

RESURRECTION OF THE SURVEYING SHIP USS KELLAR (TAGS 25)

by

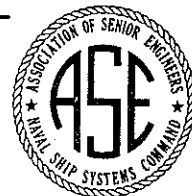
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THE

SMALL

SURVEYING

SHIP

USNS KELLAR

(T-AGS 25)

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ABSTRACT

On Friday, 10 September 1965, the Commandant of the Eighth Naval District dispatched the following priority message to the Chief of Naval Operations:

"New Orleans now catching rear part of Hurricane after calm of the eye. Still very bad but worst should be over. KELLAR (AGS 25) recently delivered by contractor unfinished and unmanned, hit by one of many drifting merchantmen and torn loose from moorings. Unable to relocate as yet."

Since the KELLAR had already become synonymous with trouble, the offhanded response to this message was to be expected.

The KELLAR's physical being started in a small shipyard in Point Pleasant, West Virginia, and her history reads like a catalog of disasters; floods, freezes, shipyard strikes, labor-management disputes, a flu epidemic, extended construction delays, and finally the necessity to terminate the contract.

INTRODUCTION

In December 1960, the approved characteristics for a surveying ship (AGS) were issued. Its mission was to conduct hydrographic surveys and collect other special scientific data with specific designated tasks as follows:

- (1) To conduct hydrographic surveys under technical direction of the Hydrographer.
- (2) To conduct surveys for collection of oceanographic, acoustic and meteorological data.
- (3) To compile, print and distribute field charts.

The Chief of Naval Operations directed that this ship was to be designed, as much as possible, as a follow ship to the AGOR 3 Class of oceanographic research ships with the research spaces adaptable for hydrographic surveys.

The Bureau of Ships, as the Naval Ship Systems Command (NAVSHIPS) was then called, completed the contract design on 25 September 1961.

In October, invitations to bid were sent to forty-nine shipbuilding firms, twelve of whom expressed an interest in bidding. Fixed price bids, ranging from 2.7 to 3.1 million dollars were received from five firms, and on 18 January 1962, a fixed price contract was executed with the lowest bidder, Marietta Manufacturing Company of Point Pleasant, West Virginia. The contract required delivery of the ship by February 1964, a twenty-five month construction period.

A comparison of the scheduled and actual principal construction event dates follows:

	<u>SCHEDULED</u>	<u>ACTUAL</u>
Start Construction	10-1-62	6-1-62
Keel Laying	12-1-62	11-20-62
Launch	8-1-63	7-30-64
End of Construction	1-30-64	?
Delivery	2-28-64	?

Obviously, the shipbuilder got off to a rather good start, his actual start of construction and keel laying were ahead of schedule; however, many of man's endeavors which begin auspiciously develop with such misadventure that when they come to an end their bright beginnings often become ashen to the taste of memory.

The following is a chronological sequence of events pertaining to the KELLAR, as they occurred on that eventful Thursday:

2:30 p.m. KELLAR secured for hurricane

6:00 p.m. Weather conditions:
Wind force - 20-30 knots
Visibility - 5 miles
Barometer - 29.52 inches
Temperature- 78 degrees
Wave height- 1 foot

8:00 p.m. Rain now falling; weather conditions:
Wind force - 30-45 knots
Visibility - 3 miles
Barometer - 29.39 inches
Temperature- 75 degrees
Wave height- 2 feet

8:42 p.m. All electrical power lost at Headquarters Support Activity. Since KELLAR was using shore power, the temporary lighting onboard was lost.

9:00 p.m. Civilian security guard, who had been stationed on board, now removed. Ship still riding well; weather conditions:
Wind force - 40-50 knots
Visibility - 1 mile
Barometer - 29.25 inches
Temperature- 74 degrees
Wave height- 3 feet

10:00 p.m. Ship still riding satisfactorily; tide rising rapidly, weather conditions:
Wind force - 50-60 knots
Visibility - 0
Barometer - 29.14 inches
Temperature- 77 degrees
Wave height- 4 feet

10:30 p.m. The USS HYMAN (DD-732), moored about 150 yards astern of the KELLAR, hit by an adrift merchantman and crane barge which then passed forward of the HYMAN and into the berths occupied by the KELLAR.

(2) She was rammed, holed, and torn loose from her moorings by a crane barge and one or more merchantmen during the height of Hurricane "Betsy."

(3) Once free from the wharf and taking on water she was buffeted by ships, barges, wind and water action to the extent that she rolled over and sank approximately 900 yards from her berth.

Salvage operations commenced on 27 September 1965. Inspection by divers revealed that the KELLAR had been "holed" in three places. These openings were plugged and the ship was turned "right side up." A cofferdam was constructed around the forecastle hatch and pumping operations commenced. She was finally refloated on 10 November 1965.

While salvage operations were proceeding, the Industrial Manager was seeking bids for the cleaning, inspection and interim preservation of all exterior and interior surfaces of the ship, including equipment and outfit.

The contract was awarded to the Buck Kreihs Company of New Orleans, Louisiana. After refloating, the KELLAR was towed to that company's wharf.

The entire ship was hosed down using a 0.5% solution of a neutral nonionic cleaner in fresh water. In selecting cleaning methods, consideration had to be given to the location of the sinking together with the abnormally high water and wind and the resultant probable erratic currents, flows and water densities during and after the sinking, which rendered any estimate of the exact chemical composition of the water extremely unreliable.

After removal of sand, water and other foreign matter, an on-board inspection of the KELLAR was conducted where the effects of Hurricane "Betsy" and the subsequent salvaging were found staggering. The following are some of these major effects:

(1) Extensive structural damage was confined mainly above the main deck, a large part of which resulted during the salvage operations.

