PROCEEDINGS
OF THE MARINE SAFETY COUNCIL

DEPARTMENT OF TRANSPORTATION UNITED STATES COAST GUARD

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PROCEEDINGS

OF THE

MARINE SAFETY COUNCIL

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CONTENTS

COVERS

FRONT COVER: Pictured during her sea trials is the SS *Arco Anchorage,* the first 120,000 deadweight-ton tanker built at Bethlehem Steel's Sparrows Point, Md., shipyard. She is 883 feet in length, has a molded breadth of 138 feet and a speed of 16 knots. Her liquid cargo capacity is 942,656 barrels. *Courtesy Bethlehem Steel.*

BACK COVER: A view of the recently launched Great Lakes M/V *Roger M. Kyes.* The vessel is a 680-foot self-unloader which will carry coal and taconite. She has a maximum speed of 15½ m.p.h. and a cargo capacity of 26,200 tons which she can unload in less than 4½ hours. *Courtesy The American Ship Building Co.*

DIST. (SDL No. 97)
A: abcd (2), fhklmntuv(1)
B: n(40); c(6); e(5); f(4); ghj(3); r(2); bkiq(1)
C: gmp(1)
D: i(5); adgklm(1)
E: m(1)
F: kp(1)
Lists TCG–06, CG–13, CG–20

TOXIC GASES CAN KILL UNWARY ENGINEERS; TAKE EXTRA CARE AROUND BOILERS AND TANKS

IN SPITE OF better air conditioning and circulation systems on newer ships, gas hazards continue to exist for engineers. Special care should be taken for the removal of toxic gases from idle boilers and empty tanks, before workmen enter them.

In one recent tragedy, the boiler had been washed out, left to dry, and then sealed up for a considerable time. When the manhole plate was removed, a workman entered at once and died on the spot. Hindsight showed that the engineer had been killed by oxygen deficiency, for the moist iron surfaces of the boiler had used up the limited amount of oxygen available in the enclosed space.

Boilers should not be entered until they have been thoroughly ventilated by blowing them out with air, if natural draft is inadequate. Reliance should not be placed on flame tests made adjacent to manholes, since such tests may give no indication of gas accumulation or deficiences at other points within the boiler.

Carbon monoxide poisoning can be presumed wherever exposure to motor exhaust gases and furnace or stack gases occurs. Fatal cases of such poisoning have been observed in drying rooms warmed by stack gases, and are known also to have been caused by leaks from parts of Diesel engines.

On-board tanks that have been sealed for relatively long periods may be unsafe to enter, even though they contain no oil or other cargo residues. Accidents have occurred in tanks painted on the inside but normally empty and hermetically sealed for long periods of time, such as the "blister" tanks on Navy ships. Similarly, casualties have occurred in tanks that are at times filled with water for ballast or other use—notably the double bottom and peak tanks of merchant vessels.

Two disasters that occurred in the blister tanks of a Navy vessel a few years ago attracted wide attention. In one case, three men were overcome after working for a shift in one of these tanks; their deaths were later blamed on carbon monoxide poisoning. In the second accident, a man who entered a lower blister compartment 5 minutes after the manhole plate had been removed was overcome, and several other men who entered the tank to rescue the first victim also lost consciousness. Two of the men died, but the others recovered without permanent ill effects. This tank had been painted with red lead, but the paint had come off in a number of places—allowing the contained air to reach the metal. Oxygen deficiency and carbon monoxide were the probable cause of death.

Carbon monoxide does not, however, seem to have caused a number of disasters in empty peak and double bottom tanks of merchant vessels. In these cases, oxygen deficiency was apparently the major factor. Free air normally contains about 21 percent of oxygen by volume, but men can work with decreased efficiency when the oxygen is as low as 16 percent. If the volume of oxygen drops to 8 or 11 percent, loss of consciousness occurs. When only 6 percent of the air is oxygen, death will occur in 6 to 8 minutes.

It is important, before inspecting an empty peak or double bottom tank, to remember that moist steel surfaces consume oxygen by rusting. On one ship, the volume of oxygen in an empty hull tank had dropped to less than 4 percent.

In a double tragedy, a man started to descend into a peak tank carrying a candle. When he reached a point 2 feet below the manhole, the candle went out and the man simultaneously fell off the ladder. A second engineer who went to his assistance also fell off the ladder, and both were dead before they could be rescued.

There is nothing in the appearance or odor of the air in such tanks to indicate oxygen deficiency. This makes them particularly dangerous, since workmen can collapse without warning and be killed after 4 minutes' exposure to an inadequate supply of oxygen.

Harsh as it is to say, rescue attempts in such situations almost always result in more deaths, since gas masks, respirators, wet towels and other means commonly used to protect the wearer against gaseous atmospheres are of no use when the volume of oxygen is too low to support life.

The only equipment useful under such conditions are hose-masks and self-contained oxygen respirators using compressed oxygen or chemical mixtures to provide oxygen.

Carbon monoxide alarms that ring gongs whenever the deadly gas exists are one means of reducing the death rate and improving the health of those whose business it is to check sealed boilers and keel tanks. This is surely a case of an "ounce of prevention"; the trouble of trailing a wire to such an alarm in each tank would rid the ship of a serious menace to the health of its crew. ‡

—*Courtesy* Safety Valve, *District 2 MEBA*

NEW LIGHT ON AN OLD TOPIC

A practical flashing light (Morse code) examination has long been in use in qualifying merchant marine deck officers. Although the requirement for such an examination was standard, the procedures employed in administration varied somewhat from port to port. In the interest of fair and objective treatment of all candidates, it was obvious that these procedures should be standardized.

The USCG Electronic Engineering Laboratory at Washington Radio Station, Alexandria, Va., has developed a Code Flasher, which converts a coded audio message from an external source (a cassette tape player) into corresponding coded light flashes. The Code Flasher automates the testing process and assures a flashing light code test which is consistent and objective throughout the country.

The Code Flasher, while designed for administering flashing light tests, can also be used as an aid in learning flashing light. Inquiries have been received from various training institutions concerning the availability of such devices for training. At present, no commercial source is known where a comparable testing/training device can be procured. A description of the Coast Guard Code Flasher is given to enable any interested person to fabricate his own flashing light training device.

This concept can also be utilized at a lower cost, by anyone owning a cassette player. This permits a seaman to build up his flashing light experience using commercially available practice (sound) code training cassette tapes until he excels at the mandatory six words per minute.

The simplified block diagram of the Coast Guard Flashing Light Code Set (figure 1) shows the two paths available to the audio signal. One path routes the signal to a speaker, the other causes the coded signal to trigger a flashing light circuit.

The external audio signal is connected to the Flasher at an input jack, J101, which is wired directly to a LIGHT/AUDIO switch, S102 (see figure 2). From the switch the signal is directed to either the speaker, LS-101, for reproduction or to the flashing light circuit. In the flashing light circuit the signal passes through a variable resistor, R101, which can be adjusted to attenuate the input level as necessary. When the signal reaches the gate of the triac, Q101, it triggers the triac and causes current to flow from the secondary winding of a step-down transformer, T101, through the lamp, DS101. The lamp is illuminated as long as the signal triggers the triac; once the signal is stopped, the lamp is extinguished.

An alternate approach, which will allow a person to construct his own training device by a slight modification to any cassette tape player, is presented here courtesy of Captain Van's Nautical School of Port Arthur.

Figure 1, Block Diagram

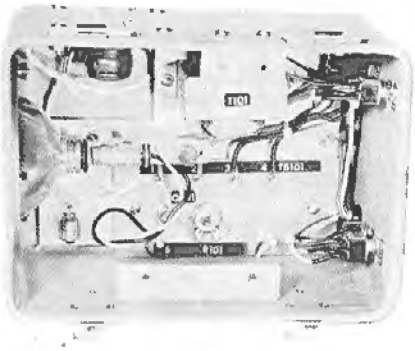
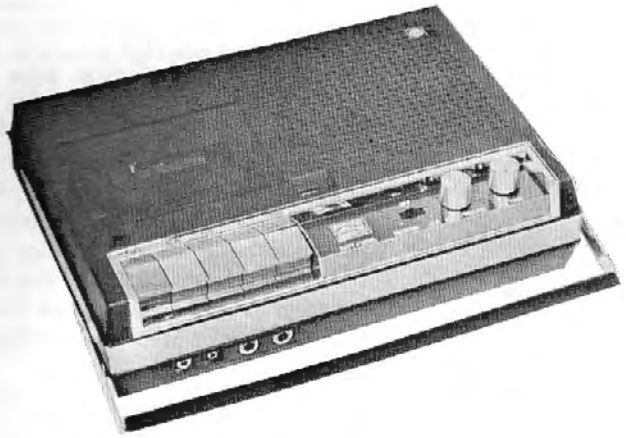


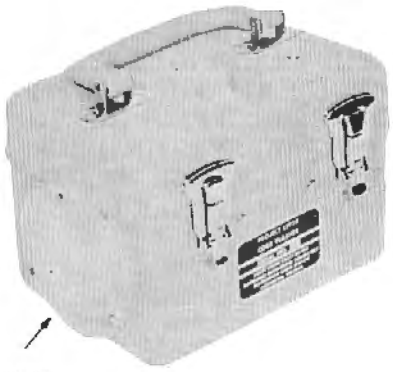
Figure 2
Component Location

Parts List

Ref symbol	*Name and description*	*Approximate price*
	BOARD, circuit	$4.00
DS101	LAMP, 755, 10 V, 0.45 A	.24
	FUSE, 3/10 A	.19
J101	JACK, phone, 3.5 mm	.50
LS101	SPEAKER, 2¼" dia., 8 ohm, 1 W	2.25
Q101	TRIAC, 2.5 A. low volt	1.57
R101	RESISTOR, variable, 3 Kohm, ¼ W	.33
S101	SWITCH, DPDT, 115 V, 5 A	1.29
S102	Same as S101	1.29
T101	TRANSFORMER, Stepdown, 115/6.3	3.14
	CORD, patch, ¼" to 3.5 mm	1.00
	FUSE HOLDER	.53
	LAMP HOLDER	.65

