UNITED STATES COAST GUARD

ADDRESS REPLY TO:
COMMANDANT
U.S. COAST GUARD
HEADQUARTERS
WASHINGTON 25, D.C.

MVI
(AUGUST ZIESING -
STANDARD PORTLAND
CEMENT C-9 Bd)
26 JUN 1961

Commandant's Action

on

Marine Board of Investigation; collision between the SS AUGUST ZIESING and the SS STANDARD PORTLAND CEMENT, Lake Huron, 20 May 1960

1. The record of the Marine Board of Investigation convened to investigate subject casualty together with its Findings of Fact, Opinions and Recommendations has been reviewed.

2. At approximately 1133 EST, 20 May 1960, two United States Great Lakes bulk carriers, the SS STANDARD PORTLAND CEMENT and the SS AUGUST ZIESING, collided in the Lake Huron Cut Channel in dense fog. There were no lives lost or known injuries as a result of the collision, but both vessels sustained structural damage, and the PORTLAND CEMENT settled to the bottom in 22 feet of water with her weather decks still above water. Property damage was estimated at $217,000.

3. The 800 foot Lake Huron Cut Channel connects the upper end of the St. Clair River with Lake Huron. The channel runs in a generally north-south direction with the reach off Point Edward, Ontario, having an axis of 000½°T; the northern reach has an axis of 005°T and terminates at the Lake Huron Lightship in Lake Huron. On the day of the collision, dredging operations were in progress, and as a result the western 450 feet of the channel between buoys 3 and 4 to the south and buoys 5 and 6 to the north, a distance of about 1 mile, had been closed to navigation. Western channal marker buoys 3 and 5 had been temporarily relocated eastward opposite buoys 4 and 6, respectively, to mark the new western boundary of the remaining 350 feet of channel. Broadcast and Local Notices to Mariners announcing the change erroneously gave the positions of buoys 3 and 5 as 1000 feet north and 1000 feet south, respectively, of their actual positions.

4. The AUGUST ZIESING, en route from Conneaut, Ohio, to Two Harbors, Minnesota, in ballast, entered the southern end of the channel at about 1105. She was preceded by the SS WILLIAM E. COREY, immediately ahead; the SS RICHARD REISS; and the SS GEORGIAN BAY, in that order. Two other vessels were behind the ZIESING, and all were at approximately the same 3/4 mile interval.

5. At 1124, the ZIESING entered the southern end of the narrowed channel passing between buoys 3 and 4. She was closer to the eastern channel marker buoy 4, on her starboard, than to buoy 3. The ZIESING was proceeding at half speed, on a course of 001°T, and sounding fog signals. At about the same time she passed between buoys 3 and 4, visibility decreased further and the COREY, about 3/4 miles ahead, faded from sight. The ZIESING then changed course to 002°T. A downbound vessel, the PORTLAND CEMENT, was first observed ahead on radar at a distance of about 1.2 miles. One-blast passing signals were heard exchanged ahead, and the COREY was observed on radar to pass the PORTLAND CEMENT port to port north of buoys 5 and 6 at a distance of 3/4 miles ahead. The downbound vessel bore 3° on the ZIESING's port bow at this time.

6. At a position about 3100 feet north of buoys 3 and 4, the ZIESING blew a one-blast signal as an invitation to pass the PORTLAND CEMENT port to port and a short time later sounded the underway fog signal of three blasts. A one-blast signal followed by a three-blast fog signal was heard ahead and it was assumed that this was the PORTLAND CEMENT's assent. At this time the radar indicated that the PORTLAND CEMENT was 6° on the port bow at 0.5 miles. Within a minute, at about 1129, the ZIESING in accordance with the master's custom to assure himself blew a second one blast and then sounded the fog signal. Again a ship ahead, believed to be the downbound PORTLAND CEMENT, was heard to sound a one-blast signal followed by the fog signal of three blasts and finally a two-blast signal. Hearing the two-blast signal, the ZIESING sounded a danger signal of 7 or 8 blasts, repeated her third one-blast passing signal, and then a fog signal. Once again the ZIESING personnel testified that the PORTLAND CEMENT answered with one blast, a fog signal of three, and then two. The ZIESING went full astern and a short time later rang a second full astern for emergency power. About the same time, she blew her second danger signal. At the time of reversing the ZIESING was steering 002°T and was about 150 feet from the eastern side of the channel.

7. Immediately after reversing the smoke stack of the PORTLAND CEMENT came into view, and very shortly thereafter, the entire vessel emerged from the fog about 1200 feet on the port bow heading across the ZIESING's path at an angle of about 45°. Moments later the vessels came together at an angle of about 45° with the ZIESING's bow contacting the starboard side of the PORTLAND CEMENT at the after end of #2 hatch.