(2) The mainmast was heavily damaged by twisting and breaking of joints and fittings.

(3) Electrical cabling was covered with a chemical growth rendering the cabling unusable.

(4) All lagging and insulation were completely destroyed.

(4) Deletion of the oceanographic deep-sea bow anchoring facilities.

(5) Deletion of the Meteorological Rocket Magazine.

(6) Deletion of the storage and wire inspection winch.

(7) Increase ship's officers accommodations from nine to eleven and improve habitability standards.

(8) Provide a 26-foot survey launch and a 16-foot Boston whaleboat.

(9) Improve machinery plant operation.

It was estimated that the above changes could be accomplished within the 350,000 dollars allocated for up-dating.

To affect a readily interpretable bidder's package, it became necessary to prepare new contract design plans and specifications representative of the updated KELLAR; however, as usually happens during plan and specification preparation, "minor" design changes and improvements were continually developing. NAVSHIPS incorporated many of these "minor" items into the design plans and specifications. They can be summarized as follows:

(1) Provide an additional air conditioning unit to permit more efficient cooling of scientific laboratories.

(2) Provide two 30 kw motor generators for regulated voltage and frequency power to scientific laboratories.

(3) Provide a 19-inch buoy tracking search light atop the pilot house.

(4) Extend the superstructure on the 01 level to provide a Scientific Instrument Shop of approximately 150 square feet.

(5) Extend the superstructure on the 02 level to enlarge the Survey Control Center by approximately 150 square feet.

(6) Combine the Drafting Room and Dry Laboratory into a Main Laboratory.

(7) Provide tie-down fittings on deck, bulkheads, and overhead in the Main and Wet Laboratories.

(8) Provide a double watertight door from the Main Laboratory to the fantail to facilitate material handling.

It would be of interest at this point to indicate some of the facets of the pro-forma contract, because they were the basis of many conferences before they were finally resolved.

General Scope of Work:

The contractor shall accept: (1) the ship "where is-as is" at the Headquarters Support Activity (HSA), New Orleans, Louisiana; (2) the residual construction material aboard the barges and stored at HSA; (3) the two government owned barges. The contractor shall transfer the ship, material and barges to his yard. The barges shall be redelivered to HSA within sixty (60) days after the award of this contract.

The contractor shall open, inspect and report the necessary repairs required by Schedule "B". Repairs required shall be accomplished by a change order under this contract.

Government Furnished Property:

The Government shall furnish for use under this contract only the property listed in Schedule "A". Any and all material required for the performance of this contract which does not appear in Schedule "A" shall be furnished by the Contractor.

The Government shall furnish the uncompleted hull for the AGS 25 "where as-as is" for use in the completion of this contract. Recognizing the damage to this hull sustained as a result of its sinking during a hurricane and further recognizing that the specifications for the completion of this vessel have changed since its original construction, the Government makes no guarantees with respect to the suitability of this hull for its use in performance of this contract as required by the specifications and contract plans.

The Government shall provide and the Contractor is authorized to use under the performance of this contract the material as set forth in the List of Residual Construction Material for the USNS KELLAR (AGS 25). Title to such material shall pass to the Contractor at such time as the Contractor takes custody of such material.

Because of the unusual aspects of this contract, a meeting was scheduled with the prospective bidders on 26 May 1966. The purpose of this meeting was to clarify any questionable requirements. The bidders were requested to submit questions concerning any areas of uncertainty by 19 May 1966. NAVSHIPS expected a deluge of questions; however, 19 May came and not even one question had yet been received. 25 May and still no questions. Consequently, the scheduled bidders conference was cancelled. After overcoming the initial reaction that

(1) Complete up-dating of main propulsion and ship service machinery plant which included re-engining of the main propulsion and ships service diesel engines.

(2) A Mark 19 stabilized gyro compass to replace the existing Mark 23 miniature gyro compass.

(3) A 200 horsepower active rudder motor to be installed on the existing rudder to permit efficient slow speed operation necessary for survey work.

(4) Additional potable water stowage of approximately 10 ton capacity.

(5) A spring-operated slack cable tensioning device for the intermediate winch.

(6) A winch monitoring system for the intermediate winch consisting of measuring units, readout instruments, and recorders for line-out, line tension and line speed.

(7) A separate sea chest and circulating pump for the ship's air conditioning plant.

(8) Deletion of the gas turbine generator set (this set, an out-of-production Solar "Jupiter" had not been rehabilitated because of the prohibitive cost) and substitution of an emergency 100 kw alternating current diesel driven generator.

(9) Elimination of one of the two 1200 lbs/hour oil-fired heating boilers (which was serving only as a standby unit) and increase in size of the electric steam boiler.

(10) Miscellaneous machinery and safety improvements.

The cost of the above up-dating items was estimated to be 447,000 dollars. Consequently, approximately 250,000 dollars now remain to compensate for any construction and post-construction contingencies which may arise.

Although the KELLAR has undergone extensive updating, there still remain many other updating items whose accomplishment will be required for performance of productive scientific work. If additional funds cannot be provided to accomplish this work during the present completion of construction, this work will be budgeted for and accomplished after delivery of the KELLAR.

LIST OF FIGURES

1. Artist's Concept of T-AGS 25.
2. AGOR 3 Class Oceanographic Research Ship, USNS SANDS (T-AGOR 6).
3. KELLAR's Progress Photograph taken March 1965 at Marietta Manufacturing Company.
4. Barges used for Transporting and Storing Residual Construction Material.
5. Mooring Diagram of KELLAR at time of Hurricane "Betsy."
6. KELLAR's Berth after "Betsy."
7. KELLAR Re-located; Showing Bow and Port Bilge Keel at Heel of 120 degrees to Starboard.
8. KELLAR Re-floated.
9. Inboard Profile (Sketch) of Up-dated KELLAR.
10. KELLAR Completing Construction at Boland Machine and Manufacturing Company.

