PROCEEDINGS

OF THE MERCHANT MARINE COUNCIL

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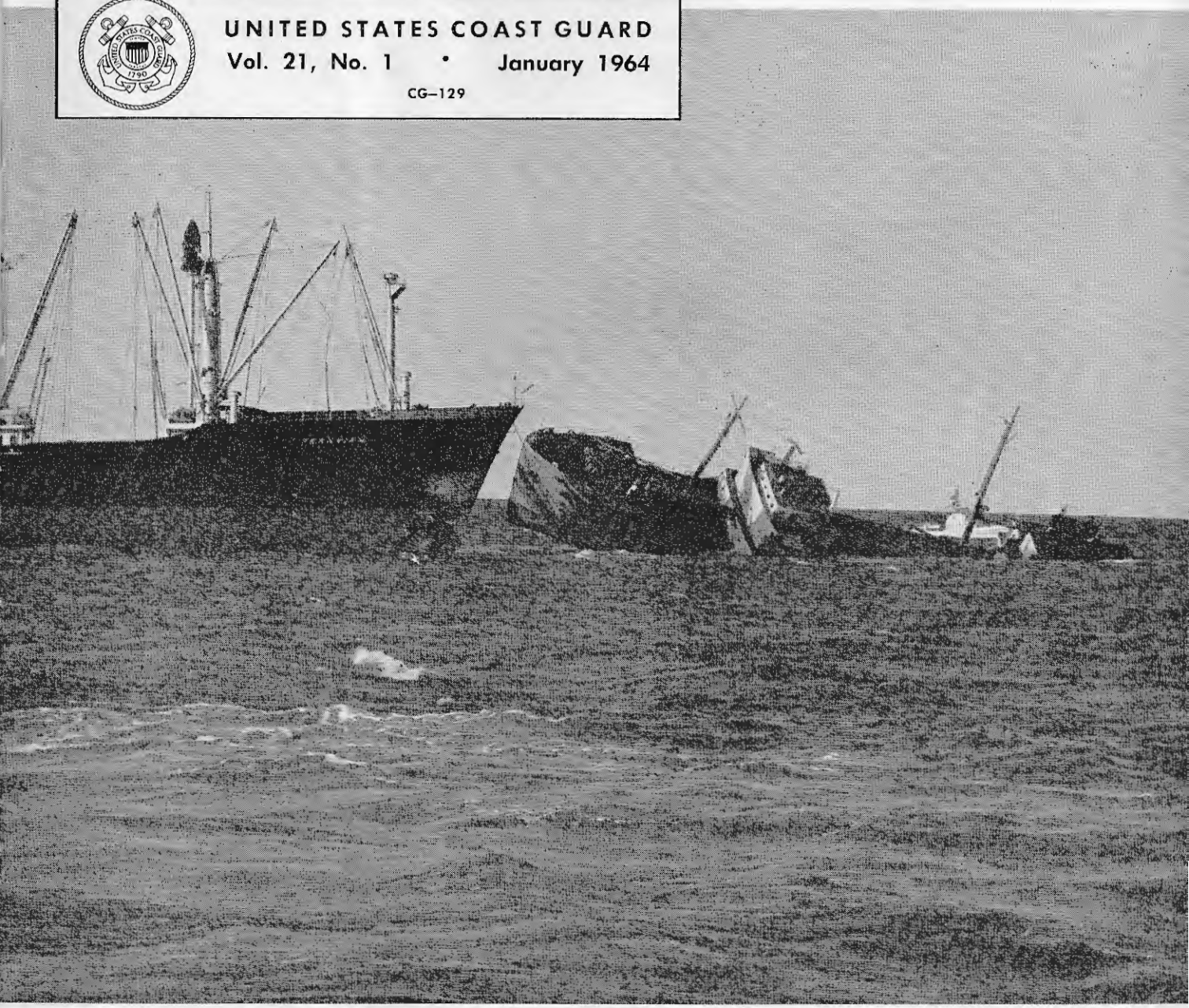

Feature

COLLISIONS

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LCDR N. B. Binns, USCG, *Editor*
T. A. DeNardo, *Assistant Editor*

RESCUE MAT

A NEW RESCUE MAT is being developed for the Coast Guard by the United States Rubber Co. The Coast Guard is testing this device primarily for use as a floating platform to be used alongside a vessel to facilitate recovery of survivors who are already in the water. The mat needs no inflation and takes only a few seconds to launch. It is not being developed for use as abandon ship or survival equipment. Improvements suggested by the Coast Guard are being incorporated into the design for further testing. This 4-inch-thick mat will have nylon straps extending over the sides to enable men to climb aboard, and devices are being developed so that the mat can be towed at either end.

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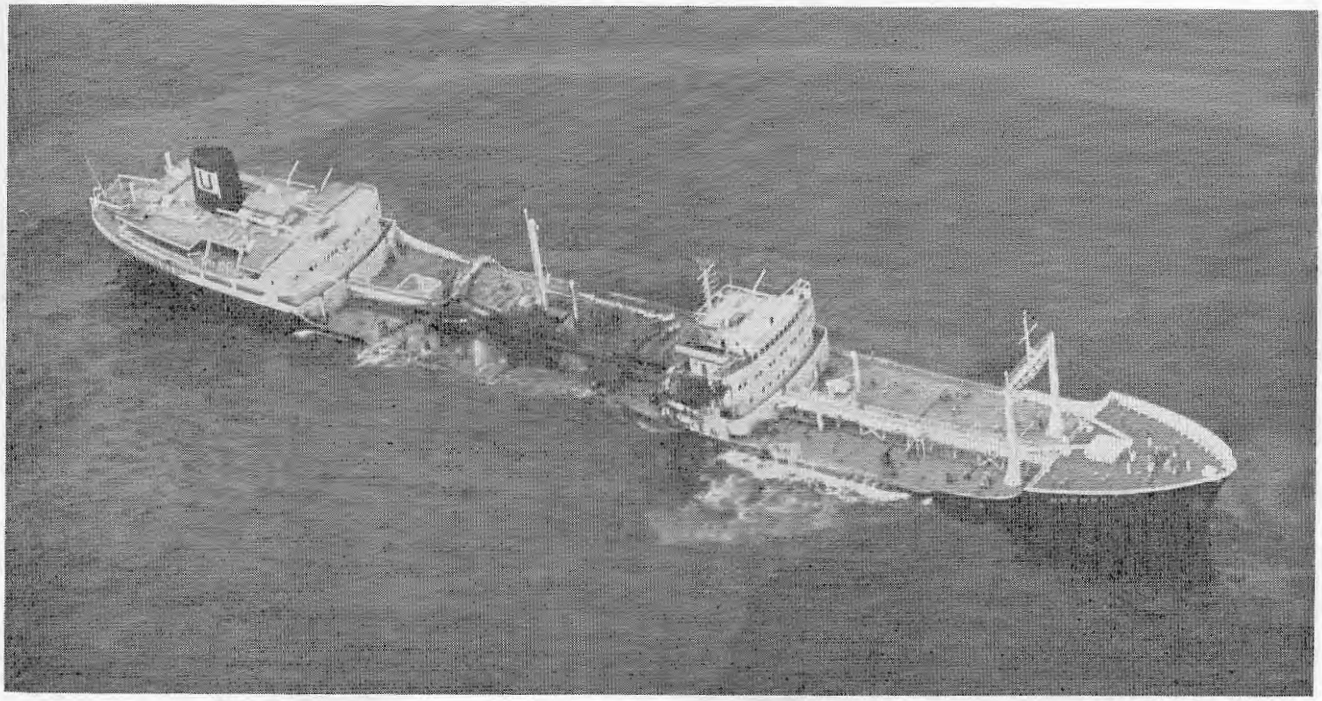
COLLISIONS



INTRODUCTION

AN EXAMINATION of ship casualties for the years 1957–61, inclusive, indicates that, on the average, approximately 20 percent of these casualties resulted from collisions. For these years, collisions varied from a low of 1,288 to a high of 1,628, usually with an increase over the previous year's total; while total losses from collisions ranged from 7 in 1961 to 16 in 1957. Obviously, the prevalence of collisions constitutes a serious problem for the mariner. Therefore, the following cases are being presented both to focus attention on the problem and to consider some of the causes contributing to collisions; also, with the hope that serious consideration of these causes will lead to a significant reduction in the number of collisions.

CASE 1

The principals in this case were a Swedish cargo vessel (*Ship A*) of 5,137 gross tons and a U.S. merchant tanker (*Ship B*) of 531 gross tons. The collision occurred, at about 0025 hours EDST, 25 June, in the East River, N.Y., about 100 yards off the head of Pier 3, Brooklyn. The weather was clear, the wind southerly, force 2 to 3, and the tide was flooding at about 2.5 knots in the direction of 045° true.

This material on collisions is reprinted from the October 1962 edition of H.O. Pilot Chart 1400 published by the U.S. Naval Oceanographic Office.—Ed.

SHIP A

In the early morning hours of 25 June, *Ship A*, a Swedish cargo vessel en route from New Haven, Conn., to Port Newark, N.J., was westbound in the East River, with 1,407 metric tons of cargo. Her speed was 10 knots through the water, bucking a 2.5-knot flood current. The pilot, who had boarded off City Island, N.Y., at 2300, 24 June, was directing the movements of the vessel. With the pilot were the master, a helmsman, and a deck officer handling the telegraph. A lookout was on the bow.

