

DISAPPEARANCE OF M/V SOUTHERN CITIES
IN GULF OF MEXICO ON OR ABOUT
November 1, 1966

ACTION BY THE NATIONAL TRANSPORTATION SAFETY BOARD

This accident was investigated by the U. S. Coast Guard under the authority of R. S. 4450 (46 USC 239) and the regulations prescribed by 46 CFR 136. The Marine Board of Investigation was conducted in a public proceeding in Houston, Texas, beginning November 14, 1966. The Coast Guard report of that investigation and the Commandant's action thereon is included in and made a part of this report.

The National Transportation Safety Board has considered those facts in the Coast Guard report of this accident investigation pertinent to the Board's statutory responsibility to make a determination of cause. By publication of this report the Board does not adopt those portions of the Coast Guard report which are concerned with activities within the exclusive jurisdiction of the Department of Transportation and the Coast Guard.

The National Transportation Safety Board finds that the basic cause of the accident with attendant loss of life was the unseaworthiness of the vessel for its employment. Vessels of this type, designed for service on inland waters, are extremely vulnerable to the perils of the sea when operating on unsheltered waters and distant from a harbor of safe refuge.

REMARKS

Based on the experiences of the tug SOUTHERN CITIES on four previous voyages from Freeport, Texas, to Tuxpan, Mexico, and characteristics of this vessel adduced by the Marine Board of Investigation, the NTSB concurs in the remarks of the Commandant who stated:

"The evidence indicates that the most likely cause was sinking after putting to sea on a voyage for which the vessel was unsuitable. In view of her design as a harbor tug, her size, her low freeboard, and her past performance, it is evident that the vessel was inadequate for ocean towing."

The Board also noted that diesel tugs under 300 gross tons are not presently subject to Coast Guard inspection, and no regulatory authority now exists to prevent similar accidents. Proposed legislation (H.R. 11216 introduced at the First Session of the 90th Congress by Congressman Garmatz) would require licensing of the person in charge of certain uninspected towing vessels but does not cover inspection. The NTSB supports H.R. 11216, but feels that as drafted this legislation would not prevent accidents similar to that experienced by the M/V SOUTHERN CITIES. In comparing the fatality and injury experience of towing vessels with other industries (based on the Department of Labor and National Safety Council statistics), it is noted that the rates on towboats are much higher. While recognizing that these statistics are only as reliable as their source and comparisons may be misleading, the fatalities on

towing vessels appear to be over three times that of U.S. industry as a whole.

Previous legislative proposals to bring these vessels under inspection have not been successful. The Safety Board recognizes the practical and economic problems of inspection of presently uninspected towing vessels, but based on this accident, and the relatively high accident rates prevailing in the towing industry, feels preventive action is necessary.

RECOMMENDATIONS

The Safety Board recommends that the Department of Transportation and the Coast Guard give consideration to proposing legislation which would require some form of certification or rating of seaworthiness for towboats operating outside of the inland waterway system. One possible method of control is requiring a certification of seaworthiness as a condition of documentation of towing vessels for the coastwise trade.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD:

Chairman

Member

Member

Member

Member



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Address reply to:
COMMANDANT (MVI-3)
U.S. COAST GUARD
WASHINGTON, D.C.
20591

5943/SOUTHERN CITIES
A-8 Bu
17 January 1968

Commandant's Action

on

The Marine Board of Investigation convened to inquire into the circumstances surrounding the disappearance of the M/V SOUTHERN CITIES in the Gulf of Mexico on or about 1 November 1966 with loss of life

1. The record of the Marine Board of Investigation convened to investigate subject casualty has been reviewed and the record, including the findings of fact, conclusions, and recommendations, is approved subject to the following comments and the final determination of the cause of the casualty by the National Transportation Safety Board.
2. The M/V SOUTHERN CITIES bound on a voyage to Tuxpan, Mexico was lost at sea in the Gulf of Mexico with six crewmembers on board after having departed Freeport, Texas on the evening of 29 October 1966 towing loaded barge B-1800 on a hawser. Other vessels in the Gulf of Mexico reported winds from the Northwest at 30 to 40 knots with seas 9-1/2 to 13 feet. The last communication was received from the M/V SOUTHERN CITIES at approximately 0630 (+6 zone time) on 1 November 1966 when, in the morning report to the owner she indicated her position to be latitude 24°30' north, longitude 96°40' west. The M/V SOUTHERN CITIES failed to make her scheduled daily report on the morning of 2 November 1966. Although not yet overdue, when no position report was received from the SOUTHERN CITIES on the morning of 3 November 1966, the owner reported to the U. S. Coast Guard rescue coordination center New Orleans, Louisiana that there had been no communication from the vessel in the previous forty-eight hours and requested Coast Guard assistance in locating and establishing communication with the M/V SOUTHERN CITIES. A search was made along the probable route of the tow by a Coast Guard aircraft with negative results. When no report was received from the M/V SOUTHERN CITIES on 4 November 1966 an intensive search by Coast Guard aircraft and a Coast Guard vessel was commenced at the request of the vessel's owner. The search, covering 84,600 square miles, continued until 8 November 1966. During this search, barge B-1800 was located at 0833 on 5 November 1966 drifting approximately 105 miles north of Tuxpan, Mexico. The barge was undamaged with her cargo intact and the tow line was still made fast. A life preserver, a broken section of the name board, and a ring life buoy from SOUTHERN CITIES were later found at various positions. No other

debris or equipment of the M/V SOUTHERN CITIES was located. None of the crew of six persons on board the M/V SOUTHERN CITIES have ever been found.