08'-4"
96'-0"
39'-5"
39'-0"
14'-3"
13'-11"
300 tons

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sel
ving one
of 1000

ice

1-150kw
nd 1-150

a-quiet

boilers

plants.

nit.

LIST OF TABLES

1. Original Ship Characteristics of USNS KELLAR
2. Un-accomplished Up-Dating Items USNS KELLAR

g and

inch.

TABLE 2

UN ACCOMPLISHED
UP-DATING ITEMS
(USNS KELLAR)

1. Shallow water echo transducers and transceivers.
2. Security storage facilities in Main Laboratory.
3. UHF transceiver.
4. Additional Loran "C".
5. Omega receiver
6. Scanning sonar.
7. Two satellite receivers
8. Two Hi-Fix receivers.
9. Outfitting of enlarged Survey Control Center and new Scientific Instrument Shop with workbenches, drafting and light tables, cabinets, lockers, etc.
10. Magnetometer winch.
11. Winch monitoring system for hydrographic and magnetometer winches.
12. Continuity device (12-conductor) for intermediate winch.
13. Hydraulically actuated hydrographic davit.
14. "U"-frame on fantail.
15. Roller chocks on fantail.
16. Precision clock system.
17. Additional sea chests in engine room for scientific use.
18. Yardarm catwalk on foremast.
19. Hydraulically actuated, articulated, ib, scientific equipment handling crane.
20. Bow transducer housing array.
21. Periscope type magnetic compass installed on flying bridge.
22. Additional telephone circuits.
23. Sewage retention tank.
24. Cable ways between scientific spaces.
25. Improved galley, scullery, messing, living and laundry facilities.