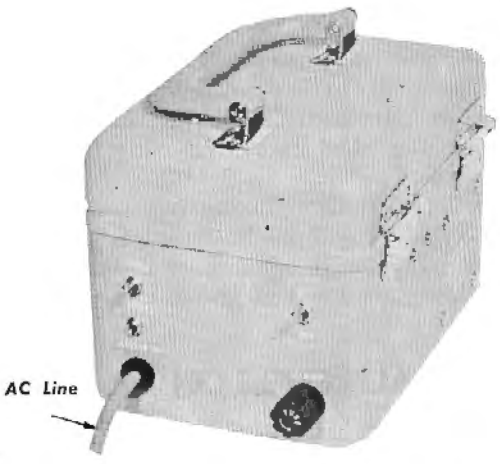


Recorder



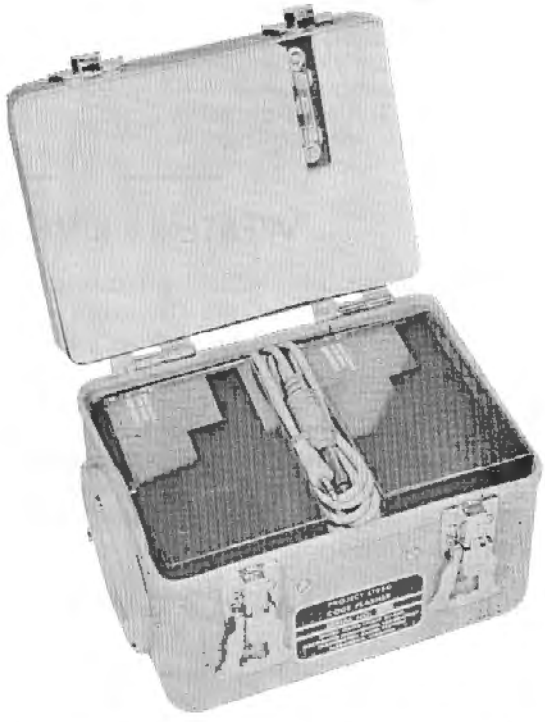
Flashing Light

Project L1950 Code Flasher

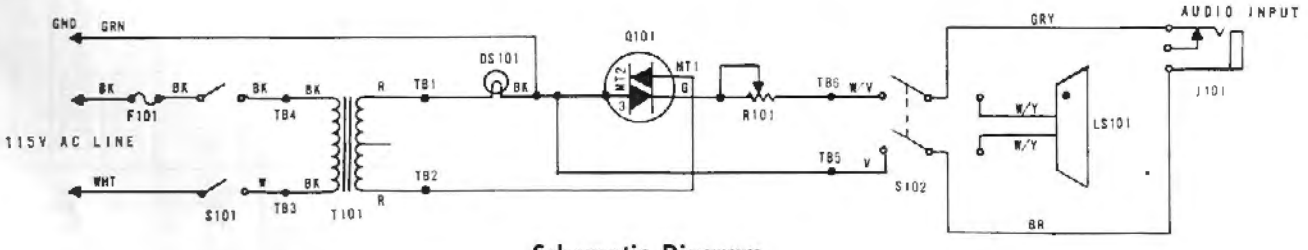


AC Line

Code Flasher, Rear View



Code Flasher With Cassette Tapes and Patch Cord



Schematic Diagram

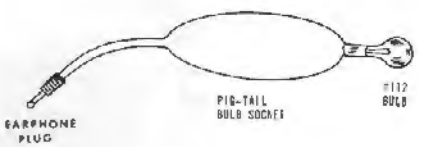
BLINKER TAPE TRAINING DEVICE UTILIZED BY CAPTAIN VAN'S NAUTICAL SCHOOL IN THE TRAINING OF THEIR MEN UP TO THE 6 WPM BLINKER RECEPTION SPEED REQUIRED BY THE DECK OFFICER LICENSE EXAMINATION OF THE U.S. COAST GUARD

With the advent of the Coast Guard's adoption of a mechanical blinker light message sending device in the exam room our old blinker tape training system was rendered too slow for the students to build up the required speed on blinker reception. Searching around, with the clue of the information that the Examiner cassette tape used, we found we could rig up a simplified sending machine using an inexpensive cassette tape recorder/player (or even just any cassette player) as follows:

Shop around until you locate a cassette player or recorder on special (between $25 and $30). Go to any amateur radio supply shop and buy a pig-tail bulb socket. Also buy an extra plug-in ear for your cassette machine, cut off the ear plug end and connect the two wires of the pig-tail to the ends of the cut ear plug wires.

Now, at the same amateur radio supply house, buy a practice (sound) code training cassette tape and a supply of number 112 (1½ volts) flashlight bulbs. (Buy several as they burn out if the volume of your cassette machine is set too high.)

Put the code training cassette in your player, plug the earphone connection into the earplug hole of your cassette machine, screw a bulb into the earphone wire connected pig-tail socket, turn the volume down low, start the machine and adjust the volume until the light of the 112 bulb is easy to read . . . you got it . . .



The reason this whole thing worked is that, at the school we use lots of cassette training aids, we found by trial and error that the voltage of the cassette earplug lead was high enough to drive a 1½ volts flashlight bulb. From then on it was only a matter of rigging up a light to an earplug and finding a practice code tape.

Sufficient information has been presented to enable any interested person to build his own flashing light training device. The device can have a design similar to the Coast Guard Code Flasher or the simplified version of the Code Flasher.

It should be noted that the simplified device is both economical and easy to construct. However, it utilizes a small bulb which might prove more difficult to see if used for group training.

Practice code tapes compatible with either device should be available at most radio shops selling equipment for ham operators.

WESTERN RIVERS CASUALTY STATISTICS

The following statistical tables represent casualties occurring on those waters covered by the Western Rivers Rules of the Road during fiscal year 1972. The tables are reproduced in a format similar to the Annual Statistics of casualties published in the January 1973 *Proceedings,* with the addition of a column on the extreme right and a new row in the top section of the first page. The new column and row indicate what percentage of all reported casualties (See January 1973 *Proceedings*) in that category occurred on the Western Rivers.

The statistical tables have been published at the request of a Coast Guard Study of the waterways comprising the Western Rivers. In the future the Information and Analysis Staff (G–MIS/83) will publish statistical summaries of other areas of interest if there is an interest shown in this program. If any individual or organization has any comments concerning this summary or has a need for a continuing program of this type please contact the U.S. Coast Guard (G–MIS/83), Washington, D.C. 20590.

STATISTICAL SUMMARY OF CASUALTIES TO COMMERCIAL VESSELS ON THE WESTERN RIVERS

1 July 1971 to 30 June 1972

Fiscal year 1972

	Nature of casualty																	
	Collisions; crossing, meeting and overtaking	Collisions, while anchored, docking, or undocking	Collision, fog	Collisions with piers and bridges	Collisions, all others	Explosion and/or fires—cargo	Explosion and/or fires—vessel's fuel	Explosion and/or fire—boilers, pressure vessel	Explosion and/or fire—structure, equipment, all others	Grounding with damage	Grounding without damage	Foundering, capsizing, and floodings	Heavy weather damage	Cargo damage	Material failure—structure and equipment	Material failure—machinery and engineering equipment	Casualty not otherwise classified	Total Western Rivers casualties	Percent of total fiscal year 1972 casualties
Number of casualties	28	14	6	92	23	------	3	------	4	29	6	8	------	2	20	13	3	251	10
Number of vessels involved	130	77	19	223	43	------	4	------	5	72	8	11	------	2	35	26	13	671	16
Number of inspected vessels involved	37	13	2	55	7	------	1	------	1	26	5	------	------	------	1	11	------	159	11
Number of uninspected vessels involved	93	64	17	168	36	------	3	------	4	46	3	14	------	2	34	15	13	512	20

STATISTICAL SUMMARY OF CASUALTIES TO COMMERCIAL VESSELS ON THE WESTERN RIVERS—Continued

1 July 1971 to 30 June 1972

Fiscal year 1972

	Nature of casualty																		
	Collisions; crossing, meeting and overtaking	Collisions, while anchored, docking, or undocking	Collision, fog	Collisions with piers and bridges	Collisions, all others	Explosion and/or fires—cargo	Explosion and/or fires—vessel's fuel	Explosion and/or fire—boilers, pressure vessel	Explosion and/or fire—structure, equipment, all others	Grounding with damage	Grounding without damage	Founderings, capsizing, and floodings	Heavy weather damage	Cargo damage	Material failure—structure and equipment	Material failure—machinery and engineering equipment	Casualty not otherwise classified	Total Western Rivers casualties	Percent of total fiscal year 1972 casualties
Percent of total fiscal year 1972 casualties	15	9	10	22	9	------	12	------	3	10	3	9	------	6	6	9	13	------	------
PRIMARY CAUSE																			
Personnel fault:																			
Pilots—State	------	------	1	1	------	------	------	------	------	------	------	------	------	------	------	------	------	2	3
Pilots—Federal	8	4	3	19	1	------	------	------	------	6	3	1	------	------	1	------	------	46	21
Licensed officer—documented seaman	6	1	2	10	2	------	------	------	------	4	1	------	------	------	------	------	------	26	9
Unlicensed—undocumented persons	23	4	3	42	4	------	1	------	1	14	1	------	------	------	------	------	1	94	16
All others	------	7	------	2	1	------	------	------	1	1	------	1	------	1	1	------	5	20	14
Storms—adverse weather	------	1	1	3	1	------	------	------	------	1	------	1	------	------	1	------	------	9	4
Unusual currents	------	1	------	7	------	------	------	------	------	------	------	------	------	------	------	------	------	8	57
Sheer, suction, bank cushion	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	1	14
Depth of water less than expected	------	------	------	------	------	------	------	------	------	1	1	------	------	------	------	------	------	2	4
Failure of equipment	1	1	------	6	------	------	1	------	1	1	------	------	------	------	1	13	------	25	5
Unseaworthy—lack of maintenance	------	------	------	1	------	------	------	------	------	------	------	2	------	------	2	------	------	5	9
Floating debris—submerged object	------	------	------	2	16	------	------	------	------	------	------	------	------	------	------	------	------	18	15
Inadequate tug assistance	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	1	17
Fault on part of other vessel or person	90	58	9	126	18	------	1	------	1	43	2	5	------	1	29	13	7	403	25
Unknown—insufficient information	------	------	------	4	------	------	1	------	1	1	------	4	------	------	------	------	------	11	10
TYPE OF VESSEL																			
Inspected vessels:																			
Passenger and ferry—large	------	------	------	------	1	------	------	------	------	1	------	------	------	------	------	------	------	2	6
Passenger and ferry—small	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	1	1
Freight	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Cargo barge	1	2	------	5	------	------	------	------	------	1	------	------	------	------	------	4	------	13	11
Tankships	------	1	------	------	------	------	------	------	------	------	4	------	------	------	------	------	------	5	2
Tank barge	34	9	2	50	6	------	1	------	1	24	1	------	------	------	1	7	------	136	27
Public	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	1	5
Miscellaneous	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	1	2
Uninspected vessels:																			
Fishing	3	------	------	------	------	------	------	------	------	------	------	1	------	------	------	------	------	4	1
Tugs	50	11	9	92	23	------	1	------	2	26	2	7	------	------	14	12	1	250	23
Foreign	1	1	1	1	1	------	------	------	------	------	------	1	------	------	------	------	------	6	2
Cargo barge	35	43	5	74	11	------	------	------	2	20	1	5	------	1	20	3	12	232	43
Miscellaneous	4	9	2	1	1	------	2	------	------	------	------	------	------	1	------	------	------	20	8
GROSS TONNAGE																			
300 tons or less	28	15	6	44	12	------	1	------	1	11	2	6	------	------	10	7	1	144	------
Over 300 to 1,000 tons	64	56	11	132	23	------	2	------	1	45	1	7	------	2	24	13	12	393	------
Over 1,000 to 10,000 tons	36	5	1	46	7	------	1	------	3	16	1	------	------	------	1	6	------	123	------
Over 10,000 tons	2	1	1	1	1	------	------	------	------	------	4	1	------	------	------	------	------	11	------
LENGTH																			
Less than 100 feet	20	9	4	27	10	------	2	------	1	9	2	4	------	------	3	6	1	93	------
100 to less than 300 feet	108	66	14	191	32	------	2	------	4	63	2	9	------	2	31	20	12	556	------
300 to less than 500 feet	------	1	------	4	1	------	------	------	------	------	------	------	------	------	1	------	------	7	------
500 feet and over	2	1	1	1	------	------	------	------	------	------	4	1	------	------	------	------	------	10	------
AGE																			
Less than 10 years	67	33	13	99	19	------	1	------	1	32	3	6	------	1	4	7	9	205	------
10 to less than 20 years	39	31	5	73	12	------	1	------	2	23	4	5	------	------	20	9	4	228	------
20 to less than 30 years	16	10	1	36	8	------	1	------	2	12	1	2	------	1	6	7	------	103	------
30 years and over	8	3	------	15	4	------	1	------	------	5	------	1	------	------	5	3	------	45	------
TIME OF DAY																			
Daylight	9	3	3	39	11	------	2	------	2	11	3	4	------	------	14	8	1	110	------
Nighttime	18	10	2	51	11	------	1	------	2	18	3	4	------	2	5	4	2	133	------
Twilight	1	1	1	2	1	------	------	------	------	------	------	------	------	------	1	1	------	8	------
ESTIMATED LOSSES																			
Vessel	543	721	69	2,061	173	------	3,078	------	113	834	------	273	------	------	345	876	52	9,138	11
Cargo	80	12	------	267	15	------	------	------	------	38	------	34	------	2	375	------	------	823	6
Property	------	1,207	------	3,044	1	------	------	------	------	20	------	------	------	------	8	1	------	4,281	39
VESSELS TOTALLY LOST																			
Inspected	------	------	------	2	------	------	------	------	------	3	------	------	------	------	------	------	------	5	23
Uninspected	3	2	------	8	------	------	1	------	1	4	------	2	------	------	2	3	------	26	9