3. The M/V SOUTHERN CITIES, Official Number 241635, of New Orleans, Louisiana, was a welded steel, single screw, diesel propelled towing vessel built in 1942. She was 85 gross tons, 67 feet in length, 19.1 feet in breadth, and 7.7 feet in depth. The M/V SOUTHERN CITIES, being under 300 gross tons, was not subject to inspection by the U. S. Coast Guard. The vessel had never been in class with a recognized classification society. The persons serving as crewmembers on board the M/V SOUTHERN CITIES were not required by law to be licensed or certificated by the Coast Guard. The M/V SOUTHERN CITIES was equipped with a 20 man lifefloat, five thirty-inch ring life buoys and twelve life preservers. The vessel had last been drydocked at Houston, Texas on or about 13 September 1966.

4. Barge B-1800, Official Number 293266, of Houston, Texas is a 1,013 gross ton seagoing, bulk dry cargo barge built in 1944, with a registered length of 210 feet, a breadth of 40 feet, and a depth of 13.5 feet. The B-1800 was last inspected prior to the casualty on 14 March 1966 at Houston, Texas and a new certificate of inspection was issued. With calm wind and sea conditions the tow was normally able to make 5 to 6 knots with the engine of the SOUTHERN CITIES turning at a full speed of 300 RPM. An eight inch polypropylene towing hawser 600 feet in length was normally used.

5. There is no evidence that the M/V SOUTHERN CITIES had ever been employed in other than inland service until after 25 July 1966 when a contract was made to tow barge B-1800 between Freeport, Texas and Tuxpan Mexico. The vessel was lost on her fifth voyage, in that service, after having experienced difficulties on three of her four prior voyages.

6. On the first voyage of the M/V SOUTHERN CITIES to Tuxpan, Mexico her automatic direction finder became inoperative and the master, uncertain of his position while in sight of land, requested Coast Guard assistance. The tug and tow were located by aircraft approximately fifty miles north of Tampico, Mexico, a considerable distance from their estimated position. The direction finder was repaired upon completion of the voyage.

7. On her second voyage the M/V SOUTHERN CITIES experienced generator trouble and her tow line became caught in the propeller.


8. On her fourth voyage, commencing on 8 October 1966 at Freeport, Texas, heavy weather was encountered and the master reported Northwest winds of 40 knots and 50 foot seas. Although rubber gasket material and additional hinges and dogs had been installed on the weather deck doors just prior to this trip, they proved not to be weather-tight and admitted great quantities of water to the engine room. Attempts to replace the half-doors fitted on the vessel with solid steel doors had also been made prior to this trip but were unsuccessful due to the insufficient clearance between the deckhouse and the bulwarks. Sea water also leaked into the engine room through faulty electrical fixtures on the main deck near the stern where the freeboard was only about three inches. At times both the engine driven bilge pump and the electric bilge pump were incapable of removing the volume of water entering the engine room.

9. The master requested that the Coast Guard fix the vessels' position and have a unit stand by the tug and tow as they were in danger due to heavy seas and high winds. The master reported to the Coast Guard vessel and aircraft arriving on scene that he might lose communications as he had lost main electrical power and his mast was in danger of being carried away. The master was fearful of losing his tow and capsizing. It is reported that the amount of superstructure coupled with the light draft of the vessel complicated his problem in handling the tow, especially while turning in a heavy sea without fear of capsizing. Main electrical power was later restored and after the seas moderated the tow was able to proceed to its destination.

REMARKS

1. Concurring in the Conclusions of the Board, it appears that the M/V SOUTHERN CITIES and her crew were lost in the Gulf of Mexico on a voyage between Freeport, Texas and Tuxpan, Mexico on 1 or 2 November 1966. Although the exact cause of the loss of the M/V SOUTHERN CITIES could not be determined, the evidence indicates that the most likely cause was sinking after putting to sea on a voyage for which the vessel was unsuitable. In view of her design as a harbor tug, her size, her low freeboard, and her past performance, it is evident that the vessel was inadequate for ocean towing.

2. The unregulated operation of vessels such as the M/V SOUTHERN CITIES has been a concern of the Coast Guard for many years and the problem has remained under continuous study. Recommendations for legislation have been proposed. In addition, it appears that the master of the M/V SOUTHERN CITIES was unqualified for offshore navigation. Remedial legislation concerning this problem is now under consideration by Congress.



W. J. SMITH
Admiral, U. S. Coast Guard
Commandant

3. The vessel was equipped with a 20 KW direct current General Motors 271 Diesel driven generator, and a 7 1/2 KW direct current auxiliary generator driven by an approximately 60 horsepower Lister diesel engine. She was also equipped with a 120 volt bank of batteries for emergency lighting, recharged by the generator supplying power to the vessel. The batteries had capacity for three-fourths (3/4) hour to eight (8) hours of service in the event of generator casualty. It was reported that the vessel was equipped with a main engine-driven air compressor and an auxiliary Quincy air compressor belt driven by the Lister engine. Four air receivers of approximately 250 P.S.I. supplied starting air to the engine. There is no indication that hydrostatic tests were performed on these tanks. The vessel was also equipped with a Way-Wolff low pressure steam heating boiler. The galley stove was supplied by tubing from two (2) butane tanks located in a compartment on the forward weather deck under a ladder leading from the pilothouse forward to the foredeck. The vessel was fitted with electric steering and a manual direct connected hydraulic steering system. The steering motor was located in the engineroom. The vessel was equipped with a Raytheon 90 watt radio telephone in the medium frequency range in addition to a Bendix portable direction finder. A radar installation, magnetic compass and a barometer were also provided.

4. The main engine was cooled by a heat exchanger consisting of a closed fresh water system to the engine cooled by circulating sea water. The sea suction and overboard discharge was located at the port side of the engineroom. Another sea suction was located at the starboard side of the engineroom for cooling of a General Motors 271 diesel engine driving the main generator and a Lister diesel engine driving the auxiliary generator. This cooling water was discharged through the one common overboard discharge.

