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**JOINT TASK FORCE ONE**

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**BUREAU OF YARDS & DOCKS GROUP**

**FINAL REPORT**

**FOR TESTS ABLE AND BAKER**

**CONDUCTED JULY 1946**

**NAVDOCKS P-3**

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*Approved by [redacted] on 11/19/46*  
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⑨ Director of Ship Material

(final)

Rept.

Joint Task Force One

Bureau

of

Yards & Docks Group

⑩ OPERATION CROSSPLADS Final Report  
Tests Able and Baker

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~~E OF REPORT:~~

This report is intended to be a part of the final supplementary report to the Commander Joint Task Force One. As such, it contains essential items taken from the four gross damage and interim reports which have preceded it. Data from scratch gage record plates, not included herein, have been turned over to the Planning and Design Division, Bureau of Yards and Docks, for use in the structural analysis of the ARDC-13.

The crack survey of the ARDC-13, accomplished after Test Able, has been made Appendix A to this enclosure.

A listing of all photographs known to pertain to the three concrete vessels has been made Appendix B to this enclosure.

Prints of those photographs believed to be pertinent to this report have been provided in limited number as Appendix C. A complete file set of prints has been turned over to the Bureau of Yards and Docks for use in further study and analysis.

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B L A N K

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PURPOSE--The purpose of the inclusion of concrete vessels in the target array was primarily to determine the effects of atomic bomb phenomena on land based concrete structures. A considerable fund of information has been provided by studies of structures at Nagasaki and Hiroshima, and in furtherance of these data, the Chief of the Bureau of Yards and Docks recommended to the Commander, Joint Task Force One, and to the Chief of Naval Operations, that concrete vessels be included in the target array for test purposes.

Three concrete vessels were selected: the ARDC-13, a 2800 ton drydock; the YOG-83, a gasoline barge; and the YO-160, a fuel oil barge.

The atomic bombs employed at Bikini were the Nagasaki type. It has been reported that the test A bomb had an estimated blast equivalent of 20,000 tons of TNT at ground level over smooth ground. It is understood that no precise estimate has been made of the underwater effects of the test B bomb, but that the data available indicate an equivalent of 17,000\*~~17~~ 3000 tons of TNT. Other units of the task force secured data on pressures, temperatures, radiological effects, etc., a portion of which is restated later in this section to facilitate the reference. It must be borne in mind that at the date of this writing, these latter data have not been made generally available.

COMMENTS--All three concrete craft sustained damage or were made uninhabitable by both Able and Baker explosions.

In test A, the peak air blast pressures experienced ranged from 9.5 p.s.i. (YOG 83 at 1040 yards) to 40 p.s.i. (YO 160 at 540 yards). The duration of the positive pressures varied from about 3/4 of one second to about 1/2 second, the longer durations associated with the smaller peak pressures.

These pressures, or the winds which followed, affected the YOG 83 superficially (1040 yards), caused cracking and appreciable derangement of interior furnishings in the ARDC-13 (840 yards), and demolished much of the

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superstructure of the YO 160 (540 yards).

The heat of the bomb presumably caused a fire on the YO 160, some ammunition on the YOG 83 burned, while timber on the ARDC-13 was charred.

The accompanying radioactivity had little if any effect on the YOG 83, had decayed to safe value in three days on the ARDC-13, and persisted for about a week on the YO 160.

In test Baker, the air blast did not apparently damage the concrete vessels. Eight days after Baker, however, the radioactivity on the ARDC-13 (1250 yards) was 70 times the allowed tolerance, on the YOG 83 (1160 yards) 140 times the allowable. The YO 160 (500 yards), judging from photographs, was swamped by the stern about 18 seconds after the blast by the wave which was generated by the underwater detonation.

The underwater shock or air blast may have damaged the YO 160. It is certain that her cargo tanks were ruptured -- since if they were not, the craft would have returned to the surface after being forced under. But it is more probable that the rupture was caused by the tons of water pouring on it than by bomb generated pressures.

Again, the underwater shock or air blast probably did no damage to the ARDC-13, since the flooding after Baker caused settlement at a rate of about .01 to .02 feet per hour, contrasted with the more rapid rate after Able of from .03 to .08 feet per hour.

CONCLUSIONS: Entirely aside from the problem of design against blast, certain broad conclusions can be made in the light of the foregoing considerations.

(1) Important water front structures must be designed to withstand severe wave action, since a harbor would appear a good target for enemy atomic bombing;

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(2) Similarly, important waterfront areas must be designed and equipped to provide protection against and to effect the elimination of radioactive contamination; and

(3) The indiscriminate use of the concrete insert to fasten relatively light articles to overheads, decks, and bulkheads must be modified to insure that the insert will hold considerably more than the articles dead weight.

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DATA ON PRESSURES TO WHICH CRAFTS WERE SUBJECTED

Craft	Heading of burst	Horizontal distance, yards	Air blast		Water shock pressure psi	Duration at 10 depth,
			Peak side-on pressure, psi	Duration of positive pres- sure, seconds		
TEST ABLE						
Y0-160	70° shaft port beam	540	4C	0.48	-	-
ARDC-13	110° fwd port beam	840	15	0.65	-	-
Y0G-83	45° shaft stbd beam	1040	9.5	0.78	-	-
TEST BAKER						
Y0-160	Astern	500	17.5	-	2350	0.000
ARDC-13	Off stbd beam	1160	3.3	-	630	0.000
Y0G-83	-	1250	2.5	-	550	0.000

ARDC-13-DESCRIPTION. The ARDC-13, a 2800 ton capacity floating concrete drydock, was the unit about which the Yards and Docks observers centered their attention. The structure was built in March 1946, by the Haddock Company, Pasadena, California, under Contract N0y-11999. The pontoon was 84 feet by 389 feet, overall, with a depth of 14 feet, uniform throughout except for the rather abrupt fairing at the bow and stern. Mounted on the pontoon, and cast integrally with it, were two wingwalls, 26 feet high, 306 feet long, with widths of 10 feet at the top and 13 $\frac{1}{2}$  feet at the base.

Structurally, the dock consisted of transverse frames, watertight bulkheads, and nonwatertight bulkheads, spaced 6 feet on centers, interlocked with longitudinal watertight and nonwatertight bulkheads, 13 to 28 feet apart, and with the overall shell of the walls, decks and bottom of the dock. The structural framework is depicted in the profiles and plans in Y&D Dwg. No. 267 911.

It should be pointed out that the dock was not completely equipped functionally. Pumps, flooding and discharge valves, and controls were omitted. Aside from temporary generators, bunks, and a galley, which served to make the dock habitable, it was merely a rigid frame concrete structure.

ARDC-13-INSTRUMENTATION: The dock, in presenting vertical walls rising over 30 feet above the water, resembled an industrial building more closely than any other floating unit the Navy uses. Further, its shape was admirable for the purpose, since it was anticipated that there would be a considerable movement, readily measurable, of the wingwalls relative to the pontoon.

With this movement in mind, steel frames were built within the wingwalls, rigidly mounted to the pontoon, with scribing mechanisms at the top to record sway in any direction, on plates fastened to the wingwall. Similarly, small scratch gages were mounted on the shell and frames at critical points to determine the strains at these points. These instruments are described in Y&D Dwg. No. 428 711.

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~~AND DUE TO RESULTS OF TEST A.~~ The first team went on the tonated according to schedule, the morning of 1 July. Subsequently the dock was boarded for the first time by initial boarding team No. 4, of which the senior Bureau of Yards and Docks representative was a member, at about 1300 on 2 July. The dock was found to be radio-active, with an intensity of about 0.2 roentgens per 24 hours, and only a limited inspection could be made in the time allotted for safety.

The team reported that the dock had retained its structural shape but did have a slight list to port and was slightly down at the stern. The fenders on the port side were charred and the outboard face of the port wall was somewhat blackened. The inboard face of the starboard wing-wall was darkened by blast from the top of the wall to about one half the distance to the floor of the dock. The line of demarkation between clean and blast marked concrete was not entirely clear. The catwalk connecting the tops of the wingwalls was destroyed and had only one cable left in place. Wooden walkways along inboard side, top of wing-walls were missing but most of the framing timbers which supported the walkway were in place. Walkway framing on the starboard wingwall and the inboard draft boards on this wall were charred.

The top of each wingwall A deck had longitudinal cracks extending almost the entire length of the wingwall. The crack in the port wall was most severe and was attended with spalling of the concrete and relative displacement of the sections in some areas. Fine line cracks were observed for most of the length of the dock floor C deck running longitudinally about 3 ft. on each side of the center line. Cracks were observed in the inboard faces of the wingwalls about 5 ft. above the dock floor on the starboard side and about four or five ft. from the top on both walls and about midway down on the port wall. One steel hatch cover was blown off and apparently went over the side from port A deck. The lower halves of the forward access ladders were blasted away. A section of torpedo tube and spoon and a

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... were believed to have been thrown on the dock by the explosion of the U. S. S. ANTHONY, a destroyer which was anchored about 200 yards off the port beam of the dock.

Interior damage seemed to be confined almost entirely to the port wingwall. Temporary plywood partitions for the Captain's and Chief's quarters and the sick bay were moved from their original positions, partly knocked down and torn apart. Bunks were in some cases knocked off their stanchions. Stanchions, secured by inserts to the overhead and deck, were still firmly in place, although a few had been bent. Mess tables, held with inserts in the concrete, had been uprooted. As a matter of record, a number of switches, mounted on bulkheads with the same type insert, had become loose during the craft's movement from California to Bikini, and the presumption is advanced that the insert employed was not the best available.

On the other hand, the electrical distribution panel and a large store of electric light bulbs, among a host of other items, remained entirely undamaged in the starboard wingwall.

At about 0830 on 3 July 1946, the dock floor was almost awash at the stern on the port side, indicating that flooding was increasing more rapidly than observed by Initial Boarding Team #4 on the previous day. The Bureau of Yards and Docks representative reboarded the dock with a monitor in attendance to check radioactivity, for the purpose of determining the extent of flooding and a proper course of action.

ARDC-13-REPAIRS AFTER TEST A: Since the water washing over the stern was occasionally covering the anchor chain on the port quarter, it was decided immediately to slip the anchor by cutting the chain, and then to tow the dock to the beaching area off the north west end of Enyu Island.

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The dock was under tow at about 1100 and was subsequently anchored, bow in, at Enyu at 1420 with 6,000 pound bow and stern anchors to prevent drifting and broaching. When anchored, the dock had about 12 ft. of water under the bow and 25 ft. under the stern. While the dock was under tow, the Bureau of Yards and Docks observers removed the deflection gage plates from the wingwalls took extensive pictures of topside damage and made a hasty crack survey. The monitor advised that the dock could be occupied safely for only 12 hours on 3 July 1946. Before departing the dock, arrangements were made with Commander Task Unit 1.2.7. to arrange for pumps to facilitate inspection and salvage work.

On 4 July 1946, the ARDC-13 was cleared radio logically and the Officer in Charge of the dock returned to the ship with a part of his crew to assist in salvage work and inspection. The average draft at 1630 on 4 July was 13.2 feet and the list was about 8° - 10' to port. Water was washing through the dock on the port side. A salvage tug alongside the port wall rigged a submersible pump through hatches in the port wingwall and started pumping out the dock at about 1800.

At 0130 on 5 July 1946, after pumping for about 8 hours with a six inch submersible pump, the ARDC 13 was returned nearly to even keel and normal draft. Pumping subsequently was done intermittently, using a handy-billy. An average draft of 9 ft. 11 inches was observed at 1330 this date. The principal reason for leakage was determined to be a small crack through the port shell, about 6 inches below the water line extending from Frame 55 forward to about Frame 18. There was an observed leakage through this crack over about one fourth of its length. This underwater damage was considered to be relatively minor. The dock's generators were started without incident. A portion of the power lines passed through flooded compartments on the port side and were not utilized for providing power to the port side of the dock.

On 8 July 1946, tanks numbers one and seven on the starboard side of the dock were flooded to a depth of about four feet furnishing sufficient list to starboard to place

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the crack on the port side above the water line. Minor leakage from wave action only was experienced. The dock dragged anchor during the early afternoon and was resecured by Commander Task Unit 1.2.7 using the same anchor gear.

It was planned to caulk the crack in the port side of the dock during the week of 8 and 15 July 1946. However, due to the heavy swells running in the lagoon during that time it was impossible to hold a working barge alongside for men to work at the crack. The dock also slipped her mooring and went adrift three times during this period, further complicating any work. It was also found that with the dock listed to starboard practically no leakage occurred and the necessity for effecting permanent repairs was lessened when it was decided to leave the dock listed to starboard for Test Baker. Temporary repair only was effected.

The dock was towed into position and anchored in the array on a heading of about 85 degrees true on 13 July 1946. In this position, the starboard or uncracked side of the hull was presented to the center of the target array. Four 24,000 pound anchors were used in securing the dock for Test Baker with two at the bow and two at the stern, using 100 fathoms of cable for each anchor.

ARDC-13-WILLIAM DAY REHEARSAL EXPLOSION:

For William Day Rehearsal of Test Baker, four M-46 flash bombs were mounted on the top of the starboard wingwall near the bow end of the dock.

These bombs have the following characteristics:

Overall length	48.4 inches
Diameter	8.0 inches
Total weight	51.9 pounds
Weight flash powder	25.0 pounds
Burning time	0.20 seconds

The flash powder has an explosive effect similar to black powder.

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The bombs were mounted on a platform located on the starboard A deck at Frame 12. The platform consisted of 3 inch timber planking which was placed across the crane rails and secured by cleats and a cable tie passed under the crane rails. The platform was floored over with one layer of bagged cement. The bombs were placed 4 abreast on this bagged cement, with bags of cement used as separators. Cable ties fastened to the crane rails held the bombs secure. The bombs were detonated by a remote control mechanism.

An examination of the damage after the blast revealed that:

- (a) The platform was entirely gone except for a few strands of cable hanging to the crane rails;
- (b) Powdered cement was scattered over the starboard forward section of the dock;
- (c) The 18 inch exhaust ventilator under the platform was blown thru the A deck. It was considerably dished downward and apparently absorbed and cushioned a good share of the blast;
- (d) The concrete deck around the exhaust ventilator and the A deck beam at Frame 12 were fractured;
- (e) There was no evidence of fire from the explosion of the flash bomb; and
- (f) Damage was entirely confined to about a six foot square area on the A deck and did not affect the use of the dock as a target for Test Baker.

ARDC-13 INSTRUMENTATION FOR TEST BAKER:

Instrumentation for Test Baker consisted of 5 of the steel A frame towers with plunger type scratch gages, three in the Port wingwall and two in the Starboard wingwall. The gage at Frame 12, Starboard side, was not set due to damage received from the William Day Flash Bombs.

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ARDC-13-RESULTS OF TEST BAKER:

The ARDC-13 was boarded on the 2nd of August (Baker plus 8 days) by Bureau of Yards and Docks Representatives. There was no apparent evidence of damage resulting from the Baker Test. Slow leakage was taking place through cracks developed during the Able Test and at that time the Port stern section of the dock was awash up to Frame 55. From draft measurements of the ARDC-13 on 24 July, together with estimates made on 31 July and 1 August, the rate of flooding was approximately 25 to 50 per cent of the rate observed prior to listing the craft between tests.

Deflection markings were noted on the gage at Frame 27, Starboard side, which indicated that the tip of the wall had moved 2.5 inches to port, and 1.25 inches to starboard, relative to its neutral position. Radiological conditions prevented the rescue of the record plates.

The following intensities of radio-activity were observed on the ARDC-13 on 2 August 1946:

	6 roent-	gens per 24 hrs.			
Dock floor, at bow and stern	9	"	"	"	"
Dock floor, amidships	9	"	"	"	"
"A" Deck, (top) Starboard	4	"	"	"	"
Within Starboard wingwall, "B" Deck	7	"	"	"	"
Approximate dock average					

Radiological contamination allowed the presence of personnel only from 16 to 30 minutes per day. For this reason, salvage operations could not be undertaken without endangering the health of personnel.

ARDC-13-DISPOSITION:

During the night of 4 August 1946, the dock capsized to Port due to the flooding of the Port side pontoons and wingwall. After capsizing, the dock remained afloat with

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On 5 August 1946, the Director of Ship Material recommended to Commander Joint Task Force ONE That the ARDC-13 be sunk by demolition charges. This was carried out by Commander Task Unit 1.2.7, at 1755, 6 August 1946.

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ARDC-13 DRAFTS AT VARIOUS STAGES OF THE TESTS

Date	Time	Drafts, feet				Trim by Stern
		FRAME #6	FRAME #7	Port	Starbd.	
<u>TESTABLE</u>						
1 July	0900	9.5	9.5	9.5	9.5	.5
2 July	1500	10.5	10.5	12.0	10.0	10.5
3 July	0930	9.5	14.5	14.5	17.5	42'
3 July	1500	13.0	6.5	9.5	11.5	40'
4 July	1630				13.2	80'
<u>POSTABLE REPAIRS</u>						
5 July	1330				9.9	4"
6 July	1300				9.7	--
<u>TEST BATTER</u>						
22 July	--	8.0	11.5	8.3	11.7	3"
1 August	1200	10.5bb	9.0 b	14.0bb	13.0 b	42"
2 August		11.0	2.8	14.5	13.3	39"
4-5 August				Capsized		

- a. List to starboard, with starboard ballast.
- b. Estimated through ships glass.

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YOG 83. The YOG 83 was built as a gasoline barge by the Concrete Ship Constructors of National City, California for the Maritime Commission. It was completed in January 1944, and had a displacement of 20,960 tons, an overall length of 375 feet, beam of 56 feet, and a maximum draft of 29 ft.

Prior to the tests, this craft was in service in the Pacific as a gasoline barge. The tanks were butter-worthed in preparation for the tests, and a number of steel pallets were tack-welded to the top layer of main deck reinforcing steel, exposed at various points for this purpose, and to steel plates and framework, in order to facilitate the display by Army personnel of ordnance and chemical warfare service items.

Prior to Test Able, there was minor damage to forecastle and poop deck houses, incurred when other vessels came alongside for fuel, and the guard railings were similarly damaged and in part removed. Hold No. 4, starboard, was reported to have a crack in the exterior shell about 10 feet below the waterline in a ballasted state, and was regarded as not watertight against the sea. As a matter of record, this hold was not butterworthed when it was found impracticable to pump it dry.

The craft was maintained at Bikini in utmost cleanliness. Dark spaces had been painted white, valve handles painted in distinguishing colors, and the galley area was free from spilled grease and dirt.

#### YOG-83-RESULTS OF TEST ABLE:

Preliminary inspection of the YOG 83 indicated that the craft has sustained superficial damage only.

Detailed inspection of the YOG 83 revealed that the damage was entirely confined to the top side. Items noted are listed below:

- (a) Draft remained unchanged from pre-test draft;

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- (b) Roof dished downward slightly on amidships deck house or pump room causing cracks in beams at the center and near the ends;
- (c) Roof covering on wheelhouse blown off and wooden siding on tankhouse just below wheelhouse blown in;
- (d) Steel frame life raft rack on starboard poop deck pulled loose and upset;
- (e) Few blast burns on poop deck frame structures;
- (f) Wheelhouse and tankhouse frame pushed slightly forward;
- (g) Ladders to wheelhouse loosened at upper connections;
- (h) Some paint charred on forecastle;
- (i) Canvas covers blown off 40 MM guns on forecastle; and
- (j) Top of signal mast above yardarm blown off.

The YOG 83 was moored in the target array for Test Baker on 14 July 1946.

YOG-83-RESULTS OF TEST BAKER:

There was no apparent damage to this craft resulting from Baker Test.

Intensities of radiation on 2 August 1946 were measured from 10 to 18 roentgens per day alongside the hull, with lowest readings at the bow and stern and the highest reading near the midship section. This intensity would safely allow personnel aboard less than 15 minutes each day.

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YO-160. This craft was built in 1943 as a fuel oil barge by the Concrete Ship Constructors, of National City, California for the Maritime Commission. Its displacement was 10,960 tons, overall length 375 feet, and beam 56 feet.

Prior to the tests, it was in active service as an oil barge in the Pacific, and the forecastle and poop deck houses, supports, and the guard railings had been extensively damaged when other ships had come alongside for fuel.

The holds, prior to Test Able, were reported entirely tight against the sea. Upon examination at Bikini, all the cargo tanks contained small amounts of oil, apparently not contaminated by water, the residual after attempts to pump the tanks dry, except the two forward tanks which carried salt water ballast.

There was evidence of rust, debris, improperly stowed stores, and the gallery area was cluttered and greasy, but the basic hull structure appeared free from defects, and the craft was considered ready as a hull for test.

#### YO-160-TEST ABLE RESULTS:

On re-entry to the lagoon the YO 160 was found to be radioactive above the daily tolerance. Accordingly, on 2 July 1946 it was towed out of its position in the center of the array and was secured to a spare mooring buoy in the lagoon between ENYU and BIKINI Islands, at a remote distance from other ships.

On 4 July 1946, the YO 160 was boarded with two radiological monitors and was found to be sufficiently active radiologically to preclude remaining on board for more than 5 hours, with isolated spots still higher in radioactivity.

On 5 July 1946, the barge was again boarded with monitors, a photographer and an inspection party, prepared to make a complete physical inspection of the topside. The barge was found to be radioactive with a twelve hour

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tolerance. A detailed inspection was completed in about two hours.

The damage to the barge from the main deck and below was superficial only. A small amount of concrete was scaled from the main deck just forward of the after deck house. This scaling is believed to have been caused by an intense fire which occurred in the area of the after deck house, the wheel house and the tank house.

The hatches on the main deck, deck valves, deck concrete, and the concrete hull all appeared to be intact and undamaged. The draft at the stern was noted to be 22 feet, the figure observed prior to the test.

The structures above the main deck were almost completely demolished, considered a direct result of the blast. The poop deck was fractured over its entire area. The wooden frame pilot house was consumed by fire. The deck house which contained the pump engines, line valves and power plant were crushed in with sections scattered over the deck. The catwalks were ripped assunder and partially destroyed by fire. The after portion of the forecastle was crushed inward but the forecastle deck was almost intact. It is improbable that any personnel aboard the YO 160 would have survived the blast, the subsequent fire, or ultimately the radioactivity.

The fire in the poop deck house was confined almost entirely to the crews living spaces, the Captain's spaces, galley and mess hall, and refrigeration spaces. The generator room, the generators themselves, and prime movers, in the forward amidships section of the deck house and the steering engine room were untouched by fire but were damaged somewhat from chipped concrete and debris when the deck above was smashed downward.

On 9 July 1946, the YO 160 was declared radiologically clear and Commander Task Group 1.2 was notified that the barge could be moved into the target array for Test Baker.

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On 9 July 1946, the YO 160 was secured alongside the USS ARKANSAS preparatory to mooring in final target array position. Due to swells running in the lagoon at the time, a camel between the ARKANSAS and the YO 160 punched a hole in the hull of the barge just below the waterline on the after port side and the barge took on water. The YO 160 was towed clear of the target array having a 45 degree list to port and with the main deck awash. The barge was beached in the beaching area at the north west tip of ENYU ISLAND. The barge was subsequently dragged off the beach, a temporary patch secured over the hole, which was about one foot in diameter, and the barge was counterflooded in the starboard compartment to bring it to an even keel. It was trimmed down at the stern with draft of 21 ft. forward and 28.5 ft. aft. It was placed in the target array for Test Baker on 20 July 1946.

YO-160-RESULTS OF TEST BAKER: The YO-160 sank immediately after the blast. The following information of the sequence of events just after the blast has been deduced by the Bureau of Ships Group from tower camera pictures from both Bikini and Enyu Islands, and pictures taken by PBM "U". The pictures discussed here are on roll 31(R)-275. In picture No. 0, the YO-160 is clearly visible and has not yet suffered any apparent effects from the burst. Picture No. 1 shows the cloud chamber. Picture No. 2 (plus six seconds) shows the YO-160 being lifted on a conical mound of water, the stern inclined upward towards the ascending column of water and the lower portions of the hull shrouded in a light mist. In Picture No. 3, all but the upper bow of the YO-160 is obscured in the light mist that surrounds the mound of water. In Picture No. 4, the upper part of the hull of the barge is again visible, still inclined stern upward toward the now descending column of water and dense spray from the base of the column. In Picture No. 5, the after three quarters of the length of the YO-160 has been engulfed and that portion of the bow which is showing is inclined upward. In Picture No. 6 (plus 18 seconds), the barge has disappeared completely.

It is surmised from the discussion above that the barge was fractured by the water pouring on it from above.

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bridge section was the Standard Yards and Docks pontoon assembly made up of T-6 steel pontoons, two pontoons wide and six pontoons long.

The section, moored to the stern of the ARDC 13 for Test A, was turned up side down as a result of the bomb explosion. It was structurally intact and watertight, and the only noticeable effect was the general dishing of the steel plates between the lines of internal bracing. This superficial damage in no way reduced the effectiveness of the structure.

The section was utilized as a landing float for the movie exchange between tests, and on 22 July 1946 was again moored astern of the ARDC 13 for Test Baker.

The section was not apparently affected by the Baker Test. It was ultimately carried below the surface when the ARDC-13 capsized and settled by the stern. Visual inspection of the section was made on 2 August 1946. Radio-logical contamination prevented the boarding of the pontoon or the undertaking of salvage operations.

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Appendix A

Enclosure G to DSM Serial 001500

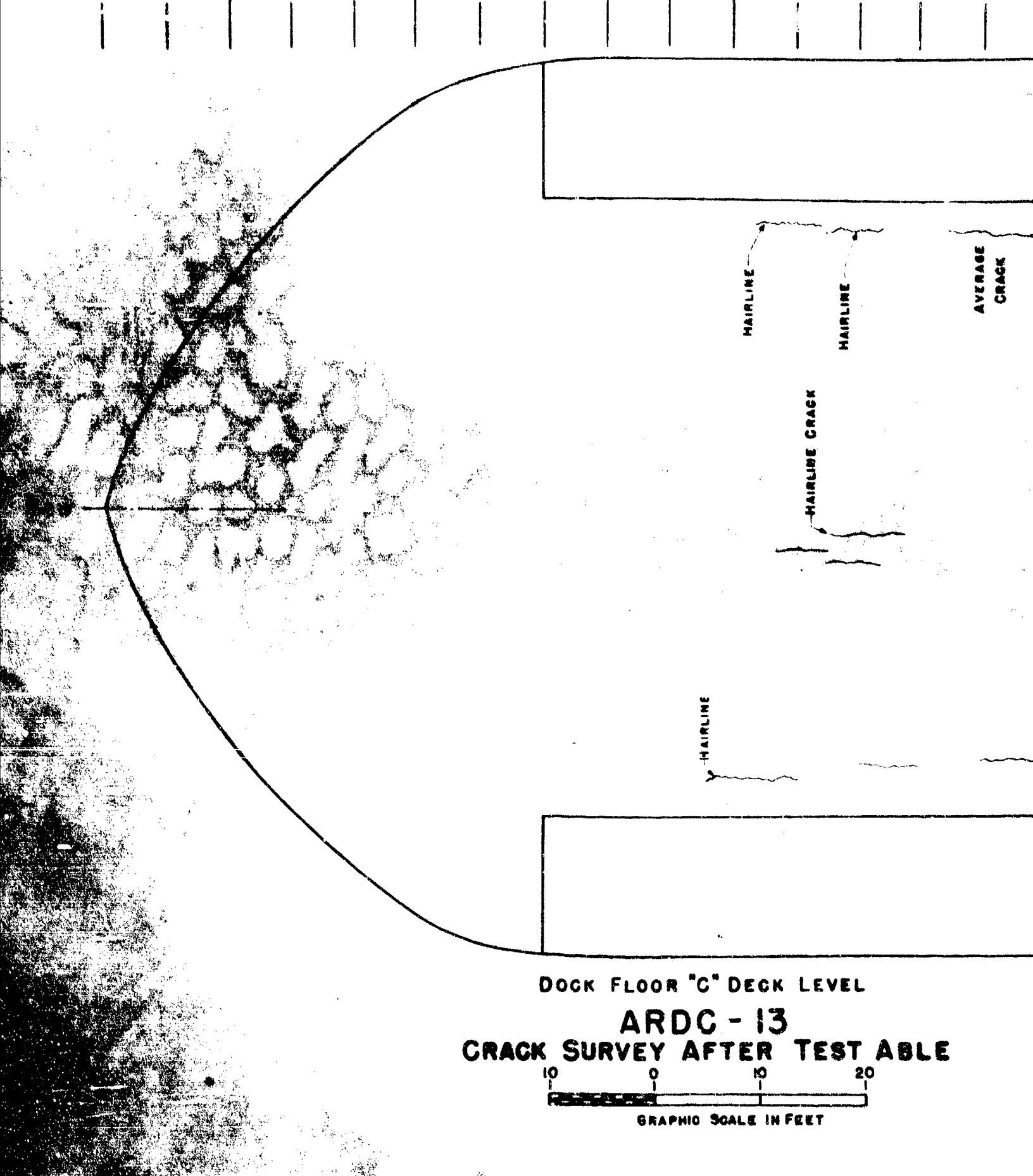
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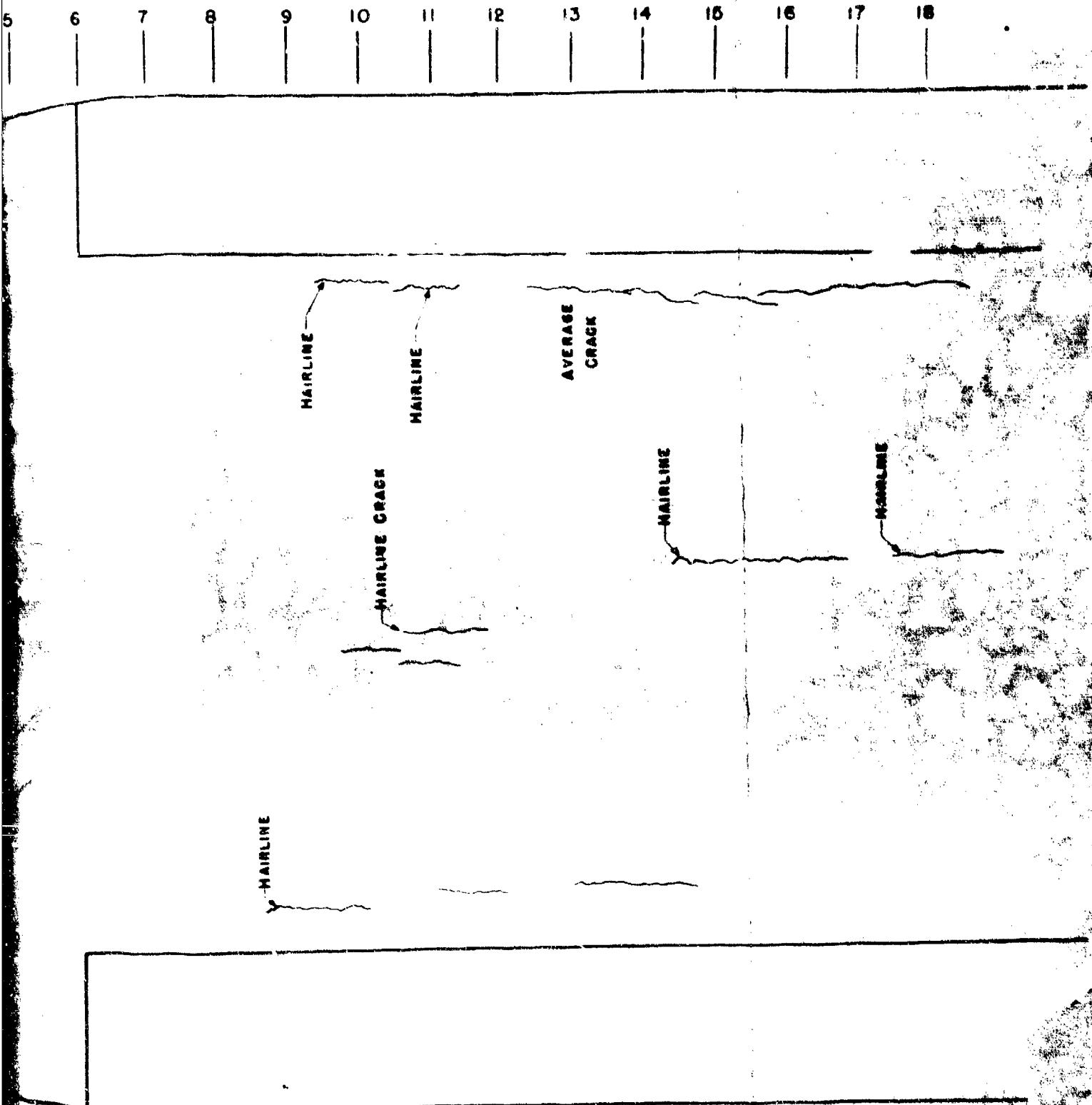
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S E C R E T

Appendix A

Enclosure G to DSM Serial 001500





DOCK FLOOR "C" DESK LEVEL

**ARDC - 13**

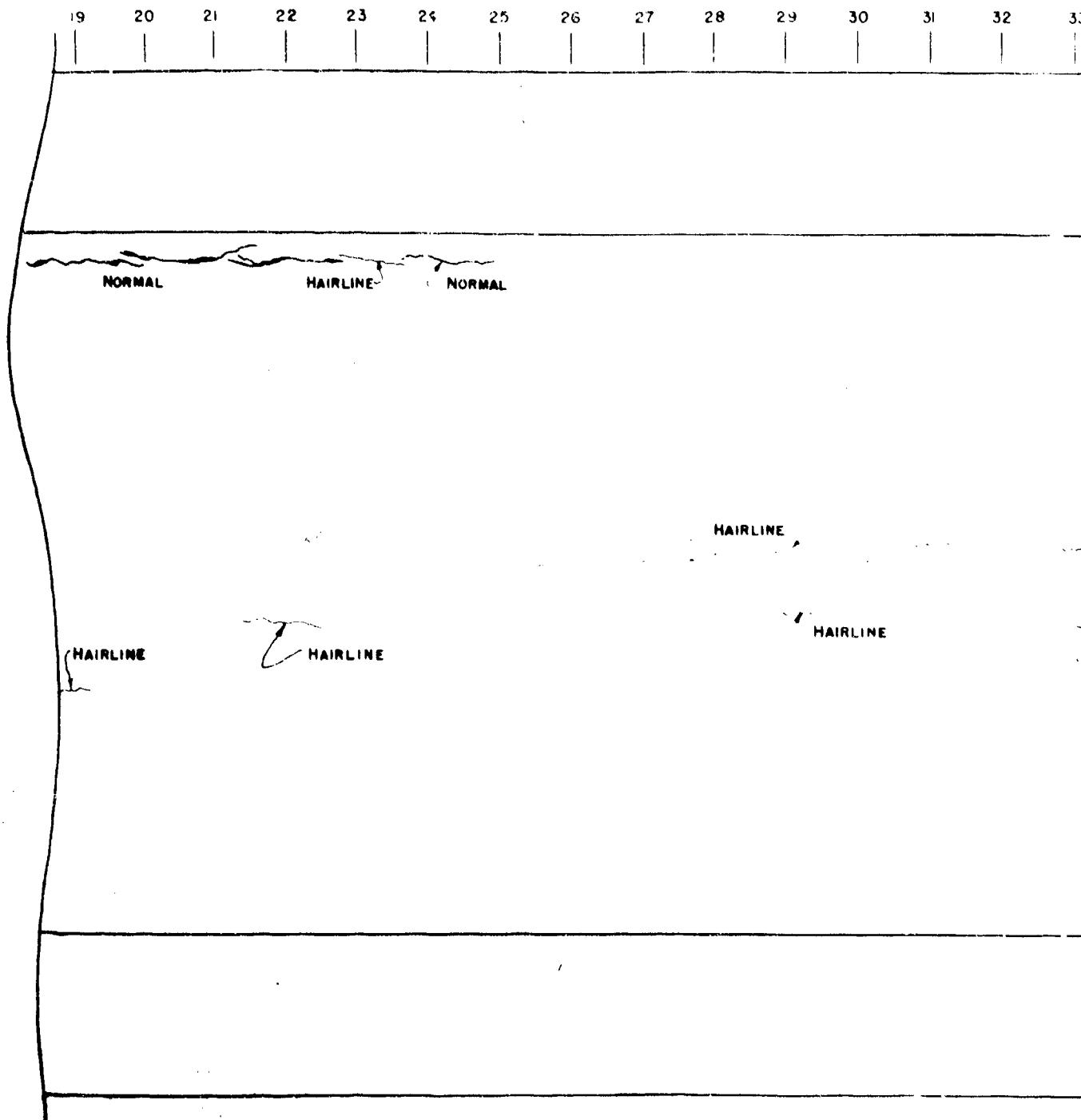
RACK SURVEY AFTER TESTABLE

10 9 10 20

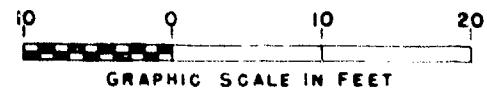
GRAPHIC SCALE IN FEET

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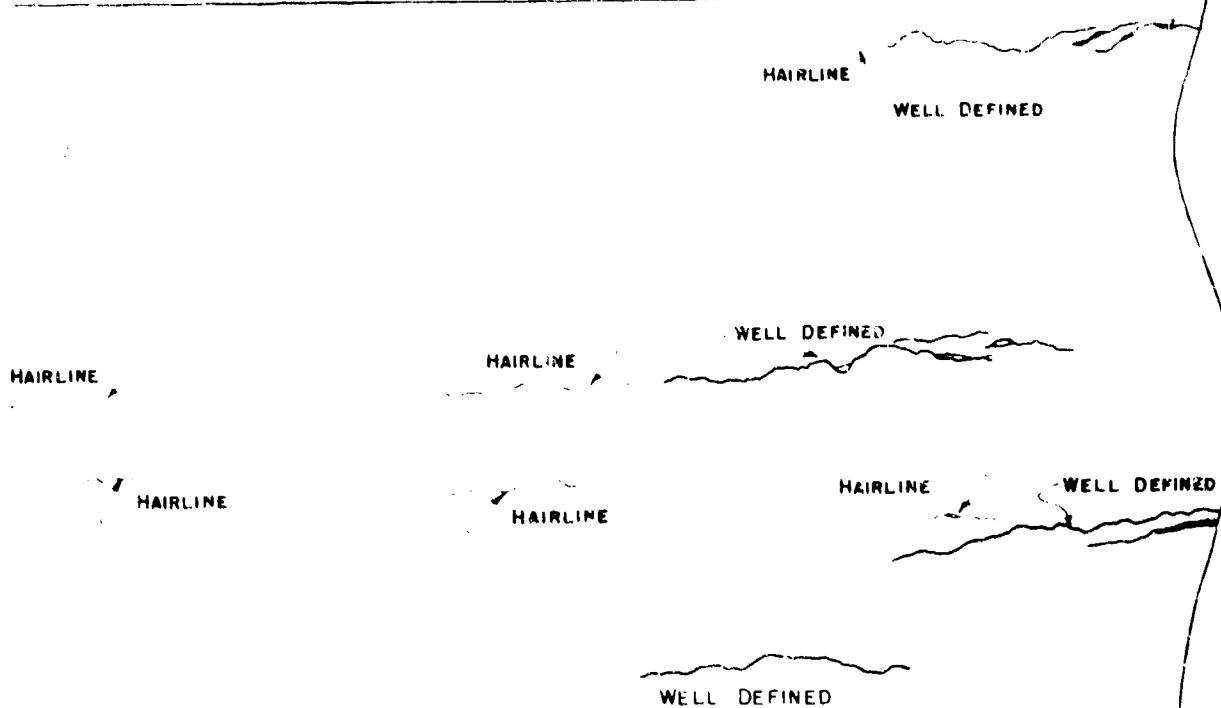
DOCK FLOOR -- "C" DECK LEVEL



ARDC - 13  
CRACK SURVEY AFTER TEST ABL



5	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
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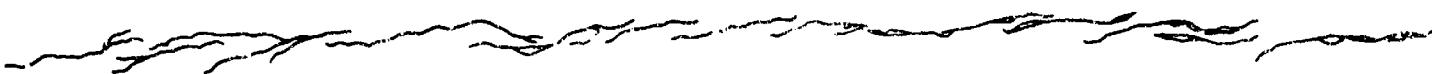
**ARDC - 13**  
**CRACK SURVEY AFTER TESTABLE**



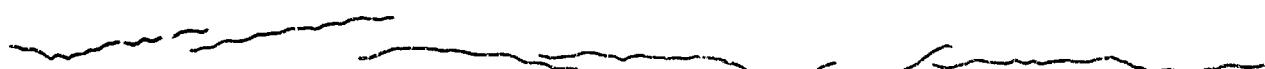
SHEET  
APPENDIX A, EXCLOSURE G TO DIRECTOR SHIP M  
SERIAL 001500 PAGE 4 OF 30 PAGE

2

42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57



WELL DEFINED CRACKS



WELL DEFINED

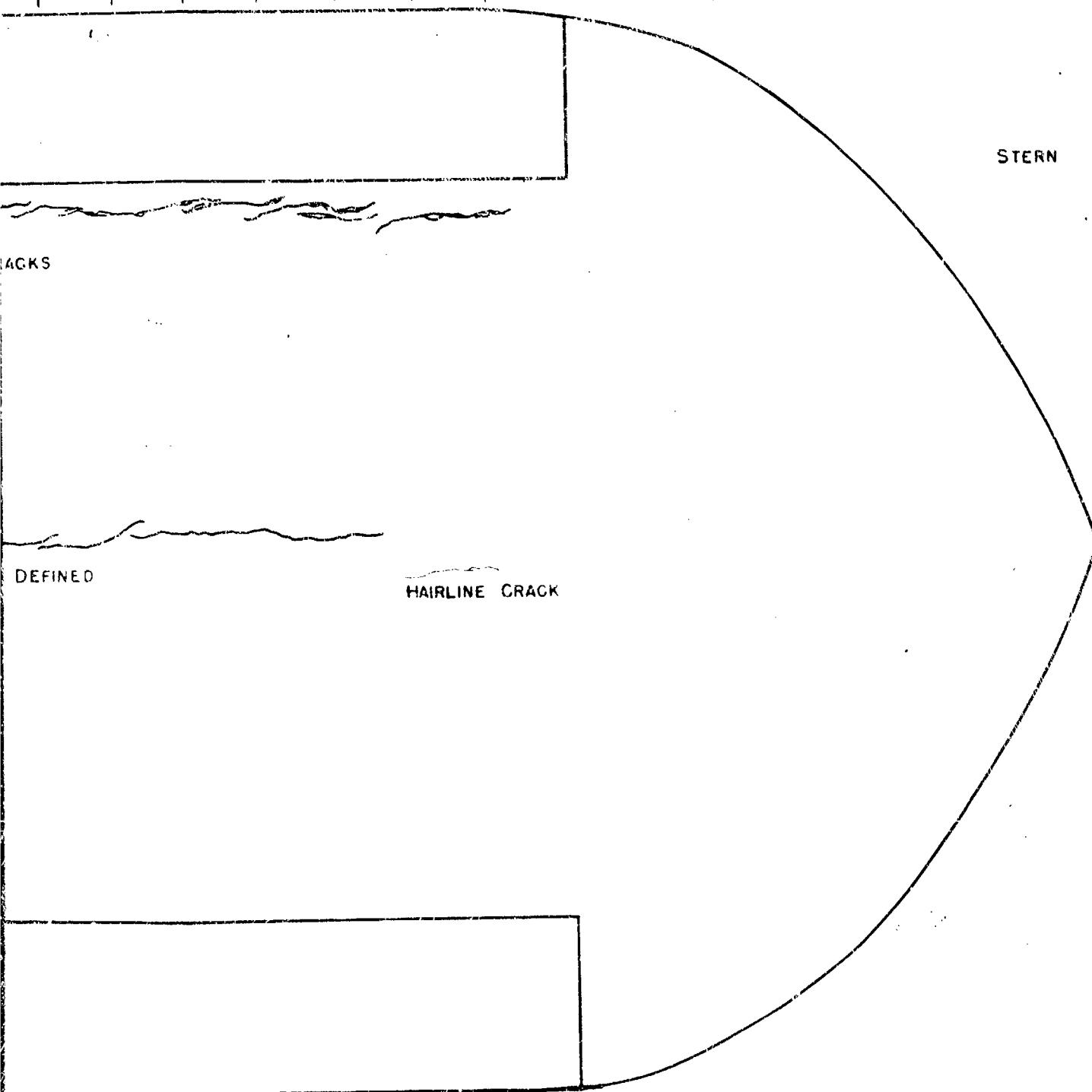
HAIRLINE CRACK

**ARDC-13**  
**CRACK SURVEY AFTER TESTABLE**



GRAPHIC SCALE IN FEET

50 51 52 53 54 55 56 57 58 59 60 61 62 63 64



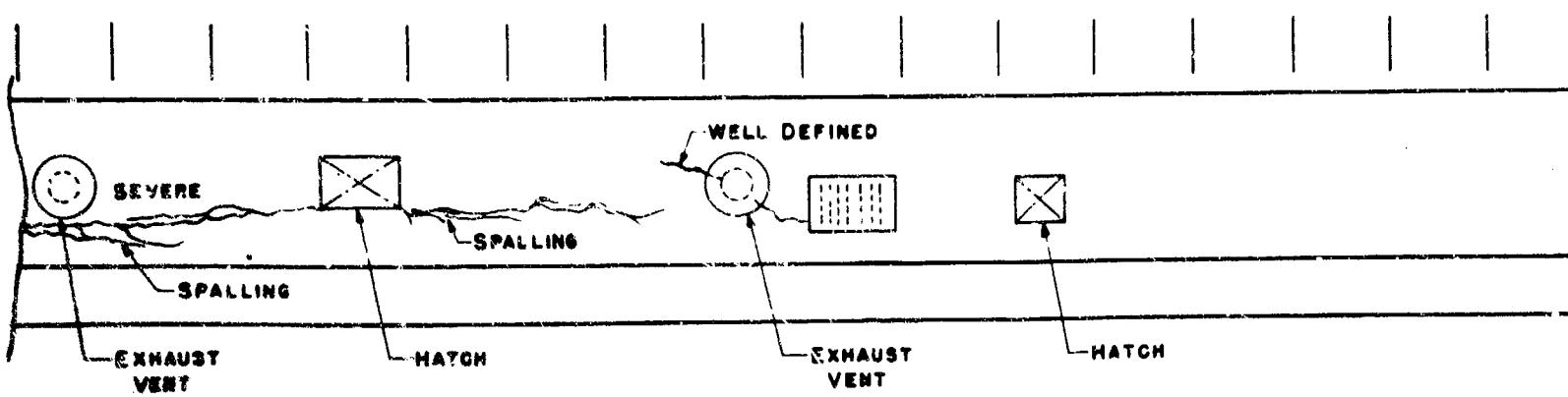
**ARDC - 13**  
**CRACK SURVEY AFTER TESTABLE**