When *Ship A* was approximately 100 yards above the Manhattan Bridge, in midstream, heading for the green light affixed to the span marking the center of the navigable channel, her pilot noted ahead the green side light of an upbound vessel in the vicinity of the Brooklyn Bridge but closer to the Brooklyn side. He then blew a two-blast signal and altered his course to port with a 20° left rudder. No reply was heard, and the ship, which turned out to be *Ship B*, continued to show a green side light. When *Ship A* was about 100 yards below the Manhattan Bridge, her pilot noticed *Ship B*, which was now approximately in midstream, turn toward the Brooklyn shore as its green side light passed from view and the red revealed itself. The pilot of *Ship A* then, at about 0023 hours, sounded the danger signal and backed his engines full, as *Ship B* continued to turn to its own right. With its way considerably lessened, the bow of *Ship A* struck the port quarter of *Ship B* aft of the wheelhouse and the ships remained fast.

At the impact, a muffled explosion emanated from *Ship B*. Both vessels and the surrounding water were

SHIP CASUALTIES AND COLLISIONS, 1957–61 [1]

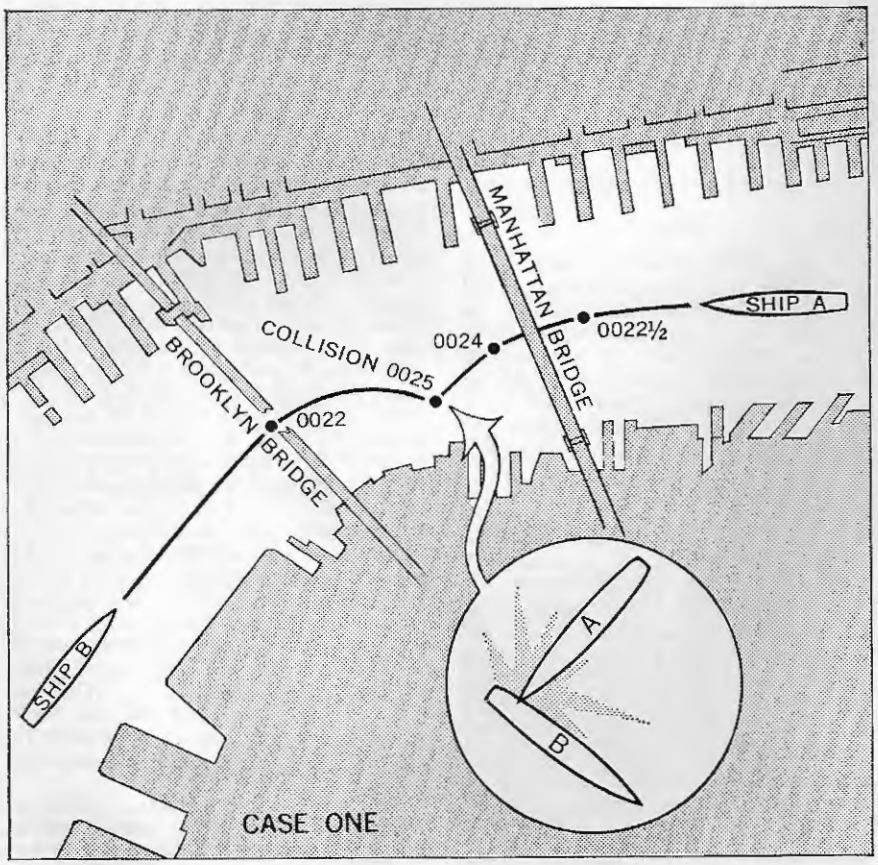
Year	Total casualties	Collisions	Collisions—Percent of total casualties
1957	7333	1288	17.56
1958	6944	1381	19.88
1959	7359	1592	21.63
1960	7368	1472	19.97
1961	7818	1628	20.82
Average	7364.4	1472.2	19.97

[1] The tabulation of ship casualties and collisions is from the Liverpool Underwriters' Association Return of Casualties to Steam & Motor Vessels of 500 tons gross register and upwards.

quickly enveloped in flames from burning gasoline. *Ship A*'s engines were used to maintain the position of the two vessels in the stream and to avoid their drifting onto the Manhattan piers. The forward deck of *Ship A* and both sides aft to the poop were afire. The bow of *Ship A* was firmly embedded in *Ship B* for about 1½ hours. They were separated by use of a tug which placed a line to the bow of *Ship B* and forced it away. The tanker sank by the stern immediately, but its bow remained afloat.

SHIP B

Ship B, a U.S. tankship, en route from Bayway, N.J., to Mount Vernon, N.Y., with 6,500 barrels of automobile gasoline, was eastbound in the East River making 7.5 knots through the water with a favorable current of 2.5 knots. The pilot was at the helm of *Ship B*, and with him in the wheelhouse was an able seaman who was stationed as a lookout. The master was in his room adjacent to the wheelhouse. When just below Brooklyn Bridge, the pilot noted a tug with carfloats alongside heading downstream, about 50 yards off the Brooklyn shore between the Manhattan and Brooklyn Bridges. As *Ship B* navigated under the Brooklyn Bridge, it passed the carfloats, on its starboard hand about 150 yards off. At about the same time, the pilot observed a vessel which proved to be *Ship A*, about 200 yards above the Manhattan Bridge. Upbound at the Brooklyn Bridge, East River turns to the right. The pilot of *Ship B* stated that, while his ship was making this turn to starboard, he heard a one-blast signal from *Ship A*. He replied with one blast and continued to swing right, increasing his rudder. Observing the oncoming cargo ship swinging to its own port, the pilot repeated the one-blast signal about 30 seconds later. In about 10 seconds he heard a danger signal from *Ship A*, which was then slightly below Manhattan Bridge heading to the Brooklyn side of the river with only its red side light visible. With the helm hard right, the tanker was heading almost directly for the Brooklyn shore, when it was struck by *Ship A*'s bow on the port side at about right angles in the vicinity of No. 4 tank. Slightly before the crash the pilot directed the lookout to call the master. He had already been aroused by whistle signals and responded immediately to the call from his room adjacent to the wheelhouse. The master arrived in time to shift the rudder to hard left in an effort to throw his stern away from the oncoming ship. This maneuver was not successful, due to the close proximity of *Ship A*, and the collision occurred.



ANALYSIS

The two vessels sighted each other less than one-half mile apart as *Ship A* was nearing Manhattan Bridge and *Ship B* was turning to her own right just prior to passing under the Brooklyn Bridge. Signals were sounded by both vessels but were not heard by each other. It appears that *Ship A* and *Ship B* were in sight of each other at the time a one-blast signal was sounded by a tug (in response to an earlier signal by *Ship A*). A subsequent one-blast signal by *Ship B* appears to have coincided with *Ship A's* two-blast signal, so that both vessels' signals were drowned out by the signal of the other.

After sounding a two-blast signal and without hearing a reply, *Ship A* altered her course to her own port in anticipation of a starboard-to-starboard passing. *Ship B*, desiring a port-to-port passing, continued to turn to her own right as she rounded the bend under the Brooklyn Bridge. Thus, the failure of both vessels to timely ascertain the intention of the other began the sequence of events which resulted in collision about 2 minutes later.

Under the circumstances prevailing at the outset, *Ship B* had the right to expect a port-to-port passing, but, when a few moments later it became apparent that *Ship A* was turning toward the Brooklyn side, *Ship B* had the duty to stop, and, if necessary, reverse. Her failure in this regard is considered to have contributed to the collision.

The pilot navigating *Ship B* stated that it was a one-blast signal that motivated his reply of one short blast and additional right rudder. When he observed a confusing situation developing, namely, *Ship A* heading toward the Brooklyn shore, he blew a second one-blast signal. He should have blown the danger signal, and his repetition of his own one-blast signal, without so sounding the danger signal, was contrary to the Rules of the Road.

The principal cause of this collision was the improper alteration of course by *Ship A* to her own port upon sounding a two-blast invitation to pass. Within the meaning of the Pilot Rules for Inland Waters, the two vessels were *clearly meeting* and each recognized the situation as such. Accordingly, a port-to-port passing was indicated, and the circumstances did not warrant an assumption by the pilot of *Ship A* that *Ship B* might desire a starboard-to-starboard passing

without a proper exchange of whistle signals.

Additionally, this collision serves to emphasize an effect of excessive speed. In a meeting situation, with a consequently high relative speed, the time available for maneuvering to avoid collision is so drastically reduced that there is insufficient time left to evaluate and resolve confusing situations. Consequently, early reductions in speed are absolutely necessary when there is any uncertainty over the other ship's intentions. Reductions in speed will provide the additional time to clarify a situation.

The collision also emphasizes the necessity for a proper *exchange* of signals. An exchange of signals is *mandatory*, under Section 80.3, Pilot Rules for Inland Waters, for vessels in sight of each other when passing or meeting at a distance within half a mile. This is a duty all too frequently ignored. The signal should be initiated as early as practicable, and the reply should be given promptly. If the initiating ship fails to receive a reply, it must sound the danger signal (Sec. 80.1, Pilot Rules for Inland Waters), prior to sounding a second signal.

As a result of this casualty, two men were killed and two officers injured aboard *Ship B* and the ship, valued at $225,000, was a total loss. Ten crewmembers were injured aboard *Ship A* and the ship received damages estimated at $415,000.

