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BUREAU OF SHIPS GROUP TECHNICAL INSPECTION REPORT.

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Authority of Joint Chiefs of Staff (Action 15 Apr _____)

John Beggs, Capt. Date *24 Sept 51*
AFSWP

**6 OPERATION CROSSROADS.
U.S.S. PILOTFISH (SS386).**

TEST ABLE [U]

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BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT

Classification (~~Confidential~~) (Changed to **CONFIDENTIAL**)
by Authority of Joint Chiefs of Staff (Action 19 Apr
y *John B. Gage Capt* Date *24 April 65*
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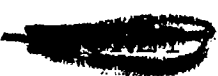
USS PILOTFISH (SS386)

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 USS PILOTFISH (SS386)

U.S.S. PILOTFISH (SS336)

SHIP CHARACTERISTICS

Building Yard: Portsmouth Naval Shipyard.

Commissioned: 16 December 1943.

HULL

Heavy Hull Construction.

Length Overall: 311 feet 8 inches.

Length (between perpendiculars): 307 feet 0 inches.

Beam (extreme): 27 feet 3 inches.

Beam (molded): 27 feet 1 3/4 inches.

Height (lowest point of keel to top of periscope supports): 47 feet 3 inches.

Drafts (at time of test): Fwd. 16 feet 3 inches.

Aft. 16 feet 5 inches.

Standard Displacement: 1525 tons.

Displacement (at time of test): 2005 tons.

MAIN PROPULSION PLANT

Main Engines: Four Fairbanks-Morse, 10 cylinder,
Type 38D8.

Auxiliary Engine: Fairbanks-Morse, 7 cylinder,
Type 38D5.

Main Motors and Generators: Elliott.

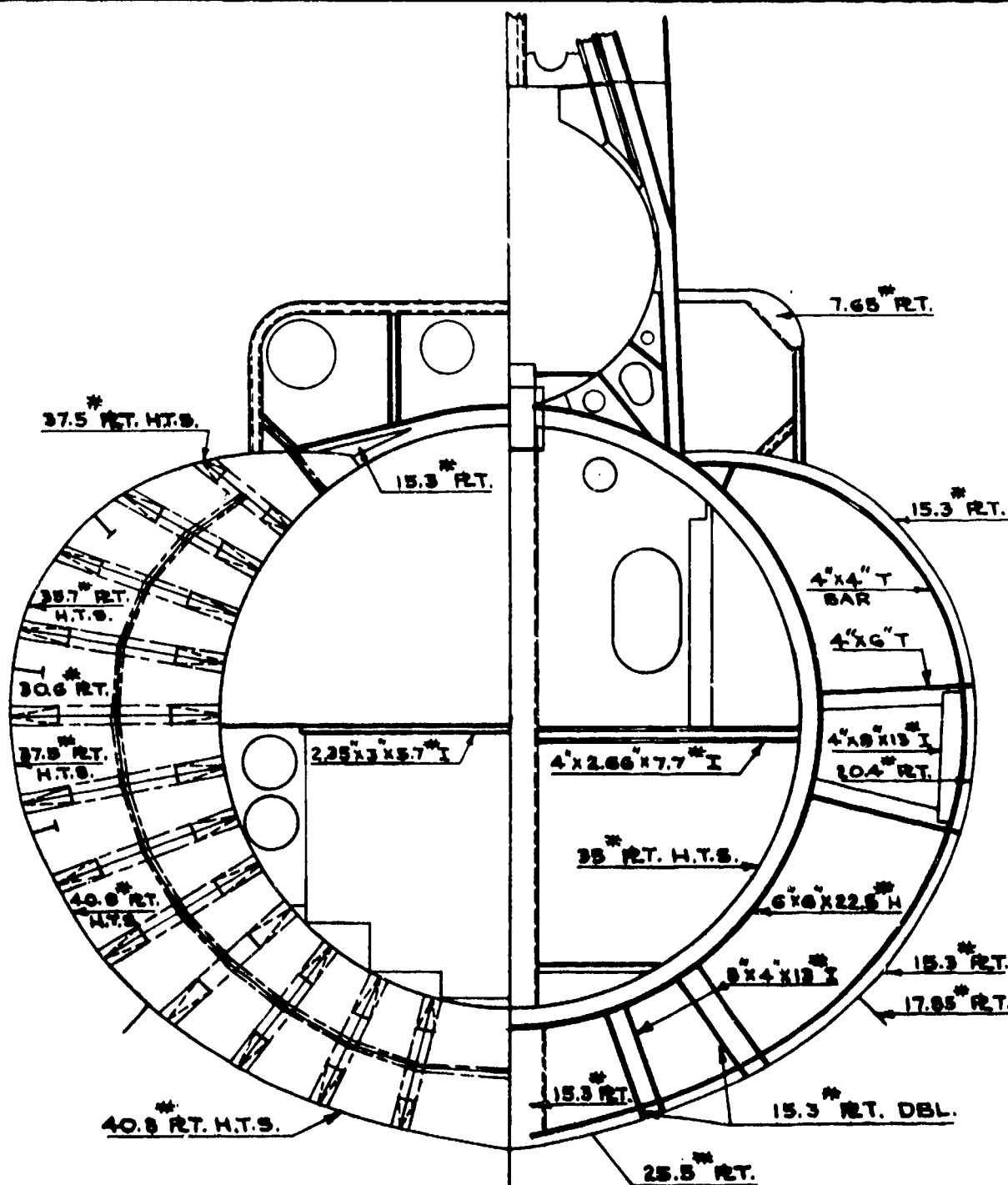
Main Storage Battery: Exide.