STATISTICAL SUMMARY OF DEATHS/INJURIES DUE TO A VESSEL CASUALTY ON THE WESTERN RIVERS

1 July 1971 to 30 June 1972

Fiscal year 1972

	Nature of casualty																	
	Collisions; crossing, meeting and overtaking	Collision, while anchored, docking, or undocking	Collision, fog	Collisions with piers and bridges	Collisions, all others	Explosion and/or fires—cargo	Explosion and/or fires—vessel's fuel	Explosion and/or fire—boilers, Pressure vessel	Explosion and/or fire—structure, equipment, all others	Grounding with damage	Grounding without damage	Founderings, capsizings, and floodings	Heavy weather damage	Cargo damage	Material failure—structure and equipment	Material failure—machinery and engineering equipment	Casualty not otherwise classified	Total Western Rivers casualties	Percent of total fiscal year 1972 casualties
Number of casualties	3	2	------	3	2	------	------	------	2	------	------	------	------	------	1	------	------	13	10
Number of inspected vessels involved	------	------	------	2	------	------	------	------	1	------	------	------	------	------	1	------	------	4	4
Number of uninspected vessels involved	13	3	------	4	2	------	------	------	2	------	------	------	------	------	------	------	------	24	13
Number of persons deceased/injured	9/4	1/2	------	3/3	2/	------	------	------	2/1	------	------	------	------	------	/1	------	------	17/11	10/10
PRIMARY CAUSE																			
Personnel fault:																			
Pilots—State	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Pilots—Federal	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Licensed officer—documented seaman	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Unlicensed—undocumented persons	3	2	------	1	1	------	------	------	1	------	------	------	------	------	------	------	------	8	------
All others	------	------	------	------	------	------	------	------	1	------	------	------	------	------	------	------	------	1	------
Storms—adverse weather	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Unusual currents	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------	1	------
Sheer, suction, bank cushion	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Depth of water less than expected	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Failure of equipment	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Unseaworthy—lack of maintenance	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------	1	------
Floating debris—submerged object	------	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------	1	------
Inadequate tug assistance	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Fault on part of other vessel or person	------	------	------	------	------	------	------	------	------	------	------	------	------	------	1	------	------	1	------
Unknown—insufficient information	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
TYPE OF VESSEL INVOLVED																			
Inspected vessels:																			
Passenger and ferry—large	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Passenger and ferry—small	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Freight	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Cargo barge	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Tankships	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Tank barges	------	------	------	2/	------	------	------	------	/1	------	------	------	------	------	/1	------	------	2/2	------
Public	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	*	------	------	------
Miscellaneous	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Uninspected vessels:																			
Fishing	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Tugs	------	/2	------	1/3	1/	------	------	------	------	------	------	------	------	------	------	------	------	2/5	------
Foreign	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Miscellaneous	9/4	1/	------	------	1/	------	------	------	2/	------	------	------	------	------	------	------	------	13/4	------
PARTICULARS OF PERSON DECEASED/INJURED																			
Papers of deceased/injured:																			
Licensed by Coast Guard	------	------	------	1/	------	------	------	------	------	------	------	------	------	------	------	------	------	1/	------
Documented by Coast Guard	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
No license or document	9/4	1/2	------	2/3	2/	------	------	------	2/1	------	------	------	------	------	/1	------	------	16/11	------
Other—unknown—foreign	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Status or capacity on vessel:																			
Passenger	7/3	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	7/3	------
Longshoreman—harbor worker	------	------	------	------	------	------	------	------	2/	------	------	------	------	------	/1	------	------	2/1	------
Crewmember	2/1	1/2	------	3/3	2/	------	------	------	/1	------	------	------	------	------	------	------	------	8/7	------
Other	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Activity engaged in:																			
Off duty	------	1/2	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	1/2	------
Deck department duties	1/1	------	------	3/3	------	------	------	------	/1	------	------	------	------	------	------	------	------	4/5	------
Engine department duties	------	------	------	------	1/	------	------	------	------	------	------	------	------	------	------	------	------	1/	------
Stewards department duties	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Handling cargo	------	------	------	------	------	------	------	------	2/	------	------	------	------	------	/1	------	------	2/1	------
Fishing	2/	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	2/	------
Drills	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Passenger	6/3	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	6/3	------
Other and unknown	------	------	------	------	1/	------	------	------	------	------	------	------	------	------	------	------	------	1/	------
Location of vessel:																			
At dock/at anchor	------	------	------	------	------	------	------	------	2/1	------	------	------	------	------	/1	------	------	2/2	------
Underway	9/4	1/2	------	3/3	2/	------	------	------	------	------	------	------	------	------	------	------	------	15/9	------
PART OF BODY INVOLVED																			
Head	/1	------	------	------	1/	------	------	------	------	------	------	------	------	------	------	------	------	1/1	------
Back	------	/2	------	------	------	------	------	------	------	------	------	------	------	------	/1	------	------	/3	------
Chest	/1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	/1	------
Extremities	/1	------	------	/1	------	------	------	------	/1	------	------	------	------	------	------	------	------	/3	------
Illness	------	------	------	/1	------	------	------	------	------	------	------	------	------	------	------	------	------	/1	------
Drowning	9/	1/	------	3/	1/	------	------	------	------	------	------	------	------	------	------	------	------	14/	------
Unspecified and miscellaneous	/1	------	------	/1	------	------	------	------	2/	------	------	------	------	------	------	------	------	2/2	------

STATISTICAL SUMMARY OF DEATHS ON BOARD COMMERCIAL VESSELS ON THE WESTERN RIVERS

(Not Involving a Vessel Casualty)

1 July 1971 to 30 June 1972

Fiscal year 1972

	Nature of death																					
	Natural cause	Homicide	Suicide	Disappearance	Slips and falls—ladders	Slips and falls—gangways	Slips and falls—on deck	Slips and falls—other	Falls from vessel—into water	Falls into holds or tanks	Struck by objects; falling, dropped, or moving	Exposure and asphyxiation	Struck against, crushed, bumped into objects	Operating machinery and tools	Burns and scalds (other than electrical)	Electrical shock and burns	Caught in lines, chains, or wire ropes	Pinching and crushing	Heavy weather	Overexertion, sprains and strains	Cuts, lacerations, bruises, and punctures	Altercations and misconduct	Unknown or insufficient information
CAUSE OF DEATH																						
Total: 20	3								15		2											
Intoxication																						
3 Physical deficiency or handicap	3																					
Unsafe movement or posture																						
1 Psychological—immaturity, insanity									1													
1 Unsafe practice									1													
Violation of law or regulation																						
11 Human errors									10		1											
2 Decks—slippery or cluttered									2													
Weather conditions																						
Poor maintenance or housekeeping																						
Inadequate lighting																						
Inadequate rails or guards																						
1 Failure of equipment											1											
1 Inadequate supervision									1													
Inadequate life preservers																						
Inadequate tools or equipment																						
Inadequate protective equipment																						
Improper use of tools or equipment																						
Miscellaneous causes																						
TYPES OF VESSELS INVOLVED																						
Inspected vessels:																						
Passenger and ferry—large																						
Passenger and ferry—small																						
Freight ships and barges																						
3 Tankships and barges									3													
Public																						
Miscellaneous																						
Uninspected vessels:																						
1 Fishing									1													
8 Tugs	3								5													
Foreign																						
8 Miscellaneous									6		2											
TIME OF DAY																						
15 Daytime	2								11		2											
4 Nighttime	1								3													
1 Twilight									1													
PARTICULARS OF DECEASED																						
Papers of deceased:																						
2 Licensed by Coast Guard	1								1													
4 Documented by Coast Guard	2								2													
14 No license or document									12		2											
Other—Unknown—foreign																						
Status or capacity on vessel:																						
Passenger																						
2 Longshoreman—Harbor worker									2													
16 Crewmember	3								12		1											
2 Other									1		1											
Activity engaged in:																						
2 Off duty	1								1													
12 Deck department duties	2								8		2											
1 Engine department duties									1													
Stewards department duties																						
1 Handling cargo									1													
1 Fishing									1													
Drills																						
Passenger																						
3 Other and unknown									3													
Location of vessel:																						
11 At deck/at anchor									10		1											
9 Underway	3								5		1											
Part of body:																						
2 Head											2											
Back																						
Chest																						
Extremities																						
3 Illness	3																					
14 Drowning									14													
1 Unspecified and miscellaneous									1													