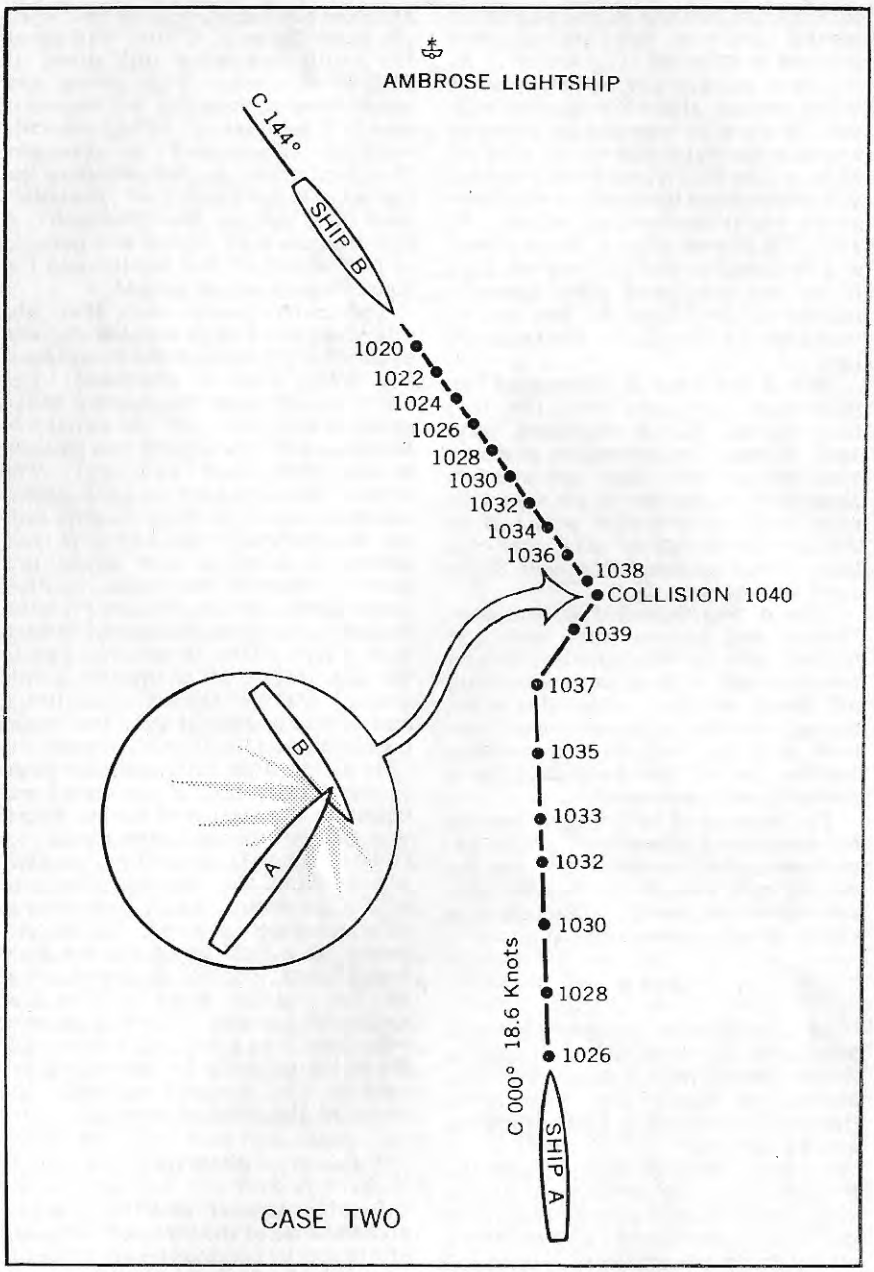
CASE 2

The principals in this case were a U.S. passenger steamship (*Ship A*) of 23,754 gross tons and a Norwegian motor tanker (*Ship B*) of 12,228 gross tons. The collision occurred about 5 miles southeastward of Ambrose Lightship. At the time of the casualty, there was a slight northeasterly sea with a short easterly swell; the wind northeast, force 3; a dense fog, with visibility less than one-quarter mile.

SHIP A

Ship A departed Newport News, Va., at 1334 EST, 28 February, on a coastwise voyage to New York with a crew of 116 and 33 observers. The draft on departure was 25 feet 4 inches forward and 27 feet 2 inches aft.

At approximately 0955 EST, 1 March, *Ship A* encountered fog about 25 miles north of Barnegat Lightship. The engine order telegraph was placed on "Standby" and operation of the fog whistle commenced under automatic control, sounding a prolonged blast at intervals of not more than 2 minutes. On course 004° and making a speed of 18.6 knots, the master took charge of the vessel's movements and placed himself at the radar, which was located on the starboard side of the wheelhouse. With him in the wheelhouse were the staff captain and a helmsman. The second officer and a messenger were stationed on the port wing of the bridge, and the third officer was stationed on the starboard wing. A lookout was on the bow.



CASE TWO

At 1000, course was changed to 020° to avoid a southbound radar target, which passed 2 miles off the port beam at approximately 1010. At this time, *Ship A* was swung left and had steadied on course 000° by 1020.

A short time later, another target, bearing 5° on the port bow, 7½ miles distant, appeared on the radar (set on the 8-mile scale). This target was observed, using the cursor bearings and range rings, but not plotted. When the target was about 4 miles away, the range scale of the radar was changed to the 4-mile scale. At 1032, when 2 miles away on the port bow, the target disappeared in the sea return. At 1032, engine revolutions were reduced to 100 RPM (18.4 knots). At about 1037, a one-blast whistle signal was heard on the port bow. *Ship A* was swung right to 035° (the course recorder indicated that the turn had started at approximately 1032 from a heading of 000°). At

1039, another whistle signal was heard on the port bow; both engines were reduced to 60 RPM (11.1 knots). At this time, the bow of a vessel appeared out of the fog, about one-quarter mile just off the port bow and on a course crossing at right angles to that of *Ship A*. At 1039½, hard right rudder was ordered and the engine order telegraph was placed on full astern. At 1040, the bow of *Ship A*, going ahead and swinging to the right, struck *Ship B* on her starboard side, approximately 125 feet from the bow and at about right angles to her fore-and-aft line.

Ship A hit *Ship B* forward of her pilothouse, continued into the hull through the No. 2 starboard wing tank, crossing the centerline, and cutting the catwalk. The bow was left hanging onto the rest of the ship with only about a foot-wide strip. *Ship B*'s bow broke off at 1115, and was later towed to the Bethlehem Shipyard in Hoboken, N.J.

Ship A was damaged at the bow. Plating and frames were torn and pushed into the forward lounge and the forepeak, with a gash extending aft about 60 feet. Also, the chain pipes, port and starboard, the forepeak tank top, and the power cables leading to all the deck machinery forward were damaged.

The masters of both vessels carried out emergency procedures. After ascertaining that no assistance was required, both vessels, escorted by tugs, proceeded into New York Harbor, each under its own power.

SHIP B

Ship B departed Brooklyn, N.Y., at 0800 EST, 1 March, on a voyage to Aruba, Dutch West Indies. The vessel was in ballast with a draft on departure of 12 feet 10 inches forward and 21 feet aft.

At 0955, *Ship B* disembarked the pilot about 2 miles off Ambrose Lightship. The master was in charge of the vessel's movements and the third officer was stationed on the starboard wing of the bridge. A lookout was on the bow.

At 1000, departure was taken from

Ambrose Lightship, bearing 033° true, 1½ miles distant. Course was set at 135°, with the speed full ahead at 12½ to 13 knots. This course and speed were maintained for approximately 5 minutes, at which time the visibility commenced to decrease. The third officer started sounding the fog whistle by hand and "Standby" was rung up on the telegraph. A few minutes later, speed was reduced to half ahead (7 to 8 knots) and the course was changed to 144°.

Two radar targets were then observed on the 8-mile range scale; one at about 4½ miles and the other about 2¼ miles, both to starboard. The target at 2¼ miles was moving in the opposite direction. Its fog signal was heard and *Ship B*'s speed was reduced to dead slow ahead (3.5 knots). The target was estimated to have passed about one-half to three-fourths mile off the starboard side. *Ship B* then increased speed to slow ahead (5.5 knots). Shortly thereafter, another radar target appeared about 2¼ miles on the port side as the bearing opened to the left. This target was lost in the sea return at about the 2-mile range. No fog signals were heard and it was estimated that the target passed about 1½ miles off to port.

At about 1038, with visibility down to one-fourth mile, a fog signal was heard on the starboard beam. Speed was reduced to dead slow ahead (3.5 knots). Shortly thereafter, another whistle signal was heard just forward of the starboard beam; immediately all engines were stopped. About one-fourth of a mile away, on the starboard beam, a vessel appeared out of the fog, bearing down on *Ship B* at about right angles. The engine order telegraph was rung full astern, followed immediately by emergency full astern. *Ship B* was about dead in the water at the time of impact.

ANALYSIS

Relative motion, and the direction and distance of the CPA (closest point of approach), cannot be estimated to any reliable degree without properly plotting at least several periodic range and bearing positions of the target. In addition, the solution is accurate only when the course and speed of the target are not altered after the last range and bearing. In this case, even if the visual methods were accepted as capable of producing accurate results, the loss of the target in the sea return at a distance of 2 miles would have rendered the predicted results extremely doubtful and to be treated with utmost caution.

A relative motion plot (based on the available information) indicates that *Ship B* had crossed ahead of *Ship A*, and bore about 017° true when *Ship A* ended its turn, from 000° to a new course of 035°. *Ship A*'s new course and speed (11.1 knots) placed the two ships on collision courses (based on *Ship B*'s course of 144° and an effective speed of about 4 knots). Thus the plot indicates a collision will occur about 3 minutes later.