5. The M/V SOUTHERN CITIES was constructed with four (4) transverse watertight bulkheads extending from the bottom shell to the weather deck plating. These bulkheads were located at frames 2, 7, 11, and 23 separating from forward, a forepeak void tank, galley, fuel tank with a capacity of approximately 5,000 to 7,000 gallons, engineroom (32 feet in length) and after fresh water tank with a capacity of approximately 3,000 gallons. Below the galley was a void space approximately 2.75 feet in depth, extending the breadth of the vessel. Access to this void was provided by a manhole opening covered by a non-watertight steel grating. It was reported that a two-inch pipe passed through the bottom of the fuel tank and welded to the forward and after bulkheads of that tank. The pipe formerly contained copper tubing which supplied diesel fuel from the engineroom to the galley at a time the vessel was equipped with a diesel galley stove. In the transom area was a transverse watertight bulkhead approximately 3.25 feet in depth separating the lazarette from the after fresh water tank. The frame spacing of the vessel was approximately 2 feet, 8 inches. Transverse and longitudinal swash bulkheads divided the fuel tank at midlength and on each side of the centerline. An oval-shaped manhole and bolted cover approximately 14 inches

by 24 inches was fitted in the bulkhead between the engineroom and fuel tank. The after fresh water tank fill line was an approximately three (3) inch pipe extending approximately twelve (12) inches above the weather deck, and fitted with a threaded cap. Access to the forepeak tank, after fresh water tank and lazarette was provided by manholes with bolted plates on the weather deck. Gooseneck vents for the fuel tank and after fresh water tank were located at the side of the housing and extended a reasonable height above the deck. Originally, vents for the forepeak and lazarette were located forward and aft respectively and extended approximately one and one-half (1 1/2) feet above the deck. The filling line manifold for the fuel tank was located on the starboard side between the after doors of the deck housing.

6. Two (2) two-inch bilge suctions were located in the engineroom, one forward of the main engine and one aft of it. One (1) two-inch suction was also located in the void space below the galley. These suctions were connected to a bilge pump driven off the main engine and also to a non-automatic electric bilge pump located in the engineroom. A manifold was located forward of the engine so that the bilge system could be operated from one location. The electric bilge pump also took suction from the sea and discharged to a fire hydrant on each side of the vessel on the weather deck. The vessel was also equipped with an emergency portable gasoline engine driven bilge pump with a two (2) inch suction, and stowed in the engineroom fidley. The gasoline was stowed in a five (5) gallon can located on the boat deck. It was reported that the emergency gasoline driven pump was utilized in washing down the vessel in lieu of the electric fire and bilge pump.

7. On the weather deck level, there were six (6) doors leading into the deck house, three (3) on each side. The forward starboard door led into the engineer's quarters and aft along a catwalk to a ladder leading into the lower engineroom. The forward port door led to a passage which led forward to a ladder into the galley below. This was the only access to the galley. Both of these doors, located in way of frames 8 and 9, provided access to the engineer's quarters located on the starboard side forward, crew quarters located on the port side forward inboard of the galley passage, or galley passage through interconnecting doors. The midship doors, located in way of frames 12 and 13, and after doors, in way of frames 17 and 18, led to the upper level of the engineroom. The after doors both led onto an athwartship catwalk to a ladder on the port side leading to the lower level of the engineroom.

8. A sill was welded at the bottom of the after and midship engineroom door openings on each side of the vessel of three-eighths (3/8) inch steel plate, extending approximately twelve (12) inches in height. The other two (2) door openings were fitted with sills constructed of two (2) inch lumber extending approximately twelve (12) inches in height, and caulked tight. The doors were of three-eighths (3/8) inch flat plate steel and constructed in two halves, the upper halves overlapping the bottom halves. The bottom doors extended to within six (6) inches of the deck. Large house-type rectangular windows surrounded the Master's cabin and pilothouse on the upper deck.

9. Originally, the door casings were fitted with one (1) dog securing each half by means of steel wedges mounted on the doors at the forward side. The dogs could be operated both from the inside and outside. Two (2) slotted hinges were fitted on each door section at the after side. A gasket material was fitted around the perimeter of the doors. No knife edge was fitted.

10. A ladder was fitted which led from the engineroom to an escape hatch, 2 or 3 feet by 2 or 3 feet in dimensions located on the after boat deck providing access from the engineroom to the pilothouse through the Master's quarters and making it unnecessary to emerge on the weather deck to go to and from the pilothouse.

11. The SOUTHERN CITIES was equipped with five (5) thirty-inch ring life buoys, one on each side of the pilothouse equipped with retrieving lines, one on the railing on each side in way of the stack, and one aft of the deckhouse. It was reported that this after ring life buoy may have been of the plastic type and painted international orange, and that the others were of the cork or balsa type, and painted white. The name, "SOUTHERN CITIES", was stenciled on them. No water lights were attached to any of the ring life buoys. A twenty (20) man life float, equipped with an oar or paddle, was provided, and also twelve (12) life preservers, with the vessel's name stenciled thereon.

12. The vessel was equipped with approximately nine (9) fire extinguishers of the 15 pound carbon dioxide type, and 2 1/2 gallon foam type. One was located in each of the two crew's quarters, one in the galley, and the remainder in the engineroom. It was reported that a CO₂ extinguisher was used shortly after 27 July 1966 to extinguish an electrical fire (battery wire) in the engineroom, and that afterwards, some or all of the extinguishers were recharged ashore.

