one short blast. In the third meeting situation they will be a little starboard to starboard, but not enough for safe clearance, and again the vessels will, if obeying article 18, alter course to the right (this

[1] See "The Rules of the Nautical Road," Farwell, U. S. Naval Institute, p. 191.

time somewhat across each others bows), and each blow one short blast. In the fourth situation the vessels will be already clear port to port sufficiently to indicate a safe passage without altering course, though risk of collision as interpreted may well exist even if there is an apparent clearance of half a mile. If neither vessel changes course in this case neither vessel can lawfully whistle. This may be characterized as the first "gap" in providing for signals. In the fifth meeting situation our two vessels, approaching this time far enough to starboard of each other for a safe clearance on that side, pass starboard to starboard without a whistle signal, and we have the second "gap" in signals. While the value of whistling may be open to argument in the fourth situation, its omission in the fifth is more serious because, particularly in border line cases, one vessel or the other may suddenly decide to swing right, while the other continues to think that all is well for passing as previously indicated by the original headings. In the cases that have come to Coast Guard headquarters this situation is more than an occasional cause of collision. In the present international articles 18 and 28, not only is there a "gap" in whistle signals here, but there is neither mention nor recognition of the legitimate starboard to starboard situation, and the mariner is left with the dangerous inference that he must always get across to the port side of the other vessel, sometimes a disastrous procedure.

2. *The overtaking situation.*—In this situation one vessel must be approaching another from aft or in the arc on either side more than two points abaft the latter's beam. At night it is usually indicated to the overtaking vessel by her inability to see either of the other vessel's side lights. This is an uncertain test at best due to the frequency of incorrectly set side lights, and the tendency of vessels under certain conditions to yaw in their courses.

It may be seen from article 24 that an overtaking steam vessel has the option of passing on either side of the overtaken vessel, subject only to the modification that in a narrow channel the overtaken vessel should be on the right-hand side of the channel, and it would, therefore, ordinarily be better seamanship in such waters for the overtaking vessel to pass on the left. This situation is very definitely one of privilege and burden, and the obligation is put upon the overtaking vessel to keep well clear, not only throughout the approach and during the actual passing, but long enough afterward so that she is in the most literal sense "finally past and clear." This is equally true, whether the overtaking vessel is steam or sail.

Under the present article 28, International Rules, vessel A overtaking vessel B and desiring to pass her, does not signal unless the approach will be sufficiently close to indicate that change of course is necessary to clear her. Then vessel A, if a steam vessel, blows one short blast if changing to the right, and two short blasts if changing to the left. Vessel B is required to keep course and speed, and cannot properly, therefore, give any whistle signal.

Again we have "gaps" in the desired use of whistles. Not only is the rule devoid of a whistle signal for vessel A unless she changes course, but it is equally devoid of a whistle signal for vessel B should she deem it unsafe at that time for vessel A to pass. When vessel A has reached a position well clear of vessel B's track there is nothing to prevent her returning to her original course, using the proper signal to indicate the reversed direction she now turns, but once again receiving no answering signal from vessel B. Although this last signal of vessel A in most cases has no useful purpose, and is nearly always omitted in practice, its use seems to be required by article 28 on the grounds that, with another vessel not only in sight but in the immediate vicinity, it announces a maneuver which is certainly not forbidden, is naturally to be expected, and is at least by implication "authorized by the rules."

In the overtaking situation we not only find the signal "gaps" just pointed out but we find occasions where using a signal provided may involve some risk. Supposing, for example, the overtaking vessel, after blowing one blast, hauls out sharply to the right, and as often happens, wishes to swing left back to her original course while still a considerable distance astern of the overtaken vessel. To omit the appropriate two blasts in executing this second maneuver would certainly make her at fault if through rudder failure or other cause she swings left too far and collision occurs. To sound the signal, on the other hand, might be interpreted by the overtaken vessel as a change of intent to pass her on the other side.

3. *Two steam vessels crossing.*—In this situation again we have one of privilege and burden, where it is the theory of the rules that the best way to avoid collision is to restrict one vessel, misnamed "privileged" to continuing the maneuver in which she is engaged, that is, to keep course and speed; and to require the other vessel, the giving-way vessel, to take all the positive action to avoid collision. Thus vessel A, having vessel B in the crossing position to port, is required by article 21, with its footnote, to keep course and speed across vessel B's bow unless and until vessel B's failure to do her duty and give way forces vessel A into the jaws of collision. Vessel B, having vessel A in the crossing position to starboard, is required by article 19 to keep clear, is forbidden by article 22 to cross, and is directed by article 23, if necessary, to slacken speed or stop or reverse. All the language of four articles is thus set up for the primary purpose of making it clear to vessel B that for her the territory ahead of vessel A is forbidden territory. Yet notwithstanding this legal armor, if vessel B fails to yield vessel A may have to go through the most trying situation known to seamen, that of holding on across a deadly cut water, advancing upon her at the most vulnerable angle of attack with ungodly speed, without benefit of any whistle signal. This is the worst signal "gap" of all. The four blast danger signal, so widely used in the inland waters of the United States in situations of this kind, is not recognized in the present International Rules. Until vessel A properly alters course or sped in the very jaws of collision she has no legal right to the use of one, two, or three blasts; but when that crucial moment comes she will be held to the double duty of taking such steps as will, in her judgment, best aid to avert collision, and of indicating by the appropriate signal of one, two, or three short blasts the maneuver by which she tries to escape the results of vessel B's undoing. Even if vessel B is law-abiding she need not whistle if she keeps clear of vessel A by the simple expedient of slowing down without changing course, a legal, but hardly a moral method of letting vessel A find out the honesty of her intentions. What vessel A should always do, of course, in this situation is to give vessel A both a substantial change to starboard and the reassuring whistle blast which properly accompanies that maneuver; but there is nothing in the present rules that compels her to do it.

Now to sum up, the signal "gaps" inherent in the existing international system of having one and two blast whistle signals used only to signify a proper change in course result in lawful whistle silence: (1) In the meeting situation by either vessel not altering course, whether she passes to starboard or to port of the other vessel; (2) In the overtaking situation by the overtaken vessel, and by the overtaking vessel, if she approaches on a parallel course to one side and does not alter it; (3) In the crossing situation by the stand-on vessel, and by the giving-way vessel if she does not

alter course, either because the stand-on vessel will evidently clear her with no action, or because she elects to keep her course and reduce speed.

When we come to examine the second or "inland" system of whistle signals, we find to begin with, a complete difference of technique in setting it up in the rules. Instead of a general article 28 to provide for the use of one and two blast signals in the various inland jurisdictions, specific signals are provided in the respective meeting, overtaking and crossing rules. With the adoption of the compulsory exchange of whistle signals in the new Panama Canal Rules effective January 1, 1948, we now have four inland jurisdictions where this plan is followed: Inland waters generally; the Great Lakes area; certain rivers emptying into the Gulf of Mexico and their tributaries, and the Panama Canal. The rules for these sections all have in common a required exchange of whistle signals by approaching steam vessels whether meeting, overtaking, or crossing and, whether either vessel changes course during the approach or not. In all these areas except the Panama Canal supplemental pilot rules require the exchange of whistles if the vessels approach within half a mile of each other. The real crux of the matter is the fact that both vessels whistle whether either changes course or not. As long as there is a causal relation between the whistle and the rudder we are prevented from using one or two blasts unless at the same moment we change course. The second vessel cannot even acknowledge our signal without a similar change in course on her part. In a sense we therefore have at sea a one way communication system with the sender often unaware as to whether the receiver really received his signal. At best, the sender announces which way he is turning and not how fast or how much. At worst he keeps his dogged course and both vessels sweat out the approach in whistle silence. All this is inherent in the meaning of whistle signals under the international article 28. But the minute we divorce the whistle string from the rudder and use one- and two-blast signals to indicate the manner of passing, these objections for the most part disappear. There are no "gaps" where the first vessel cannot whistle; and the other vessel is always bound to answer, thus in all normal cases removing any uncertainty of maneuver from both. That is what the various inland rules aim to do and it is why those rules should do a better job of preventing collisions. For most mariners will go along with the argument that it is more important in a collision approach to have a whistle signal reveal our intention to maneuver out of collision in a manner prescribed for a given situation than it is to have it reveal only the fact that we are at the moment swinging right or left. And by the same token surely an answer which is an agreement to carry out the same maneuver is of more value than an answer which reveals only a partial state of the other vessel's rudder and, as happens when there is a signal "gap," of much more value than no answer at all.

Also common to the rules for the different United States inland waters is the required danger signal of four

NUMBERED AND UNDOCUMENTED VESSELS

The table below gives the cumulative total of numbered but undocumented vessels in each Coast Guard district by Customs ports for the quarter ending 31 December 1947. Generally speaking, undocumented vessels are those machinery-propelled vessels of less than 5 net tons engaged in trade which by reason of tonnage are exempt from documentation, and those motorboats or motor vessels of less than 16 gross tons which are not subject to documentation as yachts, together with motorboats and motor vessels used exclusively for pleasure purposes which are 16 gross tons or over and not so documented. These vessels are required to be numbered under the provisions of the act of June 7, 1918, as amended (46 U. S. C. 288).