8. The SS STANDARD PORTLAND CEMENT was downbound, en route from Silver Bay, Minnesota, to Cleveland, Ohio, and loaded with 8094 tons of iron ore pellets. She was preceded by a vessel about 6 miles ahead and followed by the SS EDWARD J. BERWIND about 1¼ to 1½ miles astern.

9. The PORTLAND CEMENT passed the Lake Huron Lightship on her starboard side at 1103 and passed between the most northern set of Lake Huron Cut Channel buoys about 6 minutes later. Visibility was about 1 mile, and the PORTLAND CEMENT was traveling at half ahead at an estimated 5 or 6 MPH. Fog signals were being sounded and were continued up to the time of the collision. Passing between buoys 9 and 10 she was about in the center of the downbound channel on course 186°T. Faint fog signals were heard ahead, and shortly after passing buoys 9 and 10 the PORTLAND CEMENT received a radio call from the upbound SS GEORGIAN BAY. The GEORGIAN BAY indicated that she had just cleared the dredging area and after requesting the PORTLAND CEMENT's position advised that conditions were poor around the dredging area.

10. Buoys 7 and 8 were observed visually from a distance of about 3/4 miles, and the fog signals from ahead were gradually growing louder. As the PORTLAND CEMENT passed between buoys 7 and 8, she was about 200 feet east of buoy 7, and at about this time course was altered to the left to 181°T to conform with the next reach of the channel. Just south of buoys 7 and 8 one-blast passing signals were exchanged with the upbound GEORGIAN BAY. When abeam of the GEORGIAN BAY, the PORTLAND CEMENT blew a one-blast signal to the SS RICHARD REISS, which was observed visually to be following about 700 feet astern of the GEORGIAN BAY. The REISS answered with one blast, and after passing, the PORTLAND CEMENT blew for a port to port passing with the SS WILLIAM E. COREY. This was agreed to by the COREY, and they passed at a position between 2000 and 2500 feet north of buoys 5 and 6. Visibility decreased further at this last passing. The PORTLAND CEMENT's third mate was operating the radar and reported that the temporarily relocated buoy 5 was dead ahead and that the radar showed many objects to starboard, but no bearings or ranges were given.

11. According to the PORTLAND CEMENT witnesses, when buoy 5 became visible dead ahead at a distance of approximately 1000 feet, the vessel's course was altered to the left to 179°T. Moments later the ZIESING appeared as a big dark object on the starboard bow at a distance of about 1000 feet. The PORTLAND CEMENT was about 600 feet north of buoy 5 at this initial sighting, and believing the ZIESING to be west of buoy 5 she blew two blasts. Not hearing a reply to this passing signal, speed was reduced from half ahead to slow ahead and a danger signal was sounded. The ZIESING then became fully visible on the starboard bow and appeared to be heading across the PORTLAND CEMENT's bow from starboard to port and at an angle of about 45°. The PORTLAND CEMENT then blew a second two-blast passing signal, and hearing no answer the master ordered the rudder left full and the engine full astern followed by emergency full astern. The helmsman returned his rudder to amidship when the engine was reversed. The PORTLAND CEMENT's general alarm was then rung and a second danger signal was sounded. A danger signal from the ZIESING was heard when the vessels were about 60 to 70 feet apart.

12. Realizing the collision could not be avoided and in order to prevent the ZIESING from striking the forward crew's quarters, the master of the PORTLAND CEMENT rang full ahead and again ordered the rudder left full. It was estimated that the PORTLAND CEMENT's bow swung to the left on this last maneuver about the same amount that it had swung to the right during the full astern period. The two vessels then came together at an angle of about 45°. The point of collision was disputed by both sides, but it appears to have occurred near the eastern side of the available channel approximately 100 feet south of buoy 6 and about 100 feet west of the eastern channel line.

13. Immediately after the collision, the ZIESING pushed the sinking PORTLAND CEMENT out of the channel to the east where she settled on the bottom in 22 feet of water with her weather decks still above water. The PORTLAND CEMENT was holed on the starboard side at about #2 hatch, and the ZIESING's bow was holed at the stem.

14. The ZIESING remained in the side of the PORTLAND CEMENT until about 2145 that evening when she backed out and went to anchor. She later proceeded to Lorain, Ohio, under her own power. The PORTLAND CEMENT's cargo had to be lightened, then she was patched and towed to River Rouge, Michigan.

REMARKS

1. It is considered that the principal cause of this casualty was the failure of the SS STANDARD PORTLAND CEMENT to navigate with caution upon approaching a restricted channel area in conditions of heavy traffic and reduced visibility.