The primary cause of this collision was the failure of *Ship A* to go at a moderate speed in a fog and failure to stop her engines and navigate with caution upon hearing forward of her beam the fog signal of a vessel, the position of which was not ascertained. These failures were aggravated by the fact that the radar provided timely notice of the proximity of the other vessel. Improper interpretation of the radar aboard *Ship A* was also a factor; in that, *Ship A's* course change (to 035°) actually placed the vessels on collision courses. This situation could have been avoided by the simple expedient of plotting ranges and bearings.

As a result of this casualty, *Ship A* received damage in the amount of $380,000, and *Ship B* damage in the amount of $900,000. There were no personnel injuries.

CASE 3

The principals in this case were a U.S. destroyer escort (*Ship A*) and a Swedish merchant vessel (*Ship B*), of 16,266 gross tons. Both ships were equipped with good operating radar. The collision occurred at about 1945 EST, 19 March, about 1.9 miles 048° true from Cape Henry Light, Va. At the time of the collision, the wind was easterly, force about 2; a light, easterly sea; the weather was clear with good visibility; and the tide was ebbing, with an east-southeasterly set.

SHIP A

At about 1650 e.s.t. 19 March, *Ship A* completed exercises at sea off the Virginia Capes and began her return voyage toward the entrance to Chesapeake Bay. She was under instructions to rendezvous with an admiral's barge near Little Creek Approach Lighted Buoy "2A" for the purpose of disembarking passengers. The commanding officer and OOD (officer of the deck), a lieutenant, were on the open bridge, with the OOD in charge of the vessel's movements. A forward lookout was stationed on the signal bridge. The radar was manned in CIC (Combat Information Center).

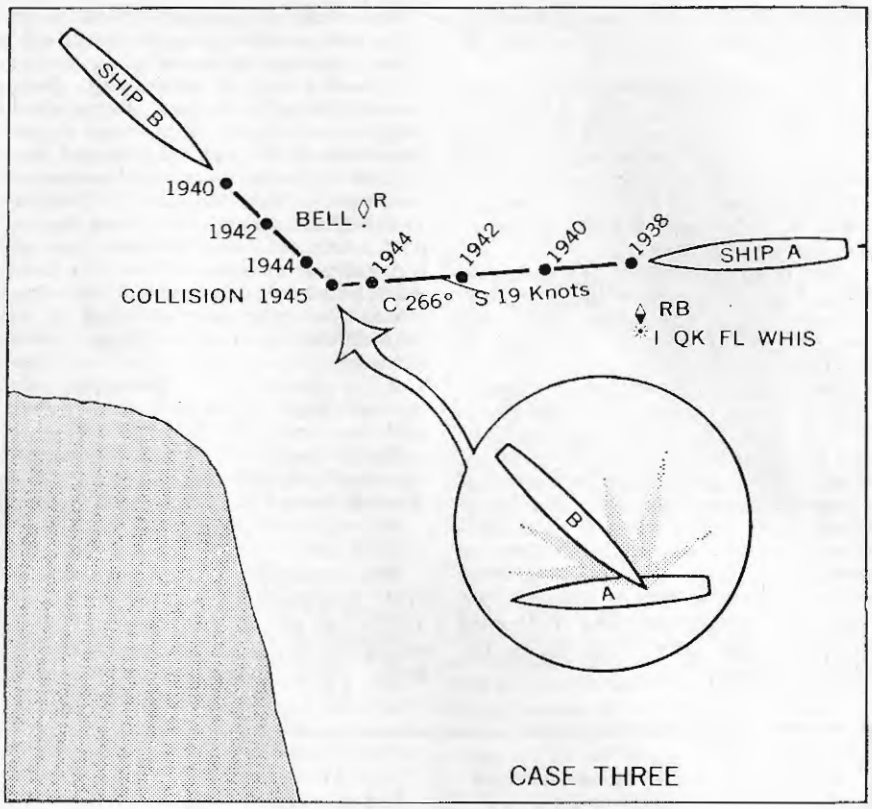
Ship A proceeded westward, passed Chesapeake Lightship to starboard, about 1,900 yards distant; then Buoy "2" was passed to starboard, about 150 yards distant. Cape Henry Junction Lighted Whistle Buoy was passed

to port, about one-half mile distant, at about 1938. At the time of passing this buoy, the ship's speed was 19 knots and the course was 266°.

When in the immediate vicinity of the junction buoy, the commanding officer and OOD noticed, about 15° off the starboard bow, several lights in the area of the Tail of the Horseshoe Channel. The commanding officer requested the OOD to check with CIC to find out if a moving target was among the lights. CIC returned a negative answer. Moving lights, which the commanding officer and the OOD accepted as coming from a ferry, were seen in this same area. However, the commanding officer, observing that CIC had not reported a moving target, assumed that the ferry was beyond the radar range which was set on the 7-mile scale.

Approximately 2½ minutes before the collision, the commanding officer observed the masthead lights and red side light of a vessel, which bore about 40° off the starboard bow. The OOD attempted to take a bearing, but the assistant navigator was using the starboard pelorus. He then viewed the lights by binoculars, and estimated the distance to be about 2,000 yards. The commanding officer, about this time, stopped the engines. A few seconds later, after hearing a four-short-blast whistle signal from the other vessel, he ordered "left full rudder—all engines back full," sounded four short blasts on his whistle, then sounded the collision alarm. The commanding officer then heard what he thought was another four-blast signal from the other vessel. *Ship A* began to turn left and the bow of *Ship B* passed down the starboard side of *Ship A*. When about 100 feet away, the commanding officer ordered "rudder amidships—all ahead full." But, a few seconds later, *Ship B* struck *Ship A* on the starboard side, abaft of amidships.

Ship A was able to prevent progressive flooding and remained afloat. The injured and deceased personnel were cared for, and the vessel was later towed into the port of Norfolk, Virginia. *Ship B* remained in the area, and later proceeded into Norfolk.



SHIP B

Ship B departed Baltimore, Md., bound down Chesapeake Bay en route to Puerto de Hierro, Venezuela. On board was a State pilot who was directing the movements of the vessel. The run down the bay was completed without incident. While approaching the area where the pilot was to disembark, *Ship B* was navigated to the westward of Tail of the Horseshoe buoys, "3TH" and "1TH," so as to pass buoy "1TH" about 800 yards to port. The engines were stopped, and the vessel placed on a heading of 160° in order to make a lee for the pilot's departure. At about 1940, 19 March, with the engines stopped and the vessel moving through the water "a little," the pilot departed.

While *Ship B* was heading about 165°, the master, who was now in charge of the movements of the vessel, observed the masthead lights and the green side lights from a vessel 10° to 20° forward of his port beam. This vessel was *Ship A*. The master then ordered ahead full and ordered the man at the helm to come left to 115°. As *Ship B* approached this course, the master, wishing to pass Buoy "2A" abeam to port, distant one-half mile, observed the buoy on radar and decided the correct course to pass one-half mile off was 125° (after having been on 115° "just a short while").

As *Ship B* approached Buoy "2A", the master observed the masthead lights and the red side light of another vessel almost dead ahead and several miles away. He decided to come right in order to leave room between his vessel and Buoy "2A" for the latter oncoming vessel to pass. He then came to course 134°.

When *Ship B* had Buoy "2A" abeam, *Ship A* was approximately 50° off the port bow of *Ship B* and still closing. The master, at about this time, ordered his chief mate to sound the danger signal and stop the engines. Both orders were executed. Failing to observe any change in maneuvering by *Ship A*, the master sounded one long blast and ordered hard right. As *Ship B* began turning right, the master, observing that *Ship A* was still closing so as to cross ahead of *Ship B* and thinking that he could not avoid collision by going right, ordered hard left and half astern. The right rudder had been held for about one-half minute. As the bow of *Ship B* was about amidships of *Ship A*, the master, seeing that the vessels would not clear, ordered full astern, just before the impact.

ANALYSIS

The available information indicates that earlier visual detection of *Ship B* was hampered by background lights which were visible beyond the port bow to the starboard bow of *Ship A*. In addition, the question of a proper lookout is also raised. An 18-year-old seaman, standing his fourth lookout watch, was the forward lookout. His position on the signal bridge made it even more difficult for him to see another ship's lights among all the background lights. In any event, he failed to see and report any moving

targets to CIC. A lookout on the bow would probably have seen *Ship B* much earlier.

Radar was also a factor in this case. Although the reason *Ship A* failed to detect the presence of *Ship B* by radar was not evident in the record, there can be little doubt that the speed of the vessel was influenced by the absence of any reports from radar of moving targets ahead.