13. Barge B-1800, O.N. 293266, of Houston, Texas, is a 1,013 gross ton sea-going bulk dry cargo barge. Her registered dimensions were 210 feet in length, 40 feet in breadth, and 13.5 feet in depth. She was built in 1944 at Decatur, Alabama. The vessel is owned and operated by Bludworth Marine Equipment Company of 8250 Dixie Drive, Houston, Texas. The B-1800 was last inspected on 14 March 1966 at Houston, Texas and a new Certificate of Inspection was issued. She has a valid International Load Line Certificate issued by the American Bureau of Shipping, and has an + A1 Classification by the American Bureau of Shipping. The barge was constructed with a ship form hull with three (3) cargo holds and double bottom tanks. She was equipped with two (2) fixed skegs and two (2) anchors, a housing forward contained a diesel anchor windlass engine. The barge was equipped with a one-cylinder diesel driven bilge pump in the aftermost compartment. The barge was last drydocked at Houston, Texas on 29 December 1966, and there was no indication of recently caused indentations or other damage.

14. A list of the six (6) missing crew members are as follows:

[REDACTED] Master Age: [REDACTED]
[REDACTED]
New Orleans, Louisiana
License [REDACTED], Operator of mechanically propelled
vessels of less than 100 gross tons on
waters other than Ocean or Coastwise.

Next of Kin: Mrs. [REDACTED], [REDACTED]
Address same as above

[REDACTED], Mate Age: [REDACTED]
[REDACTED]
Omega, Georgia
[REDACTED]

Next of Kin: [REDACTED]
Tallahassee, Florida

[REDACTED], Engineer Age: [REDACTED]
[REDACTED]
Houston, Texas
[REDACTED]

Next of Kin: [REDACTED]
[REDACTED]
Address same as above

[REDACTED] Deckhand Age: [REDACTED]
[REDACTED]
Jacksonville, Florida
[REDACTED]

Next of Kin: Mrs. [REDACTED]
[REDACTED]
Germany

[REDACTED] Deckhand

Age: [REDACTED]

[REDACTED]
Perry, Florida
[REDACTED]

Next of Kin: [REDACTED]

Address same as above

[REDACTED], Deckhand

Age: [REDACTED]

[REDACTED]
Perry, Florida

Next of Kin: Mrs. [REDACTED]

[REDACTED]
Jacksonville, Florida

All of the above persons were employed by F. W. Towing Company, Inc., owners of the M/V SOUTHERN CITIES.

15. Weak pressure gradients prevailed over the Gulf of Mexico for several days prior to 1 November 1966. Early on 1 November 1966, a cold front pushed into the Western Gulf of Mexico, moving South at 30 knots as it passed through Brownsville, Texas. In advance of the front, winds were generally West-Southwest less than 10 knots. With the passage of fronts, the winds shifted to North-Northwest and increased to over 20 knots at land stations. Three ship reports available at 0000, +6 zone time, on 2 November 1966, 300 miles Northeast of the area of concern, were probably representative of conditions in the cold air after frontal passage. These ships reported winds from the Northwest at 30 to 40 knots. Two of the three included sea conditions with waves from 320 degrees with a period of five (5) to nine (9) seconds, and wave height of 9 1/2 to 13 feet. Surface winds at Tampico, Mexico, after frontal passage, were reported from the North at 30 knots.

16. In June 1948, Lake Tankers, Inc., of Wilmington, Delaware, then owners of the SOUTHERN CITIES, submitted Avondale Marine Ways, Inc., drawing No. 2950-5, Midship Section and Inboard Profile, to American Bureau of Shipping with a view to Classification of the vessel. The drawing was approved on the condition that 2 1/2 inch by 1/2 inch flat bars be added to form tees at the bulkhead stiffeners at frames 2, 7, 11 and 23, and that the top and bottom ends of the stiffeners be attached to the deck and bottom shell. Another condition was to fit 7 inch by 4 inch angle, butt welded to existing flat bar frames 14 and 17 to form webs 12 inches deep from the deck plating through the turn of the bilge. The two web frames were not fitted and it is not known whether the bulkhead stiffener attachments were fitted. Therefore, classification was not granted by the American Bureau of Shipping.

17. From 1957 to 1963, the SOUTHERN CITIES operated in the Houston, Galveston and Texas City area, pushing ahead tank barges and employed in the mobile fueling service. After purchase by F. W. Towing Company, the vessel was employed towing in the Intracoastal Waterways and on coastwise trade between Saint Marks, Florida and Pensacola, Florida. There is no indication that the vessel was ever used in ocean towing service until after 25 July 1966 when F. W. Towing Company was contracted to tow barge B-1800 between Freeport, Texas and Tuxpan, Mexico.

18. Testimony indicates that between 1957 and 1963, 1/2 inch to 5/8 inch steel straps approximately six (6) inches in width were welded on the garboard strakes fore and aft on each side of the keel of the SOUTHERN CITIES while the vessel was owned by Lake Tankers, Inc. or National Marine Service.

19. On or about 14 July 1964, a representative of U. S. Salvage surveyed the SOUTHERN CITIES at Port Arthur, Texas, to determine her general condition and approximate valuation. At this time, it was recommended that the vessel be further examined on drydock, that a butane stove be removed from the galley below the weather deck, and that a two (2) inch nipple in the bilge line be checked and repaired if necessary. The market value of the vessel was estimated at \$30,000.00 and the replacement value at \$125,000.00. The survey did not consider the intended route of the vessel. The vessel was in idle status at the time. It is not known whether or not the first and third recommendations were complied with at the time, although the butane stove was still located in the galley below, just prior to the last voyage of the vessel.

20. In February 1966, the M/V SOUTHERN CITIES, at the time of purchase by F. W. Towing Company, Inc., was surveyed by a representative of Bachrach & Company, Inc., independent surveyors of New Orleans, Louisiana, to establish a fair market value for purchase. The vessel was found in a slightly run down condition, with slightly rusted out places in her bulwarks. The survey did not consider the vessel's route or condition of lifesaving or fire fighting equipment. Her value was estimated at \$35,000.00.