524-495—73——2

STATISTICAL SUMMARY OF PERSONNEL INJURIES ON BOARD ALL COMMERCIAL VESSELS ON THE WESTERN RIVERS

(Not Involving a Vessel Casualty)

1 July 1971 to 30 June 1972

Fiscal Year 1972

	Nature of Injury																	
	Slips and falls—ladders	Slips and falls—gangways	Slips and falls—on deck	Slips and falls—other	Falls from vessel—into water	Falls into holds or tanks	Struck by objects; falling, dropped or moving	Exposure and asphyxiation	Struck against, crushed, bumped into objects	Operating machinery and tools	Burns and scalds (other than electrical)	Electrical shock and burns	Caught in lines, chains, or wire ropes	Pinching and crushing	Heavy weather	Overexertion, sprains, and strains	Cuts, lacerations, bruises, and punctures	Altercations and misconduct	Unknown or insufficient information
CAUSE OF INJURY																			
Totals: 26		1	1	2	1	1	7		2	2	1		3	3		1	1		
1 Intoxication				1															
Physical deficiency or handicap																			
1 Unsafe movement or posture																1			
Psychological—immaturity, insanity																			
4 Unsafe practice										1			1	1			1		
Violation of law or regulation																			
15 Human errors		1	1	1	1	1	2		2	1	1		2	2					
Decks—slippery or cluttered																			
Weather conditions																			
Poor maintenance or housekeeping																			
Inadequate lighting																			
Inadequate rails or guards																			
3 Failure of equipment							3												
1 Inadequate supervision							1												
Inadequate life preservers																			
Inadequate tools or equipment																			
Inadequate protective equipment																			
1 Improper use of tools or equipment							1												
Miscellaneous causes																			
TYPES OF VESSELS INVOLVED																			
Inspected vessels:																			
1 Passenger and ferry—large									1										
Passenger and ferry—small																			
6 Freight ships and barges		1					1		1					2		1			
2 Tankships and barges				1		1													
Public																			
Miscellaneous																			
Uninspected vessels:																			
2 Fishing											1		1						
12 Tugs			1	1	1		4			2			1	1			1		
3 Foreign							2						1						
Miscellaneous																			
TIME OF DAY																			
19 Daytime				1	1	1	4		2	2	1		3	2		1	1		
7 Nightime		1	1	1			3							1					
Twilight																			
PARTICULARS OF PERSON INJURED																			
Papers of person injured:																			
2 Licensed by Coast Guard		1				1													
9 Documented by Coast Guard				1			2		1	1				3		1			
15 No license or document			1	1	1		5		1	1	1		3				1		
Other—unknown—foreign																			
Status or capacity on vessel:																			
Passenger																			
Longshoreman—harbor worker																			
26 Crewmember		1	1	2	1	1	7		2	2	1		3	3		1	1		
Other																			
Activity engaged in:																			
3 Off duty		1		1	1														
19 Deck department duties			1	1		1	6		2				3	3		1	1		
4 Engine department duties							1			2	1								
Stewards department duties																			
Handling cargo																			
Fishing																			
Drills																			
Passenger																			
Other and unknown																			
Location of vessel:																			
17 At dock/at anchor		1		1		1	4		1	2	1		2	3		1			
9 Underway			1	1	1		3		1				1				1		

STATISTICAL SUMMARY OF PERSONNEL INJURIES ON BOARD ALL COMMERCIAL VESSELS ON THE WESTERN RIVERS—Continued

(Not Involving a Vessel Casualty)

1 July 1971 to 30 June 1972

Fiscal Year 1972

	Nature of Injury																		
Totals	Slips and falls—ladders	Slips and falls—gangways	Slips and falls—on deck	Slips and falls—other	Falls from vessel—into water	Falls into holds or tanks	Struck by objects; falling, dropped or moving	Exposure and asphyxiation	Struck against, crushed, bumped into objects	Operating machinery and tools	Burns and scalds (other than electrical)	Electrical shock and burns	Caught in lines, chains, or wire ropes	Pinching and crushing	Heavy weather	Overexertion, sprains, and strains	Cuts, lacerations, bruises, and punctures	Altercations and misconduct	Unknown or insufficient information
Part of body injured:																			
3 Head				1			2				1								
1 Eye																			
Neck and shoulder																			
20 Extremities		1		1	1	1	5		2	2			3	3			1		
1 Chest			1																
Abdomen and hip																			
1 Back																1			
Unspecified and miscellaneous																			

PAINTING OPERATIONS

In painting operations aboard ship, there are many other things in addition to the use of ladders, stages, goggles, and safety belts that must be kept in mind if we are to be on the safe side of the ledger in our work. Summed up here are these points as they apply to painting operations in any location on the vessel.

1. When painting aloft, all gear, gantlines, bosun's chairs, safety belts, etc., must be in good condition, well rigged, and properly secured.

2. In the painting of a mast ladder, a tail block with a gantline and bosun's chair should be used, and the man should lower himself. It is doubly important that the man using a bosun's chair knows how to rig it and make the necessary hitch for lowering himself. Never use a makeshift rig.

3. As a matter of safety, a bosun's chair should not be hooked or shackled to a rung of a ladder. It provides too much margin for error because of the constant need to change from one rung to the next. Also a hook may jump off a rung whenever a man's weight is temporarily released.

4. If painting must be done in closed areas, there must be sufficient ventilation. If paint is to be sprayed, men should wear goggles and respirators. When men are working over the side, stages must be in good condition and well rigged, and safety belts and safety lines must be available to be worn by the men. Lifelines attached to safety belts must not be too slack.

5. If men are working in a punt or work boat, or on a raft, all safety precautions must be taken to prevent drowning, such as wearing a work vest. A life ring with a line attached must be available at each stage in case a man should fall off the stage into the water.

6. When men are working over the side, an attendant must be provided to supervise and assist the men at work. ⚓

Courtesy Lykes Lines Safety Bulletin

COAST GUARD RULEMAKING

(Status as of 1 October 1973)

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
1972 PUBLIC HEARING							
Tailshaft inspection and drawing (67–71, 4–71)	3–1–72	3–27–72	4–3–72	X			
Definition of international voyage (12–70)	3–1–72	3–27–72	4–3–72	X			
Portable foam firefighting equipment—tank vessels (17–71)	3–1–72	3–27–72	4–3–72	X			
ANCHORAGE REGULATIONS							
Casco Bay, Maine	6–16–72		7–19–72	X			
Henderson Harbor, N.Y.	6–28–72		8–1–72	X			
St. John's River, Fla. (CGFR 71–162)	12–22–71		1–31–72	X			
San Juan Harbor, P.R. (CGFR 72–12)	2–1–72		3–4–72	X			
Willington River, Ga. (CGFR 71–153)	11–25–71		12–27–71	X			
San Diego Harbor (CGD 72–228)	12–5–72		1–8–73	X			
Juan De Fuca, Wash. (CGD 72–233)	12–5–72		1–9–73	X			
Chester River, Md. (CGD 73–10)	1–19–73		2–27–73	X			
Milwaukee Harbor, WI (CGD 73–48)	3–19–73		4–16–73	X			
Barbers Point, Oahu, HI (CGD 73–59)	3–30–73		4–20–73	X			
Sodus Bay, NY (CGD 73–84)	4–27–73		5–29–73	X			
Baltimore Harbor, MD (CGD 73–125)	6–19–73		7–20–73	X			
Oyster Bay, NY (CGD 73–126)	6–19–73		7–20–73	X			
Potts Harbor, ME (CGD 73–124)	6–19–73		7–20–73	X			
Puget Sound Area, WA (CGD 75–180)	8–24–73		9–28–73	X			
BOATING SAFETY (GENERAL)							
Personal Flotation Devices (CGD 72–172, 120, 163)	10–6–72	11–20–72				3–28–73	10–1–73
Personal Flotation Devices, supplementary (CGD 72–120)	1–5–73		1–30–73			3–28–73	10–1–73
Termination of unique vessels (CGD 73–40)	3–14–73	5–8–73	5–14–73	X			
Hazardous bar areas (CGD 73–41)	3–14–73	4–17 & 19–73	5–1–73	X			
BRIDGE REGULATIONS							
Nansemond R., Va. (CGD 72–244)	11–11–72		12–15–72	X			
John Day R., Blind Slough, Clatskanie R., Oregon (CGD 72–231)	11–28–72		1–2–73	X			
Nanticoke, Del. (CGFR 71–142)	11–24–71		12–24–71	X			
Ogden Slip, Chicago, Ill. (CGFR 72–16)	2–2–72		3–7–72	X			
Sacramento River, Cal. (CGFR 71–165)	12–29–71		2–7–72	X			
Clear Creek, Tex. (CGD 72–165P)	8–26–72		10–3–72	X			
Pascagoula R. MS (CGD 73–140)						7–12–73	10–8–73 through 1–4–74
Cooper R. SC (CGD 73–139)	7–12–73		8–14–73	X			
Sacramento R. et. al. CA (CGD 73–142)	7–20–73		8–21–73	X			
Lechmere Canal MA (CGD 73–163)	8–10–73		9–11–73	X			
Westchester Ck. NY (CGD 73–166)	8–10–73		9–11–73	X			
Big Carlos Pass FL (CGD 73–164)	8–10–73		9–11–73	X			
Cheesequake Ck. NJ (CGD 73–162)	8–10–73		9–11–73	X			
Green R. KY (CGD 73–171)	8–21–73		9–25–73	X			
Pompano Beach, Fla. (CGD 72–158P)	8–22–72		9–26–72	X			
St. Lucie River, Fla. (CGD 72–168P)	8–26–72		10–3–72	X			
West Palm Beach, Fla. (CGD 72–167P)	8–26–72		10–3–72	X			
Back Bay of Biloxi, Miss. (CG 72–173R)						9–7–72 Extended 4–2–73	10–2–72 through 10–19–73
AIWW, Mile 342, Fla.; Drawbridge Operations (CGD 72–190P)	9–30–72		11–1–72	X			
Barnegat Bay, N.J. (CGD 72–211)	10–31–72		12–5–72	X			

