UNITED STATES COAST GUARD

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

MVI
(ALAMO 100 - ALAMO 400 -
ALAMO 600 - PHILIP ARTHUR
a-8 Bd)
25 SEP 1961

Commandant's Action

on

Marine Board of Investigation; sinking of the tug PHILIP ARTHUR with barges ALAMO 100, ALAMO 400 and ALAMO 600 in tow on 31 December 1960 with loss of life

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

2. The 65 foot, uninspected, diesel tug PHILIP ARTHUR, while towing three empty and unmanned tank barges, sank at the intersection of the Intracoastal Waterway and the Port Arthur Ship Canal at about 11:40 PM, CST, 31 December 1960. The barges did not sink, nor were they otherwise damaged. Of the six crew members known to have been aboard the tug, five bodies have been recovered, and the sixth crew member is missing and presumed dead. The tug was salvaged two days after the sinking.

3. In the area of the casualty, the Intracoastal Waterway runs in an approximate east-west direction with a width of about 275 feet narrowing to 100 feet between abutments of Route 87 Highway Bridge. The Highway Bridge crosses the Intracoastal Waterway about 700 feet west of the intersection of the Waterway with the Gulf-Taylor Bayou Channel, the Sabine-Neches Canal, and the Port Arthur Canal. Currents from the Intracoastal Waterway, the Bayou Channel and the Sabine-Neches Canal meet at the intersection forming heavy eddies and the current then flows to the south in the Port Arthur Canal. Recent heavy rains and a moderate, westerly breeze had increased the currents, and in the Intracoastal Waterway it was flowing at about three knots in an easterly direction.

4. The PHILIP ARTHUR en route from Texas City, Texas, to Lake Charles, Louisiana, approached the Highway Bridge from the west, with the three tank barges, ALAMO 100, ALAMO 400, and ALAMO 600 in tandem tow astern. The bridge tender estimated that the tug and tow were traveling at a faster than usual speed and that the bow of the lead barge was about 15 feet astern of the tug. There was no other traffic in the immediate

area and the bridge was opened well in advance of the tow's arrival. Shortly after the tow cleared the bridge, the tender was attracted by a reduction of the tug's engine noise. Looking out of the control tower he observed the three barges near the southwest bank of the intersection but the tug was not in sight. Three cries for help were heard from the area but no one was seen. In response to the bridge tender's telephone call, representatives from the local sheriff's office arrived on the scene 15 minutes after the casualty, followed shortly by a Coast Guard boat from the Sabine Pass Lifeboat Station.

5. The mast of the PHILIP ARTHUR was found protruding above the water, the vessel having apparently settled on the bottom in an upright position. The tug later shifted its position and the mast disappeared beneath the surface. On 2 January 1961 she was raised and three bodies were recovered from within the vessel. Two other bodies were subsequently recovered along the shore line. The body of the sixth crew member has not been recovered.

6. After the tug was raised, examination disclosed that the eight inch manila towing hawser was cleanly cut about three fourths of the way through and the remainder frayed. An axe was found on the afterdeck. There was no evidence of collision damage, but the stern was protected by a heavy manila fender. Engine controls in the pilothouse were set in the slow ahead position, and several of the weather type doors leading into the deckhouse were found to be open.

REMARKS

1. Concurring with the Board, it is considered that the lead barge with her high and raked bow overrode the stern, probably on the starboard quarter, of the tug causing her to flood and sink. As pointed out by the Board, the large manila fender on the stern could account for the absence of evidence indicating contact.

2. The Board speculated that the tug upon reaching the eddy currents experienced a reduction of speed through the water, which resulted in the tow overtaking her. Whether it occurred in this manner is not known, but it is evident that the tug must have experienced some difficulty which dictated the necessity of cutting the towing hawser. In connection with the speed reduction, the fact that the pilothouse controls were found in the slow ahead position when the tug was raised would indicate that speed was purposely reduced.

