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BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT

Classification (~~Secret~~) (Changed to **CONFIDENTIAL**)
By Authority of Joint Chiefs of Staff (Action 15 Apr 49)
By *[Signature]* Date *[Date]*

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OPERATION CROSSROADS. U.S.S. WAINWRIGHT (DD 419)

U. S. GOVERNMENT PRINTING OFFICE: 1950
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Defense Home Support Agency
Washington, D. C. 20301

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ARMED FORCES
SPECIAL WEAPONS PROJECT

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~~OPERATION CROSSROADS~~

~~DIRECTOR OF SHIP MATERIAL~~

~~JOINT TEST FORCE ONE~~

DDC

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REG. NO. 3

1 JAN 1965

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JAN 1965

BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT

Classification (Cancelled) (Changed to **CONFIDENTIAL**)
By Authority of Joint Chiefs of Staff (Action 15 Apr 49)
By *[Signature]* Date *9 April 51*

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Defense Atomic Support Agency
Washington, D. C. 20301

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USS WAINWRIGHT (DD419)

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USS WAINWRIGHT (DD419)

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U.S.S. WAINWRIGHT (DD419)

SHIP CHARACTERISTICS

Building Yard: Norfolk Naval Shipyard.

Commissioned: 15 April, 1940.

HULL

Length Overall: 348 feet 4 inches.

Length on Waterline: 341 feet 0 inches.

Beam (extreme): 36 feet 0 inches.

Depth (molded at side, to main deck, amidships):
19 feet 7 ⁷/₈ inches.

Drafts at time of test: Fwd. 12 feet 2 inches.
Aft. 12 feet 9 inches.

Standard displacement: 1,570 tons.

Displacement at time of test: 2,229 tons.

MAIN PROPULSION PLANT

Main Engines: Two sets of Westinghouse turbines are installed, one set per shaft.

Reduction Gears: Two sets of "Falk" double reduction are installed, one per shaft.

Main Condensers: Two are installed in ship.

Boilers: Three Babcock and Wilcox Boilers are installed in ship. 565 psi. gauge. 715° F.

Propellers: Two are installed in ship.

Main Shaft: Two are installed in ship.

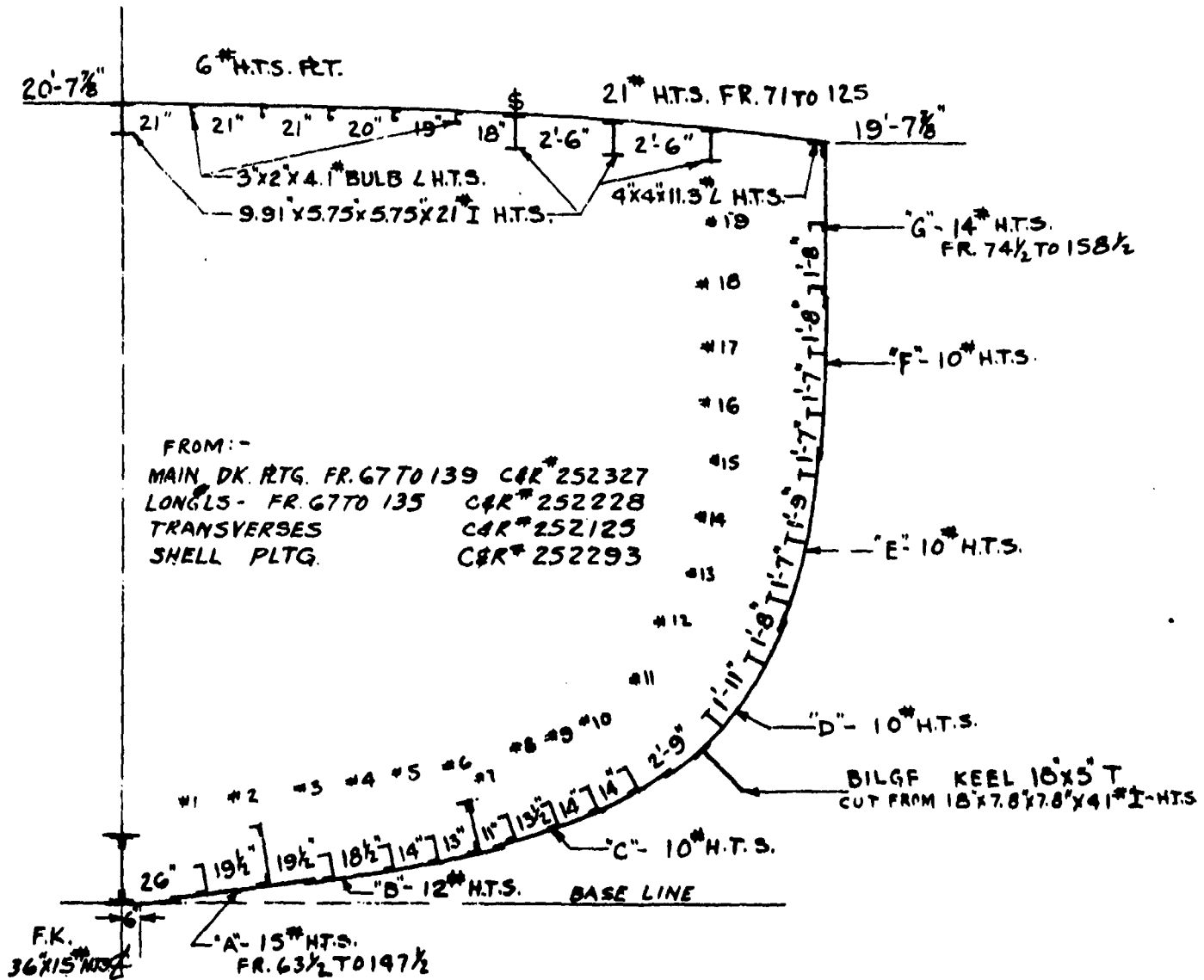
Ships Service Generators: Four sets are installed in ship. Two 150 KW.-A.C. and two 40 KW.-D.C. sets.

~~SECRET~~ USS WAINWRIGHT (DD419)

C.V.K. 21x12 H.T.S. R
 " FR. 12"x12" H.T.S. R
 " L's 3x3x6.1" H.T.S. DBL T&B.
 LONG L 1-9 - 2 1/2 x 2 1/2 x 13.4" E H.T.S.
 " 2 - 19 1/4 x 10" RT. 2 1/2 x 3 x 4.5" L's H.T.S.
 LONG L 3,4,5 - 8 x 2 1/4 x 2 1/4 x 11.5" E H.T.S.
 " 6 - 16 3/4 x 10" R 3 x 2 1/2 x 4.5" L's H.T.S.
 " 7-8-9-10 - 8 x 2 1/4 x 2 1/4 x 11.5" E H.T.S.

LONG L 11-12-13-14 - 6 x 5.06 x 5.87 T H.T.S.
 " 15-16-17 - 5 x 2.69 x 4.48 T H.T.S.
 " 18-19 - 5 x 1 1/4 x 1 1/4 x 6.7" E H.T.S.

7" KEEL BKT. EACH FRAME
 7.65" WEBS SPCD 63"



MIDSHIP SECTION FR 98
 TEST - A
 SCALE 1/4" = 1'-0"

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TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after test; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural damage.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

There was no structural damage in way of electrical equipment.

(c) Other damage.

HULL

Not observed.

MACHINERY

The machinery was not damaged by Test A.

ELECTRICAL

No damage occurred to electrical equipment due to Test A.