Main Controls: Westinghouse.

Reduction Gears: Westinghouse.

Diesel Electric Drive.

USS PILOTFISH (SS386)



TYPICAL SECT. AT FR.69
LOOKING AFT

TYPICAL SECT. AT FR.53
LOOKING FORD.

TEST A

U.S.S. PILOTFISH (SS 386)

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TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test

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

Draft and list were normal after the test; no flooding occurred.

- (b) Structural damage.

No structural damage was experienced.

- (c) Other damage.

Machinery, electrical, ship control, fire control and electronic equipment was fully operable after the test.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

Direct radiant heat blistered and scorched the top coat of paint on exposed surfaces which were essentially normal to the rays. The direction of the flash was clearly shown to be within a few degrees of 100° relative and almost exactly horizontal. The scorching of the superstructure paint extends the whole length of the superstructure on the starboard side while the vertical distribution of char indicates that the most severe heat was in the upper half of the periscope shears gradually decreasing from the half way mark down to the bottom of the superstructure where the char is almost negligible. Except for about 5 of the largest paint char bubbles the penetration was limited to the outer layer of paint. The largest char spots are about one inch in diameter on the shears and show penetration of three layers of paint. Bitumastic, wood, and grease where exposed show nothing. Topside cables, in some few instances where completely exposed, had a light covering of char or soot which could be rubbed off with the fingers but in no case was insulation damaged. The heat indicating instruments mounted topside all show the presence of heat

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USS PILOTFISH (SS386)

and those equipped with lenses are particularly interesting in that the heat penetrated even very thin metal. No scorching was noted on horizontal surfaces or where the vertical surfaces were shielded by other structure. There were no apparent reflections of the heat wave back onto a surface which did not face the blast.

(b) Fires and explosions.

No fires or explosions occurred.

(c) Shock.

There is no evidence of shock.

(d) Pressure.

The "Coordinator's Report on Air Blast and Water Shock for Tests A and B" of 27 September 1946 indicates that the peak air pressure was about 3.4 lbs. per square inch and the duration of the positive pressure phase approximately 1.2 seconds.

(e) Any effects peculiar to the atom bomb.

Slight radioactivity and heat as well as the pressure wave mentioned in II(d) above were the only effects noted peculiar to the atom bomb.

III. Effects of Damage.

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

None.

(b) Effect on gunnery and fire control.

None.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

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USS PILOTFISH (SS386)

It is believed there would have been no effect on personnel inside the sealed pressure hull but that exposed topside personnel would have suffered severe flash burns. Habitability is unimpaired.

(e) Total effect on fighting efficiency.

There is no reduction in fighting efficiency from a material standpoint. Exposed personnel topside would have been at least temporarily out of action.

IV. General Summary of Observers' Impressions and Conclusions.

The PILOTFISH had been moored on the surfact at a distance of approximately 2500 yards from the burst. From inspection, the impression is formed that this ship was subjected to a directional flash of more or less instantaneous heat followed by a relatively high velocity wind. It is concluded that a submarine at this distance from an explosion of the type experienced in Test A will not be affected from a material standpoint but would have casualties among exposed topside personnel. Had the submarine been submerged, there would have been no damage. For general views of the PILOTFISH after Test A see photographic section on pages 26 to 33.

V. Preliminary General or Specific Recommendations of Inspecting Group.

The only recommendation that can be made on the basis of damage to this ship is that insofar as practicable, topside personnel be shielded from flash burns by suitable clothing and enclosed stations. The report of the Commanding Officer of the U.S.S. PILOTFISH contains some recommendations based on the damage to the U.S.S. SKATE which warrant careful investigation and consideration. However, since they are not based on damage to the PILOTFISH they are not included herein.

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USS PILOTFISH (SS386)

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 is no flooding and no change in draft or list.

(b) Structural damage.

There is no structural damage.

(c) Other damage.

None observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Direct radiant heat blistered and scorched the top coat of paint on exposed surfaces which were essentially normal to the rays. The direction of the flash was clearly shown to be within a few degrees of 100° relative and almost exactly horizontal. The scorching of the superstructure paint extends the whole length of the superstructure on the starboard side while the vertical distribution of char indicates that the most severe heat was in the upper half of the periscope shears gradually decreasing from the half way mark down to the bottom of the superstructure where the char is almost negligible. Except for about 5 of the largest paint char bubbles the penetration was limited to the outer layer of paint. The largest char spots are about one inch in diameter on the shears and show penetration of three layers of paint. Bitumastic, wood and grease where exposed show nothing. The heat indicating instruments mounted topside all show the presence of heat and those equipped with

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USS PILOTFISH (SS386)

lenses are particularly interesting in that they show images of the explosion. There is no evidence that the heat penetrated even very thin metal. No scorching was noted on horizontal surfaces or where the vertical surfaces were shielded by other structure. There were no apparent reflections of the heat wave back onto a surface which did not face the blast.

(b) Fires and explosions.

None.

(c) Shock.

No evidence.

(d) Pressure.

The "Coordinator's Report on Air Blast and Water Shock for Tests A and B" 27 September 1946 indicates that the peak air pressure was about 3.4 lbs. per square inch and the duration of the positive pressure phase approximately 1.2 seconds.

(e) Effects peculiar to the atom bomb.

None other than heat.

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 watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

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USS PILOTFISH (SS386)

Insofar as hull structure is concerned there is no effect on habitability. It is estimated that personnel exposed directly to the flash would have suffered severe flash burns on parts not covered by two layers of closely woven material.

(e) Effect on fighting efficiency.

None.

IV. General Summary of Observers' Impressions and Conclusions.

From inspection, the impression formed is that this ship was subjected to a directional flash of more or less instantaneous heat followed by a relatively high velocity wind. It is concluded that a submarine on the surface at such distance from an explosion of the type experienced in Test A will not be affected as far as hull material condition is concerned.

V. Preliminary General or Specific Recommendations of the Inspection Group.

The only recommendation that can be made on the basis of damage to this ship is that insofar as practicable, topside personnel be shielded from flash burns by suitable clothing and enclosed stations. The report of the Commanding Officer U.S.S. PILOTFISH contains some recommendations based on the damage to the U.S.S. SKATE which warrant careful investigation and consideration. However, since they are not based on damage to the PILOTFISH they are not included herein.

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USS PILOTFISH (SS386)

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

No damage except as covered in Item T.

B. Superstructure.

No damage.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

No damage.

E. Weather Deck.

No Damage.

F. Exterior Hull.

No damage.

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.

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USS PILOTFISH (SS386)

K. Tanks.

No damage.

L. Flooding.

None.

M. Ventilation.

No damage.

N. Ship Control.

No damage.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage.

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

S. Miscellaneous.

No comment.

T. Covering.

The scorching of the superstructure paint extends the whole length of the superstructure on the starboard side while the vertical distribution of char indicates that the most severe heat was in the upper half of the periscope shears gradually decreasing from the

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USS PILOTFISH (SS386)

half way mark down to the bottom of the superstructure where the char is almost negligible. Except for about 5 of the largest paint bubbles the penetration was limited to the outer layer of paint. The largest char spots are about one inch in diameter on the shears and show penetration of three layers of paint. Bitumastic, wood, and grease where exposed show nothing.

U. Welding and Rivetting.

No damage.

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PILOTFISH (SS386)

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TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test Able.

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

Draft and list were normal; no flooding occurred.

(b) Structural damage.

All machinery and equipment operable.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Momentary extreme heat from the direction of the bomb burst is evidenced by heavily scorched and blistered paint on vertical surfaces toward the burst.

(b) Fires and Explosions.

No fires or explosions occurred aboard.

(c) Shock.

No indication of shock was evidenced. No disarrangement of loose gear inside pressure hull was noted.

(d) Pressure.

None evidenced.

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

Slight radioactivity and heat were only effects noted peculiar to the atom bomb.

III. Effects of Damage.

- (a) Effect on propulsion and ship control.

None. No damage.

- (b) Effect on gunnery and fire control.

None. No damage.

- (c) Effect on watertight integrity and stability.

None. No damage.

- (d) Effect on personnel and habitability.

It is believed there would have been no effect on personnel inside the sealed pressure hull. Habitability was unimpaired. Personnel topside, if any, would have suffered flash burns to exposed skin surfaces.

- (e) Total effect on fighting efficiency.

None to material. Any personnel topside would have been at least temporarily out of action.

IV. General Summary.

It is apparent that a submarine sealed up as for diving and lagged for depth charge attack yet still on the surface would be undamaged by an air burst of an atomic bomb of similar strength and at similar range as the Test A bomb.