21. On 25 July 1966, F. W. Towing Company, Inc. engaged in a verbal contract with Bludworth Marine Equipment Company to tow barge B-1800 between Freeport, Texas and Tuxpan, Mexico. No survey was held at the time of the change in employment nor was one required. The SOUTHERN CITIES completed four (4) voyages with barge B-1800 in tow between Freeport, Texas and Tuxpan, Mexico since 4 August 1966.

22. In the beginning of August 1966, prior to the vessel's first voyage between Freeport, Texas and Tuxpan, Mexico, a new automatic direction finder, a radar installation and antenna, and the 7 1/2 KW direct current generator were installed on board the SOUTHERN CITIES. Also, the 20 man balsa lifefloat

equipped with one oar or paddle, was installed in a cradle above the Master's quarters on the deckhouse, replacing a lifeboat which was the original equipment of the vessel. The lifefloat was transferred to the SOUTHERN CITIES from the M/V SANCO, a towing vessel formerly owned by F. W. Towing Company, Inc. The lifefloat was later painted international orange, having previously been grey, and although the name of the vessel was not again stenciled thereon, the original stencil was slightly visible through the orange paint. The float was not equipped with a water light or any other equipment. At about this time, seven (7) new cork life preservers were provided and stowed in racks above the crew's bunks. Approximately five (5) spare life preservers were on board, including one cork perserver and the remainder were kapok preservers. One of the spares was located in the engineroom, and one in the pilothouse. The remainder of the spare life preservers were located in a box on the boat deck aft. The vessel's name was reported to be stenciled on the life preservers. Also, at this time, 1/8 inch gaskets were renewed around the weather deck doors leading into the housing and repairs were effected to the bulwarks, starboard side forward, including the installation of pipe, which was welded inboard of the cap rail as protection against jagged edges. Other general maintenance was performed. These repairs were performed by Industrial Fabricators, Inc., of Freeport, Texas. A fathometer was also installed at this time, but not the underwater fittings.

23. At 0900, +6 zone time, on 10 August 1966, the USCGC TRITON (WPC-116) Campeche Patrol Vessel, received a communication from Commander, Eighth Coast Guard District that the Tug SOUTHERN CITIES was uncertain of her position, believed to be between Brownsville, Texas and Tampico, Mexico, and that she was in sight of land. Also, that the vessel's automatic direction finder was inoperative. The tow was bound from Freeport, Texas to Tuxpan, Mexico on her first ocean voyage from Freeport, Texas to Tuxpan, Mexico. The CGC TRITON, at 1345, established communications with the Master of the SOUTHERN CITIES. The Master advised that the tow was approximately 25 miles North of Tampico, five (5) miles from the beach, and in no difficulty. The Coast Guard Campeche Air Patrol was requested to establish the tow's position on her return flight from Merida, Mexico to Corpus Christi, Texas on 11 August 1966. The Campeche Air Patrol located the SOUTHERN CITIES on 11 August 1966, approximately fifty (50) miles North of Tampico, Mexico. The CGC TRITON relayed this position to the SOUTHERN CITIES. The automatic direction finder of the vessel was reported to have since been repaired.

24. On the second ocean voyage commencing 26 August 1966, the SOUTHERN CITIES experienced a generator failure. The tow was stopped, and repairs to the generator were effected. The engine was then started, with the tow line caught in the propeller. Twenty (20) feet of tow line was lost at this time. A new splice was made without a thimble, the tow was resecured, and proceeded to her destination.

25. On or about 13 September 1966, the SOUTHERN CITIES was drydocked at Platzer Shipyard, Inc., Houston, Texas. The propeller was repaired, the upper rudder stock was found bent and renewed, and a new skeg and bearing was fitted. Also, 5/8 inch cable on the steering system was renewed and the underwater fittings of the fathometer were installed. Electrical and other minor repairs were performed, including the replacement of zinc anodes. The sea valves and overboard discharge valve were not opened at this time.

26. On 5 October 1966, prior to the vessel's departure on her fourth ocean voyage between Freeport, Texas and Tuxpan, Mexico, at Freeport Marine Ways, Inc., Freeport, Texas, an additional dog and hinge was fitted to the bottom section of each after engineroom door, port and starboard. Also, 1/8 inch by 3/4 inch flat bar was welded around the inside of all the doors approximately 3/4 of an inch apart, forming a groove into which flaxen packing was installed. The dogs and hinges were revamped to accommodate the arrangement. Rubber gasket material was installed between the overlap of the top and bottom sections. Repairs to the foremast and hand rails, upper deck, were also accomplished.

27. During the above repair period at Freeport Marine Ways, Inc. on 5 October 1966, the owner of the SOUTHERN CITIES procured solid steel doors to replace the half doors fitted on the vessel. The half doors were 24 inches in width and the solid doors were 28 to 32 inches in width. If installed, sufficient space would not be provided between the housing and bulwarks to facilitate opening and closing of the doors, therefore the solid doors were not installed and the aforementioned repairs were accomplished instead.

28. Approximately two (2) freeing ports existed on the bulwarks aft on each side of the SOUTHERN CITIES, and on 5 October 1966, three (3) or four (4) more were cut on each side at Freeport Marine Ways, Inc., Freeport, Texas. The two existing ports on each side were reported to have been increased in size to approximately eight (8) inches in height and eighteen (18) inches in length. The new ports were cut to this approximate size also. The aftermost ports were located about ten (10) feet from the stern in way of the after outboard bitts, and the others were located at every third frame space from aft. The bulwarks were approximately eighteen (18) inches in height fore and aft.