COAST GUARD DISTRICT	CUSTOMS PORT		TOTAL
1. (Boston)	(4) Boston	14,010	
	(1) Portland, Maine	10,171	
	(2) St. Albans, Vt	2,723	
	(5) Providence, R. I	3,903	
			30,807
2. (St. Louis)	(45) St. Louis	18,405	
	(12) Pittsburgh	3,163	
	(34) Pembina	68	
	(35) Minneapolis	7,704	
	(40) Indianapolis	4,727	
	(42) Louisville	3,802	
	(43) Memphis (part)	8,653	
	(44) Vacant (Des Moines)	108	
	(46) Omaha (part)	458	
			47,088
3. (New York)	(10) New York	43,951	
	(6) Bridgeport	8,129	
	(11) Philadelphia	20,362	
			72,442
5. (Norfolk)	(14) Norfolk	14,817	
	(13) Baltimore	21,091	
	(15) Wilmington, N. C	7,906	
			43,814
7. (Miami)	(16) Charleston	1,726	
	(17) Savannah	3,050	
	(18) Tampa (part)	20,797	
			25,573
8. (New Orleans)	(20) New Orleans	18,027	
	(18) Tampa (part)	842	
	(19) Mobile	7,093	
	(21) Port Arthur	3,774	
	(22) Galveston	9,593	
	(23) Laredo	1,802	
	(24) El Paso	6	
	(43) Memphis (part)	76	
			41,180
9. (Cleveland)	(7) Ogdensburg	6,519	
	(8) Rochester	8,469	
	(9) Buffalo	8,068	
	(36) Duluth	3,973	
	(37) Milwaukee	12,309	
	(38) Detroit	27,444	
	(39) Chicago	7,697	
	(41) Cleveland	13,909	
			88,388
10. (San Juan)	(49) San Juan	342	
	(51) St. Thomas	64	
			406
11. (Long Beach)	(27) Los Angeles	7,780	
	(25) San Diego	1,553	
	(26) Nogales	73	
			9,406
12. (San Francisco)	(28) San Francisco	19,318	
	(47) Denver		
			19,318
13. (Seattle)	(30) Seattle	31,045	
	(29) Portland, Oreg	9,160	
	(31) Juneau	6,266	
	(33) Great Falls	996	
	(46) Omaha (part)		
			47,467
14. (Honolulu)	(32) Honolulu	3,830	
			3,830
Grand total			429,719

or more short blasts (recently changed to five or more on the Great Lakes) to be used, in clear weather or thick, when either of two steam vessels is in doubt as to the action of the other. Under the best of rules, of course, whistles fail or are omitted or are not heard; steering gears carry away; tempests, tides, and currents intervene, and seamen try to steal the right of way. In short, there are so many uses for the danger signal that its omission from International Rules for so long is hard to understand. In the meeting situation the danger signal would be blown if the other vessel's actions indicate that she ignores, fails to hear, or intentionally disregards our signal, or if after a proper exchange of signals she still makes a wrong maneuver. In the overtaking situation, it would be used not only to warn the overtaking vessel in answer to an unacceptable proposal not to try to pass, but whenever through any cause an emergency arises. In the crossing situation it would be especially useful to the stand-on vessel if the other vessel fails to give way, or to signal as required, and of course it would serve equally well in case of a misunderstanding of signals from any other cause. In thick weather it would be blown when the apparent increasing loudness and steady bearing of approaching fog signals indicate that collision is imminent unless positive emergency action is taken. It would be used at all times by a vessel in whose opinion a situation *in extremis* has developed or is threatening. As a matter of fact it would be used as it is today not only in the inland waters of the United States, but as a "bootleg" signal in almost every harbor in the world.

The principal argument generally advanced by mariners who favor the present international system of signals is that it is the simplest because you have for one blast, for instance, only one meaning. Even that argument is open to some question when we recall that the one-blast signal may mean a right rudder of all the way from one degree to hard over. In more direct reply it might be argued that so far as the initial signal of the inland system is concerned, whether you are meeting, overtaking, or crossing it also has a single meaning: "We are maneuvering so as to leave you to port." When the other vessel answers with the same signal it is always an acknowledgment that the signal is understood and an agreement that she will do her part to carry out the announced maneuver. In the meeting situation this answer means: "Yes, you are leaving us to port and we are leaving you to port." In the crossing situation the answer of the burdened vessel means: "Yes, you are crossing our bow leaving us to port and in going under your stern we are leaving you to port." In the overtaking situation it means: "Yes, you want to leave us to port. As we are going in the same general direction, to do that you will of course pass on our starboard side." When all is said and done it is hardly logical to uphold the

Marine Information Broadcasts

The schedule of marine information broadcasts has been revised effective September 1, 1947, and appears in table form for ready reference.

This information replaces that published on page 6 in the January 1948 PROCEEDINGS.

Bell System Coast Harbor Station

Station	Call letters	Frequency (kc.)	Present schedule
Astoria, Oreg	KFX	2598	1130-1800
Boston, Mass	WOU	2506	1120-2320
Charleston, S. C	WJO	2566	1100-2300
Eureka, Calif	KOE	2506	0900-2100
Galveston, Tex	KQP	2530	0030-1900
Miami, Fla	WDR	2514	1200-2400
New Orleans, La	WAK	2598	1100-2300
New York, N. Y	WOX	2522	1050-2250
New York, N. Y	WAQ	2558	1050-2250
Norfolk, Va	WGB	2538	2400-1200
Portland, Oreg	KQX	2598	1040-1810
San Francisco, Calif	KLH	2506	0830-2030
San Pedro, Calif	KOU	2506	0800-2000
Seattle, Wash	KOW	2522	1130-1800
Tampa, Fla	WFA	2550	1100-2300
Wilmington, Del	WEH	2558	0030-1230

NOTE.—All schedules are local standard time.

STATIONS BROADCASTING MARINE INFORMATION

Station and call letters	Time (G. C. T.)	Frequency	Emission	Nature of broadcast
Boston, Mass. (NMF)	0350, 1550	425	A-1	Regular.
	0420, 1620	2698	A-3	Do.
	Upon receipt and on even hour intervals	425	A-1	Emergency.
	Upon receipt and on odd hour intervals	2698	A-3	Do.
New York, N. Y. (NMY)	0420, 1620	480	A-1	Regular.
	0450, 1650	2698	A-3	Do.
	Upon receipt and on odd hour intervals	480	A-1	Emergency.
	Upon receipt and on even hour intervals	2698	A-3	Do.
Philadelphia, Pa. (NMK)	0350, 1750	2598	A-3	Regular.
	Upon receipt and on even hour intervals	2598	A-3	Emergency.
Baltimore, Md. (NMN-7)	1630	2698	A-3	Regular.
	Upon receipt and on odd hour intervals	2698	A-3	Emergency.
Norfolk, Va. (NMN)	0450, 1650	410	A-1	Regular.
	0520, 1720	2698	A-3	Do.
	Upon receipt and on even hour intervals	410	A-1	Emergency.
	Upon receipt and on odd hour intervals	2698	A-3	Do.
Fort Macon, N. C. (NMN-37).	1700	2698	A-3	Regular.
Charleston, S. C. (NMB)	Upon receipt and on even hour intervals	2698	A-3	Emergency.
	0420, 1620	2698	A-3	Regular.
	Upon receipt and on even hour intervals	2698	A-3	Emergency.
Mayport, Fla. (NMV)	0550, 1750	464	A-1	Regular.
	0620, 1820	2698	A-3	Do.
	Upon receipt and on even hour intervals	464	A-1	Emergency.
	Upon receipt and on odd our intervals	2698	A-3	Do.
Miami, Fla. (NMA)	0420, 1620	425	A-1	Regular.
	0450, 1650	2698	A-3	Do.
	Upon receipt and on odd hour intervals	425	A-1	Emergency.
	Upon receipt and on even hour intervals	2698	A-3	Do.
Key West, Fla. (NOK)	0430, 1630	2698	A-3	Regular.
	Upon receipt and on odd hour intervals	2698	A-3	Emergency.
St. Petersburg, Fla. (NOF)	0420, 1620	2698	A-3	Regular.
	Upon receipt and on odd hour intervals	2698	A-3	Emergency.
Mobile, Ala. (NOQ)	0550, 1750	2698	A-3	Regular.
	Upon receipt and on even hour intervals	2698	A-3	Emergency.
	Upon receipt and on odd hour intervals	464	A-1	Do.
New Orleans, La. (NMG)	0520, 1720	425	A-1	Regular.
	Upon receipt and on even hour intervals	425	A-1	Emergency.
Galveston, Tex. (NOY)	0520, 1720	2698	A-3	Regular.
	Upon receipt and on even hour intervals	2698	A-3	Emergency.
	Upon receipt and on odd hour intervals	425	A-1	Do.
San Juan, P. R. (NMR)	0300, 1500	2698	A-3	Regular.
	0330, 1530	127, 4795	A-1	Do.
	Upon receipt and on odd hour intervals	2698	A-3	Emergency.
	Upon receipt and on even hour intervals	127, 4795	A-1	Do.
Long Beach, Calif. (NMQ)	0430, 1630	425	A-1	Regular.
	0500, 1700	2698	A-3	Do.
	Upon receipt and on odd hour intervals	425	A-1	Emergency.
	Upon receipt and on even hour intervals	2698	A-3	Do.
San Francisco, Calif. (NMC)	0400, 1600	425	A-1	Regular.
	0430, 1630	2698	A-3	Do.
	Upon receipt and on even hour intervals	425	A-1	Emergency.
	Upon receipt and on odd hour intervals	2698	A-3	Do.
Seattle, Wash. (NMW)	0500, 1700	425	A-1	Regular.
	0530, 1730	2698	A-3	Do.
	Upon receipt and on odd hour intervals	425	A-1	Emergency.
	Upon receipt and on even hour intervals	2698	A-3	Do.
Ketchikan, Alaska (NOL)	0530, 1730	410	A-1	Regular.
	0900, 1800	2698	A-3	Do.
	Upon receipt and on even hour intervals	410	A-1	Emergency.
	Upon receipt and on odd hour intervals	2698	A-3	Do.
Honolulu, T. H. (NMO)	0900, 2100	425	A-1	Regular.
	0930, 2130	3698	A-3	Do.
	Upon receipt and on local odd hour intervals.	425	A-1	Emergency.
	Do	2698	A-3	Do.

international system on the grounds of greater simplicity. And the alternate system of blowing and answering has the very great added merits (1) of leaving no "gaps" in any situation of meeting, overtaking, or crossing; (2) of insuring an understanding by each vessel of the other's intended maneuver, and (3) of providing an emergency or "danger" signal, whenever and as soon as things go wrong, so that appropriate departure from the rules or other remedial action can be taken in time to prevent disaster.