2. Before the PORTLAND CEMENT reached buoys 7 and 8 the information received by radio from the GEORGIAN BAY that the visibility in the dredging area was poor imposed on her the burden of deciding whether it was better to anchor or proceed. What consideration, if any, was given to this question is not evident in the record; however, having decided not to anchor while still north of buoys 7 and 8, she was then committed to continue since there was no place to anchor outside of the channel below buoys 7 and 8. Recognizing that she would have to navigate so as to enter the right-hand side of the available channel in the face of oncoming traffic, poor visibility, and her own heavily laden condition, it is considered that, even aside from the requirements of Rule 15 of the Great Lakes Rules, prudence should have dictated that speed be reduced to bare steerageway in order to provide the greatest possible margin for error. Nevertheless, the record reflects that the PORTLAND CEMENT continued at half ahead, an average speed of approximately 6.7 MPH, until after the ZIESING came into view 1000 feet off.

3. The Board's conclusion that the PORTLAND CEMENT must have permitted her heading to come considerably to the left of the 179°T she claimed she had steered in her maneuver to clear buoy 5 to starboard and their conclusion that the collision occurred on the eastern side of the channel near buoy 6 rather than on the western side as claimed by the PORTLAND CEMENT are adequately supported in the record and are concurred in.

4. Also contributing to this casualty was the PORTLAND CEMENT's failure to properly evaluate and adequately use information available from radar observations. The radar was on and operating properly, and although both the master and the mate glanced at the radar, there appears to have been little or no effort made to positively identify targets, to determine bearings or to analyze the navigational situation as it appeared on the scope.

5. The Board's opinion No. 12 that the speed of the ZIESING was not immoderate under the circumstances is not supported in the record. The Board found that the ZIESING's speed between buoy 4 and the time of collision averaged 6.7 MPH. Since the record also indicates that the ZIESING was backing for approximately two minutes before the collision, her speed prior to backing must have been in excess of 6.7 MPH. The ZIESING first became aware of the downbound PORTLAND CEMENT by radar when she was 1.2 miles ahead. She initiated the first one-blast signal when the two vessels were 0.5 miles apart and continued without reduction of speed for at least another minute thereafter. The master indicated that bare steerageway for the ZIESING under the existing circumstances was 1 to 3 MPH. If the vessel had been proceeding at a more moderate speed from the outset and if she had reduced to bare steerageway as required by Rule 15 when the fog signal of the PORTLAND CEMENT was heard ahead, the collision might have been avoided or at least the effect might have been minimized.

6. The Board expressed the opinion that the two vessels did not adequately use their radiotelephones, and had they done so, they might have avoided passing each other at the northern end of the restricted area of the channel. Recognizing the difficult navigational situation that faced her, it is agreed that the PORTLAND CEMENT should have used her radiotelephone to obtain more information concerning the traffic ahead, and had she done so, she might have decided on a different course of action. The ZIESING on the other hand, being fourth in a line of six ships was even more limited in the alternatives open to her. In addition, she had timely notice of the PORTLAND CEMENT's approach and had reason to expect that the PORTLAND CEMENT would keep to her own right-hand side of the channel without the necessity of verbal assurances.

7. The Board states in opinion 6 that the master of the PORTLAND CEMENT did not fully comprehend the extent to which the navigable channel was reduced by the relocation of buoys 3 and 5. The master testified that it was his understanding that the channel had been reduced to 400 feet. Because the channel was actually reduced to 350 feet, the Board is technically correct; however, this difference is not considered significant.

8. The Board's opinion 11 that the ZIESING heard the PORTLAND CEMENT exchange one-blast passing signals with the three vessels ahead and mistook them or some of them as answers to her own proposed one-blast passing signal is not concurred in. The ZIESING observed the vessel immediately preceding her pass the downbound PORTLAND CEMENT 3/4 of a mile ahead on radar, and the ZIESING blew her first passing signal at a distance of 1/2 mile. Considering the number of vessels that were present in the area, all blowing fog signals, the possibility of confusion of signals is understandable; however, there is no evidence that any such confusion contributed to the casualty in this instance.

9. To the extent that the record is considered to contain evidence of negligence on the part of the master of the SS PORTLAND CEMENT, the Board's opinion 13a. is approved. With respect to opinion 13b., it is considered that the responsibility for the failure of the PORTLAND CEMENT to properly use and evaluate the information available from the radar rested with the master rather than the mate on watch. From the record it would appear that the mate was not specifically designated as the radar operator to the exclusion of other duties as mate on watch. He merely observed the radar from time to time, volunteering such information he thought the master desired. The master also checked the scope on occasion, and it appears that he was satisfied with the mate's performance and the type of information that was relayed. The opinion of the Board, also in paragraph 13b., that the lookout was negligent for failing to distinguish the one-blast signal by the ZIESING from the signals of the three vessels that preceded her is not concurred in. The peculiarities of audibility of sound signals, particularly in fog, are well established, and recognizing the difficulties of distinguishing one vessel's signals from another, the inability of an individual to do so is not in itself considered to be improper performance or lack of vigilance.

