

UNITED STATES COAST GUARD



MVI
25 March 1957
(SEDCO NO. 8 - RIG 22 -
a-8 Bd)

Commandant's Action

on

Marine Board of Investigation; capsizing, SEDCO NO. 8 - RIG 22,
Avondale, Louisiana, 10 August 1956, with loss of life

1. Pursuant to the provisions of Title 46 C.F.R. Part 136, 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. On 10 August 1956 the SEDCO NO. 8 - RIG 22, under construction for use as a mobile platform in oil drilling operations on the Continental Shelf in the Gulf of Mexico, was afloat and nearing completion. Instructions had been issued to keep the draft of the floating section at a minimum and not to exceed 6' 6" to assure proper stability and avoid any upsetting moments. Following inclining and submergence tests, added ballast was not completely removed; approximately 80 tons of materials were placed on board and approximately 100 tons of ballast were added to sink the bow wedge, so it is estimated that the draft of the floating section reached 8' 6". At this draft with slack water in the ballast tanks, a progressive list to starboard developed and the rig capsized at about 1530 on 10 August 1956 at dockside, Avondale, Louisiana. Of the approximately 45 workmen on board, 4 drowned and 6 were injured. The estimated damage to the rig, although subsequently salvaged, was \$1,300,000.

3. The Findings of Fact and Conclusions of the Marine Board of Investigation convened to investigate subject casualty are approved. The Recommendation of the Board that the regulations promulgated pursuant to Section 4(c)(1) of the Outer Continental Shelf Lands Act be amended to require plans approval and inspection during construction of all mobile platforms, as defined in 46 C.F.R. 149.10-30, will be referred to the Merchant Marine Council for further consideration.

(signed) A. C. Richmond

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

MARINE BOARD OF INVESTIGATION

convened at the

Marine Inspection Office, United States Coast Guard

Eighth Coast Guard District

313 Custom House, New Orleans, La.

on

16 August 1956

by order of

Commandant, U. S. Coast Guard, Washington, D. C.

To Investigate the Capsizing of the Mobile Drilling Rig, SEDCO
NO. 8 - Rig 22, in The Mississippi River at Avondale, Louisiana,
on 10 August 1956 With Loss of Life.

27 September 1956
A17-6/3 SEDCO NO. 8 -
Rig 22

From: Chairman, Marine Board of Investigation
To: Commandant (MVI)

Subj: Marine Board of Investigation; capsizing, mobile drilling rig,
SEDCO NO. 8 - Rig 22, Avondale, Louisiana, 10 August 1956, with
loss of life

FINDINGS OF FACT

1. At approximately 1530 on 10 August 1956, the drilling barge (mobile platform) SEDCO NO. 8 - Rig 22, capsized in the Mississippi River at Avondale, Louisiana, with the loss of four lives and injury to six persons...

2. Vessel involved:

The SEDCO NO. 8 - Rig 22 is a mobile drilling platform, designed and built by the Louisiana Drilling Company, Inc., at Avondale, Louisiana, for the Louisiana Drilling Company. The Design Agents for the Louisiana Drilling Company are Friede and Goldman, Inc.

The SEDCO NO. 8 - Rig 22, was designed to be submerged and fixed to the seabed for the purpose of drilling for oil on the outer continental shelf. The design would permit drilling in depths of water up to 25 feet. The drilling platform, engine room, and casing and drill stem storage rack were located on the superstructure deck 10 feet above the bottom of the hull. The crew quarters were on the deck above the engine room and the loading deck atop of the crew quarters. The drilling derrick was 120 feet high and located on the drilling platform. The barge was divided into compartments as shown on drawing 8156-F1 (Exhibit 33) and was designed with an apron on the bottom of the sides and after end (stern end), and a movable bow wedge to give the maximum amount of bottom suction when submerged to the seabed on drilling locations. The tumble home or sloping sides and ends were designed to reduce to a minimum the scouring action of the sea and current while the vessel is attached to the seabed. Access to the pump room in the barge, while submerged, was by means of a circular trunk from the upper deck to the barge. Two ladders, one on port and one on starboard side, provided access from superstructure to deck of barge when afloat. This barge should be classed as a mobile platform in Section 110.10-30 of the regulation applicable to Artificially Placed Structures on the Outer Continental Shelf.