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II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

Heat radiation emanated from about 320° relative and an elevation of about 4°. It caused scorching and blistering on vertical painted surfaces normal to the burst. There is some scorching of canvas and cordage.

MACHINERY

Not evidenced.

ELECTRICAL

No evidence of heat in way of electrical equipment.

(b) Fires and Explosions.

HULL

There were no explosions. Fires burned the painted canvas gun bloomers on mounts, 1, 2, and 4 and the canvas cover on the starboard side of the 5 inch battery director, and an unpainted canvas cover on an animal cage at frame 10, port. All fires are considered to have been caused by heat radiation. These fires caused no damage to structure or other equipment.

MACHINERY

Not evidenced.

ELECTRICAL

There were no fires or explosion in way of electrical equipment.

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(c) Shock.

HULL

None.

MACHINERY

Not evidenced.

ELECTRICAL

There was no evidence of shock in way of electrical equipment.

(d) Pressure.

HULL

The only evidence of pressure is slight dishing of the flag bags and the tearing of canvas weather screens.

MACHINERY

Not evidenced.

ELECTRICAL

There was no evidence of pressure in way of electrical equipment.

(e) Effects peculiar to the Atom Bomb.

HULL

None.

MACHINERY

None.

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ELECTRICAL

Radiant heat and radioactivity were evident on exposed surfaces. There was no damage to electrical equipment due to these effects.

III. Results of test on target.

(a) Effect on machinery, electrical, and ship control.

HULL

No comment.

MACHINERY

None.

ELECTRICAL

No damage was apparent to electrical machinery or ship control.

(b) Effect on gunnery and fire control.

HULL

No comment.

MACHINERY

No comment.

ELECTRICAL

No damage apparent.

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(c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

No electrical damage affected watertight integrity or stability.

(d) Effect on personnel and habitability.

HULL

Personnel and habitability are not affected by damage to hull equipment.

MACHINERY

None.

ELECTRICAL

No electrical damage affected personnel or habitability.

(e) Effect on fighting efficiency.

HULL

None.

MACHINERY

None.

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ELECTRICAL

No electrical damage affected the fighting efficiency of the vessel.

IV. General Summary.

HULL

None.

MACHINERY

The WAINWRIGHT was outside the effective range of the explosion in Test A.

ELECTRICAL

No damage was evident on any electrical equipment on this vessel. It appears that the effects of the A Bomb at the distance of this vessel from the center of the blast are not such as to require special designs or installation arrangements for electrical equipment.

V. Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

None.

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TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

- (b) Structural damage.

None.

- (c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

Heat radiation emanated from about 320° relative and an elevation of about 4°. It caused scorching and blistering on vertical painted surfaces normal to the burst. There is some scorching of canvas and cordage.

- (b) Fires and explosions.

There were no explosions. Fires burned the painted canvas gun bloomers on mounts 1, 2, and 4 and the canvas cover on the starboard side of the 5 inch battery director and an unpainted canvas cover on an animal cage at frame 10, port. All fires are considered to have been caused by heat radiation. These fires caused no damage to structure or other equipment.

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(c) Shock.

None.

(d) Pressure.

The only evidence of pressure is slight dishing of the flag bags and the tearing of canvas weather screens.

(e) Effects apparently peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery, electrical and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on water-tight integrity and stability.

None.

(d) Effect on personnel and habitability.

Personnel and habitability are not affected by damage to hull equipment.

(e) Effect on fighting efficiency.

None.

IV. General Summary of Observers' Impressions and Conclusions.

None.

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USS WAINWRIGHT (DD419)

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

VI. Instructions for Loading the Vessel Specified the Following:

ITEM	LOADING
Fuel oil	50%
Diesel oil	50%
Ammunition	50%
Potable and reserve feed water	As full as practicable
Salt water ballast	160 tons

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

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DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

(a) Overall condition.

No structural damage occurred on this ship.

(b) General areas of damage.

The total damage consisted of slight dishing of sheet metal flag bags on the navigating bridge, ripping of canvas wind screens on the signal bridge, ripping of the moving picture screen, failure of seams in a canvas cover over No. 3 mount, burning of canvas gun bloomers on mounts 1, 2, and 4 burning of a canvas awning on an animal cage, and scorching of exposed fire hose, rope, signal halyards, and of paint on vertical surfaces.

(c) Apparent causes of damage.

All damage is the result of air blast and heat radiation.

(d) Areas of flooding with sources.

No flooding.

(e) Residual strength, buoyancy, and operability.

There is no effect on residual strength, buoyancy or operability.

B. Superstructure.

(a) Description of damage.

A canvas bloomer burned off the starboard side of the main battery director (photo 2005-6, page 37). Canvas wind shields on the top of the pilot house are torn. (photo, 1825-12, page 38).

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Sheet metal flag bags on the navigating bridge are slightly dished. Signal halyards, fire hose, and cordage are lightly scorched. Paint on vertical surfaces is scorched. Scorched surfaces are affected on the side facing in the general direction of the blast and, in some instances, on sides normal to the direction of radiation. Heat penetrations is limited to approximately 0.002 inches on painted metal surfaces.

The radiation emanated from about 320 degrees relative and an elevation of 4 degrees.

Paint damage to superstructure is shown in (photos 2005-6, 1825-12, 1849-12, pages 37, 38 and 39 .)

(b) Causes of damage in each area.

Damage is considered to have been caused by air blast and radiant heat.

(c) Evidences of fire in superstructure.

The only fire in the superstructure is the burning of canvas on the main battery director.

(d) Estimate of relative effectiveness of materials against heat and blast.

Sheet metal is affected by blast, and canvas is ineffective against blast and heat, at the distance of this ship from an atomic bomb air blast.

(e) Constructive criticism of superstructure design or construction.

Canvas and sheet metal should not be installed in areas exposed to heat or blast where such use is avoidable. Where protective covers are required, heat resistant material should be used.

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C. Turrets, Guns and Directors.

The seams of the canvas cover placed over No. 3 mount are torn. The canvas bloomers on mounts 1, 2, and 4 were burned. It appears that heat radiation penetrated the folds of the canvas and the air blast could not dissipate the heat sufficiently to prevent combustion. A canvas blower was burned off the starboard side of the main battery director.

The port forward corner of No. 1 mount shows extensive blistering and carbon smudges having a typical "smoke" pattern. It is possible that the burning paint was quenched by the blast, leaving the smoke pattern. (photos 2005-6, 1850-1, pages 37 , and 40). Paint was scorched on the bulwark of the after port 40MM twin gun.

No damage other than to paint and canvas occurred in way of mounts, guns, and directors.

D. Torpedo Mounts, Depth Charge Gear.

No damage.

E. Weather Deck.

The weather decks and equipment and fittings thereon are undamaged. At frame 10 on the forecastle, two wooden crates containing goats were secured, one port and the other starboard. The crates had a new, unpainted piece of canvas on top, presumably to protect the animals from the sun. The port crate was scorched and the canvas burned. (Photo 1850-2, page 41). No movement was recorded by any of the six deflection scratch gages located under the weather deck.

F. Exterior Hull.

The exterior hull is undamaged except for scorched paint on the port side from the bow to frame 3.

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G. Interior Compartments (above w.l.).

No damage.

H. Armor Decks and Miscellaneous Armor.

Not Applicable.

I. Interior Compartments (below w.l.).

No damage.

J. Underwater Hull.

No damage.

K. Tanks.

No damage.