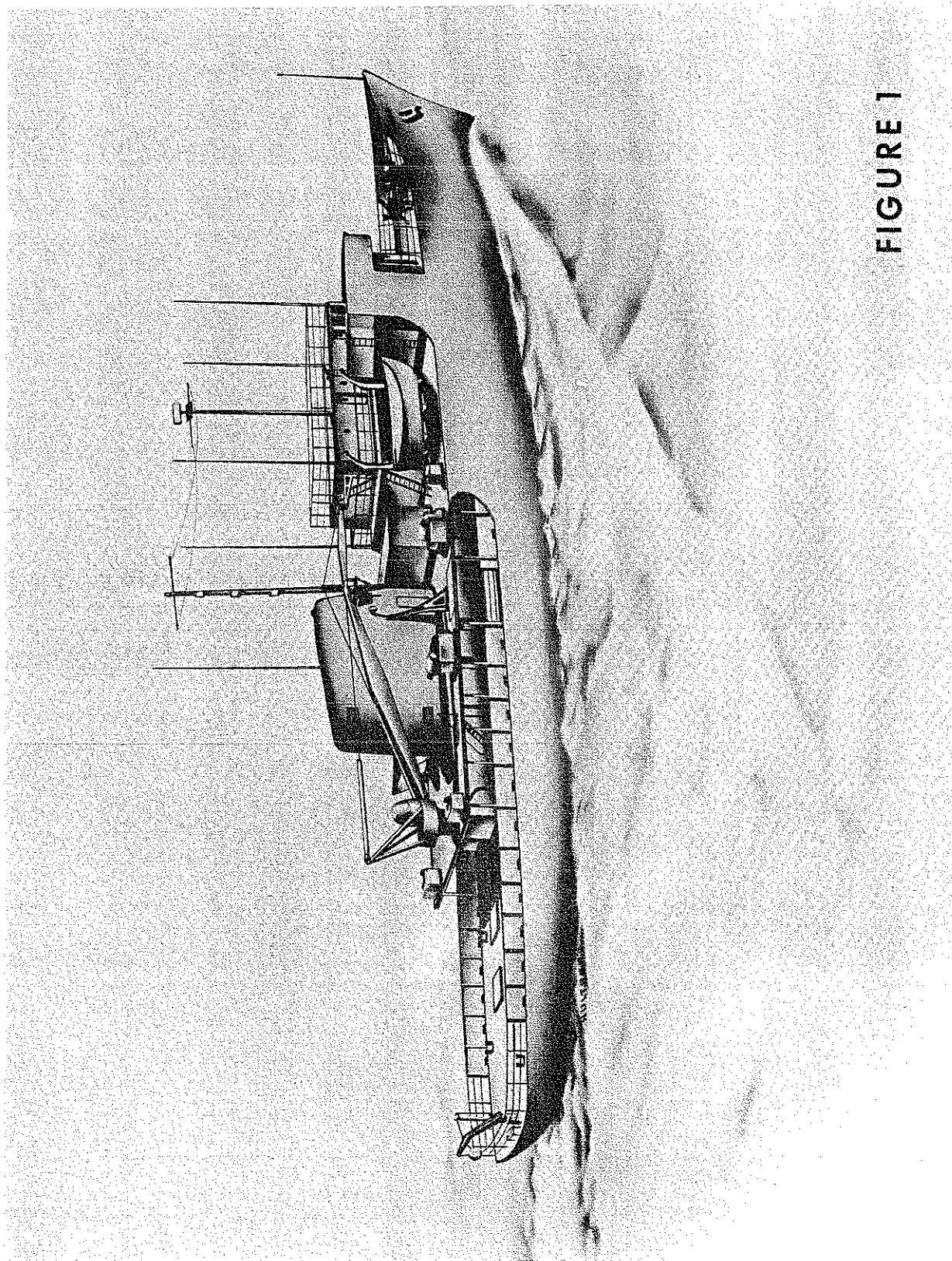


FIGURE 1

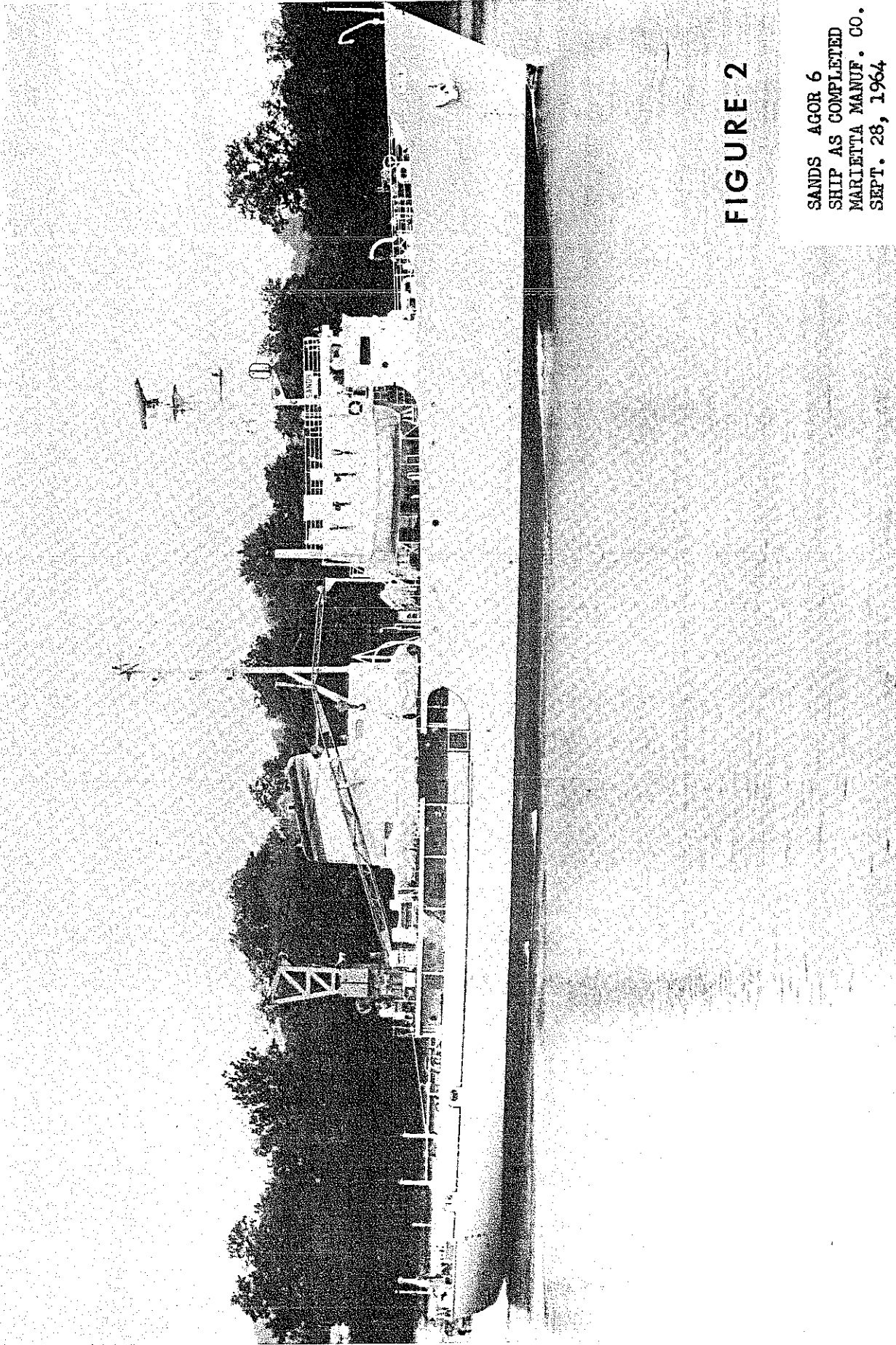


FIGURE 2

SANDS AGOR 6
SHIP AS COMPLETED
MARIETTA MANUF. CO.