10. Although the Broadcast and Local Notices to Mariners announcing the temporary relocation of buoys 3 and 5 contained erroneous positions of these two buoys, it is considered that this in no way contributed to the casualty. The navigation of the ZIESING was not affected, and as far as the PORTLAND CEMENT was concerned, the master's understanding as to the position of buoy 5 was within 50 feet of its actual position.

11. The statement by the Board in opinion 17 to the effect that a system of one-way traffic in temporarily restricted channels may be desirable, particularly under adverse conditions, is concurred in. A copy of the Board's report will be forwarded to the U. S. Army Corps of Engineers for their information in this regard. In this connection the Board took notice of the fact that following this casualty the U. S. Army Corps of Engineers instituted one way traffic control in the Lake Huron Cut for the duration of the dredging operations in that channel.

12. The Board's recommendation that Great Lakes masters be urged to make better use of the radiotelephone to assist in establishing successful meetings and passings is concurred in to the extent that masters should employ every means at their disposal to insure the safe navigation of their vessels. At the same time, however, it should be publicized that the greatest chance of avoiding collisions still lies in careful navigation and adherence to the Rules of the Road.

13. In addition to the Board's recommendation that further investigation under the Suspension and Revocation Proceedings be instituted in the case of the master of the SS STANDARD PORTLAND CEMENT, the Commander, 9th Coast Guard District, is hereby directed to institute similar action in the case of the master of the SS AUGUST ZIESING for his part in the casualty.

14. Subject to the foregoing remarks the record of the Marine Board of Investigation is approved.

[redacted]

A. C. RICHMOND
Admiral, U. S. Coast Guard
Commandant

The Marine Board of Investigation met on 6 September, 10 October, and 23 October 1960 to consider proposed findings of fact, opinions and recommendations. After full and mature deliberation, the Board makes the following Findings of Fact, Opinions, and Recommendation.

FINDINGS OF FACT

1. The U. S. inspected vessel SS AUGUST ZIESING is a Great Lakes bulk freighter, official number 215870, of 7969 gross tons and 6143 net tons with registered dimensions of 580.0 feet x 60.0 feet x 27.9 feet. She is powered by a triple expansion, reciprocating steam engine of 2200 HP. This vessel, built by the Great Lakes Engineering Works, Ecorse, Michigan in 1917, is owned and operated by the Pittsburgh Steamship Division of the U. S. Steel Corporation, Cleveland, Ohio and New York is her home port.

2. The U. S. inspected vessel SS STANDARD PORTLAND CEMENT is a Great Lakes bulk freighter, official number 206044, of 5141 gross tons and 3894 net tons, with registered dimensions of 444.0 feet x 56.2 feet x 29.0 feet. She is powered by a triple expansion, reciprocating steam engine of 1550 HP. This vessel, built by the Great Lakes Engineering Works, Ecorse, Michigan in 1909 is owned by the American Steamship Company, Inc., and operated by Boland & Cornelius of Buffalo, New York, and Buffalo, New York is her home port.

3. The SS AUGUST ZIESING departed Conneaut, Ohio on 19 May 1960 at 1500 EST, in ballast, en route Two Harbors, Minnesota with a draft of 5' forward and 17' aft. These drafts were taken from the CG 2692 submitted by the ZIESING on 20 May 1960. (It is noted that the Master of the ZIESING stated that his vessel was drawing approximately 9' forward at the time of the incident when he testified before the Board. R.p. 3)

4. The SS STANDARD PORTLAND CEMENT departed Silver Bay, Minnesota on 17 May 1960 with a load of 8094 tons of iron ore pellets en route to Cleveland, Ohio with a draft of 18'2" forward and 20'2" aft.

5. Both vessels continued their voyages without incident until arriving at opposite ends of Lake Huron Cut at the south end of Lake Huron at about 1100 EST on 20 May 1960.

6. The weather in this area at the time of their arrival was hazy to foggy with visibility ranging from about 600 feet to one mile. It was daylight with calm seas and light winds; easterly as stated by the STANDARD PORTLAND CEMENT, and northwesterly as stated by the AUGUST ZIESING.

7. The ZIESING was upbound at the Port Huron Traffic Buoy at 1053 on 20 May 1960, following astern of the SS WILLIAM E. COREY, a distance of one-half to one mile, and when abreast of the Port Huron Traffic Buoy the ZIESING broadcast a "Security" call on the radiotelephone. As the vessel approached the Lake Huron Cut the visibility decreased and the ship began sounding the required underway fog signals. The navigation of the ZIESING was under the direction of a duly licensed pilot, namely the master, with the third mate in the pilot house observing the radar, the wheelsman at the wheel and the boatswain acting as lookout on the forecastle head. The ZIESING carried

the usual ship control and navigational equipment found on a vessel her size and service and all navigational and ship control equipment was reported as operating satisfactorily, with the radar set on a two mile scale.