SHE  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP  
SERIAL 001500 PAGE 5 OF 30 PA

2

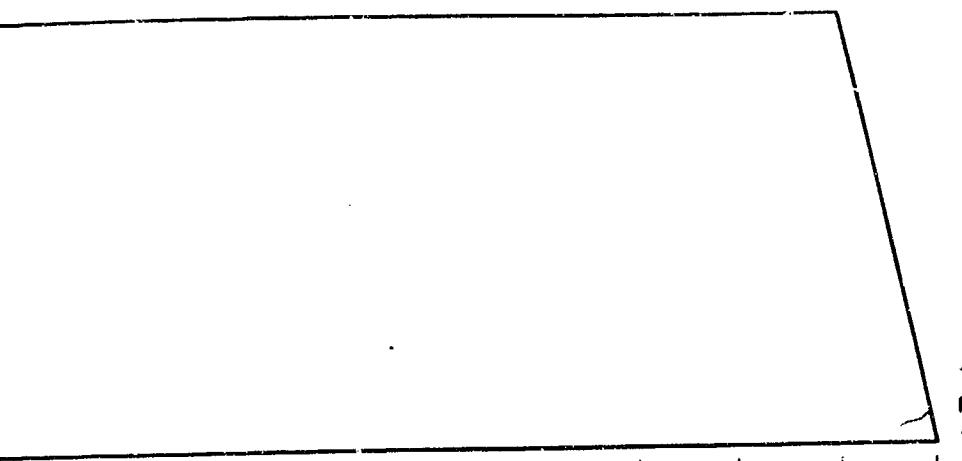
23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8  
INBOARD FACE PORT WALL



"A" DECK PORT WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE

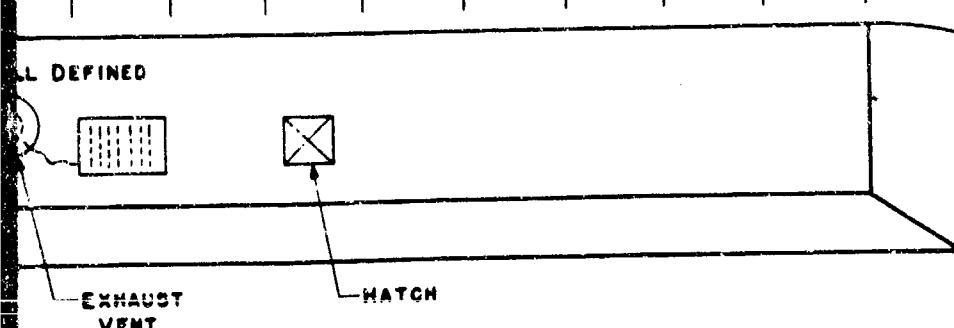




HAIRLINE

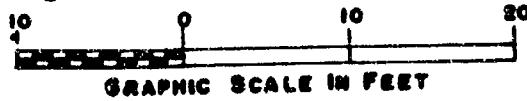
BOW FACE  
PORT WALL

15 14 13 12 11 10 9 8 7 6  
FACE PORT WALL



DECK PORT WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE



APPENDIX A, ENCLOSURE 6 TO DIRECTIVE 5  
SERIAL 001500 PAGE 6 OF THE

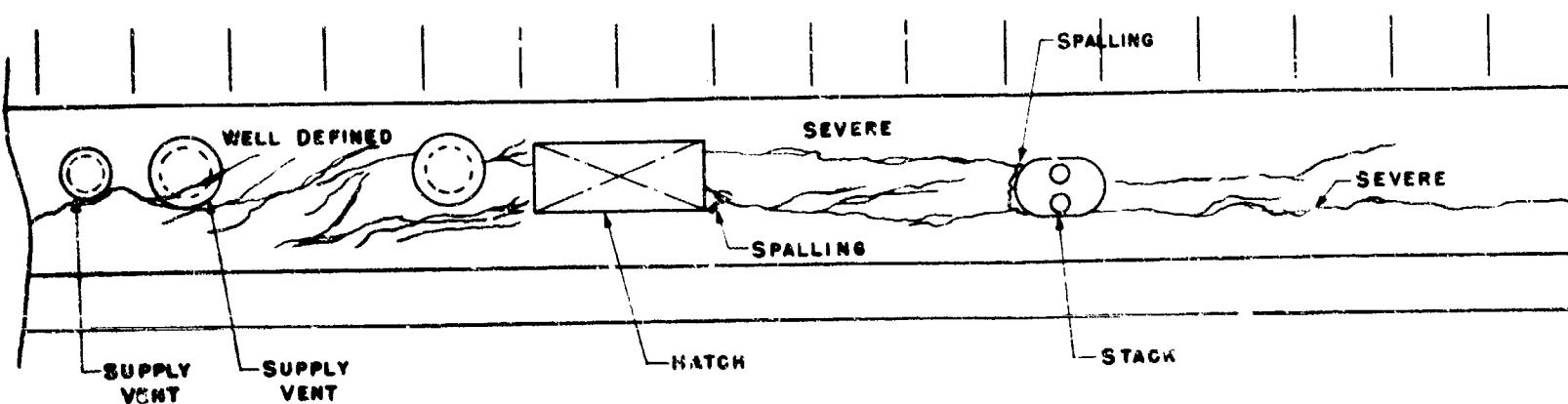
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WELL DEFINED

WELL DEFINED

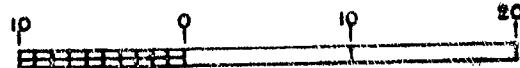
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INBOARD FACE PORT WALL



"A" DECK PORT WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE



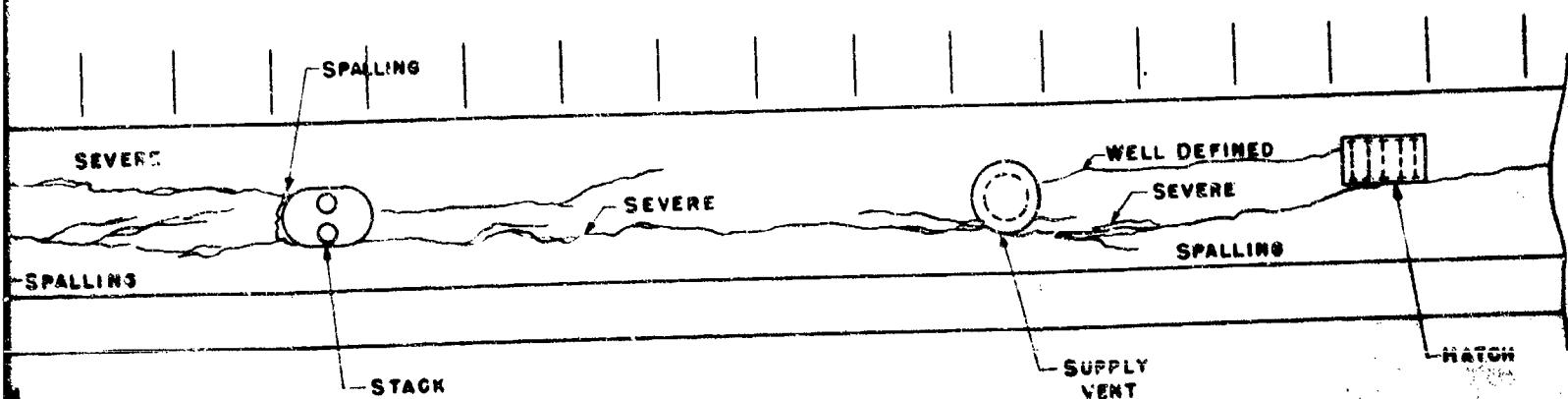
GRAPHIC SCALE IN FEET

WELL DEFINED

WELL DEFINED

38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23

INBOARD FACE PORT WALL



"A" DECK PORT WALL

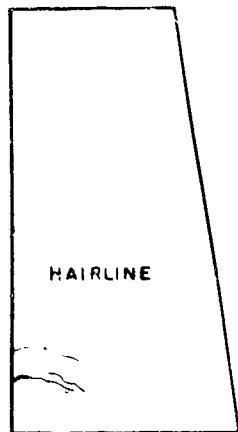
ARDC - 13  
CRACK SURVEY AFTER TESTABLE

10 9 10 20

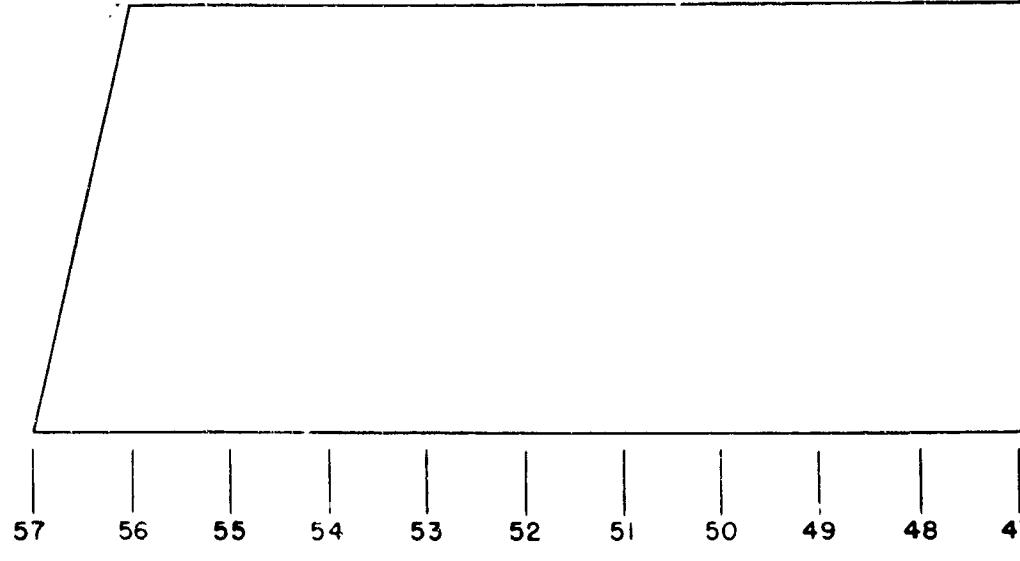
GRAPHIC SCALE IN FEET

APPENDIX A, ENCLOSURE 6 TO DRAWING 1  
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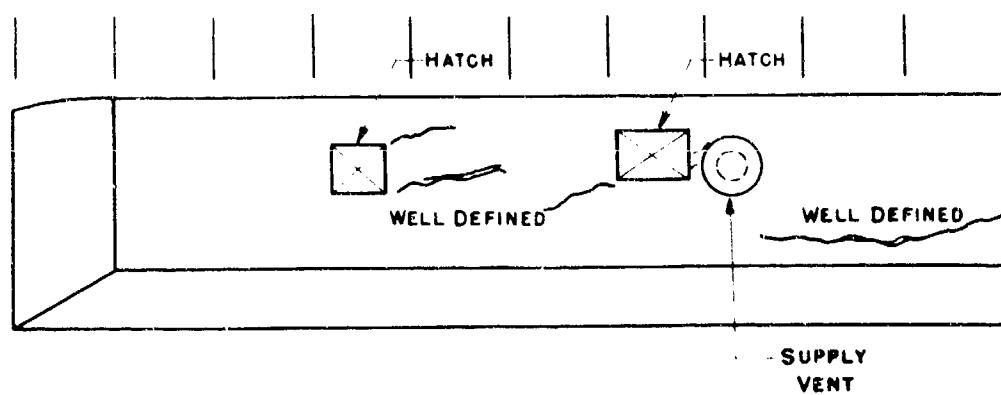
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STERN FACE  
PORT WALL



INBOARD FACE PORT WALL

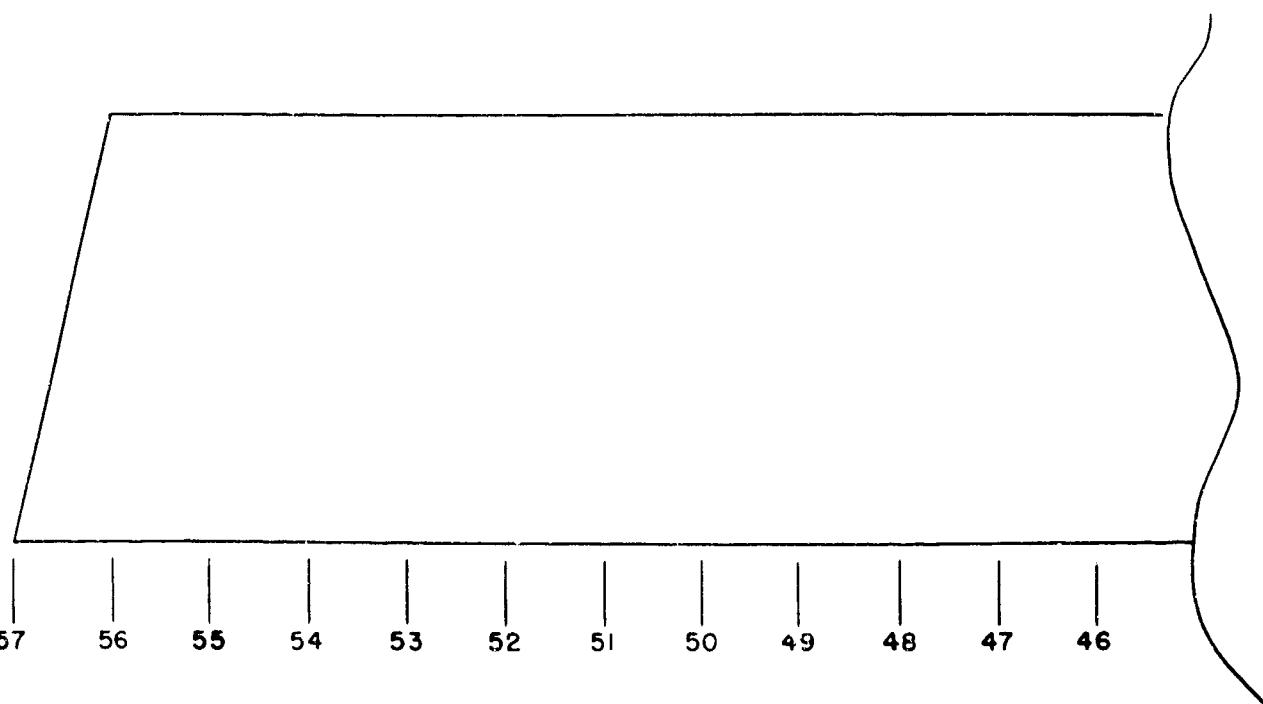


"A" DECK PORT WALL

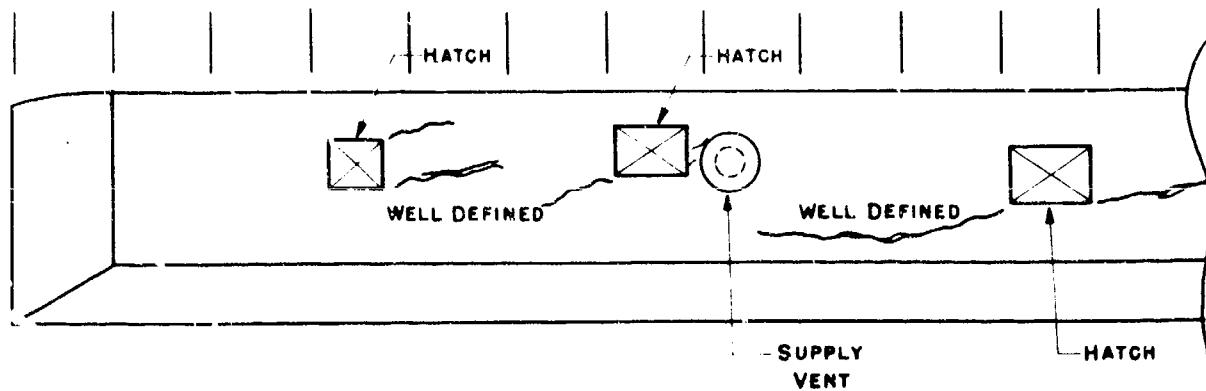
ARDC - 13  
CRACK SURVEY AFTER TESTABLE



APPENDIX  
S



INBOARD FACE PORT WALL



"A" DECK PORT WALL

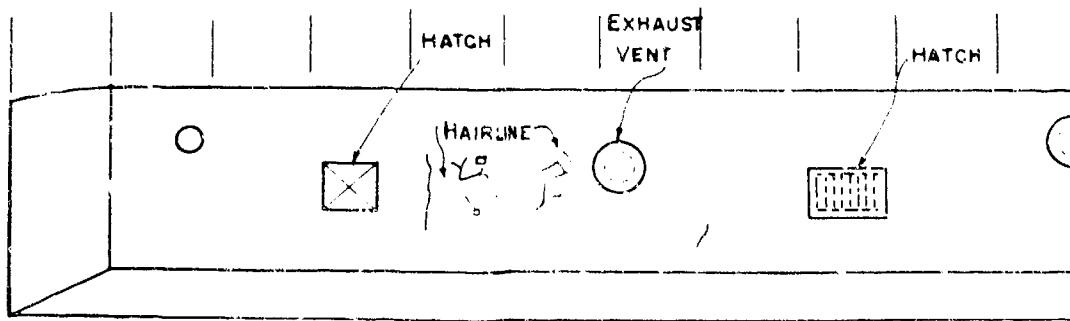
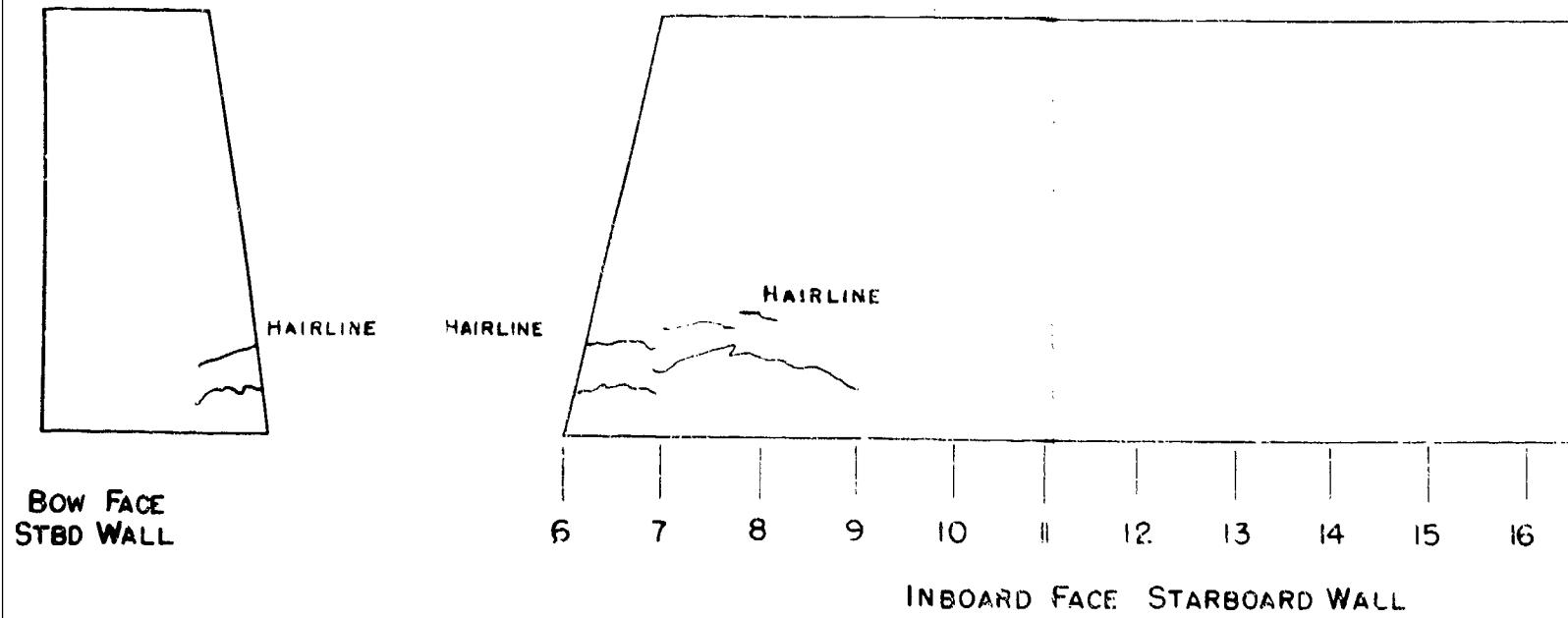
ARDC - 13  
RACK SURVEY AFTER TESTABLE



APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP I  
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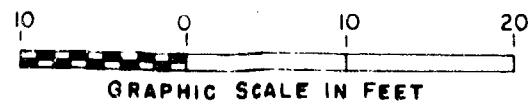
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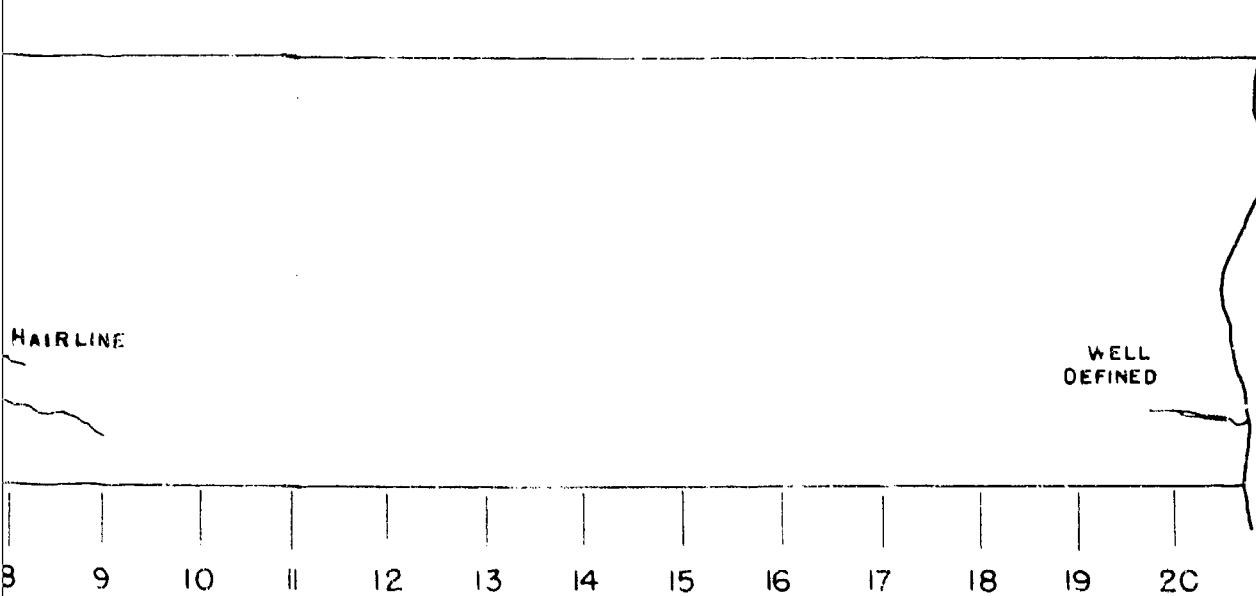
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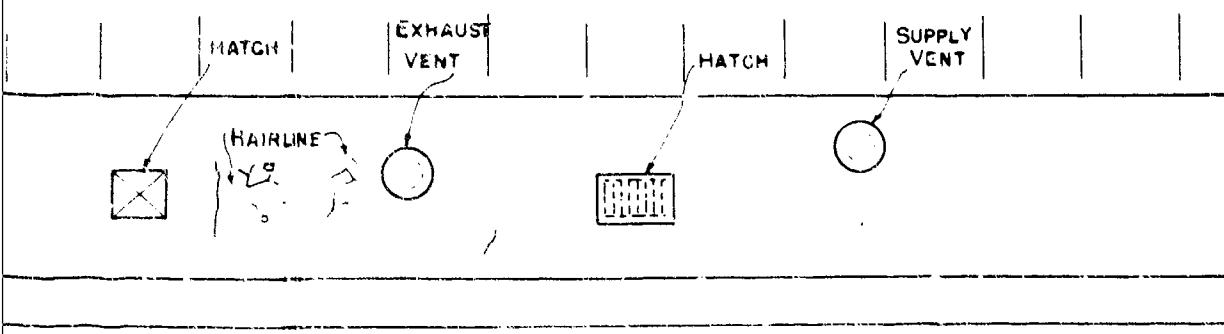
A DECK STARBOARD

ARDC-13  
CRACK SURVEY AFTER TESTABLE



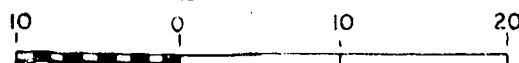


INBOARD FACE STARBOARD WALL



A DECK STARBOARD

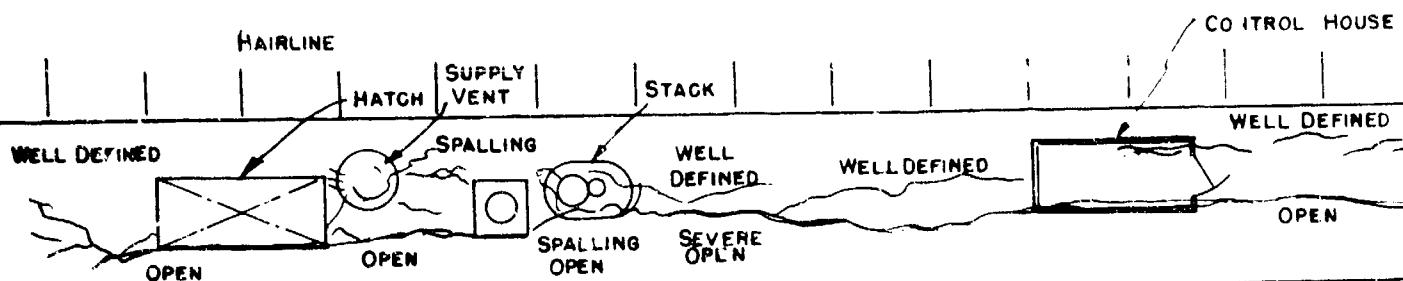
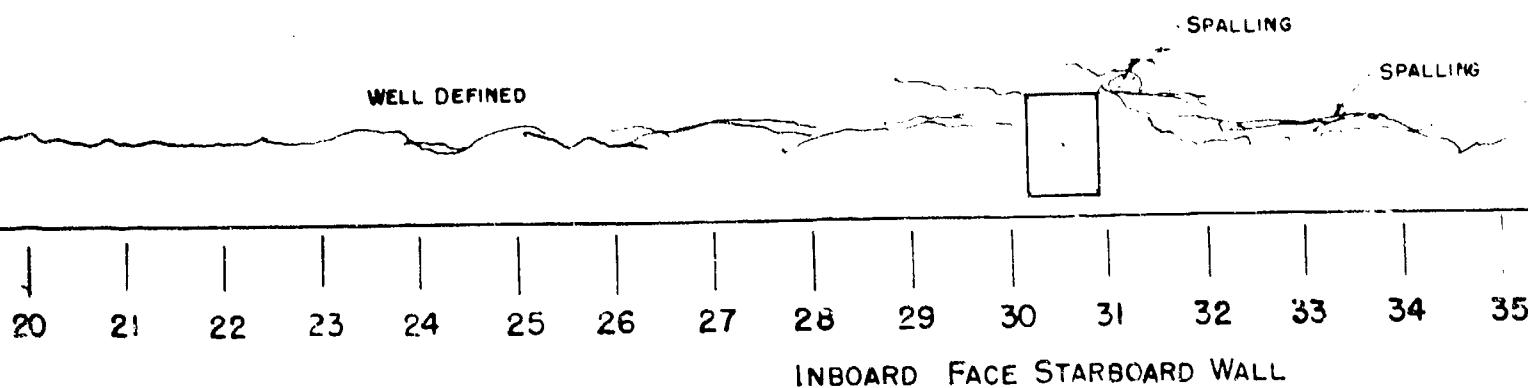
ARDC-13  
RACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET

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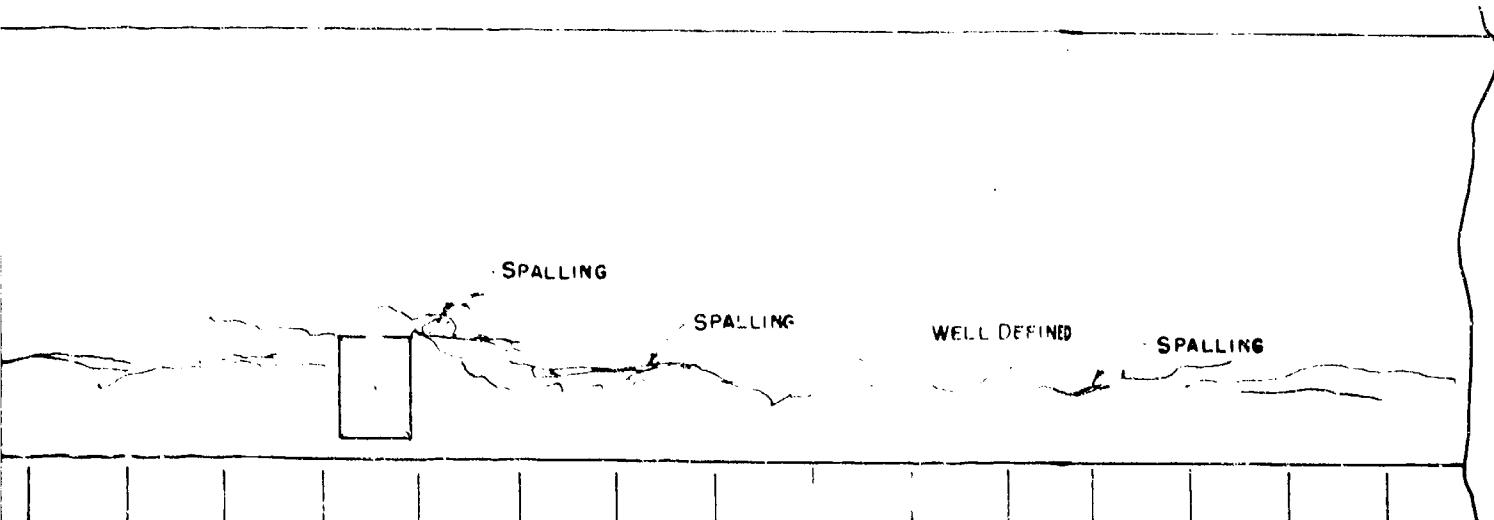
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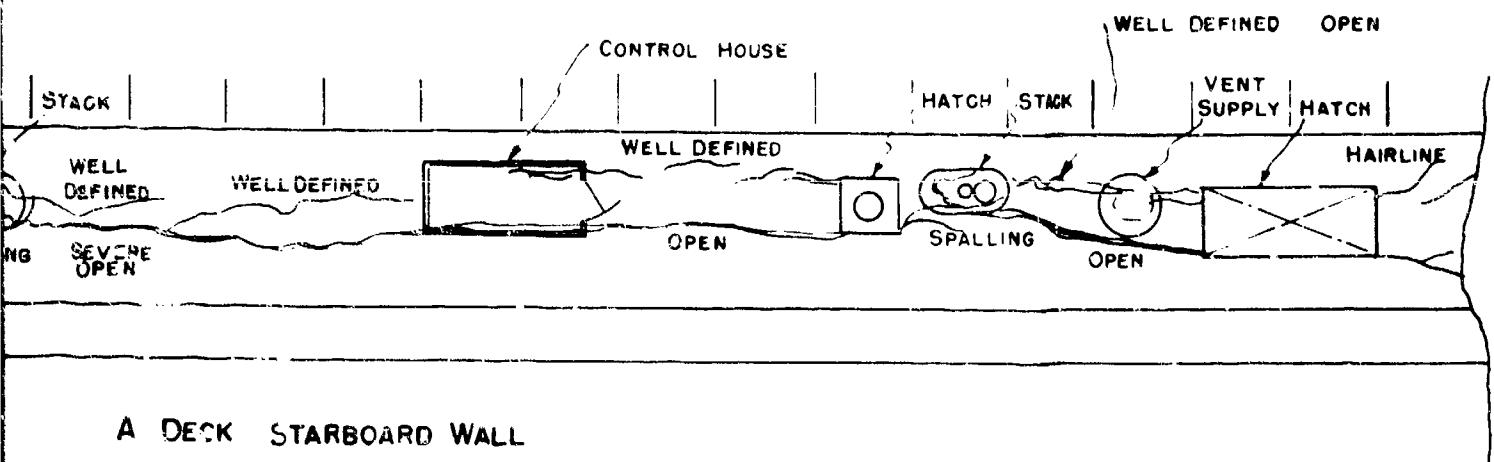
A DECK STARBOARD WALL

ARDC-13  
CRACK SURVEY AFTER TESTABLE





INBOARD FACE STARBOARD WALL

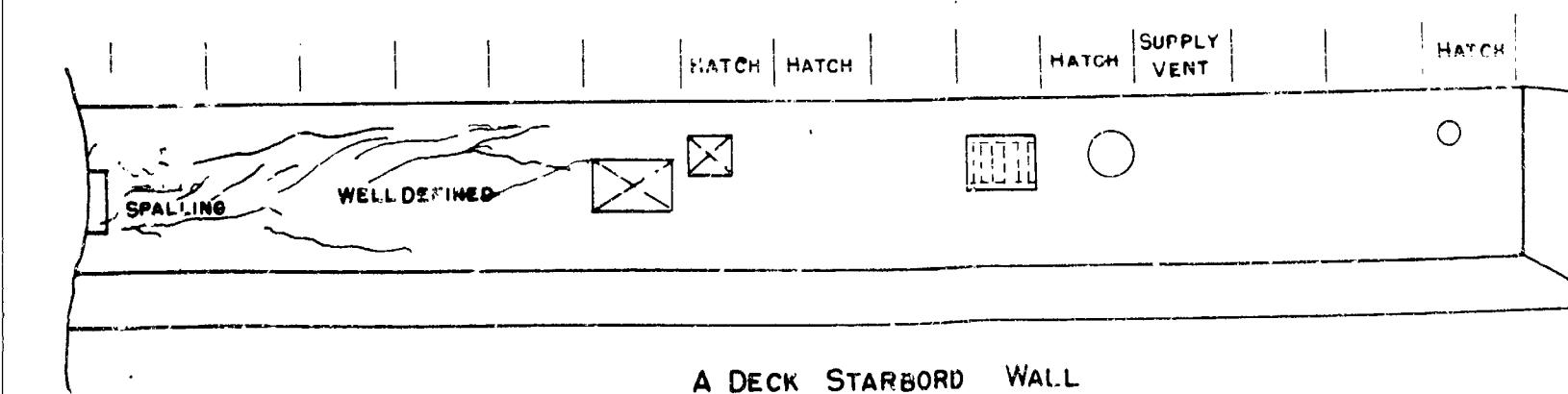
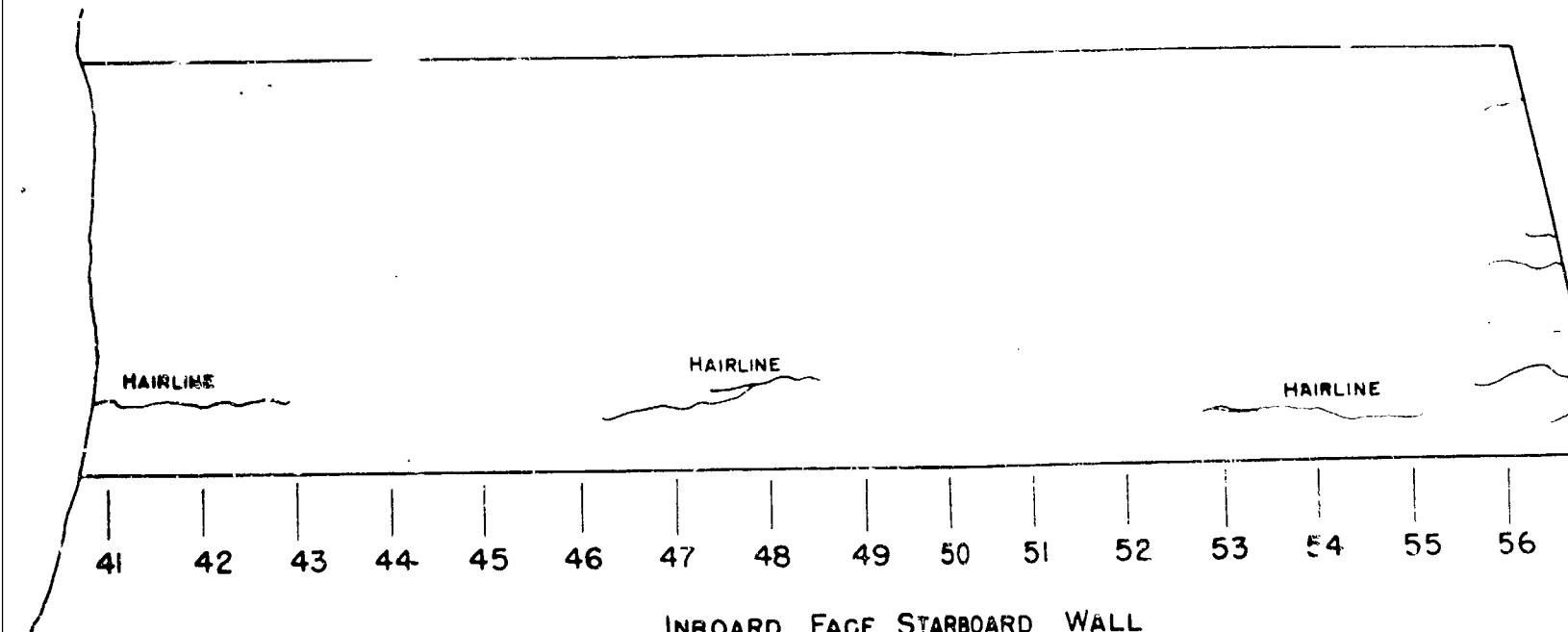


A DECK STARBOARD WALL

**ARDC-13**  
**CRACK SURVEY AFTER TESTABLE**

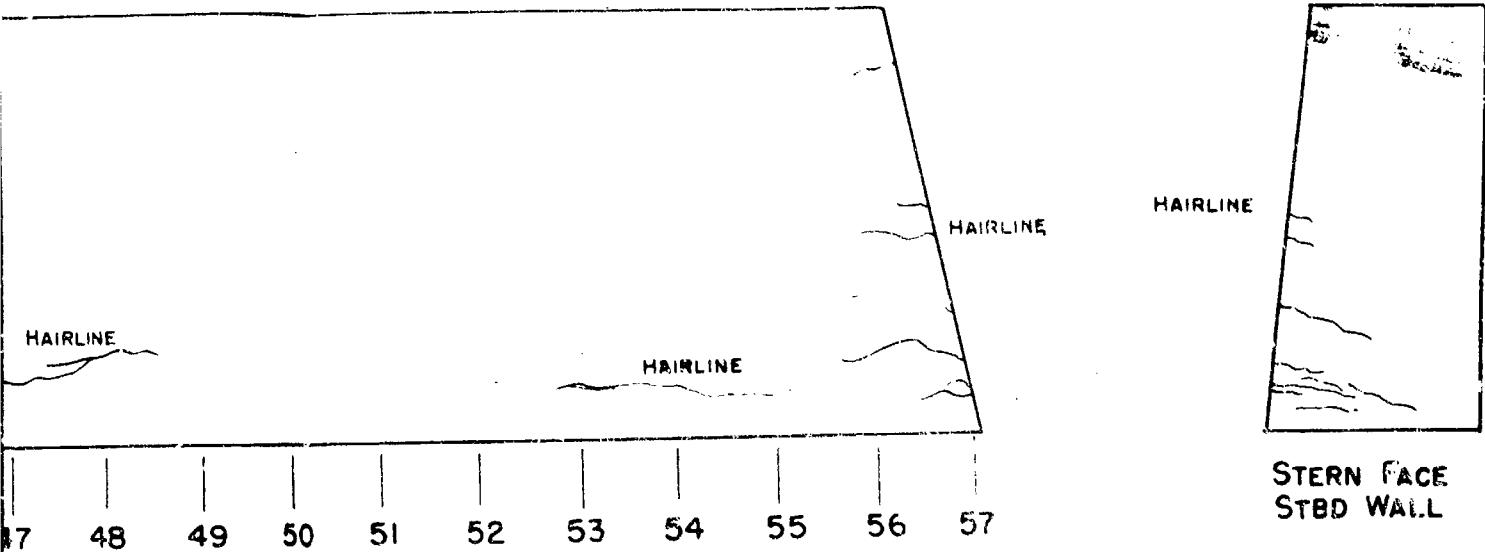


SHEET 8  
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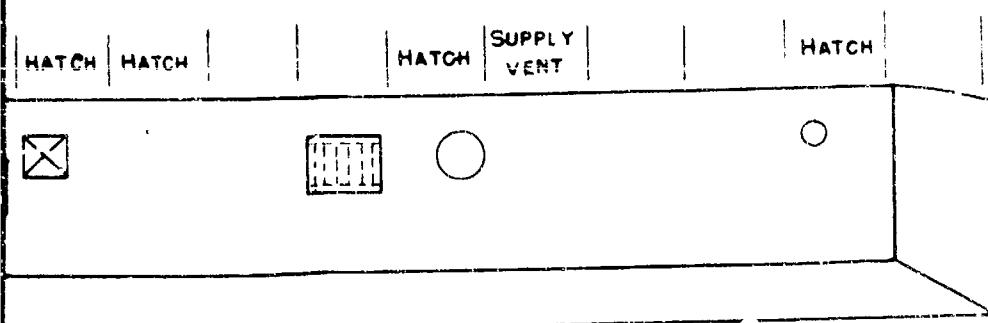