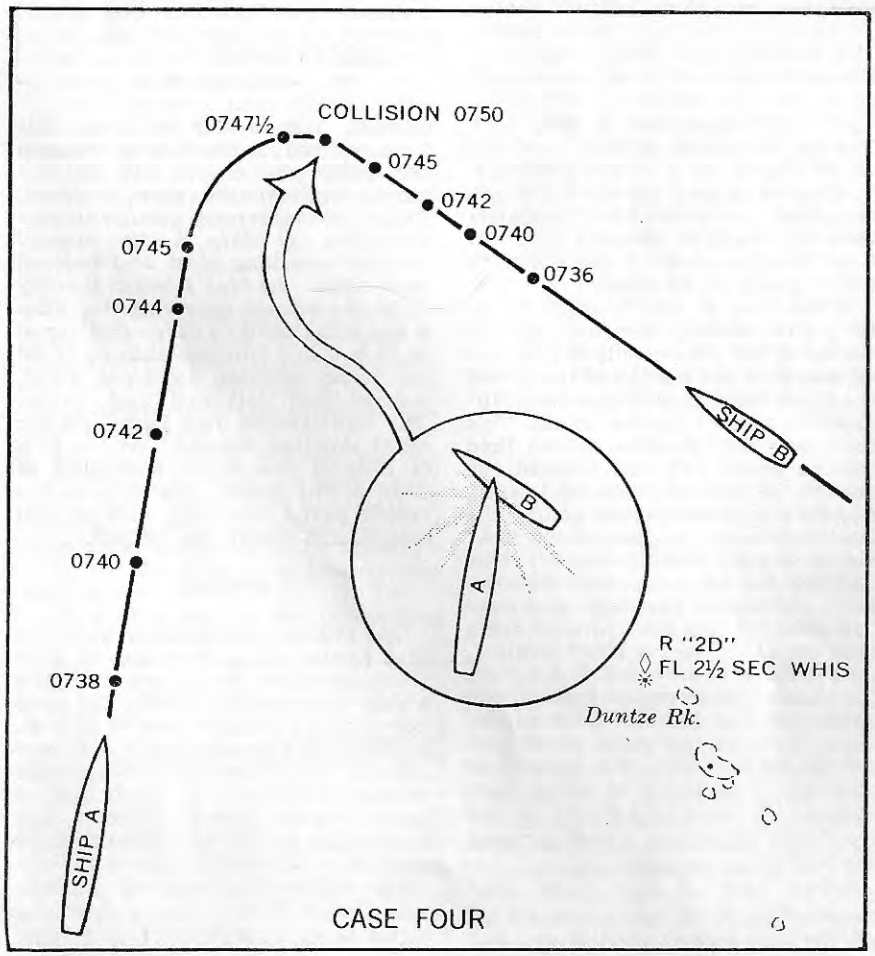
The master of *Ship B*, watching *Ship A* approaching off his port bow, expected *Ship A* to come right and pass to port of *Ship B*. However, in the absence of signals, or other communication, no vessel should attempt to predict the intentions of the other. *Ship A* being the burdened vessel, had the duty to keep clear. Therefore, when her commanding officer first observed the red side light of *Ship B* about 2,000 yards away on his starboard bow, he should have given a one-blast signal and then altered course to pass astern of *Ship B*. An *exchange* of signals was indicated under Section 80.3, Pilot Rules for Inland Waters.

This was a crossing situation in which the proximate cause of the collision was the failure of *Ship A*, the burdened vessel, to keep clear. Factors contributing to her failure were background lights hampering visual detection of *Ship B's* lights and the reported absence of a moving target on radar. Obviously, the CIC failed to maintain a plot, and based its report solely on radar presentation in the absence of reports from the forward lookout. A plot would have disclosed the proximity of *Ship B* in ample time to take proper evasive action.

As a result of this casualty, two crewmembers of *Ship A* were killed and one seriously injured. *Ship A* suffered structural damage estimated at about $350,000; damage to *Ship B* was estimated at about $35,000.

CASE 4

The principals in this case were a U.S. merchant vessel (*Ship A*) of 7,632 gross tons and a U.S. fishing vessel (*Ship B*), a motorboat, of 23 net tons. The merchant vessel was equipped with good operating radar. The weather at the time of the casualty was: wind from the northwest at force 5; approximately a 9-foot sea from the northwest; and dense fog.



SHIP A

Early on the morning of 27 September, *Ship A*, en route San Pedro, Calif., to Seattle, Wash., was proceeding northward off the Washington coast at 11.5 knots. The master and second officer were on the bridge. At 0720 PST, a fog bank was observed ahead about 4 miles away in the vicinity of Tatoosh Island. A lookout was posted on the bow and fog signals were commenced. The engine was placed on "Standby", but no reduction in speed was made. The radar was on and appeared to be operating satisfactorily, showing a good presentation of land mass, but no vessel targets were observed. At 0734, Tatoosh Island was abeam to starboard, and the vessel had entered the fog bank where visibility was between 500 and 1,000 yards. At 0746, with Tatoosh bearing 145° true, distant 3 miles, the master ordered right rudder to enter the Strait of Juan de Fuca. At this same time, the lookout reported by phone that he heard a whistle ahead. Immediately, the engine was stopped and the master checked the radar, which was on the 8-mile scale, but observed no vessel targets. Approximately 1½ minutes later, the lookout reported sighting a vessel 1,000 feet ahead fine on the starboard bow. This later proved to be *Ship B*, which appeared to be underway with little or no way on and heading across the bow of *Ship A* from starboard to port. Upon receiving the report from the lookout, the master ordered full astern. The rudder was already hard right. The response to the engine order was immediate, but these maneuvers did not succeed in evading *Ship B*. At about 0750, with *Ship A* making an estimated 3 to 4 knots through the water, her bow struck and holed *Ship B* on the port side near the forward end of the pilothouse.

Ship A was undamaged, but *Ship B* was severely holed and sank about 3 minutes after the collision. *Ship A* came about, lowered her motor lifeboat, and was able to rescue three survivors. Unfortunately, the master and one crewmember of *Ship B* were lost.

SHIP B

Ship B, a 49-foot, wood hull motorboat, licensed for fishing, with the master and four crewmembers aboard, departed Neah Bay, Wash., at about 0600 en route to the fishing

grounds near Destruction Island at the entrance to the Strait of Juan de Fuca. After clearing the harbor, the vessel headed west at half speed—approximately 5 knots—into a 9-foot westerly swell. At about 0720, fog was encountered. The master came to the bridge, took the wheel, and began sounding fog signals. Five minutes later speed was reduced to 4 knots. Sometime later, the master ordered the stabilizers rigged to reduce the vessel's roll, as the seas had increased. The man who previously had the wheel had remained in the pilothouse. At this time, he went below to call two other crewmembers to assist in the rigging out. Afterward, while waiting for the others, he was standing on the foredeck acting as lookout. He had been there 2 to 3 minutes when he heard the master shout "Look out!" Shifting his gaze from right to left, the lookout saw the bow of *Ship A* about 50 to 60 feet away and felt the engine of *Ship B* being reversed and the revolutions increased. Within seconds, the collision occurred.

ANALYSIS

The principal cause of the collision was the failure of *Ship A* to go at a moderate speed in fog. In this connection, it is apparent that undue reliance was placed on the fact that no vessel targets were observed on the radar and that the radar appeared to be working properly. The record does not indicate whether or not any attempt was made to periodically shift the range scale; such a procedure is often successful in detecting targets not visible on one range scale alone.

There is the question of a proper lookout aboard *Ship B*. The crewmember who was relieved at the wheel by the master indicated that he remained in the pilothouse until he went below to call the other crewmembers. When he returned topside he took position on the foredeck to act as lookout, and within 2 or 3 minutes the collision occurred. During his absence, *Ship B* had no lookout. Had a lookout been stationed on deck well forward and away from any distractions at the time fog was first encountered, there remains the possibility that he might have heard the fog signal of *Ship A*, thereby providing additional time in which to take avoiding action.

The board investigating this casualty was of the opinion that the use of a radar reflector aboard *Ship B* may have made her a more effective radar target. Tests conducted by the U.S. Coast Guard indicate that the increase in radar detectability afforded by available reflector equipment is definitely limited and offers no assurance that vessels so equipped will be observed by radar in time to avoid collision or even that they will be observed at all. However, it appears that owners of small vessels, particularly those of nonmetallic construction, should be encouraged to employ any means which might improve radar detectability.

As a result of this casualty, *Ship B* sank with an estimated loss of $65,000. The master and one crewmember of *Ship B* were lost and presumed dead; one crewmember was injured. *Ship A* was not damaged.

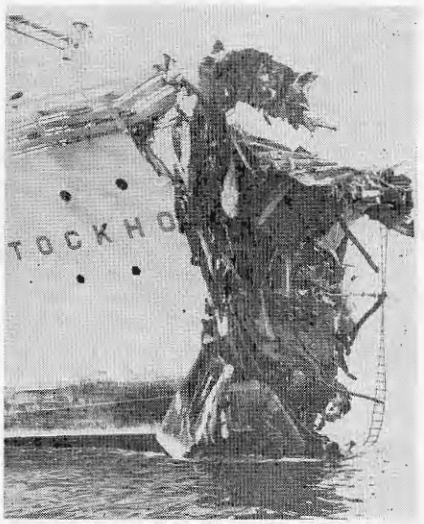
CONCLUSIONS

In a study of collision cases certain conclusions appear obvious. For example, the greater number of collisions occur in narrow channels and other congested waters. At the same time, an important contributing cause is a marked inclination to ignore some of the established rules for avoiding collisions. The latter is convincingly illustrated by a study,[2] completed in 1960, which showed that, of 199 collisions studied, there were 105 violations of article 18, Inland Rules (approaching steam vessels). Fifty-five of these were violations of article 18, rule I (meeting and passing, and whistle signals), and 30 were violations of article 18, rule III (danger signals). Failure to make a normal port-to-port passing, where clearly indicated in a meeting situation, is often aggravated by excessive speed and failure to give proper signals, including a failure to sound the "danger signal", as prescribed by article 18, rule III.

In the study previously mentioned, of the 11 causes considered, excessive speed was a contributing cause in 77 cases. Reference to the study report also discloses that being on the wrong side of the channel was a contributing cause in 58 cases, and failure to sound signals a contributing cause in 45 cases. However, 33 collisions occurred even though a passing agreement had been reached.