3. Although the barge had not been assigned a crew and construction had not been completed, life preservers had been placed in the crews quarters and four 15 person life floats had been placed on the superstructure deck, two on the helicopter deck and two near the after end. Eight ring buoys equipped with waterlights and lines were distributed about the superstructure deck.

4. The design agents had informed the builders of this hull and previous hulls they had constructed of this type that the draft of the barge should be kept to a minimum and should not exceed 6 feet 6 inches during construction. Prior to inclining and submerging experiment, these instructions were carried out.

5. When the barge was nearing completion, on 2 August 1956, an inclining and submerging experiment was made. The design agents instructed Avondale Marine Ways, Inc. to ballast the barge to 8' draft for the experiment, with particular instructions as to the condition of the ballast, drilling water and portable water tanks. Results of the inclining experiment with computations are given in Exhibit 16. After the inclining experiment a submerging test was made. After these tests were completed the barge was moored to the lower end of the upper wet dock of Avondale Marine Ways, Inc. river plant. Four mooring wires of approximately 1" diameter were used to moor the barge. The ballast was not pumped out, as instructed by the design agents and the draft remained at approximately 8 feet as work was continued to complete the barge. No written record was kept of the draft of the barge after the inclining experiment or the amount of ballast or other weight changes. The supervisor of the workmen on the vessel stated that ballast was either taken on or pumped out to keep the vessel from listing.

6. On the 10th of August, approximately 80 tons of drill stem and casing were loaded on the pipe rack deck, 40 tons on each side. The loading of the drill stem and casing was completed about 1400 on 10 August, 1956. The movable bow wedge was also lowered and secured in the down position some time prior to 1345 to install additional brackets to hold the wedge in a position for towing.

7. In order to sink the bow wedge, approximately 160 tons of weight would be required. The wedge weighed 60 tons and therefore approximately 100 additional tons of ballast water in the wedge tanks would be necessary to lower the wedge to the down position.

8. Testimony of Adams indicated that when he inserted the locking pins to hold the wedge in the down position, the surface of the water was about 12 inches above the pins. This would make the draft at the bow end about 9'6". After the pins were secured in place to secure the wedge in the down position the pumps were run for approximately 15 minutes to pump the water out of the wedge; however, soundings were not taken to determine the amount of water actually left in the wedge tanks after the pumps were stopped. According to Adams the pumps were stopped about 1345. There was also testimony that at about this time that agitation in the water near the starboard suction indicated that water was being pumped into the barge.

Chairman, Marine Board of Investigation to
Commandant (MVI)

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27 September 1956
A17-6/3 SEDCO NO. 8 -
Rig 22

9. Franklin and Roberts both stated that at about 1430 that the draft on after end (slot end), as shown by the draft boards, was approximately 9 feet on the starboard side and 6 feet on the port side. The two draft boards on the after end of the barge were located 37 feet outboard from the centerline. This would be a mean draft on that end of 7'6" and would indicate a starboard list of over 2°.

10. At this time (shortly before capsizing) Murphy stated that ballast tanks 2-3, 2-4, 6-3, 6-4, 10-3 and 10-4 were dry; ballast tanks 14-3 and 14-4 were full; ballast tanks 14-1 and 14-2 had approximately 5 feet of water in them; ballast tanks 18-1 and 18-2 had approximately 4 feet of water; drilling water tanks, port and starboard side, had approximately 8 feet; fresh water tanks, port and starboard, had approximately 7 feet; and the void space, port and starboard, had about 5 inches of water. There was no sounding taken during the day to check these figures and no record kept of prior sounding.