8. The ZIESING proceeded up the Cut steering 002° by gyro (001°T) keeping track of the COREY by radar and when the distance was found to be closing, the ZIESING stopped and backed (at 1117) to open the distance. The ZIESING was following close to the east, or red, side of the channel, having hauled to 003° by gyro after the COREY had been shut out by the fog. At about 1115 the ZIESING heard a vessel later determined to be the STANDARD PORTLAND CEMENT exchange a one whistle passing signal with the WILLIAM E. COREY.

9. At 1119, the ZIESING stopped her engines, and at 1120 went slow ahead. At 1123 she increased to half ahead and at 1124 Lake Huron Cut Buoys 3 and 4 were logged abeam.

10. When about 3000 feet above Lake Huron Cut Buoy 4 the ZIESING initiated a one whistle passing signal to the yet unidentified downbound vessel and followed that by the three blasts required of a vessel underway in a fog. The ZIESING lookout thought he heard their passing signal answered by the downbound vessel which then blew the underway fog signal. The ZIESING'S radar showed the vessel 3° on her port bow, distance 1.1 miles, at this first exchange of passing signals. Subsequent radar observations showed the bearings increasing slowly to port until a bearing of 6°, .5 miles distance, was obtained.

11. Shortly thereafter the ZIESING blew another one blast passing signal followed by the three blast underway fog signal. The master of the ZIESING testified that this passing signal was also answered by the STANDARD PORTLAND CEMENT.

12. The ZIESING'S master testified he next heard the STANDARD PORTLAND CEMENT blow a two blast signal which he promptly answered with the danger signal, a one blast passing signal and the three blast underway fog signal.

13. According to the ZIESING this last one blast passing signal was answered with one blast followed by a three blast fog signal and then a repetition of the two blast passing signal.

14. At 1131, by the Master of the ZIESING'S estimate, the ZIESING reversed her engines to full astern from half ahead and simultaneously blew another danger signal. Just after this danger signal the STANDARD PORTLAND CEMENT was reported to have blown another one whistle signal. At 1132 the master of the ZIESING rang up a second full astern, signifying full power astern. At this point, the smoke stack of the STANDARD PORTLAND CEMENT was observed by the ZIESING about 600 to 1200 feet away on the port side and very shortly the entire vessel was visible crossing above Buoy 5, heading at about a 45°

angle to the center line of the channel with her after two-thirds length west of Lake Huron Cut Buoy 5 and forward one-third east of Lake Huron Cut Buoy 5. Just prior to the collision, the ZIESING sounded her general alarm bells.

(Note: The entries in the ZIESING engineroom log indicates that the engine-room clock was approximately 6 minutes slow of the pilot house clock.)

15. At 1133 the vessels collided at an angle of about 45° with the ZIESING's stem penetrating the starboard side of the STANDARD PORTLAND CEMENT at about #2 Hatch. The point of impact occurred about 100 feet west of the eastern channel limits of Lake Huron Cut about 50 to 100 feet South of Lake Huron Cut Buoy 6.

16. The STANDARD PORTLAND CEMENT was downbound on Lake Huron and when abreast of Sanilac at 0852 EST changed course from 177° to 180°T, setting a course for the Lake Huron Light Vessel. Visibility was hazy and the STANDARD PORTLAND CEMENT was sounding the required fog signals with the SS E. J. BERWIND following about 1½ miles on her port quarter. When about 7 miles north of the Lake Huron Light Vessel the STANDARD PORTLAND CEMENT changed course to 188oT. When about 3½ miles north of the Light Vessel it was sighted visually. At 1059 when visibility reduced, the STANDARD PORTLAND CEMENT checked to half speed and notified the E. J. BERWIND via radiotelephone. This call was not recorded.

17. At 1103 the Lake Huron Light Vessel was passed abeam to starboard and visibility was estimated at one mile. The STANDARD PORTLAND CEMENT broadcast a "Security" call on the radiotelephone and proceeded down to Lake Huron Cut Buoys 11 and 12 when she changed course to 186° at approximately 1109, holding the starboard (west) side of the channel close aboard.

18. The navigation of the STANDARD PORTLAND CEMENT was under the direction of a duty licensed pilot, namely the master, with the third mate in the pilot house observing the radar, the wheelsman at the wheel, and an AB acting as lookout on the forecastle head. The STANDARD PORTLAND CEMENT carried the usual ship control and navigational equipment found on a vessel her size and service and it was reported that all equipment was operating satisfactorily with the radar set on a three mile scale.