Coast Guard Rulemaking—Continued

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
Menominee River, WI (CGD 73–12)	1–26–73	.....	3–6–73	X	.....	.....	.....
Spa Creek, MD (CGD 73–13)	1–26–73	.....	3–6–73	X	.....	.....	.....
Long Island Inland Waterway (CGD 73–23)	2–12–73	.....	3–30–73	X	.....	.....	.....
Shaws Cove, CT (CGD 73–72)	4–18–73 corrected 5–1–73	.....	5–18–73	X	.....	.....	.....
Columbia and Snake R's, WA (CGD 73–95)	5–8–73	.....	6–8–73	....	.....	9–13–73	10–14–73
Scuppernong R., NC (CGD 73–111)	5–29–73	.....	7–3–73	X	.....	.....	.....
Rahway R., NJ (CGD 73–196)	9–11–73	.....	10–16–73	....	.....	.....	.....
Alabama R., AL (CGD 73–195)	9–11–73	.....	10–16–73	....	.....	.....	.....
Ashepoo R., SC (CGD 73–198)	9–11–73	.....	10–16–75	....	.....	.....	.....
Red River LA & AR (CGD 73–197)	9–11–73	.....	10–16–73	....	.....	.....	.....
Corte Madera CK, CA (CGD 73–199)	9–11–73	.....	10–16–73	....	.....	.....	.....
Gulf Intracoastal Waterway, FL (CGD 73–204)	.....	.....	.....	....	.....	9–13–73	8–15–73 through 3–1–74
Genesee R., NY (CGD 73–203)	9–13–73	.....	10–16–73	....	.....	.....	.....
Miner Slough, CA (CGD 73–210)	.....	.....	.....	....	.....	9–18–73	9–18–73
Navigable Waters in LA (CGD 73–214)	9–27–73	.....	10–30–73	....	.....	.....	.....
HAZARDOUS MATERIALS							
Compressed Gas Cylinders (CGD 72–115PH)	8–31–72	9–28–72	10–2–72	X	.....	.....	.....
Dichlorobutene, Corrected, F.R. 9–20–72, Hazardous Cargoes (CGD 72–162PH)	8–30–72	10–24–72	10–31–72	X	.....	.....	.....
Certification of Cargo Containers for Transport under Customs Seal (CGD 72–139)	11–17–72	.....	12–19–72	X	.....	.....	.....
Metal Borings, Shavings, Turnings & Cuttings (CGD 72–229)	12–5–72	1–11–73	3–1–73	....	.....	7–16–73	10–19–73
Shipment of DOD material sold to shipper (CGD 73–42)	3–22–73	4–17–73	4–24–73	....	.....	7–9–73	10–12–73
Miscellaneous Dangerous Cargoes (CGD 72–182)	11–11–72	12–12–72	12–19–72	X	.....	.....	.....
Miscellaneous Amendments (CGD 72–34)	3–1–72	5–24–72	.....	....	.....	7–27–73	10–30–73
Marking of radioactive materials packages (CGD 73–137)	8–31–73	9–25–73	10–5–73	....	.....	.....	.....
Dangerous Cargoes, miscellaneous amendments (CGD 73–173)	9–5–73	9–25–73	10–5–73	....	.....	.....	.....
MARINE ENVIRONMENT AND SYSTEMS (GENERAL)							
Oil pollution prevention (CGFR 71–160, 161)	12–24–71	2–15–72	4–21–72	X	.....	12–21–72	7–1–74[1]
Marine Sanitation Devices (CGD 73–83)	Adv. Notice 6–18–73	.....	8–15–73	X	.....	.....	.....
Vessel traffic system, Puget Sound (CGD 73–158)	8–6–73	8–30–73	9–17–73	X	.....	.....	.....
Security Zone, New London CT (CGD 73–182)	8–23–73 corrected 9–4–73	.....	9–28–73	X	.....	.....	.....
MERCHANT MARINE SAFETY (GENERAL)							
Oceanographic vessels, fire main systems (CGFR 72–20)	2–4–72	.....	3–19–72	X	.....	.....	.....
Water lights, floating electric (CGFR 72–48)	3–9–72	4–18–72	4–24–72	X	.....	.....	.....
Great Lakes Maritime Academy, List as a Nautical School-Ship (CGD 72–92P)	8–9–72	.....	9–15–72	X	.....	.....	.....
Ship's Maneuvering Characteristics Data (CGD 72–134PH)	8–22–72	9–28–72	10–13–72	X	.....	.....	.....
	Supp. Notice 7–20–73	.....	8–31–73	....	.....	.....	.....
Unmanned Barges; hull construction (CGD 72–130)	10–31–72	12–19–72	12–29–72	X	.....	.....	.....
Marine Engineering Systems and Components (CGD 72–206)	11–17–72	12–12–72	12–20–72	....	.....	6–29–73	10–1–73

[1] Various effective dates precede that indicated. *See* Federal Registers of 12–21–72 and 8–24–73.

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
Construction requirements for tank ships (CGD 72–245).	Adv. Notice 1–26–73	.....	3–15–73	....	.....	.....	.....
	Supp. Notice 7–5–73	.....	.....	....	.....	.....	.....
Wiring methods and materials for hazardous locations (CGD 73–6)	2–14–73	.....	3–16–73	....	.....	8–24–73	11–27–73
Emergency Position Indicating Radio Beacons (CGD 73–24)	3–5–73	4–18–73	4–30–73	X	.....	.....	.....
Firemen's outfits on manned tank barges (CGD 73–11)	4–26–73	On request	5–28–73	X	.....	.....	.....
Dry chemical fire extinguisher requirements (CGD 73–73)	6–8–73	.....	7–10–73	X	.....	.....	.....
Great Lakes pilot rules (CGD 73–100)	8–1–73	.....	9–3–73	X	.....	.....	.....
Lifeboat winches for merchant vessels (CGD 73–103)	8–21–73	.....	9–28–73	X	.....	.....	.....
Lifesaving equipment specification (CGD 73–130)	8–28–73	.....	9–28–73	X	.....	.....	.....
Inflatable liferafts (CGD 73–160)	9–27–73	.....	10–31–73	....	.....	.....	.....

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AFFIDAVITS

The following affidavits have recently been accepted:

U.S. Pipe & Foundry Co., 3300 First Avenue North, Birmingham, Ala. 35202, VALVES.

National Flange & Fitting Co., 4420 Creekmont Street, P.O. Box 94149, Houston, Tex. 77018, FLANGES.

Circle Seal Corp., James, Pond and Clark Div., 1111 North Brookhurst Street, P.O. Box 3666, Anaheim, Calif. 92803, VALVES, FITTINGS.

Aerco Corp., 159–161 Paris Avenue, Northvale, N.J. 07647, VALVES.

Brooks Instrument Div., Emerson Electric Co., P.O. Box 450, Statesboro, Ga. 30458, VALVES.

Jacoby-Tarbox Corp., 808 Nepperhan Avenue, Yonkers, N.Y. 10703, FITTINGS.

Edward Valves, Inc., East Chicago, Ind. 46312, VALVES, FITTINGS.

Unaflex Rubber Corp.,[5] 255 19th Street, Brooklyn, N.Y. 11215, FITTINGS.

The following affidavited companies have new addresses as follows:

Old: *K–F Prince Valve Company*

New: *Prince Valve, Incorporated,* P.O. Box 1003, Norman, Okla. 73069, VALVES.

Old: 1 Market Street, P.O. Box 719, Passaic, N.J. 07055

New: *Uniroyal Industrial Products,*[5] Division of Uniroyal, Incorporated, Oxford Management and Research Center, Middlebury, Conn. 06762, FITTINGS.

Old: P.O. Box 1526, El Cajon, Calif. 92022

New: *Pathways Bellows, Incorporated,* 999 Industrial Place, El Cajon, Calif. 92020, FITTINGS.

Old: 15201 Keswick St., Van Nuys, Calif. 91405

New: *Air-Dry Corporation of America,* 19338 Londelius St., Northridge, Calif. 91324, FITTINGS.

The following affidavits are terminated:

Rockwell-Brodie Co., Division of Rockwell Manufacturing Co. P.O. Box 450, Statesboro, Ga. 30458, VALVES.

AMF Cuno Div., 400 Research Parkway, Meriden, Conn. 06450, FITTINGS.

Western Affiliated Engineering Company, Inc., 368 West 7th Street, Salt Lake City, Utah, 84110, VALVES.

The following footnote to the Affidavit section of CG–190 (August 1, 1972) is amended:

[5] Limited to Models NR–5000–A and NR–5000–3A dehydrators, F–5000–A, MO–5000–A and MO–5000–3A filters for

a maximum allowable working pressure of 5000 psi at 150° F.

The following changes are made in the Valve Type column of the Acceptable Hydraulic Components list for *Vickers, Inc.:*

(1) "Check valves" is changed to "Directional control" for items identified as DIL–**–2* *thru* DG19S4–10**–*–5*.

(2) "Check valves" is changed to "Angle check valve" for item identified as DF10P1–16–**–2**.

FUSIBLE PLUGS

The regulations prescribed in Subpart 162.014, Subchapter Q, "Specifications", require that manufacturers submit samples from each heat of fusible plugs for test, prior to the manufacturer selling the plugs from that heat to customers for use aboard vessels requiring Coast Guard review. A list of approved heats which have been tested and found acceptable is as follows:

The Lunkenheimer Co., Cincinnati, Ohio, 45214, Heat Nos. 786, 788, 789, 790, 791, 792, 793 and 794.