V. Preliminary Recommendations.

It is believed the following items brought out in Commanding Officer's Report No. 11 are worthy of consideration and further study:

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USS PILOTFISH (SS386)

1. Present submarine bridge structure to be redesigned to eliminate open ended after part; to be of heavy metal, faired to shield all topside personnel and guns.

2. Fasten external torpedo impulse tanks to pressure hull.

3. Provide telescopic shears to eliminate present tower for periscopes and radar masts.

4. Eliminate present hull superstructure and decking. Enclose all external hull fittings in a faired heavy metal cover. This would also aid in increasing underwater speed by streamlining.

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USS PILOTFISH (SS386)

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

Undamaged. All machinery was operated under service conditions with vessel underway. Diving equipment was tested by stationary trim dive.

(b) Areas of major damage.

None.

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

None. No damage.

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

No effect. All machinery operable as before test.

B. Boilers.

Not applicable.

C. Blowers.

Not applicable.

D. Fuel Oil Equipment.

No damage.

E. Boiler Feedwater Equipment.

Not applicable.

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F. Main Propulsion Machinery.

No damage.

G. Reduction Gears.

No damage.

H. Shafting and Bearings.

No damage.

I. Lubrication System.

No damage.

J. Condensers and Air Ejectors.

Not applicable.

K. Pumps.

No damage.

L. Auxiliary Generators (Turbines and Gears).

Discussed under Item F.

M. Propellers.

No damage.

N. Distilling Plant.

No damage.

O. Refrigeration Plant.

No damage.

P. Winches, Windlasses, and Capstans.

No damage.

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Q. Steering Engine.

No damage.

R. Elevators, Ammunition hoists, etc.

Not applicable.

S. Ventilation (Machinery).

No damage.

T. Compressed Air Plant.

No damage.

U. Diesels (Generators and Boats).

Not applicable. See Item F.

V. Piping Systems.

No damage.

W. Hydraulic System.

No damage.

X. Navigational Instruments.

No damage.

Y. Periscopes.

No damage.

Z. Radar and Sonar.

No damage.

AA. Miscellaneous.

None.

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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.

Not observed.

(b) Structural damage.

Not observed.

(c) Damage.

No electrical equipment was damaged or inoperable due to the test.

II. Forces Evidenced and Effects Noted.

(a) Heat.

There was no evidence of heat having affected any equipment inside the pressure hull. On the topside charring of paint on the superstructure had occurred along the starboard side. Topside cables in some few instances, where completely exposed, had a light covering of char or soot which could be rubbed off with the fingers, but in no case was the insulation damaged at all.

(b) Fires and explosions.

None.

(c) Shock.

There was no evidence of shock damage.

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

Other than slight radioactivity, the charring of the ship's superstructure on the side toward the blast is the only phenomenon noted of any kind that may be considered peculiar to the atom bomb.

III. Results of Test on Target.

- (a) Effect on propulsion and ship control.

None.

- (b) Effect on gunnery and fire control.

None.

- (c) Effect on watertight integrity and stability.

Not observed.

- (d) Effect on personnel and habitability.

None except for possible radiological effects and probable heat blast effects on exposed personnel.

- (e) Total effect on fighting efficiency.

None.

IV. General Summary of Observer's Impressions and Conclusions.

There was no effect from the atom bomb on electrical equipment in this ship. It is considered that, even though on the surface, this submarine was outside the range of damage by the atom bomb.

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

None.

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USS PILOTFISH (SS386)

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

No damage to electrical equipment.

(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.

The operability of the electric plant was in no way impaired, either directly or indirectly, by the atom bomb.

(e) Types of equipment most affected.

None.

B. Electric Propulsion Rotating Equipment (S41).

No damage.

C. Electric Propulsion Control Equipment (S41).

No damage.

D. Generators - Ship's Service (S61).

Not applicable.

E. Generators - Emergency (S61).

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Not applicable.

F. Switchboards, Distribution and Transfer Panels (S62).

No damage.

G. Wiring, Wiring Equipment and Wireways (S62).

No damage. Topside cables in some few instances, where completely exposed, suffered slight scorching of paint, but in no case was the insulation damaged.

H. Transformers (S62).

No damage.

I. Submarine Propelling Batteries (S62).

No damage. Batteries were fully charged and on open circuit during the test. Analysis of electrolyte samples after the test by Pearl Harbor Naval Shipyard revealed no significant changes attributable to the atom bomb.

J. Portable Batteries (S62).

Not applicable.

K. Motors, Motor-Generator Sets and Motor Controllers (S63).

No damage.

L. Lighting Equipment (S64).

No damage.

M. Searchlights (S66).

No damage.

N. Degaussing Equipment (S81).

Not applicable.

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O. Gyro Compass Equipment (S24).

No damage.

P. Sound Powered Telephones (S65).

No damage.

Q. Ship's Service Telephones (S65).

Not applicable.