L. Flooding.

No flooding.

M. Ventilation.

The ventilation system is unaffected except for loosening of dirt and dust in the ducts. There is no evidence that the system conducted heat, blast, fire, or smoke below decks.

N. Ship Control.

No damage occurred to ship control stations or equipment.

O. Fire Control.

No damage to fire control stations occurred except scorching of paint and burning of canvas.

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P. Ammunition Behavior.

Ammunition is unaffected.

Q. Ammunition Handling.

No damage is known to have occurred to any ammunition handling devices.

R. Strength.

Strength of the ship is unaffected. The only evidence of panel failure under blast is the dishing of sheet metal flag bags.

S. Miscellaneous.

No significant difference in heat resistance of painted and unpainted canvas is apparent. The animal cage cover and the signal bridge weather canvas were unpainted. Gun bloomers were painted. It is not known whether or not the director bloomer was painted.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas fo flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

The machinery was not damaged by Test A.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Not evidenced.

(b) Fires and explosions.

Not evidenced.

(c) Shock.

Not evidenced.

(d) Pressure.

Not evidenced.

(e) Any effects apparently peculiar to the atom bomb.

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None.

III. Effects of Damage.

- (a) Effect on machinery and ship control.

None.

- (b) Effect on gunnery and fire control.

No comment.

- (c) Effect on watertight integrity and stability.

No comment.

- (d) Effect on personnel and habitability.

None.

- (e) Total effect on fighting efficiency.

None.

IV. General Summary of Observers' Impressions and Conclusions.

The WAINWRIGHT was outside the effective range of the explosion in Test A.

V. Preliminary Recommendations.

None.

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DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

The overall condition of the machinery was not affected by Test A.

(b) Areas of major damage.

None.

(c) Primary causes of damage.

Not applicable.

(d) Effect of target test on overall operation of machinery plant.

The target test had no effect on the machinery installation.

B. Boilers.

The boilers were not damaged. Boiler No. 1 was inoperable before the test. Its condition was not changed by the test. Boilers No. 2 and No. 3 have been steamed after Test A. Their performance was normal.

Boiler No. 2 was tested hydrostatically before and after Test A. The results indicate no change in the tightness of the boiler. A hydrostatic pressure of 560 lbs./sq. inch was left on boiler No. 2 at 0400, 1 July 1946, when the ship was abandoned before Test A. Upon return of the crew at 1630, 2 July 1946, the pressure was 175 lbs./sq. inch. Boiler No. 3 was left under steam pressure of 570 lbs./sq. inch when the ship was abandoned for Test A. This pressure had fallen to zero when the crew returned.

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Tests demonstrated that approximately the same blower speed (4300 rpm) was required to maintain an air pressure of 22 inches of water in No. 2 boiler before and after Test A.

C. Blowers.

Undamaged. All forced draft blowers have been operated at approximately rated power subsequent to Test A, and functioned normally.

D. Fuel Oil Equipment.

No damage. All fuel oil equipment has been operated under normal operating conditions incident to the operation of boilers since Test A, and is satisfactory.

E. Boiler Feedwater Equipment.

All feedwater equipment has been operated at normal working conditions, subsequent to Test A. This equipment remains unchanged.

F. Main Turbines.

Undamaged. Both main turbines have been operated since Test A under conditions that are limited by the ships being at anchor. Both engines were spun ahead and astern at ten minute intervals for one hour, and all equipment operated normally.

G. Reduction Gears.

Undamaged. The main reduction gears were inspected through inspection holes while they were being jacked over. This inspection and observation of the gears, while the main engines were being spun, led to the conclusion that the gears sustained no damage as a result of Test A. Lubrication of the gears are normal.

H. Shafting and Bearings.

Undamaged. The shafting and bearings were

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checked while the main engines were being spun. Operation was normal.

I. Lubrication System.

Undamaged. The lubrication system was checked while the main engines were being spun.

J. Condensers and Air Ejectors.

Undamaged. The condensers and air ejectors have been operated under normal service conditions since Test A.

K. Pumps.

Undamaged. The fuel heater drain booster pump was inoperable before Test A. Its condition was not changed by the test. All other pumps have been operated under service conditions since Test A, and functioned normally.

L. Auxiliary Generators (Turbine and Gears).

Undamaged. Both ship's service generators have been operated under load since Test A. Their performance was normal.

M. Propellers.

Undamaged. The propellers have been inspected from above the water and have apparently sustained no damage. Satisfactory operation was obtained while spinning the main engines after Test A.

N. Distilling Plant.

Undamaged. The distilling plant has been in operation since Test A, with no change in the quantity or quality of water distilled.

O. Refrigerating Plant.

Undamaged. The refrigerating plant has been in operation since Test A. Operation is normal.

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P. Winches, Windlasses, and Capstans.

Undamaged. The anchor windlass was operated under load, the deck winch at no load after Test A. Operation was normal.

Q. Steering Engine.

Undamaged. The steering gear has been tested since Test A, and functioned normally.

R. Elevators, Ammunition Hoists, Etc.

Undamaged. Ammunition hoist No. 1 was inoperable before Test A. Its condition was not changed by Test A. Hoists No. 2 and No. 3 have been tested since Test A. They operate normally.

S. Ventilation (Machinery).

Undamaged. All ventilation fans have been operated since Test A.

T. Air Compressors.

Undamaged. Both high pressure and low pressure air compressors have been tested at rated capacity and pressure subsequent to Test A.

U. Diesels (Generators and Boats).

Undamaged. The emergency diesel generator has been operated under load since Test A. Performance was normal. This generator operated during Test A with a fairly heavy load, and continued to run until the fuel in the day tank was exhausted.

V. Piping.

Undamaged. All piping systems have been subjected to pressure for which designed, or at which they normally operate. Performance was normal.

W. Miscellaneous.

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There was no damage to miscellaneous equipment (laundry, galley, machine shop), all of which has been in normal operation since Test A.

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TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

Drafts and list were the same as before Test A. There was no flooding.

- (b) Structural damage.

There was no structural damage in way of electrical equipment.

- (c) Other damage.

No damage occurred to electrical equipment due to Test A.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

No evidence of heat in way of electrical equipment.

- (b) Fires and explosions.

There were no fires or explosions in way of electrical equipment.

- (c) Shock.

There was no evidence of shock in way of electrical equipment.

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(d) Pressure.

There was no evidence of pressure in way of electrical equipment.

(e) Any effects apparently peculiar to the atom bomb.

Radiant heat and radioactivity were evident on exposed surfaces. There was no damage to electrical equipment due to these effects.

III. Effects of Damage.

(a) Effect on propulsion and ship control.

No damage was apparent to electrical machinery or ship control.

(b) Effect on gunnery and fire control.

No damage apparent.

(c) Effect on water-tight integrity and stability.

No electrical damage affected water-tight integrity or stability.

(d) Effect on personnel and habitability.

No electrical damage affected personnel or habitability.

(e) Total effect on fighting efficiency.

No electrical damage affected the fighting efficiency of the vessel.

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IV. General Summary of Observers' Impressions and Conclusions.

No damage was evident on any electrical equipment on this vessel. It appears that the effects of the atomic bomb at the distance of this vessel from the center of the blast are not such as to require special designs or installation arrangements for electrical equipment.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

None.

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USS WAINWRIGHT (DD419)

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

The overall condition of the electric plant is the same as before the test.

(b) Areas of major damage.

None.

(c) Primary causes of damage in each area of major damage.

None.

