

UNITED STATES COAST GUARD



FILE:

MVI

17 June 1955

(STEELORE - C-5 26)

Commandant's Action

on

Marine Board of Investigation; SS STEELORE, heavy list and partial flooding during January 1955 at sea in the North Atlantic Ocean

1. Pursuant to the provisions of Title 46 CFR part 136, 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. On 7 January 1955 the SS STEELORE, a bulk cargo carrier of 8215 g.t., built in 1922, departed from Puerto de Hierro, Venezuela, for Baltimore with a cargo of 21,429 tons of iron ore on board. On 10 January the weather began to worsen and by 13 January the wind was west to northwest, of gale force, rain squalls and very confused seas. Plates in "C" strake fractured, flooding No. 4 and No. 7 port tanks. The pumproom became inoperative due to breaking of deck steam lines and flooding through leaky tank tops and bulkheads. Due to additional flooding and counter-flooding, the vessel settled until on 14 January 1955, in position 31° 49' North and 73° 35' West, there was no freeboard on the port side and only 3 to 3½ feet on the starboard side. The weather began to moderate and with assistance from other vessels the STEELORE was able to make the port of destination safely. There was no loss of life and only one minor injury as a result of this casualty. The heavy weather damage to the vessel, however, has been estimated to be about \$1,500,000.00.

3. The Findings of Fact, Opinions, and Recommendations of the Marine Board of Investigation convened to investigate subject casualty are approved.

(signed) A. C. RICHMOND

A. C. RICHMOND

Vice Admiral, U.S. Coast Guard  
Commandant

RECORD OF PROCEEDINGS  
OF  
MARINE BOARD OF INVESTIGATION

Convened at  
UNITED STATES COAST GUARD  
MARINE INSPECTION OFFICE  
FIFTH COAST GUARD DISTRICT  
BALTIMORE, MARYLAND

By order of

THE COMMANDANT  
UNITED STATES COAST GUARD

to inquire into the  
Heavy Weather Damage Sustained  
By the SS STEELORE during January 1955  
In the North Atlantic Ocean

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## FINDINGS OF FACT

1. The SS STEELORE sustained extensive hull damage, was partially flooded, and listed heavily during a siege of adverse weather beginning on 14 January 1955, while at sea in position 31° 49' North Latitude, and 73° 35' West Longitude enroute to Baltimore, Maryland in a fully laden condition.

2. The vessel involved was:

The SS STEELORE, official number 222537, home port New York, N. Y., a riveted, steel hulled, steam propelled, 5000 horsepower, twin screwed bulk carrier of 8,215 gross and 4,172 net tons. The vessel was built at Sparrows Point, Maryland, in 1922 and is owned by the Ore Steamship Corporation of Delaware and operated by the Steamship Service Corporation, Sparrows Point, Maryland. The vessel's dimensions are as follows: length 550.3 feet; breadth 72.2 feet; and depth 43.9 feet. The normal employment of the vessel is the transportation of iron ore from Puerto de Hierro, Venezuela, to Baltimore, Maryland.

3. The design of the vessel provides for 3 bulk cargo holds of approximately 373,110 cubic feet of carrying capacity. The holds measure about 30 feet wide, 30 feet deep, and 140 feet long. Each hold is equipped with 3 loading hatches, making a total of 9 cargo hatches. The bottom of the cargo hold is approximately 14 feet above the vessel's bottom, with the wing ballast or cargo oil tanks extending down either side to a centerline longitudinal bulkhead. There are 11 wing tanks on either side of the vessel, making a total of 22, whose combined capacity is approximately 101,700 cubic feet.

4. The weather at the time of the casualty was gale force west to northwest winds, passing heavy rain squalls, moderate to poor visibility and very rough, confused seas.

5. The SS STEELORE departed Baltimore for Puerto de Hierro on the afternoon of 31 December 1954. At the time of departure the vessel was in ballast with tanks #2, #5 and #8 port and starboard pressed up, giving the vessel a departure draft of 15' forward, 25' aft, and a mean draft of 20'. Fuel, water and stores for an estimated 20 days were on board.