The study further emphasized the relatively small number of collisions which result from poor visibility. Of 199 collisions, less than 27 percent occurred when visibility was less than 2 miles. In most instances human factors, rather than physical ones, were responsible for the resulting collisions.

The use of radar information as a help in preventing collisions, particularly in open-sea situations and situations of low visibility, has been a subject of growing importance. Recognizing that this aid is effective only when properly used, the Fourth



International Conference for the Safety of Life at Sea (1960) adopted certain additions to the Rules of the Road which contemplate the proper use of radar at sea. Applicable portions of the proposed changes and the annex to the rules are reproduced at the conclusion of this article.

Case 2 is an impressive example of the misuse of radar information. *Ship A* relied on unplotted ranges and bearings as a means of determining the movements of *Ship B*. It should be remembered that in a relative-motion presentation, such as is given by most PPI scopes, the course and speed of the other ship can be determined only by plotting several successive ranges and bearings. A single reading of another ship's range and bearing fixes its position only for that particular instant. It does not provide enough information upon which to take avoiding action, since it cannot predict any future position. The officer directing the movements of *Ship A* (case 2) erroneously assumed he had the ability to deduce the other ship's movements from the radarscope presentation. Later, when the other ship disappeared in the sea return at a range of about 2 miles, its subsequent movement could not be predicted. As a consequence, *Ship A's* turn to starboard actually produced a collision. A relative-motion plot establishes quite conclusively that the collision would not have occurred had *Ship A* continued on her original course.

Certain research and tests have been undertaken to develop automatic plotting and evaluation of multiple radar targets; for example, by appropriate inputs to a monitoring electronic computer. Preliminary tests have been encouraging, as have other

tests with true-motion radar presentation; however, for the present, ships' officers must utilize the information available from conventional radar. Properly used radar is an effective aid. However, if not used properly, it can help to cause a collision as in case 2. This is particularly so if the available information leads to unwarranted conclusions and a false sense of security.

The above cases are based on actual casualties, but none of the accounts is to be construed as complete factual reports, for facts not essential to this presentation have been omitted. The comments reflect, in general, the opinions and conclusions of the investigative officers and boards concerned with the various casualties.

[2] "A Statistical Analysis of Selected Marine Collisions Occurring During the Three Fiscal Years 1957, 1958, and 1959." U.S. Coast Guard, Washington, D.C., 1960.

CHANGES IN THE RULES OF THE ROAD ADOPTED BY THE FOURTH INTERNATIONAL CONFERENCE FOR THE SAFETY OF LIFE AT SEA

The Fourth International Conference for the Safety of Life at Sea, held in London, England, from May 17 to June 17, 1960, adopted several significant improvements in the Rules of the Road concerning the use of radar at sea. There are now a great number of ships of all nationalities that are equipped with marine radar. It is to be expected that many additional ships will make use of this valuable navigational instrument in the future. At present there is no specific language in the Rules of the Road concerning the proper use of radar at sea. However, during and since World War II there has been a considerable amount of experience and knowledge gained concerning the practical use of marine radar during periods of low visibility. The conference used the lessons learned through collision investigations, the decisions rendered in various admiralty court cases, and many other intensive studies concerning the proper usage of radar, as the basis for the adoption of a new paragraph (c) to rule 16 and a radar annex to the rules.

These new additions to the Rules of the road serve to clarify the use of marine radar and legalize many of the procedures now used by radar-equipped vessels during fog and periods of low visibility. The new rule and the annex have been adopted to take full advantage of the benefits to be gained by radar navigation, to the extent that such usage will not endanger other shipping. Full compliance with the letter and spirit of these new measures, used in conjunction with the existing rules, should aid in the promotion of safety at sea by making each ship aware of the procedures to be followed by other vessels.

It should be borne in mind, however, that these new provisions to the Rules of the Road adopted by the Conference do not become binding until the convention as a whole is ratified by 15 nations, including 7 countries having not less than 1 million gross tons of shipping.

The section of the old rules concerning "Sound Signals for Fog, and So Forth" has been retitled "Part C—Sound Signals and Conduct in Restricted Visibility."

There has been a new preliminary paragraph added, as follows:

PRELIMINARY

"1. The possession of information obtained from radar does not relieve any vessel of the obligation of conforming strictly with the rules and, in particular, the obligations contained in rules 15 and 16.

"2. The annex to the rules contains recommendations intended to assist in the use of radar as an aid to avoiding collision in restricted visibility."

The new paragraph (c) to rule 16 is as follows:

"(c) A power-driven vessel which detects the presence of another vessel forward of her beam before hearing her fog signal or sighting her visually may take early and substantial action to avoid a close quarters situation but, if this cannot be avoided, she shall, so far as the circumstances of the case admit, stop her engines in proper time to avoid collision and then navigate with caution until danger of collision is over."

The new annex to the rules contains eight principles for using radar to avoid collision at sea and is as follows:

ANNEX TO THE RULES

"Recommendations on the use of radar information as an aid to avoiding collisions at sea.

"(1) Assumptions made on scanty information may be dangerous and should be avoided.

"(2) A vessel navigating with the aid of radar in restricted visibility must, in compliance with rule 16(a), go at a moderate speed. Information obtained from the use of radar is one of the circumstances to be taken into account when determining moderate speed. In this regard it must be recognized that small vessels, small icebergs, and similar floating objects may not be detected by radar.

"Radar indications of one or more vessels in the vicinity may mean that 'moderate speed' should be slower than a mariner without radar might consider moderate in the circumstances.

"(3) When navigating in restricted visibility the radar range and bearing alone do not constitute ascertainment of the position of the other vessel under Rule 16(b) sufficiently to relieve a vessel of the duty to stop her engines and navigate with caution when a fog signal is heard forward of the beam.

"(4) When action has been taken under Rule 16(c) to avoid a close quarters situation, it is essential to make sure that such action is having the desired effect. Alterations of course or speed or both are matters as to which the mariner must be guided by the circumstances of the case.

"(5) Alteration of course alone may be the most effective action to avoid close quarters provided that:

"(a) There is sufficient sea room.

"(b) It is made in good time.

"(c) It is substantial. A succession of small alterations of course should be avoided.

"(d) It does not result in a close quarters situation with other vessels.

"(6) The direction of an alteration of course is a matter in which the mariner must be guided by the circumstances of the case. An alteration to starboard, particularly when vessels are approaching apparently on opposite or nearly opposite courses, is generally preferable to an alteration to port.

"(7) An alteration of speed, either alone or in conjunction with an alteration of course, should be substantial. A number of small alterations of speed should be avoided.

"(8) If a close quarters situation is imminent, the most prudent action may be to take all way off the vessel."

nautical queries

DECK

Q. a. How can the weight and strength of an anchor be determined?

b. On the usual stockless anchor employed on merchant vessels, what care is necessary and what parts should be examined for signs of wear?

A. a. The weight and strength of an anchor may be determined by examining the stampings required to be made on the flukes and shank. This information may also be derived from the anchor certificates which should be among the ship's papers. The anchor has the certificate number stamped on it, so that the certificate corresponding to the particular anchor can be determined.

b. Modern stockless anchors are of rugged design and normally require little care. However, flukes should be kept free to move in their proper arc on the shank. The crown socket or pivot bar should be kept free of mud, rocks, etc. The anchor shackle pin on the bower anchors should be examined as they are subject to severe strain as well as abrasion in the hawse pipes. Should any slackness develop they must be hardened up (usually by shipyard repair gangs) by heating and peening, or be renewed. Spare bower, stream, and kedges which are seldom used should have their shackles kept free.

Q. If the temperature of the atmosphere is considerably higher than that of sea water, the depth indicated on the sounding tube will be _____ the actual depth.

(a) Less than
(b) Greater than
(c) The same as

A. (b) Greater than

Q. The general name given to the instrument that consists of wet and dry bulb thermometers is a:

(a) Hygrometer
(b) Hydrometer
(c) Clinometer
(d) Tachometer
(e) Both (a) and (b) above

A. (a) Hygrometer

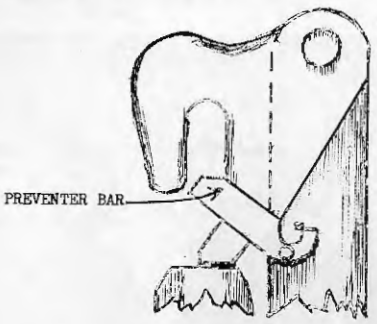
Q. The property of the gyroscope which causes it to maintain its plane of rotation is known as:

(a) Torque
(b) Spin
(c) Rigidity
(d) Precession
(e) Gravity

A. (c) Rigidity

ROTTMER GEAR

Q. What is the purpose of the preventer bars on the Rottmer-type releasing gear illustrated?



A. The purpose of the preventer bars is to prevent accidental or premature disengagement of the chain or ring from the hook, particularly in a seaway or when hooking on.

ENGINE

Q. Describe the construction and operation of a "pop" safety valve?

A. In the "pop" type safety valve there is an extended curved lip on the valve disk outside of the regular beveled part which acts on the valve seat. Screwed to the outside of the valve seat is an adjustable pop ring which may be raised or lowered, and, with normal adjustment the top edge of this ring is outside of the lower edge of the pop lip, thereby forming a pop chamber under the lip. When the safety valve first begins to lift the escaping steam acts on the excess area of the pop lip, thus causing the valve to open wide very quickly and relieve the excess pressure. With high adjustment of the pop ring the back pressure in the pop chamber is higher thereby keeping the valve open longer and reducing the boiler pressure to a lower point before the valve closes. With low adjustment of the pop ring and the pop chamber open to the atmosphere when the valve is closed, the valve will act much slower in opening. A desirable feature of pop safety valves is that they do not chatter between opening and closing.