(d) Effect of target test on overall operation of electric plant.

1. Ships service generator plant - No effect
2. Engine and boiler auxiliaries - No effect
3. Electric propulsion - Not applicable
4. Communications - No effect
5. Fire control circuits - No effect
6. Ventilation - No effect
7. Lighting - No effect

(e) Types of equipment most affected.

None.

B. Electric Propulsion Rotating Equipment.

Not Applicable.

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C. Electric Propulsion Control Equipment.

Nct Applicable.

D. Generators - Ships Service.

No damage.

E. Generators - Emergency.

No damage. The emergency diesel generator operated through the test until it stopped from lack of fuel.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

Not Applicable.

J. Portable Batteries.

No damage.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage.

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M. Searchlights.

No damage.

N. Degaussing Equipment.

No damage.

O. Gyro Compass Equipment.

No damage.

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

Not Applicable.

R. Announcing Systems.

No damage.

S. Telegraphs.

No damage.

T. Indicating Systems.

No damage.

U. I.C. and A.C.O. Switchboards.

No damage.

V. F.C. Switchboards.

No damage.

W. Miscellaneous.

No comment.

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SECTION IV

PHOTOGRAPHS

TEST ABLE

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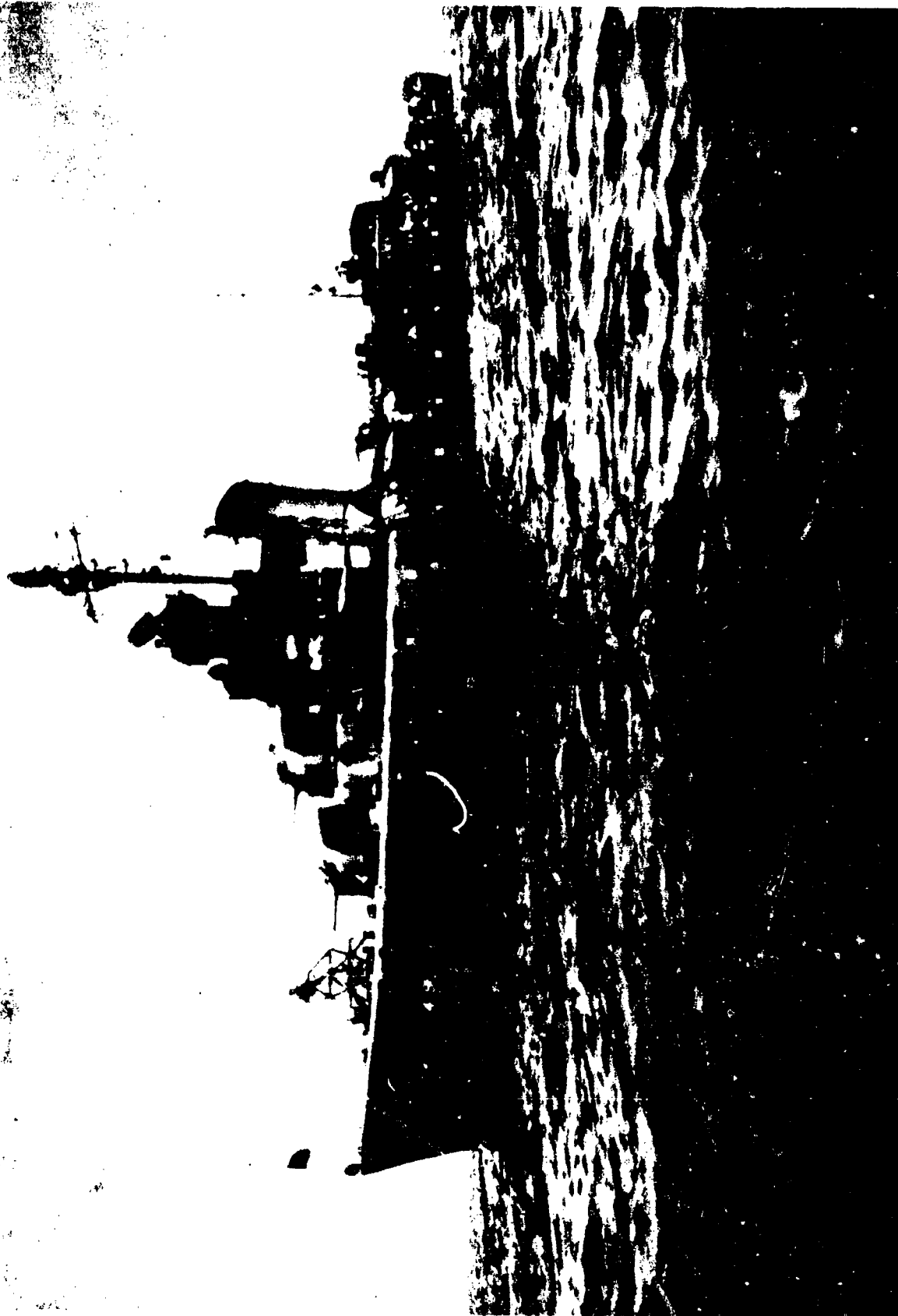
BA-CR-196-158-6. View from off port bow before Test A.

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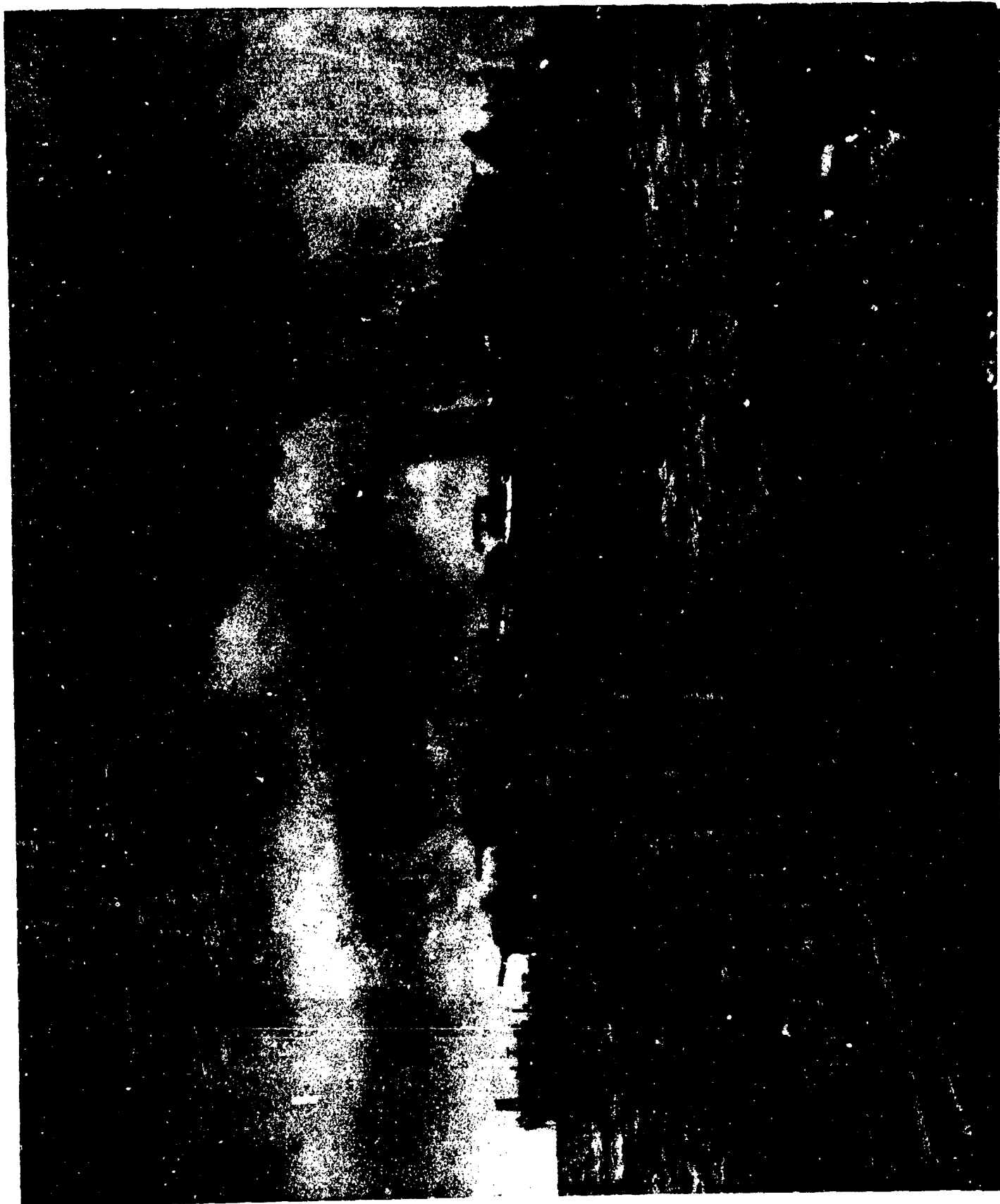
AA-CR-227-49-98. View from off port bow after Test A.