11. The structure of this barge was such that when the draft increased the area of the waterplane decreased rapidly; also, when the movable bow wedge was lowered to the down position the area of the waterplane was decreased, both factors tending to lower the metacenter and the range of stability. According to testimony of Mr. Blakely, a representative of the design agents, with the conditions existing on the barge at the time of capsizing, when the draft exceeded 8 feet and continued to increase, the righting moment would rapidly disappear.

12. The draft at about 1430 was approximately 7'6" on the after end, according to testimony of Franklin and Roberts and about 9'6" on the forward end, according to testimony of Adams. This would give a mean draft of 8'6".

13. At about 1530, workmen in the quarters were changing clothing, preparing to knock off work for the day, when they felt a jar, and seconds later felt the barge begin to list to starboard. When the list increased rapidly and it became apparent that the barge was going to capsize, they rushed out of the quarters and attempted to get ashore. However, before they could get ashore the barge capsized and they jumped into the water, and with the exception of four, were picked up by vessels in the vicinity. While in the water most of them succeeded in reaching oil drums or the life floats that had floated free after the barge capsized. When the men on the barge deck saw that the barge was capsizing they rushed to the gangway and most of them succeeded in getting ashore before the barge capsized.

14. The following workmen were assigned to the barge on 10 August 1956 by Avondale Marine Ways, Inc.:

Emile Foret
Lucien Rodrigue
Randolph Plaisance

Box 236, Route #1, Raceland, La.
228 Ave. A., Westwego, La.
Box 509, Raceland, La.

Maurico Scioneaux
Clinton Bennett
Sam Murphy
I. G. Rogers
John Oubre
Joseph B. Savoie, Jr.
Joseph E. Phelps
Foster Davis, Jr.
Nelson Wilcox
Harry Bartley
Vincent Adams
Dudley J. Blanchard
Henry J. Frederick Fried, Jr.
Colly Perole
Lawrence Boudreaux
Fred Wood, Jr.
George Healy
Douglas Adams
Felix P. Kennedy
Lee D. Kennedy
Earl J. Theriot
Joseph M. Nicholas
Delonie Scioneaux
Heazie Pierre
Kenneth R. Pickett

Box 186, Vasherie, La.
Slidell, La.
559 Hesper St., N.O., La.
813 Casthy Ave., Metairie, La.
Chackbay, Thibodeaux, La.
Box 96, Edgard, La.
1314 Miro St., N.O., La.
3606 Washington Ave., N.O., La.
4721 Erato St., N.O., La.
2800 Louisiana Ave., N.O., La.
Box 239, Route #1, Raceland, La.
537 Paillet St., Harvey, La.
707 Mandevielle, N.O., La.
419 Fairway Dr., Marrero, La.
Raceland, La.
455 East Pine St., Ponchatoula, La.
2805 Broadway, N.O., La.
Box 524, Raceland, Louisiana
601 N. Carrollton Ave., N.O., La.
Box 8255, Tropical Courts, N.O., La.
114 145th St. Bridge City, La.
685 Weinberger Rd., Ponchatoula, La.
Gen'l. Delivery, Vacherie, La.
6003 St. Claude Ave., N.O., La.
4712 Orleans Blvd., N.O., La.

15. The following workmen were assigned to the barge on 10 Aug 1956 by Southeastern Drilling Co.

B. J. Robbins
Harry Kilgore
Ben Franklin, Jr.
Robert R. Roberts
Lesler H. Lewis
Donald M. Sharp
Herbert Roy
Joseph Ned Clanton
C. A. Welsh
R. Carpenter

R. E. Tucker
E. E. Holter
G. E. Hunt
C. O. Rudder
Steve W. Wascoom
Tommy Mostyn
Wendell M. Sullivan

4738 Venus St., N.O., La.
601 Huntley Drive, Algiers, La.
Chalmette, La.
Sanford, N.C.
746 1st St., Harvey, La.
Seabreeze Hotel, Houma, La.
Kilgore, Texas
893 Belancer St., Houma, La.
112 Harrison, Pineville, La.
200 Central Bldg., Midland, Tex.
or General Delivery, Snyder, Tex.
Route 1, Palestine, Tex.
1110 Daniel St., Kenner, La.
433 Huntlee Drive, N.O., La.
24 Pine Hill Route 3, Harrisburg, Miss.
General Delivery, Walker, La.
General Delivery, Vivian, La.
General Delivery, Lumberton, Miss.