3. The Board also expressed the opinion that the design and physical characteristics of the PHILIP ARTHUR were not compatible with the service in which she was employed. Testimony revealed that this tug had been capsized or swamped on at least three occasions in recent years, and this information, coupled with the circumstances of the latest casualty, raises the question of stability and freeboard. Stability tests are normally conducted to determine whether a vessel has adequate freeboard

and stability; in the case of towboats, wind heel, hawser pull at different leads and cross current effect are among the principal considerations. Without a stability test it is impossible to evaluate the adequacy of a towboat's stability.

4. Because the stability characteristics of the PHILIP ARTHUR are still in question and were very possibly a factor in this case, future safe operation dictates that the owners positively establish the tug's suitability for employment in towing service by means of a stability test and stability investigation.

5. The opinion of the Board that this vessel had inadequate watertight integrity is not concurred in. Watertight integrity for vessels of this type is normally considered in terms of hull closures and watertight bulkheads. In this case the record does not contain evidence that the watertight integrity of the PHILIP ARTHUR was substandard, having regard either to the applicable rules considering the vessel's age, or to the vessel's route and service.

6. 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

UNITED STATES COAST GUARD

ADDRESS REPLY TO
Officer in Charge
USCG Marine Inspection
General Delivery
Galveston, Texas

A25/1717

5 April 1961

From: Marine Board of Investigation
To: Commandant

Subj: Tug PHILIP ARTHUR with barges ALAMO 100, ALAMO 400 and ALAMO 600 in tow; sinking of with loss of life, on 31 December 1960 at the junction of Port Arthur Ship Channel and the Intracoastal Waterway

Findings of Fact:

1. At approximately 2340 Central Standard Time on 31 December 1960 the tug PHILIP ARTHUR, while towing three empty tank barges, foundered and sank at the intersection of the Intracoastal Waterway and the Port Arthur Ship Channel, Port Arthur, Texas, with the loss of her entire crew of six.

2. Vessel data:

Name:	PHILIP ARTHUR
Official Number:	208716
Service:	Towing (Uninspected)
Gross Tons:	48
Net Tons:	21
Length:	65.6
Breadth:	15.1
Depth:	6.2
Propulsion:	Oil Screw
Horsepower:	500
Home Port:	Houston, Texas
Owners/Operators:	Alamo Barge Lines 218 Oil & Gas Building Houston 2, Texas
Master:	Paul Roquemore (unlicensed, certificated tankerman) [redacted]

Name:	ALAMO 100	ALAMO 600	ALAMO 400
Official Number:	176211	----	----
Service:	Tank Barge	Tank Barge	Tank Barge
Gross Tons:	519	680	627
Net Tons:	519	680	627
Length:	180.1	225	195
Breadth:	35.0	----	----
Depth:	10.0	----	----

Vessel data: (Continued)

	ALAMO 100	ALAMO 600	ALAMO 400
Home Port:	Houston, Texas	Houston, Texas	Houston, Texas
Owners/Operators:	Alamo Water Transportation Co., 218 Oil & Gas Building, Houston, Texas	Alamo Water Transportation Co., 218 Oil & Gas Building, Houston, Texas	Alamo Barge Lines 218 Oil & Gas Bldg., Houston 2, Texas
Master:	Unmanned	Unmanned	Unmanned
Last Inspection for Certification:	Biennial LBS Grade "B"	Biennial LBS Grade "B"	Biennial LBS Grade "B"
Date:	1/20/60	5/19/60	3/10/60
Port:	Port Arthur, Texas	Houston, Texas	Houston, Texas
Capacity in Barrels:	9,064	12,000	10,000
Nature of Cargo:	None	None	None

3. The following crewmembers are known to be dead, their bodies having been recovered prior to the convening of this Board:

Paul Roquemore, Captain, [redacted]
Horace Gammill, Cook, [redacted]
Leo Phillips, Chief Engineer, [redacted]