R. Announcing Systems (S65).

No damage.

S. Telegraphs (S65).

No damage.

T. Indicating Systems (S65).

No damage.

U. I. C. and A. C. O. Switchboards (S65).

No damage.

V. F. C. Switchboards (S71).

No damage.

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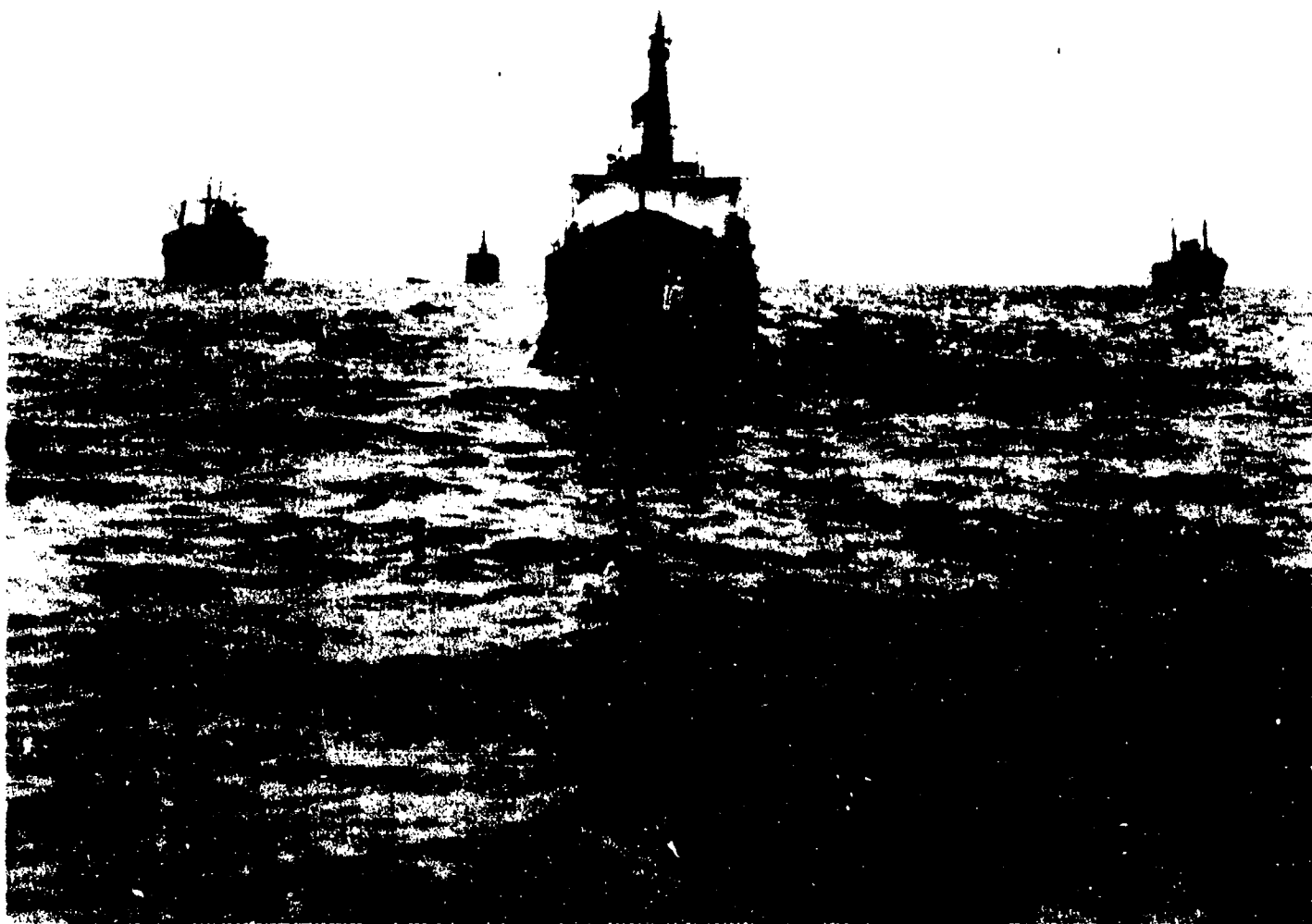
SECTION IV

PHOTOGRAPHS

TEST ABLE

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USS PILOTFISH (SS386)



AACR-227-92-37. General view from ahead.