ACCEPTABLE HYDRAULIC COMPONENTS

Manufacturer	Valve type	Identity	Maximum allowable working pressure
Parker-Hannifin Corp., Munatrol Div., 200 Perry Court, Elyria, OH 44092.	Directional Control	121******C	3,000
Do	do	124******B	3,000
Do	¾ in. counter balance	MBRC1671AA	2,550
Double A Products Co., Manchester, MI 48158.	Directional Control	Q*–005–*–10A2	3,000
Brand Hydraulics, Inc., 2332 South 25th Street, Omaha, NE 68105.	Flow integrator	B300 (⅜ in., ½ in., ¾ in.)	1,000
Do	Priority divider	BG–5, BGR–5, DGC–5 (⅜ in., ½ in., ¾ in.).	1,000
Do	Flow divider	B50, B100 (⅜ in., ½ in., ¾ in.).	1,000
Do	Manual Selector Valve	MS–50 (½ in.)	1,000
Do	do	MS–75 (¾ in.)	1,000
Do	Pilot operated relief valve	Por-75 (¾ in.)	1,000
Do	do	Poc-75 (¾ in.)	1,000
Rexnord, Hydraulic Components Div., Racine Fluid Power Products, 2000 Albert Street, Racine, WI 53404 (note name change and addition).	4-way directional control	OD4–**K*–*028	2,500
Do	do	OD4–**KF–*16*	2,500
Do	4-way solenoid valve	OD4–**HS–*04S	2,500

Coast Guard Rulemaking—Continued

	Notice of proposed rulemaking	Public hearing	Deadline for comments	Awaiting final action	Withdrawn	Published as rule	Effective date
Construction requirements for tank ships (CGD 72–245).	Adv. Notice 1–26–73	.....	3–15–73	....	.....	.....	.....
	Supp. Notice 7–5–73	.....	.....	....	.....	.....	.....
Wiring methods and materials for hazardous locations (CGD 73–6).....	2–14–73	.....	3–16–73	....	.....	8–24–73	11–27–73
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Lifeboat wiuches for merchant vessels (CGD 73–103)...	8–21–73	.....	9–28–73	X	.....	.....	.....
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[5] Limited to Models NR–5000–A and NR–5000–3A dehydrators, F–5000–A, MO–5000–A and MO–5000–3A filters for

maritime sidelights

No Letup In Wire Rope Failures

Wire rope is widely used for hoisting and lowering lifeboats under both gravity and mechanical lifeboat davits. The accompanying photograph shows a typical installation of the wire rope falls on gravity-type lifeboat davits. The need for lubrication of this gear at regular intervals is well established and has been the subject of many instructions and advertisements by wire rope manufacturers. Lubrication must be applied to the wire's entire length, even in places where it passes around sheaves and under the plates enclosing the sheaves. Although the necessity for lubrication is common knowledge, the accompanying table of casualties indicates that the message may not be getting through. As shown by the number of failures occurring each year, wire rope falls on a ship are not fault-free, and a haphazard approach to their maintenance can expose a crew to unnecessary dangers.

Fortunately, not every failure has resulted in the injury or death of a seaman, but that possibility is always at hand. For example, in the casualty reports, such descriptions as "Forward falls parted during raising operations . . ." and "Falls parted where stranded wire passed over a closed fairlead . . ." occur so often that the reader has to marvel that more mariners are not injured.

A seaman assigned to lubricating wire rope falls, even if he does the work with great care, will not have access to the entire length of a fall if the lifeboat remains fixed in place. As shown by the photograph, he can climb up on the davit and apply lubrication to the wire where it is exposed between the sheaves. But the blind spots at locations labeled *A, B, C,* and *D,* where the fall passes over the sheaves and behind the cheek plates, will remain inaccessible. To reach the blind spots, the boat will have to be moved downward a few feet so that the covered parts of the wire can be brought out in the open. This takes a lot of effort, but there is no other way if the falls are to be lubricated thoroughly. Without lubrication the best wire rope in the world will not perform as intended. Without lubrication, the pitted and corroded spots on the surface of the individual wires will become bending-fatigue points as the stress builds up when a load is applied to the falls.

The conclusion is inescapable. Better maintenance procedures for wire rope lifeboat falls are necessary to avoid the present risk of injury or death. Spending the time and effort to lower the boat to provide access for lubricating the entire length of the wire rope falls could pay off in safety to lives and limbs. ⚓

Table 1

Failures in wire rope lifeboat falls for U.S.-flag merchant vessels (1,000 gross tons and over) fiscal years 1962 through 1972 inclusive.

Year:	*Number*
1962	4
1963	3
1964	3
1965	4
1966	2
1967	4
1968	6
1969	2
1970	4
1971	6
1972	3
Annual average	3.7

MODERNIZATION OF THE INTERNATIONAL RULES OF THE ROAD

By Capt. W. W. Barrow and Cdr. J. M. Duke, USCG

ED. NOTE: This is the third of a series of installments on the modernization of the International Rules of the Road. The article will be continued in subsequent issues of the Proceedings. *The views expressed are those of the authors and do not necessarily reflect those of the Commandant or of the Coast Guard as a whole.*

PART B—STEERING AND SAILING RULES

Section II—Conduct of Vessels in Sight of One Another

RULE 11

APPLICATION

Rules in this section apply to vessels in sight of one another.

RULE 12

SAILING VESSELS

(a) When two sailing vessels are approaching one another, so as to involve risk of collision, one of them shall keep out of the way of the other as follows:

(i) When each has the wind on a different side, the vessel which has the wind on the port side shall keep out of the way of the other;

(ii) When both have the wind on the same side, the vessel which is to windward shall keep out of the way of the vessel which is to leeward;

(iii) If a vessel with the wind on the port side sees a vessel to windward and cannot determine with certainty whether the other vessel has the wind on the port or on the starboard side, she shall keep out of the way of the other.

(b) For the purpose of this Rule the windward side shall be deemed to be the side opposite to that on which the mainsail is carried or, in the case of a square-rigged vessel, the side opposite to that on which the largest fore-and-aft sail is carried.

Comment: This rule is the same as the existing sailing rule, Rule 17, with the exception that paragraph (iii) has been added. The International Yacht Racing Union was a driving force behind this change which they wanted in order to bring these rules in closer conformance with their yacht racing rules. With the exception of the United Kingdom, Belgium, and France, none of the other nations was able to generate much enthusiasm from its sailing interests one way or the other with respect to this rule. On the face of it this is a good rule which says effectively if you are in doubt assume you are the burdened vessel and get out of the way. Our yachting friends tell us that this is a good rule and is common practice in such situations.

RULE 13

OVERTAKING

(a) Notwithstanding anything contained in the Rules of this Section any vessel overtaking any other shall keep out of the way of the vessel being overtaken.

(b) A vessel shall be deemed to be overtaking when coming up with another vessel from a direction more than 22.5 degrees abaft her beam, that is, in such a position with reference to the vessel she is overtaking, that at night she would be able to see only the sternlight of that vessel but neither of her sidelights.

(c) When a vessel is in any doubt as to whether she is overtaking another, she shall assume that this is the case and act accordingly.

(d) Any subsequent alteration of the bearing between the two vessels shall not make the overtaking vessel a crossing vessel within the meaning of these Rules or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.

Comment: This rule is very similar to the existing overtaking Rule 24. Two modifications have taken place. First the rule has been considerably shortened by removing a great deal of the cumbersome language used in the old rule to try and define what an overtaking vessel is. Second, the beginning of the existing rule, "notwithstanding anything contained *in these rules*", has been replaced with "notwithstanding anything contained in the rules *of this Section*". The reason for this is the necessity to accommodate the new overtaking rule we discussed under the narrow channel situation and also to

accommodate an overtaking situation in restricted visibility which will appear when we discuss Rule 19.

Rule 14

HEAD-ON SITUATION

(a) When two power-driven vessels are meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision each shall alter her course to starboard so that each shall pass on the port side of the other.

(b) Such a situation shall be deemed to exist when a vessel sees the other ahead or nearly ahead and by night she could see the masthead lights of the other in a line or nearly in a line and/or both sidelights and by day she observes the corresponding aspect of the other vessel.

(c) When a vessel is in any doubt as to whether such a situation exists she shall assume that it does exist and act accordingly.

Comment: The title of this rule has been changed from "meeting" to "head-on" as being more descriptive. As with the overtaking rule a great deal of the cumbersome language of this rule, which inadequately tried to define a meeting situation, was removed. Our mariners were in favor of this action by a margin of five to one. Courts have generally held a meeting situation to be within one point of dead ahead. Some decisions tend to narrow that to half a point. Our mariners were opposed to this trend, and by a significant twenty-one to one margin they favored the insertion of paragraph (c) of this rule. Paragraph (c) essentially says if you are in doubt as to whether you are meeting or crossing assume you're meeting and act accordingly. This modification gets our Blue Ribbon for best rule change. It does a number of things, all of which we feel are good. As with the overtaking situation the head-on situation seems unusually difficult to define in sea man language. And now again, as with the overtaking rule, we have a bit of conciseness upon which the mariner can hang his hat. In short, it's a clear duty rule that covers up for a poor definition. This, we believe, will broaden the number of meeting situations with a corresponding decrease in crossing situations. Finally, action taken under this rule dictates to both parties that you must turn right, which is a good instruction to prevent collision regardless of calling the encounter a meeting or crossing.

Rule 15

CROSSING SITUATION

When two power-driven vessels are crossing so as to involve risk of collision, the vessel which has the other on her own starboard side shall keep out of the way and shall, if the circumstances of the case admit, avoid crossing ahead of the other vessel.

Comment: The caveat against crossing in front of the privileged vessel has been removed from the burdened vessel duty of existing Rule 22 and, we believe, more properly placed under the crossing situation. Otherwise, this is the same as the existing crossing Rule 19.

Rule 16

ACTION BY GIVE-WAY VESSEL

Every vessel which is directed by these Rules to keep out of the way of another vessel shall, so far as possible, take early and substantial action to keep well clear.

Comment: This rule is essentially the same as existing Rule 22, the Burdened Vessel Duty Rule, with of course, the crossing caveat removed to the crossing situation rule. Notice the term "give-way" in the title of this rule and "stand-on" in the title of the next rule. We believe these are a lot more meaningful than "burdened" and "privileged." It might be noted here that the existing rules do not have titles although the Coast Guard has added such in its publication of the rules. The drafters of these rules, we believe, have done a superb job in giving additional clarity by careful use of titles.

Existing Rule 23 which cautions the give-way vessel to slow, stop, or reverse if necessary has been left out of the give-way vessel duties in this draft. However, Rule 8(e) under "action to avoid collisions" covers this subject adequately.

Rule 17

ACTION BY STAND-ON VESSEL

(a)(i) Where by any of these Rules one of two vessels is to keep out of the way the other shall keep her course and speed.

(ii) The latter vessel may however take action to avoid collision by her manoeuvre alone, as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.

(b) When, from any cause, the vessel required to keep her course and speed finds herself so close that collision cannot be avoided by the action of the give-way vessel alone, she shall take such action as will best aid to avoid collision.

(c) A power-driven vessel which takes action in a crossing situation in accordance with sub-paragraph (a)(ii) of this rule to avoid collision with another power-driven vessel shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.

(d) This Rule does not relieve the give-way vessel of her obligation to keep out of the way.

