

UNITED STATES COAST GUARD

ADDRESS REPLY TO

Commander
Eighth Coast Guard District
New Orleans, Louisiana



A17-6/37451
20 October 1960

From: Marine Board of Investigation
To: Commandant (MVI)
Via: Commander 8th Coast Guard District (m)

Subj: Capsizing of MV BORIE, 14 August 1960, approximately four miles west of the entrance to Southwest Pass, Mississippi River Delta with resultant damage to the vessel and loss of life

Findings of Fact:

1. The MV BORIE capsized without warning in the Gulf of Mexico in position 28° 56' N, 89° 27' W on 14 August 1960, with the loss of one life, the Master, Lee Deakle.
2. The MV BORIE, Official Number 270732, is an uninspected diesel-propelled, oil platform supply vessel, gross tonnage 199, net tonnage 135, length: 120.6 ft.; breadth: 32.0 ft.; depth: 10.0 ft. This vessel was built in Madisonville, Louisiana, in 1955 and is owned by the California Company Inc., 800 California Building, 1111 Tulane Avenue, New Orleans, Louisiana.
3. The BORIE was drydocked at Avondale Shipyard, Harvey, Louisiana on 8 August 1960, in order to change a propeller and also conduct an American Bureau of Shipping survey. Upon completion of this drydocking and survey, ballasting of certain tanks was undertaken by the Engineer, Mr. J. E. Darby, on orders of the Master. The instructions issued were to fill to overflowing #7, #3, and #4, ballast tanks. This ballasting was commenced by Mr. Darby and completed by Mr. A. H. Kinsey, a relief engineer. The ballasting was checked by Mr. Darby prior to the vessel's departing the dock. After departing, while in the Harvey Canal locks, the Master directed the Engineer to commence filling #1 and #2 ballast tanks until directed to stop, and to fill #5 ballast tank enough to remove a starboard list of approximately 1½°. Mr. Darby accomplished this and when directed to stop had added water ballast to the three tanks as follows:

#1 Ballast Tank - 10.6 Tons
#2 Ballast Tank - 10.6 Tons
#5 Ballast Tank - 6.5 Tons

This ballasting was accomplished after departure from the dock due to the limiting draft in the Harvey Canal. After all ballasting was completed, Mr. Darby closed all valves in the ballast manifold and the ballast pump sea suction. It should be noted that #7 ballast tank in the original design of this vessel was a stores space and is not fitted with a watertight centerline bulkhead. Tanks on this vessel are numbered with the odd numbers to port and even to starboard. After all ballasting was complete the liquid load aboard the BORIE was as follows:

LIQUID LOAD

TANK	LOAD GALS OR TONS	CAPACITY GALS OR TONS
Diesel Oil Forward Port	6,500 Gals	15,000 Gals
Diesel Oil Forward Starboard	6,500 Gals	15,000 Gals
Diesel Oil Centerline	3,000 Gals	4,000 Gals
#1 Ballast	10.6 Tons	65 Tons
#2 Ballast	10.6 Tons	65 Tons
#3 Ballast	65 Tons	65 Tons
#4 Ballast	65 Tons	65 Tons
#5 Ballast	6.5 Tons	43 Tons
#6 Ballast	Empty	43 Tons
#7 Ballast	Full 55 Tons	55 Tons
Potable (Domestic) Water	4.3 Tons	4.3 Tons

4. During the afternoon of 13 August 1960, while the vessel moored at the California Company dock, Harvey, Louisiana, the deck cargo for the trip was loaded on board. This cargo consisted of 339,409 lbs. of 7-5/8" drill pipe casing that was stowed on the main deck from the break of the forecastle aft to frame 40. Loaded on top of this were 73,461 lbs. of 10-3/4" drill pipe casing. This cargo was loaded to the height of the retaining stanchions, approximately 4', and was secured to the deck with two 1/2" chains and ratchet-type turnbuckle. From frame 43 aft to the stern between retaining stanchions, drill tubing weighing 159,315 lbs. was loaded. This tubing was loaded to the height of approximately 4' and was secured by one 1/2" chain and a ratchet-type turnbuckle. On top of the forward load of drill pipe casing, lying between the pipe casing on the centerline were two lengths of 2-1/16" chain weighing a total of 6,800 lbs.