19. After passing Lake Huron Cut Buoys 11 and 12, faint fog signals were heard ahead with Lake Huron Cut Buoys 9 and 10 visible a distance of about one mile. The STANDARD PORTLAND CEMENT proceeded down the channel sounding the proper underway fog signals. By the time she came abeam of Lake Huron Cut Buoys 9 and 10 the visibility had lessened to about three-quarters of a mile. When about 800 feet south of Lake Buron Cut Buoys 7 and 8, the

STANDARD PORTLAND CEMENT exchanged a one blast passing signal with an upbound vessel, the SS GEORGIAN BAY, and passed her to port.

20. When abreast of the GEORGIAN BAY, the STANDARD PORTLAND CEMENT exchanged a one whistle passing signal with a second upbound vessel, the SS RICHARD REISS which was about 600 to 700 feet astern of the GEORGIAN BAY, and these vessels passed port to port.

21. After passing the RICHARD REISS, The STANDARD PORTLAND CEMENT exchanged a one whistle passing signal with a third upbound vessel, the SS WILLIAM E. COREY and passed her about 2200 feet north of Lake Huron Cut Buoys 5 and 6.

22. a. Local Notice to Mariners No. 16 dated 18 April 1960 indicated that Lake Huron Cut Lighted Buoy #3 (LL 994) would be commissioned in a temporarily relocated position 8,680 feet, 010.5 degrees True from Fort Gratiot Light (LL 989) and that Lake Huron Cut Lighted Buoy #5 (LL 996) would be commissioned in a temporarily relocated position 13,980 feet, 007 degrees True from Fort Gratiot Light. Local Notice to Mariners No. 18 dated 21 April 1960 advised that dredging operations would commence in the Lake Huron Cut on or about 2 May 1960 and confirmed the information disseminated in Local Notice to Mariners No. 16.

b. Local Notice to Mariners No. 22 dated 29 April 1960 indicated that Lake Huron Cut Lighted Buoys 3 and 5 were commissioned in the positions set forth in Local Notice to Mariners 16 and 18.

c. On 19 May 1960 buoys 3 and 5 were actually relocated further due east, so that only 350 feet of the regular 800 foot channel remained available for navigation during the dredging operations being carried out under the supervision of the U. S. Corps of Engineers. The positions to which the buoys were moved on 19 May 1960 were verified by the CGC ACACIA on 24 May 1960 in the following positions: Buoy 3,000.8 degrees True, 9,870 feet from Pt. Edward Front Range Light; Buoy 5,000.6 degrees True, 15,170 feet from Pt. Edward Front Range Light. These positions plot 350' due west from buoys 4 and 6 respectively. Broadcast Notice to Mariners 130-60, issued on 19 May 1960, contained information concerning this last relocation. Local Notice to Mariners No. 34, 20 May 1960, contained the same information as was passed by Broadcast Notice to Mariners 130-60. The information passed by these two Notices to Mariners was based upon erroneous information supplied to the Coast Guard by the Corps of Engineers and indicated that buoy 5 was moved 50 feet east but also 1,000 feet south.

d. Both the master of the STANDARD PORTLAND CEMENT and the master of the AUGUST ZIESING stated that they had received Broadcast Notice to Mariners 130-60 and that they were aware that the Lake Huron Cut Channel had been restricted to 350 feet of usable channel due to dredging operations.

e. Both masters further stated that they had plotted the positions contained in the Broadcast Notice to Mariners 130-60. If so, they should have believed that buoy 5 was 1,000 feet south of its actual position.

f. The master of the STANDARD PORTLAND CEMENT stated that he had plotted the relocated position of buoy 5 and that this information indicated to him that buoy 5 was 350 feet west of buoy 6. This is obviously a mistake on his part, which mistake resulted in his plotting buoy 5 in its actual position.

g. The relocation of buoy 5 did not appreciably affect navigation on the ZIESING.

23. The Master of the STANDARD PORTLAND CEMENT stated that when he was abeam of buoys 9 and 10 he had come left to 181° T and pgc to steer dead on Lake Huron Cut Buoy No. 5. When about 1000 feet north of this buoy it was sighted visually and the master came further left to 179° T and pgc to pass the buoy to starboard. At this instant the third mate, stationed at the radar, reported to the master that the radar showed "everything is to starboard."