6. The voyage to Puerto de Hierro from Baltimore was uneventful and the vessel arrived at the loading berth at about 0927 on 7 January 1955, having pumped ballast tanks #5 and #8 port and starboard before arrival, with #2 being pumped at the dock. At or about 0938 loading was begun at #4 hatch and continued in orderly fashion through the following sequence, #5, #6, #7, #2, #3, #8, #9, and terminating at #1 at 1840 on 7 January 1955, having taken on board

an estimated 21,429 long tons of iron ore. The ore was peaked in small pyramids directly under each hatch and the peaks averaged a height of about 6 feet spread out over the entire hatch area. As each hatch was loaded, the Deck Department lowered the hatch covers and dogged the hatch securely in order that the vessel might put to sea with a minimum of delay.

7. At or shortly after 2200 on 7 January 1955 the SS STEELORE departed Puerto de Hierro enroute to Baltimore. Her draft on departure was 33' 6" forward, 36' aft, and a mean draft of 34' 9", utilizing a fresh water allowance of 7".

8. At about 0005 on 10 January 1955, the vessel developed a slight starboard list. Upon investigation as to the cause, it was discovered that #5 starboard ballast tank was filling. The ballast pump was started and the tank drained. When the tank had been sufficiently pumped, it was entered by the Master, and the Second Assistant Engineer, for a closer examination. Water was boiling into the tank from the bottom of the vessel, and a 3-inch brass bleeder plug was discovered adrift in the tank. A wooden plug was made and driven into the opening. The ingress of water was completely stopped in a matter of some 2½ hours. The following morning the driven plug was heavily shored to prevent its working loose, and no further distress was noted from this tank.

9. The vessel encountered increasingly heavier swells from the morning of 10 January 1955, accompanied by alternate periods of storm force winds and moderate breezes, until at about noon on 13 January, when full gale force winds were encountered. The seas were extremely rough and confused, and boarded the vessel with consistent regularity from several directions. The speed of the vessel was reduced from 105 to 80 revolutions at 1906 on 13 January to minimize the laboring and straining of the deeply laden craft. At about 2000 on the same date a slight port list of about 4° was noted. By midnight this list had increased to an estimated 15°. Counter flooding of the starboard side was begun, but was both slowly and hazardously performed, since it necessitated the opening of certain valves on the main deck, which was constantly awash from the boarding seas. The ballast pumps were utilized to some extent to perform this counterflooding and the vessel was righted about 0300 on 14 January. The even keel condition was shortlived, however, and by 0800 the vessel had listed again to port an estimated 15° to 18°. Additional ballast tanks on the starboard side were flooded in an effort to right the vessel, but were unsuccessful. By this time the vessel had settled from the additional weight of the flooding water until there was no freeboard on the port side and only 3 to 3½ feet on the starboard side. The boarding seas had, by this time, broken the vent lines to #5, #6, #7, #8 and #9 port wing tanks, torn the heavy sheet iron protective guards over the deck lines loose, and carried the deck steam lines away, disabling the pump room. The loose steel on deck, coupled with the heavy boarding seas, made the effecting of temporary plugs in the broken vent lines extremely hazardous. Efforts were made to repair the broken steam lines, but were unsuccessful, since a boarding sea would wash out each attempt.

10. By 0900 on 14 January it became apparent that the vessel would be unable to effect the necessary repairs unassisted, and at 0910 a general distress signal was made. At the same time the vessel notified the operating managers of her condition and requested assistance. It was estimated that at noon on 14 January the vessel attained her deepest draft, since #3, #4, #5, #6, #7, #8 and #9 wing tanks, port and starboard, were completely flooded, with #10 about half full, and an estimated 15 to 20 feet of water in the pump room under the midship house. During the afternoon of 14 January the weather began to moderate. The SS CUBORE, a vessel of the same company, arrived on the scene about 1657 on the 14th and stood by the distressed STEELORE awaiting further developments.