In conclusion, this argument will have little value if it is not recognized that the overwhelming majority of collisions still occur as the result of disobedience to the rules. When mariners take the Rules of the Road seriously enough to understand and obey them, we shall have fewer collisions and, in all probability, not before.

HEARING UNITS

Coast Guard Merchant Marine investigating units and Merchant Marine details investigated a total 719 cases during the month of December 1947. Of this number, charges were preferred involving 21 licenses and 70 unlicensed men. No hearings were held because examiners were not available.

LESSONS FROM CASUALTIES

EASE DOWN WHEN YOU BLOW DOWN

At sea, recently, a second assistant engineer was scalded severely while clearing an evaporator blow-down line, and died within 9 hours.

Prior to the incident, the second and junior third assistant engineers were on watch, during which time it developed that the evaporator blow-down line was plugged up. At about 1930, the second assistant engineer agreed to go down and clear it while the junior third assistant engineer remained on the operating platform.

The second assistant engineer first attempted to blow down the line by building up steam pressure on the evaporator to between 5 to 10 pounds. Since this did not clear the line, he decided to remove the blow-down valve and use a plumber's snake. He crawled under the floor plates to get into position to work on the valve. He then removed the reach rod and all bolts from the valve flanges, except two bolts which he left loose, and swung the valve off the line. He inserted the plumber's snake (the blow line was about 2 feet long) and began to work it. In a matter of seconds, the snake cleared the line, and steam and hot water gushed out on him.

Because of his precarious position under the floor plates, he was trapped. As the steam and hot water continued to blow out, he screamed, yelled, and kicked.

The junior third engineer heard his watchmate screaming and rushed down to help. He lifted the floor plates and removed the second assistant engineer, who was wet and steaming from head to foot. The junior third assistant engineer and the fireman on watch, took him to the machine shop, ringing the fire alarm for additional help as they did so. They cut off his clothes and began pouring oil on him.

On hearing the alarm the chief engineer started below. He met the junior third assistant engineer who told him what was wrong. He notified the master and then sent the junior third assistant engineer for first-aid equipment. He went to the machine shop where he found the second assistand pacing up and down, shaking, and in obvious agony. The junior third returned and gave the injured engineer an injection of morphine to ease his pain and then helped him to his room.

Upon learning of the incident, the master, who, a few days before, had departed a South American port bound northward, changed course and headed at increased speed to the nearest port.

A passenger, who was a doctor, and the purser, a pharmacist mate, took charge of the engineer and treated him for burns. At about 0330 the next morning, they called the chief engineer and reported that the second assistant engineer was in very critical condition. The chief went to the room and found the doctor and purser holding the second assistant up in bed. He was complaining that he couldn't breathe; he needed air. About 10 minutes later, he died.

At 1540, the body of the second assistant engineer was removed from the vessel and placed ashore for interment.

When asked by the investigating officer if the casualty could have been avoided, the chief engineer said, "It was not good engineering judgment for the second assistant to be trapped there. He told me that he did something foolish. He said there was 5 to 10 pounds pressure in the shell of the evaporator. If he had removed the floor plate in front of the evaporator, and had eased down on the pressure, he would have had an escape, and the casualty could have been avoided."

In every case where there is pressure on a line—be it steam pressure, hydraulic pressure, fuel or lube-oil pressure—it must be relieved before ever attempting to work on the line. This is a fundamental principle of marine engineering.

AN "AUTOMATIC" MOTORBOAT EXPLOSION

A short while ago, a pleasure boat exploded and burned in the Municipal Yacht Basin of a southern east coast port, destroying itself and three other boats and damaging three more.

No lives were lost, although the operator of the exploding boat was seriously injured.

The value of the boat in question was $7,000, but it caused more than $50,000 damage to other boats in the area. The resulting fire also burned down the new boathouse and the adjoining foot piers.

The basic cause of this explosion has been well known to operators of gasoline-powered motorboats for many years. The case here, however, has a feature which has not received too much attention. Gasoline vapors are dangerous, and are readily ignited by the most innocent sources.

On the morning of the explosion, the boat in question was moored in the municipal boathouse along with six other pleasure boats. The operator discovered a quantity of gasoline in the bilges and upon investigating found the starboard fuel tank leaking. Upon noting this, he transferred the remaining gasoline in the starboard tank to the port tank. Then, with the help of the mechanic at the yacht basin, he began flooding the bilges with fresh water and siphoning the mixture into the harbor. This procedure was followed several times until the bilges seemed clear of all gasoline in liquid form.

Nevertheless, gasoline fumes remained in the bilges and throughout various compartments in such quantities that the mechanic and other yacht basin representatives warned the operator and other persons in the vicinity not to start any motors on their boats.

However, about 1500 that afternoon, a deckhand working on a boat about 60 feet to port heard a motor running on or near the gasoline-fumed boat, but he saw no one on board. At about

1600, another deckhand working on a boat 30 feet to starboard also heard a motor running. About 15 minutes later, while the operator was standing on the dock, an explosion occurred in the engine compartment. Instantaneously flames were sprayed throughout the immediate area.

The operator in question was enveloped in flames and his clothing caught fire. His clothing was extinguished by others in the area, and he was rushed to a nearby hospital.

After the local fire department and other fire-fighting facilities appeared on the scene, and the boathouse fire was extinguished, the extent of damage was found to be:

(*a*) Four pleasure boats completely destroyed by fire—three of which sunk.

(*b*) Three boats partially burned by fire, and paint and varnish work blistered.

(*c*) Boathouse and adjoining foot piers completely destroyed.

An investigation of the incident revealed that for several days prior to the explosion, there was common knowledge of the presence of gasoline fumes on and in the vicinity of the exploding boat. In fact, the day before, the operator complained of being sick from inhaling gasoline fumes while working on board.

After being hospitalized for several weeks as a result of the explosion, the operator was interviewed. He maintained that all motors were shut off and had been shut off all day, after discovering the gasoline leak. He, himself, did not start any motors. He did state, however, that the boat was equipped with an automatic electric bilge pump which under normal conditions would become activated with the rise of bilge water in the suction pipe.

It was the opinion of the investigating officer that the automatic bilge pump became activated and produced a spark which ignited the gasoline vapors. Inasmuch as large quantities of fresh water had been used to flush out the bilges earlier in the day, it was believed that an accumulation of the residual from between the floors was directly responsible for the activation of the pump. It can be reasoned that siphoning is not a thorough method for cleaning bilges.

This incident clearly illustrates one of the pitfalls of the modern machine age in which man prides himself in substituting push-buttons and automatic devices for the human mind.

It is a paradox and a dilemma that man-made mechanical devices can bring disaster if they work when they are supposed to, and don't work when they are not supposed to. When danger lurks, automatic features sometimes serve to compound the danger. This is equally true on large vessels as well as on small motorboats.

Gasoline vapors, high temperatures, low water, and other omens of misfortune in maritime operations must today, be evaluated with aggressive precaution. It is all well and good to install mechanical contrivances to ease the burden of daily routine, but it must be remembered that they increase the burden of responsibility when that routine is interrupted. In a complex era of machines, extra precaution is needed, if disaster is to be averted.

Machines don't think—and neither do some men.

APPENDIX

Amendments to Regulations

TITLE 33—NAVIGATION AND NAVIGABLE WATERS

Chapter III—Coast Guard: Inspection and Navigation

[CGFR 47–61]

Part 322—Pilot Rules for the Great Lakes

MISCELLANEOUS AMENDMENTS

A notice regarding proposed changes in the regulations for Pilot Rules for the Great Lakes and their connecting and tributary waters and the St. Marys River was published in the FEDERAL REGISTER dated February 18, 1947 (12 F. R. 1109), and a public hearing was held by the Merchant Marine Council on March 27, 1947, at Washington, D. C.

The purpose of the amendments to the regulations is to improve safety in navigation by changing the Pilot Rules for the Great Lakes and to obtain a correct and uniform administration of the Statutes. All the written and oral comments and suggestions submitted were considered by the Merchant Marine Council and where practicable were incorporated into the regulations. These amendments to the regulations were also referred to the Government of Canada for possible promulgation of similar Canadian Regulations for uniformity of rules on the Great Lakes.

By virtue of the authority vested in me by R. S. 4405, as amended (46 U. S. C. 375), section 3 of the act of February 8, 1895, as amended (sec. 3, 28 Stat. 649, 33 U. S. C. 243) and section 101 of Reorganization Plan No. 3 of 1946 (11 F. R. 7875), the following amendments to the regulations are prescribed and shall become effective on and after March 15, 1948:

1. Section 322.02 *Definitions and risk of collision* is amended by deleting the word "compass" before the word "bearing" in the first sentence of the last undesignated paragraph.

2. Section 322.1 is amended to read as follows:

§322.1 *Signals.* (a) In all weathers every steam vessel under way, in taking any course authorized or required by the rules in this part, shall indicate that course by the following signals on her whistle, to be accompanied, whenever required, by corresponding alteration of her course; and every steam vessel receiving a signal from another shall promptly respond with the same signal or sound the danger signal as provided in § 322.2.