24. When about 400 feet above Buoy 5 the STANDARD PORTLAND CEMENT heard the ZIESING's fog signal for the first time on her starboard bow and immediately thereafter saw the loom of a large object about 1000 feet distant to starboard. She immediately blew a 2 blast passing signal which was unanswered and then the danger signal. As the loom cleared out of the fog at about 400 - 600 feet away, the STANDARD PORTLAND CEMENT checked to "dead slow", then reversed her engines and again sounded the danger signal. At this time the ZIESING sounded a danger signal when they were about 60 feet away. The Master of the STANDARD PORTLAND CEMENT, realizing that collision was inevitable, stated that he then rang up full ahead and ordered full left rudder a few seconds prior to the collision in order to move the point of impact aft on his vessel in order to avoid impact in the area of the crews quarters located forward on the starboard bow.

25. The STANDARD PORTLAND CEMENT estimated that their heading at the time of the collision was approximately 179° True.

26. At the time of collision both vessels had slight headway and the two vessels locked, resulting in the STANDARD PORTLAND CEMENT being holed and pushed out of the channel to the eastward where she settled in 22 feet of water about 15 to 20 minutes after the impact, on a heading approximately 161°, with Buoy 6 about 100 feet on the starboard quarter. The AUGUST ZIESING rested heading 048° after the collision with her stern extending out and blocking the channel. The ZIESING, after the collision worked her engines ahead to keep her bow into the STANDARD PORTLAND CEMENT to minimize flooding and to assist getting her out of the channel, and stood by until assistance was no longer required.

27. As a result of the collision there was considerable material damage to both vessels, but no injury or loss of life. Estimated damage to the STANDARD PORTLAND CEMENT was $91,000 to the vessel and $60,000 to her cargo, and to the ZIESING about $66,000.

28. The vessels remained locked in this position until 2145 that night when the ZIESING backed off and went to anchor. At 0937 the following morning the ZIESING proceeded to Lorain, Ohio under her own power to effect permanent repairs. The STANDARD PORTLAND CEMENT's cargo had to be lightened, the vessel was patched and towed to the shipyard at River Rouge, Michigan to effect repairs. Subsequently, the STANDARD PORTLAND CEMENT was transferred to Canadian registry.

OPINIONS

1. That this collision occurred on 20 May 1960 in the Lake Huron Cut just south of Lake Huron Cut Buoy 6 and about 100 feet from the east channel bank at approximately 1133 EST, and as a result thereof the STANDARD PORTLAND CEMENT became holed and settled on the bottom outside the channel in 22 feet of water.

2. That the ZIESING was proceeding upbound at a speed of approximately 6.7 miles per hour (calculated on a run of 5300 feet in 9 minutes) in the most restricted area of the channel from buoys 3 and 4 until she reached a position in extremis with the STANDARD PORTLAND CEMENT.

3. That the STANDARD PORTLAND CEMENT was downbound from buoys 7 and 8 at a speed of approximately 6.7 miles per hour (calculated on a run of 17160 feet in 29 minutes) to 7.85 miles per hour (calculated on a run from abeam buoys 11 and 12 at 1109 of 15,800 feet in 23 minutes) until she reached a position in extremis with the ZIESING.

4. That the use made of the radiotelephone by each vessel was not adequate in this situation in that its use was limited to a "Security" call by each vessel at opposite ends of the Lake Huron Cut -- except for the STANDARD PORTLAND CEMENT's conversation with the SS E. J. BERWIND.

5. That had the masters of the two vessels made better use of their radiotelephones in conjunction with radar observations the attempted passing at the northern end of the restricted area of the channel would have been avoided.

6. That the master of the STANDARD PORTLAND CEMENT did not fully comprehend the extent to which the navigable channel was reduced by the relocation of Buoys 3 and 5, which had been moved to indicate the eastern limits of the dredging area, and the new western limits of the navigable channel.

7. That the STANDARD PORTLAND CEMENT, after the master had sighted Lake Huron Cut Buoy 5 dead ahead, came much farther left than the 2° (from 181° to 179° True) the master indicated to the Board or even realized himself. This opinion is believed substantiated by the following inductive reasoning.

a. The master of the STANDARD PORTLAND CEMENT stated that his vessel was on course 179° True when the ZIESING was first sighted visually (R.p. 300) on the starboard bow (R.p. 300, 301) at a distance of about 1,000 feet (R.p. 302).

b. The master of the STANDARD PORTLAND CEMENT indicated on Exhibit 13, U. S. Lake Survey Chart No. 511, that he believed the ZIESING was about 100 feet from the western limit (left side for the ZIESING) of the normal (unrestricted) channel. This position was determined by the approximate

relative bearing and distance of the ZIESING when first seen by the STANDARD PORTLAND CEMENT visually. (R.p. 302, 304). This would mean, if the master of the STANDARD PORTLAND CEMENT were correct, that the ZIESING was proceeding upbound about 250' to the west of the western limit of the restricted navigable channel, or 250 feet into the dredging area.