ARDC - 13  
CRACK SURVEY AFTER TESTABLE

10 0 10 20



INBOARD FACE STARBOARD WALL



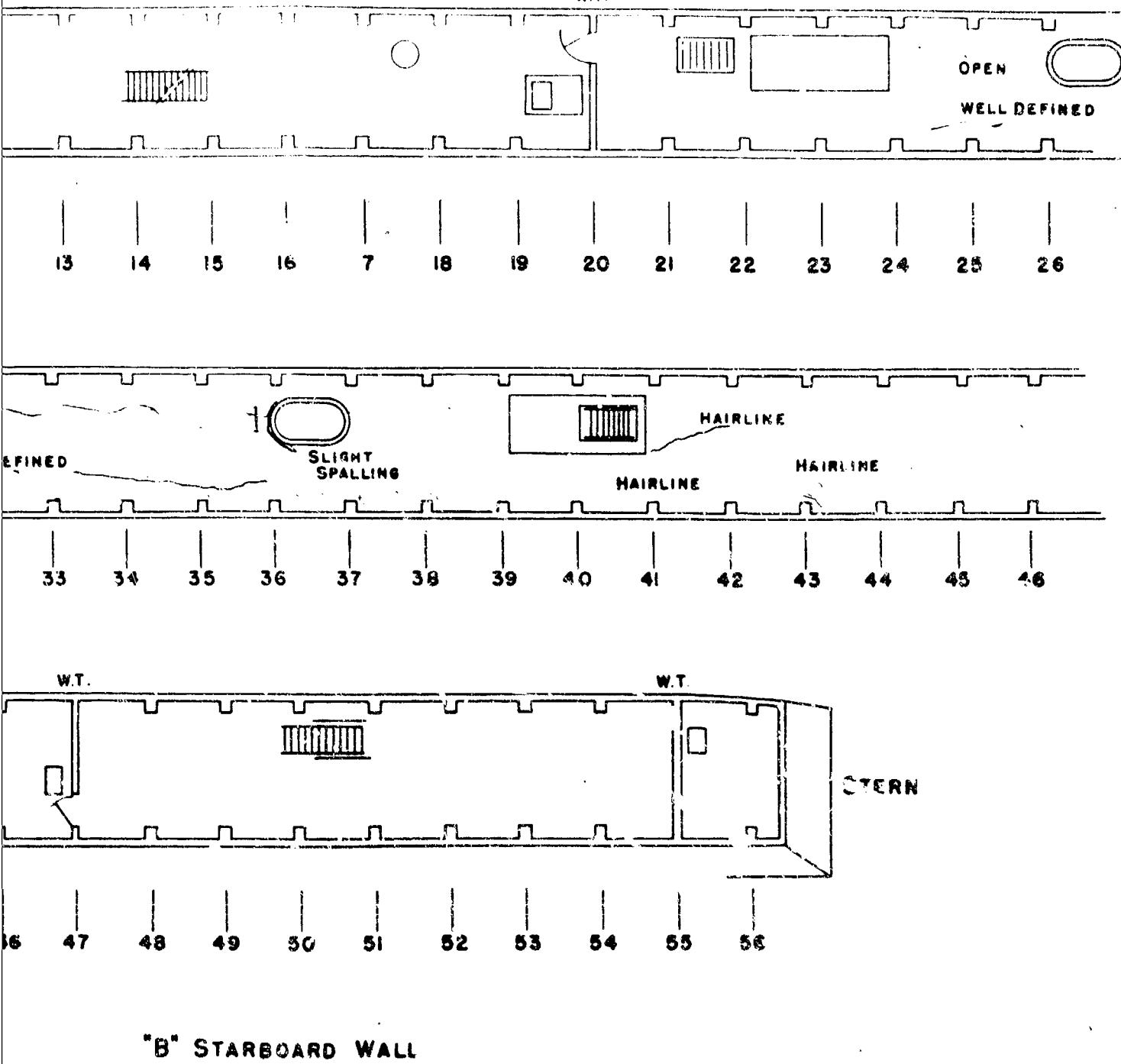
A DECK STARBOARD WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE

10 10 20

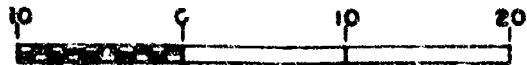
SHEET  
APPENDIX A, ENCLOSURE G TO DRAFTOR SHIP R  
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2



"B" STARBOARD WALL

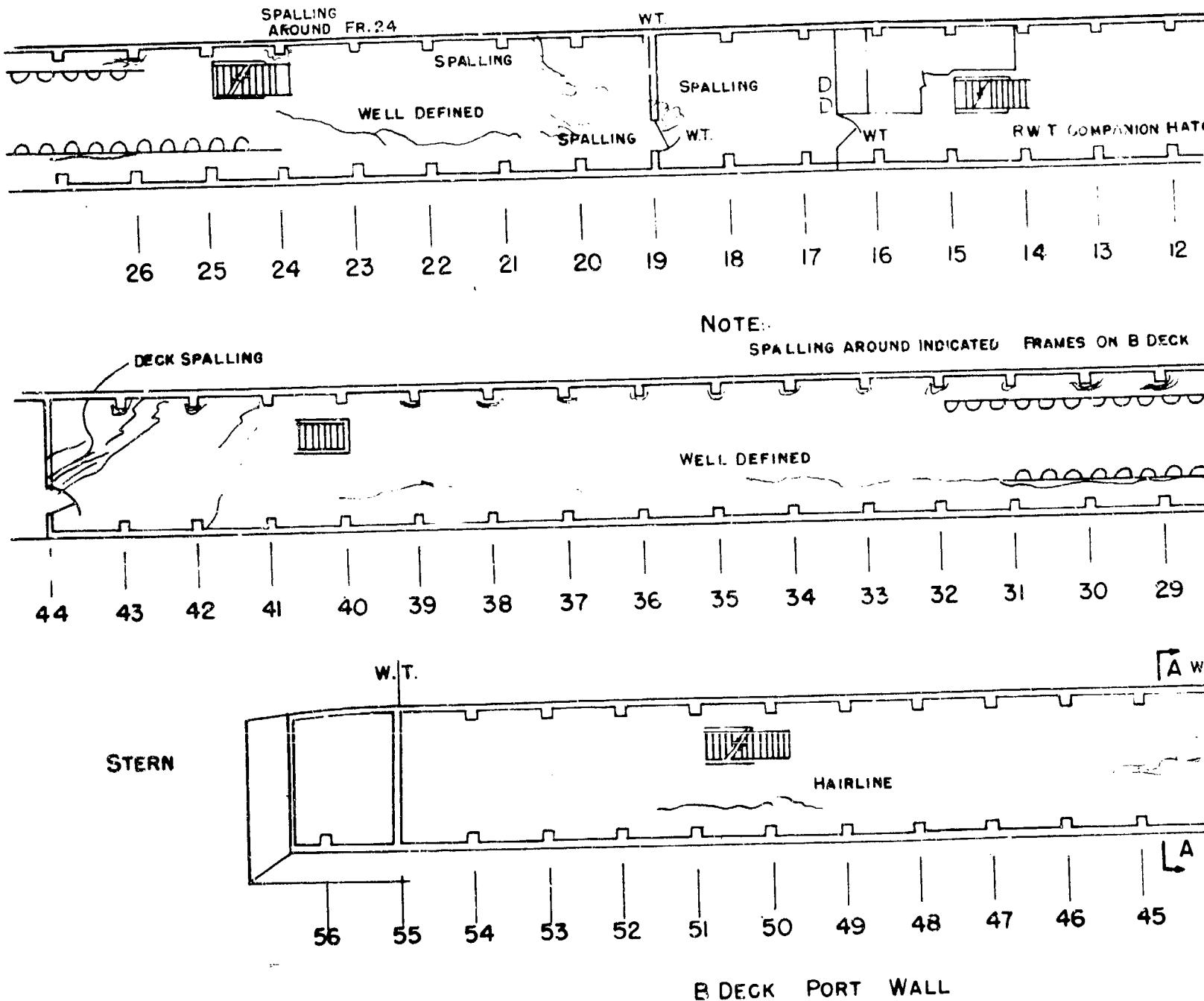
**ARDC - 13**  
**CRACK SURVEY AFTER TESTABLE**



GRAPHIC SCALE IN FEET

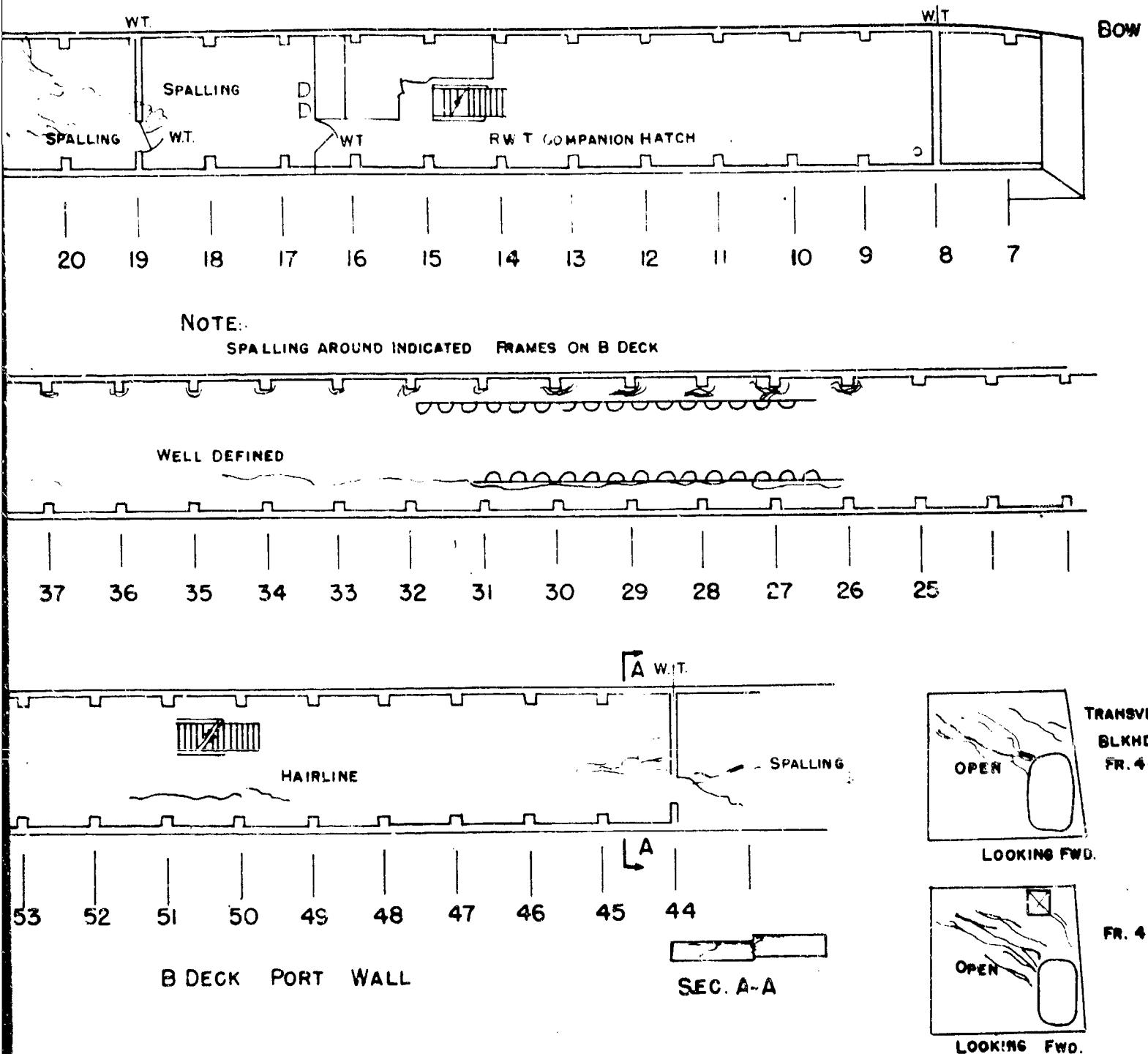
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP  
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### ARDC-13 CRACK SURVEY AFTER TESTABLE



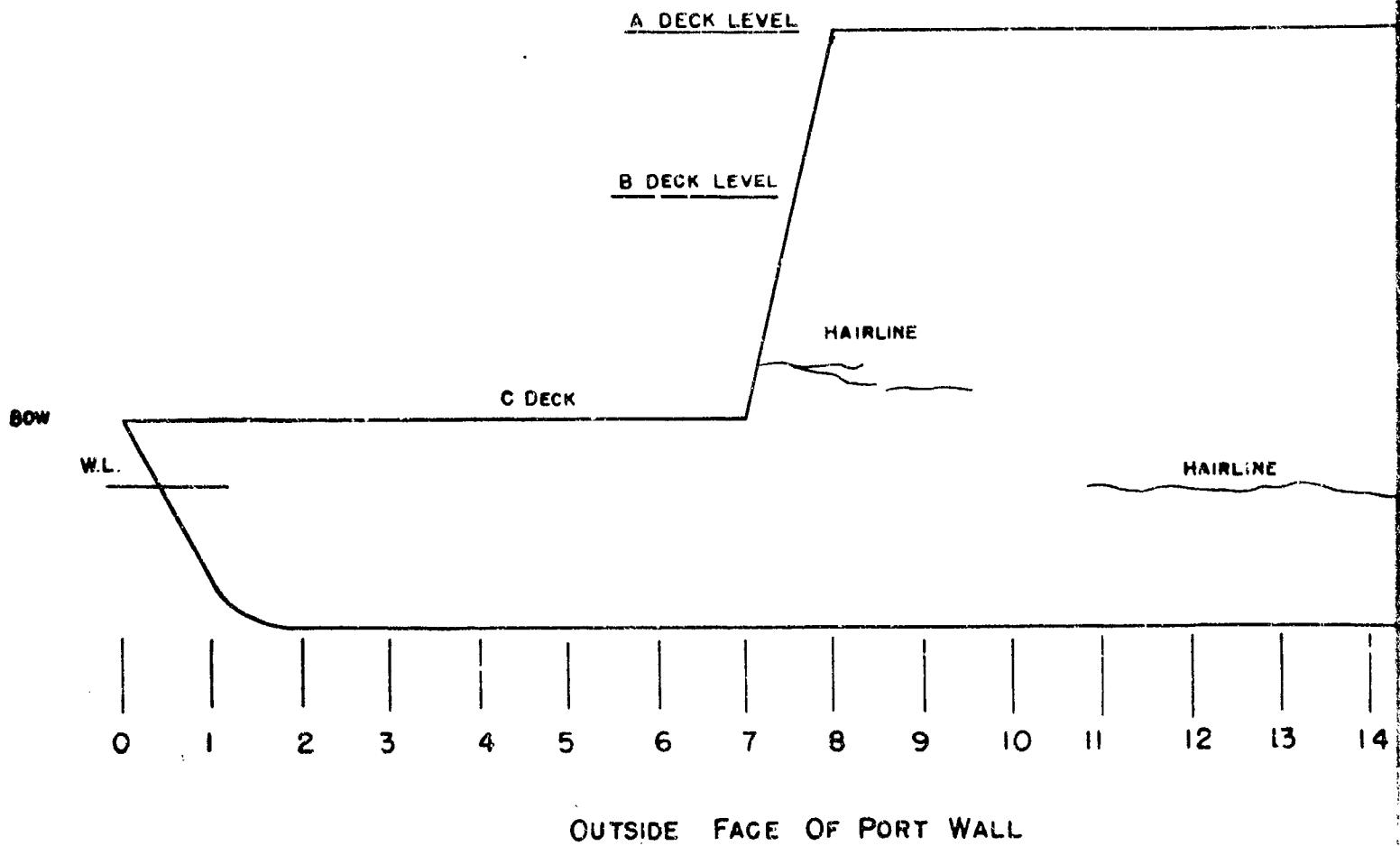


## ARDC-13 CRACK SURVEY AFTER TESTABLE

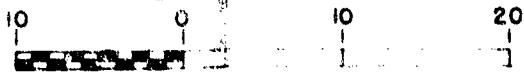


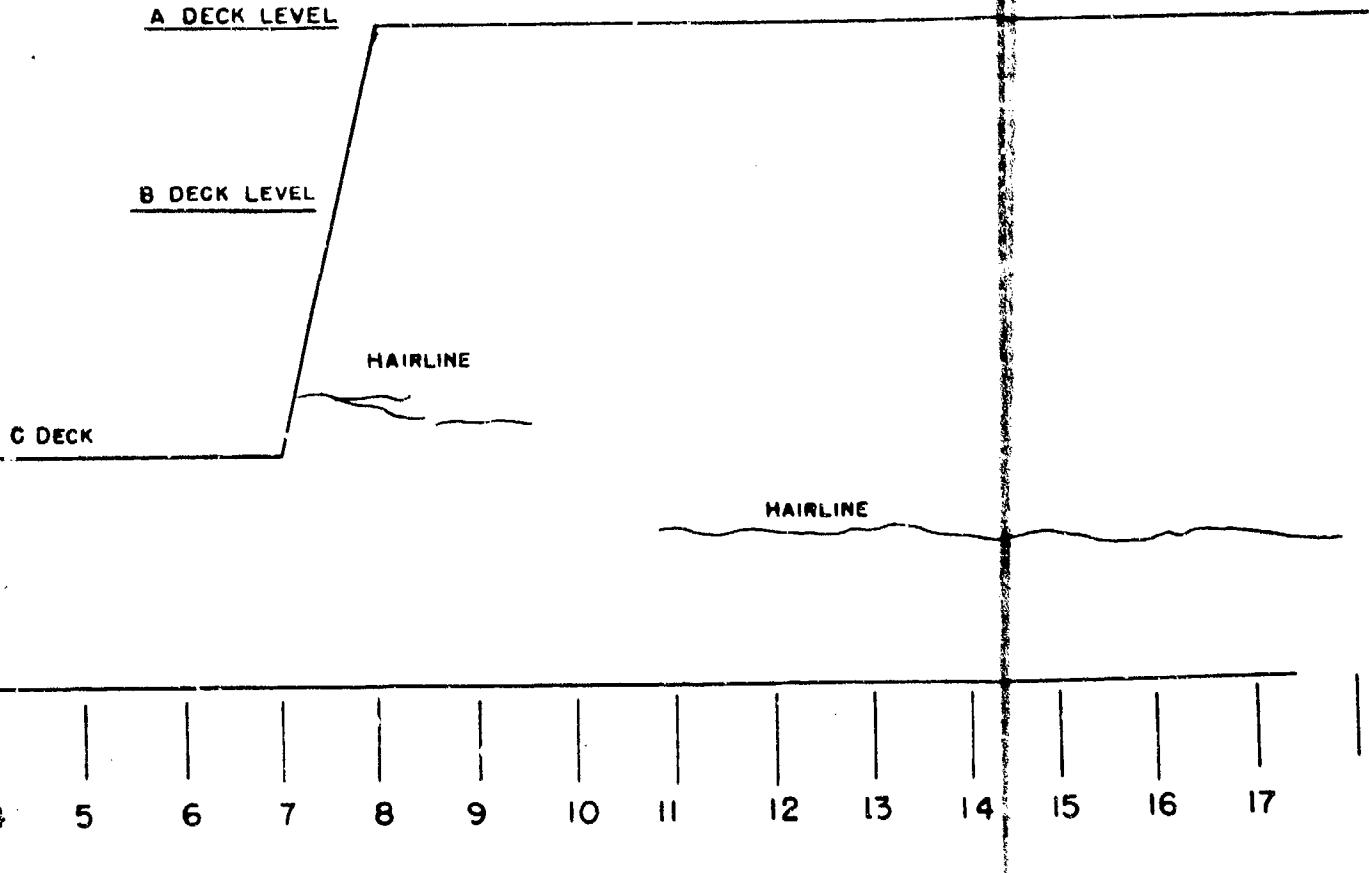
APPENDIX A, ENCLOSURE C TO DIRECTORSHIP  
SERIAL 001500 PAGE 13 OF 30 PA

Shee



**ARDC - 13**  
**CRACK SURVEY AFTER TESTABLE**





OUTSIDE FACE OF PORT WALL

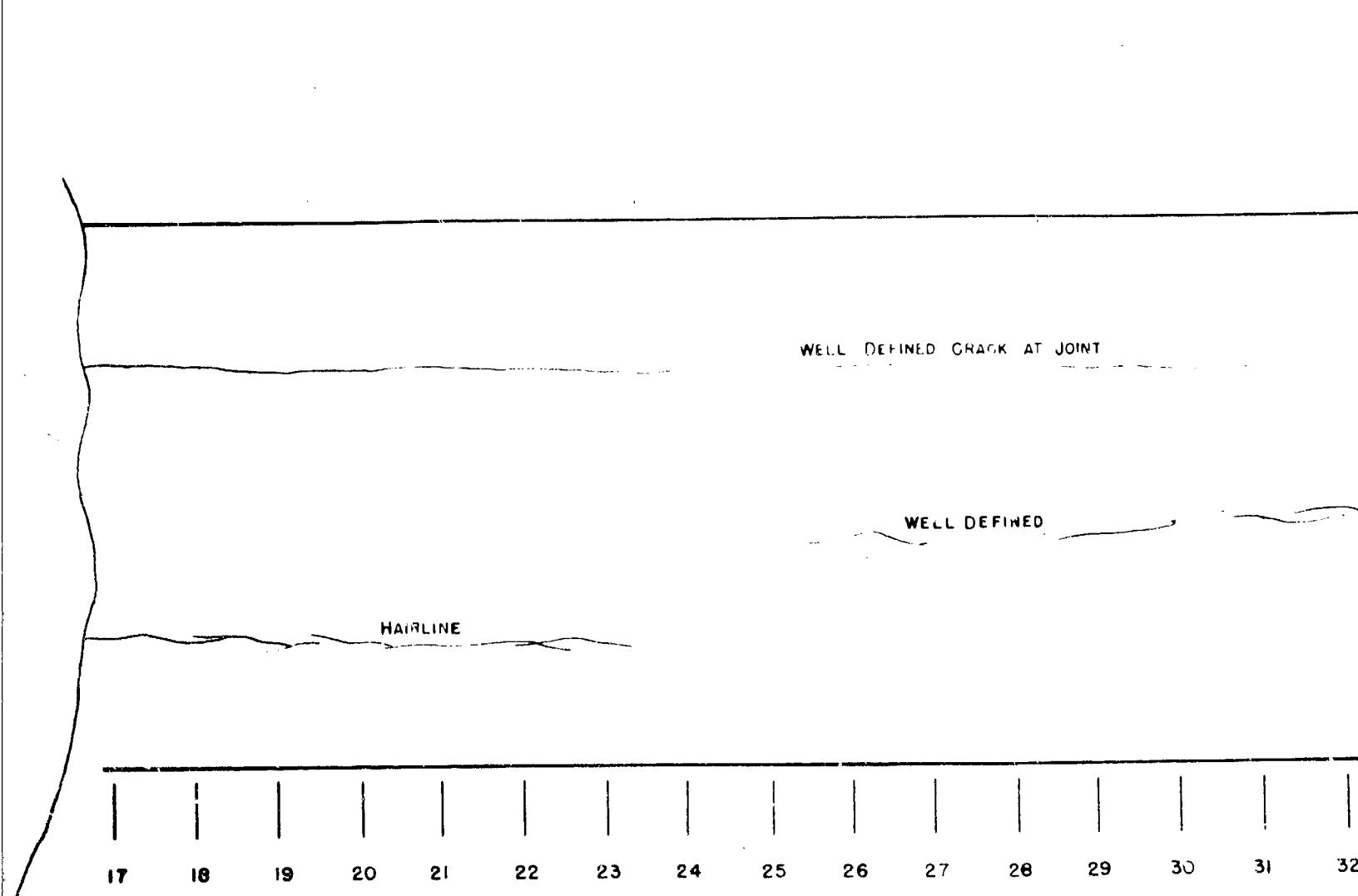
ARDC - 13  
CRACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET

SHEET 12  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP MA  
SERIAL 001500 PAGE 14 OF 30 PAGES

2



WELL DEFINED CRACK AT JOINT

WELL DEFINED

HAIRLINE

17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

OUTSIDE FACE PORT WALL

ARDC-13  
CRACK SURVEY AFTER TESTABLE



"A" DECK

"B" DECK

HAIRLINE

"C" DECK

W.L.

WELL DEFINED

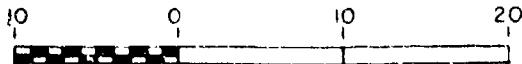
OPEN CRACK

4 25 26 27 28 29 30 31 32 33 34 35 36 37 38

OUTSIDE FACE PORT WALL

**SECRET**

ARDC-13  
RACK SURVEY AFTER TESTABLE



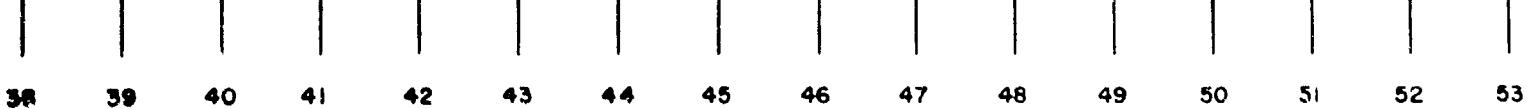
GRAPHIC SCALE IN FEET

SHEET 13 OF 2

APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP MATERIALS  
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2

WELL DEFINED CRACK ALONG JOINT



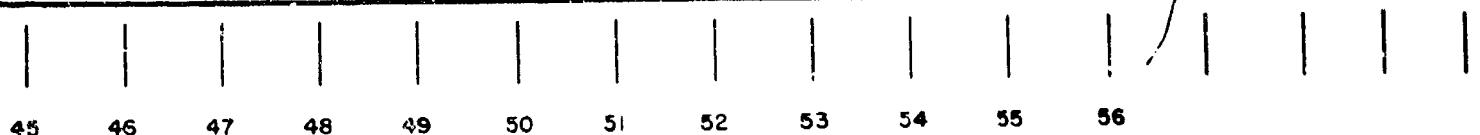
OUTBOARD FACE PORT WALL

ARDC-13  
CRACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET

WELL DEFINED CRACK ALONG JOINT



OUTBOARD FACE PORT WALL

SEE:

ARDC-13  
CRACK SURVEY AFTER TESTABLE



SHEET 14 OF  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP MATE  
SERIAL 001500 PAGE 16 OF 30 PAGES

2

HAIRLINE CRACK ALONG JOINT

"A" DECK

"B" DECK

HAIRLINE

"C" DECK

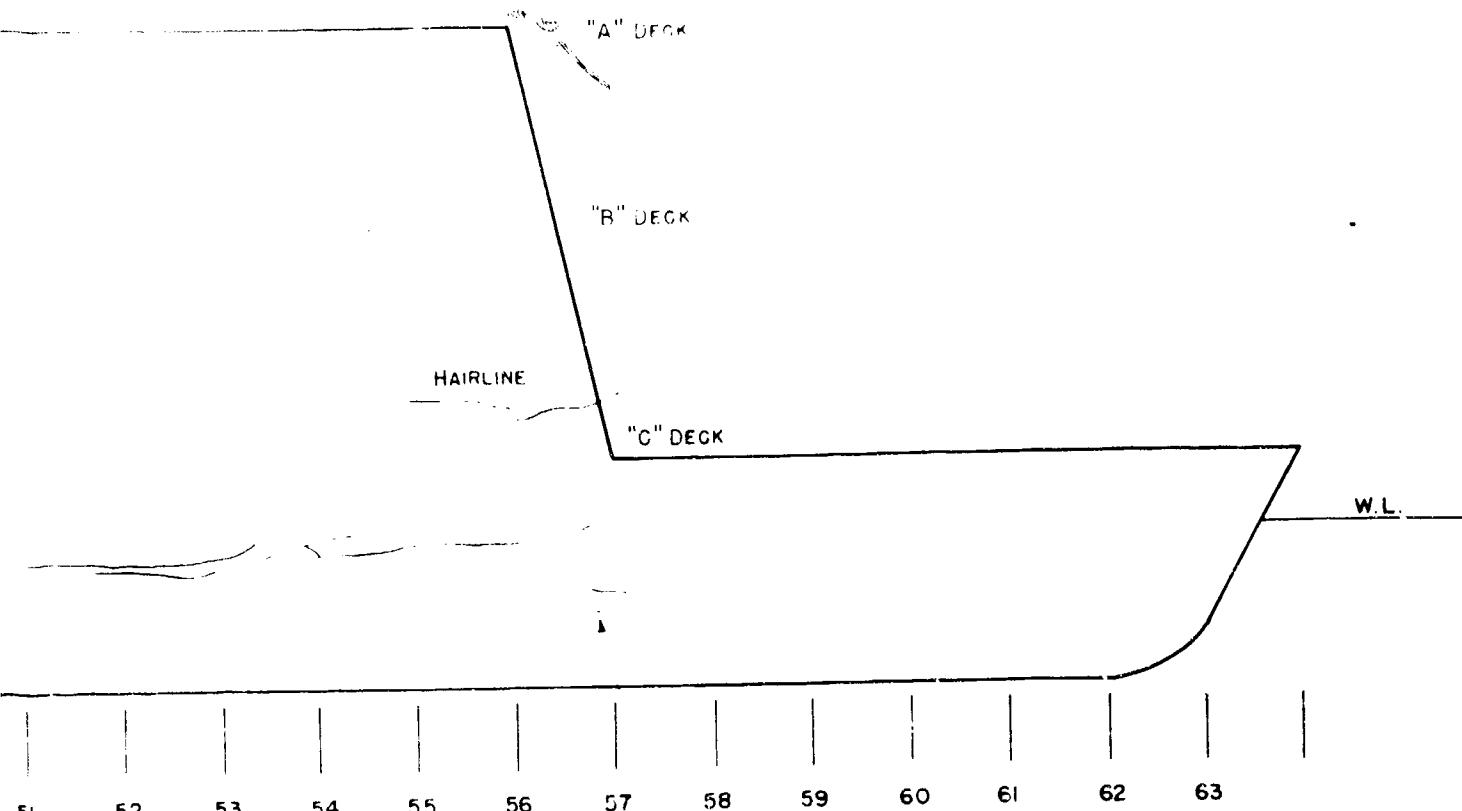


SPALLIN

OUTSIDE FACE PORT WALL

ARDC-13  
CRACK SURVEY AFTER TESTABLE





SPALLING NOTED ON INSIDE OF DECK APPROX. 7' BELOW WATER LINE

OUTSIDE FACE PORT WALL

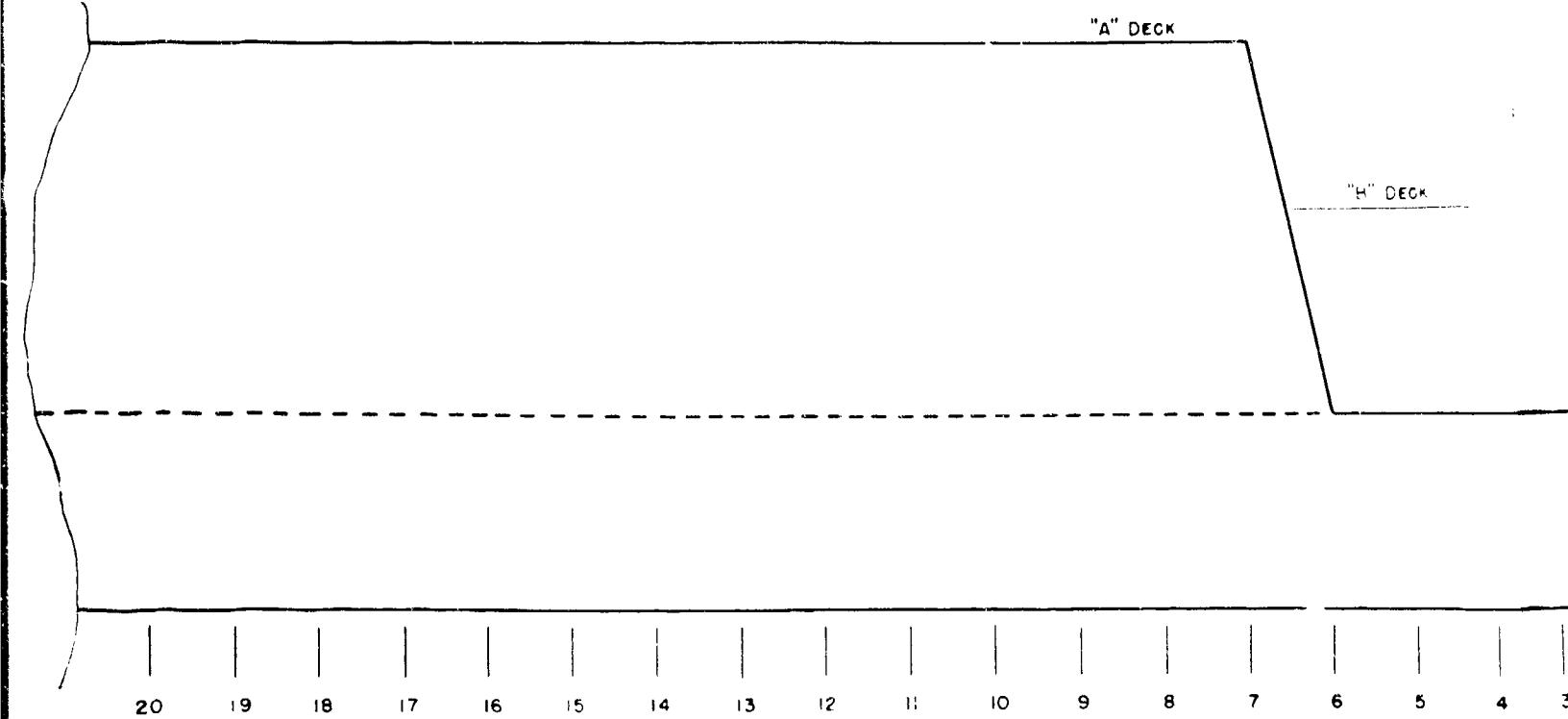
~~SECRET~~

ARDC-13  
CRACK SURVEY AFTER TESTABLE

10 0 10 20  
GRAPHIC SCALE IN FEET

SHEET 15 OF 30  
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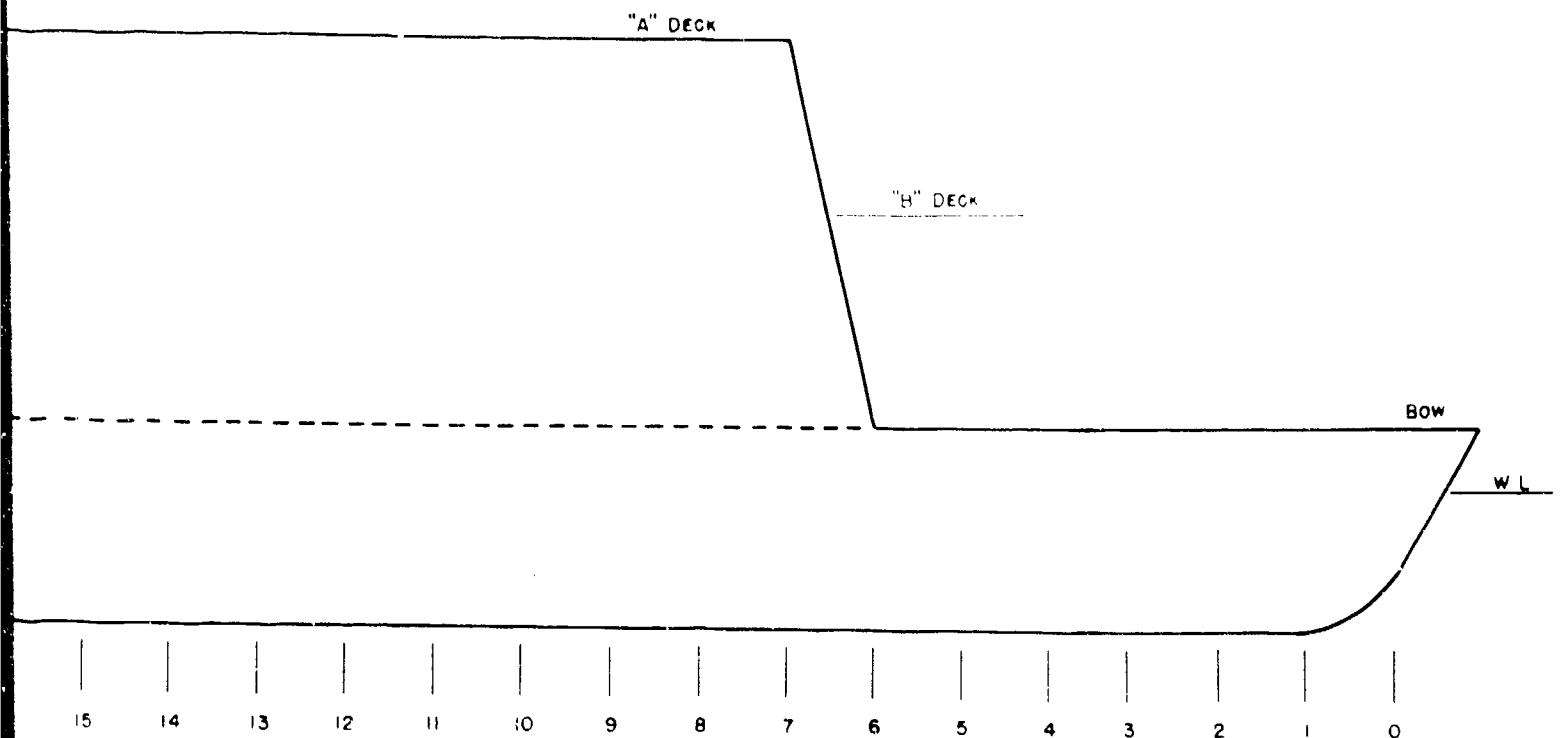


OUTSIDE FACE STARBOARD WALL

ARDC-13  
CRACK SURVEY AFTER TESTABLE



APPENDIX  
SER



OUTSIDE FACE STARBOARD WALL

**ARDC-13  
CRACK SURVEY AFTER TESTABLE**



SHEET 16 OF 24  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP MATERIALS  
SERIAL 001500 PAGE 18 OF 30 PAGES

2

HAIRLINE

HAIRLINE

WELL DEFINED

WELL DEFINED

41 40 39 38 37 36 35 34 33 32 31 30 29 28 27

OUTSIDE FACE STARBOARD WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET

A D

HAI RLINE

B DE

WELL DEFINED

WELL DEFINED

"C" D

W.L.

35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20

OUTSIDE FACE STARBOARD WALL

ARDC - 13

CRACK SURVEY AFTER TESTABLE



APPENDIX A, ENCLOSURE G TO DIRECTOR SH  
SERIAL 001500 PAGE 19 OF 30

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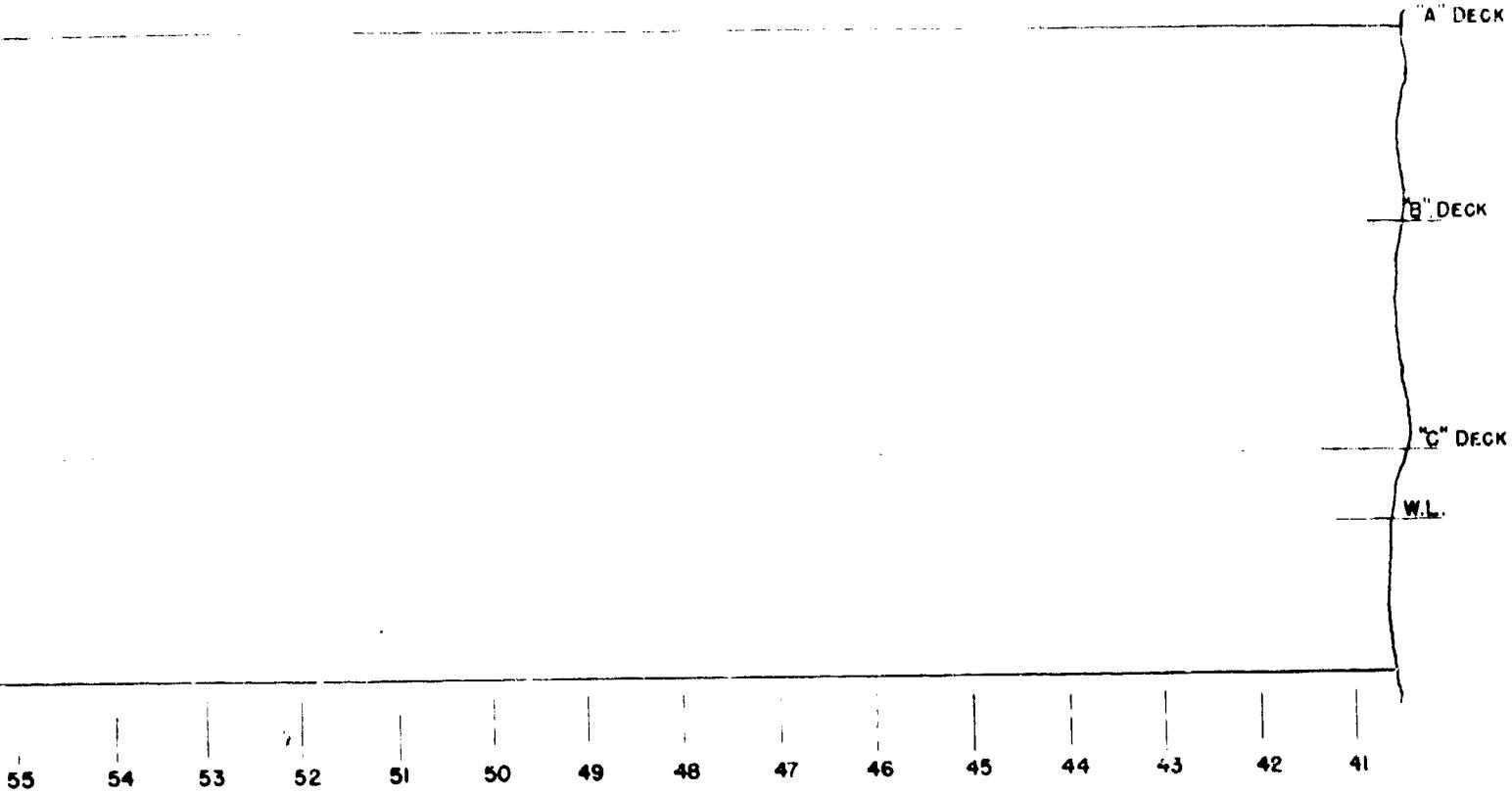
62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47

OUTSIDE FACE STARBOARD WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET



OUTSIDE FACE STARBOARD WALL

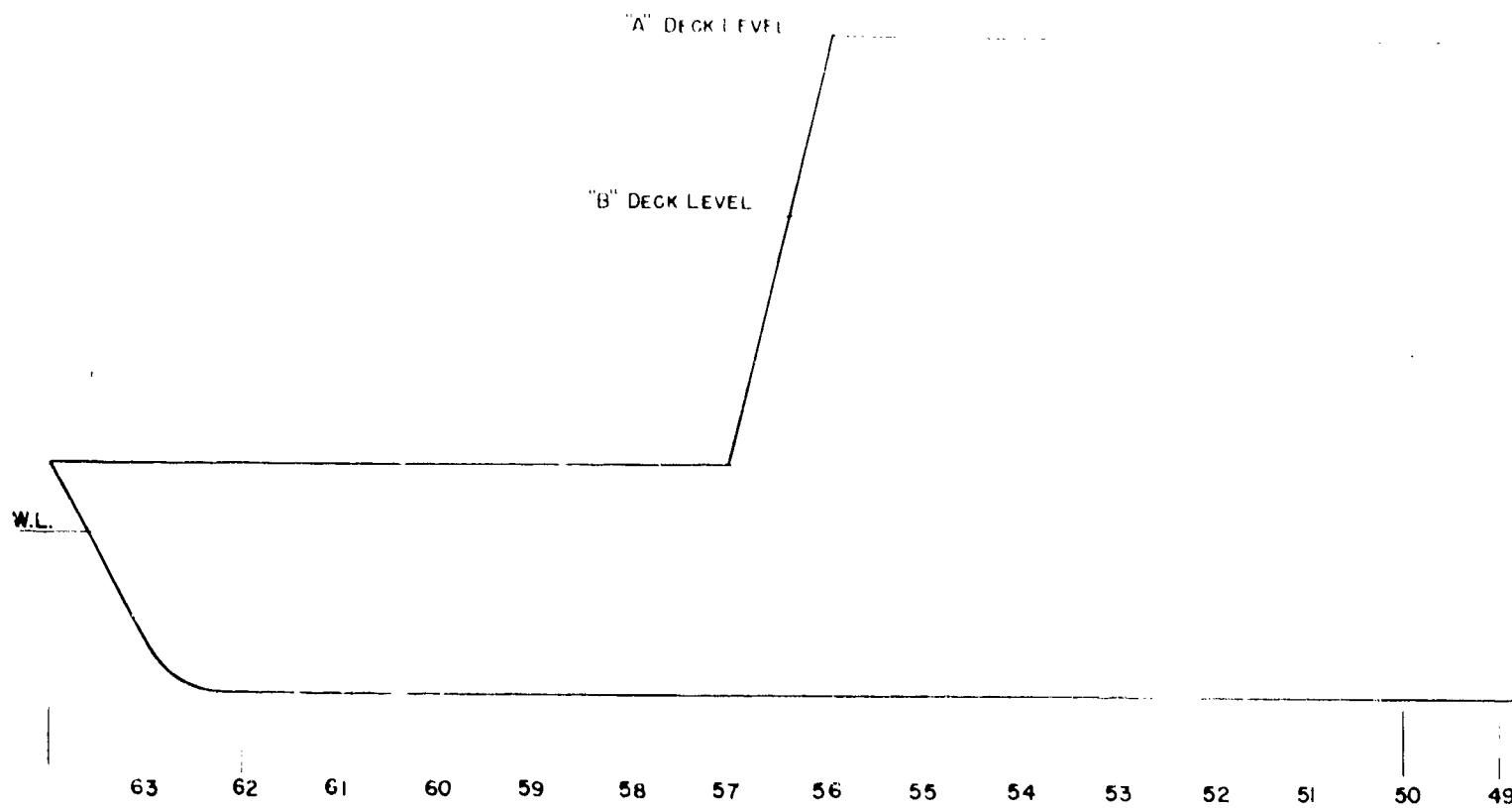
**ARDC - 13**  
**CRACK SURVEY AFTER TESTABLE**