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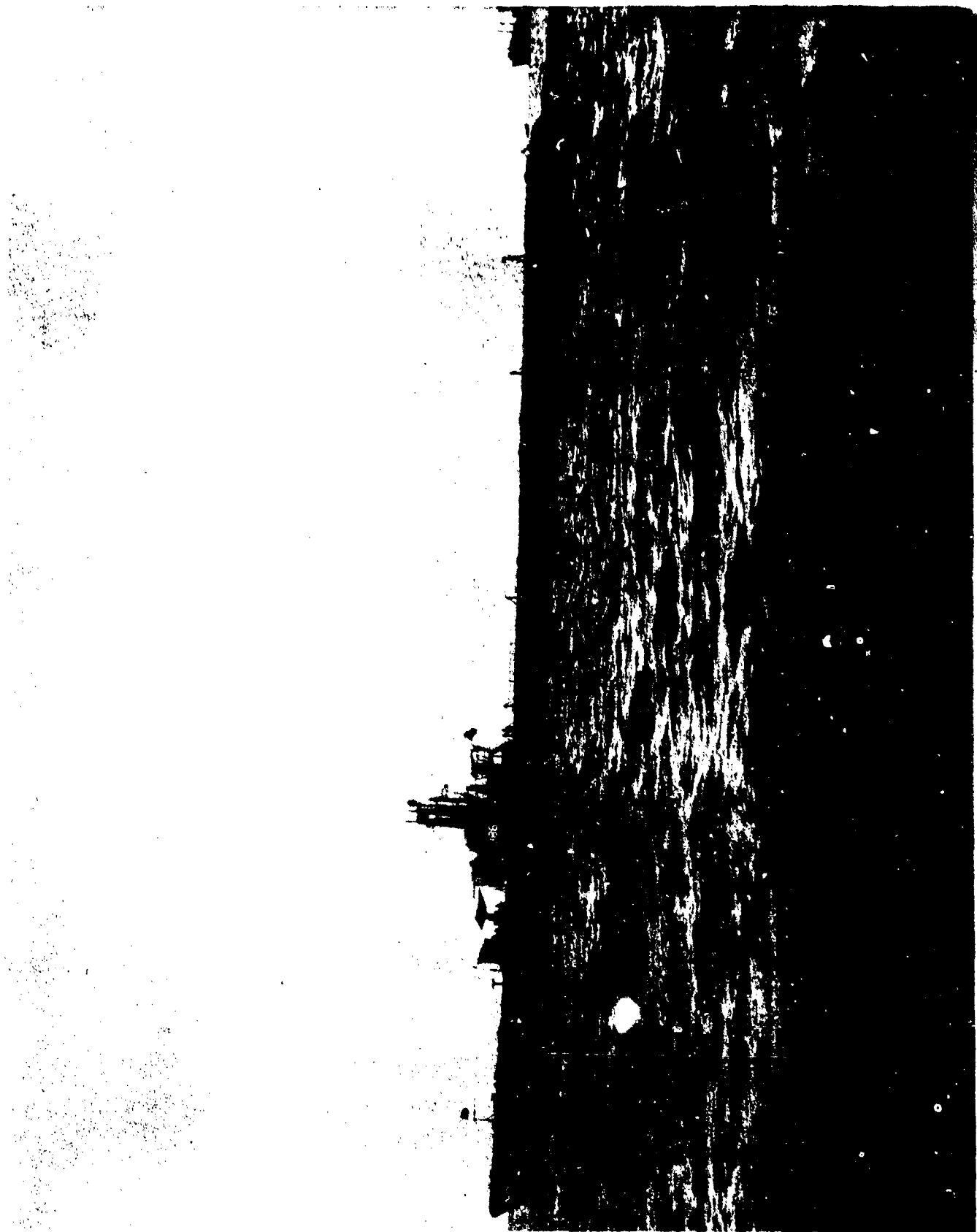
AACR-227-92-38. General view fro starboard bow.

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AACR-227-92-39. General view from starboard beam.

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AACR-92-40. General view from starboard quarter.