Subsequent to the adjournment of the Board and prior to the preparation of this report, the bodies of the following men were recovered along the waterfront in the vicinity of the casualty:

Salvadore Marino, Mate, [redacted]
Manuel Medina, Deckhand, [redacted]

Missing and assumed dead: [redacted], Oiler, [redacted]

4. At the time of the casualty there was a moderate wind out of the west to northwest and the visibility was clear. At the intersection where the casualty occurred there generally exists an eddy current resulting from a continual easterly flow from the Intracoastal Waterway, westerly flow from the Sabine-Neches Canal, and southerly flow from the Gulf Basin-Taylor Bayou Channel. These three currents feeding into the intersection combine and flow south to the Gulf of Mexico through the Port Arthur Channel. There is a certain amount of tidal influence upon these currents but it generally serves to diminish their force rather than change their directional flow and consequently introduces variations into the exact

location and intensity of the resultant eddy current. Recent heavy rainfall had increased the amount of fresh water flow into the ICW and at the time of the casualty the easterly current in the ICW was approximately two to three knots, somewhat stronger than normal. The eddy current was highly active.

5. Sometime on 31 December 1960 the tug PHILIP ARTHUR with Paul Roquemore as master, and five other crewmembers onboard, departed Texas City, Texas towing astern three empty tank barges, the ALAMO 100, ALAMO 400 and ALAMO 600, enroute Lake Charles, Louisiana via the ICW.

6. Approximately 600 to 700 feet west of the intersection where the casualty occurred, State Highway 87 crosses over the ICW by way of a drawbridge. The bridge is an attended, center opening, bascule bridge with a horizontal clearance of 100 feet. Both sides of the passage beneath the bridge are protected by wooden fender systems extending approximately 100 feet in either direction from the bridge. At the time of the casualty [redacted] was the bridge tender on duty in the control tower located at the northwest corner of the opening through the bridge. [redacted] had been on watch approximately one hour during which no water traffic had approached the bridge, when the PHILIP ARTHUR and her tow appeared from the west shortly before 2330.

7. There was no other waterborne traffic in the immediate area at any time during the PHILIP ARTHUR's approach to the bridge, passage through the bridge or entrance into the intersection. Since there was little or no highway traffic on either approach of State Highway 87, Mr. [redacted] opened the bridge well in advance of the arrival of the PHILIP ARTHUR. As the vessel and its tow passed beneath Mr. [redacted] control tower, he saw at least one person in the pilot house and waved to one man in the stern of the PHILIP ARTHUR.

8. The towing rig employed by the PHILIP ARTHUR consisted of an eight inch manila hawser made up to the starboard crucifix of their towing bitt and attached by shackles to a wire rope bridle which led around the bitts on the forward corners of the lead barge. It appeared to Mr. [redacted] that the distance between the stern of the PHILIP ARTHUR and the bow of the lead barge was in the neighborhood of 15 feet.

9. The minimum freeboard of the PHILIP ARTHUR was about eight inches. There were eight non-watertight doors at the main deck level with coamings approximately twelve inches above the deck. The stern of the tug was protected by a heavy manila fender extending the full breadth of the vessel, around the stern. The upper edge of the tapered rake of

the lead barge was approximately ten feet above the water and on the same level as the top of the deckhouse of the PHILIP ARTHUR.

10. As the vessel negotiated the passage through the bridge, the stern of the trailing barge glanced off the south fender and careened across to the north fender. With the benefit of a directional light located beneath the bridge, Mr. [redacted] observed the trailing barge for the purpose of detecting possible damage to the bridge or fenders. As the last barge cleared the fenders, Mr. [redacted] discontinued his close observance. Shortly thereafter a noticeable reduction in the engine speed of the PHILIP ARTHUR attracted Mr. [redacted]. This was followed closely by three calls for help coming from the general direction of the intersection. As Mr. [redacted] looked in that direction he could see only the barges then located near the south bank of the ICW near the intersection. The tug was no longer visible.