Comment: This rule contains what is undoubtedly the most difficult and controversial change in the entire draft. To begin with, let us discuss the existing privileged vessel Rule (21) which this rule replaces. Rule 21 essentially says the privileged vessel must stand-on until such time that it becomes apparent that collision can no longer be avoided by the action of the other vessel alone. At that point Rule 21 dictates that the privileged vessel shall take such action that will best aid to avert collision. The very serious difficulty with this rule is that it places an impossible mandate upon the privileged vessel: it requires that the privileged vessel must assess the possibility of

avoiding collision in terms of the other vessel's capabilities, and of course the privileged vessel very likely has absolutely no way in which to assess the other vessel's capabilities, only his own. This was a bad situation before. It is infinitely worse today where two vessels approaching may have extremely wide variations and capabilities such as differences of speed capabilities as much as five or eight to one. This situation is simply not acceptable. Consider, for example, a privileged vessel which is very slow being approached by a burdened vessel with a speed advantage of five times that of the privileged vessel, such as a 6-knot ship being approached by a 30-knot container vessel. Under the present rule the privileged vessel is directed to hold course and speed until such time as a fast moving container vessel with excellent turning capabilities can no longer avert collision. Once a situation has gotten that close (in extremis) then the slow stand-on vessel is required to take action which will best avert collision. At this point in time, no matter what the slow privileged vessel with poor turning capabilities attempts to do, collision is highly likely.

In summary, consider yourself on the bridge of a privileged vessel in a classic crossing situation. The burdened vessel either has not or cannot take early and substantial action, thereby placing you in the position of considering him no longer reliable. What should you do and when should you do it? Assisting the mariner in this dilemma was the task the rules drafters took upon themselves in attempting to improve this rule.

Now, with an understanding of their problem let us see what the drafters have done. Paragraph (a)(i) is taken from the existing Rule 21, is straightforward and essentially says the stand-on vessel shall hold her course and speed. Paragraph (ii) of (a) is, in our view, a monumental change. It essentially says that if, while holding your course and speed, you enter into a situation where the other vessel is not doing her duty (can no longer be considered reliable), you may do something about it. Three things come immediately to our minds:

1. This does indeed provide relief for the apprehension of this stand-on vessel. To that we can only say, Bravo!

2. This does not, in our view, tell the stand-on vessel exactly when is the best point in time to do something. However, we do believe the proper action is adequately implied. Paragraph (i) makes it clear you are required to stand on. That being your first duty, you should divert from that only when circumstances make it absolutely necessary. Since this is a relief from the old situation which was based upon the capabilities of the other vessel, we believe, action in this situation should be taken based upon the capabilities of your own vessel. In other words rather than waiting until the other vessel's capabilities alone can no longer avert collision, we believe this rule tells us (or should tell us) it is more propitious to stand on only until just before that point in time when you as the stand-on vessel can, by your actions alone, no longer avert collision.

3. The third idea that comes to mind by this rule addresses those unscrupulous vessels which in the burdened situation refuse to give-way in hopes that the stand-on or privileged vessel will break off, thereby making it unnecessary for them (the burdened vessel) to alter course or speed. This is done now even under the existing very stringent rules. We cannot help but believe that this relaxation will tempt these nefarious mariners even further. Paragraph (b) of this rule retains the last half of the existing Rule 21 which is the mandate for the stand-on vessel to take action in extremis.

So far then this new rule in step one tells the stand-on vessel to hold her course and speed. In step two the stand-on vessel is told she may divert if absolutely necessary.

ABOUT THE AUTHORS

Captain Winford W. Barrow assumed the duties of Chief, Operations Division, Fifth Coast Guard District, Portsmouth, Va. on July 31, 1972 with, at times, additional duties as Acting Chief of Staff. Before assuming his present duties, Captain Barrow was Commander, Coast Guard Group, Baltimore.

Commander John M. Duke is presently the Chief, Merchant Marine Safety School at the Coast Guard Reserve Training Center, Yorktown, Va. He assumed those duties on July 5, 1971. Immediately prior to his present assignment, Commander Duke spent 4 years as Chief, Rules of the Road Branch at Coast Guard Headquarters where he worked with national and international groups on safety of navigation problems.

Both authors had a great deal of experience in the early preparations leading up to the new International Regulations for Preventing Collisions at Sea.

Captain Winford W. Barrow

Commander John M. Duke

Step three, retained from the old rule, requires that she shall take action in extremis. Having been given broad guidance on when to do something, paragraph (c) of this rule adds guidance on what to do, or not to do. No other place in the rules would be more appropriate than right here to advise against a port turn. All fellow port turn detesters please join us in a standing ovation because that is exactly what the rules drafters have done. Paragraph (c) says in the classic crossing situation, "Don't turn left!"

Paragraph (d) wisely advises the give-way vessel that this rule in no way alters the fact that she is duty bound to keep out of the way. This, we are sure, is directed primarily at those type of give-way vessels mentioned earlier that are wont to hold on in hopes that the other vessel will suffer the inconvenience of altering course and/or speed.

Our mariners, by a margin of 1.7 to 1 in opposition to change, were indecisive on just what should be done with this rule. This important modification to the rules is, in the opinion of the authors, a reasonable approach to a very real problem. While we believe this is going to be a workable improvement, it must be recognized that some stand-on vessels are going to use paragraph (a) (ii) of this Rule as authority to break off any time they wish to. Only time will tell us if in fact this modification reduces the number of collisions at sea.

Rule 18

Responsibilities between vessels

Except where Rules 9, 10, and 13 otherwise require:

(a) A power-driven vessel underway shall keep out of the way of:

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre;

(iii) a vessel engaged in fishing;

(iv) a sailing vessel.

(b) A sailing vessel underway shall keep out of the way of:

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre;

(iii) a vessel engaged in fishing.

(c) A vessel engaged in fishing when underway shall, so far as possible, keep out of the way of:

(i) a vessel not under command;

(ii) a vessel restricted in her ability to manoeuvre.

(d) (i) Any vessel other than a vessel not under command or a vessel restricted in her ability to manoeuvre shall, if the circumstances of the case admit, avoid impeding the safe passage of a vessel constrained by her draught, exhibiting the signals in Rule 28.

(ii) A vessel constrained by her draught shall navigate with particular caution having full regard to her special condition.

(e) A seaplane on the water shall, in general, keep well clear of all vessels and avoid impeding their navigation. In circumstances, however, where risk of collision exists, she shall comply with the Rules of this Part.

Comment: In the existing rules numerous vessels, such as not-under-command vessels or vessels under various working conditions, have stated or implied privilege in various portions of the rules. This rule catalogues those various privileges in what we consider a rather neat package. As we stated earlier, two additional types of vessels have been given privileged status—deep draft vessels and certain towing vessels. Any privilege enjoyed by towing vessels under the existing rules is certainly no more than an implication brought about by their special lights and special sound signals. The beginning of this rule very neatly ties in other privilege and duty commitments to these here listed. In a very few words they successfully accomplish a great deal. In the nine words "except where Rules 9, 10, and 13 otherwise require" they have said the following:

> Do not hide behind the below listed priorities if you are a small vessel, a sailing vessel or a fishing vessel in the process of hampering traffic in a narrow channel. Do not hide behind the following if you are a small craft, sailing vessel, fishing vessel about to hamper traffic in a traffic separation scheme. You may not use any of the following priorities to claim privilege in an overtaking situation because in that instance the overtaking vessel always has the burden.

We feel that the above was a great deal to cover in nine words and that the drafters have done so satisfactorily.

As can be seen from paragraph (d) (i) of this rule, the deep draft vessel in this pecking order has been given privilege over fishing vessels and sailing vessels and is subservient only to not-under-command vessels or vessels restricted in their ability to maneuver (the so-called Rule 4 vessels of the existing rules).

Paragraph (d) (ii) tells the deep draft vessel not to abuse this privilege. We would have preferred that this caution contain slightly stronger wording or perhaps an additional phrase to the effect that in congested waters these vessels shall not operate at a speed in excess of that which will allow them to stop in x number of ship lengths.

Paragraph (e) of this rule is the admonition that a seaplane shall in general stay out of the way and is lifted directly from rule 20(c) of the present rules.

At this point in our discussion the subject of air cushion vessels should be broached. They are not mentioned in the rules until later on under Rule 23, where a special light is authorized for operating in the non-displacement mode. We infer from that language that they were intended to be all-inclusively covered by the term non-displacement craft under vessel definition in Rule 3(a). If that is indeed the case we would very much like to see this Rule 18(e) modified to say a seaplane or non-displacement craft, etc. Perhaps the rule drafters specifically omitted this because the term non-displacement craft could also mean hydrofoils and any number of various kinds of speed boats which they specifically did not want singled out. In any event, both authors believe that because of their various operating characteristics, such as loud noise, and because of their extremely high maneuver-

ability, air cushion vehicles should be compelled to keep well clear of other shipping. We further believe that this is the particular rule where such a mandate would best fit.

Section III—Conduct of Vessels in Restricted Visibility

RULE 19

CONDUCT OF VESSELS IN RESTRICTED VISIBILITY

(a) This Rule applies to vessels not in sight of one another when navigating in or near an area of restricted visibility.

(b) Every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility. A power-driven vessel shall have her engines ready for immediate manoeuvre.

(c) Every vessel shall have due regard to the prevailing circumstances and conditions of restricted visibility when complying with the Rules of Section I of this Part.

(d) A vessel which detects by radar alone the presence of another vessel shall determine if a close-quarters situation is developing and/or risk of collision exists. If so, she shall take avoiding action in ample time, provided that when such action consists of an alteration of course, so far as possible the following shall be avoided:

(i) An alteration of course to port for vessel forward of the beam, other than for a vessel being overtaken;

(ii) an alteration of course towards a vessel abeam or abaft the beam.

(e) Except where it has been determined that a risk of collision does not exist, every vessel which hears apparently forward of her beam the fog signal of another vessel, or which cannot avoid a close-quarters situation with another vessel forward of her beam, shall reduce her speed to the minimum at which she can be kept on her course. She shall if necessary take all her way off and in any event navigate with extreme caution until danger of collision is over.

Comment: Conduct in a fog under the existing rule (Rule 16) is covered in three steps:

a. Go at a moderate speed and be careful.

b. If you hear a fog signal forward of your beam stop your engines then navigate with caution.

c. If you detect a vessel by radar you may take early and substantial action to avoid a close-quarters situation; however, if a close-quarters situation is in the making you must then stop your engines and navigate with caution until danger is over. Mariners generally consider this rule inadequate but are reluctant to change because of the difficulty in finding a suitable alternative. Two of the more knotty problems involved in the existing rule are the inability of mariners to cope with or even determine what the term "moderate speed" means, and the mariners interpretation of "so far as the circumstances of the case admit stop her engines and then navigate with caution until danger of collision is over". Mariners would sometimes ring up stop and almost immediately go back up to or near previous speed, much like a hat-tipping gesture for the courts, should a collision ultimately ensue.