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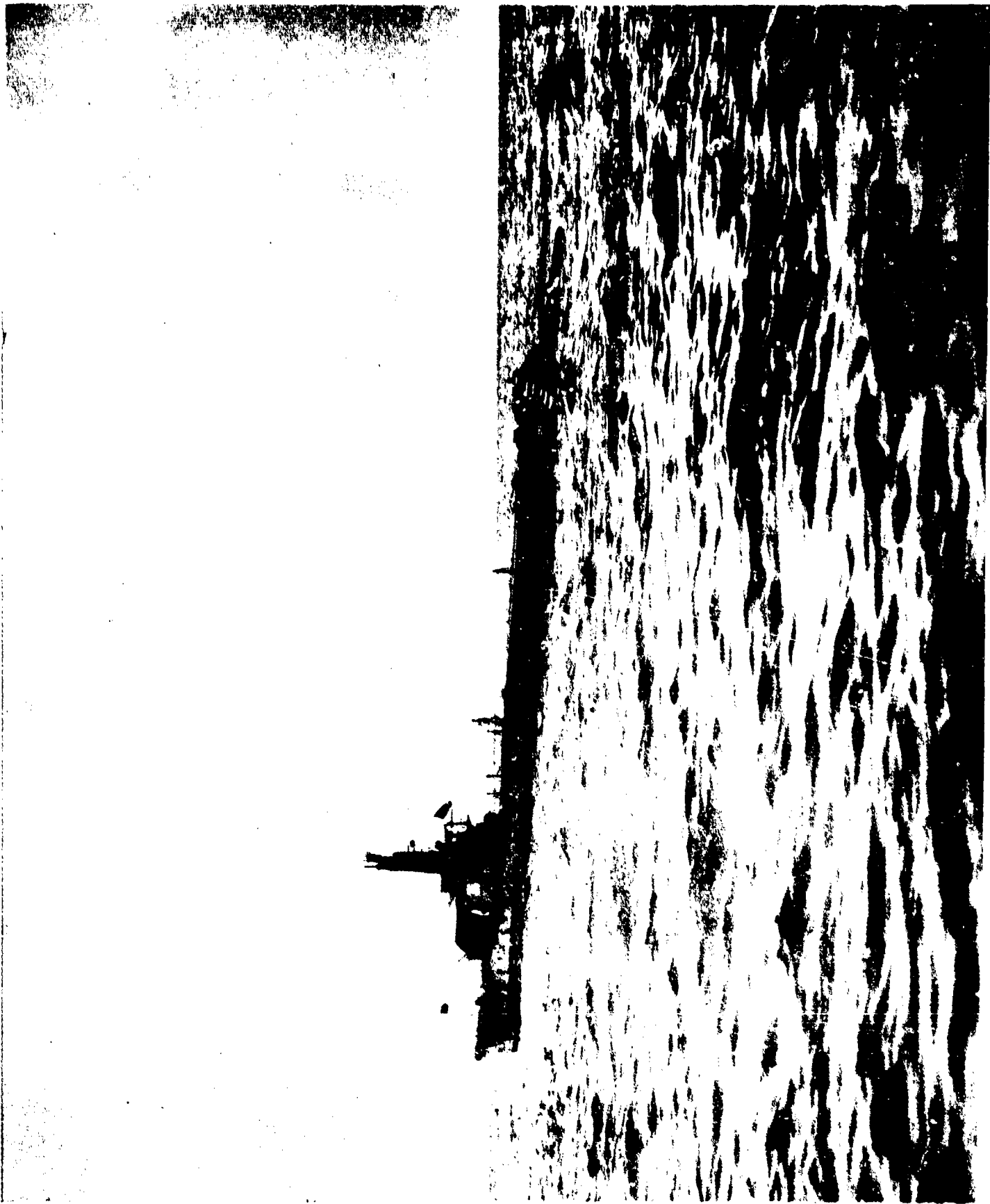
USS PILOTFISH (SS386)



AACR-227-92-41. General view from astern.

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USS PILOTFISH (SS386)



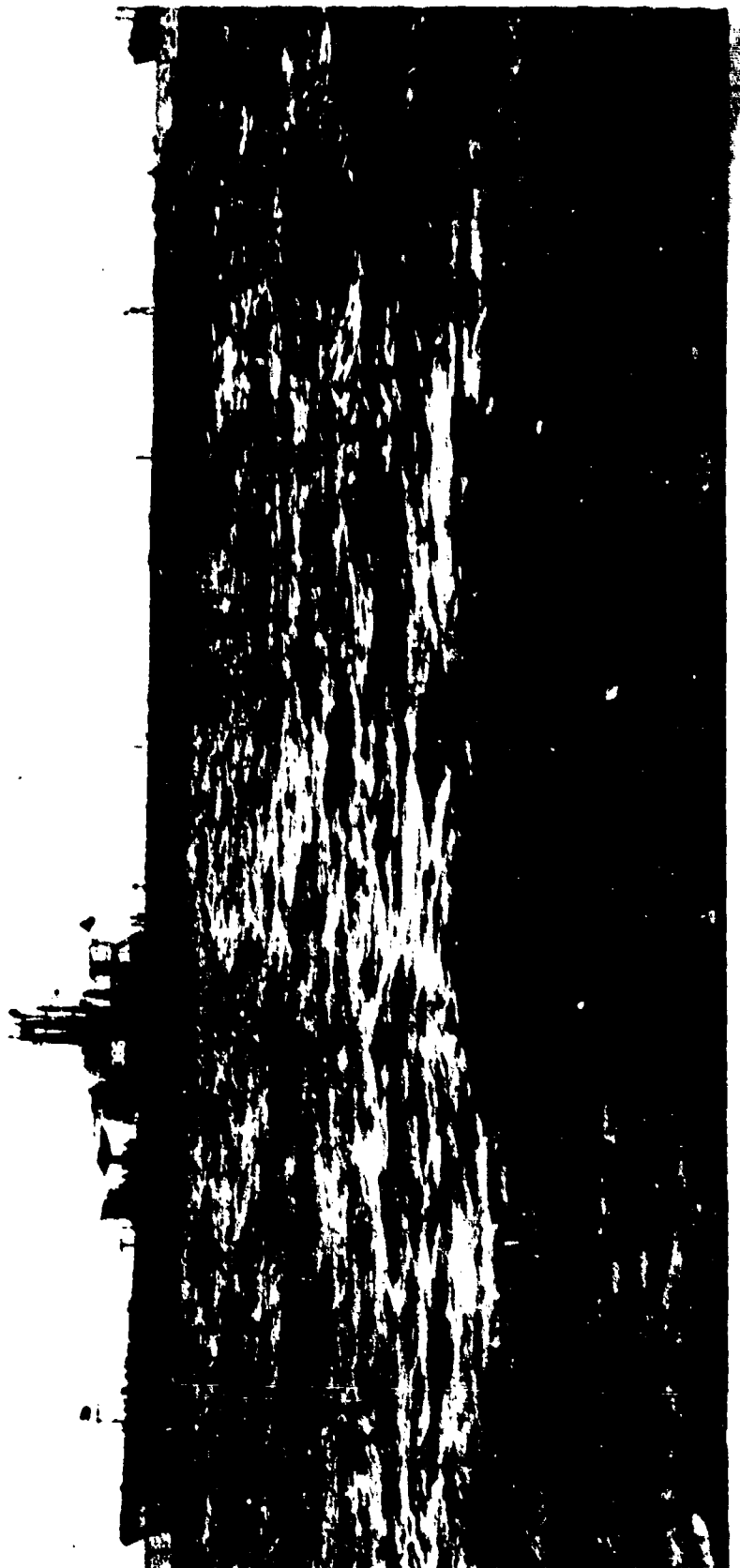
AACR-227-92-42. General view from port quarter.