SEPT. 28, 1964

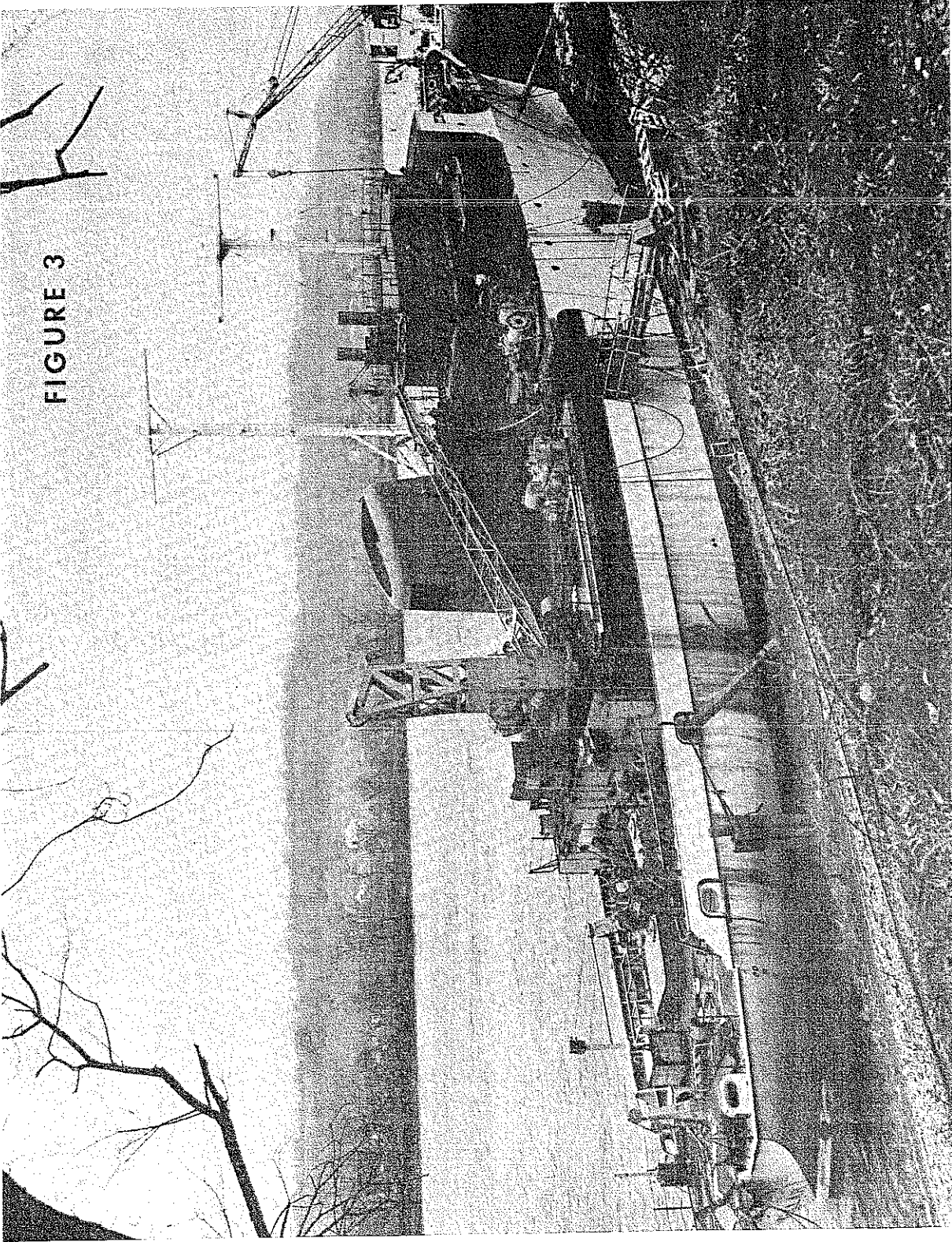


FIGURE 3

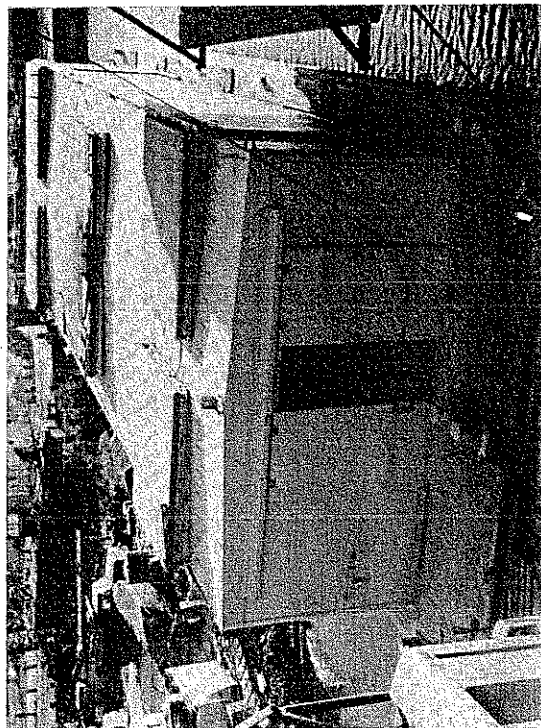
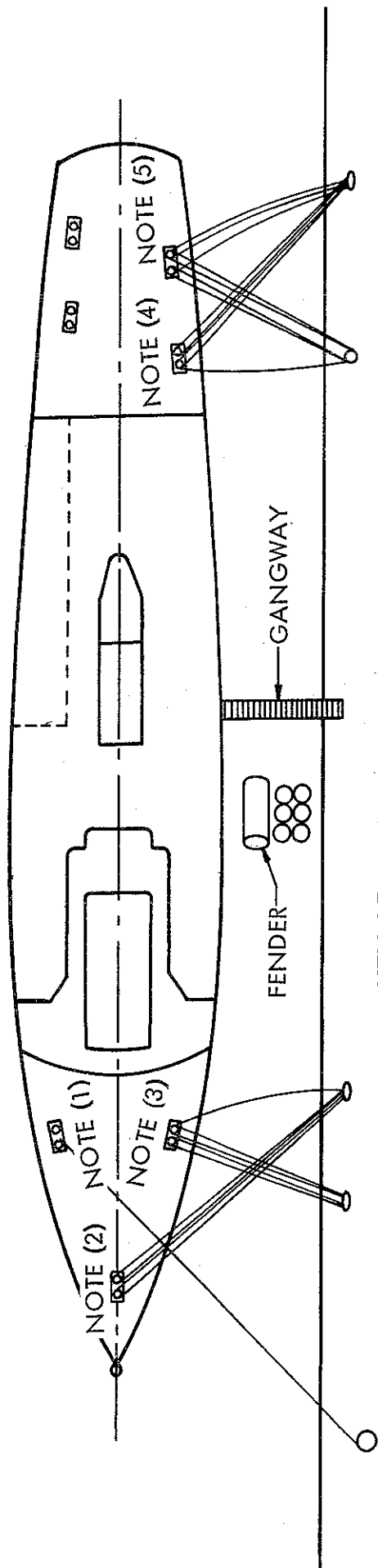