29. On the voyage previous to the last voyage, the SOUTHERN CITIES departed Freeport, Texas on 8 October 1966. It was reported that the tow experienced heavy weather on the leg of the voyage south and that sea water entered the engineroom through the doors on the weather deck because of the warping of the doors. The closures were tight in some places and open as much as an inch and a half in others. The wind velocity was reported as approximately forty (40) knots from the Northwest, with seas thirty (30) feet in height. Both the engine driven bilge pump and the electric bilge pump were placed in service. At intermittent times, both pumps could not handle the volume of sea water

entering the engineroom. As much as two and one-half (2 1/2) feet of water covered the engineroom bilge at one time. Normal cruising speed was maintained in the towing vessel throughout the period. Also, during this voyage, a steel box bolted on the after weather deck under a grating for hawser stowage, enclosing solenoids, and a one and one-half (1 1/2) inch conduit pipe containing wiring for the electric steering system leading to the engineroom was reported to be leaking. As sea water on deck rose above the level of the conduit pipe, it entered the engineroom from this source also. The leakage was reported to be the result of faulty reassembly of the steering gear box after repairs were effected to the steering system on the previous voyage. The freeboard at the stern was reported as approximately three (3) inches during this heavy weather period. It is not known whether or not repairs were since made to this electrical box, although it was reported that they were.

30. It was also reported that on this voyage, sea water entered the fresh water tank, presumably through a vent, and the tow put into Port Isabel, Texas to replenish the fresh water supply of the SOUTHERN CITIES and to take on some fuel. On two previous occasions, it was reported that some water had to be pumped out of the void space below the galley with the emergency gasoline driven bilge pump. The access was the manhole in the galley deck.

31. At approximately 1400, +6 zone time, on 15 October 1966, the USCGC TRITON (WPC-116), the Campeche Patrol Vessel, located in the vicinity of Tampico, Mexico, received a communication from the Coast Guard Radio Station, New Orleans, Louisiana. The SOUTHERN CITIES, through the Port Isabel, Texas, Coast Guard Station, had reported that they were encountering heavy seas and high winds, and that they were in danger. The tow was being pulled sternward by the wind and seas, and the Master was fearful of losing his tow and capsizing. The weather was described as winds from 40 to 50 knots, with 20 to 30 foot seas and increasing. The tow's last known position was 150 to 160 miles South of Port Isabel and approximately 50 miles offshore, bound for Tuxpan, Mexico. The Master further stated that he was losing electrical power, and would soon lose communications. He requested that the Coast Guard locate the tow and fix its position and that a Coast Guard unit stand by the tow.

32. The CGC TRITON proceeded to the scene and maintained radio communications with the Master of the SOUTHERN CITIES on a frequency of 2182 Kilocycles. At 1700 on 15 October 1966, a Coast Guard aircraft from Corpus Christi, Texas arrived at the scene and fixed the tow's position approximately 60 miles North by East of the position estimated by the Master of the SOUTHERN CITIES. In communications with the CGC TRITON, the Master stated that they had lost main electrical power and were operating on auxiliary power. He also stated that the mast was in danger of being carried away, which would bring about a loss in communications. During this period, the CGC TRITON experienced winds

from the Northwest and North at between 30 to 35 knots, with gusts up to 45 knots. The seas were approximately 15 feet in height. The CGC TRITON arrived at the scene at approximately 0830 on 16 October 1966. The wind was then Northerly at approximately 18 knots and the seas were at 5 to 6 feet and subsiding. The tow was headed into the seas in a Northerly direction and making sternway at one to one and a half (1 - 1 1/2) knots. The SOUTHERN CITIES was taking some seas over the bow. The Master requested a check of his tow line, which was found satisfactory. At approximately 1400, main electrical power was restored on board the SOUTHERN CITIES, the seas moderated to 3 or 4 feet, and there was a light breeze from the Southeast. The tow turned to the South and proceeded to her destination.

33. The Master stated that they were very wet and uncomfortable during the night and that they were having difficulty with a door. The tow required greater than an hour to turn from a Northerly direction to a Southerly direction. The Master also reported that, in his opinion, the amount of superstructure versus draft of the SOUTHERN CITIES complicated his problems in handling the tow at sea, especially in turning in a heavy sea without fear of capsizing. He also stated that he could not see his tow most of the time during this period.

34. On 28 October 1966, prior to departure of the vessel on her last voyage, at Freeport Marine Ways, Inc., a six (6) inch vent to the forepeak was cropped flush to the deck and sealed with a round steel plate, overlapping the opening and fillet welded around the top only. A vent to the lazarette was similarly cropped and sealed. No tests were made after welding. At this time, three (3) flat steel flaps of 1/4 inch plate were installed on each side outboard of six (6) of the 10 or 12 freeing ports, hung on galvanized hinges at the top, overlapping the ports by one (1) inch. This was done to attempt to prevent seas from re-boarding after being freed from the deck. Also, repairs were made to the aftermast and hand rails on the upper deck, and a ladder was relocated from the after end of the engineroom forward to the starboard side, approximately ten (10) feet from its original location, leading to the upper level of the engineroom.

35. On 29 October 1966, at Freeport, Texas, barge B-1800 loaded approximately 1200 short tons of bulk soda ash, and approximately 200 short tons of caustic, and amines contained in drums of various sizes were loaded on deck. The cargo was owned by Dow Chemical Company, and was destined to a terminal at Tuxpan, Mexico to be later sold to contract customers. The drums were loaded in one (1) tier and supported around the perimeter by steel I beams. The barge was loaded to a mean draft of nine (9) feet. The M/V SOUTHERN CITIES then took barge B-1800 in tow and departed Freeport, Texas at approximately 2345, +6 zone time, on 29 October 1966. The SOUTHERN CITIES had a mean draft of 9 feet. The invoices received by the owner after departure on this last voyage indicated that the vessel was bunkered and provisioned as she normally was when departing Freeport, Texas.