5. BORIE departed the California Company docks at Harvey, Louisiana, at 6:00 P.M. CST, 13 August 1960, for the Bay Marchand area. The total load aboard the BORIE upon departure from the Harvey locks was as follows:

Deck Cargo	258.5 Tons
Fuel, water & ballast	<u>271.4 Tons</u>
TOTAL	529.9 Tons

The drafts on departing California docks, Harvey, Louisiana, were estimated to be:

Forward 9' 6"
Aft 10'

6. Aboard the vessel at the time of departure were Lee M. Deakle, Master, Alton L. Fogg, Mate, James Elbert Darby, Engineer, and M. R. Bates, Deckhand. After departing the Harvey docks of the California Company, BORIE proceeded to the Harvey locks, locked through into the Mississippi River, and proceeded down river toward the entrance. The Master was on watch from the time of departure until the vessel arrived in the vicinity of the anchorage area, New Orleans. At this time he was relieved by Mr. Fogg, the Mate. Mr. Fogg was on watch until the vessel arrived in the vicinity of Point a la Hache, La. at which time he was relieved by Mr. Bates the deckhand. Mr. Bates was relieved a short time later by the Master who stood the watch until 1:00 A.M. CST, 14 August 1960. At this time the Master was again relieved by Mr. Fogg, the Mate. The vessel at this time was somewhere between Gulfport and Venice, Louisiana. There was no information passed from the Master to the Mate when the watch was relieved. The weather at this time was as follows: light wind, clear, good visibility. The trip thus far was made without incident, the vessel handled well, and the river traffic was moderate. At 1:00 A.M. CST, the Master, Deckhand, and the Engineer were sleeping in their quarters. The Engineer had been told by the Master to turn in, that someone would check the machinery periodically and call him if he were needed. At 2:00 A.M. CST, 14 August 1960, Mr. Darby, the Engineer, got up and checked the machinery in the engine room. He spent the next three to four hours accomplishing minor cleaning and repair jobs about the vessel.

7. At daybreak on 14 August 1960, BORIE departed the entrance of Southwest Pass, Mississippi River Delta. Immediately upon departing the course was changed to 345° to enable the vessel to clear the oil rig structures in the vicinity. As soon as these structures were cleared, the course was changed to 295°. During this course change the vessel developed a five to six degree list to port. The Engineer, Mr. Darby, at this time was sitting on his bunk. The Mate stopped the engines and went down to Mr. Darby's room and told him to attempt to remove the list that had developed. The Mate, Mr. Fogg, having instructed Mr. Darby, the Engineer, to remove the list, returned to the pilot house, put the engines in gear and applied port rudder to return to the heading of 295°. The list on the vessel continued to increase to port. Mr. Fogg, realizing the vessel was capsizing, stopped the engines and ran to the high side (starboard) and jumped overboard without a life jacket. After coming to the surface, he swam to the capsized hull, climbed aboard, and held on to the rudder stock.

8. Mr. Darby went to the engine room with intentions of removing some water ballast from #5 ballast tank to correct the port list. The list continued to increase, and by the time Mr. Darby reached the ballast manifold, the list had increased to a dangerous degree. Mr. Darby started out of the engine room through the passageway by which he had entered when he was hit and knocked down by a wall of water. He then started back toward the engine room but was unable to enter due to flood water. Realizing he was trapped and the vessel had capsized, he picked up a piece of pipe and commenced beating on the bottom of the hull.

9. Mr. Bates, the deckhand, was awakened by the Master running toward the bridge shouting, "Shut them off," apparently referring to the engines. Mr. Bates got up, noticed that the vessel had an excessive list to port and started toward the starboard (high) side of the vessel. Just as he opened the starboard door to the deck, he heard the pipe cargo on the main deck shift. At this point the vessel capsized and Mr. Bates was thrown into the water. Upon surfacing, he grabbed a floating oil drum and held on until he saw the starboard rudder of the BORIE. Thereupon, he swam to the capsized vessel and climbed up on the starboard rudder post. Shortly after getting on the capsized hull, Mr. Bates heard Mr. Fogg shouting, whereupon he called back and eventually assisted Mr. Fogg on to the capsized hull. The two men then climbed up on the flat portion of the hull bottom. They heard the Engineer hammering inside the hull and answered by hitting the hull on the outside with their hands and fists. While walking back and forth on the hull, looking for vessels to signal for help, Mr. Bates noticed the body of Captain Deakle floating near the bow of the vessel. Mr. Fogg recovered the Master's body with the help of Mr. Bates. Captain Deakle's body did not appear to be injured in any way. Both Mr. Fogg and Mr. Bates attempted artificial respiration on the Master without results.