GRAPHIC SCALE IN FEET

S  
APPENDIX A, ENCLOSURE G TO DIRECTOR EN  
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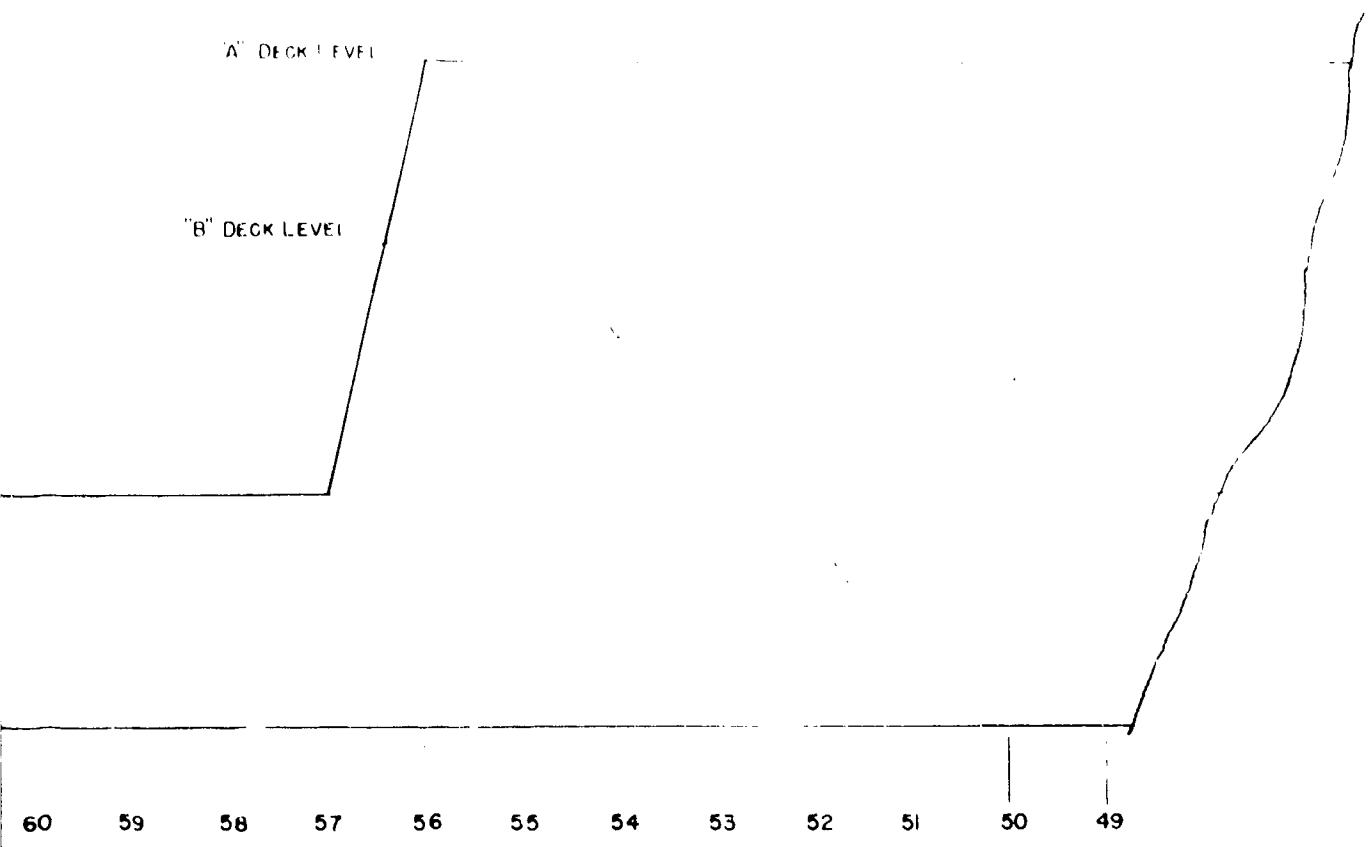


OUTSIDE FACE STARBOARD WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE



APPE



OUTSIDE FACE STARBOARD WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE

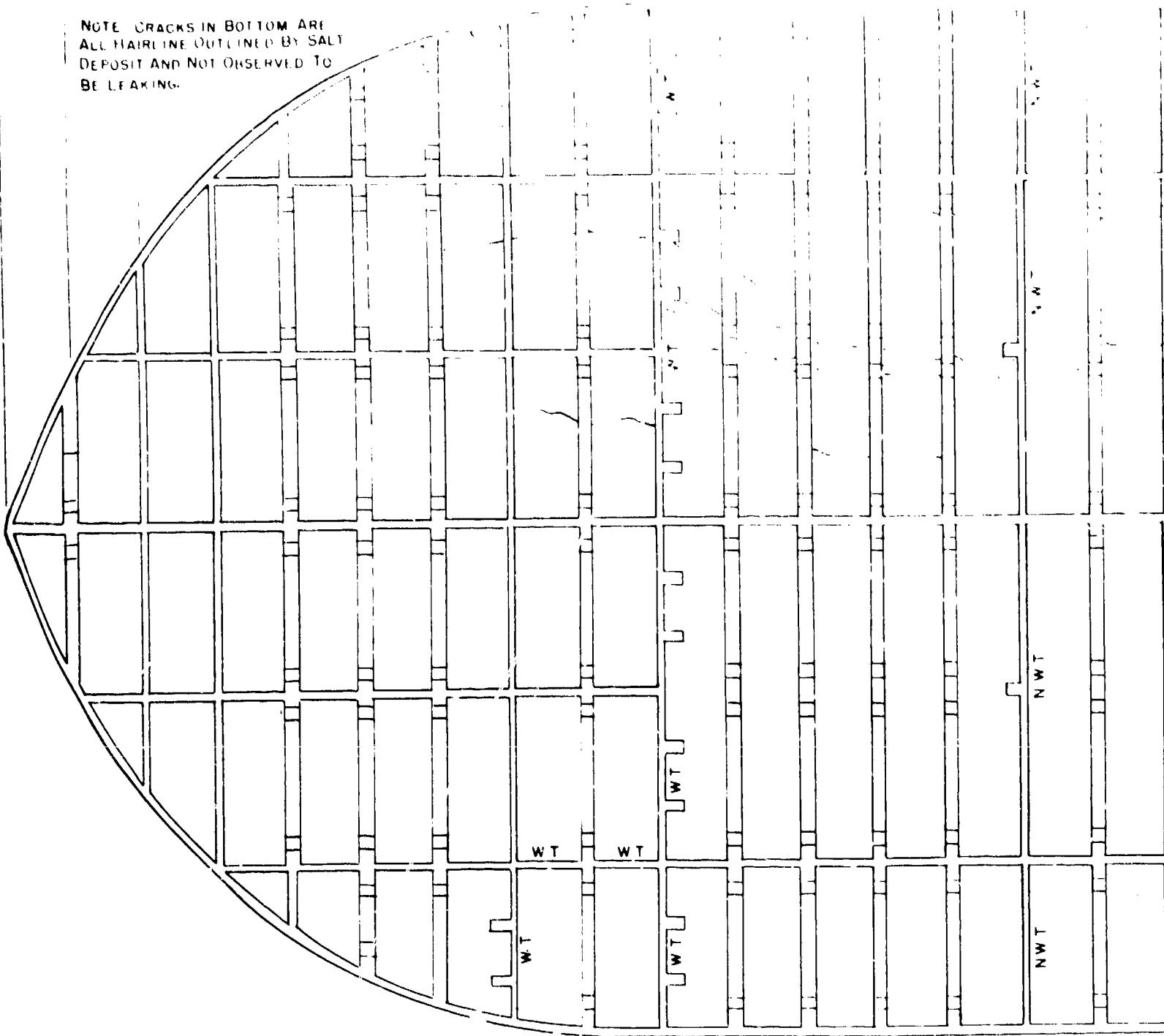


SHEET  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP  
SERIAL 001500 PAGE 21 OF 30 PA

2

63 62 61 60 59 58 57 56 55 54 53 52 51 50 49

NOTE: CRACKS IN BOTTOM ARE  
ALL HAIRLINE OUTLINED BY SALT  
DEPOSIT AND NOT OBSERVED TO  
BE LEAKING.

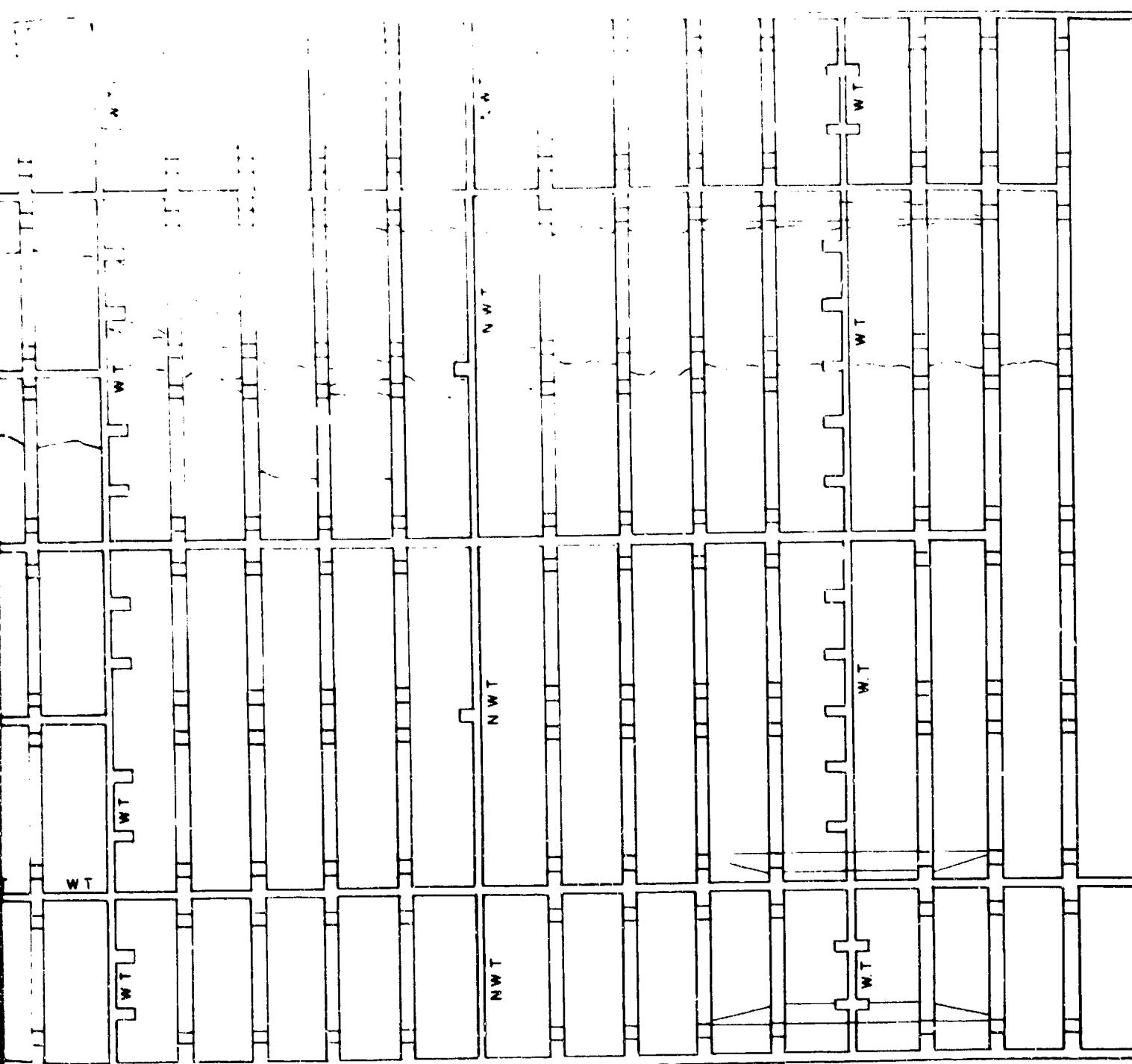


ARDC - 13  
CRACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET

56 55 54 53 52 51 50 49 48 47 46 45 44 43 42



**ARDC - 13**  
**CRACK SURVEY AFTER TESTABLE**

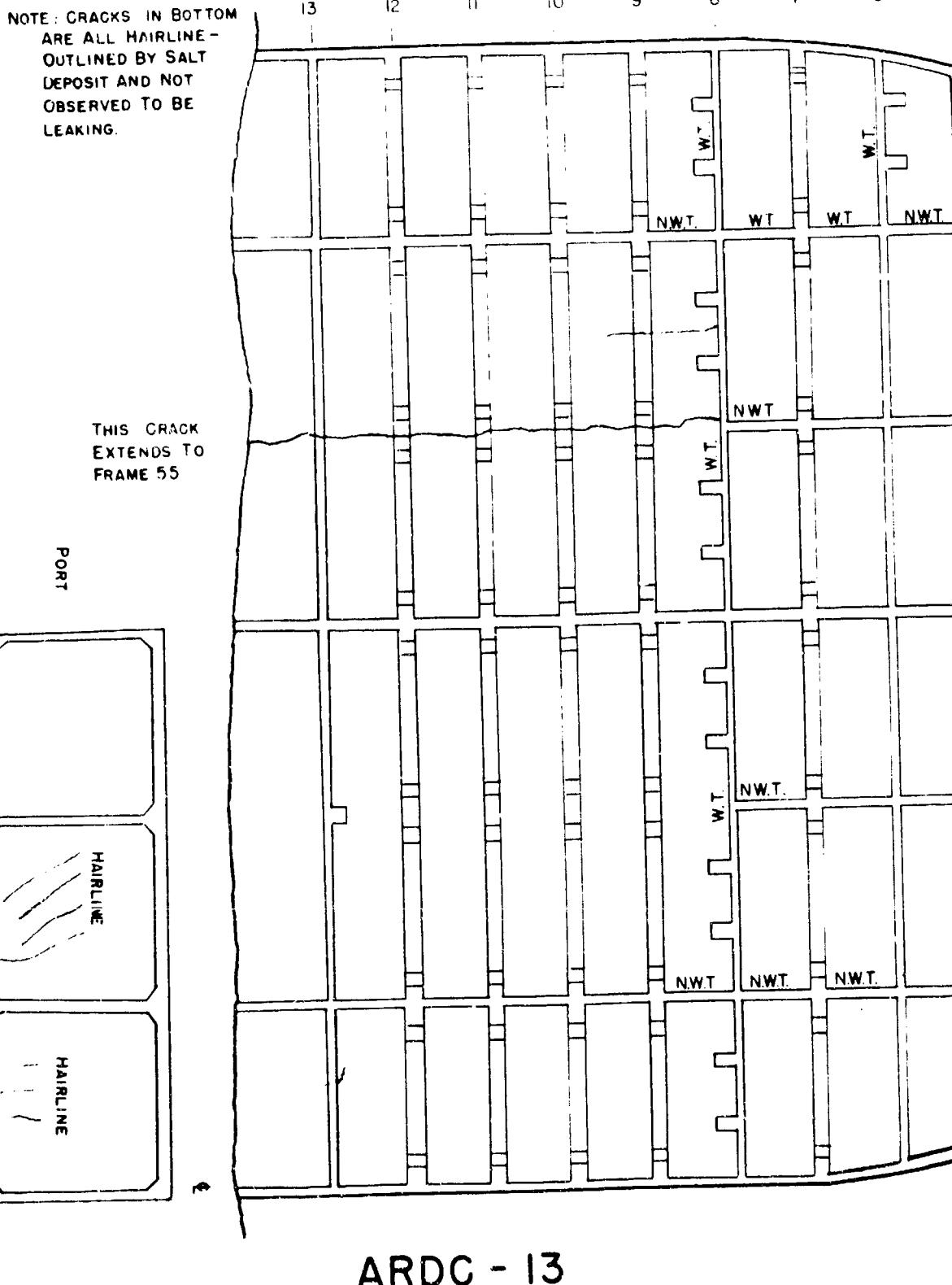
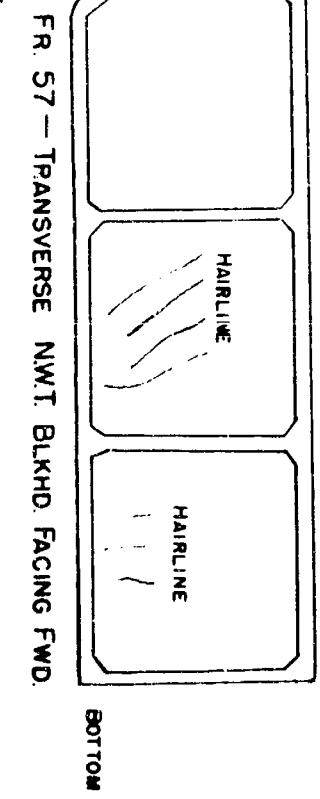
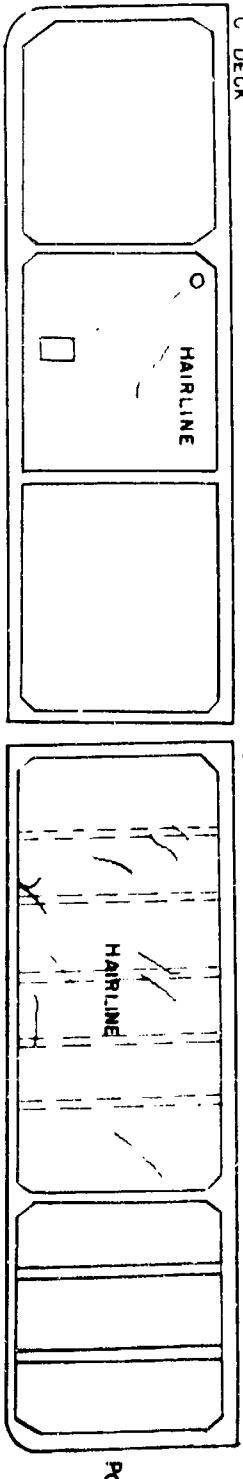


GRAPHIC SCALE IN FEET

APPENDIX A, ENCLOSURE G TO DIRECTOR SHI  
SERIAL 001500 PAGE 22 OF 30 P

2

NOTE: CRACKS IN BOTTOM  
ARE ALL HAIRLINE -  
OUTLINED BY SALT  
DEPOSIT AND NOT  
OBSERVED TO BE  
LEAKING.

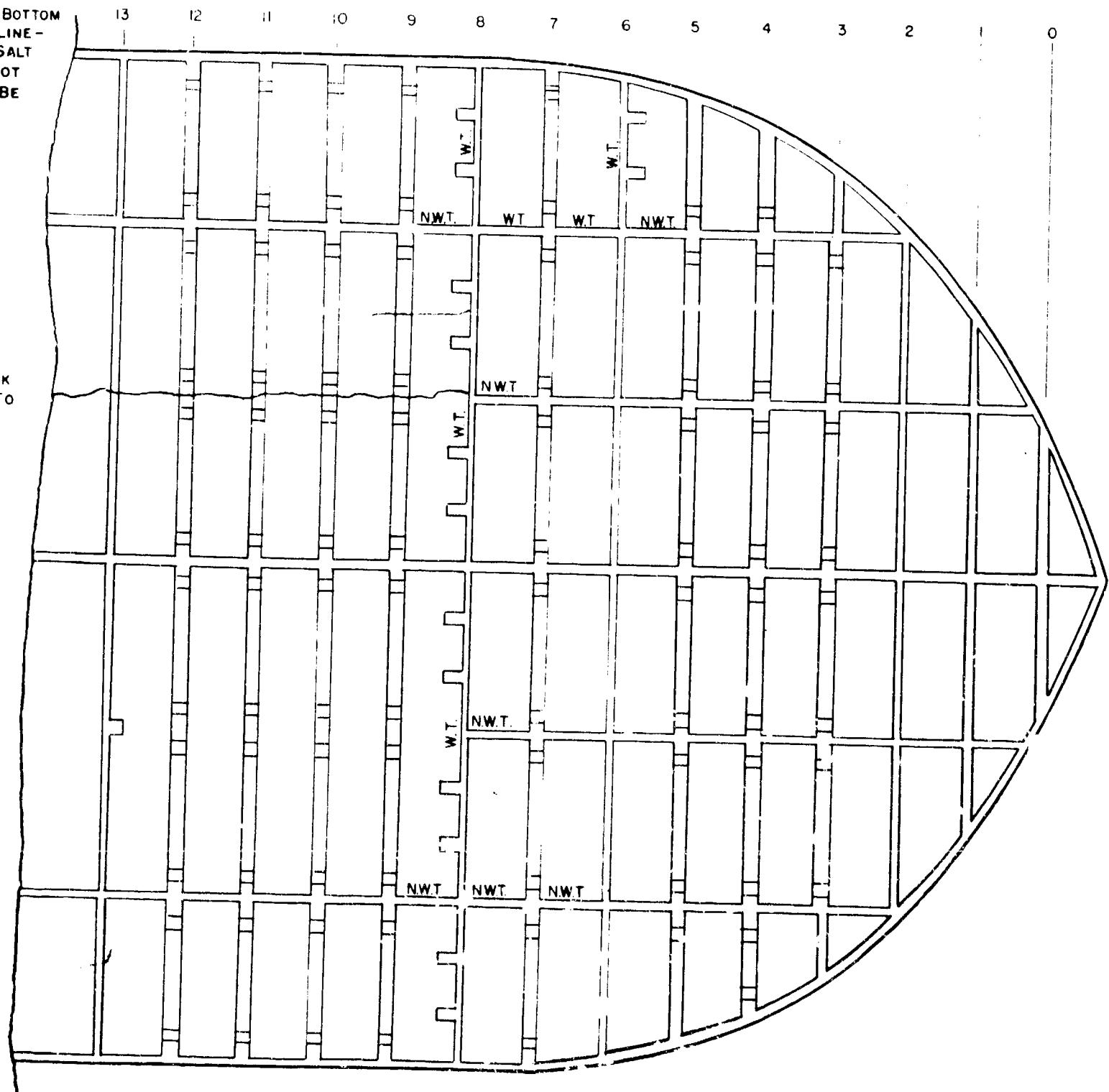


ARDC - 13  
CRACK SURVEY AFTER TESTABLE



OCKS IN BOTTOM  
LL HAIRLINE -  
ED BY SALT  
T AND NOT  
VED TO BE  
G.

S CRACK  
ENDS TO  
ME 55



**ARDC - 13**  
**CRACK SURVEY AFTER TESTABLE**

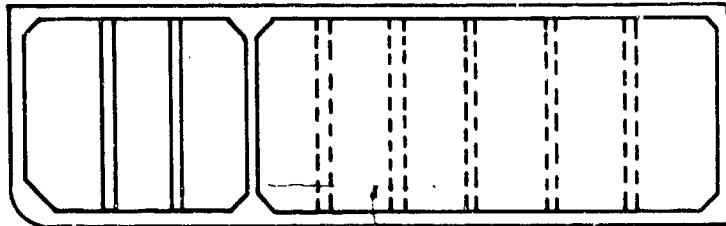


APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP  
SERIAL 001000 PAGE 23 OF 30 PA

SHIP

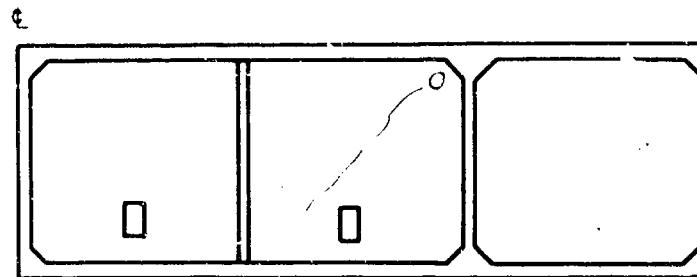
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PORT



JOINT HAIRLINE CRACK

WT BLKHD FR. 17-FACING FWD

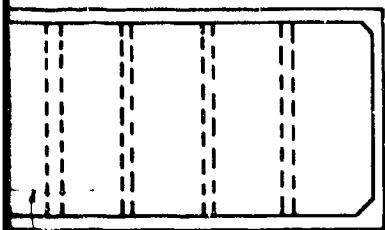


NWT BLKHD FR. 23-FACING AFT

ARDC-13  
CRACK SURVEY AFTER TESTABLE

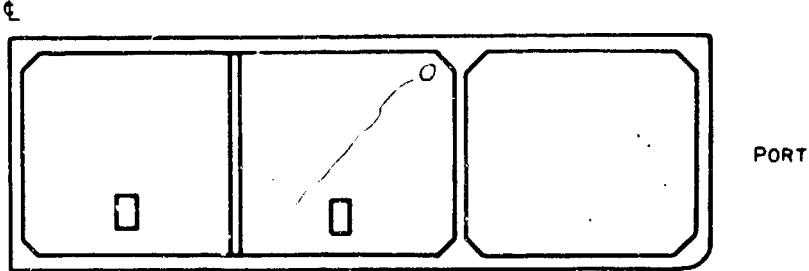


APPENDIX A,  
SERIAL



JOINT HAIRLINE CRACK

17-FACING FWD



NWT BLKHD FR. 23-FACING AFT

ARDC-13

CRACK SURVEY AFTER TEST ABLE

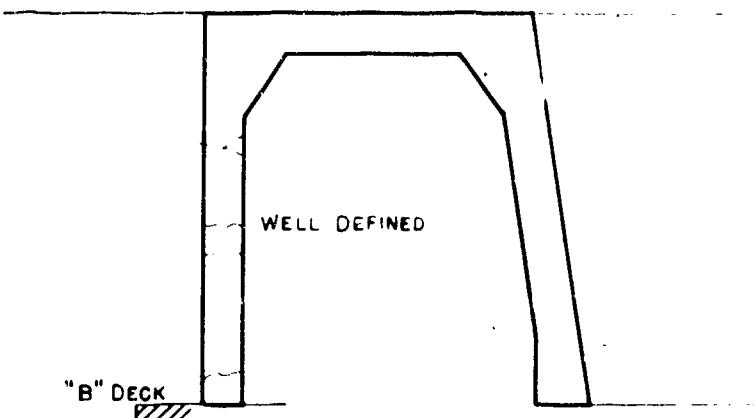
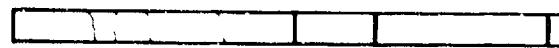
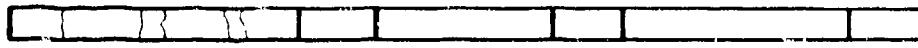
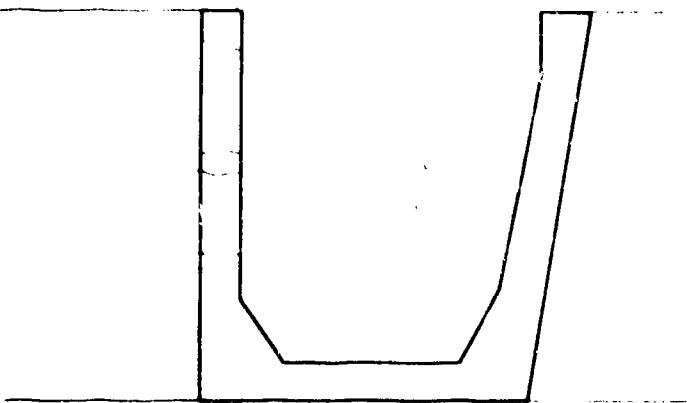


GRAPHIC SCALE IN FEET

SHEET 22  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP MAT  
SERIAL 001500 PAGE 24 OF 30 PAGES

SECRET

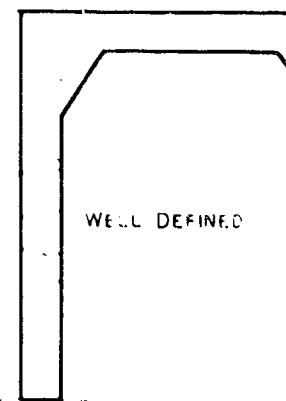
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FR 10 TO 13

1000

FR. 14 TO 1

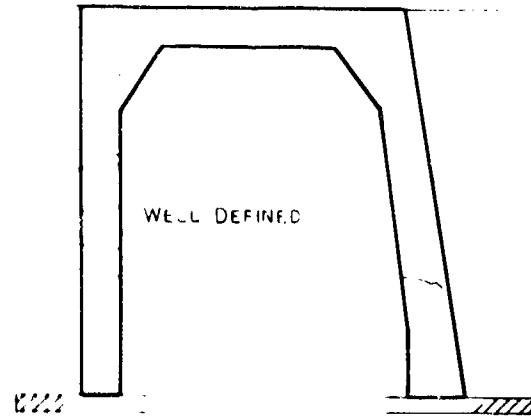
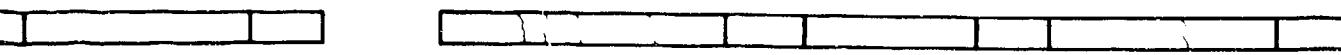
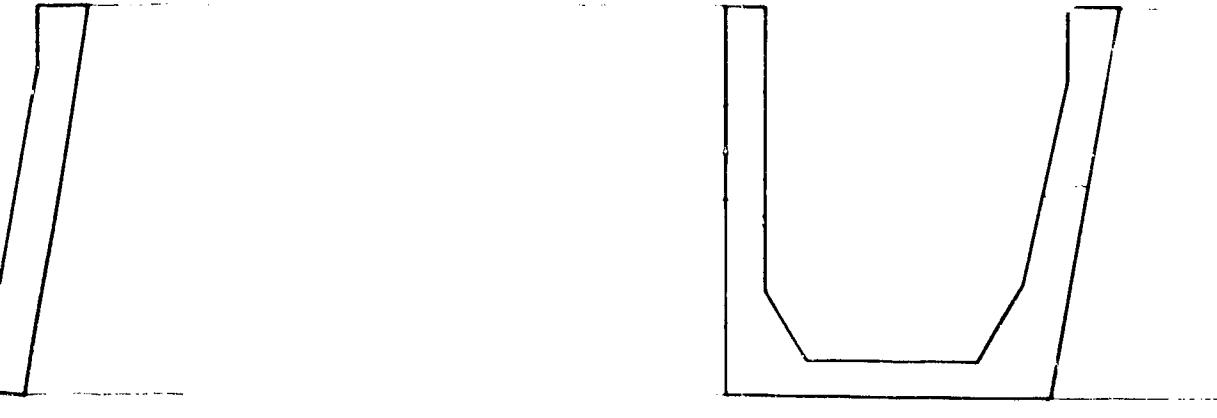


PORT WALL - FACING FWD

ARDC-13  
CRACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET



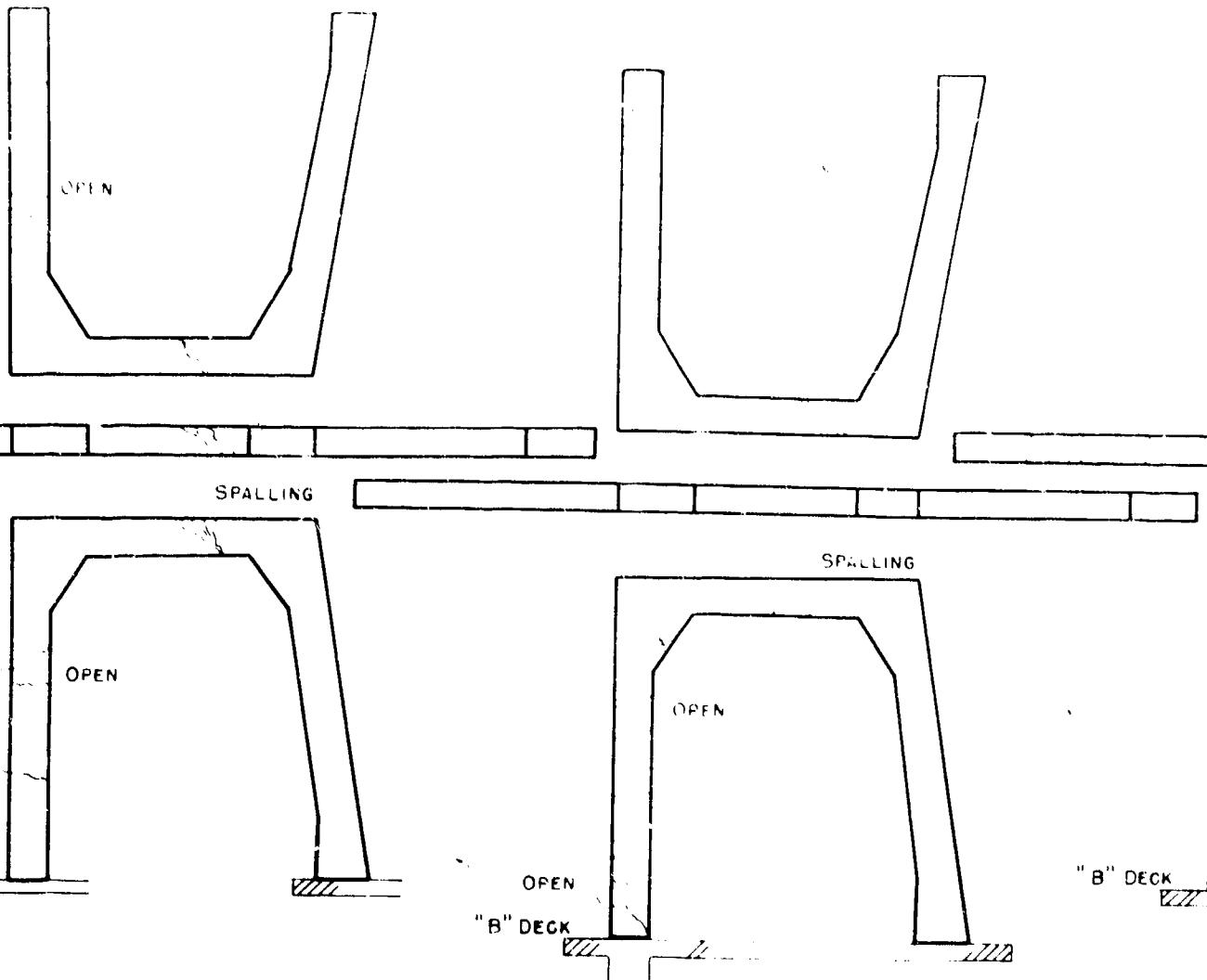
FR. 14 TO 18

PORT WALL-FACING FWD

ARDC-13  
CRACK SURVEY AFTER TESTABLE  
5 0 5 10  
GRAPHIC SCALE IN FEET

SHEET 23 C  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP MATE  
SERIAL 00150C PAGE 25 OF 30 PAGES

2



FR. 20 TO 21

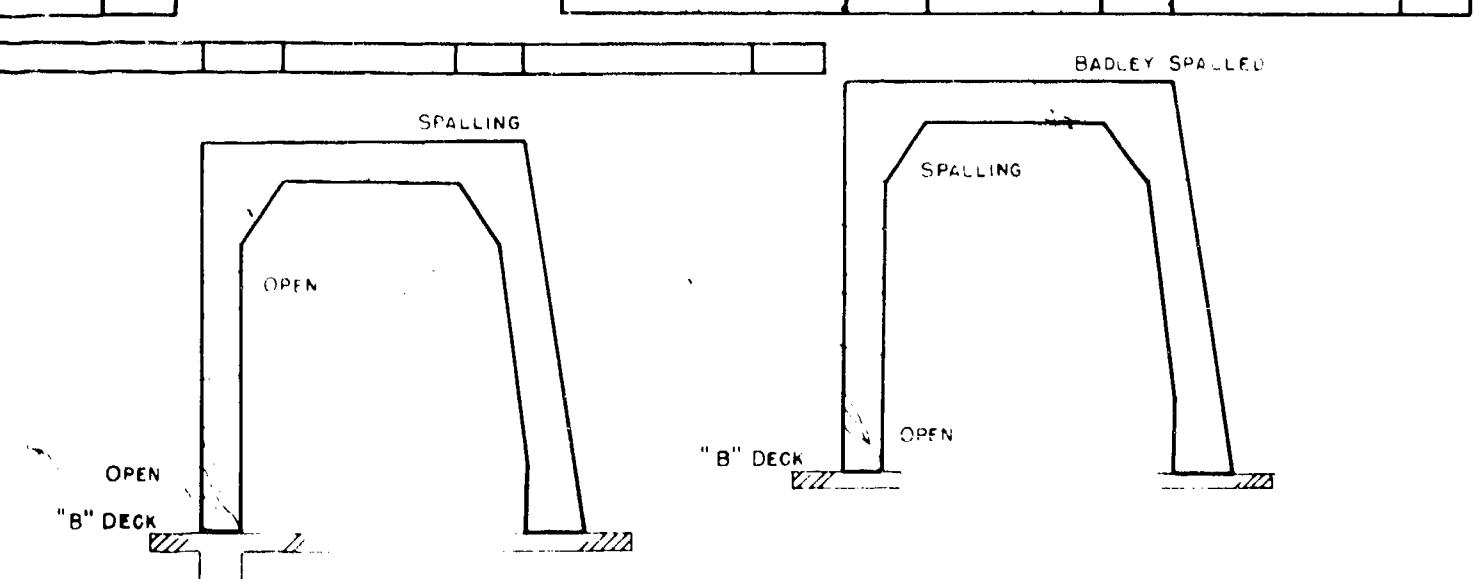
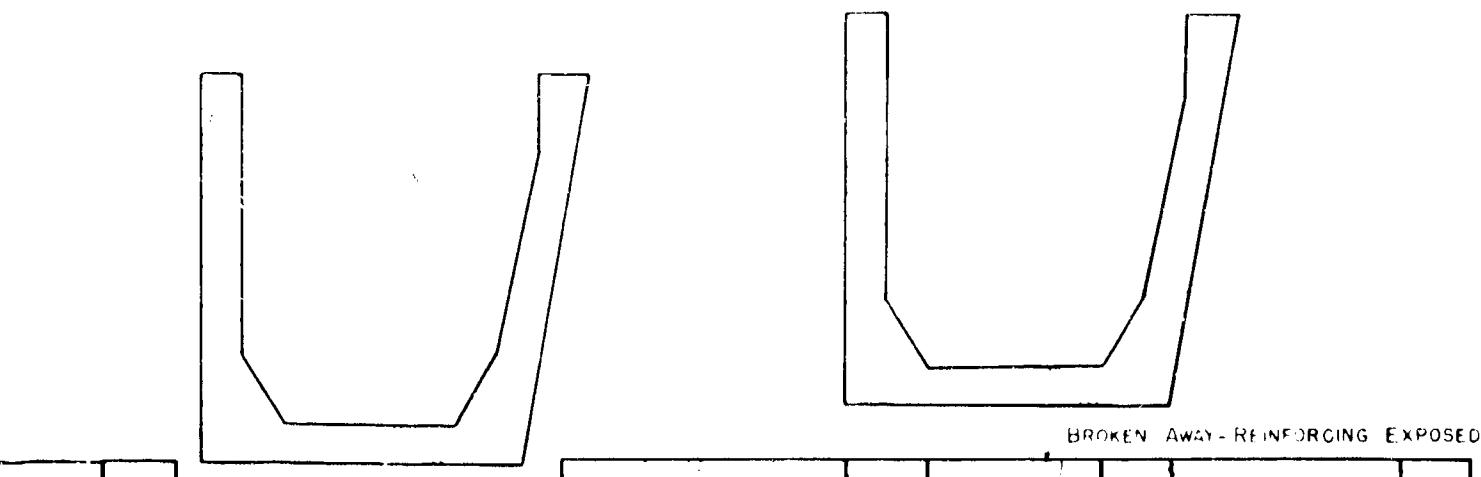
FR. 22 TO 25

PORT WALL - FACING FWD

ARDC-13  
CRACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET



FR 22 TO 25

FR. 26 TO 27

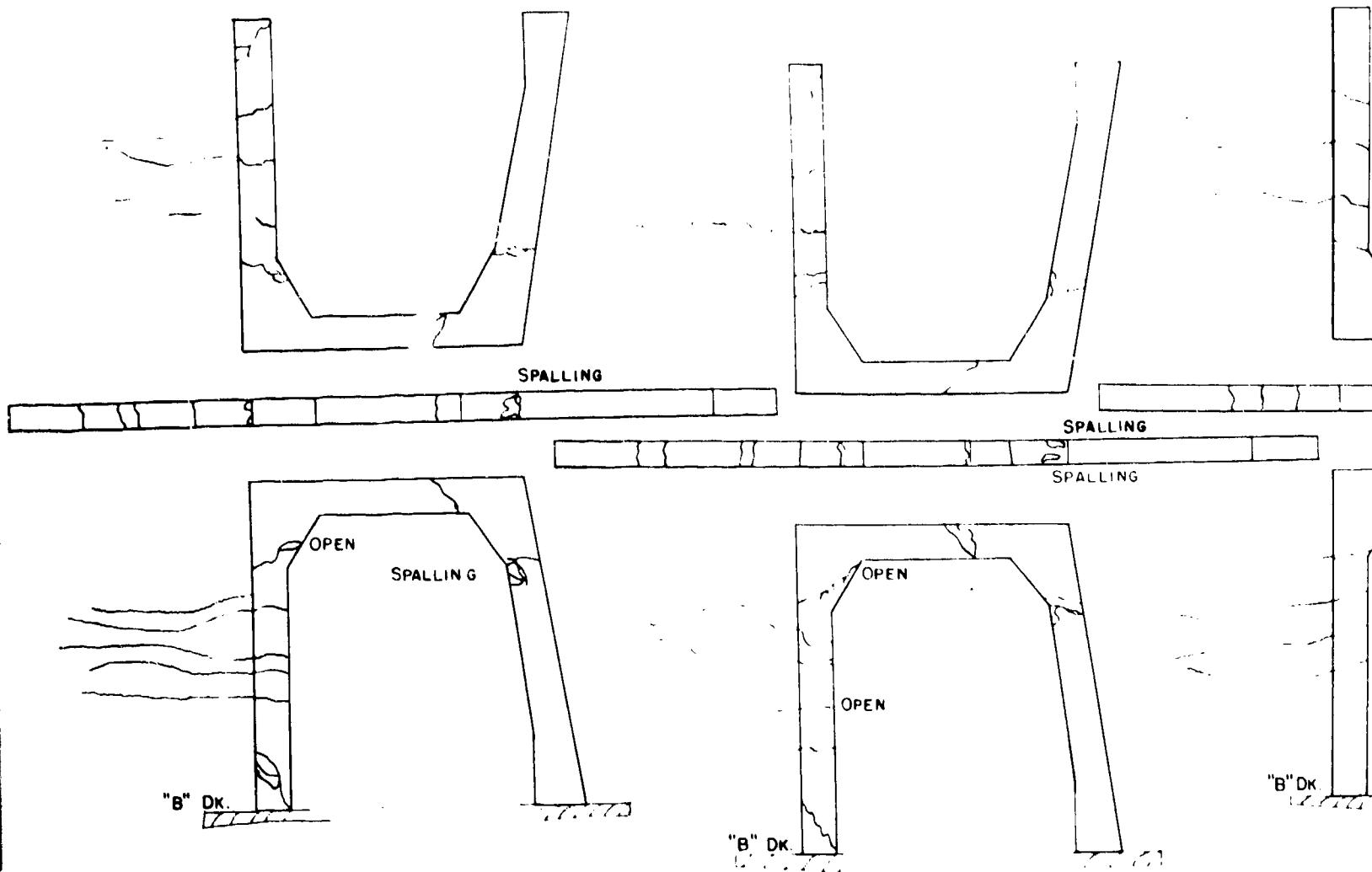
PORT WALL - FACING FWD

**ARDC-13**  
**RACK SURVEY AFTER TESTABLE**



SHEET 24 OF  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP MATERI  
SERIAL 001500 PAGE 26 OF 30 PAGES

2



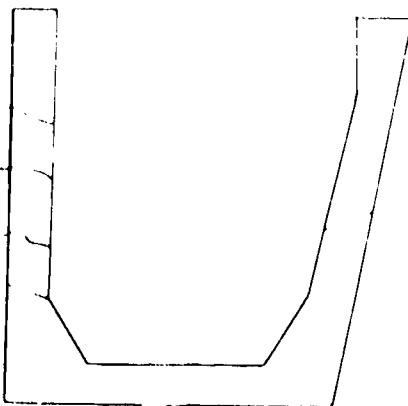
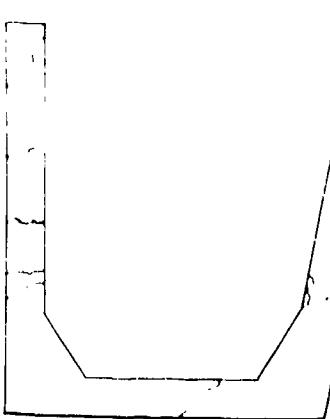
FR. 28 TO 32

FR. 23 TO 43

PORT WALL FACING FWD.