11. At or about 0815 on 15 January the CGC CHEROKEE arrived on the scene and the SS CUBORE was released. The weather had continued to moderate and at 1000 two electric submersible pumps from the CHEROKEE were placed on board in an effort to free the pump room of water. Temporary electric lines were run with considerable difficulty and the two submersibles were placed in operation. Since further assistance was impracticable because of the seas, the CHEROKEE merely stood by, and at 1320 on 15 January was released.

12. At or about 1300 on 15 January 1955, the salvage vessel CURB arrived on the scene. Communications were established and the CURB stood by awaiting abatement in the weather and sea before attempting further aid. At about 1920 on the 15th, the STEELORE attempted to get underway, heading toward shelter at Cape Lookout. A steering engine failure at 2315 necessitated heaving to until about midnight. When the steering had been restored, the vessel again got underway at slow speed on a west northwesterly heading. The boiler feed water was getting low and at 0200 on 16 January the vessel began utilizing sea water in the boilers. By 0945 on 16 January the wind and sea had lessened to such an extent that a gasoline driven pump and 50 gallons of gasoline could be transferred from the CURB via a small work boat. The pump was immediately put to work lowering the water level in the pump room. An additional pump was placed on board at 1330 the same day, together with two men to operate it, from the CURB. The additional pumps enabled the STEELORE to maintain the water levels without any appreciable gain.

13. By 2300 on 16 January the water had commenced gaining in spite of the additional pumping. The situation appeared to be considerably more serious, and shortly thereafter, 19 crew members were transferred from the STEELORE to the CURB. This evolution was accomplished by a lifeboat from the STEELORE and was executed without incident.

14. By 0400 on 17 January the wind and sea had calmed and it was noted that the pumps were gaining on the water in the vessel. Additional gasoline and a portable electric cable were transferred from the CURB. The STEELORE was

taken in tow by the CURB at 1015 on 17 January and was operating her own engines at slow speed to assist the towing vessel. The CGC CHEROKEE returned to the scene at 1935 and stood by to assist as needed. At 1045 on 18 January, the CHEROKEE transferred medical supplies and a hospital corpsman to render first aid to Joseph Cadden, First Assistant Engineer, who was burned by exhaust steam and water while attempting to repair the deck steam lines.

15. At 1530 on 18 January the tow reached Cape Lookout and the STEELORE anchored at 1637. Through the 19th, 20th, 21st, 22nd and 23rd of January the vessel lay at anchor in Cape Lookout, effecting temporary repairs and awaiting favorable weather to continue the voyage to Baltimore. At about noon on the 24th the STEELORE was again taken in tow by the CURB and the voyage toward Baltimore continued. The voyage from Cape Lookout to Baltimore was without incident and the vessel arrived in this port at about 1100 on 27 January 1955.

16. The testimony adduced at the ensuing investigation indicated that all hands on board performed well above the normal expectations, with particular emphasis being placed upon the efforts of the Master and the Second Assistant Engineer, Delmar J. McCleery, who made several dives in the flooded pump room to align the valves in an effort to rid the vessel of the flooding water.

17. Damage to the STEELORE is detailed in Exhibit #8, and consisted in the main of two cracked plates in the "U" strake, port side, and extensive damage to the steam, electric, and hydraulic lines on the main deck. The total cost of repairing the heavy weather damage has been estimated to be about \$1,500,000. The vessel is due for classification survey in the fall, and it is estimated that another \$4,000,000 would be required to place the vessel in class. To date, no disposition has been made of the vessel except a drydock examination for preliminary survey, and the vessel is presently berthed with the idle fleet in Baltimore Harbor.

18. The only personal injuries reported as a result of the casualty were of a minor nature, requiring first aid treatment only. Joseph Cadden, First Assistant Engineer, sustained second degree burns on his legs from escaping exhaust steam, but was not incapacitated nor did he fail to perform his duties.