10. At approximately 8:00 A.M. the MV HALLIBURTON 212 was sighted by Mr. Bates who signalled for help with his shirt. Both survivors and the Master's body were picked up by the HALLIBURTON 212 and were, a short time later, transferred to the MV TIOGA, another offshore supply vessel belonging to the California Company. MV HALLIBURTON, after rescuing the survivors of BORIE radioed the California Company and informed them of the casualty and the fact that one man was trapped inside the hull. Upon receipt of this information, the California Company dispatched a helicopter and a diver to the scene to effect the rescue of Mr. Darby. The diver, Mr. Kenneth Daniels, and Mr. L. J. Williams, Master of the MV HALLIBURTON 212, using self-contained breathing masks, dove together into the hull to locate Mr. Darby. He was found trapped at the forward end of the centerline passageway. The divers returned to the surface in order that Mr. Daniels could take Mr. Williams' mask down to the trapped engineer. This was done without incident and Mr. Darby was led by Mr. Daniels to the surface and safety. The three survivors were then taken to the nearest storage tank battery where they were picked up by helicopter and returned to Venice, Louisiana, for medical examination.

11. MV BORIE was righted by the McDermott Derrick Barges #5 and #8 and towed to the Avondale Shipyard, Harvey, Louisiana, for repairs and refitting.

12. A stability study was made on the results of a stability test conducted on a sister vessel, the MV TIOGA, at Avondale Shipyard, Harvey, Louisiana, 28 August 1960.

13. Mr. Lee Deakle, Master of the MV BORIE, was reportedly in good health prior to this casualty.

14. Mr. Lee Deakle resided at 227 Exlanger Street, Slidell, Louisiana.

15. The next of kin, Mrs. Lee Deakle, was notified by the owners of the BORIE, the California Company Inc., 800 California Building, 1111 Tulane Avenue, New Orleans, Louisiana.

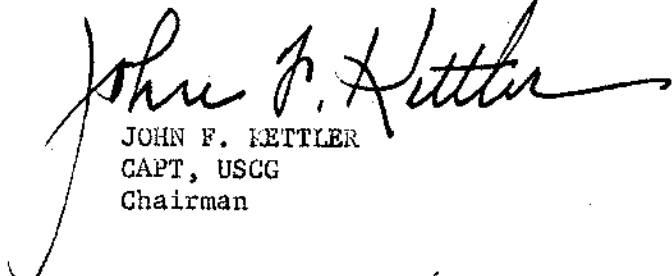
10. The remains of Mr. Deakie were turned over to G. T. Poole Funeral Home, Slidell, Louisiana, for final burial at Forest Lawn Cemetery, Slidell, La.

Conclusions:


1. It is concluded the MV BORIE, due to the lading conditions of cargo loading and ballasting, was rendered unstable.
2. Heeling started from an applied external force, probably rudder action.
3. It is further concluded that the shape of the hull of this vessel is such that when loaded with deck cargo and ballast in a low freeboard condition she has a very low maximum righting arm and a low range of stability.
4. The stability calculations indicate an initial G.M. of 2.48 ft. and a maximum righting arm, at 10° heel, of 0.49 ft. Criteria based on initial stability only for vessels of this type would not appear to be adequate.
5. There was no negligence on the part of any licensed or certificated personnel.
6. There was no failure of inspected equipment or material.

Recommendations:

1. That a stability study be made of this type hull to develop adequate standards and criteria of stability for future use on deck cargo vessels.