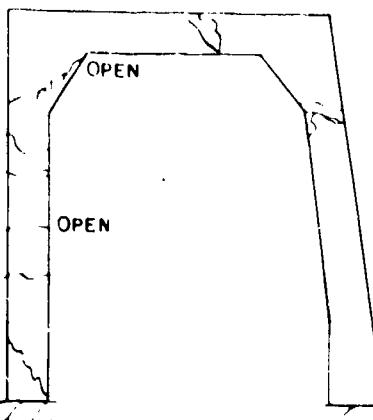
**ARDC - 13**  
**CRACK SURVEY AFTER TEST ABLE**





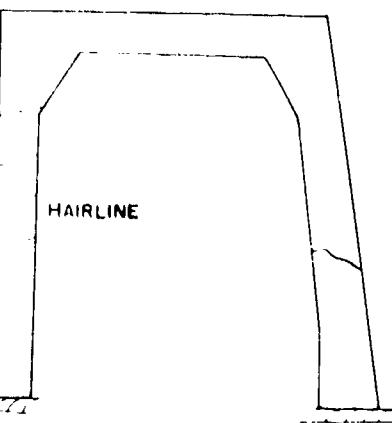
SPALLING

SPALLING



FR. 23 TO 43

PORT WALL FACING FWD.



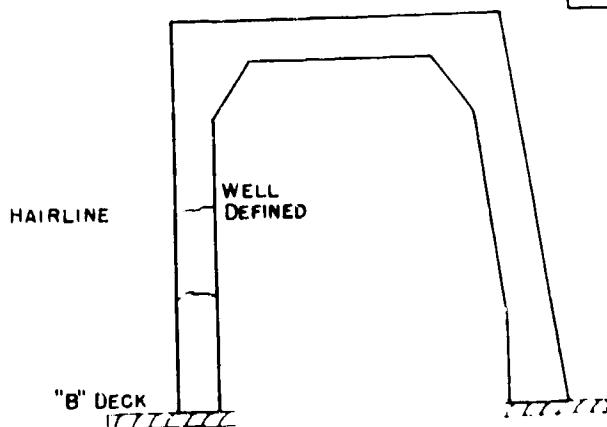
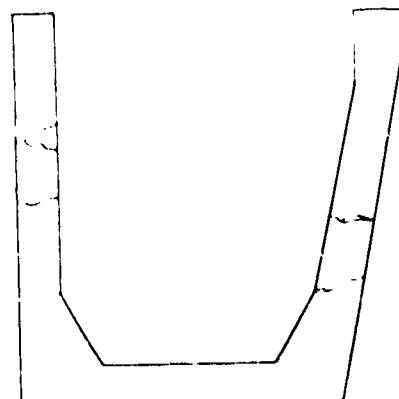
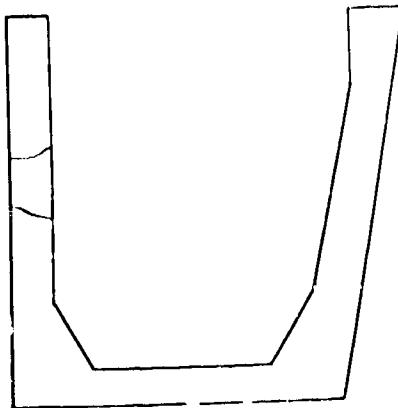
FR. 44 TO 54

ARDC - 13  
CRACK SURVEY AFTER TESTABLE

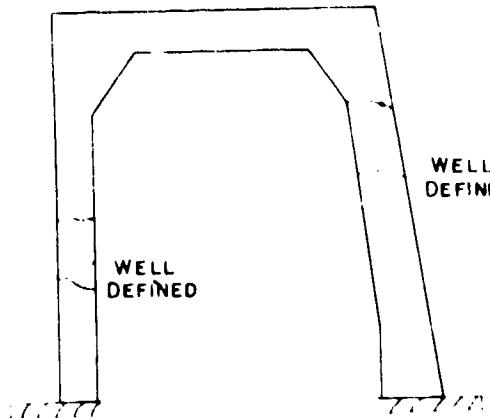


SHEET  
APPENDIX A, ENCLOSURE G TO DIRECTORSHIP  
SERIAL 001500 PAGE 27 OF 30 PAG

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FR. 10 To 22

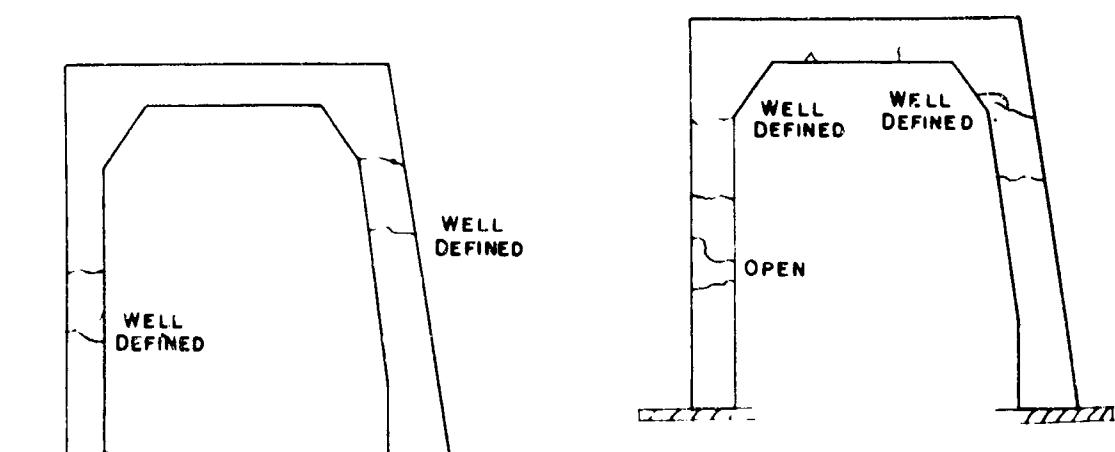
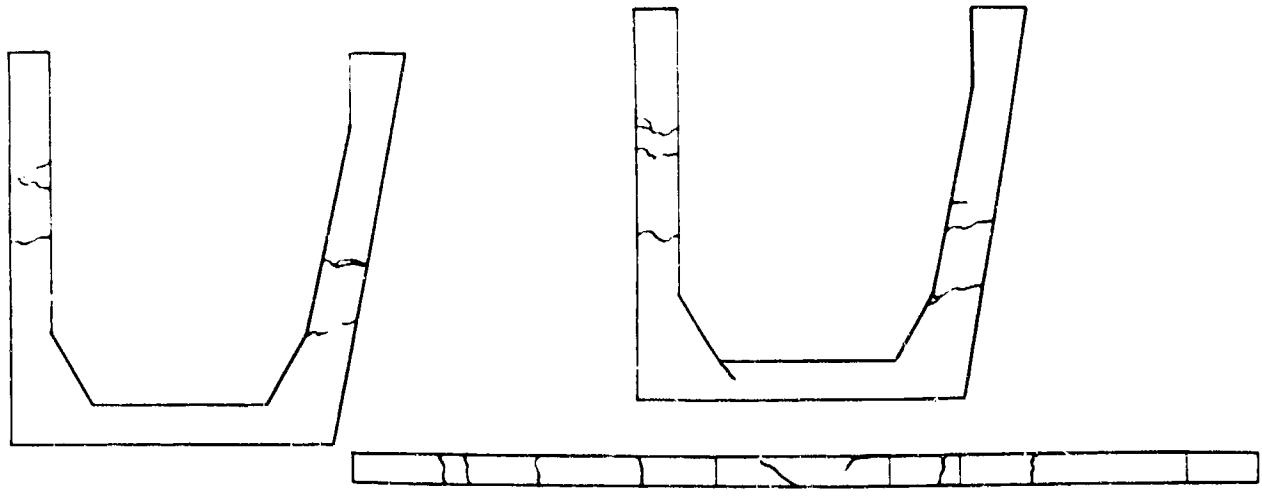


FR. 23 To 25

STARBOARD WALL - FACING FWD.

ARDC - 13  
CRACK SURVEY AFTER TESTABLE





FR 23 TO 25

FR. 26 To 29

STARBOARD WALL -FACING FWD.

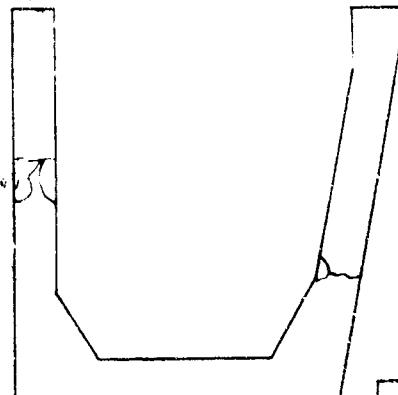
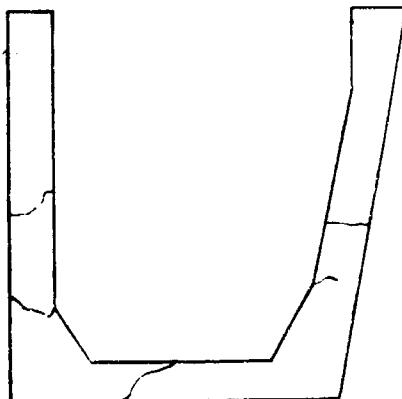
**ARDC - 13**

**CRACK SURVEY AFTER TESTABLE**

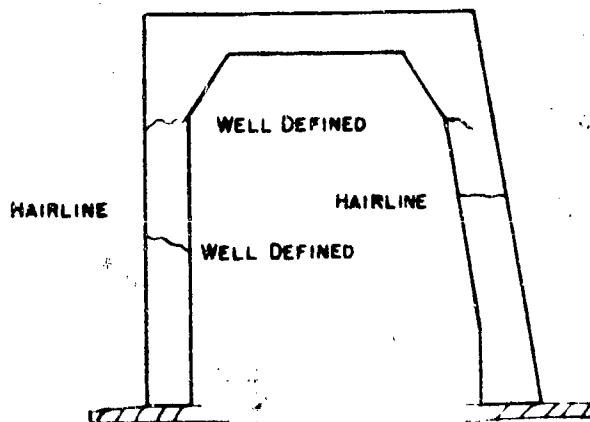


APPENDIX A, ENCLOSURE G TO DIRECTOR SH  
SERIAL 001800 PAGE 28 OF 30

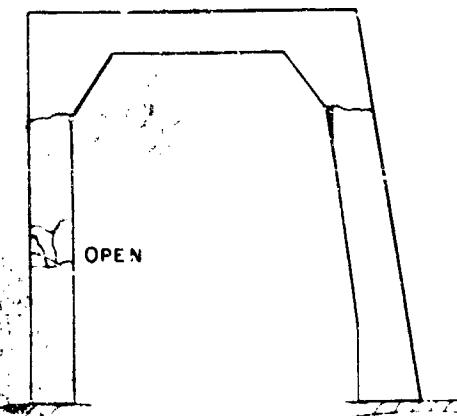
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SPALLING



FR. 28 TO 34

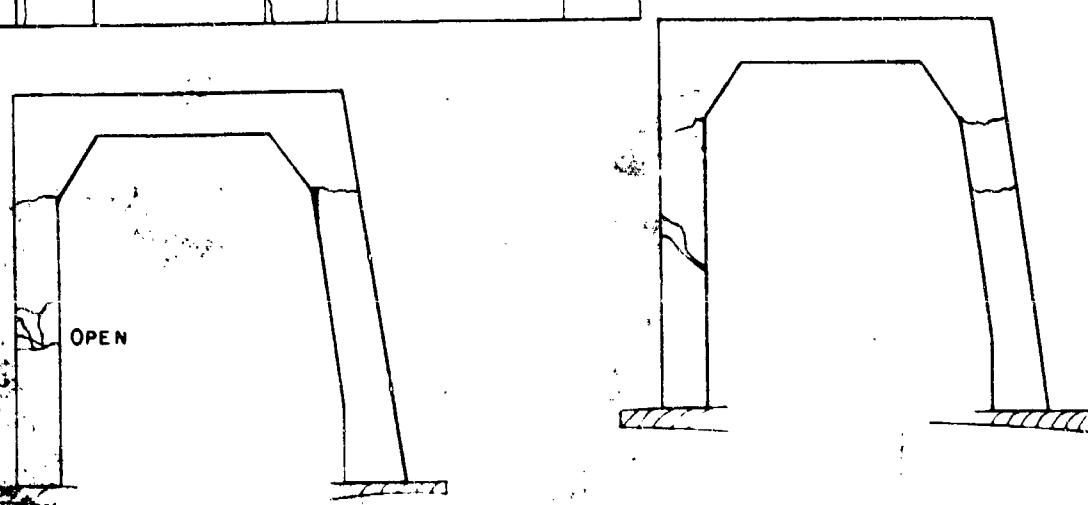
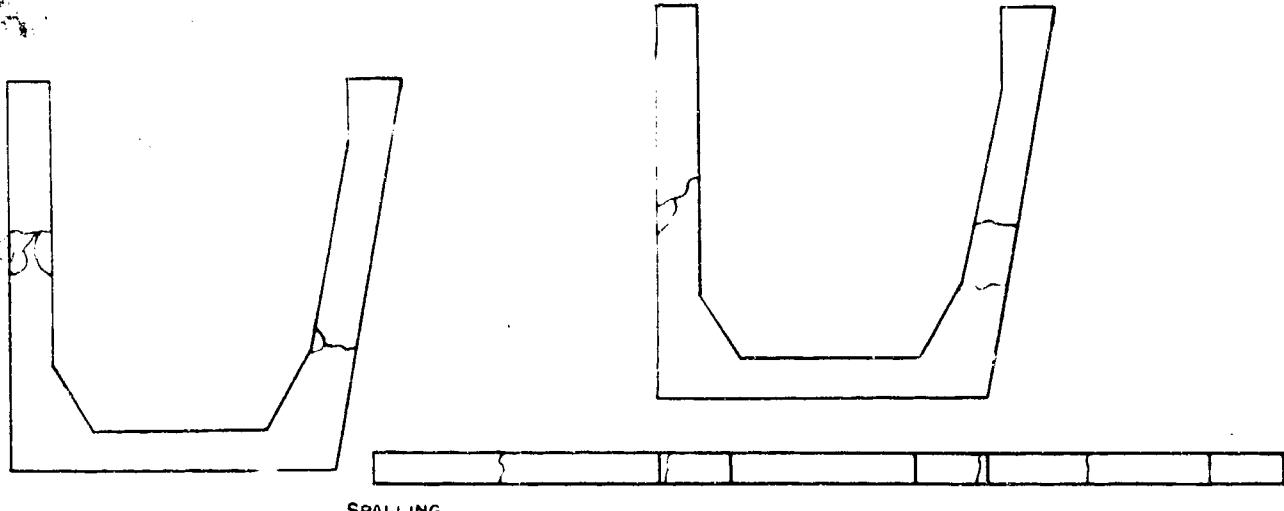


FR. 35 TO 37

STARBOARD WALL - FACING FWD

ARDC - 13  
CRACK SURVEY AFTER TESTABLE





FR. 35 TO 37

FR. 38 TO 44

AIRBOARD WALL - FACING FWD

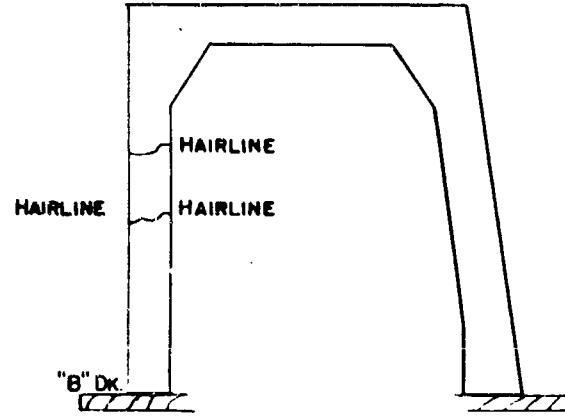
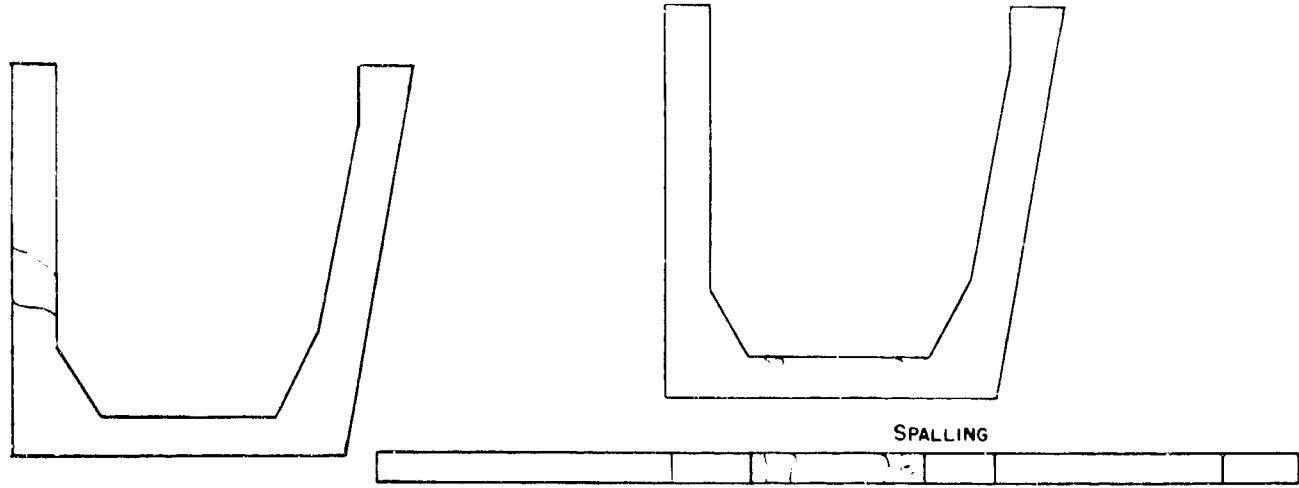
**ARDC - 13**  
**K SURVEY AFTER TESTABLE**

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GRAPHIC SCALE IN FEET

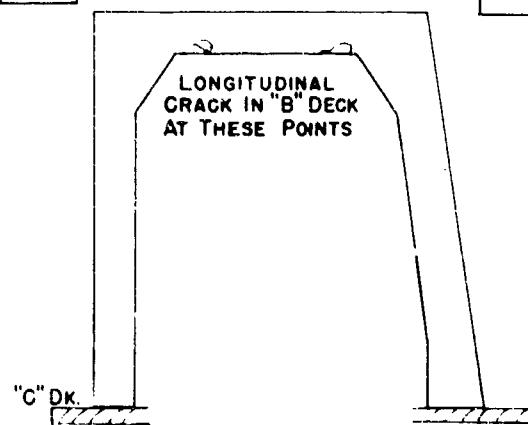
SHEET 27 OF  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP MATERI  
SERIAL 001500 PAGE 29 OF 30 PAGES

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**FR. 38 To 54**

**STARBOARD WALL - FACING FWD.**



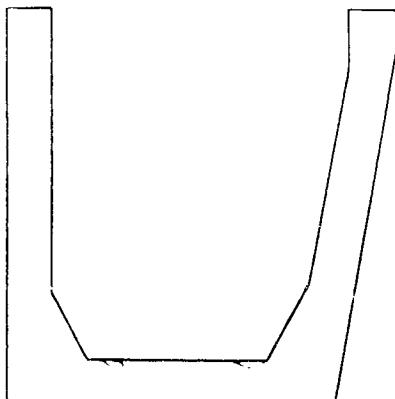
**FR. 24 To 36**

**STARBOARD WALL - FACING FWD.**

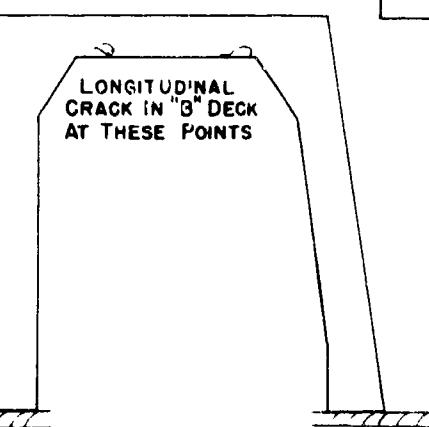
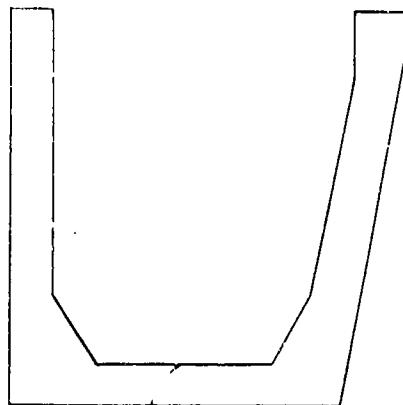
"C" DK

**ARDC - 13  
CRACK SURVEY AFTER TESTABLE**



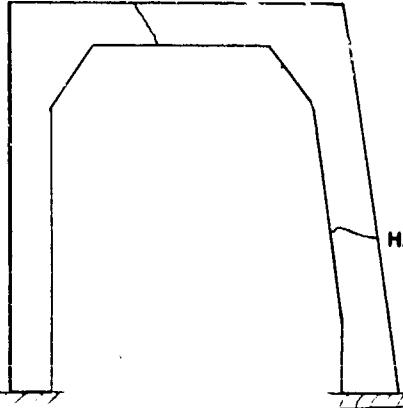


SPALLING



FR. 24 TO 36

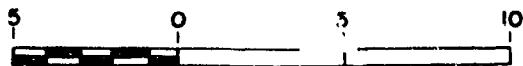
STARBOARD WALL - FACING FWD.



FR. 45 TO 52

PORT WALL

ARDC - 13  
CRACK SURVEY AFTER TESTABLE



GRAPHIC SCALE IN FEET

SHEET  
APPENDIX A, ENCLOSURE G TO DIRECTOR SHIP N  
SERIAL 001500 PAGE 30 OF 30 PAS

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**LISTING OF PHOTOGRAPHS**

**APPENDIX B**

**S E C R E T**

**Enclosure G to DSM Serial 001500**

## PRE-TEST ABLE

ARDC-13

<u>Series</u>	<u>Number</u>	<u>Description</u>
BA-CR-66 927	6	Port beam - exterior
Do:	7	" " "
Do:	8	Port bow - exterior
Do:	9	" " "
Do:	10	Stern - exterior
Do:	11	Equalizer valve blank flange
Do:	12	Flanged fill and discharge valve
BA-CR-66-488	3	Crack port forward wing wall
Do:	4	Overall view dock floor facing aft
Do:	5	Keel block bolts (as bent)
Do:	6	Forward face port wing wall
Do:	7	Forward face st'bd wing wall
Do:	8	Army QMC water tank on deck fl.
Do:	9	Anchor and chain fittings, port bow
Do:	10	Army QMC drums on dock floor
Do:	11	Anchoring of blast tower.
BA-CR-66-505	1	Port bow mooring spud.
Do:	2	Blast tower, port wing wall f'wd.
Do:	3	Anchor windlass, control gear wing wall f'wd.
Do:	4	Catwalk, amidship, facing aft
Do:	5	Control house, st'bd wing wall
Do:	6	General view dock flcor, fac- ing f'wd from catwalk
Do:	7	Details of wood walkway, inside facing port wing wall
Do:	8	Port wing wall, facing aft from st'bd wing wall
Do:	9	Signal arms, st'bd wing wall, top deck
Do:	11	Plunger type scratch gage (unset)
Do:	12	Scratch gage tower, "B" deck
BA-CR-66-506	2	Typical strain gage rosette, outboard wall, port wing wall, inside, amidships
Do:	3	Scratch gage tower base, "C" deck
Do:	4	Scratch gage tower, passing thru "B" deck

<u>Series</u>	<u>Number</u>	<u>Description</u>
BA-CR-66-506	5	Anchor windlass and foundations, port wing wall "C" deck
Do:	6	Typical single strain gage installation
Do:	7	Generators, 100kw, "C" deck
Do:	8	Overall view, generators
Do:	9	Control panel, "C" deck
Do:	10	Typical frame construction, interior "B" deck, st'bd wing wall
Do:	11	Typical frame construction, interior "C" deck st'bd wing wall
Do:	12	View port bow
BA-CR-66-76	2	Ship's bell, mounted on blast gage tower
Do:	3	Deck marking ARDC-13
BA CR-219-28*	166	Aerial view ARDC-13
Do:	167	Aerial view ARDC-13
<u>YO-160</u>		
BA-CR-62-356	1	Exterior - Bow-on
Do:	2	" Port bow
Do:	3	" Port beam
Do:	4	" Port quarter
Do:	5	" Stern
Do:	6	" St'bd quarter
Do:	7	" St'bd beam
Do:	8	" St'bd bow
BA-CR-65-106	1	Exterior - bow-on in array
Do:	2	" St'bd bow
Do:	3	" St'bd beam
Do:	4	" St'bd quarter
BA-CR-65-105	9	Exterior - Port beam
Do:	10	" Port bow
Do:	11	" Port quarter
Do:	12	" Stern
BA-CR-57-229	5	Topside - forward looking aft
Do:	6	Aft - looking f'wd to bridge
Do:	7	Bridge aft - looking forward

\* Secret Photographs

<u>Series</u>	<u>Number</u>	<u>Description</u>
BA-CR-93-96	1	Starboard wall, deck rail at fore-castle deck
Do:	2	Pilot house
Do:	3	Pipes and valves, amidships
Do:	4	Column, starboard poop deck
Do:	5	Column, port poop deck
Do:	6	View of fan tail
BA-CR-93-982	6	Damage to st'bd bow railing
Do:	7	Chipped concrete at bow
Do:	8	Damage along port bow rail
Do:	9	View of forecastle deck
Do:	10	Port rail and main deck, aft
Do:	11	St'bd rail and main deck, aft
Do:	12	Forward catwalk

YOG-83

BA-CR-82-85	1	St'bd side, abaft abeam
Do:	2	St'bd quarter
Do:	3	From top of pilot house looking fw'd
Do:	4	From top of pilot house looking fw'd
Do:	5	From forecastle looking aft, port side
Do:	6	" " " " st'bd side
Do:	7	From top of pump house looking aft
Do:	8	Port side, abaft abeam
Do:	9	Port side, forward abeam
Do:	10	St'bd side, forward abeam

AFTER TEST ABLE

YOG-83

AA-CR-227-91	22	Port side abeam
Do:	23	Port side abaft abeam
Do:	24	Stern
Do:	25	St'bd abaft abeam
Do:	26	St'bd beam
Do:	27	St'bd, forward abeam
Do:	28	Bow
Do:	29	Port side, fw'd abeam

S E C R E T

<u>Series</u>	<u>Number</u>	<u>Description</u>
AA-CR-82-1829	6	View of deck beam - Pump room house
Do:	7	View of wooden bridge house
Do:	8	" " "
Do:	9	Life raft frame and foundations
<u>2 JULY 1946</u>		
		<u>ARDC-13</u>
AA-CR-98-1962	7	Aft dock floor and st'bd wing wall
Do:	8	Fw'd dock floor and st'bd wing wall
Do:	9	Catwalk wreckage
Do:	10	Deck floor fw'd from aft st'bd wing wall
Do:	11	Stern and dock floor
Do:	12	Top view crane near stern
AA-CR-98-1963	1	Pontoon bridge, stern of dock, up-side down
Do:	2	Torpedo tube and spoon, stern ARDC-13
Do:	3	Torpedo tube and spoon, stern ARDC-13
Do:	4	Torpedo spoon, stern ARDC-13
Do:	5	Crack st'bd wing wall inside aft
Do:	6	Running light frame (from APA)
Do:	7	General view fw'd from port side
Do:	8	St'bd wall inboard draft gage
Do:	9	Crane on dock floor looking aft
Do:	10	Army water tank
Do:	11	Ladder, st'bd wing wall fw'd
Do:	12	St'bd wing wall, blast marks
AA-CR-98-1964	1	Crack, port side; top of wing wall
Do:	2	Hatch opening, port top deck, hatch cover gone
Do:	3	Hatch opening on stern showing bent clips
Do:	4	Torpedo tube stern ARDC-13
Do:	5	Signal tower blown over side, St'bd bow
Do:	6	General view bow
Do:	7	" " "
Do:	8	Port bow
Do:	9	Port, fw'd section
Do:	10	Port, after section
Do:	11	Port quarter
Do:	12	Stern

~~S E R E T~~

Page 5 of 10 pages

<u>Series</u>	<u>Number</u>	<u>Description</u>
AA-CR-93-1835	1	General View of Port Bow
Do:	2	General View of Starboard Quarter
Do:	3	General View of Stern showing Dock floor
Do:	4	General View of After Port Quarter
Do:	5	General View of Port Quarter
Do:	6	General View of Port Beam
Do:	7	General View of Port Bow
Do:	8	Head on View of Bow
Do:	9	View of Damage Material on Dock Floor Facing Forward
Do:	10	View of Damage Material on Dock Floor Facing Aft.
Do:	11	General View of Port Wing Wall Facing Aft
Do:	12	General View of Starboard Wing Wall Facing Aft
AA-CR-93-1988	1	View of Damage to Forward Face of Port Wing Wall
Do:	2	View of Damage to Forward Face of Starboard Wing Wall
Do:	3	Longitudinal Crack in "A" Deck, Port Wing Wall, Frame 25 Facing Aft
Do:	4	Longitudinal Crack in "A" Deck, Port Wing Wall, Frame 25 Facing Forward
Do:	5	View of Blown Out Hatch, "A" Deck, Port Wing Wall at Frame 40.
Do:	6	View of Damage to Crane on Dock Floor from Top of Port Wing Wall
Do:	7	View of "A" Deck Starboard Wing Wall from After End of Port Wing Wall
Do:	8	Crack - Inboard Face Starboard Wing Wall - Amidships - 3' Above Dock Floor
Do:	9	Crack - After Face and Inboard Corner of Starboard Wing Wall - 3' Above Dock Floor
Do:	10	Crack - After Face of Starboard Wing Wall
Do:	11	Spalling - Inboard Face Starboard Wing Wall - Frame 40 - 3' Above Fl.
Do:	12	Crack - "A" Deck Starboard Wing Wall at Frame 50 Facing Aft.

~~SECRET~~

AA-CR-93-1986	2	Crack - Spalling - Around Ventilator at Frame 28 - "A" Deck Starboard Wing Wall
Do:	3	View of "A" Deck Port Wing Wall from Starboard Wing Wall
Do:	4	Spalling - Around Ventilator - "A" Deck - Starboard Wing Wall at Frame 38
Do:	5	View of "A" Deck Forward Port Wing Wall from Starboard Wing Wall
Do:	7	Crack - Inboard Face - Port Wing Wall Frame 20-35 - 10' Above Fl.
Do:	8	Crack - Inboard Face - Port Wing Wall - Frame 20-40-2' from Top
Do:	9	Crack - "B" Deck Port Wing Wall - Frame 18
Do:	10	Crack - "B" Level - Port Wing Wall - Frame 20 - Outboard Wall - Inside Face
Do:	11	Crack - "B" Level - Port Wing Wall - Frame 26 - Top Inside Face of Outboard Wall
Do:	12	Crack - "B" Level - Port Wing Wall - Frame 24 - Top
AA-CR-93-1987	1	Longitudinal Crack - Inside Face - Outboard Wall - Frame 24 - Port
Do:	2	View of Mess Table Ripped Off Fastenings to "B" Deck
Do:	3	View of Damage to Sick Boy "B" Deck
Do:	4	Crack in Transverse Bulkhead at Frame 44, Port Wing Wall
Do:	5	View of Dock Under Tow - Stern
Do:	7	" " " " " - Starboard Bow
Do:	8	View of Dock Under Tow - Port Bow
Do:	9	" " " " " - Port Quarter

S E C R E T

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4 JULY 1946

ARDC-13

<u>Series</u>	<u>Number</u>	<u>Description</u>
AA-CR-92-1776	9	Blast shadow, face st'bd wing wall, Fr. 6 to 13
Do:	10	" " " "
Do:	11	wall, Fr. 12 to 19
Do:	12	wall, Fr. 19 to 27
		wall, Fr. 27 to 34
AA-CR-92-1777	1	Blast shadow inside face st'bd wing wall Fr. 34 to 44
Do:	2	" " " "
Do:	3	wing wall Fr. 44 to 49
Do:	4	wing wall Fr. 49 to 56
Do:	5	Fr. 36 below "A" deck outboard shell st'bd wall
		Fr. 36 between "A" & "B" deck, Fr. 27 to 28 near inboard shell, st'bd wall
Do:	7	Bottom of "A" deck, Fr. 27 to 28 near outboard shell, st'bd wall
Do:	8	"B" deck Fr. 25 to 26 near cut-board shell, st'bd wall
Do:	10	Fr. 29 below "B" deck near outboard shell, st'bd wall
Do:	11	Fr. 28 below "B" deck near outboard shell, st'bd wall
Do:	12	Inboard shell, Fr. 27 to 28 about 4 feet above "C" deck, st'bd wall
AA-CR-92-1778	1	View of preparations for pumping out dock
		<u>5 JULY 1946</u>
		<u>XO-160</u>
AA-CR-58-2007	1	General view of stern
Do:	2	General view of st'bd quarter
Do:	3	" " " "
Do:	4	General view of st'bd beam
Do:	5	" " " "

S E C R E T

<u>Series</u>	<u>Number</u>	<u>Description</u>
AA-CR-58-2007	6	General view of st'bd bow
Do:	7	" " " " "
Do:	8	" " " port "
Do:	9	" " " beam
Do:	10	General view of blast effects pool deck, port side
Do:	11	" " " " "
Do:	12	deck, port q'tr " " " " "
AA-CR-58-2008	1	Close up of st'bd q'tr poop deck
Do:	2	View of deck damage facing aft from midships
Do:	3	" " " " " fwd. from midships
Do:	4	View of damage to after midship deckhouse
Do:	5	" " " " " fwd " " deckhouse
Do:	6	Damage to after bulkhead of midship deckhouse
Do:	7	View of port side of midship deckhouse
Do:	8	View of damage to forecastle deck
Do:	9	Blast shadow port side of doc'le deck
Do:	10	Damage to main deck, port side aft
Do:	11	Damage to poop deck at center line
Do:	12	Dished-in effect to tank on main deck aft
AA-CR-58-2009	1	Poop deck, port side aft - Dished-in deck
Do:	2	Poop deck, port side - Dished-in deck
Do:	3	Poop deck, st'bd - Dished-in deck
Do:	4	Interior view of damage to deckhouse - midships
Do:	5	" " " " " " house - midships

~~S E C R E T~~

23 JULY 1946

M - 46 BOMB DAMAGE TO ARDC - 13

<u>Series</u>	<u>Number</u>	<u>Description</u>
AA-CR-175-2180	2	Hole in Starboard Wing Wall - Facing Forward - Close-up
Do:	4	Hole in Starboard Wing Wall - General View Forward.
Do:	5	Hole in Starboard Wing Wall - Facing Aft Close-up
Do:	6	Hole in Starboard Wing Wall - General View Aft.
Do:	7	Frame Nos. 12 and 13 - Starboard Wing Wall - Facing Forward.
Do:	8	Frame 12 - Details of Failure - Facing Forward
Do:	9	" " " " "
Do:	10	Facing Forward
Do:	11	" " " " "
Do:	12	Facing Aft
Do:	12	" " " - General View of Damage
AA-CR-175-2181	1	View of Pontoon Moored Astern of ARDC - 13
Do:	2	Army barge " " "

S E C R E T

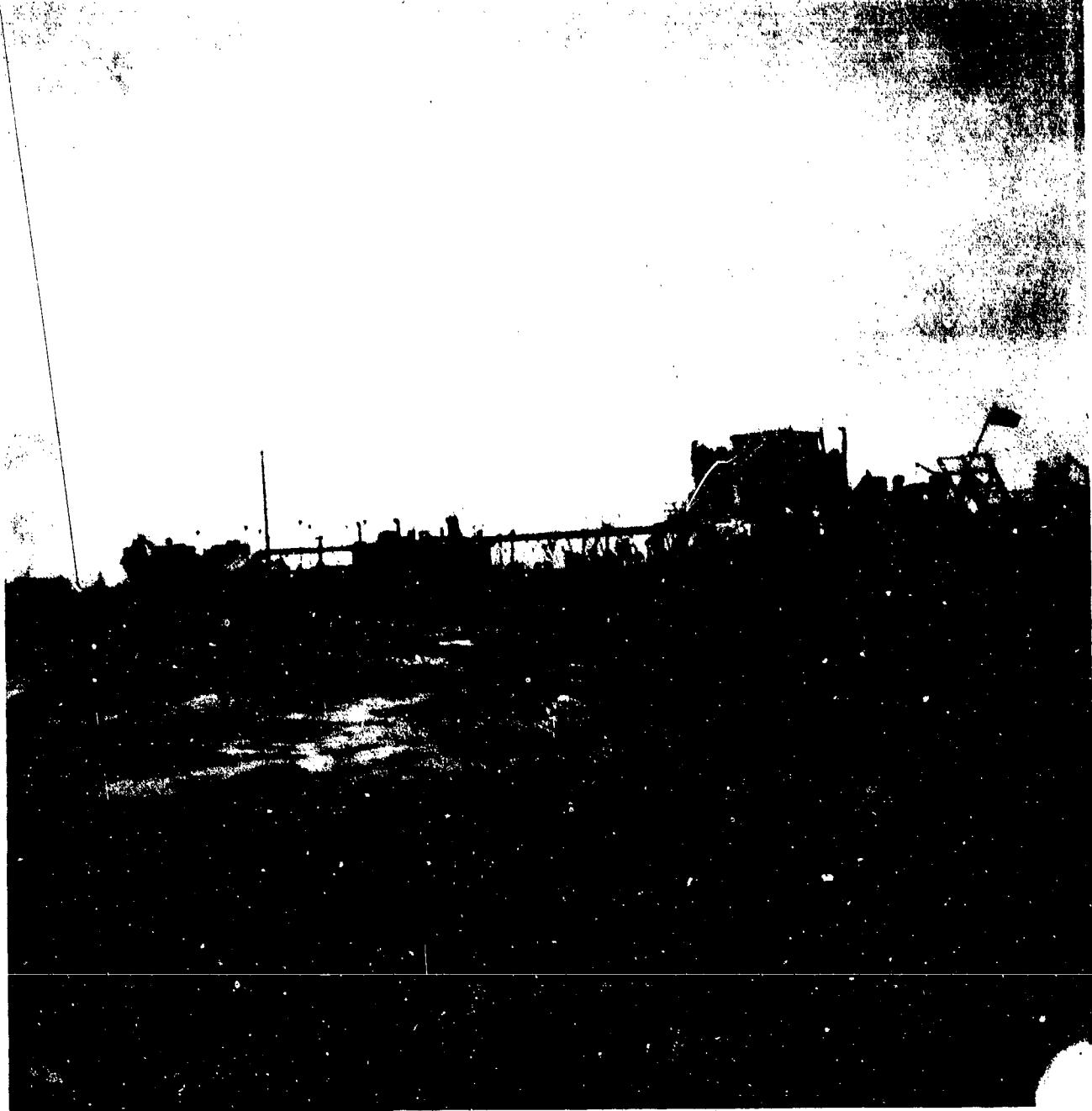
AFTER ABLE  
YOG-83

5162



Port Side Abeam

5162

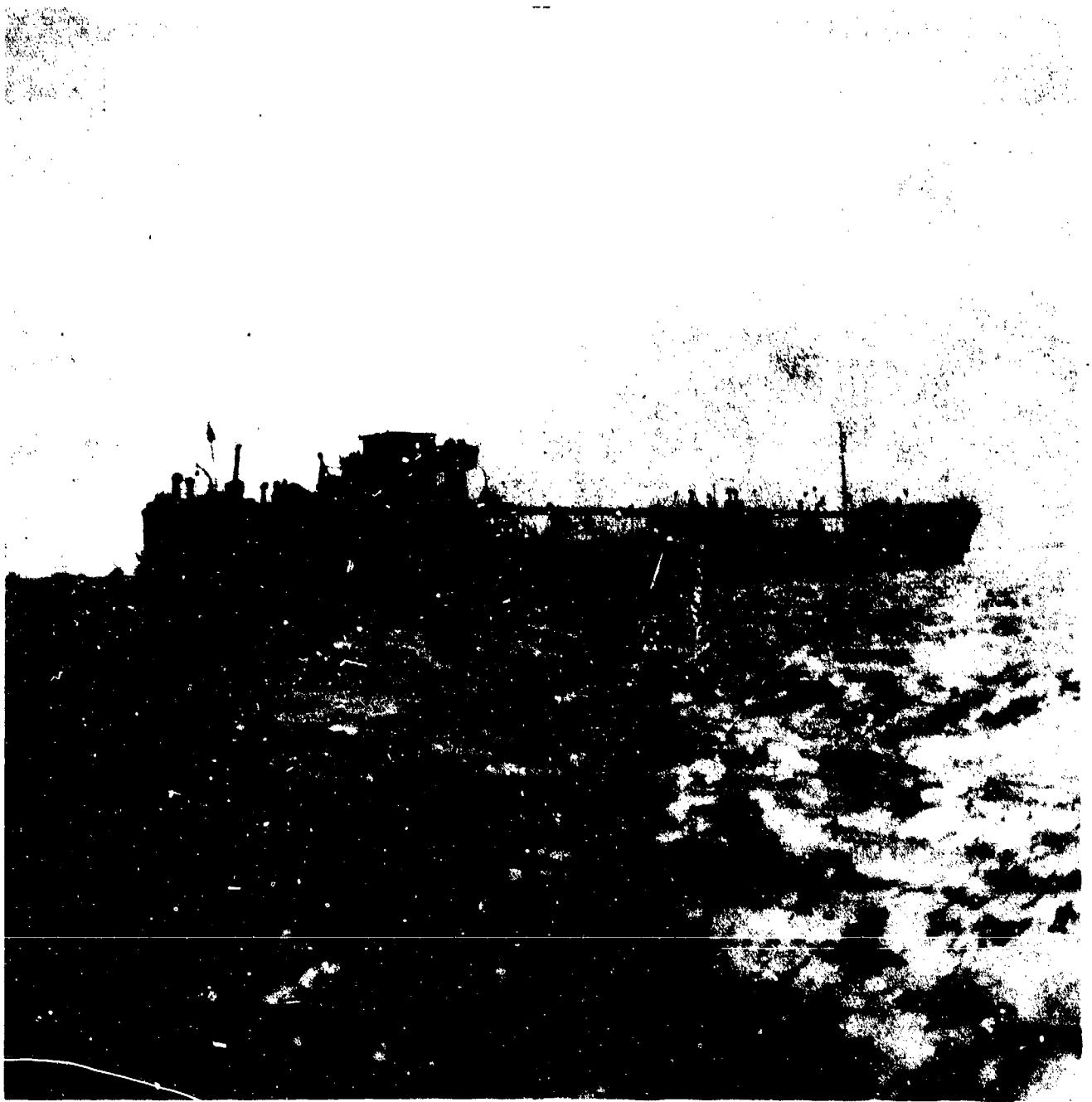


C  
**Port Side Abeam - Aloft**

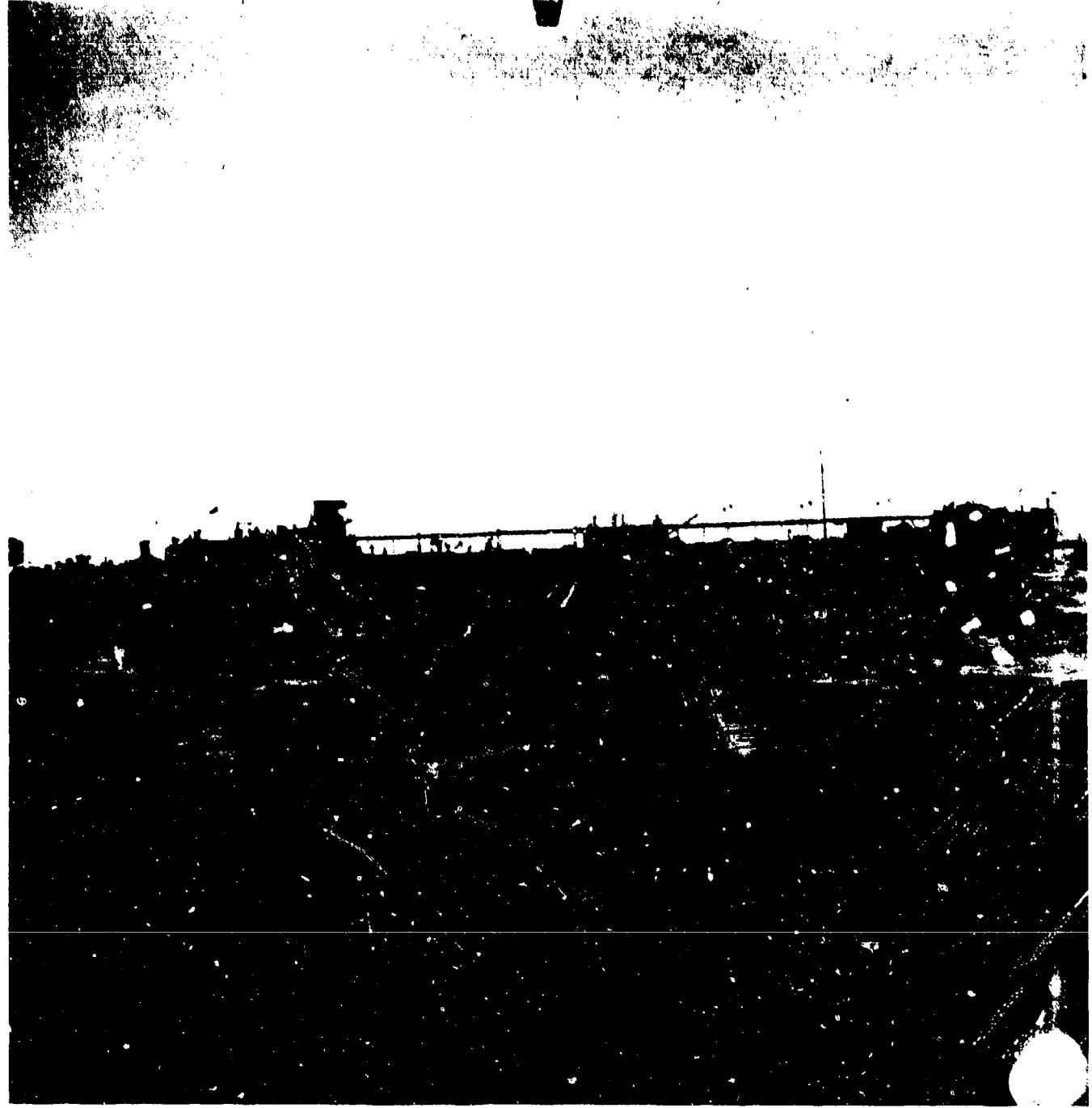


Stern

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(  
**Starboard Aloft Abeam**