19. Witnesses interviewed:

- a. Victor E. Raymond, Master, SS STEELORE
- b. Edward F. Chelchowski, Chief Mate, SS STEELORE
- c. Thomas W. Wright, Second Mate, "

- d. Spencer E. Bomgardner, Third Mate, SS STEELORE
- e. William J. Noonan, Chief Engineer, "
- f. Joseph A. Cadden, First Asst. Engineer, "
- g. Delmar J. McCleery, Second Asst. Engineer "
- h. Frederick H. Dasher, Third Asst. Engineer "
- i. Roy A. Gardner, Radio Operator, "
- j. Harry T. Collier, Boatswain, "
- k. John A. Morris, Quartermaster, "
- l. Henry Shepeta, Able Seaman, "
- m. Frank G. Ortiz, Fireman, "
- n. Anton Hopen, President, Steamship Service Corporation
- o. George Green, Port Engineer, " " "
- p. James C. Campbell, CDR, USCG, Marine Inspector
- q. Wesley W. Wood, CDR, USCG, Marine Inspector
- r. David H. Douglas, LCDR, USCG, Marine Inspector
- s. Gregory Chockluk, LCDR, USCGR, Marine Inspector
- t. John L. Knabenschuh, LTJG, USCG, Marine Inspector
- u. Preston G. Lewis, Marine Inspector (Civilian)

## OPINION

1. It is the opinion of the Board that the sequence of events leading to the casualty are logically aligned as follows:

a. The plates in "C" strake probably fractured at or about 2000 on 13 January 1955, allowing tanks #4 and #7 port to flood;

b. The subsequent list to port allowed the boarding seas greater unhindered force until the steel pipe guards on deck were broken loose;

c. The sheets of loose steel from the broken pipe guards sheared off the vent pipes to the tanks and contributed to the eventual breaking up of the steam supply and exhaust lines on deck, thus rendering the pump room inoperable;

d. The combination of loose steel on deck loosened several hatch dogs, thus admitting water to the cargo holds. The water thus admitted to holds #1 and #2 sought its way into the two sumps under the pump room. A hole or holes in the tank tops over these sumps admitted the flooding water into the pump room proper. There is also some evidence that the water in the cargo holds was admitted from the ballast tanks through leaks in the bulkheads separating the two. These bulkheads are subjected to considerable bumping during the unloading process.

2. It is the further opinion of this Board that the loss of the pump room at a most crucial period contributed to the severity of this casualty. Had the vessel been able to use the discharge pumps on the two initially flooded tanks, it is most likely that the tanks would have been sufficiently pumped to effect temporary repairs to the cracked plates.

3. There was no evidence to indicate that the cargo shifted any appreciable degree. The testimony of competent witnesses indicated the cargo to be in the exact same position on arrival in Baltimore as on departure from Puerto de Hierro.

4. The Board could adduce no evidence of reprehensible fault on the part of any personnel on board. On the other hand, it is the opinion of this Board that the vessel's officers and crew performed Herculean tasks and acted in the best tradition of the Merchant Service during a very trying and dangerous period.

5. The only failures of equipment during this period was as a direct result of that service or supply to that service being washed away by boarding seas.



6. The excellent cooperation of the local representatives of the owners of the vessel assisted this Board immeasurably in the assembling of pertinent data for use in the evaluation of this casualty.

7. In summation, it is the opinion of this Board that the incident was directly and wholly attributable to stress and strain suffered by the vessel under adverse and unusually severe conditions of storm and seas while in a fully laden condition.

RECOMMENDATIONS

1. It is recommended that consideration be given toward the issuance by the Commandant, United States Coast Guard, of a letter of commendation to the officers and crew of the SS STEELORE, with particular emphasis being placed on the performance of duty by the Master, Victor E. Raymond, the Chief Mate, Edward F. Chelchowski, the First Assistant Engineer, Joseph Cadden, and the Second Assistant Engineer, Delmar J. McCleery.

2. It is further recommended that this case be closed with no further action by this Board indicated.

(signed)ALFRED W. KABERNAGEL  
ALFRED W. KABERNAGEL  
Captain, U.S. Coast Guard, Chairman

(signed)JOSEPH E. GOULD  
JOSEPH E. GOULD  
Lieutenant Commander, U.S. Coast Guard, Member

(signed)H. H. CHAPIN  
H. H. CHAPIN  
Lieutenant Commander, U.S. Coast Guard, Member and Recorder