(b) Except as otherwise provided in the rules in this part, one blast shall mean, "I am directing my course to starboard;" two blasts shall mean, "I am directing my course to port."

3. Section 322.4 is amended to read as follows:

§ 322.4 *Vessels passing each other.* The whistle signals indicating course shall be given and answered in accordance with the rules, not only when an alteration of course is required, but at all times before vessels approach within half a mile of each other, from whatever direction, if their courses will bring them within that distance from each other.

4. Section 322.5 is amended to read as follows:

§ 322.5 *Vessels approaching each other "head and head."* When steam vessels are meeting end on, or nearly end on, it shall be the duty of each steam vessel to pass on the port side of the other; and the pilot of either steam vessel may be first in determining to pursue this course, and thereupon shall give, as a signal of this intention, one distinct blast of his whis-

tle, which the pilot of the other steam vessel shall answer promptly by a similar blast of his whistle, and thereupon such steam vessels shall pass on the port side of each other. But if the courses of such steam vessels are so far on the starboard of each other as not to be considered by pilots as meeting end on, or nearly end on, the pilot so first deciding shall immediately give two distinct blasts of his whistle, which the pilot of the other steam vessel shall answer promptly by two similar blasts of his whistle, and they shall pass on the starboard side of each other: *Provided, however,* That in all narrow channels where there is a current, and in the rivers St. Mary, St. Clair, Detroit, Niagara and St. Lawrence, when two steam vessels are meeting, the descending steam vessel shall have the right of way and shall, before the vessels shall have arrived within the distance of half a mile of each other, give the signal necessary to indicate which side she elects to take.

5. Section 322.6 is amended to read as follows:

§ 322.6 *Vessels nearing short bend or curve in channel.* Whenever a steam vessel is nearing a short bend or curve in the channel, where, from the height of the banks or other cause, a steam vessel approaching from the opposite direction cannot be seen for a distance of half a mile, the pilot of such steam vessel, when he shall have arrived within half a mile of such curve or bend, shall give a signal by one blast of the whistle, of at least 8 seconds duration, which signal shall be answered by a similar blast, given by the pilot of any steam vessel within hearing that may be approaching on the other side, and within half a mile, of such bend or curve. Should such signal be so answered by a steam vessel upon the farther side of such bend, then the usual signals for meeting and passing shall immediately be given and answered.

6. Section 322.7 is amended to read as follows:

§ 322.7 *Vessel leaving a dock.* When a steam vessel is leaving her dock or berth, she shall give a signal of one blast of the whistle, of at least 8 seconds duration, which signal shall be answered by a similar blast given by any approaching steam vessel, but she and any approaching vessel shall be governed by Rule 27, the general prudential rule, until her course is apparent, and then both vessels shall be governed by the applicable steering and sailing rules.

7. Section 322.8 is amended to read as follows:

§ 322.8 *Vessels running in same direction; signals for overtaking.* (a) When one steam vessel is overtaking another and the steam vessel astern shall desire to pass on the right or starboard side of the steam vessel ahead, she shall give one distinct blast of the whistle as a signal of such desire and, if the vessel ahead answers with one blast, she shall direct her course to starboard; or if she shall desire to pass on the left or port side of the vessel ahead, she shall give two distinct blasts of the whistle as a signal of such desire and, if the vessel ahead answers with two blasts, she shall direct her course to port; or if the vessel ahead does not think it safe for the vessel astern to pass at that time, she shall immediately signify the same by giving the danger signal of several short and rapid blasts of the whistle, not less than five. It shall then be the duty of the steam vessel astern to hold back and, after an appropriate interval, if she still desires to pass, to make the proper signal so indicating; but under no circumstances shall the steam vessel astern attempt to pass the steam vessel ahead until such time as they have reached a point where it can be safely done, and the steam vessel ahead shall signify her willingness by blowing the proper answering signal. The steam vessel ahead shall in no case attempt to cross the bow or crowd upon the course of the other steam vessel.

(b) Every vessel coming up with another vessel from any direction more than two points abaft her beam; that is, in such a position, with reference to the vessel which she is overtaking, that at night she would be unable to see either of that vessel's sidelights, shall be deemed to be an overtaking vessel, and no subsequent alteration of the bearing between the two vessels shall make the overtaking vessel a crossing vessel within the meaning of the rules in this part, or relieve her of the duty of keeping clear of the overtaken vessel until the overtaken vessel is finally passed and cleared.

(c) As the overtaking vessel cannot always know with certainty whether she is forward of or abaft this direction from the other vessel, she should, if in doubt, assume that she is an overtaking vessel and keep out of the way.

8. Section 322.10 is amended to read as follows:

§ 322.10 *Vessels approaching each other at right angles or obliquely.* (a) When two steam vessels are approaching each other at right angles or obliquely so as to involve risk of collision, other than when one steam vessel is overtaking another, the steam vessel which has the other on her own port side shall hold her course and speed; and the steam vessel which has the other on her own starboard side shall keep out of the way of the other by directing her course to starboard so as to cross the stern of the other steam vessel; or, if necessary to do so, slacken her speed or stop or reverse. The steam vessel having the other on her own port side shall blow one distinct blast of her whistle as a signal of her intention to cross the bow of the other, holding her course and speed, which signal shall be promptly answered by the other steam vessel by one distinct blast of her whistle as a signal of her intention to direct her course to starboard so as to cross the stern of the other steam vessel or otherwise keep clear.

(b) If from any cause whatever the conditions covered by this situation are such as to prevent immediate compliance with each other's signals, the misunderstanding or objection shall be at once made apparent by blowing the danger signal, and both steam vessels shall be stopped, and backed if necessary, until signals for passing with safety are made and understood.

9. Section 322.15 is amended in paragraph (c) by inserting the word "distinct" before the word "blast" or "blasts" in the description under the diagram of the "First Situation," "Second Situation," and "Third Situation;" and by changing paragraph (a) to read as follows:

§ 322.15 *Distress signals; posting of rules; diagrams; starting, stopping, and backing signals*—(a) *Distress signals.* When a vessel is in distress and requires assistance from other vessels or from the shore, the following shall be the signals to be used or displayed by her, either together or separately, namely:

(1) In the daytime:

(i) A gun or other explosive signal fired at intervals of about a minute.

(ii) The distant signal consisting of a square flag having either above or below it a ball or some object resembling a ball.

(iii) A continuous sounding with any fog-signal apparatus.

(2) At night:

(i) A gun or other explosive signal fired at intervals of about a minute.

(ii) Flames from the vessel (as from burning a tar barrel, oil barrel, etc.)

(iii) Rockets or shells, throwing stars of any color or description fired one at a time at short intervals.

(iv) A continuous sounding with any fog-signal apparatus.

(R. S. 4405, sec. 3, 28 Stat. 649, as amended; 33 U. S. C. 243, 46 U. S. C. 375; sec. 101, Reorg. Plan No. 3 of 1946, 11 F. R. 7875)

Dated: February 10, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-1386; Filed, Feb. 13, 1948; 8:53 a. m.; 13 F. R. 688, February 14, 1948]

Equipment Approved by the Commandant

By virtue of the authority vested in me by R. S. 4405 and 4491, as amended (46 U. S. C. 375, 489), and section 101 of Reorganization Plan No. 3 of 1946 (11 F. R. 7875), as well as the additional authorities cited with specific items 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:

LIFE PRESERVERS, KAPOK, ADULT AND CHILD (JACKET TYPE)

Approval No. 160.002/33/0, model 2, adult kapok life preserver, U. S. C. G. Specification 160.002, manufactured by H. S. White Manufacturing Co., Inc., 6th and Rosabel Streets, St. Paul 1, Minn.

Approval No. 160.002/34/0, model 6, child kapok life preserver, U. S. C. G. Specification 160.002, manufactured by H. S. White Manufacturing Co., Inc., 6th and Rosabel Streets, St. Paul 1, Minn.

CLEANING PROCESSES FOR LIFE PRESERVERS

NOTE.—Buoyancy fillers are not removed from envelope during cleaning process.

Approval No. 160.006/11/0, cleaning process for kapok life preservers with permanently installed buoyant inserts, as outlined in letter of 20 November 1947 from Headquarters, New York Port of Embarkation, submitted by Headquarters, New York Port of Embarkation, Brooklyn, N. Y.

(R. S. 4417a, 4426, 4488, 4492, 35 Stat. 428, 49 Stat. 1544, 54 Stat. 164, 166, 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 396, 404, 481, 490, 526e, 526p, 1333, 50 U. S. C. 1275; 46 CFR 160.006–4.)

BUOYANT CUSHIONS, STANDARD

NOTE.—Cushions are for use on motorboats of Classes A, 1, and 2 not carrying passengers for hire.

Approval No. 160.007/58/0, standard kapok buoyant cushion, U. S. C. G. Specification 160.007, submitted by Portable Products Sales Corp., Woolworth Bldg., New York 7, N. Y., manufactured by The American Pad & Textile Co., Greenfield, Ohio.

Approval No. 160.007/59/0, standard kapok buoyant cushion, U. S. C. G. Specification 160.007, manufactured by Correct Craft, Inc., Pine Castle, Fla.

BUOYANT CUSHIONS, NON-STANDARD

NOTE.—Cushions are for use on motorboats of Classes A, 1, and 2 not carrying passengers for hire.

Approval No. 160.008/375/0 15" x 48" x 2" rectangular buoyant cushion, 64 oz. kapok, U. S. C. G. Specification 160.008, Dwg. No. 12, dated 7 November 1947, manufactured by Melman, Inc., 1901 Northwest Miami Court, Miami 36, Fla.