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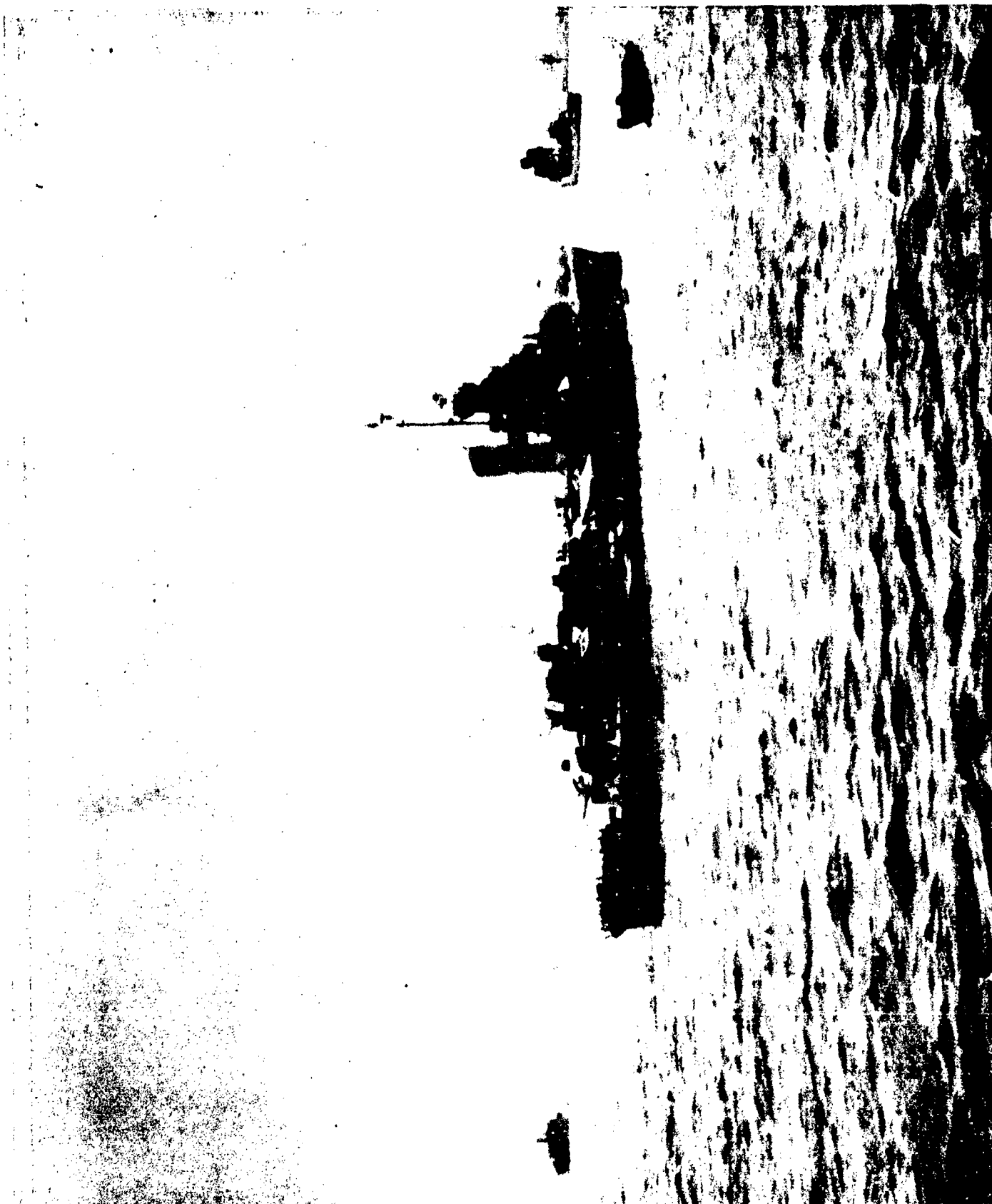
BA-CR-196-158-2. View from off starboard quarter before Test A.

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AA-CR-227-49-101. Starboard quarter after Test A.