**Starboard Beam**

5162



Bow

5162



**Starboard Forward Abeam**

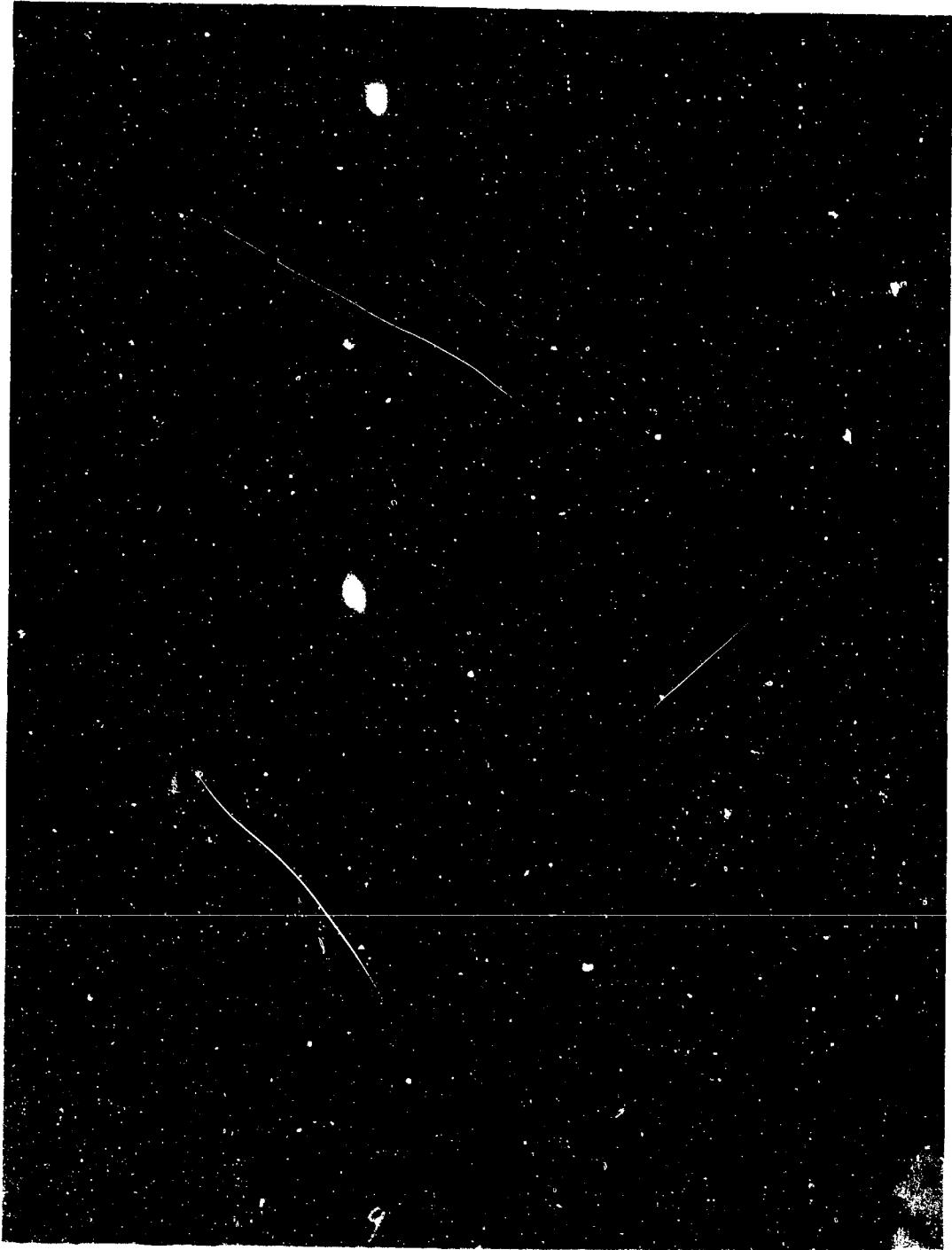


**Port Side, Forward Abeam**

View of Deck Beam Pump Room House



5162



**BEFORE ABLE**

**YO-160**

5162

C



View of Fan Tail

5162



Column - Port Poop Deck

5162



Column - Starboard Poop Deck



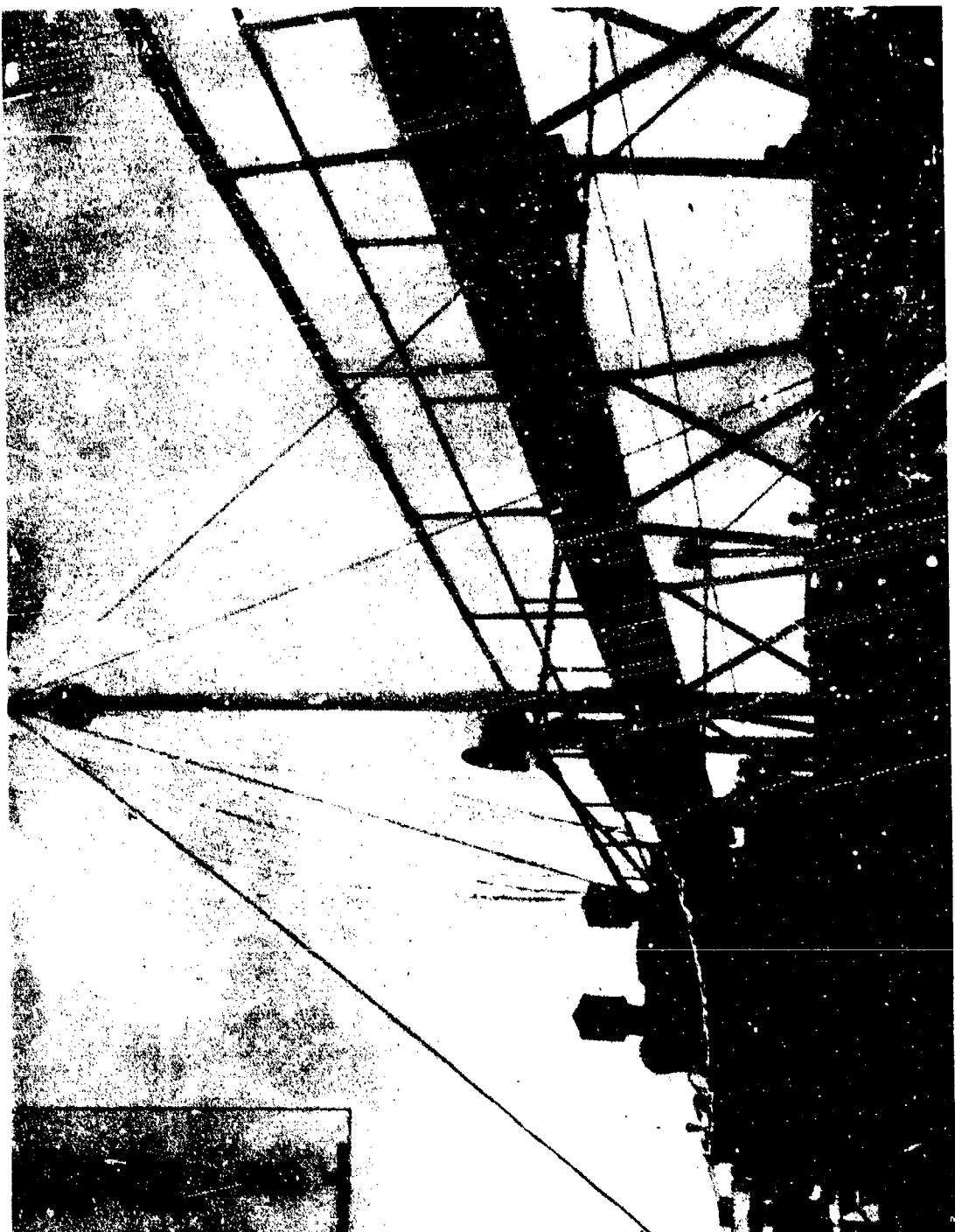
Starboard Wall, Deck Rail at Forecastle Deck

5162

Chipped Concrete at Bow

5162

Forward Catwalk



5162

AFTER ABLE  
YO-160

5162



View of Port Side of Midship Deck House

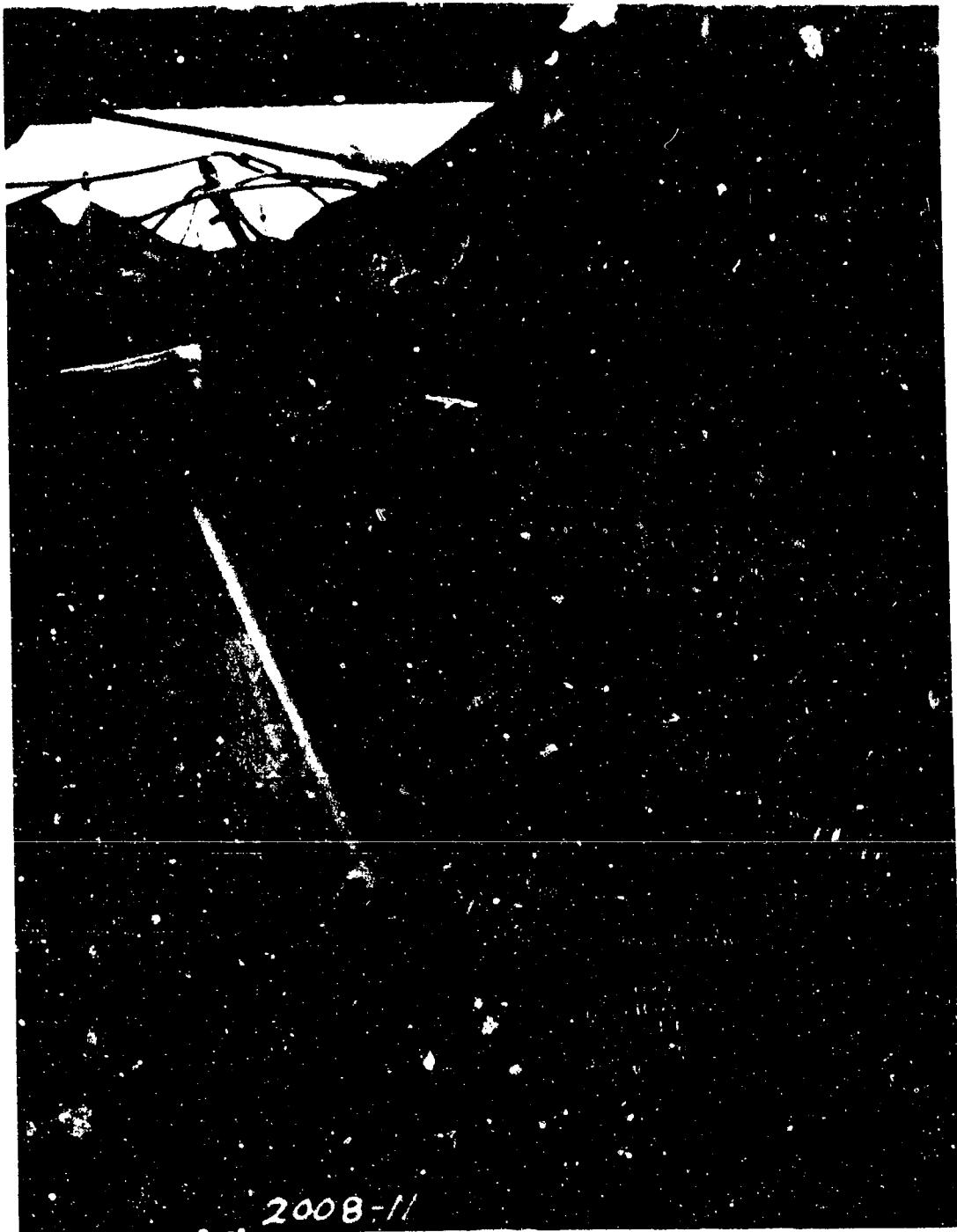


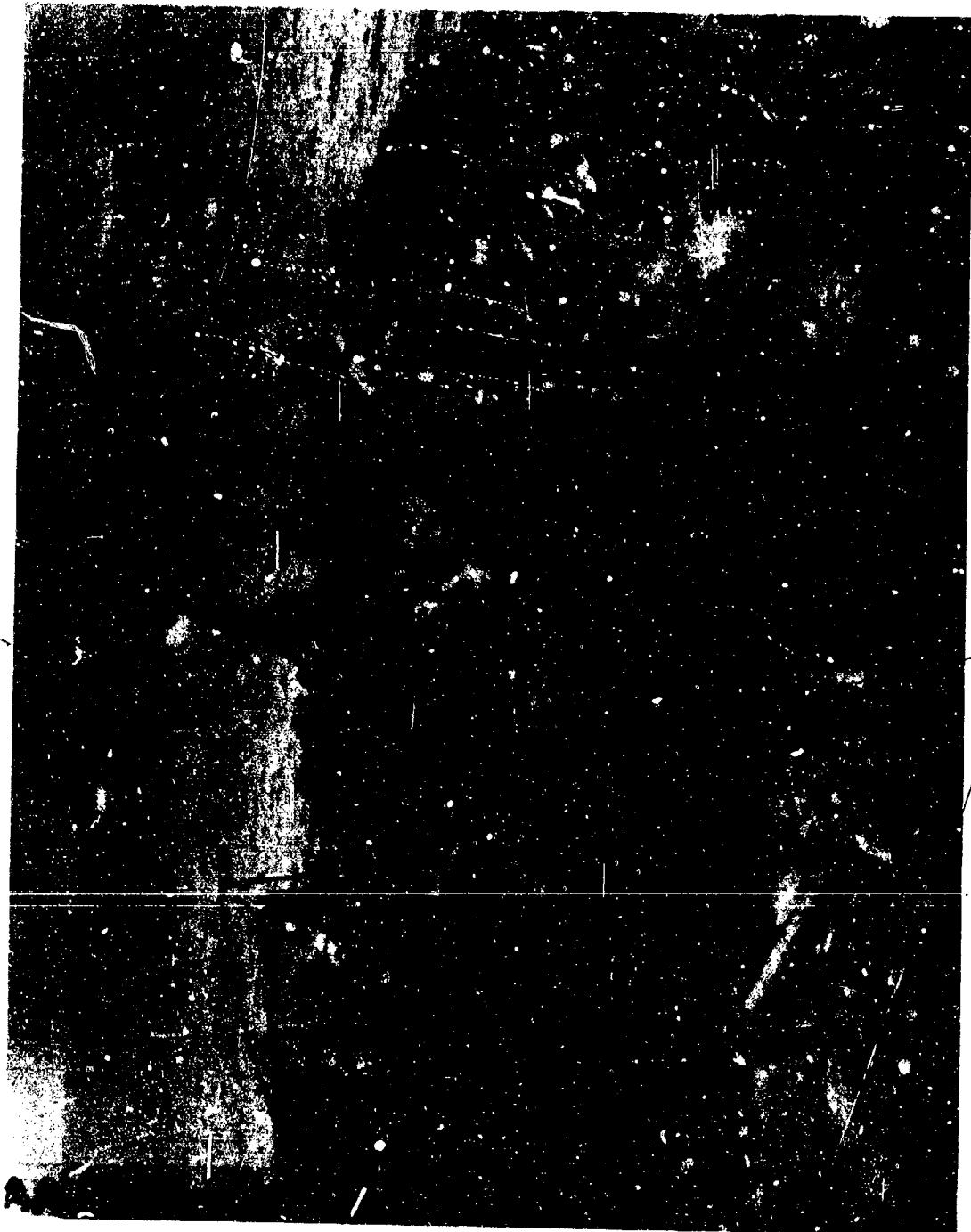
View of Damage to Forecastle Deck



Blast Shadow, Port Side of Forecastle Deck

Damage to Poop Deck at Center Line





Poop Deck - Port Side Aft, Dished-in Deck

Poop Deck - Port Side, Dished-in Deck



C

5162

Poop Deck - Starboard Dished-in Deck



Interior View of Damage to Deck House Amidship



Interior View of Damage to Deck House Amidship



5162

**BEFORE ABLE**

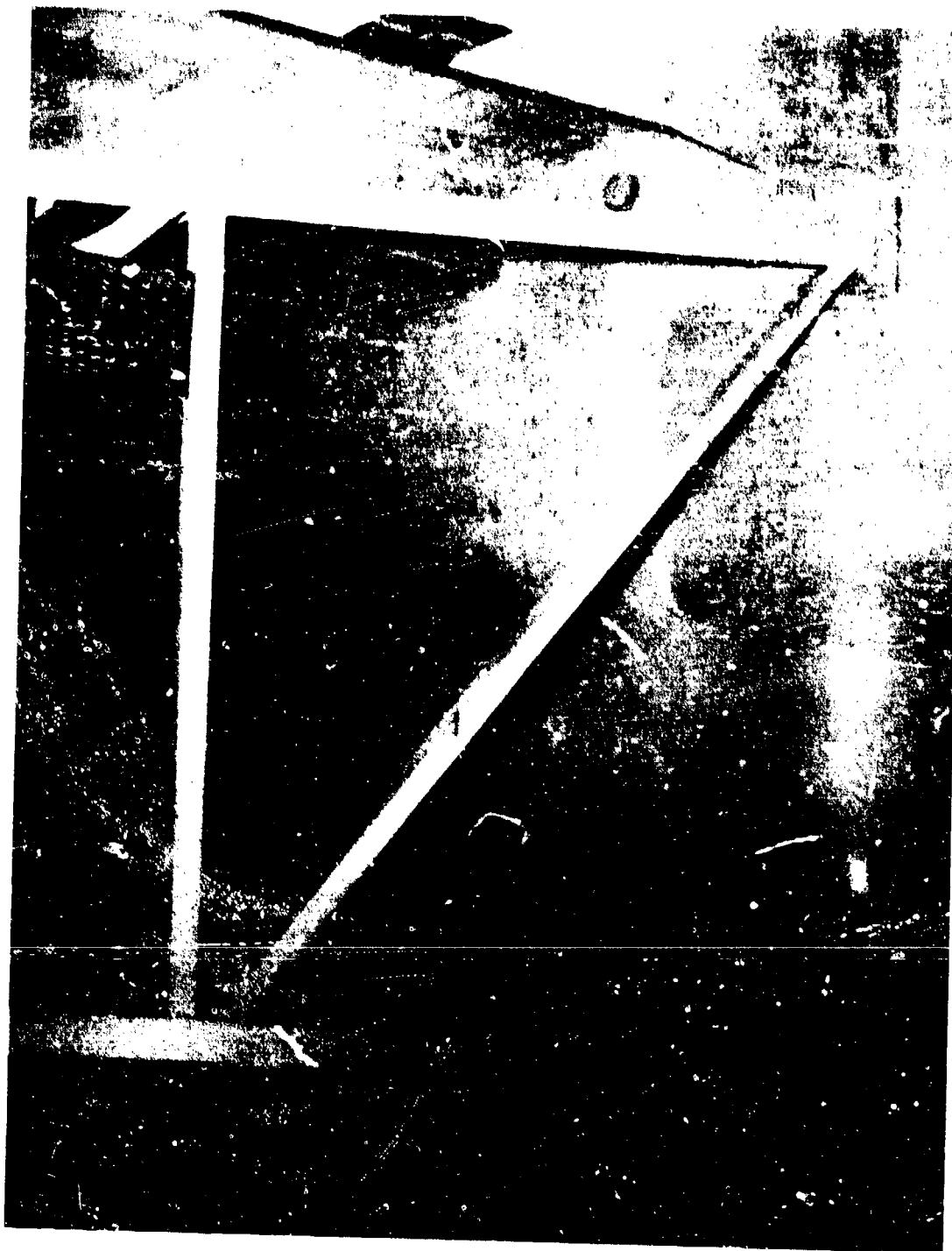
**ARDC-13**

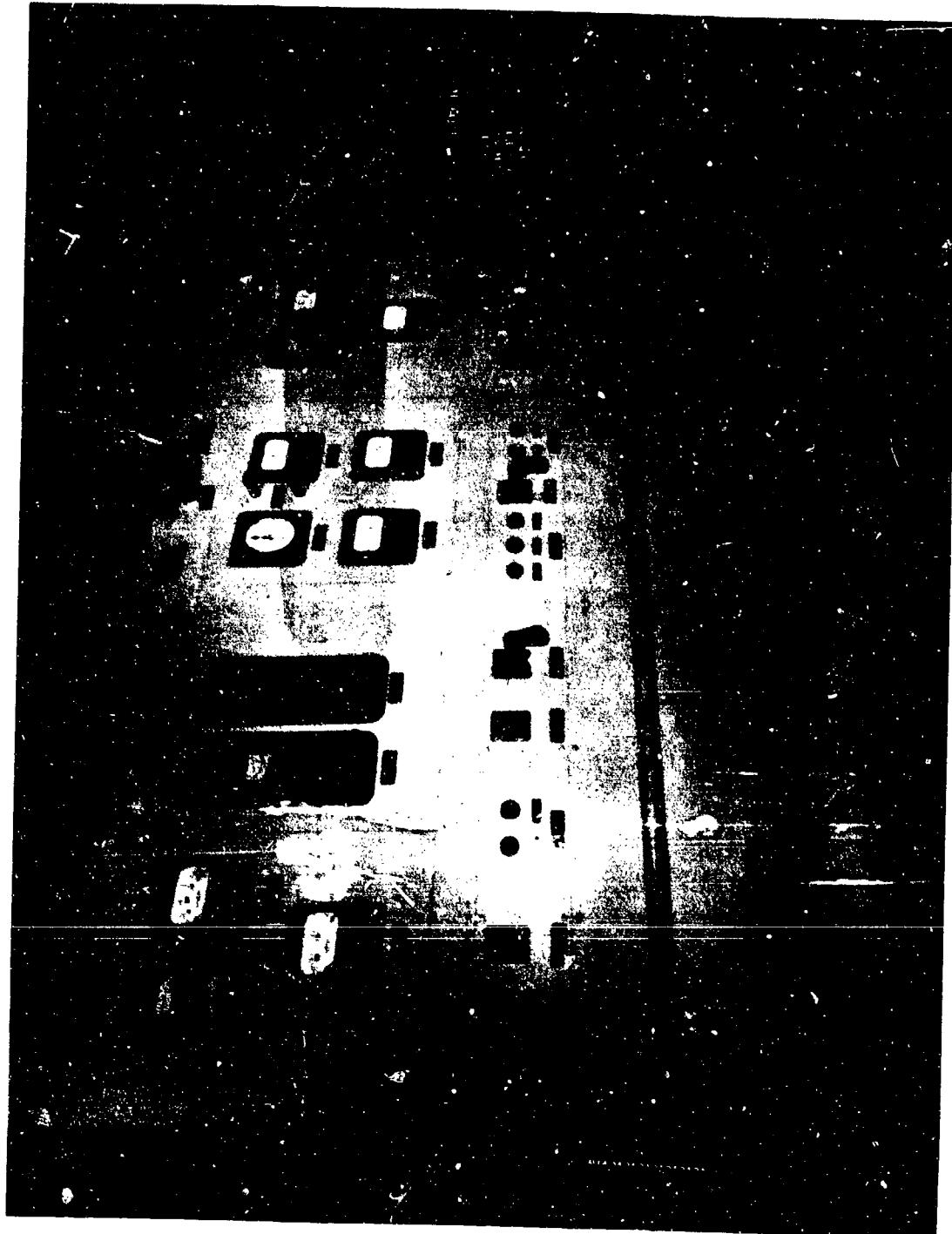


Typical Strain Gage Rosette - Outboard Wall Port - Wing Wall Inside Amidship

C

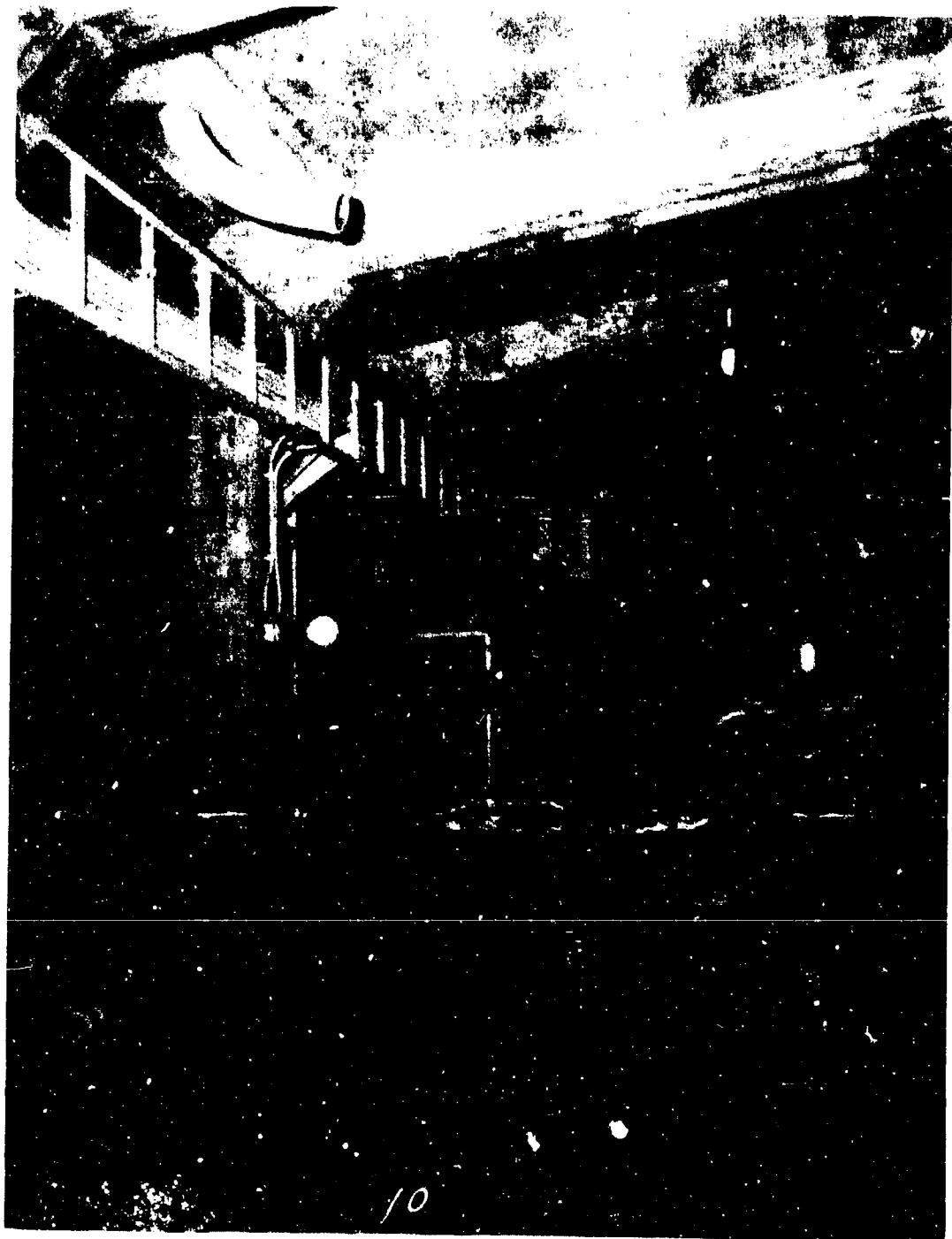
Scratch Gage Tower Base "C" Deck





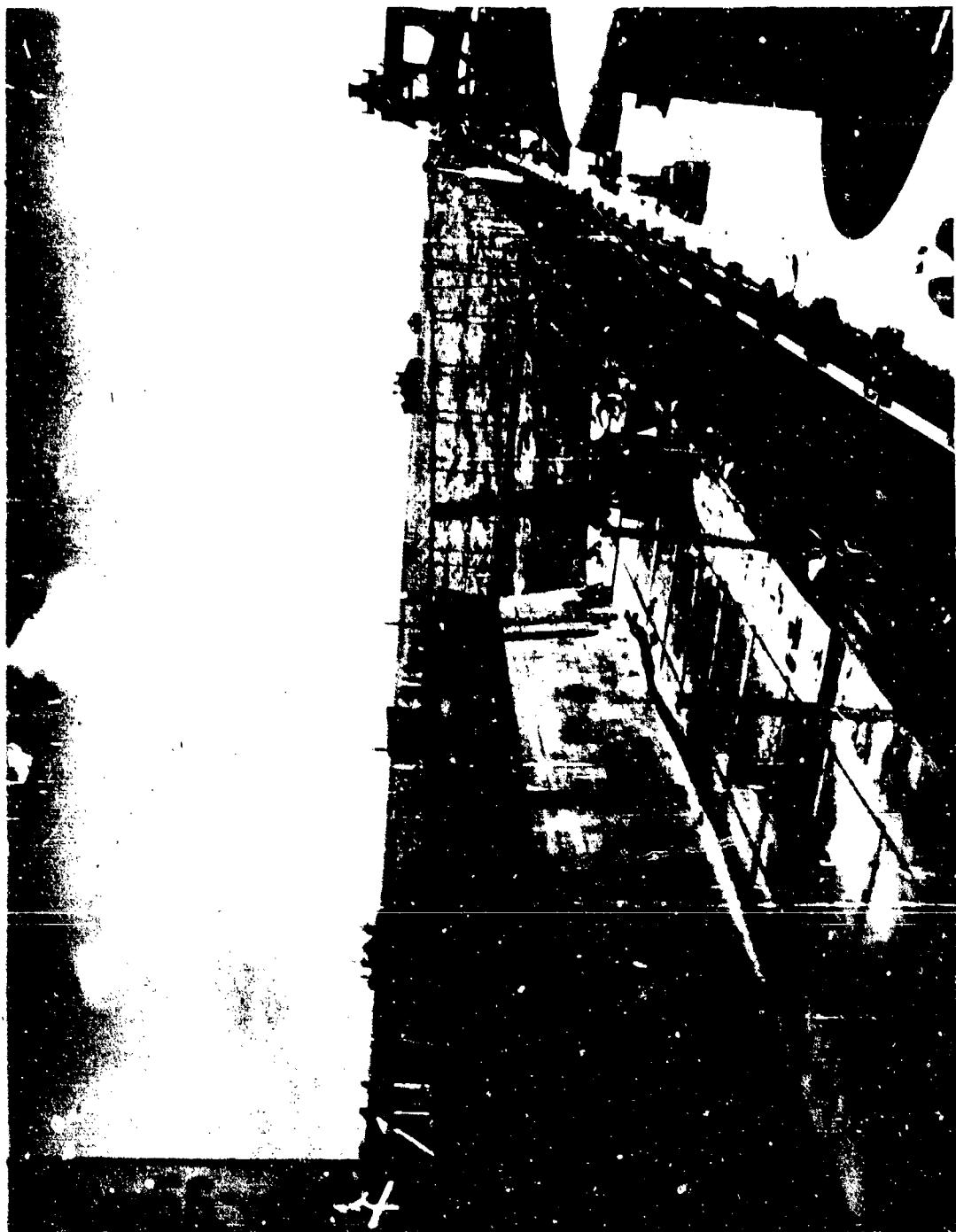
Control Panel "C" Deck

Typical Frame Construction - Interior "B" Deck - Starboard Wing Wall



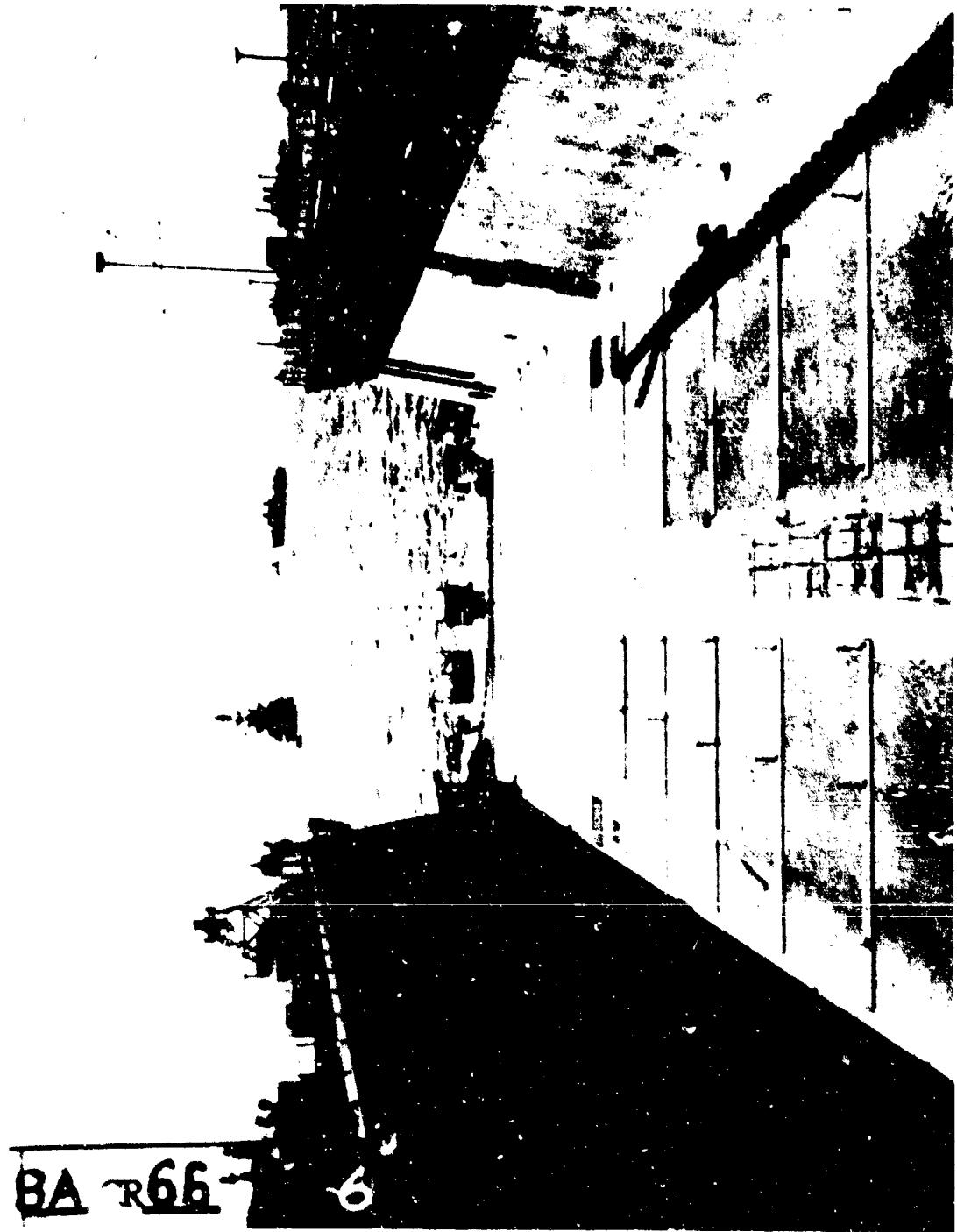
Tyricai Frame Construction - Interior "C" Deck - Starboard Wing Wall





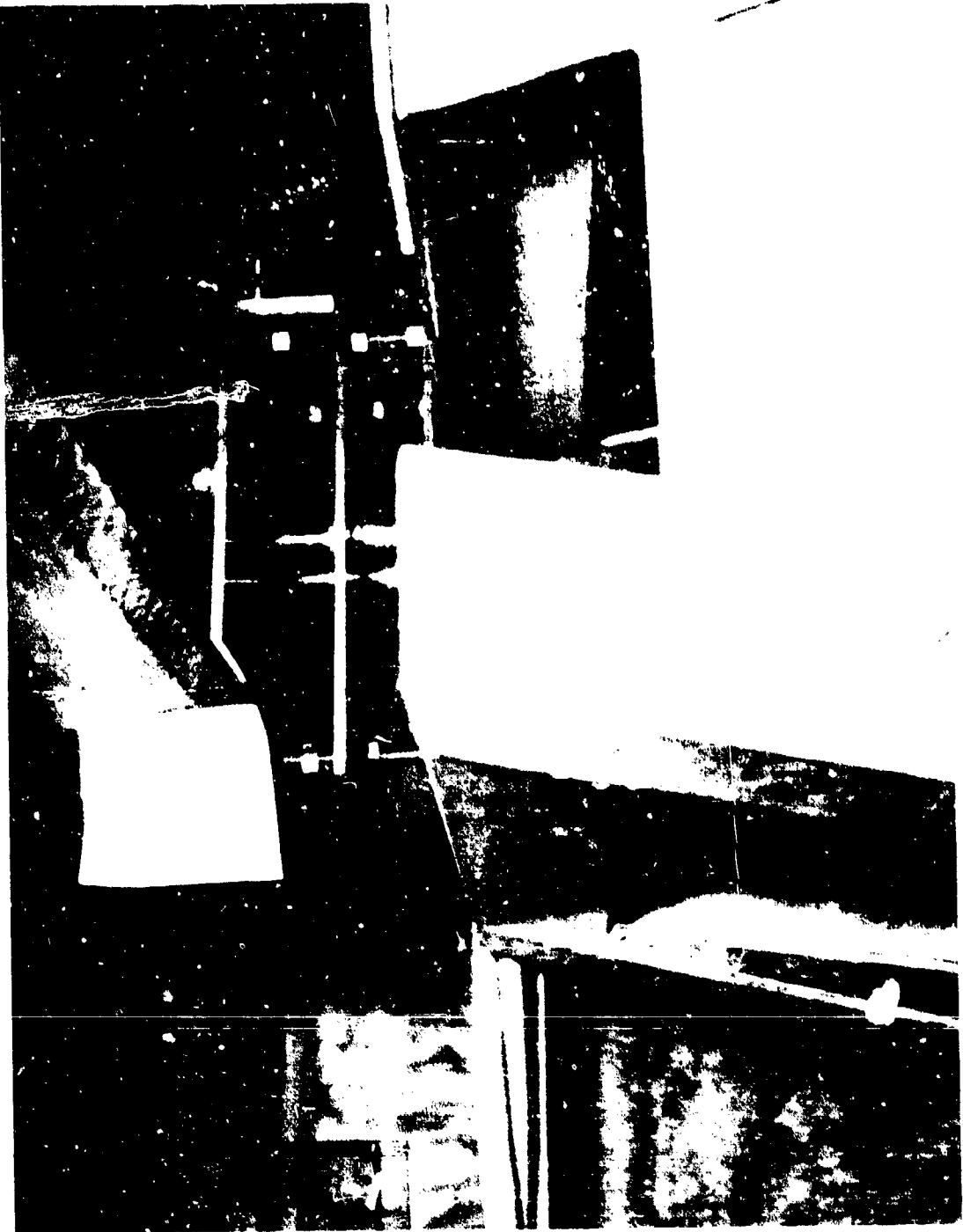
Catwalk, Amidship, Facing Aft

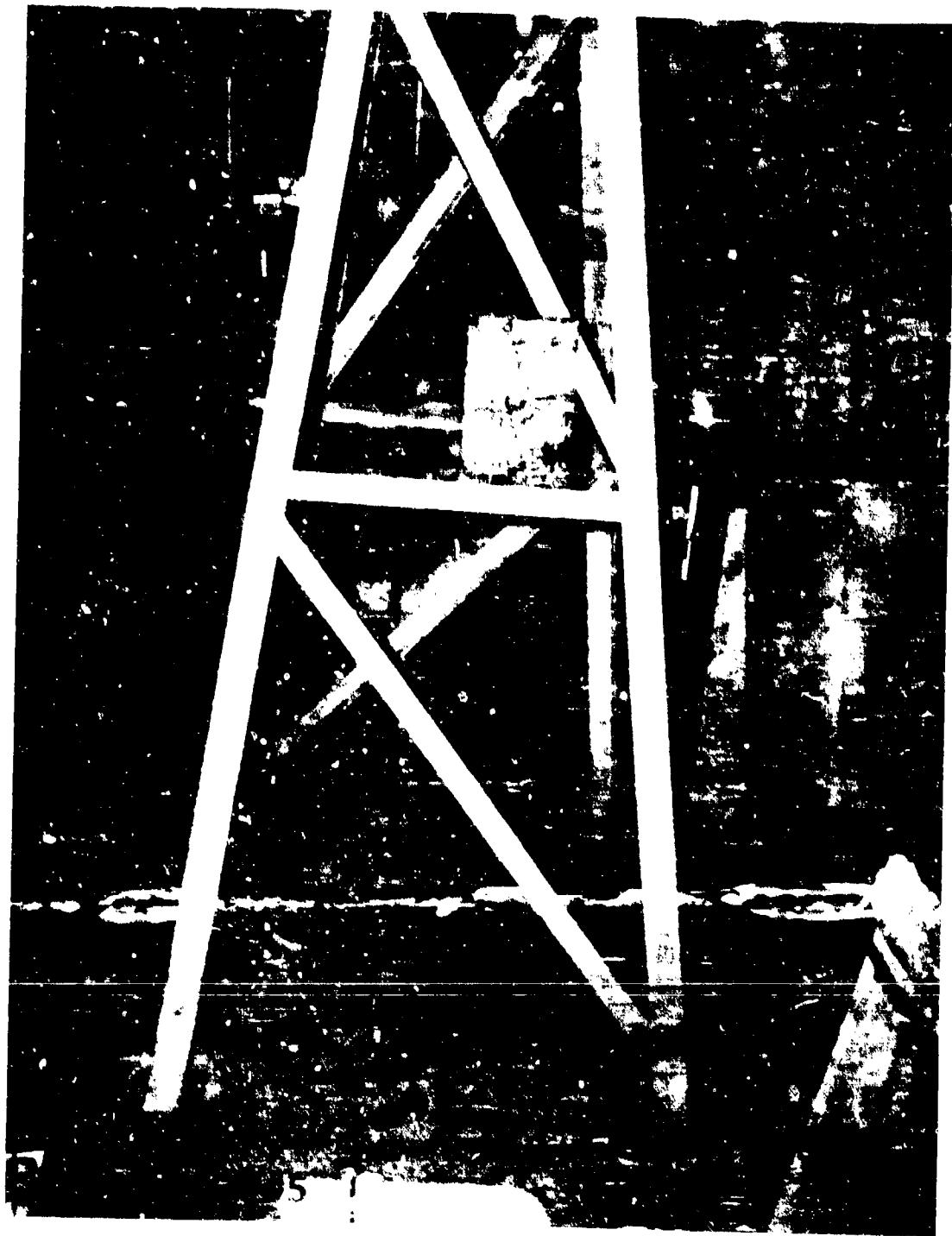
General View Dock Floor Facing Forward From Catwalk