Approval No. 160.008/376/0, 15" x 36" x 2" rectangular buoyant cushion, 48 oz. kapok, U. S. C. G. Specification 160.008, Dwg. No. 11, dated 7 November 1947, manufactured by Melman, Inc., 1901 Northwest Miami Court, Miami 36, Fla.

Approval No. 160.008/380/0, 14" x 20" x 2" rectangular buoyant cushion No. 9163, 24 oz. kapok, The American Pad & Textile Co. Dwg. No. B–65, dated 23 January 1942, revised 6 March 1946, submitted by Montgomery Ward & Co., Inc., Chicago 7, Ill., manufactured by The American Pad & Textile Co., Greenfield, Ohio.

Approval No. 160.008/381/0, 15" x 18" x 2" rectangular buoyant cushion, 24 oz. kapok, U. S. C. G. Specification 160.008, Dwg. No. 15, dated 11 November 1947, manufactured by Melman, Inc., 1901 Northwest Miami Court, Miami 36, Fla.

(54 Stat. 164, 166; 46 U. S. C. 526e, 526p; 46 CFR 25.4–1, 28.4–8.)

BUOYANT APPARATUS

Approval No. 160.010/14/0, buoyant apparatus, 10'0" x 5'0" elliptical shape, 0'11" diameter section, aluminum, 24-person capacity, Dwg. No. 3177, dated 7 August 1947, manufactured by Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

(R. S. 4417a, 4426, 4488, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 1333, 50 U. S. C. 1275; 46 CFR 37.1–1, 59.54a, 60.47a, 76.51a.)

LIFE RAFTS

Approval No. 160.018/8/0, 9.67' x 8.67' x 3.42' life raft, 15-person capacity, identified by general arrangement Dwg. No. G 281, dated 12 January 1942 and revised 15 December 1942, manufactured by C. C. Galbraith & Sons, Inc., 99 Park Place, New York 7, N. Y.

(R. S. 4417a, 4426, 4488, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 481, 1333, 50 U. S. C. 1275; 46 CFR 37.1–1, 59.42, 76.32, 94.32, 113.29.)

DAVITS, LIFEBOAT

Approval No. 160.032/94/0, mechanical davit, straight boom sheath screw, type BN–95, approved for specific installations subject to discretion of the Coast Guard for maximum working load of 19,000 pounds per set (9,500 pounds per arm) using three-part falls, identified by arrangement of boom davit, type BN–95, Dwg. No. 3185, dated 15 October 1947, manufactured by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.032/95/0, mechanical davit, Crescent sheath screw, type C–50, approved for a maximum working load of 10,000 pounds per set (5,000 pounds per arm) using not less than 3-part falls, identified by general arrangement Dwg. No. 3189, dated 23 December 1947, submitted by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.032/96/0, mechanical davit, straight boom sheath screw, type B–20, approved for maximum working load of 4,000 pounds per set (2,000 pounds per arm) using four-part falls, identified by general arrangement Dwg. No. 3161, dated 10 April 1947 and revised 18 November 1947, manufactured by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

(R. S. 4417a, 4426, 4481, 4488, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 474, 481, 1333, 50 U. S. C. 1275; 46 CFR 37.1–4, 59.3, 60.21, 76.15, 94.14, 113.23.)

HAND PROPELLING GEAR, LIFEBOAT

Approval No. 160.034/8/0, type A, size 1, hand propelling gear, identified by general arrangement Dwg. No. 600, dated 14 March 1947, manufactured by C. C. Galbraith & Son, Inc., 99 Park Place, New York 7, N. Y.

(R. S. 4417a, 4426, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 1333, 50 U. S. C. 1275; 46 CFR 33.3–1, 59.11.)

MECHANICAL DISENGAGING APPARATUS (FOR LIFEBOATS)

Approval No. 160.033/35/0, Steward type A releasing gear, approved for maximum working load of 10,320 pounds per set (5,160 pounds per hook), for use on all vessels except ocean and coastwise over 3,000 gross tons where it may be used for replacement purposes only; identified by general arrangement Dwg. No. 2131–8 dated 24 September 1947; submitted by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

(R. S. 4417a, 4426, 4488, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 481, 1333, 50 U. S. C. 1275; 46 CFR 37.1–7, 59.68, 76.62, 94.59.)

LIFEBOATS

Approval No. 160.035/170/0, 16' x 5.6' x 2.35' steel oar-propelled lifeboat, 12-person capacity, identified by general arrangement Dwg. No. OMS–100–A, dated July 1947, submitted by Tregoning Industries, Inc., Seattle, Wash.

Approval No. 160.035/173/0, 30' x 10' x 4.13' steel hand propelled lifeboat, 70–person capacity, identified by general arrangement Dwg. No. 1820, dated 23 December 1939, submitted by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/179/0, 20' x 6.5' x 2.67' steel oar-propelled lifeboat, 20-person capacity, identified by construction and arrangement Dwg. No. 3180, dated 18 September 1947, submitted by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/180/0, 20' x 6.5' x 2.75' steel oar-propelled lifeboat, 21-person capacity, identified by construction and arrangement Dwg. No. 3191, dated 18 September 1947, submitted by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/184/0, 24' x 7.75' x 3.33' steel oar-propelled lifeboat, 37-person capacity, identified by construction and arrangement Dwg. No. 245–2, dated 11 January 1944, and revised 16 May 1947, manufactured by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/196/0, 30.67' x 10.17' x 4.25' steel hand propelled lifeboat, 77-person capacity, identified by arrangement and construction Dwg. No. 1873, dated 28 March 1941, and revised 12 September 1947, manufactured by the Welin Davit and Boat Division of American Steel & Copper Industries, Inc., Perth Amboy, N. J.

Approval No. 160.035/197/0, 18.0' x 5.75' x 2.42' steel oar-propelled lifeboat, 15-person capacity, identified by construction and arrangement Dwg. No. 18–2, dated 14 October 1947, revised 10 December 1947, submitted by Marine Safety Equipment Corp., Point Pleasant, N. J.

Approval No. 160.035/205/0, 24' x 8' x 3.6' steel oar-propelled lifeboat, 41-person capacity, identified by general arrangement Dwg. No. OMS–500–A, dated August 1947, submitted by Tregoning Industries, Inc., Seattle, Wash.

Approval No. 160.035/206/0, 18.0' x 6.6' x 2.7' steel oar-propelled lifeboat, type OMS, 18-person capacity, identified by general arrangement Dwg. No. OMS–200–A, dated September 1947, submitted by Tregoning Industries, Inc., Seattle, Wash.

Approval No. 160.035/207/0, 20.0' x 6.8' x 2.9' steel oar-propelled lifeboat, type OMS, 23-person capacity, identified by general arrangement Dwg. No. OMS–300–A, dated August 1947, submitted by Tregoning Industries, Inc., Seattle, Wash.

Approval No. 160.035/211/0, 22.0' x 7.5' x 3.17' steel oar-propelled lifeboat, 31-person capacity, identified by construction and arrangement Dwg. No. 22–2, dated 17 April 1946, revised 21 October 1946 and 10 December 1947, submitted by Marine Safety Equipment Corp., Point Pleasant, N. J.

(R. S. 4417a, 4426, 4481, 4488, 4492, 35 Stat. 428, 49 Stat. 1544, 54 Stat. 346, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 396, 404, 474, 481, 490, 1333, 50 U. S. C. 1275; 46 CFR 37.1–1, 59.13, 76.16, 94.15, 113.10)

BOILERS, HEATING

Heating boilers, cast iron copper tube, maximum steam or hot water pressure of 15 p. s. i., Dwg. No. D–6245, manufactured by Bryan Steam Corp., Peru, Ind., for the following Models:

Approval No.	Model No.	Available B. t. u. rating (thousands)
162.003/54/0	17	207
162.003/55/0	19	309
162.003/56/0	111	450
162.003/57/0	113	540
162.003/58/0	115	810
162.003/59/0	117	1,188
162.003/60/0	122	1,580

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

FIRE EXTINGUISHERS, HAND, PORTABLE, CARBON-DIOXIDE TYPE

Approval No. 162.005/18/0, General Quick Aid Sno Fog. Fire Guard model 5–AKS, 5-pound carbon-dioxide hand portable fire extinguisher, assembly Dwg. No. C–205–X dated 22 July 1947, name plate Dwg. No. C–205–2 dated 4 February 1947, revised 20 June 1947, manufactured by General Detroit Corp., 2272 East Jefferson Avenue, Detroit 7, Mich.

(R. S. 4417a, 4426, 4479, 4492, 49 Stat. 1544, 54 Stat. 165, 166, 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 463a, 472, 490, 526g, 526p, 1333, 50 U. S. C. 1275; 46 CFR, 25.5–1, 26.3–1, 27.3–1, 34.5–1, 61.13, 77.13, 95.13, 114.15.)

FIRE EXTINGUISHERS, HAND, PORTABLE, DRY-POWDER TYPE

Approval No. 162.010/1/0, Ansul 20, dry chemical carbon-dioxide cartridge type fire extinguisher, rated equivalent to 15-pound carbon-dioxide type or 2½-gallon foam type fire extinguisher for shipboard use, assembly Dwg. No. DV–596, dated 14 August 1946, Rev. 3 dated 3 December 1946, name plate Dwg. No. DV–568 dated 31 May 1946, Rev. 2 dated 5 July 1946, manufactured by Ansul Chemical Co., Marinette, Wis.