36. Although the towing arrangement on this last voyage is unknown, the usual arrangement on previous voyages of this specific tow was as follows:

The main tow line consisted of approximately 600 feet of eight (8) inch polypropylene line with an eye splice and thimble at each end. A twenty (20) foot length of chafing chain was shackled to the towing vessel end of the main tow line. The other end of this chain was shackled into a 95 foot length of polypropylene line which formed a bridle and secured to double cross, pipe type towing bitts located just aft of the housing on the after deck of the SOUTHERN CITIES approximately one-third length of the vessel from aft. The inboard sections of the crosses formed a common horizontal pipe section between the vertical pipe sections. The eye of the bridle line was placed over the port vertical bitt and under the port outboard horizontal bitt. From there, the line was rove through a shackle fitted at the end of the chafing chain and led over and under the same bitts containing the eye, and then rove through a second shackle fitted into the second link of the chafing chain. From there, a series of figure eights were made over the starboard vertical bitt and under the starboard horizontal bitt. (See Enclosure 10) This arrangement made possible the slipping of the tow line, or the tow line could be somewhat lengthened. On the after railing of the boat deck, a polypropylene line of approximately 300 feet was stowed in the event a more extended tow line was needed. This length would be shackled to the chafing chain and made fast to the towing bitts of the SOUTHERN CITIES in place of the original bridle line. At the tow end, the main tow line was shackled into a 90 foot length of 1 1/4 inch anchor chain which led through the stem chock of barge B-1800 and shackled into a pad-eye welded onto the foredeck of the barge.

37. The usual procedure in departing Freeport, Texas with loaded barge B-1800 in tow was that the SOUTHERN CITIES put out the full length of the tow line before leaving the mouth of the jetties, depending on the sea conditions. She took up the slack at slow speed and then increased to half speed. After clearing for sea, speed was increased to full speed, or 300 RPM. Under normal calm wind and sea conditions, the tow normally proceeded at five (5) to six (6) knots. There is no indication that the length of the tow line was ever decreased or increased to accommodate sea conditions. During heavy weather, it was the practice to maintain a lookout on the after boat deck to observe the tow. The lookouts relieved each other at will, with no specific watch system.

38. Upon leaving the sea buoy at Freeport, the usual practice was to head due South for approximately 48 hours and then head in a Westerly direction. This would normally place the tow between Port Isabel, Texas and Tampico, Mexico; a span of approximately 230 nautical miles. When within six (6) miles of the beach, radar was used to maintain this distance off the beach heading South. The fathometer was not used, since it did not register the

depth at that distance, its capabilities being exceeded. No sextant was provided, and therefore celestial navigation was not utilized. The automatic direction finder was used to obtain radio bearings. A report was normally made by radio telephone to the owner of the SOUTHERN CITIES by the Master of the vessel through the nearest marine operator at approximately 0630 each morning while the tow was navigating.

39. At approximately 0630, on 1 November 1966, owner Frank Wyman received a report from the SOUTHERN CITIES. The Master stated that at 0600 on 1 November 1966 the tow was in position Latitude 24°-30' North and Longitude 96°-40' West, 95 miles south of Port Isabel, Texas 43 miles offshore and 230 miles to go. The tow was reported to be making 6 knots and that the weather was fine. The report further stated that no problems were being experienced, and that the tow would arrive Tuxpan, Mexico in the morning of Thursday, 3 November 1966. [REDACTED] the Master, stated that he and Clyde Sparkman, Engineer, were going to take time off during the next voyage. On Tuesday, 2 November 1966, the SOUTHERN CITIES was to report to the owner through the M/V TEXAN, then stationed at Tuxpan, Mexico, to be relayed by direct communication to Bludworth Construction Company, operators of the M/V TEXAN at Houston, Texas. The report was to be further relayed to [REDACTED] owner of the SOUTHERN CITIES. The M/V TEXAN, chartered by the Mexican Government, was then located approximately 18 miles Southeast of Tuxpan, Mexico attending a drilling barge. For this purpose, the M/V TEXAN monitored the frequencies 2182, 2192 and 2638 KC.

40. In the morning of 2 November 1966, [REDACTED] contacted the office of Bludworth Construction Company, Houston, Texas, and learned that no report had been received from the SOUTHERN CITIES. In the morning of 3 November 1966, the owner was again advised that no report had been received from his vessel, the SOUTHERN CITIES. At 0834, on 3 November 1966, Mr. Frank Wyman contacted the U. S. Coast Guard Rescue Coordination Center in New Orleans, Louisiana and requested a Coast Guard aircraft to assist in locating and establishing communications with the SOUTHERN CITIES, since no communication was had with the vessel in the previous 48 hours. The Campeche Air Patrol was utilized on its return trip from Merida, Mexico to Brownsville, Texas on 3 November 1966 for this purpose. A search of 8400 square miles was made, to no avail, along the estimated route of the tow North of Tuxpan, Mexico.

41. On 4 November 1966, Mr. [REDACTED] formally requested Coast Guard assistance, and an intensive search commenced. On that day, the Campeche Patrol Vessel, USCGC SEBAGO (WHEC-42) searched a track line from a position 15 miles off Vera Cruz, Mexico, to Tuxpan, Mexico, estimated to be 1,100 square miles. Also, on 4 November 1966, a Coast Guard amphibian aircraft searched an area from Tuxpan, Mexico to Latitude 24° North, from 15 miles off the coast to 40 miles off the coast, an area of 5,000 square miles.

42. On 5 November 1966, in addition to the sea search conducted by the Campeche Patrol vessel, six (6) Coast Guard aircraft were utilized in the search for the SOUTHERN CITIES and tow, covering 43,000 square miles. On 6 November 1966, five (5) aircraft and the Campeche Patrol vessel were utilized in the search, covering 9,800 square miles. On 7 November 1966, a total of 12,500 square miles were searched, utilizing ten (10) aircraft and one vessel. On 8 November 1966, 7,800 square miles were searched, utilizing eleven (11) aircraft and one (1) vessel. The search was terminated at the end of 8 November 1966. The total number of aircraft flights or sorties during the search was 43, totaling 253.3 hours, and covering 84,600 square miles. The last known position of the tow was used as a starting point in the search.