16. The following men were lost by drowning:

Clinton Bennett - next of kin - wife, Nell - Slidell, La.

Estevan J. Bourbon - Next of kin - wife, Doris - 515 Farrington Dr., Marrero, La.

Herbert Ray - Next of kin - father, G. R. Ray - Route 3, Box 44, Kilgore, Texas

Joseph Ned Clinton - Next of kin - wife, Lillian - 893 Bellanca St., Houma, La.

23. The following men were injured:

Lee H. Kennedy - broken left leg (fibula)

Earl J. Theriot - contusion of right knee

Sam Murphy - laceration on forehead

G. A. Welch - contusion of right knee

G. Garoutar - contusion of right lower arm, X-Ray negative

H. B. Tucker - contusions of neck and head

WITNESSES:

William Allen Harmeyer

Harry H. Middle

Sam Murphy

Edwin Fletcher

Robert R. Roberts

B. J. Robbins

George Healy

Douglas Adams

Ben Franklin, Jr.

Joseph D. Sansoni

Edwin V. Moore

Harry Blakely

Earl J. Theriot

Harry Kilgore

Lester H. Lewis

Donald H. Sharp

701 Cynthia, Lynn Park, Kenner, La.

150 Raven St., Harahan, La.

559 Casper Ave., Metairie, La.

158 East Mansfield St., N.O., La.

Sanford, North Carolina

4733 Venus, N.O., La.

2805 Broadway, N.O., La.

Box 36, Raceland, La.

Chalmette, La.

237 Dorrington Blvd., N.O., La.

53 Maryland Drive, N.O., La.

106 Holois St., Metairie, La.

114 Fourteenth St., Bridge City, La.

601 Huntley Dr., Algiers, La.

746 First St., Harvey, La.

Seabreeze Hotel, Houma, La.

CONCLUSIONS

18. That the builders, the Avondale Marine Ways, Inc., did not carry out the instructions of the design agents in not pumping out all ballast after the inclining and submerging test on 2 August 1956.
19. That the builders did not take the necessary precautions to preserve the safety of the vessel in that the draft was allowed to increase beyond the margin of safety.
20. That about 1400 on 10 August 1956 the mean draft of the vessel had increased to approximately 8'-6" through the loading of about 80 tons of drill stem and casing on the pipe rack deck and the ballasting of the bow wedge to lower and secure it in a down position.
21. That at the time of capsizing, ballast tanks 18-1, 18-2, 14-1, 14-2, drilling water tanks port and starboard, and fresh water tanks, port and starboard, were slack.
22. That about 1430 the vessel had developed a starboard list of over 20°.
23. That with the free surface in the tanks of the vessel, the starboard list, and in all probability the increase of draft resulting from additional water ballast having been pumped into the bow wedge, the righting moment disappeared and the barge capsized at about 1530, 10 August 1956.
24. That the jar felt by the workmen in the crews quarters seconds before the capsizing began was probably caused by the carrying away of the mooring lines.
25. That Clinton Bennett, Lawrence J. Boudreau, Herbert Ray, and Joseph Ned Clanton lost their lives by drowning as a result of the casualty.
26. That Lee D. Kennedy suffered a broken fibula of the left leg and Earl J. Theriot, Sam Murphy, C. A. Welch, R. Carpenter and R. E. Tucker received contusions and bruises.

RECOMMENDATIONS

27. That the regulations promulgated pursuant to Section 4(e)(1) of the Outer Continental Shelf Lands Act be amended to require plans approval and inspection during construction of all mobile platforms, as defined in Section 40.10-30.

(signed) James B. Rucker
JAMES B. RUCKER, Captain, USCG
Chairman

(signed) C. H. Broach
C. H. BROACH, Captain, USCG
Member

(signed) John F. Kettler
JOHN F. KETTLER, Commander, USCG
Member and Recorder