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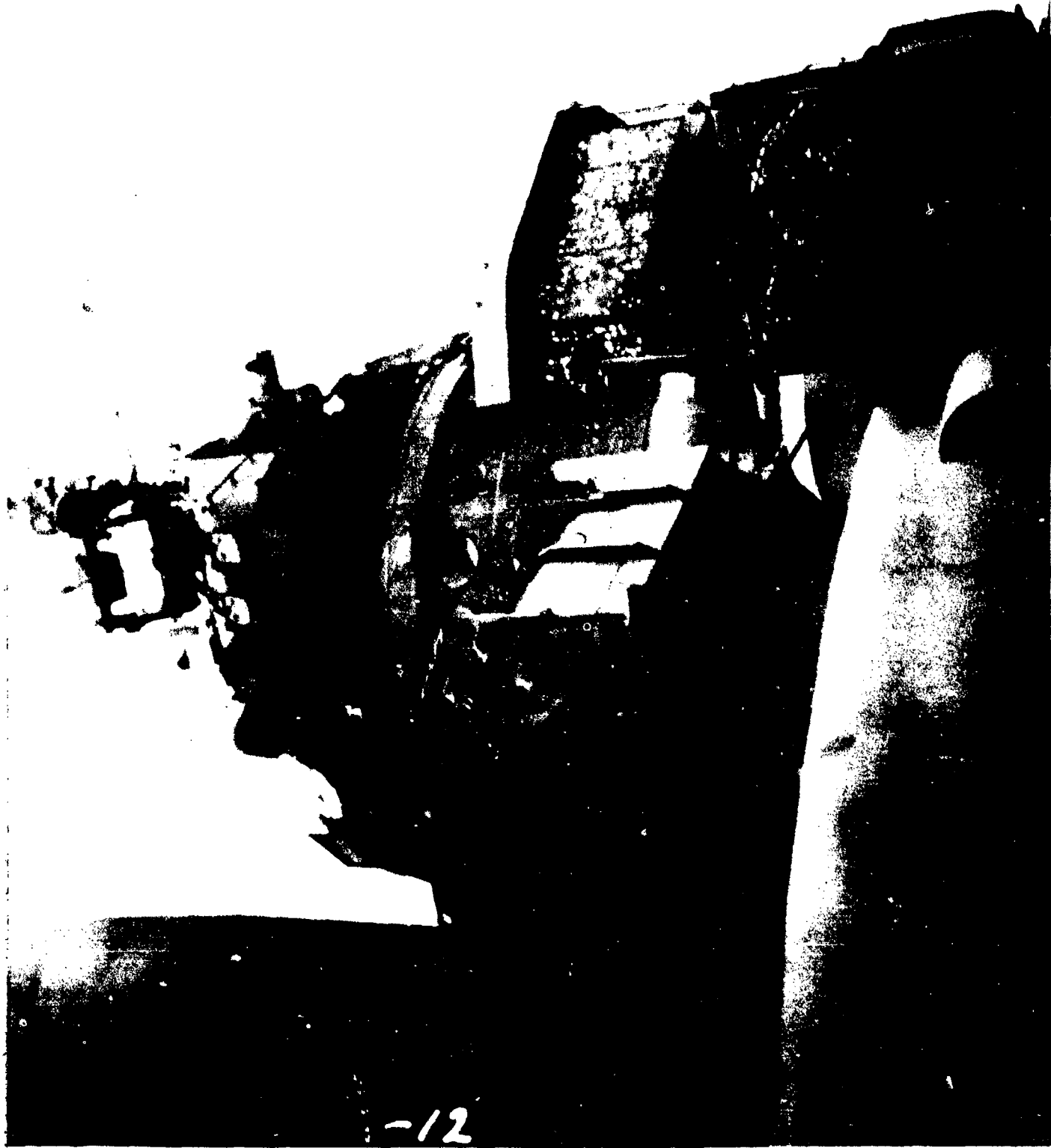
AA-CR-58-2005-6. View of forward gun mounts and superstructure looking aft from forecastle deck, port.

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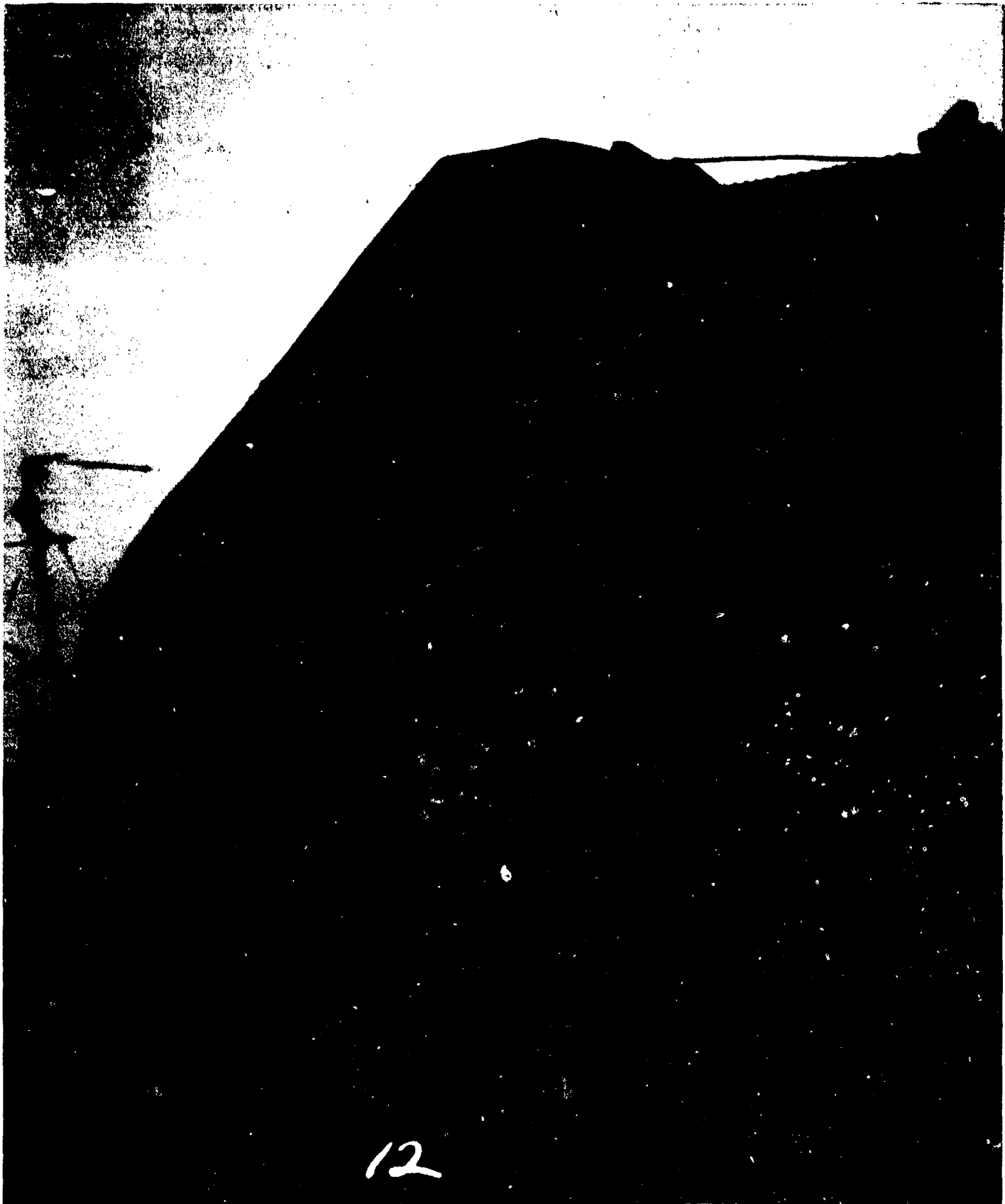
AA-CR-82-1825-12. Looking up and aft from forecastle deck, port, showing paint damage on port wing of navigating bridge.