11. Noting the time was 2341, Mr. [redacted] attempted to contact the Coast Guard Lifeboat Station at Sabine Pass by telephone but was unsuccessful because of a busy connection. Unsuccessful on a second try, he contacted the local Sheriff.

12. Representatives of the Sheriff's department arrived in about fifteen minutes, followed shortly thereafter by a Coast Guard forty foot patrol boat. The Coast Guard boat, upon sighting an antenna protruding vertically from the water in the ICW at the intersection, marked it by attaching a small white light. A search of the adjacent waters and the canal banks for possible survivors was commenced. The search party was quickly enlarged by the arrival of local law enforcement agencies and interested spectators. Along the edge of the canal two oil drums and a butane bottle, apparently from the PHILIP ARTHUR, were found.

13. Before the PHILIP ARTHUR was successfully raised on 2 January 1961 she shifted from the original position in which she sank, into slightly deeper water and rolled over onto her port side. When raised at approximately 0230 on 2 January 1961 three bodies were found in the vessel. Paul Roquemore was found in the engineroom and Leo Phillips and Horace Gammill were found in the forward berthing spaces. The refloated vessel showed no evidence of collision damage or damage that might have been caused by over-riding of the barges.

14. The portion of the towing hawser yet fixed to the towing bitts had been severed approximately four to five feet from the towing bitt. Two of the three strands had been cleanly cut all the way through and the remaining strand had been cut about three-fourths of the way through;

the other one-fourth being frayed and torn. An axe was found in the vicinity of the severed hawser.

Conclusions:

1. Based on the foregoing findings of fact, it is concluded that there was a reduction of speed by the tug as it neared the intersection. The evidence is insufficient to establish whether such reduction was effected by the operating personnel of the tug or if the reduction in engine noise heard by the bridge tender occurred as a part of the process of the sinking itself. In any event, as the PHILIP ARTHUR entered the eddy current her forward motion was substantially reduced while the barges continued to surge forward under their own momentum assisted by the swift following current.

2. The man on the stern, alerted to the impending danger, cut the hawser by use of a sharp instrument, probably the axe normally kept adjacent to the towing bitt.

3. The PHILIP ARTHUR was still unable to free herself from the path of the barges. As the lead barge over-rode the stern of the tug, the impact of that contact was absorbed by the heavy manila fender around the tug's stern. Of greater significance was the downward force exerted on the tug by the flared rake of the moving barge. Though the cause of the sinking cannot be stated with absolute certainty, the only logical conclusion that can be drawn from the evidence available is that the PHILIP ARTHUR sank from instantaneous and uncontrolled flooding resulting from the over-riding.

4. The evidence does not show that any physical material failure served as a cause of the casualty. It is glaringly obvious, however, that the design and physical characteristics of the PHILIP ARTHUR, as related to water-tight integrity, freeboard and stability, were not compatible with the service in which she was employed.

5. None of the personnel involved held any licenses or certificates issued by the Coast Guard, except for the certified tankerman's document held by the master, Paul Roquemore. There is no evidence of any act of misconduct, inattention to duty, negligence, or incompetence or willful violation of any law or regulation on the part of that certificated tankerman that would give rise to any action under the Suspension and Revocation Proceedings.

6. There is no evidence that any law or regulation relating to vessels has been violated.

7. There is no evidence that any personnel of the Coast Guard or any

other government agency contributed to the casualty.

8. Any conclusions as to preventive or minimizing measures that might have been taken would necessarily be speculative in the absence of more substantial evidence as to the cause of the casualty.

Recommendations:

1. In view of the foregoing findings of fact and conclusions drawn therefrom, it is recommended that the case be closed with the submission of this report and executed forms CG-2692 forwarded herewith.

[redacted]

JOHN R. KURCHESKI
Captain, U. S. Coast Guard
Chairman

[redacted]

J. H. MCDOWELL
Captain, U. S. Coast Guard
Member

[redacted]

Lieutenant, U. S. Coast Guard
Recorder