Q. What is the purpose of an accumulation test on a safety valve, and how is this test made?

A. The purpose is to insure that the safety valves have sufficient capacity for relieving the boiler of excessive pressure under any conditions.

Accumulation tests shall be made by shutting off the steam outlets from the boilers except such as may be necessary to operate the boiler. The fires must be forced to the maximum capacity for a period of 15 minutes for fire tube boilers and 7 minutes for water tube boilers. During this test period, the steam pressure must not at any time rise more than 6 percent above the maximum allowable working pressure. After the accumulation tests, it shall not be permissible to change the adjustment of the safety valves unless such change is authorized by the local inspectors.

Q. Describe the process known as thermit welding. Where is thermit welding usually employed?

A. Thermit welding is a method of joining ferrous metals by casting molten steel between abutting surfaces; these surfaces are surrounded by a mold over which is suspended a crucible containing the thermit mixture. Thermit is a mechanical mixture of finely divided aluminum with iron oxide in the form of magnetic iron scale. The proportions are approximately 3 pounds of iron to 1 of aluminum. An ignition powder, composed largely of barium peroxide, and a magnesium ribbon is employed to start the reaction. Thermit welding is employed for welding and repairing heavy sections, such as housings, frames, and other machinery parts.

Q. What are the data markings on approved safety valves?

A. Approved safety valves shall be marked by the manufacturer either by means of a plate attached to the body of the valve or by stamping or casting on the body of the valve itself the following data:

1. Name or registered trademark of manufacturer.
2. Serial number of safety valve.
3. Inlet diameter of safety valve.
4. Operating pressure and guaranteed discharge capacity—pounds of steam per hour at that pressure.
5. Safe working pressure of the body of the valve.
6. Blowdown, in pounds per square inch.

MARITIME SIDELIGHTS

There were 916 vessels of 1,000 gross tons and over in the active oceangoing U.S. merchant fleet on November 1, 1963, 5 more than the number active on October 1, 1963, according to the U.S. Department of Commerce. There were 12 Government-owned and 904 privately owned ships in active service. These figures did not include privately owned vessels temporarily inactive. They also exclude 26 vessels in the custody of the Departments of Defense, State, and Interior and the Panama Canal Company. The Maritime Administration's active fleet decreased by three, while the inactive fleet decreased by five. The total Government fleet decreased by 1 to 1,825. The total U.S. merchant fleet remained at 2,804. No contracts for new ships were awarded. The number of large oceangoing ships under construction in U.S. shipyards decreased by 1 to 50.

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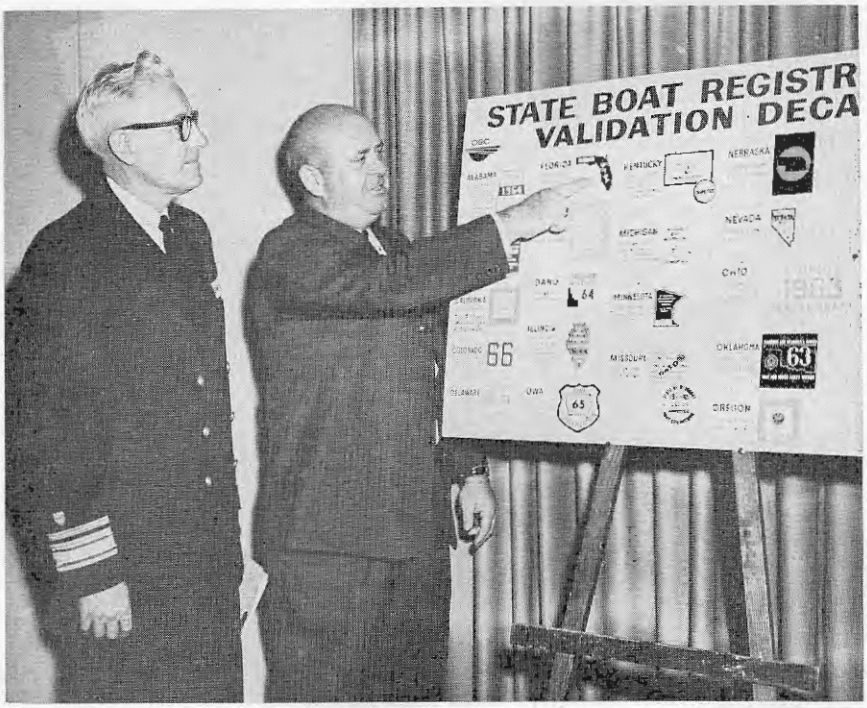
The U.S. Coast and Geodetic Survey announced recently the release of a new edition of nautical chart 8102 for Hecate Strait to Etolin Island, Alaska. Coverage includes Ketchikan, Alaska, and the surrounding areas, including Clarence Strait, Portland Inlet, Tongass Narrows and Cholmondeley Sound.

The chart shows changes critical to navigation northward of Dixon Entrance and Hecate Strait—the inside routes to southeastern Alaska and British Columbia. Major changes indicate more accurate positioning of Cholmondeley Sound and tributaries with representative depths to reflect the shape of the bottom. Added critical depths indicate the true shape of the bottom in George and Carroll Inlets, in Twelvemile Arm, and on Dogfish Bank off Hecate Strait. Other changes include the location of additional lights, buoys, and beacons and new characteristics and positions of many existing ones.

The new edition is published at $1 per copy. It can be purchased from the Coast and Geodetic Survey, Department of Commerce, Washington, D.C., 20230, its District Offices, and authorized sales agents.

ADVISORY PANEL OF STATE OFFICIALS



DURING A RECENT meeting of the Advisory Panel of State Officials, Mr. O. B. Clark, Boating Administrator for the State of Florida, discussed the problem of motorboat number renewal system with Rear Adm. O. C. Rohnke, Chief, Office of Merchant Marine Safety, who represented the Commandant of the Coast Guard at the panel discussion of state and federal government problems in the recreational boating field.

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A report entitled "United States Seaports—Atlantic Coast" has been issued by the Maritime Administration. This is the second publication in Part I of the Port Series. The first of the series covered Alaska, Pacific Coast, and Hawaiian ports, and an issue now in preparation will cover the Gulf Coast ports. The publication provides data on individual port administration.

Part I publications do not include information on detailed port subjects such as channels, anchorages, piers, maps, etc., which are published separately on individual ports as Part II of the Port Series by the Board of Engineers for Rivers and Harbors, Corps of Engineers, U.S. Army. The report may be purchased from the Superintendent of Documents, Washington, D.C., 20402, for $1 per copy.

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Officers and men of the States Marine Lines cargo vessel *Wolverine State* were recently presented with the company's semiannual award for accident-free operation during the first half of 1963. The award enables the vessel to purchase extra recreational and educational equipment.