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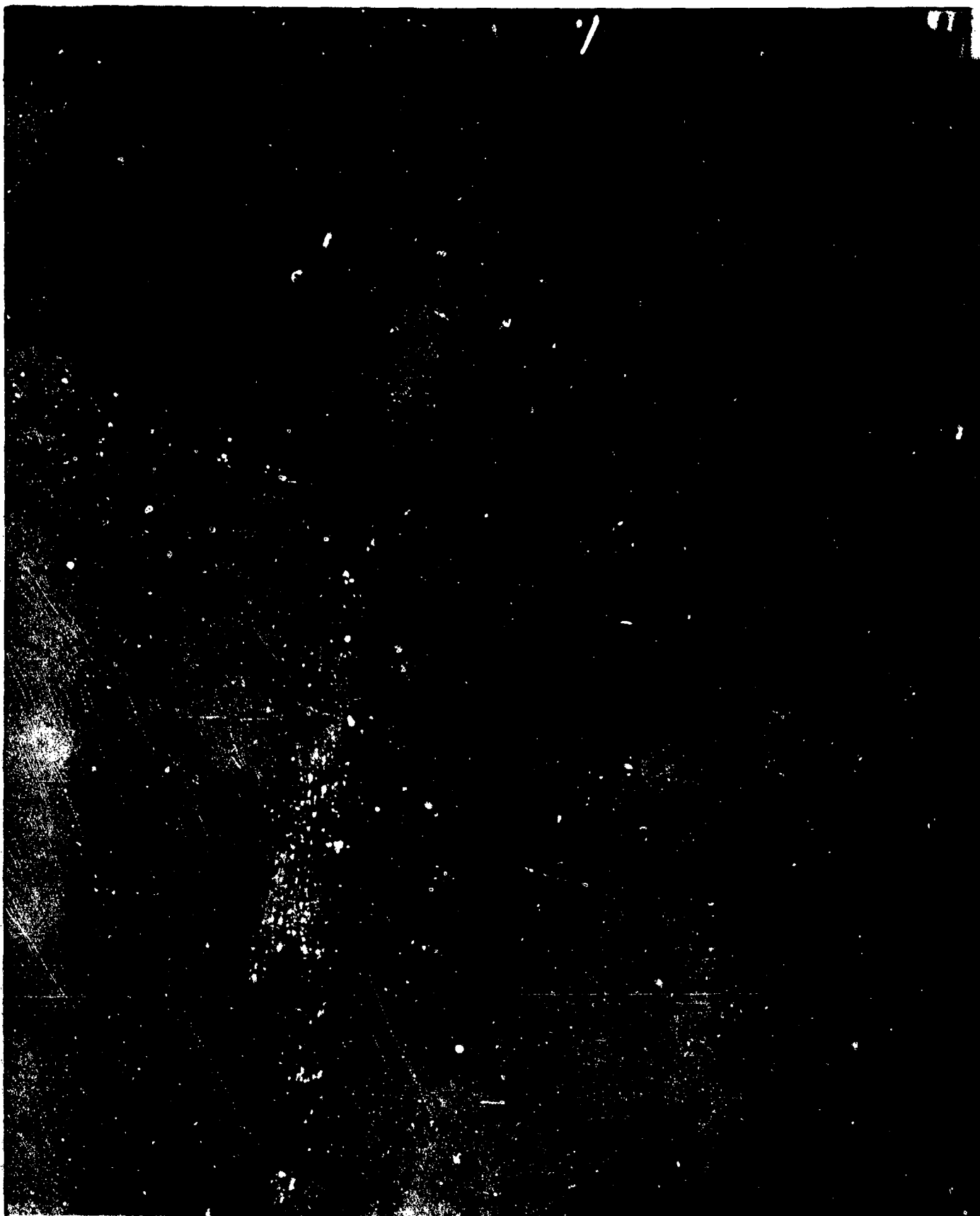
AA-CR-65-1849-12. Close-up of paint damage on port wing of navigating bridge, looking up and aft.

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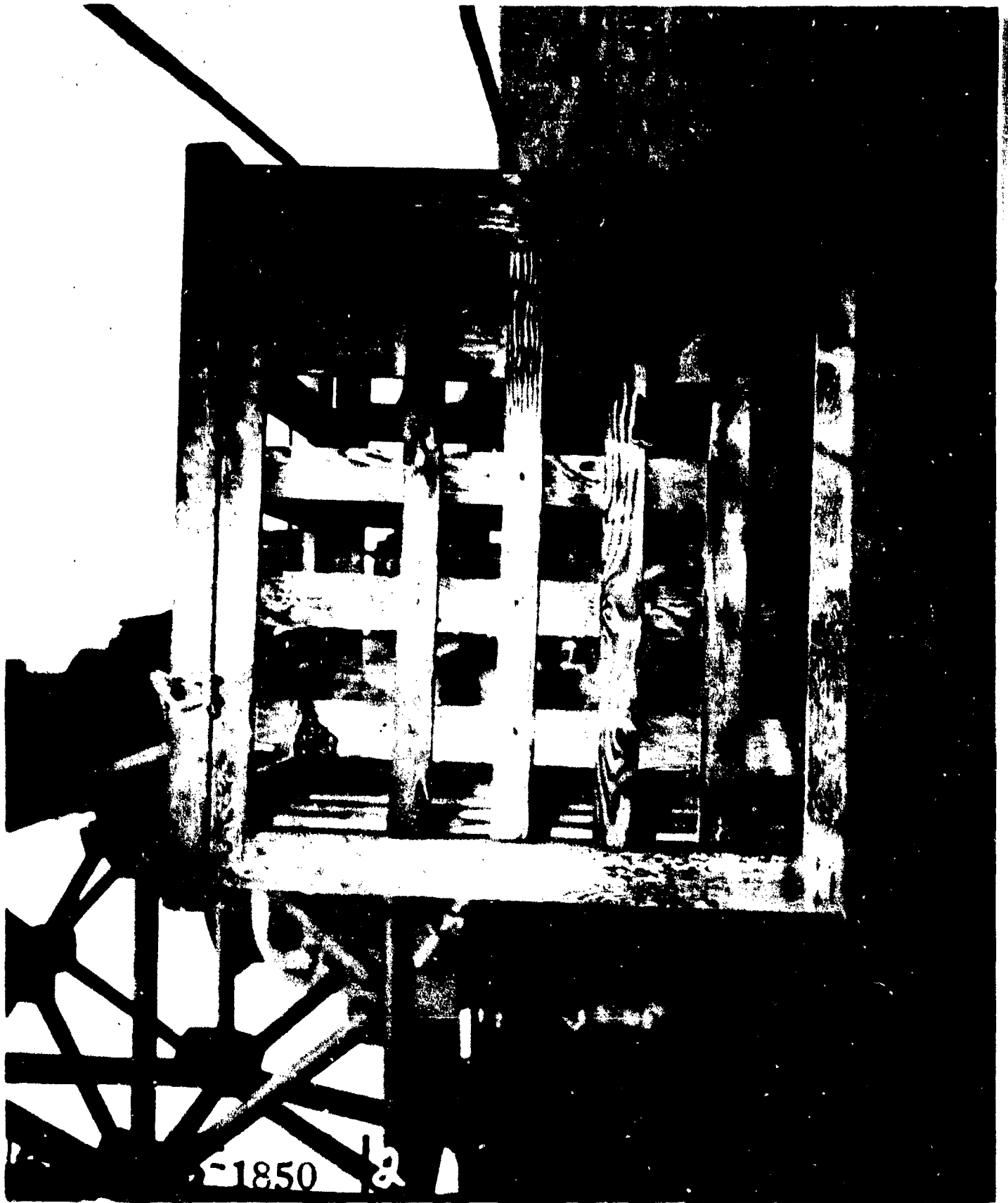
AA-CR-65-1850-1. Close-up of paint scorching on forward port corner of No. 1 gun mount showing upward trend of heat effect.

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AA-CR-65-1850-2. Paint scorching on animal cage located at frame 10, looking aft on forecastle deck, port.

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APPENDIX

COMMANDING OFFICER'S REPORT

TEST ABLE

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REPORT #11

COMMANDING OFFICER'S REPORT

SECTION I

USS WAINWRIGHT (DD419) (SIMS Class). Starboard anchor within thirty yards center berth 124; 105 fathoms of chain on deck in 28 fathoms of water. Port anchor underfoot due west of berth center with 30 fathoms of chain in hawse pipe. Normal heading 085 degs True; average yaw 20 degs each side. Refer to H.O. Chart Misc. No. 11 846.

The material condition of the vessel and its equipment was normal on ABLE day except as follows: (a) No. ONE boiler - leaking tube(s) on saturated side not specifically located. (b) No. ONE feed heater drain pump motor damaged by water since January 1946.