BA R66 - 6

Plunger Type Scratch Gage (Unset)





Bridge Gage Tower "B" Deck

Port Beam - Exterior



BA CR 56 - 927

Port Bow - Exterior



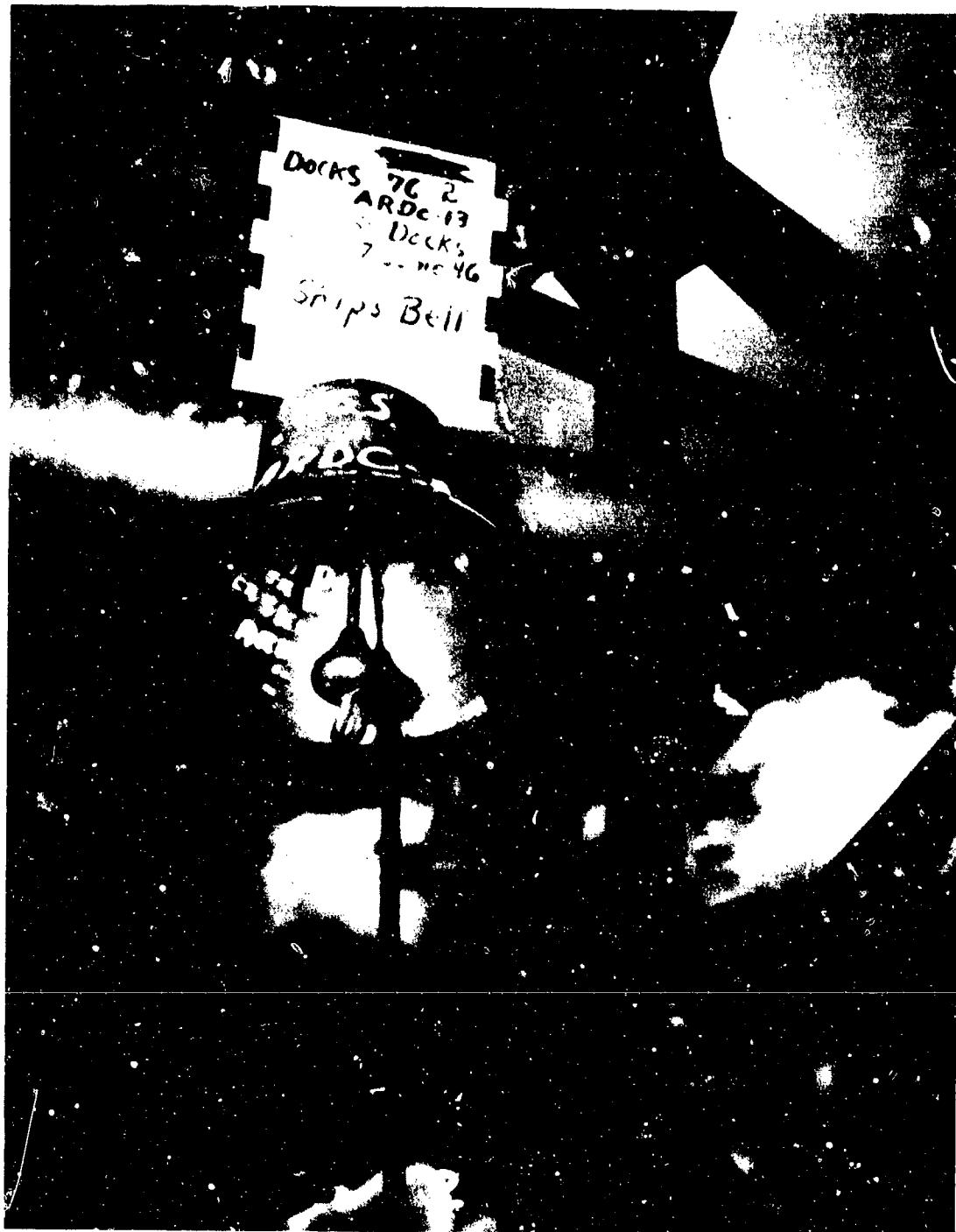
5162



Anchor and Chain Fittings - Port Bow

Flanged Fill and Discharge Value





C  
Ships Bell, Mounted on Blast Gage Tower

5162

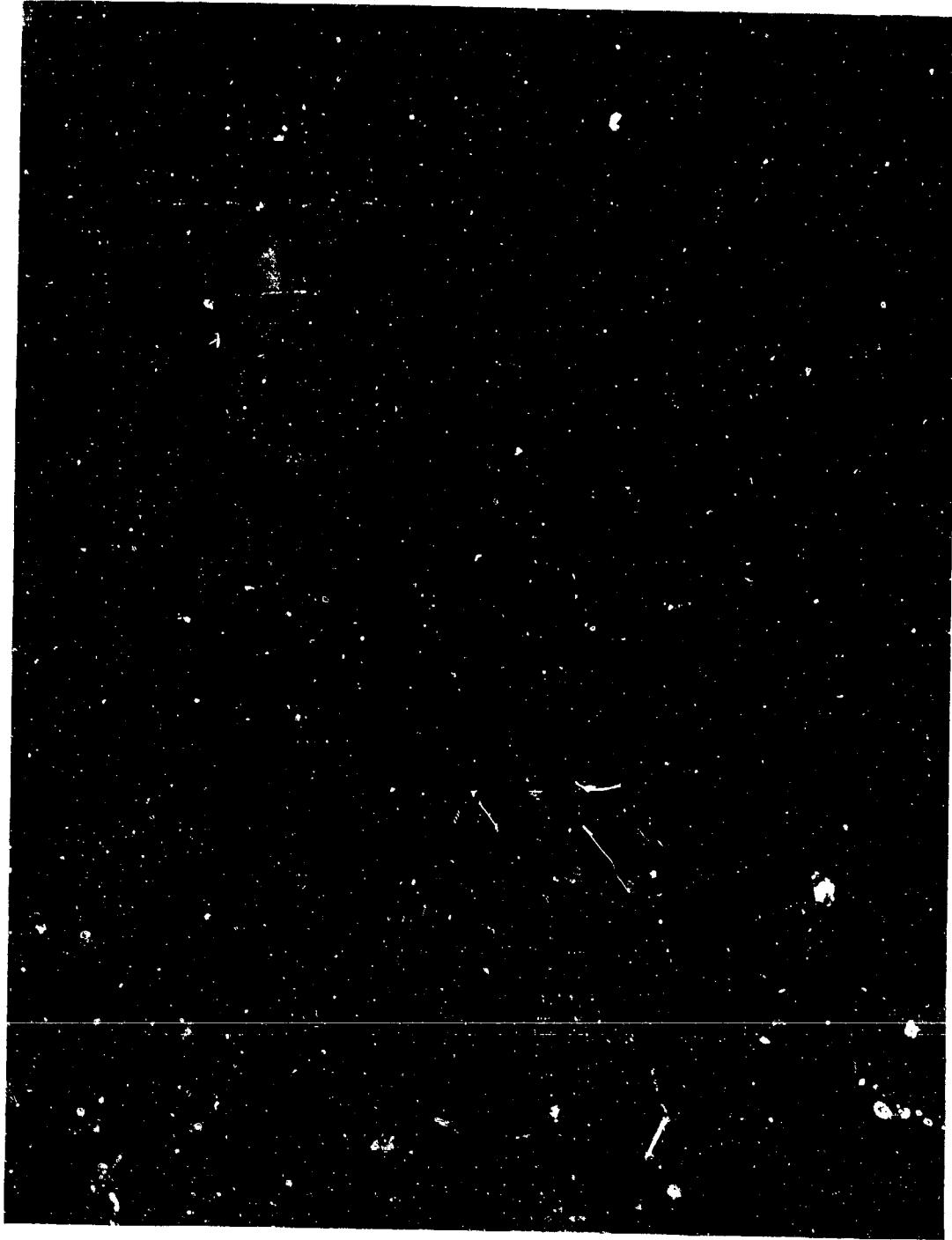


C

Army Q.M.C. - Water Tank on Deck Floor

5162

Overall View, Dock Floor Facing Aft





Forward Face, Port Wing Wall



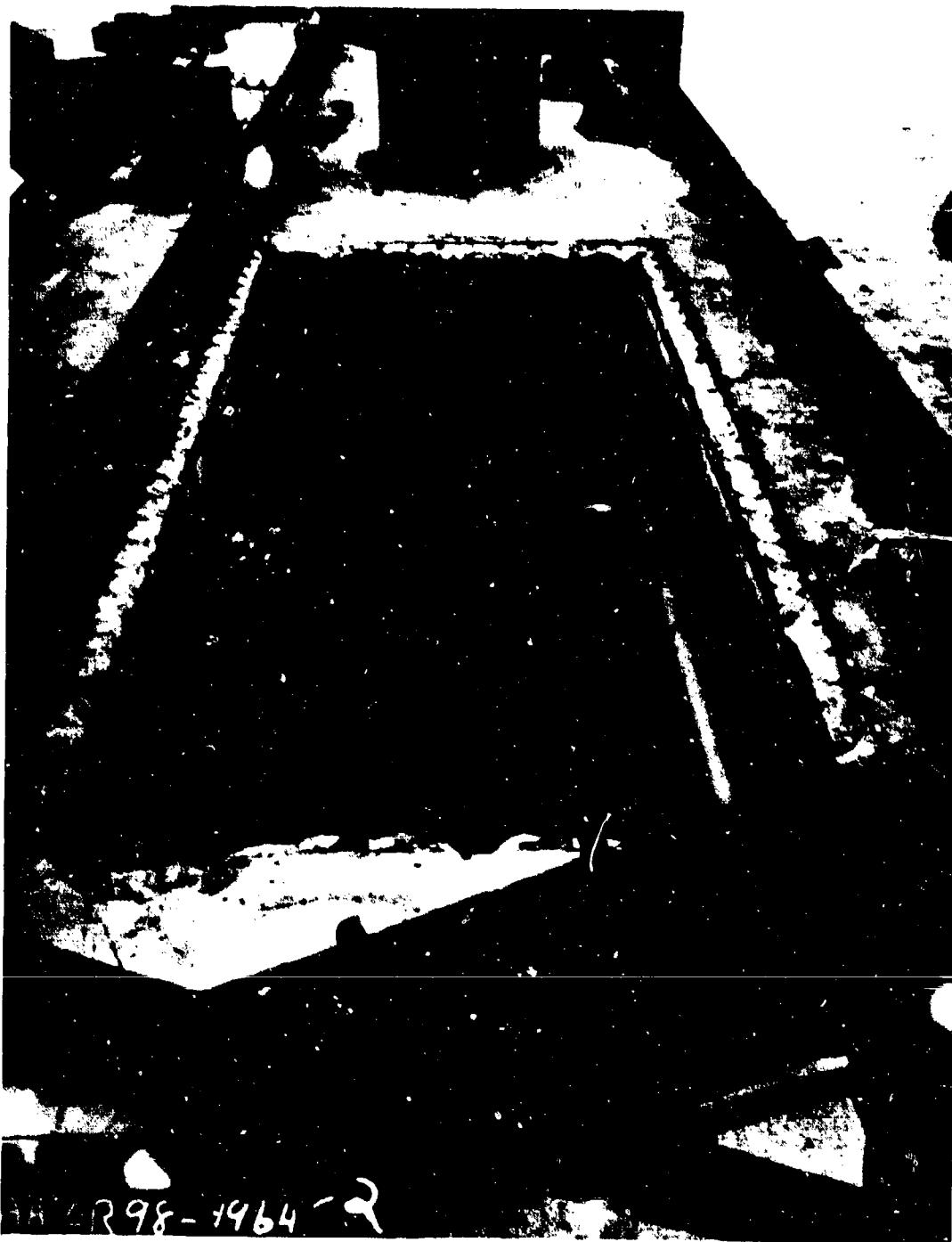
Forward Face, Starboard Wing Wall

5162

AFTER ABLE  
ARDC-13



Crack - Port Side, Top of Wing Wall

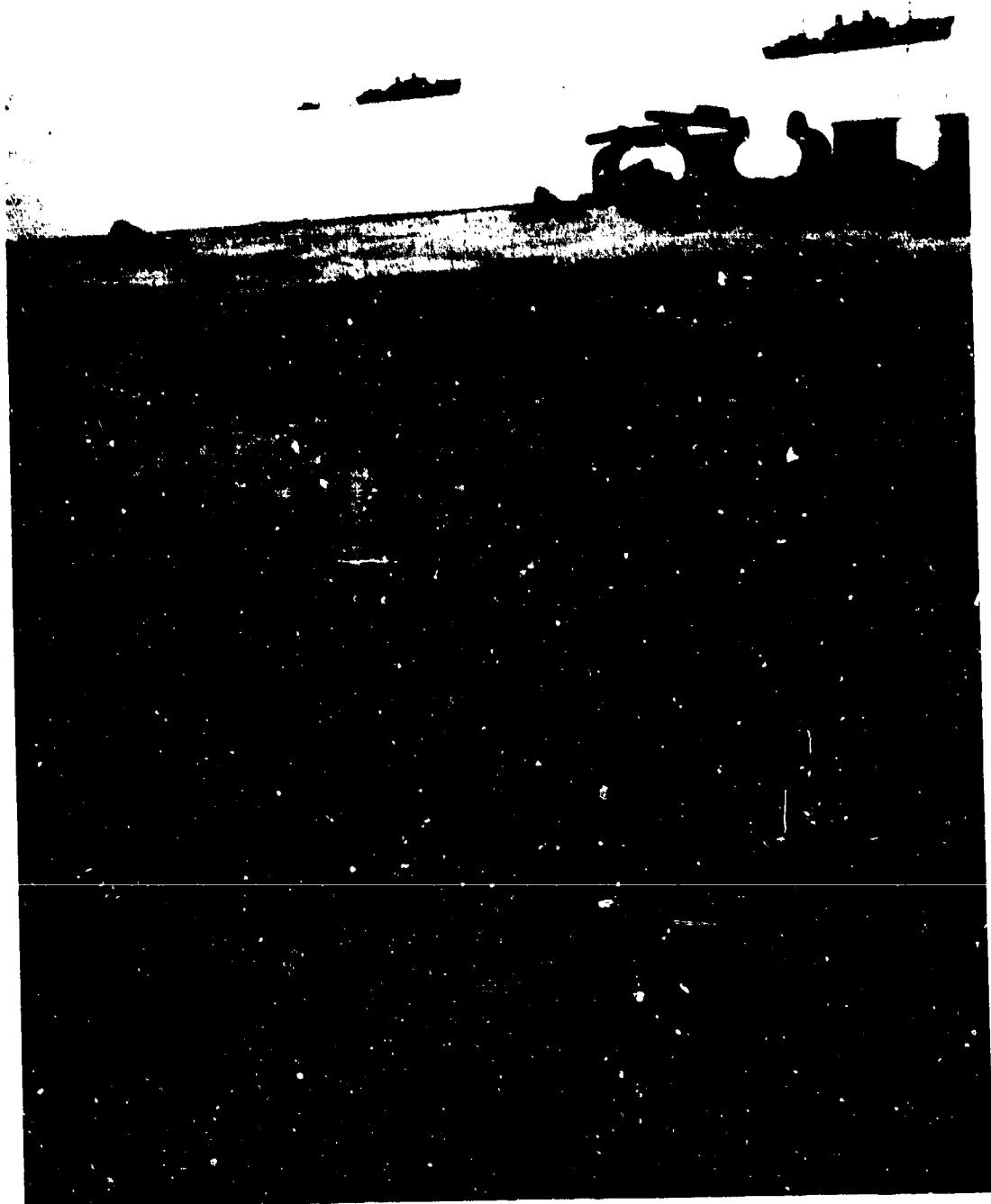


AMR 98-1964-2

Hatch Opening - Port Top Deck, Hatch Cover Gone

C

5162



C Hatch Opening on Stern Showing Bent Clips

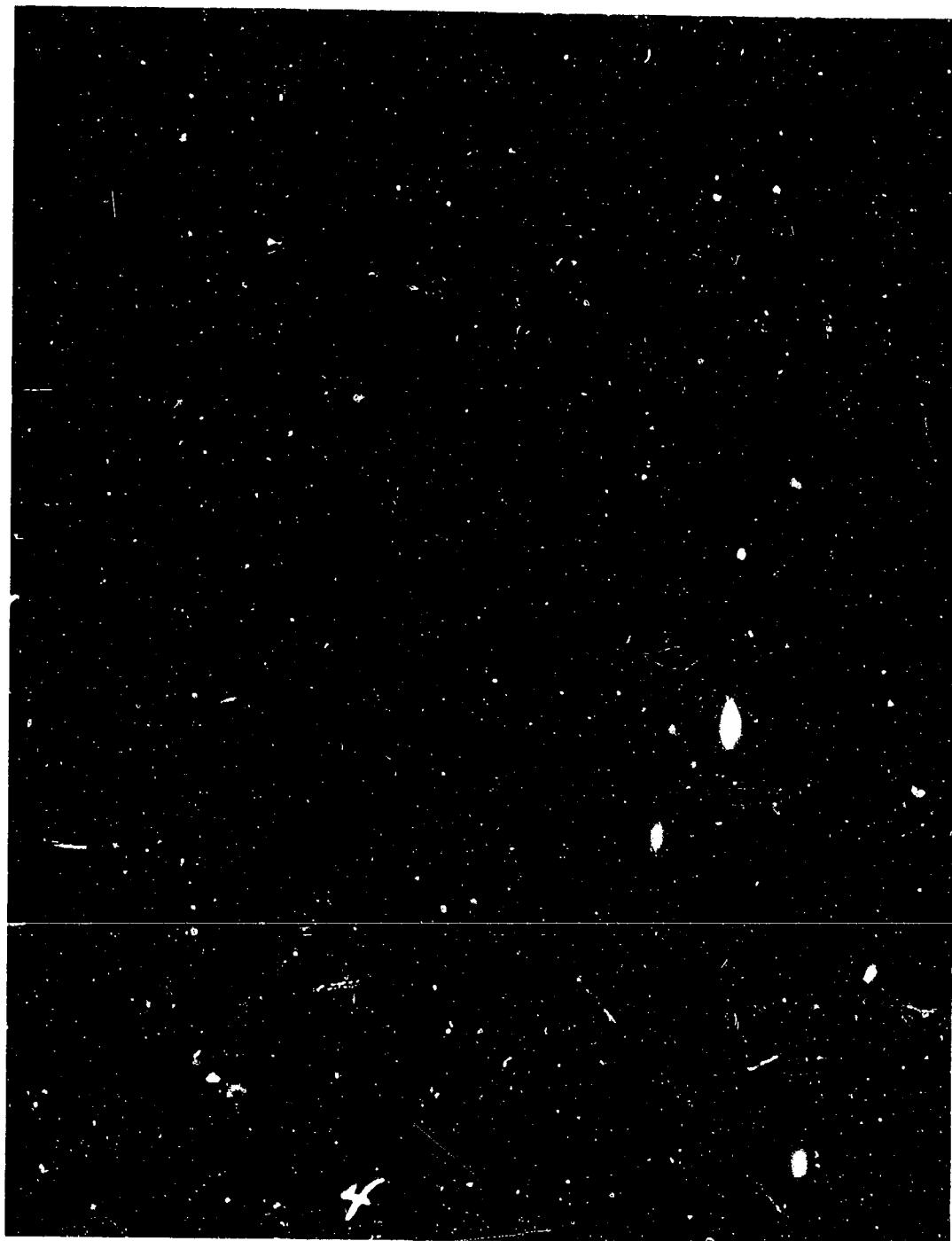
5162

General View - Bow



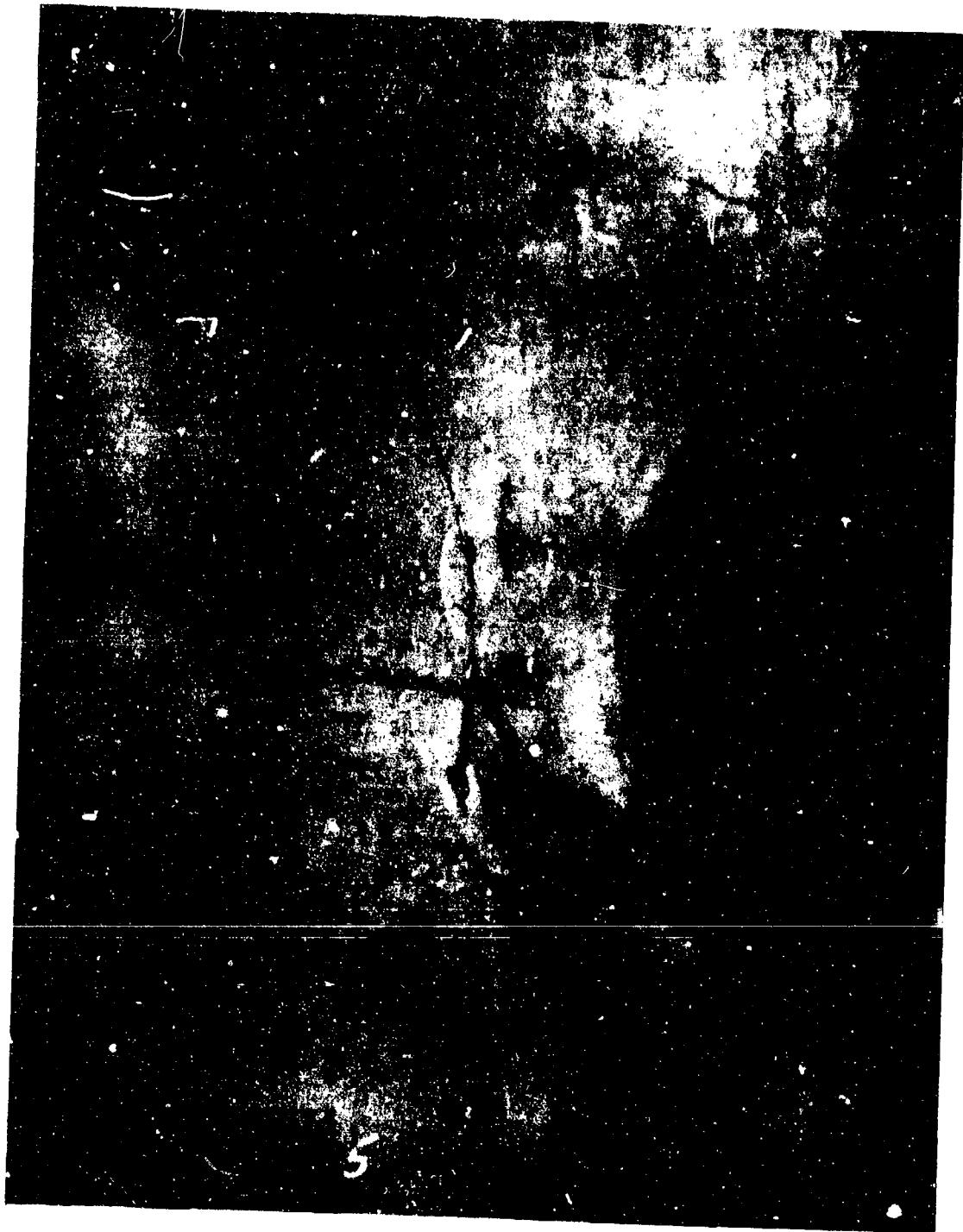
Port Bow

1A n CR98 - 1964



Torpedo Spoon, Stern ARDC - 13

Crack - Starboard Wing Wall, Inside Aft



5162

Running Light Frame (From APA)



C

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Army Water Tank



C

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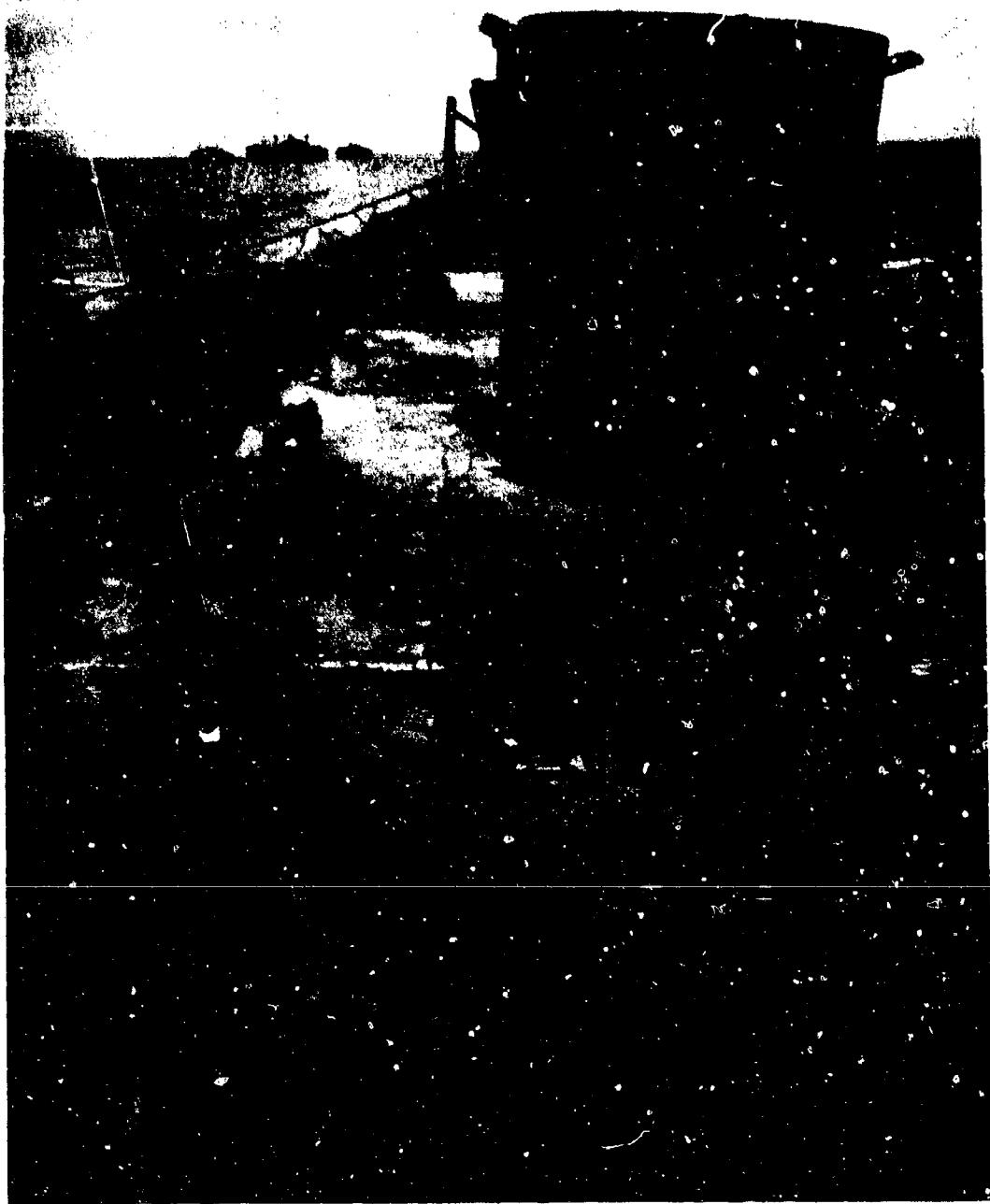
View of Damage to Forward Face of Port Wing Wall



CS 93- 1988-1



View of Damage to Forward Face of Starboard Wing Wall



**Longitudinal Crack in "A" Deck Port Wing Wall,  
Frame 25 Facing Aft**



Longitudinal Crack in "A" Deck Port Wing Wall,  
Frame 25 Facing Forward

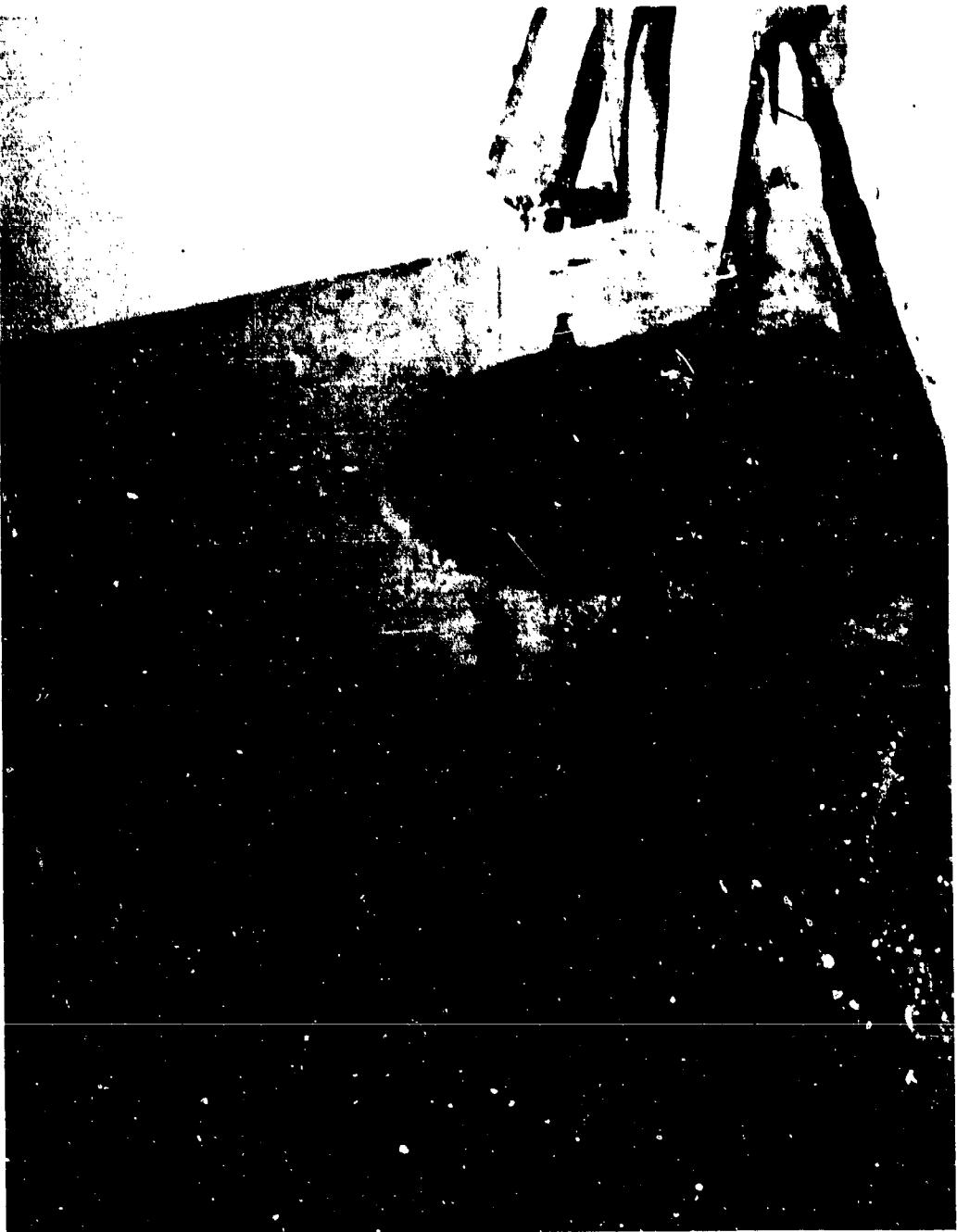
View of Damage to Crane on Deck Floor from Top of Port Wing Wall



5162

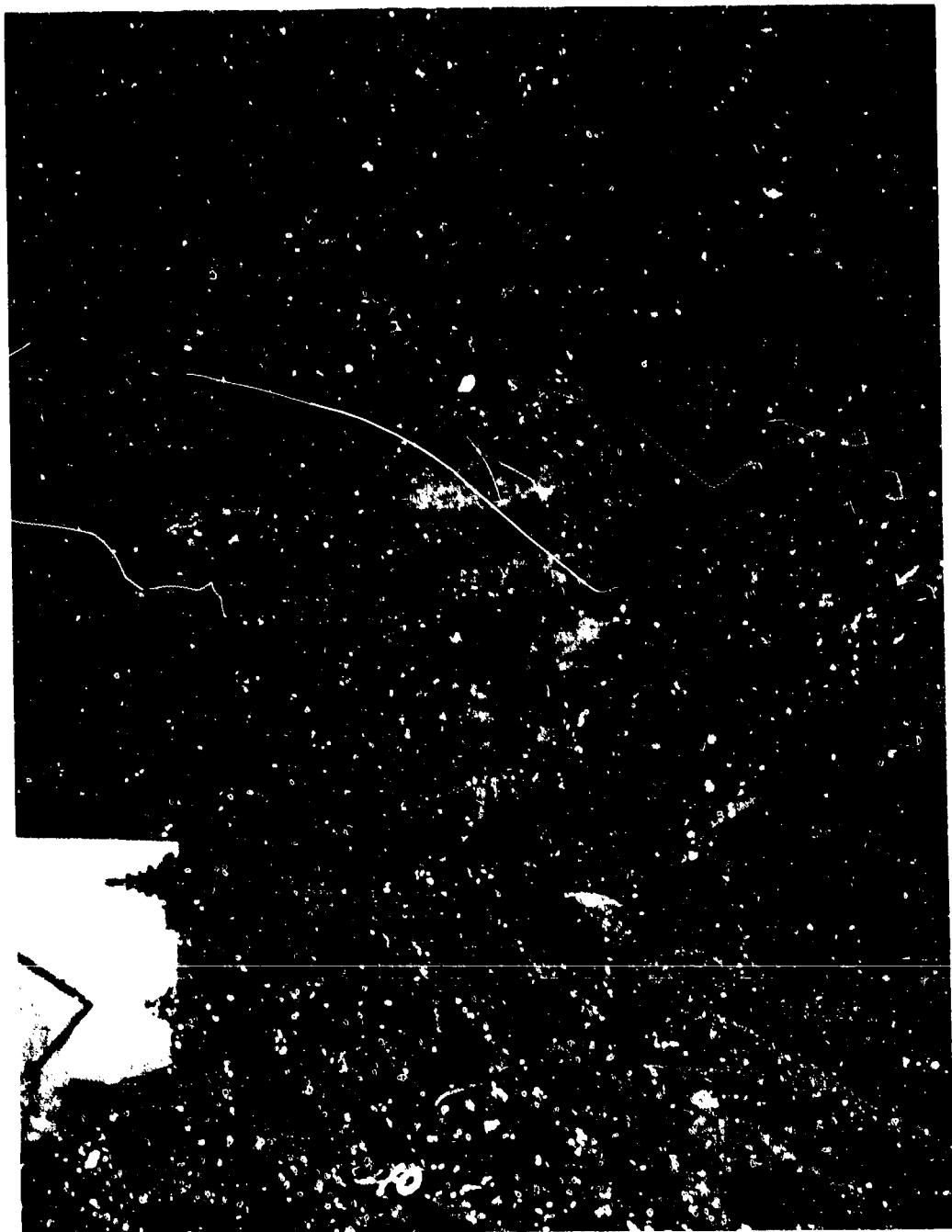


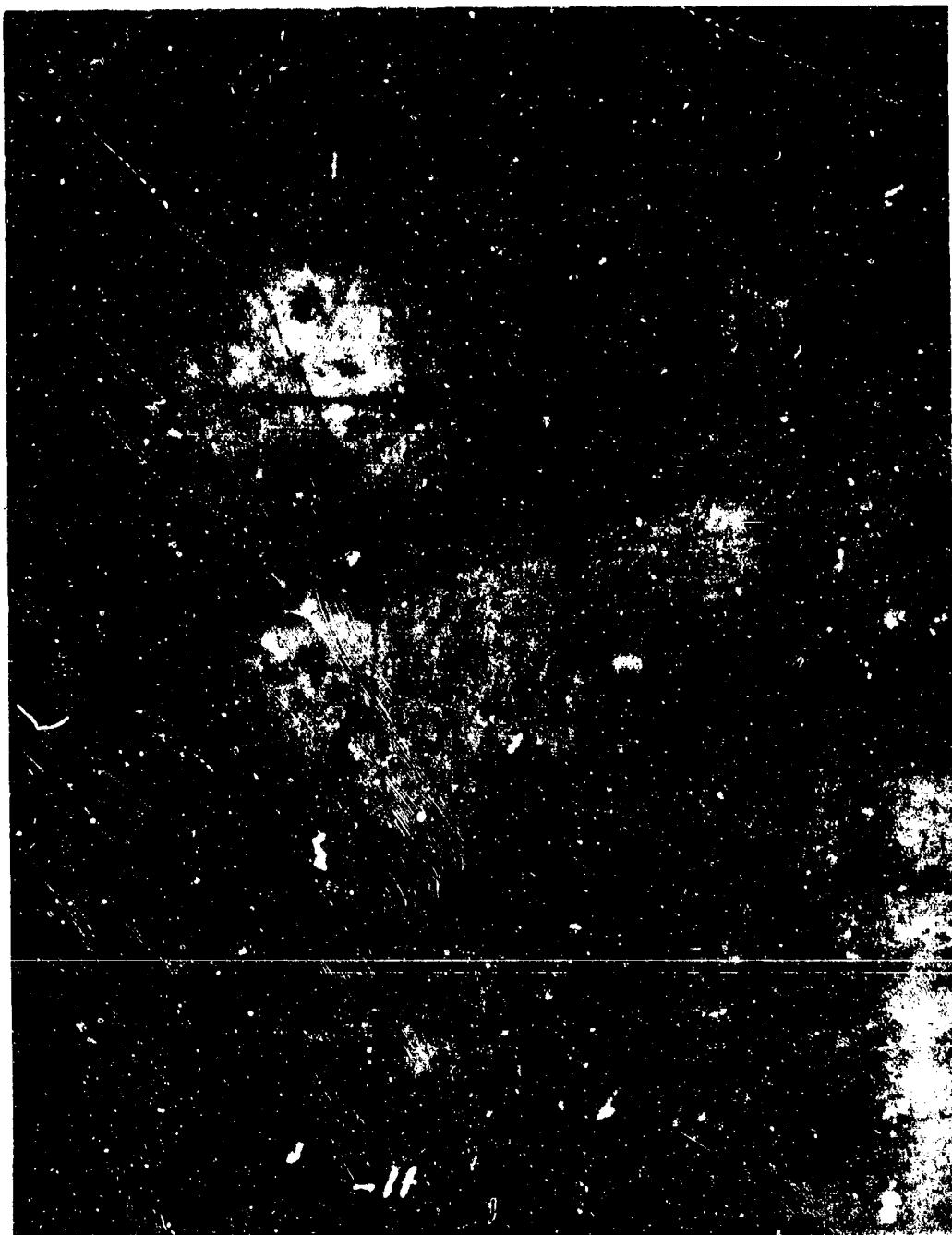
Crack - Inboard Face, Starboard Wing Wall - Amidships - 3' Above Deck Floor



Crack - After Face and Inboard Corner of Starboard Wing Wall  
3' Above Dock Floor

Crack - After Face of Starboard Wing Wall





Spalling - Inboard Face Starboard Wing Wall - Frame 40 - 3' Above Floor

Crack - "A" Deck Starboard Wing Wall - Frame 30 Facing Aft



5162

Crack - Spalling - Around Ventilator at Frame 28 - "A" Deck Starboard Wing Wall

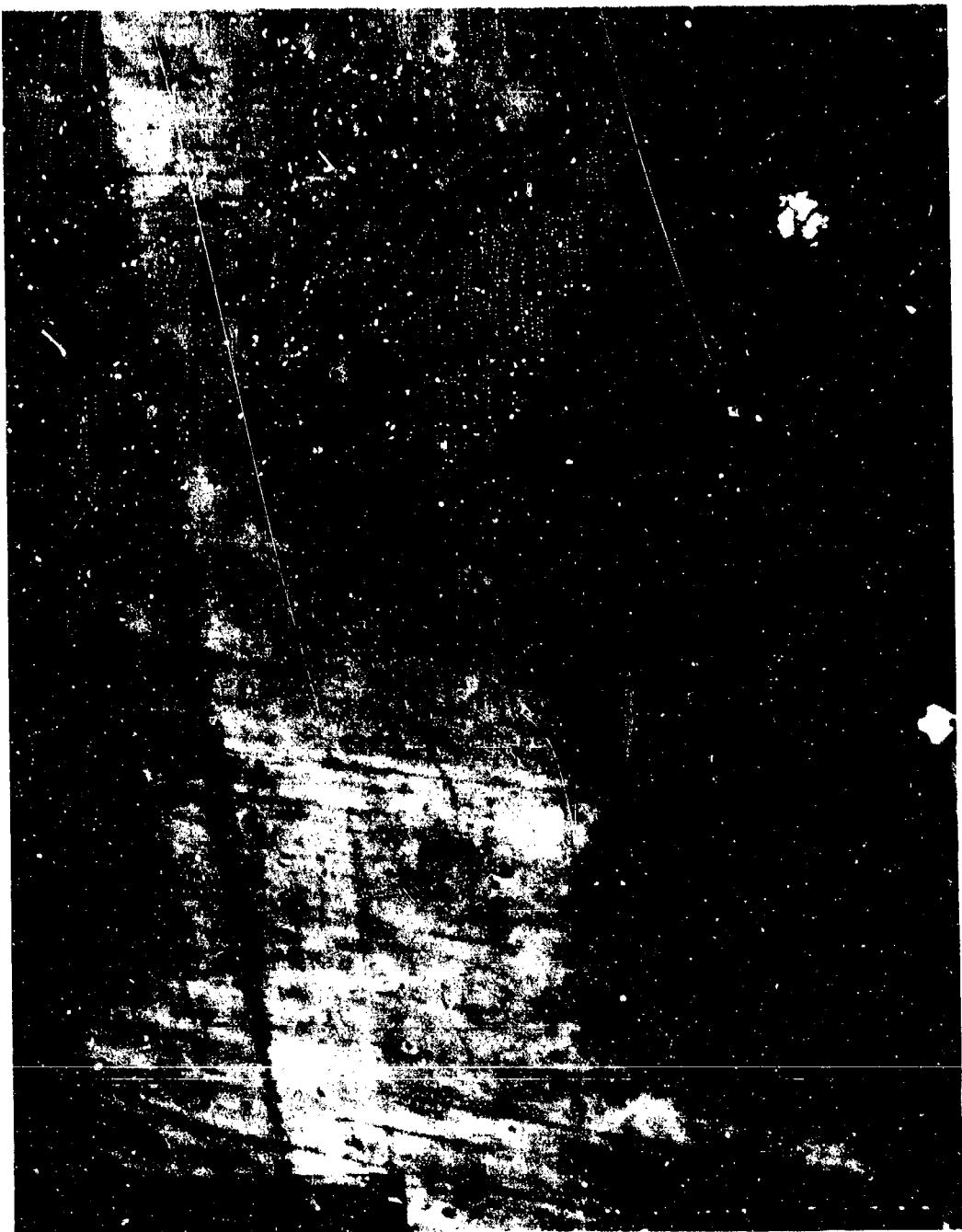


Spalling Around Ventilator - "A" Deck - Starboard Wing Wall at Frame 38



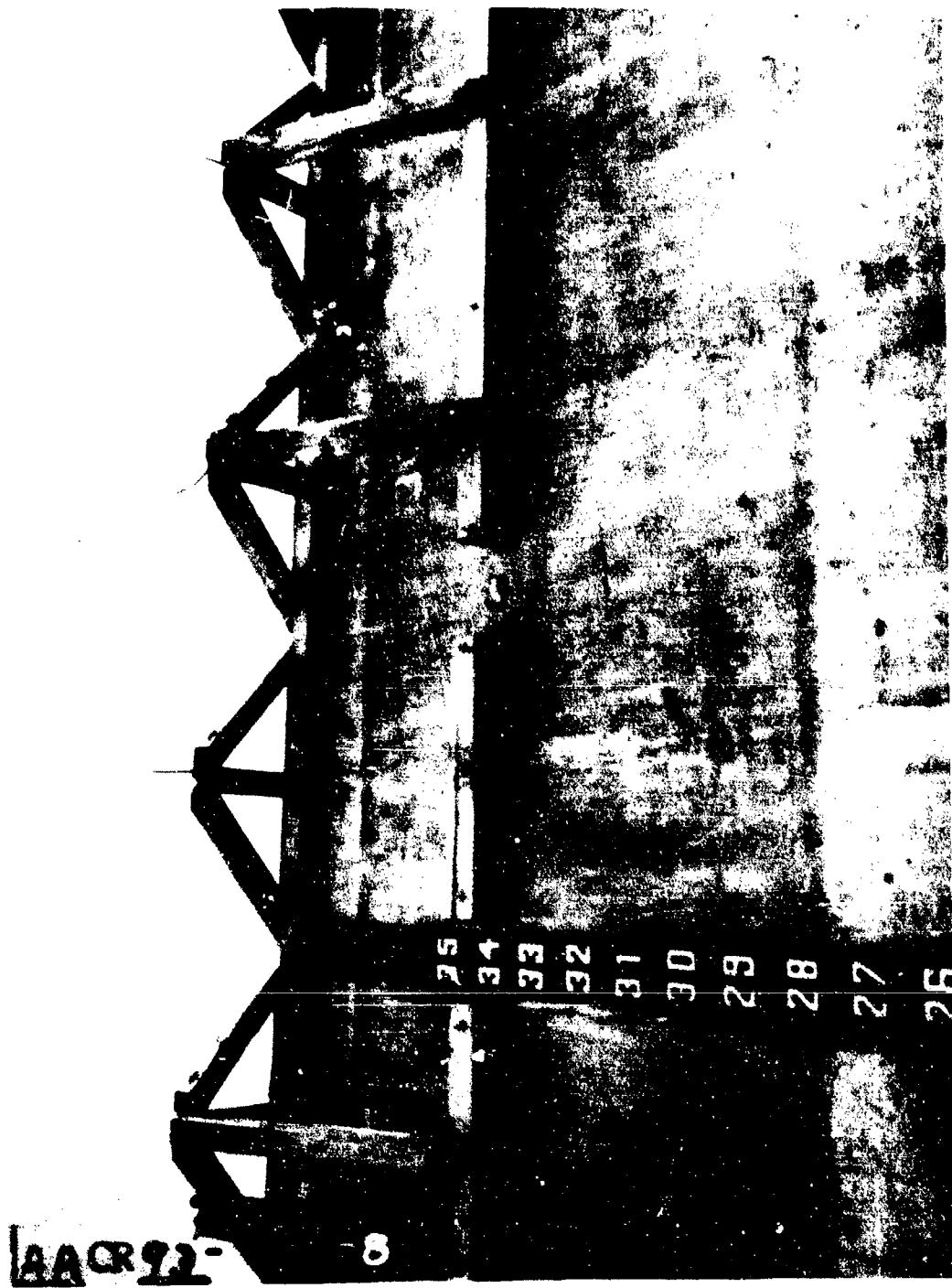
5162

Crack - Inboard Face - Port Wing Wall - Frame 20 - 35 - 10' Above Floor



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Crack - Inboard Face - Port Wing Wall - Frame 20 - 42 - 2' From Top