c. The Board has found as a fact (No. 8) that the ZIESING was proceeding up the eastern side of the restricted navigable channel, about 100 feet west of the eastern limit of the channel. (See Exhibit 1). This was based upon testimony from the crew of the ZIESING and is consistent with the point of impact and the position in which the STANDARD PORTLAND CEMENT ultimately sank.

d. If the position of the ZIESING relative to the STANDARD PORTLAND CEMENT when first sighted visually was correctly stated by the Master of the STANDARD PORTLAND CEMENT and the third mate of the STANDARD PORTLAND CEMENT (R.p. 398, 399 and Exhibit 20), it follows that the heading of the STANDARD PORTLAND CEMENT was considerably to the left of 179° True at sometime during her maneuver to clear Buoy 5 to starboard. If this is correct, all other testimony from the crews of both vessels, save that from the wheelsman on the STANDARD PORTLAND CEMENT relative to the last heading of 179° T (R.p. 425-430) prior to the collision, is consistent with the findings of fact and opinions, except for minor variations. This would explain the reason for the third mate reporting that on radar "everything is to starboard." (R.p. 398)

8. That the master of the STANDARD PORTLAND CEMENT was unaware of the presence of the ZIESING until she was sighted visually.

9. That under the actual existing conditions the two sets of two whistle passing signals initiated by the STANDARD PORTLAND CEMENT were improper in that the Master of the STANDARD PORTLAND CEMENT failed to comprehend the existing situation with respect to the positions and headings of the ZIESING and STANDARD PORTLAND CEMENT.

10. That the master of the ZIESING was aware of the presence of the STANDARD PORTLAND CEMENT by radar reports from a distance of about 1.2 miles on a bearing of 3 degrees on the port bow and that subsequent radar observations indicated that the STANDARD PORTLAND CEMENT had drawn to 6 degrees on the port bow, .5 mile distance.

11. That the ZIESING heard the STANDARD PORTLAND CEMENT exchange 1 whistle passing signals with the GEORGIAN BAY, RICHARD REISS, and the WILLIAM E. COREY and mistook them, or some of them, as answers to her own proposed 1 whistle passing signals.

12. That the speed of the ZIESING under the circumstances existing at the time, was not immoderate. The ZIESING had reason to believe that she had

properly exchanged 1 whistle passing signals with STANDARD PORTLAND CEMENT, and the speed with which she was proceeding up the channel was slightly in excess of steerageway.

13. That the collision was caused by the negligence of the STANDARD PORTLAND CEMENT in that:

a. The master of the STANDARD PORTLAND CEMENT was navigating his vessel at half speed while downbound in the Lake Huron Cut in fog and in the presence of upbound vessels while his vessel was approaching the entrance to the dredging area which restricted the navigable channel to 350 feet in width.

b. That the STANDARD PORTLAND CEMENT was unaware of the presence of the ZIESING until it was sighted visually in that the third mate failed to properly evaluate the radar plot which would have disclosed the moving target which was the ZIESING, and that the lookout was negligent in failing to distinquish the one whistle passing signal initiated by the ZIESING from the whistles of the three proceeding upbound vessels.

c. That in hauling left to pass Buoy 5 safely abeam to starboard, the master of the STANDARD PORTLAND CEMENT thus placed his vessel more broadside to the course of any upbound traffic than he realized.

14. That no failure of material, design or physical was involved or contributed to the casualty.

15. That no Coast Guard personnel or any representative or employee of any other Government agency, nor any other person, caused or contributed to the cause of the collision.

16. That no aids to navigation were involved, other than the relocation of Lake Huron Cut Buoys 3 and 5, which relocation was stated to have been known by both masters.

17. That because navigation is frequently hazardous in temporarily restricted channels, the Coast Guard should request the U. S. Army Corps of Engineers to establish one way traffic control in those temporarily restricted channels where prudent judgment so indicates. (As a result of this collision, the Commander, Ninth Coast Guard District, in cooperation with the Corps of Engineers, took measures to institute one way traffic control in the Lake Huron Cut for the duration of dredging operations in the Lake Huron Cut.)

RECOMMENDATIONS

1. That the masters of vessels operating on the Great Lakes be urged to make better use of the radio-telephone in order to assist in establishing successful meetings and passings, particularly in conjunction with radar observations in periods of reduced visibility.

2. It is recommended that further investigation under the Suspension and Revocation Proceedings be initiated in the case of Captain William Graham concerning his part in the casualty.

Signed G. H. MILLER
G. H. MILLER
REAR ADMIRAL, USCG, President

Signed C. E. LEISING
C. E. LEISING
CAPTAIN, USCG, Member

Signed J. M. NAGY
J. M. NAGY
COMMANDER, USCG, Member

Signed L. J. HOCH
L. J. HOCH
Lieutenant Commander, USCG, Recorder