TABULATION OF UNSAFE PRACTICES

January through June 1963

	Atlantic	Great Lakes and rivers	Gulf	Pacific	Total
A. Access to Vessel					
Gangways, accommodation ladders, etc.—					
1. Length, width, strength, etc., inadequate	20	13	6	5	44
2. Rigged or secured improperly	16	13	17	20	66
3. Angle too steep	20	9	21	9	59
4. Not clear at either end	----	7	4	2	13
5. Water discharging onto	2	----	----	----	2
6. Hand ropes or rails not provided or inadequate	21	16	15	7	59
7. Insufficient number	1	----	----	----	1
8. Lifeboat or other object suspended over access	1	----	----	1	2
9. Ring life buoy with lanyard not provided or inadequate	18	19	42	12	91
10. Other	7	11	8	3	29
B. Access to Spaces on Board Vessel					
Ladders—					
11. Rigged improperly	7	1	3	7	18
12. Rungs, steps or treads missing or loose	19	3	24	24	70
13. Deteriorated or weakened	9	1	15	12	37
14. Hand rails missing or inadequate	9	6	13	15	43
15. Doors or passages cluttered	26	8	5	4	43
16. Escape means blocked or locked	3	1	4	15	23
17. Other	6	1	5	7	19
C. Deck and Hull Openings					
18. Hatch covers, dangerously piled or placed	6	2	----	1	9
19. Hatch covers, missing or defective	11	7	7	5	30
20. Hatch covers, securing means defective	9	15	17	9	50
21. Hatch beam locking lugs missing or defective	1	2	3	----	6
22. Lifelines, chains, rails or guards missing or inadequate	38	10	21	13	82
23. Other	6	5	12	8	31
D. Decks and Platforms					
24. Slippery due to oil, grease, etc	43	41	48	25	157
25. Cluttered	36	22	15	11	84
26. Floor plates or gratings loose or not in place	23	21	3	11	58
27. Rails and guards missing or inadequate	32	5	19	18	74
28. Other	2	5	2	2	11
E. Cargo Handling					
29. Safe load not marked on booms	3	2	6	----	11
30. Guys, falls, booms, etc. improperly rigged	3	----	1	1	5
31. Overloading gear	----	----	----	----	----
32. Jury rig winch controls	----	----	1	----	1
33. Failure to use guards and gates of cargo elevators and escalators	----	----	2	----	2 5
34. Using defective cargo gear	3	----	2	----	9
35. Smoking prohibition disregarded	2	4	1	2	5
36. Stowage or handling of cargo or gear	1	----	2	2	1
37. Other	1	3	6	1	11
F. Lifesaving Equipment					
38. Not ready for use	24	4	7	18	53
Lifeboats—					
39. Hoisting fully loaded	----	----	----	----	----
40. Personnel riding to fully stowed position	----	----	2	----	2
41. Preventive lashings not used when working in boat	1	----	1	----	2
42. Winch power not shut off when using hand crank or performing maintenance	----	----	----	5	5
43. Starting engine without ventilating	----	----	----	----	----
44. Bypassed safety devices	----	1	1	----	2
45. Tricing and frapping lines improperly used	4	----	----	----	4
46. Davit span life lines not ready for use	4	2	6	3	15
47. Other	26	9	20	27	82
G. Fire Fighting Equipment					
48. Not ready for use	73	42	28	84	227
49. Fire screen doors blocked	3	----	----	3	6
50. Other	19	13	22	27	81
H. Ventilation					
51. Neglect to observe safety precautions prior to entering	1	----	----	----	1
52. Use of toxic solvent in confined spaces	----	----	----	----	----
53. Grease, dust, litter in ventilation system	9	4	2	16	31
54. Cowls, mushrooms, etc., frozen	17	7	3	16	43
55. Insufficient ventilation	8	5	1	5	19
56. Other	15	10	11	11	47
I. Electrical					
57. Extension cords defective	12	20	6	20	58
58. Portable equipment not grounded	28	29	11	33	101
59. Overfused circuits	41	15	4	16	76
60. Jury rigged circuits	55	26	31	53	165
61. Caps for receptacle outlets not in place	64	42	89	87	282
62. Switch and fuse box panels in passenger spaces left unlocked	1	6	1	1	9
63. General alarm bells muffled or dampened	32	9	21	38	100
64. Vapor globes and guards not in place	102	65	52	100	319
65. Use of defective equipment in hazardous spaces	5	----	3	5	13
66. Other	41	37	17	33	128
J. Machinery					
67. Failure to take safety precautions in lighting-off boilers	2	2	6	2	12
68. Spring loaded valves on sounding pipes secured in open position or not in place	13	3	18	35	69
69. Machinery guards not in place or defective	32	21	30	25	108
70. Failure to block or safeguard steam valves when working on steam lines or inside a boiler, evaporator, etc	2	1	----	----	3
71. Other	44	30	33	16	123
K. Welding, Burning, Heating or Riveting					
72. No gas-free certificates for "hot work" where required	1	----	4	1	6
73. Inadequate fire watch	5	----	----	4	9
74. Ventilation insufficient	1	----	----	----	1
75. Personnel protective equipment inadequate	----	1	----	----	1
76. Other	1	----	----	----	1
L. Tank Vessels					
77. Ullage holes or expansion trunk openings open without flame screens	6	16	26	11	59
78. Vent header drains left open	----	1	1	2	4
79. Deck battens or wooden gratings not provided where needed	----	7	2	----	9
80. Failure to comply with "Declaration of Inspection Prior to Bulk Cargo Transfer"	----	----	----	----	----
81. Other	12	49	20	3	84
M. Ferry and Excursion Vessels					
82. Vehicles not properly secured during navigation	----	----	----	----	----
83. Vehicle motors not turned off during navigation	----	----	----	----	----
84. Insufficient clearance between vehicles for egress of passengers in emergency	----	----	----	2	2
85. Barricades and gates opened prior to docking	----	----	----	----	----
86. Passenger supervision inadequate	----	----	----	2	2
87. Other	----	1	1	3	5
N. Miscellaneous					
88. Job supervision inadequate	4	6	1	1	12
89. Lack of supervision in maintenance of equipment	6	8	3	2	19
90. Lack of supervision in conducting drills	1	2	----	3	6
91. Lack of sufficient personnel	4	1	1	----	6
92. Oil, fuel and/or debris in bilges	80	8	16	53	157
93. Stoves, ranges, heaters, hot plates, lanterns, etc., not secured against vessel's movement	----	2	2	----	4
94. Inadequate deck, gangway, passageway, lighting	11	1	----	3	15
95. Unsanitary conditions	10	4	1	6	21
96. Chain falls improperly used	----	----	----	----	----
97. Lack of precautions while effecting repairs (including warning notices, etc.)	3	1	---	3	7
98. First aid equipment not ready for use (medicine chest, litter)	4	1	---	----	5
99. Stowage of ship's stores improper	5	7	----	4	16
100. Access over deckloads	1	----	----	1	2
101. Other	23	17	18	8	66
Grand total	1,261	789	872	1,043	3,965

GANGWAYMEN

The gangwayman is a very important member of the gang. The safe and expeditious handling of all types of drafts is directly under his control.

His first duty, of course, is to follow the draft at all times. This means from the ship's bulwark to the hatch coaming. The practice of permitting the winchman to take over the draft while it is in the hatch should be discouraged, for in the event of an accident, it becomes quite difficult to pinpoint its cause.

Generally, signals by the gangwayman should be given by hand. They should be clear and distinct. There should never be any doubt in the winchman's mind as to what signal the gangwayman is using.

He should be sure at all times that there is adequate walkway from the rail to the coaming.

During winter weather, it is the practice of many gangwaymen to lay a floor of hatch boards from rail to coaming to keep their feet off the cold deck. There is nothing wrong with this practice as long as the boards are so placed that there are no spaces between them which might set up a tripping hazard.

Gangwaymen should avoid building temporary seats. It is obvious that if he is to follow the draft he has no need for such a seat. There is great danger connected with the erection of makeshift seats. By using such a seat the gangwayman may get himself in a position that, in the event of an emergency, he will be unable to move quickly enough and may very well be trapped.

When working heavy lifts it is most important that he be so stationed that the winchmen and the men handling the guys can see him at all times and interpret his signals correctly. There is a tendency when heavy lifts are being worked for self-appointed members of the gang to attempt to take over the function of the gangwayman. Where the size of the lift indicates, it may be necessary to have an additional man in the hold to take over the direction of the lift when it reaches close to its point of rest. This should be the only time when more than one man is used to give signals.

The gangwayman is also in a position at most times to observe the running and standing gear. He should be sure that guys and preventers are set properly and that the remainder of the gear is in good operating condition.

Courtesy of
New York Shipping Association, Inc.

AMENDMENTS TO REGULATIONS

[EDITOR'S NOTE.—The following regulations have been promulgated or amended since the last issue of the PROCEEDINGS. A complete text of the regulations may be found in the Federal Register indicated at the end of each article. Copies of the Federal Register containing the material referred to may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402]

Title 33—NAVIGATION AND NAVIGABLE WATERS

Chapter I—Coast Guard, Department of the Treasury

SUBCHAPTER A—GENERAL

[CGFR 63–47]

PART 2—GENERAL DUTIES AND JURISDICTION

Navigable Waters of United States in Certain States

The purpose for this document is to publish the determinations made by the Commandant, United States Coast Guard with respect to certain navigable waters of the United States in Michigan and Tennessee, as well as determinations that certain waters which are in Michigan and North Carolina are considered to be nonnavigable waters of the United States.

In the administration and enforcement of various navigation and vessel inspection laws, rules and regulations it was necessary to determine whether or not certain bodies of water were in fact navigable waters of the United States and subject to laws administered by the Coast Guard. The information in this document is intended also to further the development, use and enjoyment of all the navigable waters within the United States, and to clarify responsibility with respect to laws, rules and regulations intended to promote safety of life and property on those waters as further described in 33 CFR 2.10–5 and 2.15–1.

Because the rules in this document are interpretations, it is hereby found that the Coast Guard is exempt from compliance with the Administrative Procedure Act (respecting notice of proposed rulemaking, public rulemaking procedures thereon and effective date requirements).

(Federal Register of November 16, 1963.)

EQUIPMENT APPROVED BY THE COMMANDANT

[EDITOR'S NOTE.—Due to space limitations, it is not possible to publish the documents regarding approvals and terminations of approvals of equipment published in the Federal Register dated November 23, 1963 (CGFR 63–70 and 63–77). Copies of these documents may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.]

ARTICLES OF SHIPS' STORES AND SUPPLIES

Articles of ships' stores and supplies certificated from November 1 to 30, 1963, inclusive, for use on board vessels in accordance with the provisions of Part 147 of the regulations governing "Explosives or Other Dangerous Articles on Board Vessels" are as follows.

CERTIFIED

Pennsalt Chemicals Corp., 2700 South Eastern Ave., Los Angeles, Calif., Certificate No. 585, dated November 1, 1963, PENNSALT 3002 SCALE REMOVER.

Parke-Hill Chemical Corp., 29 Bertel Ave., Mount Vernon, N.Y., Certificate No. 586, dated November 18, 1963, VANSULBAN.

AFFIDAVITS

The following affidavits were accepted during the period from October 15, 1963, to November 15, 1963:

Kraloy/Chemtrol Co., 402 West Central Ave., Santa Ana, Calif., PIPE & TUBING, VALVES, FITTINGS & FLANGES.

Smith Valve Corp., 41 Jackson St., P.O. Box 1047, Worcester 1, Mass., VALVES.

Kaiser Steel Corp., 300 Lakeside Dr., Oakland 12, Calif., PIPE & TUBING.

L & L Manufacturing Co., Box 397, Warren, Mich., PIPE FITTINGS.

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U.S. GOVERNMENT PRINTING OFFICE:1963