Approval No. 162.010/2/0, Ansul 30, dry chemical carbon-dioxide cartridge type fire extinguisher, rated equivalent to 15-pound carbon-dioxide type or 2½-gallon foam type fire extinguisher for shipboard use, assembly Dwg. No. DV–663 dated 12 September 1946, Rev. 3 dated 3 December 1946, name plate Dwg. No. DV–570 dated 6 June 1946, Rev. 2 dated 5 July 1946 manufactured by Ansul Chemical Co., Marinette, Wis.

(R. S. 4417a, 4426, 4479, 4492, 49 Stat. 1544, 54 Stat. 165, 166, 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 463a, 472, 490, 526g, 526p, 1333, 50 U. S. C. 1275; 46 CFR 25.5–1, 26.3–1, 27.3–1, 28.3–5, 34.5–1, 61.13, 77.13, 95.13, 114.15.)

BACKFIRE FLAME ARRESTORS FOR CARBURETORS

Approval No. 162.015/22/0, model No. 20915, backfire flame arrestor for carburetors, assembly Dwg. No. 20915, Rev. A dated 21 October 1947, elbow Dwg. No. 20919 Rev. G, dated 22 October 1947, manufactured by Nordberg Manufacturing Co., Milwaukee 7, Wis.

Approval No. 162.015/23/0, model No. 20916, backfire flame arrestor for carburetors, assembly Dwg. No. 20915, Rev. A, dated 21 October 1947, elbow Dwg. No. 20918, Rev. D, dated 22 October 1947, manufactured by Nordberg Manufacturing Co., Milwaukee 7, Wis.

Approval No. 162.015/24/0, model No. 20840, backfire flame arrestor for carburetors, assembly Dwg. No. 20915, Rev. A, dated 21 October 1947, elbow Dwg. No. 20922–V, Rev. B, dated 23 October 1947, manufactured by Nordberg Manufacturing Co., Milwaukee 7, Wis.

(54 Stat. 165, 166; 46 U. S. C. 526i, 526p; 46 CFR 25.6–1, 26.4–1, 27.4–1.)

GAS RANGES USING PROPANE OR BUTANE GASES

Approval No. 162.020/2/0, Magic Chef gas range, model 461–14, using liquefied petroleum gas, approval certificate issued by the American Gas Association, Inc., AGA Report No. 1–909–4.01, manufactured by The American Stove Co., 4931 Daggett Avenue, St. Louis 10, Mo.

(R. S. 4417a, 4426, 49 Stat. 1544, 54 Stat. 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 463a, 1333, 50 U. S. C. 1275; 46 CFR 32.9–11, 61.25, 77.24, 95.24, 114.25.)

STRUCTURAL INSULATIONS

Approval No. 164.007/22/0, "Baldwin-Hill 8-Pound Felt," mineral wool type structural insulation identical to that described in National Bureau of Standards' letter, file III-6/26, dated 16 July 1943, approved for use without other insulating material to meet Class A-60 requirements in a 3" thickness and 8 pounds per cubic foot density, manufactured by Baldwin-Hill Co., 500 Breunig Avenue, Trenton 2, N. J.

Approval No. 164.007/23/0, "Baldwin-Hill Mono-Block," mineral wool type structural insulation identical to that described in National Bureau of Standards Test Reports Nos. TG3619-47, FR1820, dated 7 January 1941, and TG3610-1493, FP2569, dated 10 November 1947, boards approved for use without other insulating material to meet Class A-60 requirements in a 2" thickness and 18 pounds per cubic foot density, manufactured by Baldwin-Hill Co., 500 Breunig Avenue, Trenton 2, N. J.

(R. S. 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, 391a, 404, 463a, 1333, 50 U. S. C. 1275; 46 CFR Part 144.)

BULKHEAD PANELS

Approval No. 164.008/22/0, "Almarine-M," hollow aluminum, insulation filled bulkhead panel identical to that described in National Bureau of Standards Test Report No. TG3630-1, FP2562, dated 31 October 1947, approved as meeting Class B-15 requirements in a 2⅜" thickness when filled with 2" of Eagle Picher Mineral Wool and with two 0.025" asbestos paper inserts, manufactured by Martin-Parry Corp., York, Pa.

Approval No. 164.008/23/0, "Almarine-A," hollow aluminum, asbetos board core bulkhead panel identical to that described in National Bureau of Standards Test Report No. TG3630-2, FP2563, dated 31 October 1947, approved as meeting Class B-15 requirements in a 2⅜" thickness when fitted with a ¼" asbestos millboard or 3/16" J-M Marine Sheathing core and with two 0.025" asbestos paper inserts, manufactured by Martin-Parry Corp., York, Pa.

(R. S. 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, 391a, 404, 463a, 1333, 50 U. S. C. 1275; 46 CFR Part 144.)

INCOMBUSTIBLE MATERIALS

Approval No. 164.009/10/0, "Fiberglas Insulation Type TW-MC," glass wool insulation type incombustible material identical to that described in National Bureau of Standards Test Report No. TG3610-1493, FP2569, dated 10 November 1947, approved in a 3¼ pounds per cubic foot density, manufactured by Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

Approval No. 164.009/11/0, "Ocean-Lite," plaster type incombustible material identical to that described in National Bureau of Standards Test Report No. TG367-130, FP2579, dated 15 December 1947, manufactured by Oceanic Insul-Lite Corp., 464 Baltic Street, Brooklyn 17, N. Y.

Approval No. 164.009/12/0, "Thermoflex," plaster type incombustible material identical to that described in National Bureau of Standards Test Report No. TG3610-1496, FP2574, dated 4 December 1947, manufactured by Kompolite Co., Inc., 111-115 Clay Street, Greenpoint, Brooklyn 22, N. Y.

Approval No. 164.009/13/0, "J-M Transite," asbestos cement board type incombustible material identical to that described in National Bureau of Standards Test Report No. TG3610-1495, FP2573, dated 28 November 1947, manufactured by Johns-Manville Sales Corp., 22 East Fortieth Street, New York 16, N. Y.

Approval No. 164.009/14/0, "J-M BX-4M," mineral wool insulation type incombustible material identical to that described in National Bureau of Standards Test Report No. TG3610-1493, FP2569, dated 10 November 1947, approved in a 3 and 4 pounds per cubic foot density; manufactured by Johns-Manville Sales Corp., 22 East Fortieth Street, New York 16, N. Y.

(R. S. 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, 391a, 404, 463a, 1333, 50 U. S. C. 1275; 46 CFR Part 144.)

LIFE PRESERVERS, CORK AND BALSA WOOD (JACKET TYPE)

Approval No. A-338, standard adult cork life preserver, manufactured by C. J. Hendry Co., 27 Main Street, San Francisco, Calif.

Approval No. A-339, standard child cork life preserver, manufactured by C. J. Hendry Co., 27 Main Street, San Francisco, Calif.

Approval No. A-340, standard adult balsa wood life preserver, manufactured by C. J. Hendry Co., 27 Main Street, San Francisco, Calif.

Approval No. A-341, standard child balsa wood life preserver, manufactured by C. J. Hendry Co., 27 Main Street, San Francisco, Calif.

(R. S. 4417a, 4426, 4488, 4492, 35 Stat. 428, 49 Stat. 1544, 54 Stat. 164, 166, 346, sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 396, 404, 481, 490, 526e, 526p, 1333, 50 U. S. C. 1275; 46 CFR 28.4-1, 33.6-1, 59.55, 60.48, 76.52, 94.52, 113.44.)

FIRE INDICATING AND ALARM SYSTEMS

Fire alarm annunciator, automatic, supervised, assembly Dwg. No. D-60932, Alt. 3, details, Dwg. No. D-60933, Alt. 2 and Dwg. No. D-60934, Alt. 1, schematic wiring diagram, Dwg. No. C-60898, Alt. 2, manufactured by C-O-Two Fire Equipment Co., Box 390, Newark 1, N. J.

Fire alarm remote manual alarm box, Dwg. No. C-60992, Alt. 0, manufactured by C-O-Two Fire Equipment Co., Box 390, Newark 1, N. J.

Fire alarm system battery charging panel, Dwg. No. D-60993, Alt. 1, manufactured by C-O-Two Fire Equipment Co., Box 390, Newark 1, N. J.

(R. S. 4417a, 4418, 4426, 4470, 4471, 4483, 49 Stat. 1544, 54 Stat. 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 404, 463., 463a, 464, 476, 1333, 50 U. S. C. 1275.)

FIRE EXTINGUISHING SYSTEMS, PORTABLE

Portable foam fire extinguishing system for cargo spaces of tank vessels, National Aer-O-Foam hose application type, one unit consisting of one National Aer-O-Foam nozzle with pick-up tube, Type RP-3, assembly Dwg. No. B-16-2, dated 4 June 1945, and 2 cans of National Aer-O-Foam liquid; approved for a superficial liquid area not exceeding 250 square feet, multiple units may be used to protect greater areas in the ratio of one unit for each 250 square feet or fraction thereof to be protected; manufactured by National Foam System, Inc., southeast corner Fifteenth and Chestnut Streets, Philadelphia 2, Pa.

Portable foam fire extinguishing system for cargo spaces of tank vessels, National Aer-O-Foam hose application type, one unit consisting of one National Aer-O-Foam nozzle with pick-up tube, Type RP-6, assembly Dwg. No. B-16-3, dated 4 June 1945, and 4 cans of National Aer-O-Foam liquid; approved for a superficial liquid area not exceeding 500 square feet, multiple units may be used to protect greater areas in the ratio of one unit for each 500 square feet or fraction thereof to be protected; manufactured by National Foam System, Inc., southeast corner Fifteenth and Chestnut Streets, Philadelphia 2, Pa.