FIGURE 4

RIVER FLOW



KELLAR MOORING DIAGRAM

(AT TIME OF HURRICANE)

NOTES:

- | | |
|---|---|
| (1) BOWLINE - (1) PART 5" MANILA | (4) STERN BREAST - (1) PART 3" NYLON |
| (2) BOW AFT. SPRING - (1) PART PLOW STEEL CABLE | STERN AFT. SPRING - (3) PARTS 5" MANILA |
| (3) PARTS 5" MANILA | (1) PART 3" NYLON |
| (1) PART 3" NYLON | (5) STERN - (3) PARTS 5" MANILA |
| (3) BOW BREAST - (1) PART 3" NYLON | STERN FWD. SPRING - (3) PARTS 5" MANILA |
| BOW FWD. SPRING - (3) PARTS 5" MANILA | (2) PARTS 3" NYLON |
| (2) PARTS 3" NYLON | |

NAVSHIPS - DEC '66

FIGURE 5

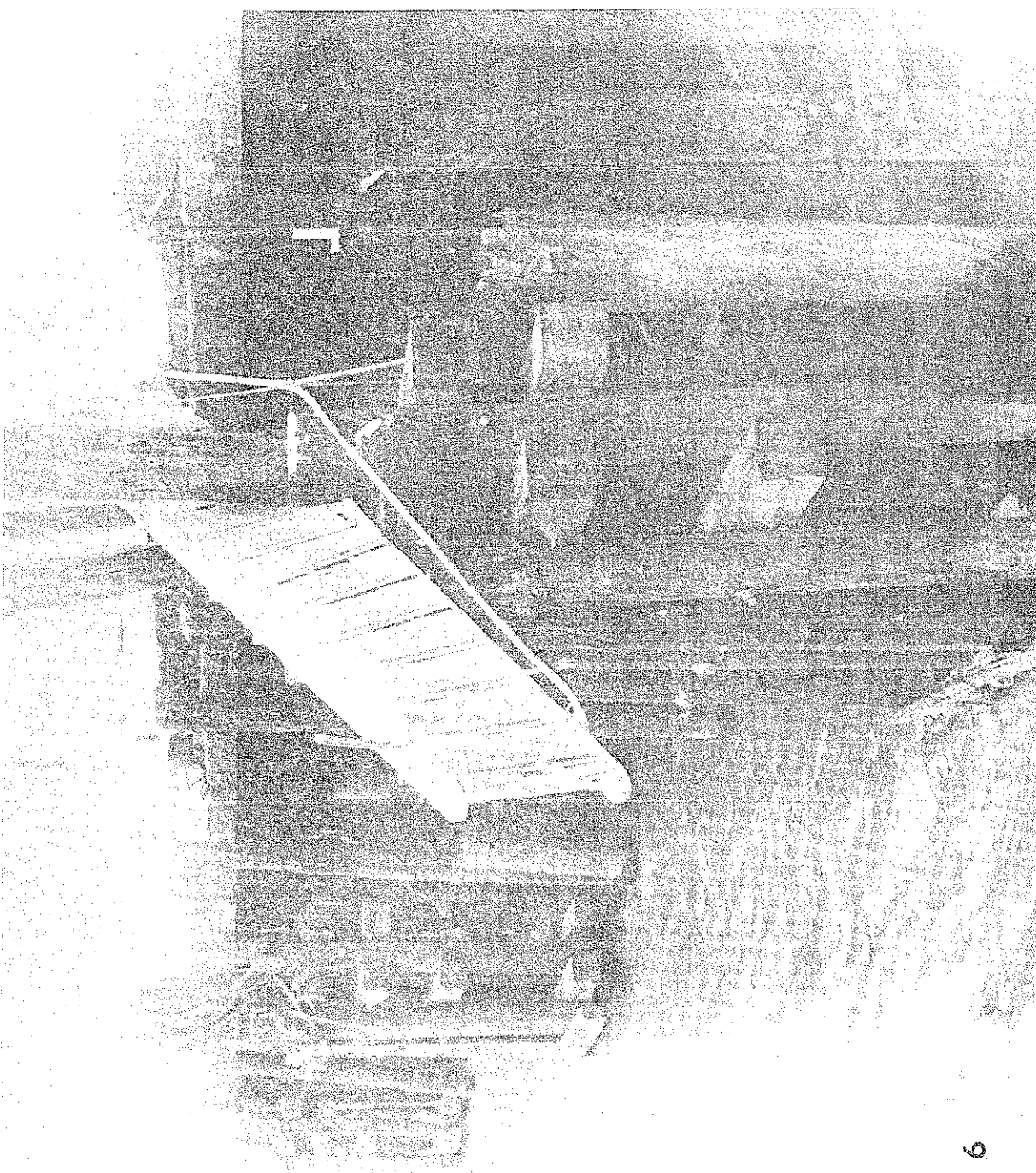


FIGURE 6

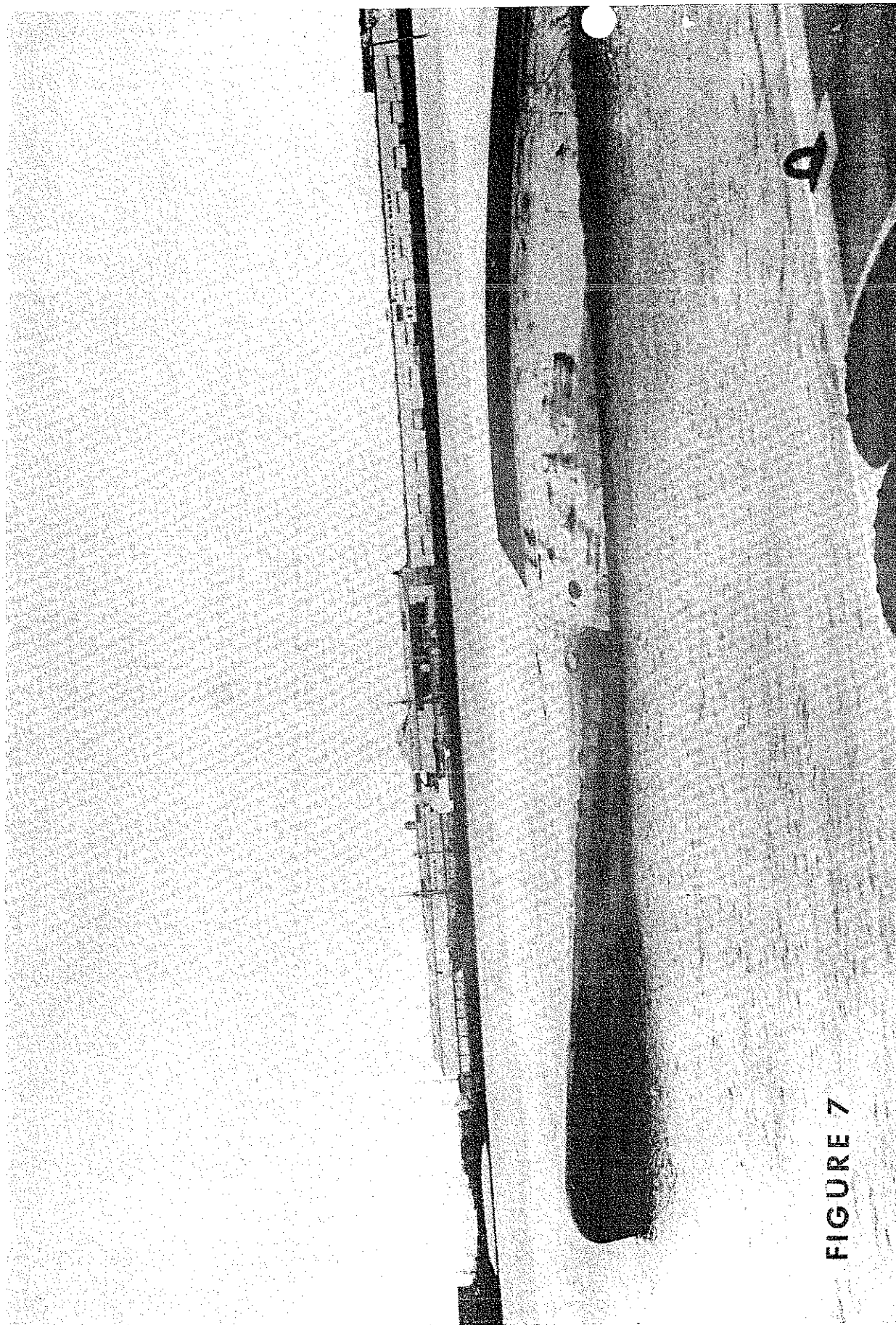


FIGURE 7

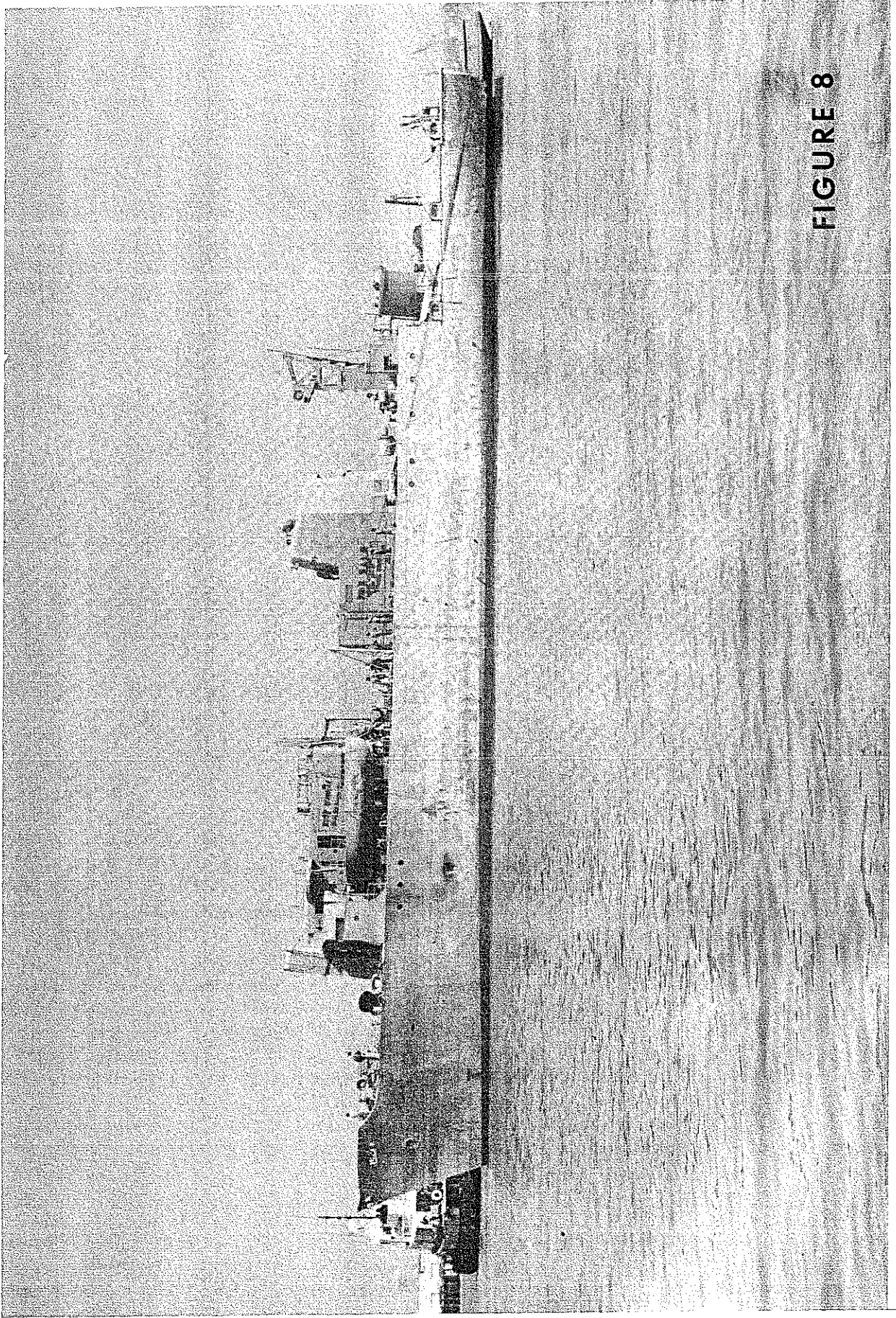


FIGURE 8

T-AGS 25 (UPDATED)

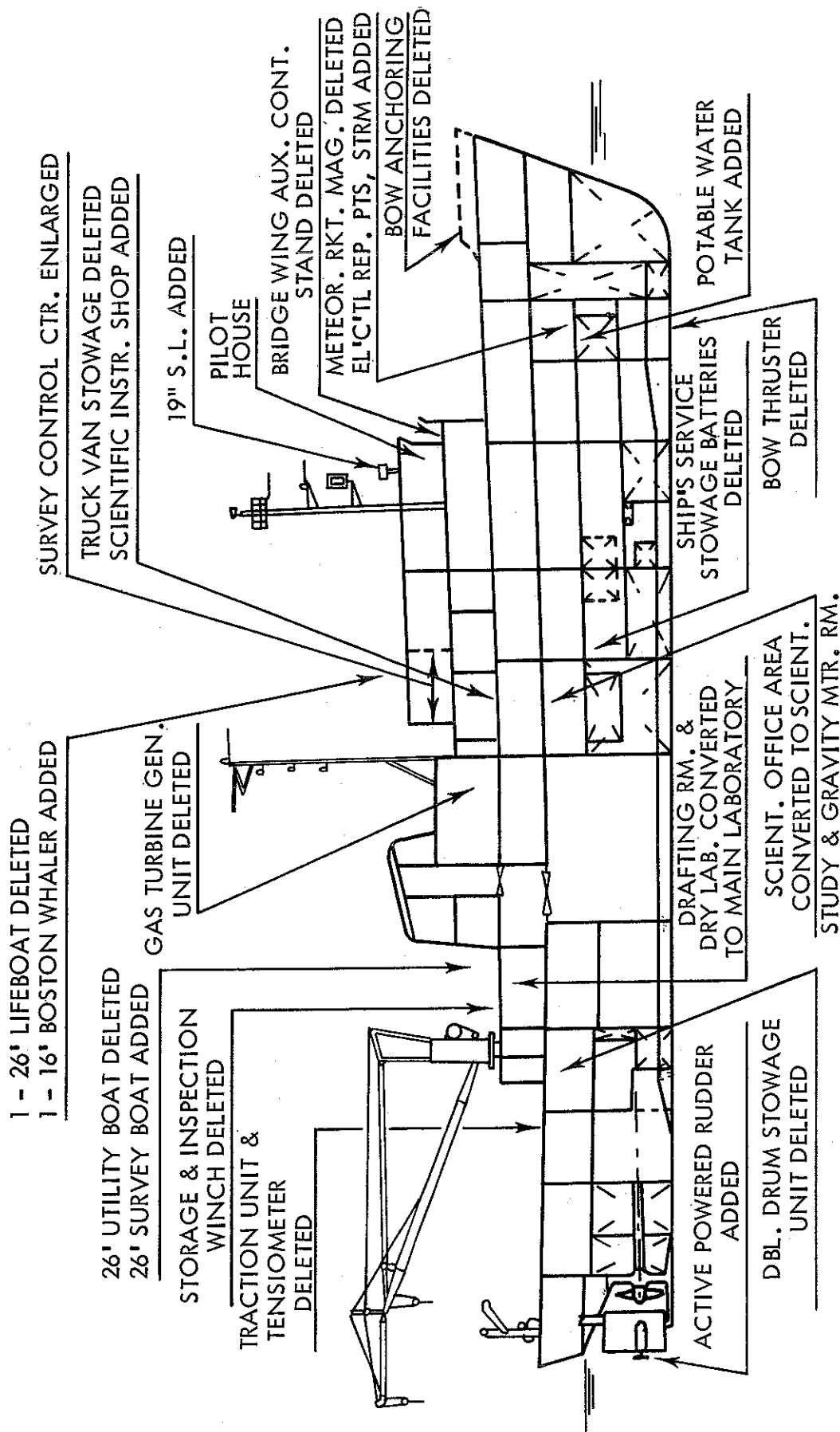


FIGURE 9

FIGURE 10