5162

Crack - "B" Deck Port Wing Wall - Frame 18



0

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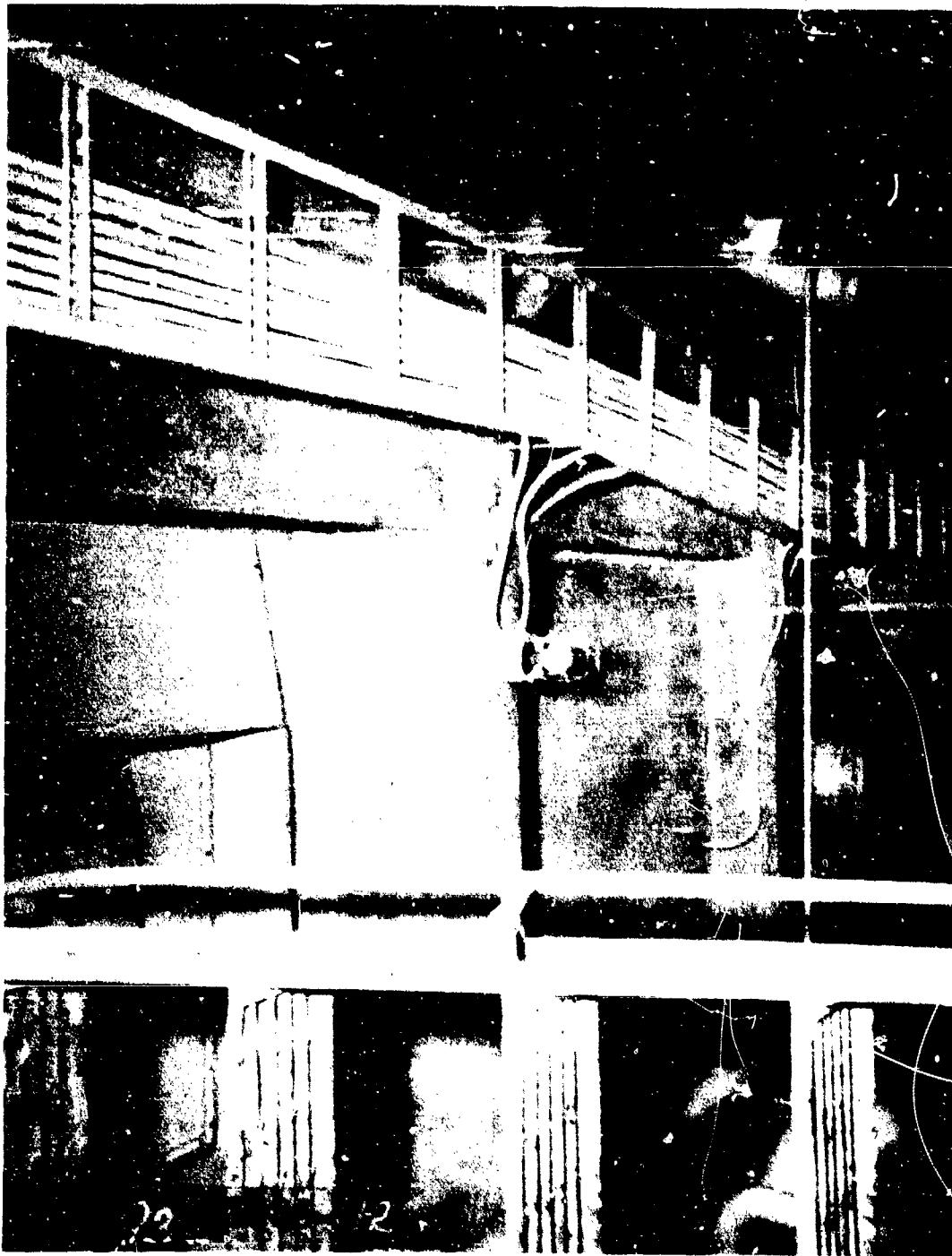


Crack - "B" Level - Port Wing Wall - Frame 20 -  
Outboard Wall - Inside Face

5162

Crack - "B" Level - Port Wing Wall - Frame 26 -  
Top Inside Face of Outboard Wall

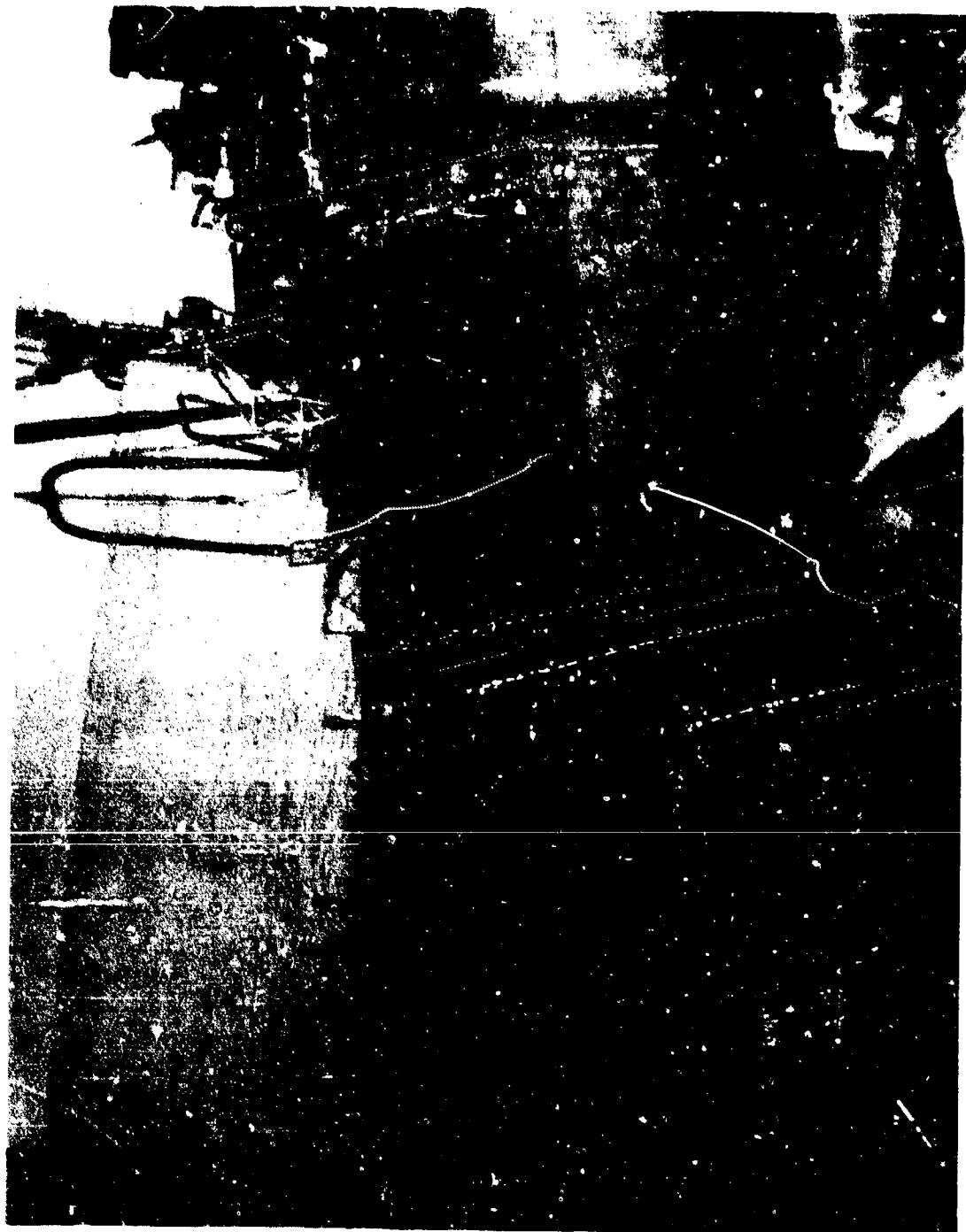
Crack - "B" Level - Port Wing Wall - Frame 24 - Top



C

5162

View of Preparations for Pumping out Dock





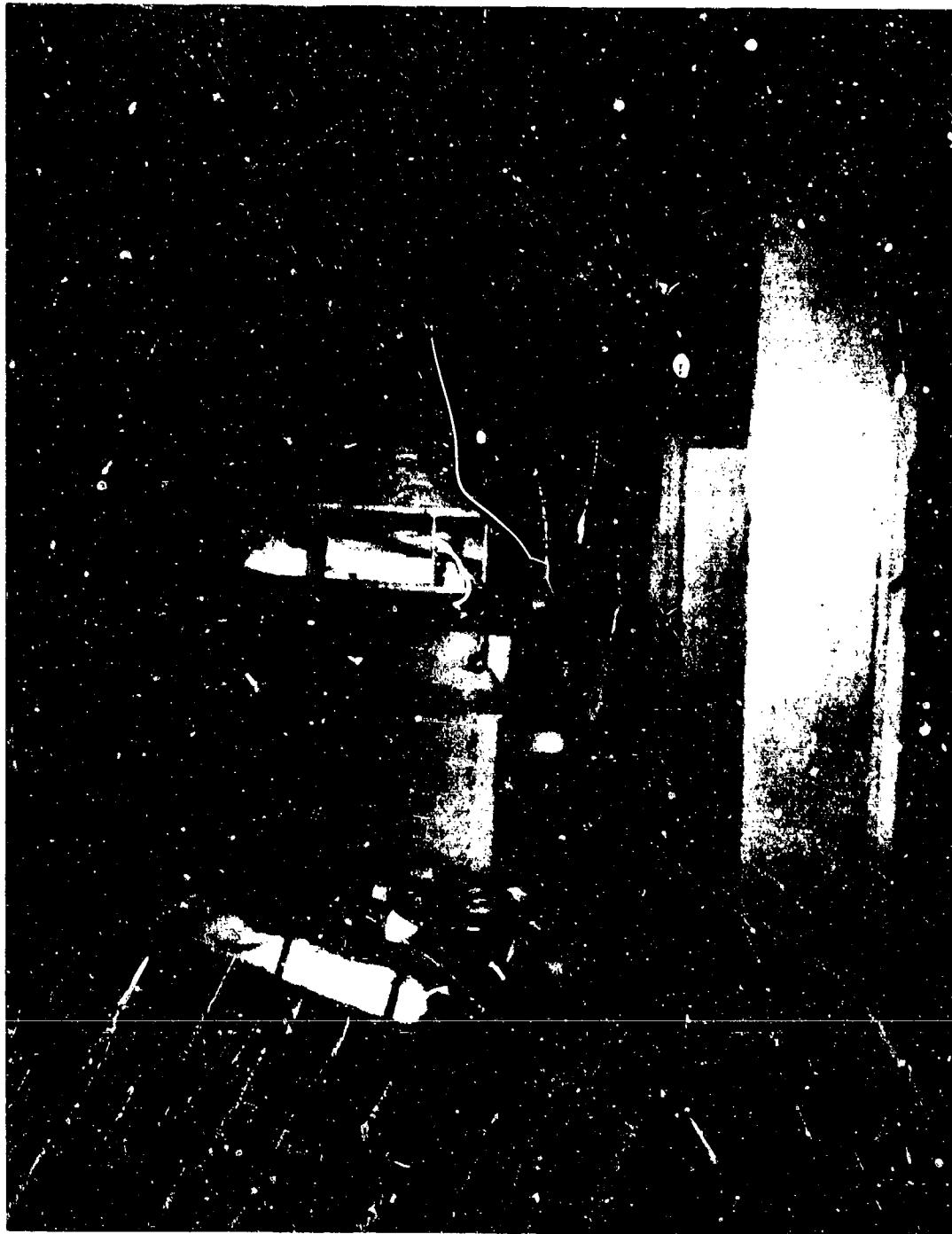
Longitudinal Crack Inside Face - Outboard Wall - Frame 24 - Port

View of Mess Table Ripped Off Fastenings to "B" Deck



2

5162



**View of Damage to Sick Bay "B" Deck**

5162

C



Crack in Transverse Bulkhead at Frame 44, Port Wing Wall



General View of Port Quarter

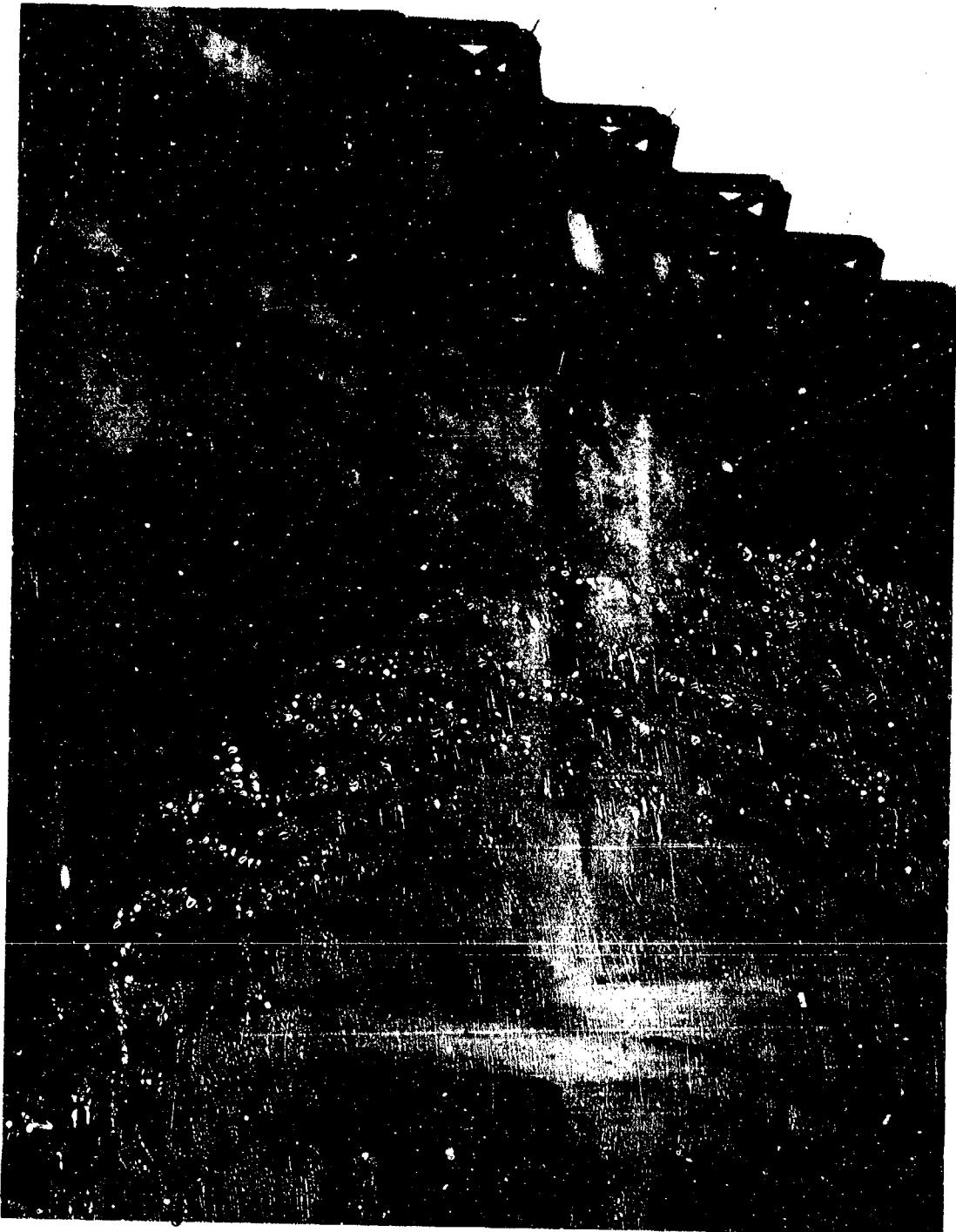
5162

View of Damage Material on Dock Floor Facing Aft



C

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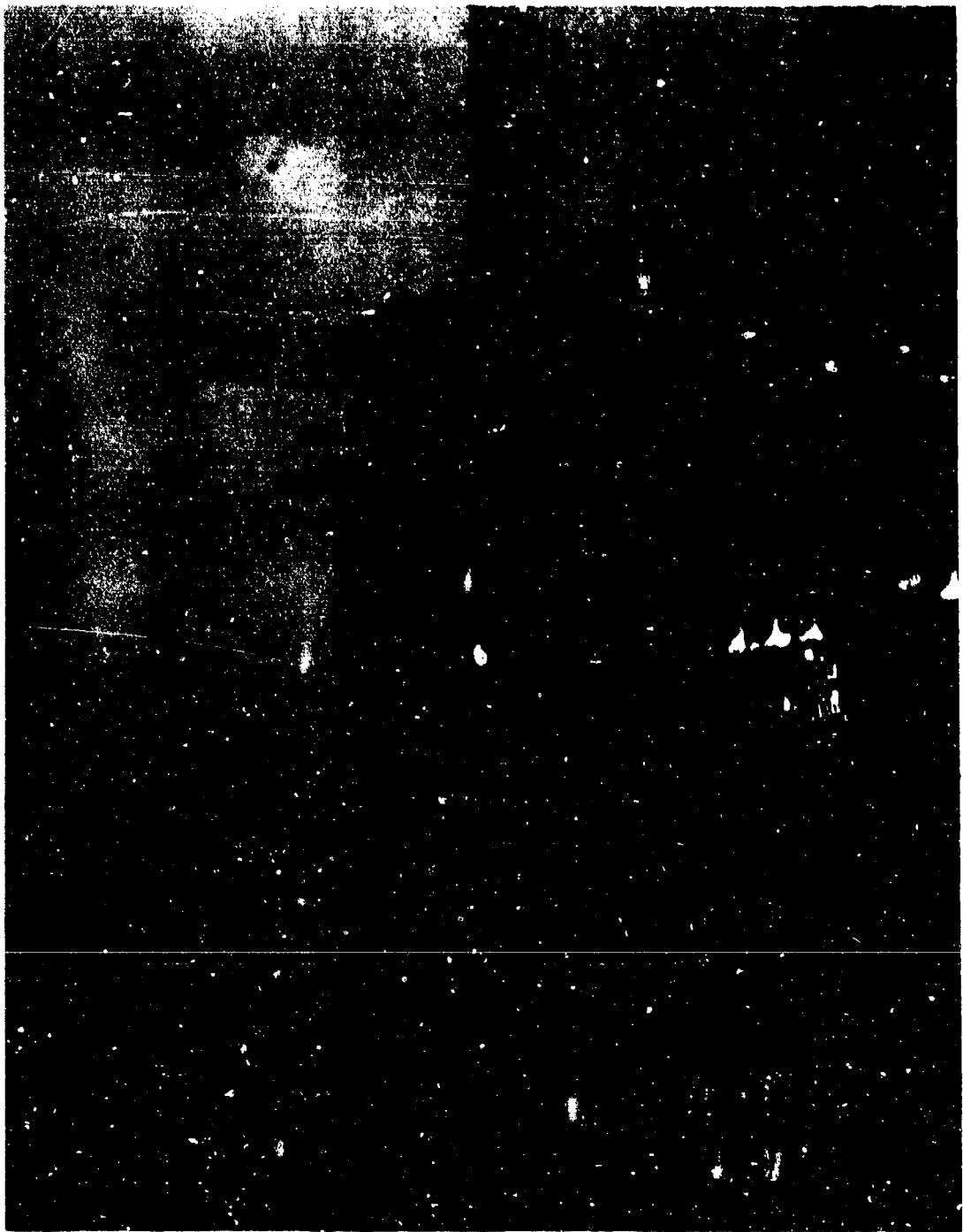


**General View of Starboard Wing Wall Facing Aft**

C

5162

Blast Shadow Inside Face Starboard Wing Wall - Frame 49 to 56



C

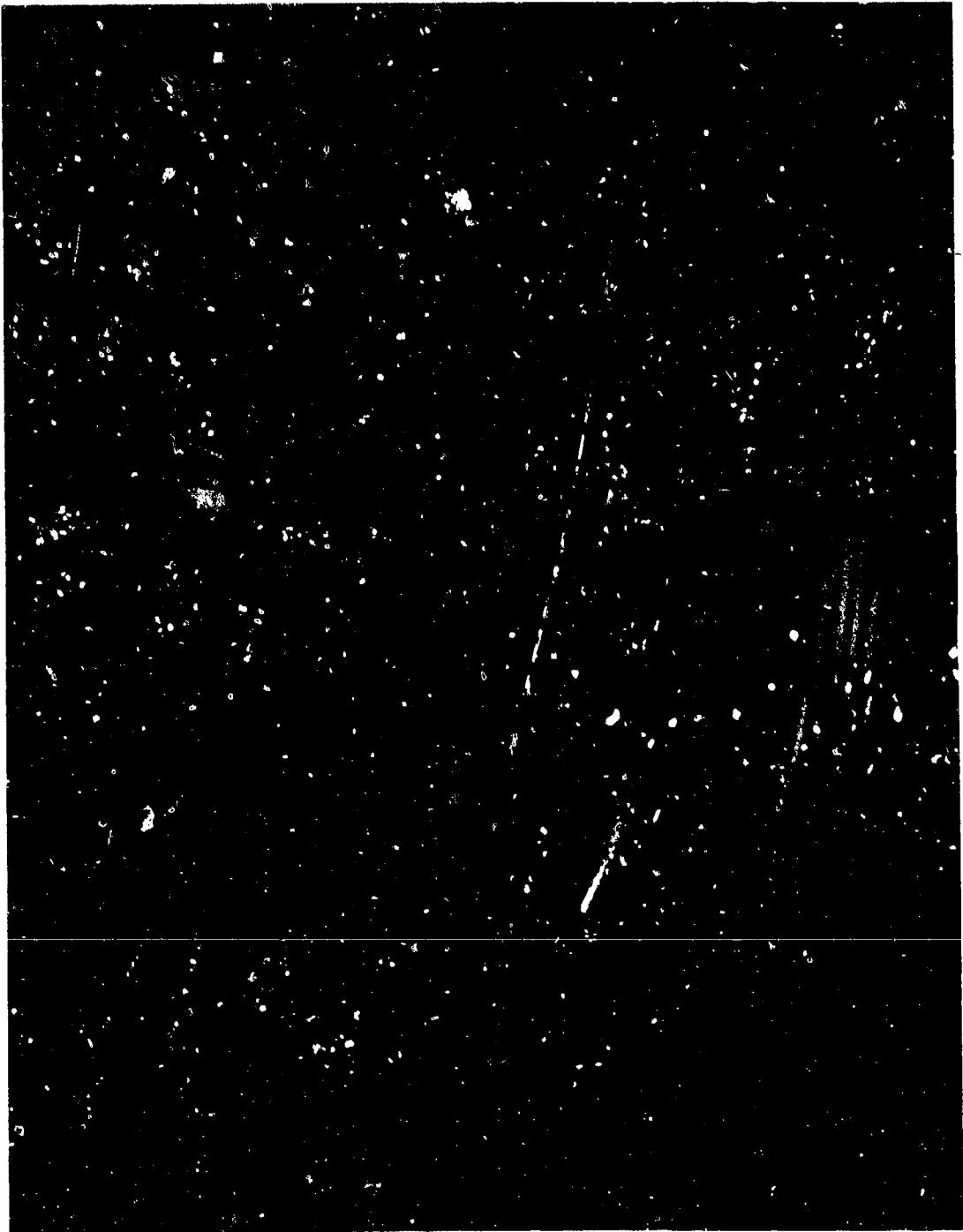


C  
**Frame 36, Below "A" Deck Outboard Shell - Starboard Wall**



Frame 36 Between "A" and "B" Deck - Frame 27 to 28 near  
Inboard Shell, Starboard Wall

Bottom of "A" Deck - Frame 27 to 28 Near Outboard Shell - Starboard Wall



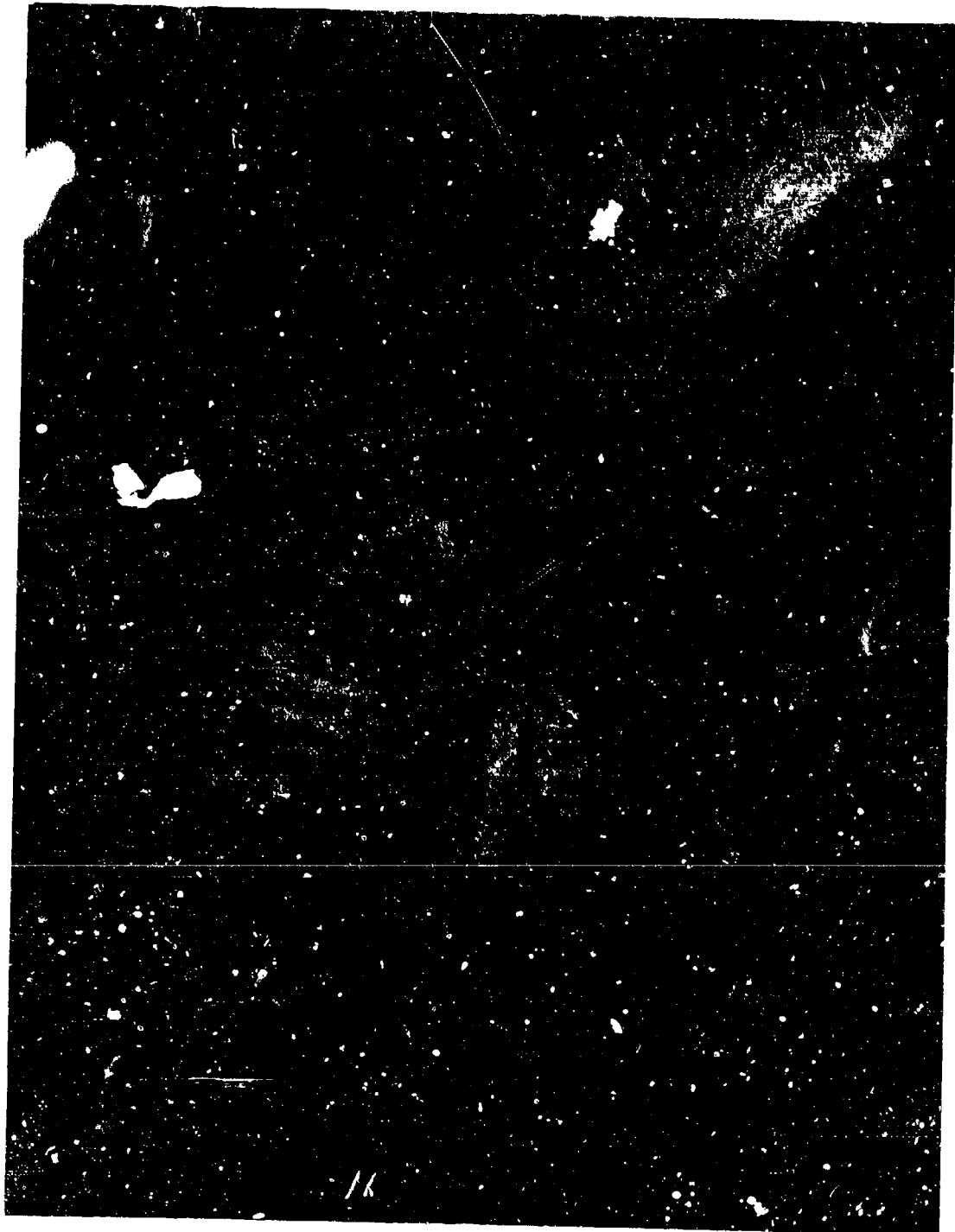
"B" Deck Frame 25 to 26 Near Outboard Shell - Starboard Wall



5162

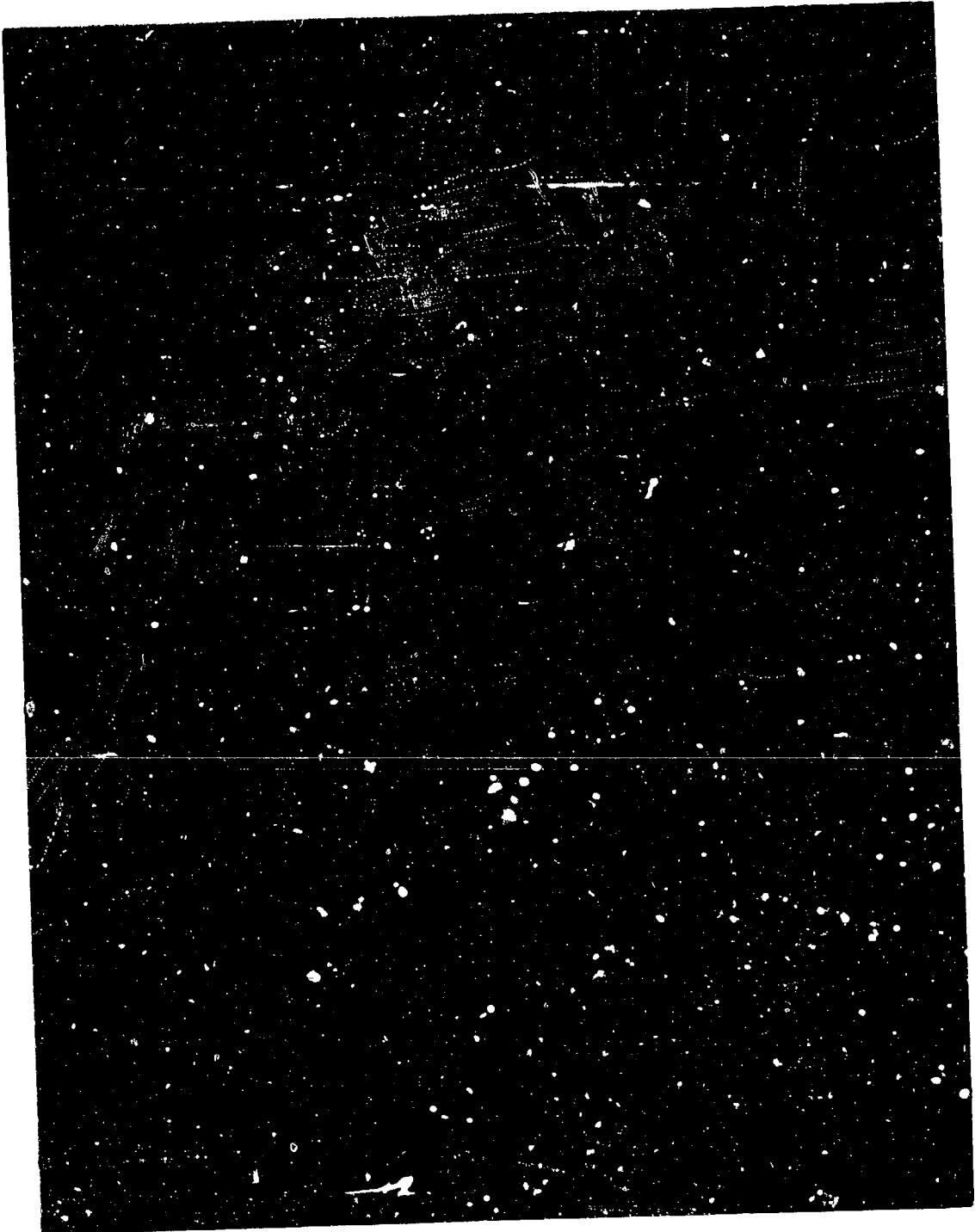


Frame 29 Below "B" Deck Near Outboard Shell - Starboard Wall



Frame 28 Below "B" Deck Near Outboard Shell - Starboard Wall

Inboard Shell, Frame 27 to 28 About 4 Feet Above "C" Deck Starboard Wall



Deck Wall Forward From Aft Starboard Wing Wall



C

M-46 BOMB DAMAGE  
TO  
ARDC-13

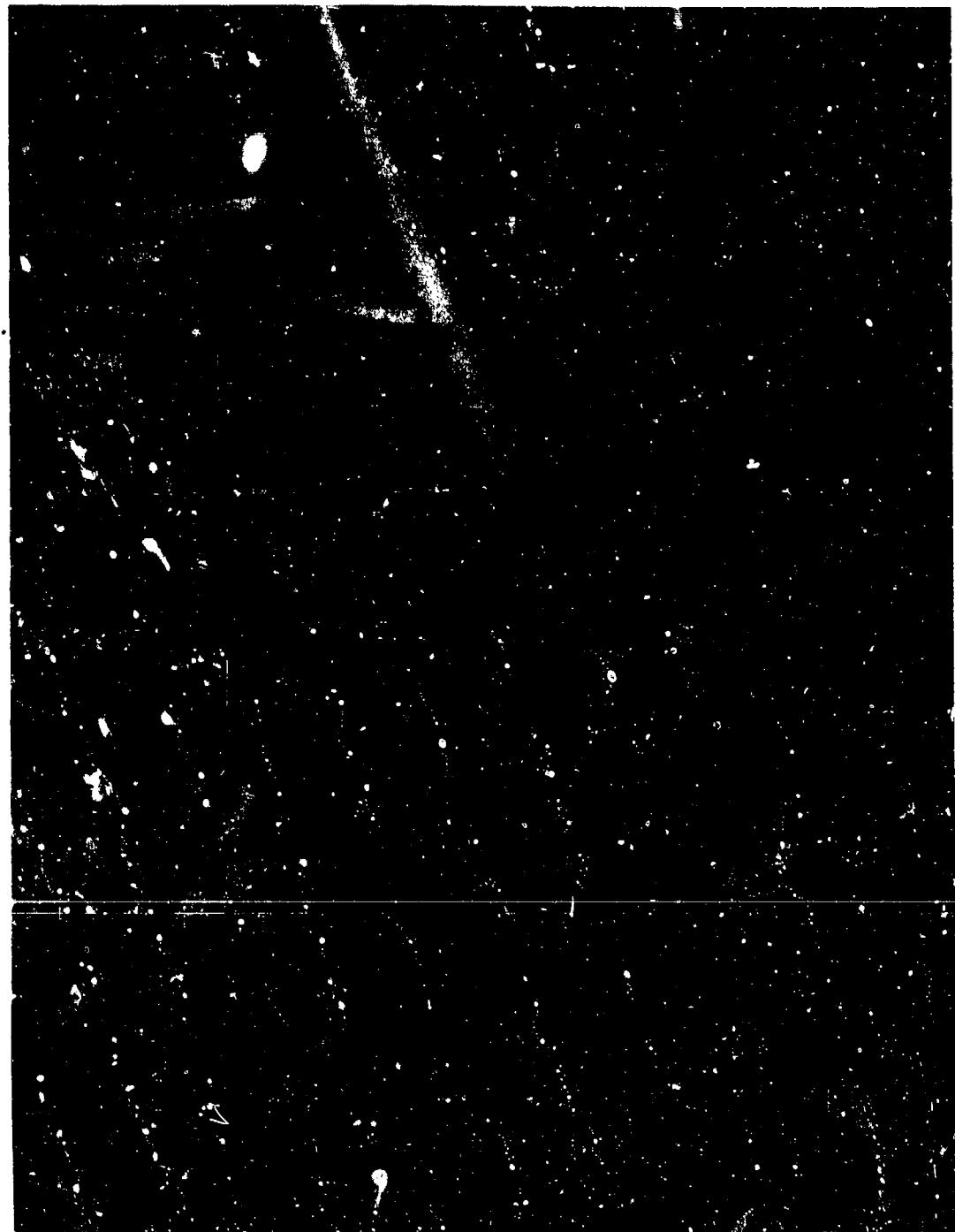
5162



View of Pontoon Moored A stern of ARDC - 13

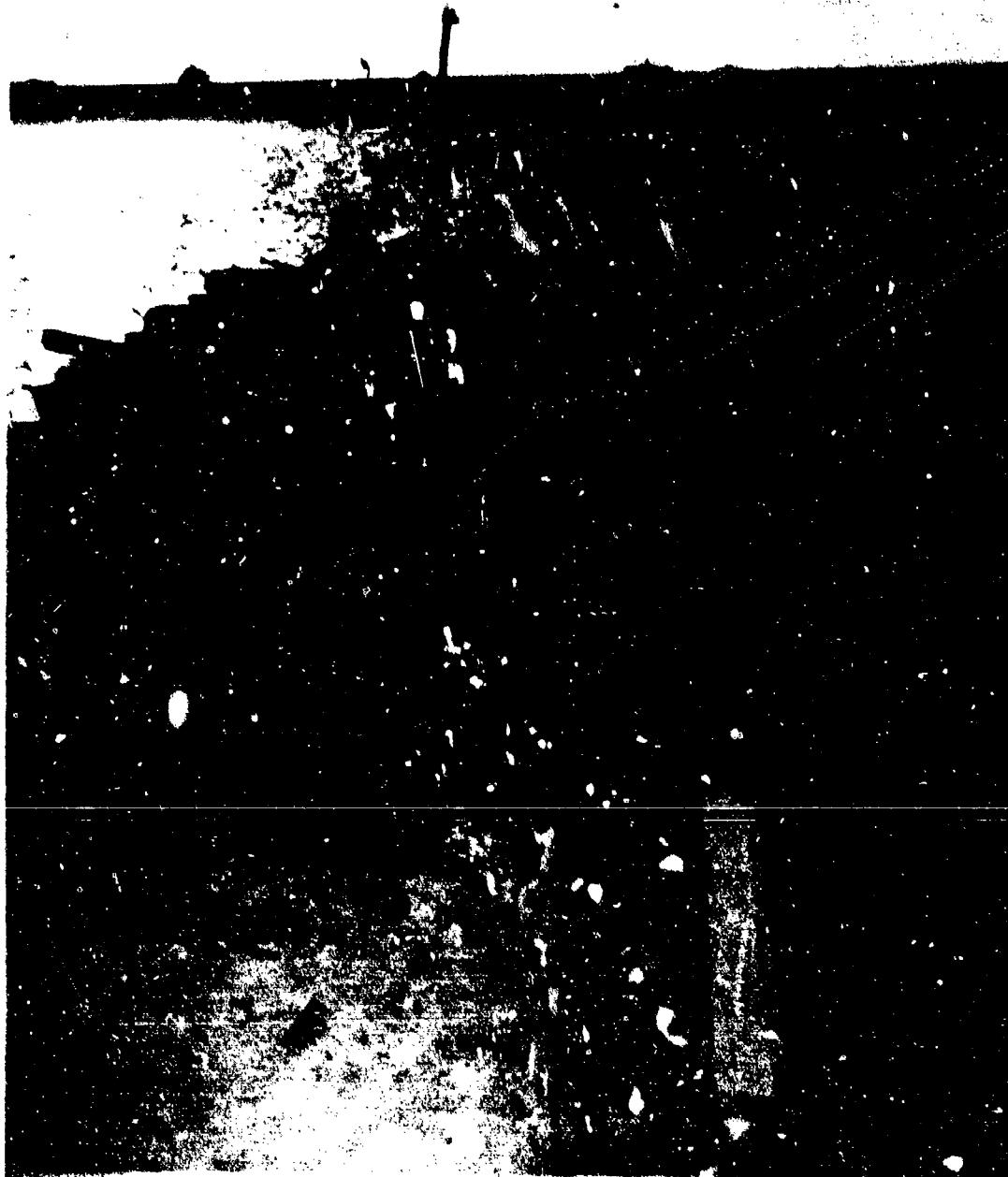


Frames 12 and 13 - Starboard Wing Wall - Facing Forward



Frame 12 - Details of Failure, Facing Forward

- 2180 -



C  
**Hole in Starboard Wing Wall - General View Forward**



**Defense Special Weapons Agency**  
6801 Telegraph Road  
Alexandria, Virginia 22310-3398

TRC

10 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER  
ATTENTION: OMI/Mr. William Bush

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency (formerly Defense Nuclear Agency) Security Office has reviewed and declassified the following reports:

AD-366718 XRD-32-Volume 3

AD-366726 XRD-12-Volume 2

AD-366703 XRD-16-Volume 1

AD-366702 XRD-14-Volume 2

AD-376819L XRD-17-Volume 2

AD-366704 XRD-18

AD-367451 XRD-19-Volume 1

AD-366705 XRD-20-Volume 2

*AD-366705*

AD-376028L XRD-4

AD-366694 XRD-1

AD-473912 XRD-193

AD-473891 XRD-171

AD-473899 XRD-163

AD-473887 XRD-166

AD-473888 XRD-167

*ST-A 28 JAN 80  
made target*

AD-473889 XRD-168

TRC

10 April 1997

SUBJECT: Declassification of Reports

AD-B197749	XRD-174
AD-473905-	XRD-182
AD-366719-	XRD-33 Volume 4
AD-366700-	XRD-10
AD-366712-	XRD-25 Volume 1
AD-376827L-	XRD-75
AD-366756 -	XRD-73
AD-366757-	XRD-74
AD-366755 -	XRD-72
AD-366754 -	XRD-71
AD-366710-	XRD-23 Volume 1
AD-366711-	XRD-24 Volume 2
AD-366753-	XRD-70
AD-366749-	XRD-66
AD-366701-	XRD-11
AD-366745 -	XRD-62.

All of the cited reports are now **approved for public release; distribution statement "A" applies.**

*Ardith Jarrett*  
ARDITH JARRETT  
Chief, Technical Resource Center

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KSC

*Completed*

*R.W*