Portable foam fire extinguishing system for cargo spaces of tank vessels, National Aer-O-Foam hose application type, one unit consisting of one National Aer-O-Foam nozzle with pick-up tube, Type RP-12, assembly Dwg. No. C-16-4, dated 6 August 1945, and 8 cans of National Aer-O-Foam liquid; approved for a superficial liquid area not exceeding 1,200 square feet, multiple units may be used to protect greater areas in the ratio of one unit for each 1,200 square feet or

fraction thereof to be protected; manufactured by National Foam System, Inc., southeast corner Fifteenth and Chestnut Streets, Philadelphia 2, Pa.

(R. S. 4417a, 4426, 4470, 49 Stat. 1544, 54 Stat. 165, 166, 346, 1028, and sec. 5 (e), 55 Stat. 244, as amended; 46 U. S. C. 367, 391a, 463, 463a, 404, 526g, 526p, 1333, 50 U. S. C. 1275.)

Dated: February 5, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-1279; Filed, Feb. 11, 1948; 8:54 a. m.; 13 F. R. 636 February 12, 1948]

TERMINATION OF APPROVAL OF EQUIPMENT

By virtue of the authority vested in me by R. S. 4405, 4417a, 4491, and sec. 5 (e), 55 Stat. 244, as amended (46 U. S. C. 375, 391a, 489, 50 U. S. C. 1275), and section 101 of Reorganization Plan No. 3 of 1946 (11 F. R. 7875), the following approvals for inverted ball-vent check valves are terminated and shall be made effective upon the thirty-first day after the date of publication of this document in the FEDERAL REGISTER:

FLAME ARRESTORS FOR TANK VESSELS

Termination of approval No. 162.017/8/0, "Marelco" non-return vent pipe valve, atmospheric pattern, hemispherical ball float type, bronze body, open top, Dwg. "4" non-return automatic vent pipe valve approved for sizes 2½" and above for use with inflammable or combustible liquids of Grade B or lower, manufactured by Marine Electric Co., 107 Main Street, Seattle, Wash. (Published in F. R. July 31, 1947, 12 F. R. 5230.)

Termination of approval No. 162.017/52/0, "Varec" Fig. No. 530, inverted ball-vent check valve, weight loaded ball check, atmospheric pattern, all bronze, flanged connection, fitted with cover, and flame screens, Bulletin No. M-4, approved for 2½", 3", 3½", 4", 5", 6", and 8" pipe sizes, for use with inflammable or combustible liquids or Grade D or lower, manufactured by The Vapor Recovery Systems Co., 2820 North Alameda Street, Compton, Calif. (Published in F. R. July 31, 1947, 12 F. R. 5233.)

Termination of approval No. 162.017/53/0, "Varec" Fig. No. 531, inverted ball-vent check valve, weight loaded ball check, atmospheric pattern, all bronze, screwed connection, fitted with cover and flame screens, Bulletin No. M-4, approved for 2½", 3", 3½", 4", 5", 6", and 8" pipe sizes, for use with inflammable or combustible liquids of Grade D or lower, manufactured by The Vapor Recovery Systems Co., 2820 North Alameda Street, Compton, Calif. (Published in F. R. July 31, 1947, 12 F. R. 5233.)

NOTE.—The termination of the above approvals is made because the inverted ball-vent check valves covered do not require approval and companies have filed appropriate affidavits covering the manufacture of the valves. This termination of approval shall not require or prohibit the use of the valves described on merchant tank vessels of the United States.

Dated: February 2, 1948.

[SEAL] J. F. FARLEY,
Admiral, U. S. Coast Guard,
Commandant.

[F. R. Doc. 48-1137; Filed, Feb. 6, 1948; 8:46 a. m.; 13 F. R. 580 February 7, 1948]

CERTIFICATION OF ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from January 25 to February 25, 1948, 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.

Spray Inc. 218 North 15th St., East Orange, N. J., dated January 27, 1948, certification No. 240, "Spraycect."

Sumco Products, Inc., 144–146 Centre St., Brooklyn 31, N. Y., dated February 19, 1948, certification No. 241, "Oilkleen." Degreasing solvent.

Sumco Products, Inc., 144–146 Centre St., Brooklyn 31, N. Y., dated February 19, 1948, certification No. 242, "Heaterkleen." Fuel oil heater solvent.

Sumco Products, Inc., 144–146 Centre St., Brooklyn 31, N. Y., dated February 19, 1948, certification No. 243, "Tubekleen." Fire scale eradicator.

AFFIDAVITS

The following affidavits were accepted during the period January 15 to February 15, 1948:

Spence Engineering Co., Inc., Walden, N. Y. Valves and fittings.

Taylor Instrument Co., P. O. Box 110, Rochester 1, N. Y. Valves and fittings.

Northern Engineering Co., 100–110 Ogden Ave., Superior, Wis. Steel valves.

American Machine & Engineering Corp., 1411 Reedsdale St. N. S. Pittsburgh, Pa. Valves and fittings.

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 list, 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, Washington 25, D. C., duplicate copies of a detail 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	
Carpenter Products, Los Angeles 43, Calif.:					
Cable clamp and hanger, dwg. No. 1001-0	x	x			1/16/48
Henschel Corp., Amesbury, Mass.:					
Current failure alarm panel, dwg. No. 40-031-1, alt. 0	x	x	x		2/4/48
McNabb, Inc., Bridgeport, Conn.:					
Salinity indicator panel, Model SMA10, dwg. No. S-111-2, alt. 0 and S-110-2, alt. 0	x	x			1/23/48
Murlin Mfg. Co., Philadelphia 43, Pa.:					
Mirror light, nonwatertight, with convenience outlet, 1 25-watt lamp maximum, dwg. No. 312, alt. 3	x				1/23/48
Mirror light, nonwatertight, with convenience outlet, 1 40-watt lamp maximum, dwg. No. 316, alt. 4	x				1/23/48
Mirror light, nonwatertight, with convenience outlet, 1 40-watt lamp maximum, dwg. No. 336, alt. 3	x				1/23/48
Mirror light, nonwatertight, with convenience outlet, 1 40-watt lamp maximum, dwg. No. 508, alt. 4	x				1/23/48
Mirror light, nonwatertight, with convenience outlet, 1 40-watt lamp maximum, dwg. No. 860, alt. 3	x				1/23/48
Cabinet light, nonwatertight, with convenience outlet, 2 25-watt lamps maximum, dwg. No. 958, alt. 3	x				1/23/48
Bulkhead light, nonwatertight, with convenience outlet, 2 25-watt lamps maximum, dwg. No. 960, alt. 3	x				1/23/48

Merchant Marine Personnel Statistics

MERCHANT MARINE LICENSES ISSUED DURING JANUARY 1948

DECK OFFICERS

REGION	Master										Chief mate										Second mate									
	Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	44	85	1	16	....	....	9	67	....	3	21	7	....	....	....	....	1	2	....	1	37	7	....	2	....	....	....	....	....	....
Gulf coast	11	43	1	2	....	....	2	1	....	3	15	....	....	....	....	....	1	....	....	1	12	4	....	....	....	....	....	....	....	....
Great Lakes and rivers	....	1	....	....	1	59	....	....	2	24	....	1	....	....	....	....	....	....	8	13	....	1	....	....	....	....	....	....	....	....
Pacific coast	28	53	....	....	....	....	1	13	....	4	11	3	....	....	....	....	2	4	....	....	27	8	....	....	....	....	....	....	....	....
Total	83	182	2	18	1	59	12	81	2	34	47	11	....	....	....	....	3	6	8	14	76	20	....	2	....	....	....	....	....	....

REGION	Third mate										Pilots						Master mate				Total		
	Ocean		Coastwise		Great Lakes		B. S. & L.		Rivers		Great Lakes		B. S. & L.		Rivers		Uninspected vessels, high seas				Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	10	27	....	....	....	....	....	....	....	....	....	1	57	138	....	....	....	1	....	....	179	356	535
Gulf coast	11	3	....	....	....	....	....	....	....	....	....	2	10	36	3	3	....	....	....	....	66	98	164
Great Lakes and rivers	....	1	....	....	....	....	....	....	....	....	4	85	....	....	30	34	....	....	....	....	45	219	264
Pacific coast	9	13	....	....	....	....	....	....	....	....	....	1	15	48	....	8	4	3	2	....	99	158	257
Total	30	44	....	....	....	....	....	....	....	....	4	89	82	222	33	45	4	4	2	....	389	831	1,220

ENGINEER OFFICERS

REGION	Chief engineer, steam				First assistant engineer, steam				Second assistant engineer, steam				Third assistant engineer, steam			
	Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Unlimited		Limited	
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R
Atlantic coast	17	75	3	44	27	17	.....	1	20	24	.....	1	5	28	.....	.....
Gulf coast	9	23	.....	11	5	8	.....	.....	11	2	.....	.....	4	6	.....	.....
Great Lakes and rivers	1	18	5	44	2	1	1	15	.....	.....	.....	10	1	1	1	2
Pacific coast	14	53	1	8	8	17	.....	.....	21	7	.....	.....	10	6	.....	.....
Total	41	169	9	107	42	43	1	16	52	33	.....	11	20	41	1	2