In the first paragraph (Rule 19(a)) the key words are *not in sight of one another*. When this phrase is considered together with Rules 34 and 35 (the two rules dealing with sound signals) it is made clear that maneuvering signals are not to be used when vessels are not in sight of one another.

The second paragraph of Rule 19(b) is a replacement for the existing Rule 16(a) paragraph dealing with moderate speed. This replacement says you shall proceed at a safe speed appropriate for the condition of visibility. Recalling Rule 6, the first three considerations in determining what the term "safe speed" means are visibility, traffic density, and own-ship maneuverability. It is a fair statement then that should any one of those three conditions be other than ideal, safe speed must be adjusted accordingly. As a practical aspect this can mean that upon the high seas, where traffic density is extremely light, a fairly high speed is appropriate because, with no maneuvering restrictions, turning may be the best evasive maneuver, and of course turning is more efficiently accomplished at high speeds. On the other hand, when traffic density increases or geographical constraints are present such that turning room is limited then, indeed, a severe speed reduction is indicated.

The last sentence of this paragraph is an addition to the rules and we believe a well advised one. It says, in effect, that in restricted visibility power-driven vessels, no matter where they are operating (high seas or coastal situations) must be ready to maneuver immediately—and the key word here is *immediately*.

For example, under steady steaming conditions a vessel will have secured her main circulating pump because her high speed forces adequate seawater through the scoop of her cooling condenser. Also the vessel's throttle will be set to give a steady and economical rate of steam flow. To disturb this condition with emergency maneuvering bells would cause radical fluctuations in steam pressure. Of immediate concern to the engineer would be loss of boiler control with possible loss of all power, or water carried over from the boiler into the turbine with possible permanent physical damage to the relatively delicate turbine blades.

Accordingly engineers take several minutes to bring their plants down from steady steaming to another maneuvering condition.

However, with the vessel set for maneuver, more steam is delivered to the throttles and different burners are used in the boilers. This condition is a good deal less economical but it allows the plant to deliver short bursts of high or low power demands immediately without dangerous fluctuations in steam parameters.

This Rule then is telling the vessel to be capable of immediate maneuver during conditions of restricted visibility.

Paragraph c refers back to Section 1 (Conduct for vessels in any condition of visibility) and cautions once again to be particularly mindful of existing conditions of restricted visibility when considering or establishing the following: proper look-out; safe speed; risk of collision;

action to be taken to avoid collision; conduct in the narrow channels; and conduct in traffic separation schemes. Although Rule 9 of Section 1, the Narrow Channel Rule, speaks of the use of whistle signals for overtaking situations and the following paragraph of this Rule, Paragraph (d) talks of an overtaking situation, the use of whistle signals for maneuver is not by this rule intended when the two vessels are not in sight of one another. Remember the key phrase in paragraph (a) of this Rule, *vessels not in sight of one another,* and under Rule 34 the maneuvering signal Rule which requires vessels to be in sight of one another in order to use maneuvering signals.

Under the existing rules, Rule 16(c) allows the mariner to take early and substantial action based on radar detection. This whole new body of rules demands a much more positive approach to the use of radar. Nowhere is the use of radar more strongly worded than in paragraph (d) of this Rule. This Rule essentially says that if a vessel is detected by radar you shall plot, shall determine if a close-quarters situation or risk of collision is developing and if so you shall take appropriate avoiding action in ample time. The second portion of this paragraph once again advises against a port turn in the classic crossing positions. It goes one step further and wisely advises against turning towards a vessel. At first blush, it might appear that these two advisements conflict with one another and sea lawyers will probably sit down and try and develop "for instances" where conflict could exist. However, a close and realistic study of the two should verify that indeed a conflict does not exist. Finally, in the execution of this Rule remember your duty under 8(d) which says that action taken to avoid collision shall be checked until the other vessel is finally passed and clear.

The last portion of Rule 16(c) under the existing rules says that if you cannot avoid the close-quarters situation a vessel shall stop her engines in proper time to avoid collision and navigate with caution. Paragraph (e) of these new rules gives the replacement for that section. On its face, this rule appears more relaxed than the existing rule: It says reduce speed to bare steerageway rather than stop engines. This is in fact a strong admonition against excessive speed. First of all the phrase *so far as the circumstances of the case admit* has been removed, which makes it clear that significant speed reduction is required in every case. Reducing speed to bare steerageway can, and very often does, involve backing engines to accomplish the necessary speed reduction in sufficient time to respond to the situation.

Finally, if that is not strong enough, the Rule goes on to say that if necessary she shall take all her way off and navigate with caution. Clearly such language is a good deal more explicit, more meaningful and more realistic than stop engines.

This rule is stronger and more exacting than the existing fog rule. The term bare steerageway more closely aligns with practices currently in being on Western Rivers and Great Lakes. As with other major changes to rules, only time will be able to measure the success of this new rule. However, we believe this rule will prove more practicable and more acceptable to mariners than the existing fog rule.

A Helping Hand for Safety

An easy-to-make and inexpensive safety device suggested by the Safety Director of the American Mail Line could reduce personal injuries on your ship. The implement, a metal hand fairleader, is designed to guide mooring wires on their drums so they spool evenly.

Presently, the apparently easy but dangerous way is to guide the wire by hand onto the drum. The danger of having a hand slashed by fish hooks on the mooring wire should be obvious.

The metal fairleader, demonstrated in the photograph by a crewmember aboard the SS *Japan Mail,* makes it easy to guide the wire on the drum—and keeps you off the hook.

—Photo courtesy *The Channel,* Pacific Maritime Ass'n.

MERCHANT MARINE SAFETY PUBLICATIONS

The following publications of marine safety rules and regulations may be obtained from the nearest marine inspection office of the U.S. Coast Guard. Because changes to the rules and regulations are made from time to time, these publications, between revisions, must be kept current by the individual consulting the latest applicable Federal Register. (Official changes to all Federal rules and regulations are published in the Federal Register, printed daily except Saturday, Sunday, and holidays.) The date of each Coast Guard publication in the table below is indicated in parentheses following its title. The dates of the Federal Registers affecting each publication are noted after the date of each edition.

The Federal Register will be furnished by mail to subscribers, free of postage, for $2.50 per month or $25 per year, payable in advance. The charge for individual copies is 20 cents for each issue, or 20 cents for each group of pages as actually bound. Remit check or money order, made payable to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Regulations for Dangerous Cargoes, 46 CFR 146 and 147 (Subchapter N), dated October 1, 1972 are now available from the Superintendent of Documents price: $5.75

CG No.	TITLE OF PUBLICATION
101	**Specimen Examination for Merchant Marine Deck Officers (7–1–63).**
108	**Rules and Regulations for Military Explosives and Hazardous Munitions (4–1–72). F.R. 7–21–72, 12–1–72.**
115	**Marine Engineering Regulations (7–1–70) F.R. 12–30–70, 3–25–72, 7–18–72, 8–19–72, 5–1–73, 6–29–73.**
123	**Rules and Regulations for Tank Vessels (1–1–73). F.R. 8–24–73.**
129	**Proceedings of the Marine Safety Council (Monthly).**
169	**Rules of the Road—International—Inland (8–1–72). F.R. 9–12–72.**
172	**Rules of the Road—Great Lakes (7–1–72). F.R. 10–6–72, 11–4–72, 1–16–73, 1–29–73, 5–8–73.**
174	**A Manual for the Safe Handling of Inflammable and Combustible Liquids (3–2–64).**
175	**Manual for Lifeboatmen, Able Seamen, and Qualified Members of Engine Department (3–1–73).**
176	**Load Line Regulations (2–1–71) F.R. 10–1–71, 5–10–73.**
182	**Specimen Examinations for Merchant Marine Engineer Licenses (7–1–63).**
184	**Rules of the Road—Western Rivers (8–1–72). F.R. 9–12–72, 5–8–73.**
190	**Equipment List (8–1–72). F.R. 8–9–72, 8–11–72, 8–21–72, 9–14–72, 10–19–72, 11–8–72, 12–5–72, 1–15–73, 2–6–73, 2–26–73, 3–27–73, 4–3–73, 4–26–73, 6–1–73, 8–1–73.**
191	**Rules and Regulations for Licensing and Certification of Merchant Marine Personnel (6–1–72). F.R. 12–21–72, 3–2–73, 3–5–73, 5–8–73, 5–11–73, 5–24–73, 8–24–73.**
200	**Marine Investigation Regulations and Suspension and Revocation Proceedings (5–1–67). F.R. 3–30–68, 4–30–70, 10–20–70, 7–18–72, 4–24–73.**
227	**Laws Governing Marine Inspection (3–1–65).**
239	**Security of Vessels and Waterfront Facilities (3–1–72). F.R. 5–31–72, 11–3–72, 7–8–72, 1–5–73.**
256	**Rules and Regulations for Passenger Vessels (5–1–69). F.R. 10–29–69, 2–25–70, 4–30–70, 6–17–70, 10–31–70, 12–30–70, 3–9–72, 7–18–72, 10–4–72, 10–14–72, 12–21–72, 4–10–73, 8–1–73.**
257	**Rules and Regulations for Cargo and Miscellaneous Vessels (4–3–73). F.R. 6–28–73, 6–29–73, 8–1–73.**
258	**Rules and Regulations for Uninspected Vessels (5–1–70). F.R. 1–8–73, 3–28–73.**
259	**Electrical Engineering Regulations (6–1–71). F.R. 3–8–72, 3–9–72, 8–16–72, 8–24–73.**
266	**Rules and Regulations for Bulk Grain Cargoes (5–1–68). F.R. 12–4–69.**
268	**Rules and Regulations for Manning of Vessels (10–1–71). F.R. 1–13–72, 3–2–73.**
293	**Miscellaneous Electrical Equipment List (9–3–68).**
320	**Rules and Regulations for Artificial Islands and Fixed Structures on the Outer Continental Shelf (7–1–72). F.R. 7–8–72.**
323	**Rules and Regulations for Small Passenger Vessels (Under 100 Gross Tons) (12–1–71). F.R. 3–8–72, 3–25–72, 6–24–72, 7–18–72, 9–13–72, 12–8–72, 12–21–72, 1–8–73, 3–5–73, 6–29–73.**
329	**Fire Fighting Manual for Tank Vessels (7–1–68).**
439	**Bridge-to-Bridge Radiotelephone Communications (12–1–72).**

CHANGES PUBLISHED DURING SEPTEMBER 1973

The following have been modified by Federal Registers:

None.


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