JOHN F. KETTLER
CAPT, USCG
Chairman


A. F. HUBBARD
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THOMAS L. WAKEFIELD
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UNITED STATES COAST GUARD

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



MVI
(BORIE a-8 Bd)
1 MAY 1962

Commandant's Action

on

Marine Board of Investigation; capsizing of the motor vessel BORIE, four miles west of entrance to Southwest Pass, 14 August 1960 with loss of life

1. The record of the Marine Board of Investigation convened to investigate subject casualty together with its Findings of Fact, Conclusions and Recommendations has been reviewed.
2. At about 0430 CST on 14 August 1960 the MV BORIE, an offshore oil platform supply vessel, capsized in the Gulf of Mexico approximately 4 miles west of Southwest Pass, Mississippi River. As a result of the casualty, the master lost his life. The 3 other crew members aboard at the time were recovered safely. The vessel was righted and towed to port for repairs and refitting.
3. The BORIE is an uninspected, twin screw, diesel propelled vessel of 199 gross tons, 135 feet in length. She is designed with the deckhouse forward and a clear deck space aft for the carriage of cargo. No cargo is carried below deck. Aside from the machinery and steering areas this space is devoted to tankage for fuel and ballast.
4. The BORIE was en route from Harvey, Louisiana to the drilling rigs in the Bay Marchand area with a deck load of drill pipe casing, drill tubing and chain. The trip down the Mississippi proceeded without incident. Upon passing the jetty at the entrance to Southwest Pass at daybreak on 14 August 1960 a course of approximately 345° on the magnetic steering compass was set to clear the drilling rigs in that area. The weather was clear, wind light and seas estimated to be from the south, 3 to 4 feet. The vessel's speed was not determined. After proceeding about a mile above the West Jetty, course was altered to 295° per steering compass. While in the turn the vessel began developing a port list which reached approximately 4 or 5° when the mate on watch disengaged the engines and went below to the engineer's room. Upon finding the engineer sitting on his bunk the mate requested him to remove the list, then returned to the bridge and re-engaged the engines.

The list continued to increase, however, and within a minute or two had reached a dangerous degree. The mate realizing the vessel was capsizing, secured the engines, climbed to the starboard side and jumped into the water as the vessel rolled over.

5. The engineer had just reached the manifold valve in the engineroom when he too realized the vessel was capsizing. He immediately attempted to return along the passageway but was halted by the onrush of water as the vessel rolled over.

6. The deckhand had been awakened by the master running toward the bridge shouting "shut them off" apparently referring to the engines. When he arose, the deckhand noticed an excessive port list and proceeded immediately out the starboard door. As he did so he heard the deck cargo shift, whereupon the vessel capsized, throwing him into the water.

7. The mate and deckhand managed to climb up on the overturned hull and after a few minutes heard the engineer hammering on the hull from within. A short time later the master's body was sighted floating near the bow of the vessel and was hauled aboard. Both the mate and the deckhand attempted to resuscitate him without success. Approximately 3 and $\frac{1}{2}$ hours later at about 0800 the MV HALLIBURTON 212 arrived on the scene and recovering the two men on the overturned hull, advised the California Company of the engineer trapped within the vessel. A diver was dispatched by helicopter and with the aid of self-contained breathing apparatus the engineer was rescued.

8. From a stability study of the MV TIOGA, a sister ship to the MV BORIE, the Board determined that the BORIE, in her most probable condition of operation and loading at the time of the casualty, had a G. M. of 2.48 feet and a maximum righting arm at 10 degrees heel of 0.49 feet in still water. Although the record appears to indicate otherwise, it should be noted that if the cross connections between the forward fuel oil tanks and between 1 and 2 ballast tanks had been open the G. M. may have been as low as 1 foot and the maximum still water righting arm equal to 0.25 feet at 10° at the time of the casualty.

REMARKS

1. Concurring with the Board, it is considered that the principal cause of this casualty was the inadequate operational stability of the vessel in the loaded condition.

2. With respect to the Board's recommendations, stability studies have been made on this type of hull and as a result all vessels of this type which are certificated by the Coast Guard will henceforth be issued a stability letter in accordance with the provisions of 46 CFR Part 93, specifying the hardware required to control hull integrity, measures to insure proper distribution and security of cargo, measures to control free surface and measures for water clearance on deck.

3. Since the MV BORIE was not subject to inspection by the Coast Guard, no further action is indicated.

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



E. J. ROLAND
Vice Admiral, U. S. Coast Guard
Acting Commandant