REGION	Chief engineer, motor				First assistant engineer, motor				Second assistant engineer, motor				Third assistant engineer, motor				Uninspected vessels				Totals		
	Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Unlimited		Limited		Chief engineer		Assistant engineer		Original	Renewal	Grand total
	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R	O	R			
Atlantic coast	3	16	8	28	....	3	1	2	6	1	....	1	1	23	1	....	....	....	....	....	92	264	356
Gulf coast	....	2	3	8	....	1	1	....	....	....	....	....	....	5	....	....	....	....	....	....	33	66	99
Great Lakes and rivers	1	2	2	5	....	....	2	1	2	....	....	....	1	3	....	....	....	....	....	....	19	102	121
Pacific coast	4	15	18	13	1	....	....	....	1	1	....	....	7	11	....	....	5	....	2	....	92	131	223
Total	8	35	31	54	1	4	4	3	9	2	....	1	9	42	1	....	5	....	2	....	236	563	799

ORIGINAL SEAMEN'S DOCUMENTS ISSUED MONTH OF JANUARY 1948

REGION	(1) Staff officer	(2) Continuous discharge book	(3) U. S. Merchant Mariner's documents	(4) AB Any waters unlimited	(5) AB Any waters 12 months	(6) AB Great Lakes 18 months	(7) AB Tugs and towboats any waters	(8) AB* Bays and sounds	(9) AB Sea-going barges	(10) Lifeboatman	(11) Q. M. E. D.	(12) Radio operators	(13) Certificate of service	(14) Tankerman
Atlantic coast	93	*1	1,210	76	173	1	0	0	0	291	260	17	974	14
Gulf coast	9	21	491	19	56	1	0	0	0	80	111	8	444	20
Pacific coast	31	0	676	44	75	3	0	0	0	243	187	10	533	4
Great Lakes and rivers	4	1	220	14	60	14	0	0	0	63	120	0	196	14
Total	137	23	2,597	153	364	19	0	0	0	677	678	35	2,147	52

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

NOTE.—Columns 4 through 14 indicate endorsements made on U. S. Merchant Mariner's documents.

WAIVERS OF MANNING REQUIREMENTS FROM JAN. 1 TO JAN. 31, 1948

Authority for These Waivers Contained in Navigation and Vessel Inspection Circular No. 8-47 Dated Aug. 21, 1947

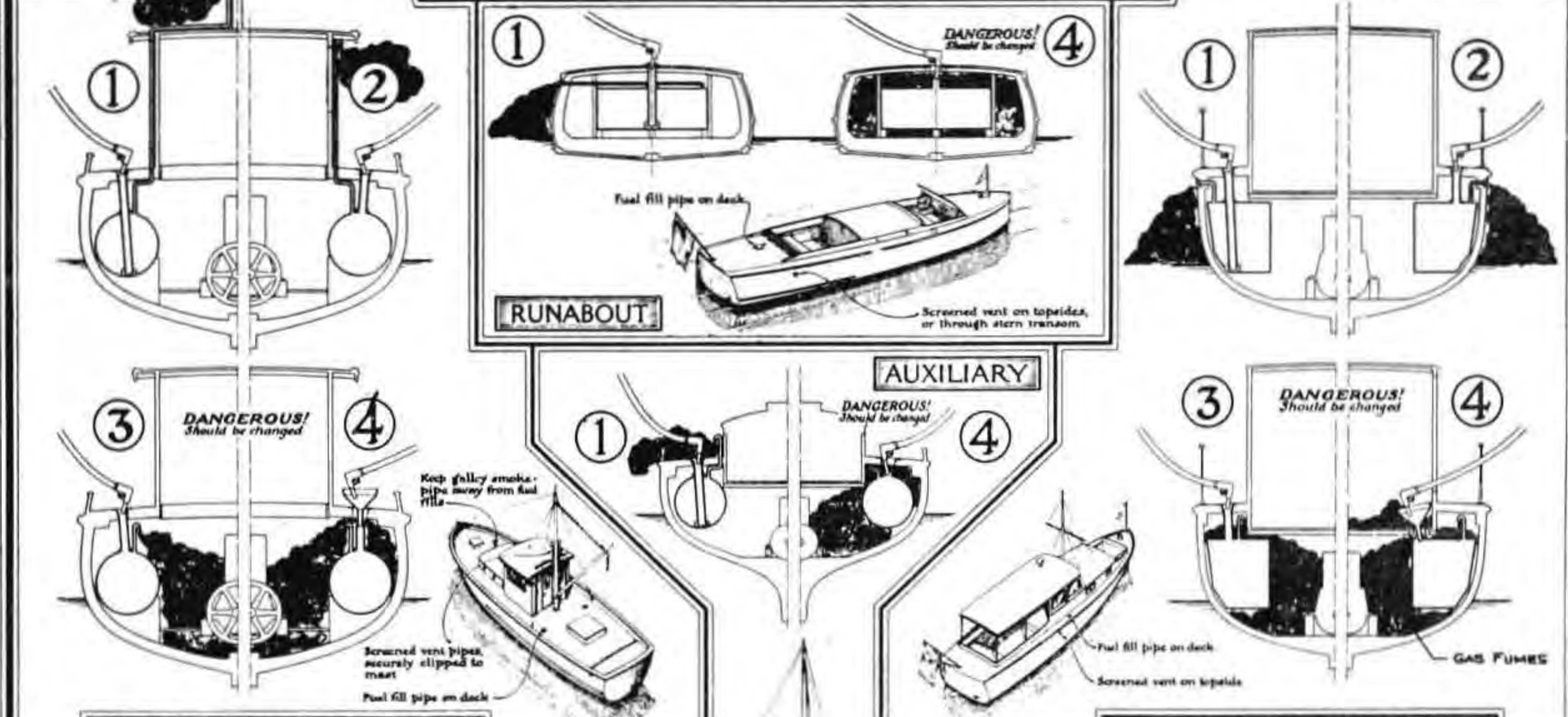
REGION	Number of vessels	Deck officers substituted for higher ratings	Engineer officers substituted for higher ratings	Able seamen substituted for deck officers	Ordinary seamen substituted for able seamen	Qualified members of engine department substituted for engineer officers	Wipers or coal passers substituted for qualified members of engine department	Wipers, coal passers or cadets substituted for engineer officers	Ordinary seamen or cadets substituted for deck officers	Total
Atlantic coast	295	8	17	1	504	2	135	1		668
Gulf coast	125	2	8		173	3	42			228
Pacific coast	74	2	6	2	72	1	34			117
Great Lakes										
Total	494	12	31	3	749	6	211	1		1,013

CREW SHORTAGE REPORTS FROM JAN. 1 TO JAN. 31, 1948

These Reports Submitted in Accordance With Navigation and Vessel Inspection Circular No. 8-47 Dated Aug. 21, 1947

Region	Number of vessels	Ratings in which shortages occurred												Total
		Chief mate	Second mate	Third mate	Radio	Able seamen	Ordinary seamen	Chief engineer	First engineer	Second engineer	Third engineer	Qualified member engine department	Wiper or coal passer	
Atlantic coast	16		1			6	8					4	2	21
Gulf coast	3		1			2								3
Pacific coast	5			1		3	1					2	1	8
Great Lakes	14			3		6		1		3	10	7	1	31
Total	38		2	4		17	9	1		3	10	13	4	63

PREVENTION of FIRES on POWER BOATS



TYPES of INSTALLATIONS

1. BEST INSTALLATION. Fill pipes firmly attached to tight deck plate. Fill pipe extends to bottom of tank, with well to form liquid seal. Vent pipe discharges to open air, away from all hull openings, hatches, doors, windows, ports, etc. Outboard end of vent screened.

2. FAIRLY GOOD INSTALLATION. Fill pipes firmly attached to tight deck plates, but not extended to bottom of tank, with liquid seal well. Tank can be exploded from ignited fill pipe. Vent led to open air with screened outboard end. Location of the vent outlet should be kept clear of all hull openings.

3. DANGEROUS INSTALLATION. Fill pipes firmly attached to deck plates, but vent pipes discharge all vapors to inside of boat. Fumes may be ignited by a backfire, a lit match, by electrical apparatus of any kind, or by a fire in the galley stove. Unless vent pipe is led to open air, a tight deck fill pipe is NO protection.

4. VERY DANGEROUS INSTALLATION. Both fill pipe and vent pipe end inside of hull. All vapors escape to interior of boat. Tank will overflow in filling and spill liquid fuel to bilge. Possible static spark from fill connections at funnel may ignite gasoline.

DO NOT place fill pipes inside of deck houses or cockpits.

DO NOT use small diameter tubing for vents. They will cause bubbling and spilling at the fill pipes.

FILLING INSTRUCTIONS

1. Fuel tanks should be properly installed and vented.
2. Fueling should be completed before dark except in emergencies.
3. Whenever boat is moored at service station for fueling:
   - A. Do not smoke, strike matches, or throw switches.
   - B. Stop all engines, motors, fans, and devices liable to produce sparks.
   - C. Put out all lights and galley fires.
4. Before starting to fuel:
   - A. See that boat is moored securely.
   - B. Close all ports, windows, doors and hatches.
   - C. Ascertain definitely how much additional fuel the tanks will hold.
5. During fueling:
   - A. Keep nozzle of hose or can in contact with fill opening to guard against possible static spark.
   - B. See that no fuel spills get into hull or bilges.
6. After fueling is completed:
   - A. Close fill openings.
   - B. Wipe up ALL spilled fuel.
   - C. Open all ports, windows, doors and hatches.
   - D. Permit boat to ventilate for at least 5 minutes.
   - E. See that there is no odor of gasoline in the engine room or below decks before starting machinery or lighting fire.
   - F. Be prepared to cut off moorings as soon as engine starts.

CG-2936 (11-47)

Originally issued by the
MARINE SECTION, NATIONAL FIRE PROTECTION ASSOCIATION
as prepared by
CONFERENCE COMMITTEE ON POWER BOAT SAFETY

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U. S. GOVERNMENT PRINTING OFFICE: 1948