The emergency diesel generator which was operating to provide power for designated equipment operated through the time of detonation until stopping due to lack of fuel about 1400L the first or MIKE hour plus FIVE. All equipment energized operated until the power failed as above except for the motor in the train receiver regulator as noted under HULL item C(c)1.(mk 37 director).

There is no evidence of any shock sustained by this target vessel during Test A and because no damage was sustained no comments can be made as regards the design of this vessel or its equipment in respect to Test A, Operations CROSSROADS.

The vessel was clear radiologically in all respects upon reboarding by ships personnel about MIKE hour PLUS TWENTY NINE.

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USS WAINWRIGHT (DD419)

SECTION III
PART C - INSPECTION REPORT
SECTION A - HULL

A. General Description of Hull Damage.

(a) Undamaged.

B. Superstructure (exclusive of gun mounts).

(a) Undamaged except for minor surface paint blistering.

(1) Bridge area. Blistered area varying from none thru negligible to slight appeared at this level to have occurred from a heat source originating from 340 degrees relative, however it did not affect surfaces laying fore and aft, nor any surface, including those in the open which were in 'shadow' of others, ie secondary planes. Forward vertical surfaces extending from about the centerline too, but not beyond the break at the port edge were affected. Estimate about 15% forward surfaces (paint) of bridge housing blistered to some degree by heat. Only late surfaces coats blistered. Paint beneath undamaged. Forward side of port flagbag bent slightly in (aft) as a result of the detonation.

(2) (3) Deck houses, stack, towers, etc. Surface paint blistered along port side as above, estimate 05-10% area affected. Stack, being in 'shadow' was unaffected.

(b) Cause of damage in each area. High temperature 'flash' heat, type and characteristics unknown.

(c) No evidence of fire.

(d), (e) Damage to paint of such a nature and in itself so minor, no further comment can be made other than it represents one of the few evidences of test A affecting this target ship.

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USS WAINWRIGHT (DD419)

C. Turrets, Guns and Directors.

(a) Protected mounts.

(1) Undamaged except canvas bloomers on Nos. ONE, TWO, and FOUR burned away leaving charred canvas between clamping lathes. Forward faces of Nos. ONE and TWO estimated 20% surface paint slightly blistered; about 20% additional area dirtied by 'smoke'.

(2) No comment other than war-time instructions required removal of gun bloomers where destruction by fire was indicated because of hot gun barrels - this because canvas replacement was difficult no danger involved.

(b) Unprotected mounts.

(1) No. THREE mount has a canvas cover over the top for weight reduction. This cover was ripped apart at the seams (athwartships) but the gun bloomer and mount otherwise undamaged.

(c) Directors and range-finders.

(1) The Mk 37 director was undamaged except canvas range-finder bloomer on starboard side burnt off and range-finder cover at this point charred. The director was energized thru computer and stable element during Test A and trained on the stern of the target ship SAKAWA. Upon reboarding inspection revealed that the condenser (.1 MFD 1000 volt DC) across the pilot motor contacts of the train receiver regulator had burned out and due to ships yawing had 'walked' away in left (counter-clockwise) train and was in the left electrical limit stop. The synchro-motor (Type 5N Mk6 Mod 1 Ord Dwg No. 184729 Arma Corp, used as Delta B receiver in Mk 5 receiver regulator in Mk 37 Director) had also burned out beyond repair. Time of this casualty is not possible to determine. The fact that a signal halyard on the starboard yardarm directly astern of the burnt bloomer was cut in two places and the YOKE flag at the same starboard side was also burned and torn might indicate that the director was against the limit stop at the time of detonation. Whether occurring before or

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USS WAINWRIGHT (DD419)

after detonation it is believed that this was an operating casualty and not bomb damage. Director resumed normal operation when condenser and motor were replaced.

(2) Condition of instruments within Director.

Undamaged.

D. Torpedo Mounts, Depth Charge gear.

No comment.

E. Weather Decks.

No comment.

F. Exterior Hull.

No comment.

G. Interior Compartments (Above Waterline).

No comment.

H. Armor Decks.

No comment.

L Interior Compartments (Below Waterline).

No comment.

J. Underwater Hull.

No comment.

K. Tanks.

No comment.

L. Flooding.

No comment.

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M. Ventilation (Exclusive of blowers).

(a) Compartments were noted to be very dusty. This condition persisted for several days after re-habilitation. Believed caused by loosening of dirt in vent ducts at time of detonation. Firing any one 5"/38 gun believed would loosen even a greater amount since no firing of any main battery gun has been done since November 1945.

N. Ship Control.

No comment.

O. Fire Control.

(a) Damage to FC stations and causes.

(1) Undamaged except as noted under item C(c)1. Torpedo control station located exposed forward showed no evidence of heat damage although covering canvas around flying bridge platform was torn and rent and dirtied by 'smoke'. This canvas is black and unpainted.

(b) Gun stations Nos. TWENTY TWO (20mm forward port) and FORTY TWO (40mm aft port) showed slight evidence of heat effect by negligible surface paint blistering as noted in item B(a). These are the only locations on the ship where it is estimated some personnel might have been injured (flash burns). It is not believed that casualties would have been numerous or serious enough to inactivate these stations.

P. Ammunition Behavior.

(a), (b) All ammunition and powder samples aboard were unaffected and undamaged.

Q. Ammunition Handling.

No comment.

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R. Strength.

No comment.

S. Miscellaneous.

(a) Not observed. Vessel painted all black.

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SECTION III
PART C - INSPECTION REPORT
SECTION B - MACHINERY

A. General Description of Damage.

Undamaged.

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SECTION III
PART C - INSPECTION REPORT
SECTION C - ELECTRICAL

A. General Description of Electrical Damage.

Undamaged.

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SECTION III
PART C - INSPECTION REPORT
SECTION D - ELECTRONICS

A. General Description of Electronics Damage.

Undamaged.

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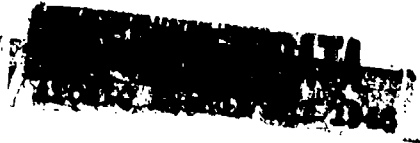
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Classification (~~Cancelled~~) (Changed to -----)

By Authority of Joint Chiefs of Staff (Action 15 Apr 49)

By *[Signature]* Date *24 April 51*

AFSN 0



CONFIDENTIAL



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

TRC

9 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:

+ ST-A

AD-366748 -	XRD-65
AD-366747 ~	XRD-64
AD-366746 ^	XRD-63
AD-376826 ~	XRD-60
AD-376824 ~	XRD-58
AD-376825 -	XRD-59
AD-376823 -	XRD-57
AD-376822 -	XRD-56
AD-376821 ~	XRD-55
AD-366743 ~	XRD-54
AD-376820 ~	XRD-53
AD-366742 ~	XRD-52
AD-366741 ~	XRD-51
AD-366740 -	XRD-50-Volume-2
AD-366739 -	XRD-49-Volume-1
AD-366738 -	XRD-48
AD-366737 ^	XRD-47

TRC

9 April 1997

SUBJECT: Declassification of Reports

AD-366736 -	XRD-46
AD-366735 -	XRD-45
AD-366723 -	XRD-37
AD-366721 -	XRD-35
AD-366717 -	XRD-31-Volume-2
AD-366716 -	XRD-30-Volume-1
AD-366751 -	XRD-68-Volume-2
AD-366750 -	XRD-67-Volume-1
AD-366752 -	XRD-69
AD-366744 -	XRD-61.

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

Arduith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center

*Completed
1 mar 2000
B.W.*