43. At 0833, +6 zone time, on 5 November 1966, barge B-1800 was located by search aircraft drifting in position Latitude 22°-45' North and Longitude 97°-15' West, or 105 miles North of Tuxpan, Mexico. The barge was undamaged, with her cargo intact. The tow line was made fast to the barge, and the chafing chain and hawser, which was normally secured to the towing bitts of the SOUTHERN CITIES were also intact.

44. At 1405, +6 zone time, on 5 November 1966, one adult cork life preserver was recovered in position Latitude 23°-52.6' North and Longitude 97°-29.5 West. The name, SOUTHERN CITIES, was stenciled thereon. In the near vicinity, two (2) broken sections of name board were recovered, and when fitted together bore the name, "UTHERN CITIES". Also recovered was a 24 foot length of unraveled polypropylene line. The SOUTHERN CITIES was never located, nor were any of the six (6) crew members that were on board.

45. On 7 November 1966, G. T. Blaylock, a representative of Bludworth Construction Company, stationed on board the M/V TEXAN as Mate, was flown from Tuxpan, Mexico to Tampico, Mexico where a boat was boarded to transport him to the Barge B-1800. The barge was boarded, and the vessel and cargo was inspected for damage. No damage to the barge or the cargo was found.

46. At 1100, +6 zone time, on 7 November 1966, the M/V FALCON, C.N. 290287, owned and operated by the Wade Towing Company, Inc. of Brownsville, Texas, arrived at the scene. [REDACTED] was transferred to the M/V FALCON and at 1130, the Barge B-1800 was taken in tow by the M/V FALCON bound for Tuxpan, Mexico, the original destination. The tow arrived at Tuxpan, Mexico at 1445, +6 zone time, on 8 November 1966.

47. Between 11 and 18 November 1966, a ring lifebuoy was recovered approximately fifteen (15) miles South of the Port Isabel, Texas jetties in six (6) to seven (7) fathoms of water. The ring lifebuoy was white, with the name SOUTHERN CITIES stenciled in black. No other debris or equipment of the M/V SOUTHERN CITIES could be located.

Conclusions:

1. It is concluded that the M/V SOUTHERN CITIES disappeared in the Gulf of Mexico in heavy weather somewhere between the approximate positions, Latitude 24°-30' North, Longitude 96°-40' West, the last position given by the SOUTHERN CITIES at 0600 on 1 November 1966, and Latitude 22°-45' North, Longitude 97°-15' West, the position in which Barge B-1800 was located. The probable position of the sinking was North of the general area of Latitude 23°-52.6' North, Longitude 97°-29.5' West, 38 degrees, 120 miles from Tampico, Mexico, the position in which debris of the M/V SOUTHERN CITIES was located, considering drift. The casualty probably occurred either late on 1 November 1966, or early 2 November 1966.

2. In the absence of survivors or physical remains of the ship, the exact cause of the loss of the SOUTHERN CITIES cannot be determined. It appears from the evidence available that the most likely causes were as follows:

(a) The foundering of the M/V SOUTHERN CITIES may have been caused during an attempt to head into the seas after heavy weather was upon them. There is evidence that the Master, on the voyage previous to the fatal one, feared this maneuver in that he would capsize due to great wind area; the superstructure being too great for the hull area. An attempt to head into the seas too rapidly may also have caused the Barge B-1800 to override and trip the towing vessel.

(b) It is also concluded that there is a possibility that the tow may have been out of step with the seas, as occurred on the voyage previous to the fatal one when the tow could not be seen, causing excessive straining and slacking of the towing hawser. Although the towing hawser did not part, it may have been slipped. Losing the tow in heavy seas was also a matter of concern to the Master on the previous voyage, as the barge provided a steadying effect on the M/V SOUTHERN CITIES.

(c) Notwithstanding the above, evidence indicates that the doors leading to the engineroom from the weatherdeck were not tight on the previous voyage, and that sea water was shipped into the engineroom. Seas may have also entered the vessel by way of the stack. These, combined with a possibility of loss of the main engine and electrical power, would have rendered the bilge pumps inoperative and progressive flooding of the engineroom, a compartment almost half the length of the vessel, would have caused the M/V SOUTHERN CITIES to founder and capsize in the heavy seas.

3. Although there is no evidence indicating a failure of the vessel's radio equipment, the failure of the vessel to transmit a distress message appears to justify the conclusion that the loss of the vessel may have occurred so rapidly as to preclude the transmission of such a message.

4. The six (6) men listed as missing; namely, [REDACTED] and [REDACTED], are presumed dead as a result of the casualty. There has been no trace of them since the sinking. There is no probability that the vessel or any of the six (6) persons on board will be recovered.

5. Although stability data of the vessel was not available, evidence indicates that the M/V SOUTHERN CITIES was constructed along the lines of an ST type tug (Small Tug), which were built for harbor service, and not designed for ocean towing. Her low freeboard and scantlings bear out this conclusion.

6. It is also concluded that the vessel was equipped with sufficient life-saving equipment as an uninspected vessel.

7. It is further concluded that there is no evidence of negligence, misconduct or foul play on the part of any of the crew members.

8. There is no evidence of violation of laws or regulations enforced by the U. S. Coast Guard.

9. It is finally concluded that there is no evidence that any personnel of the Coast Guard or any other government agency or any other person contributed to the casualty.

Recommendations:

1. It is recommended that the case be closed and no further action taken.

[REDACTED]
GEORGE W. WALKER
CAPTAIN, U. S. COAST GUARD
CHAIRMAN

[REDACTED]
GEORGE E. MALONEY
COMMANDER, U. S. COAST GUARD
MEMBER

[REDACTED]
PAUL NICHIPORUK
LIEUTENANT COMMANDER
U. S. COAST GUARD
MEMBER AND RECORDER