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AACR-227-92-43. General view from port beam.

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AACR-227-92-36. General view from port bow.

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APPENDIX

COMMANDING OFFICER'S REPORT

TEST ABLE

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COMMANDING OFFICER'S REPORT

PART A - GENERAL SUMMARY

I. Target Condition after test.

(a) Drafts after test: 16' 3" Fwd; 16' 5" Aft; List 1/2' Stb'd; Flooding: None.

(b) Structural damage: None.

(c) Operability: No damage except melted rubber insulator in VHF antenna on top of periscope shears.

(d) Heat: Direct radiant heat from the blast blistered the top coat of paint on only the vertical surfaces of the superstructure. The Yoke flag and commission were scorched in spots but manila and white line topside were not affected. The heat was evidently more intense high in the superstructure than near the water line. It is estimated that personnel exposed directly to the flash would have suffered severe flash burns on parts not covered by two layers of closely woven clothes.

II. Forces evidenced and effects noted.

(a) Heat. The direction of the flash was clearly shown to be within a few degrees of 100° relative and almost exactly horizontal. The scorching of the superstructure paint extends the whole length of the superstructure on the starboard side while the vertical distribution of char indicates that the most severe heat was in the upper half of the periscope shears gradually decreasing from the half way mark down to the bottom of the superstructure where the char is almost negligible. Except for about 5 of the largest paint char bubbles the penetration was limited to the outer layer of paint. The largest char spots are about one inch in diameter on the shears and show penetration of three layers of paint. Bitumastic, wood, and grease

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where exposed show nothing. The heat indicating instruments mounted topside all show the presence of heat and those equipped with lenses are particularly interesting in that they show images of the explosion. There is no evidence that the heat penetrated even very thin metal.

(b) Fires and explosions: None.

(c) Shock: No evidence, except that a can of corn balanced on the edge of a table was still in place after the bomb. Many other lightly placed articles showed no displacement.

(d) Any effects apparently peculiar to the Atom Bomb: The bridge signal light was thought by the Geiger man to be a little "hot", but it is near a target bearing transmitter which contains a pot of luminescent material known to affect the counter. Even this was weaker than the luminescent dials at the diving station in the control room. Radiological effects were in the untutored opinion of the commanding officer negligible.

III. Results of Test on Target.

(a) Effect on propulsion and ship control: None.

(b) Effect on gunnery and fire control: None.

(c) Effect on water-tight integrity and stability: None.

(d) Effect on personnel and habitability: None.

(e) Total effect on fighting efficiency: None.

IV. General Summary of observers' impressions and conclusions.

The PILOTFISH was undamaged while on the surface about a mile and a half from an Atom Bomb of the Nagasaki type exploded a few hundred feet in the air. This most spectacular weapon of all has in the writers opinion at very great increase in cost increased the lethal range to ships of an explosion about a hundredfold and will change

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naval warfare about as much in the near future as it has changed since the use of grape shot.

V. Any preliminary general or specific recommendations of the inspecting group.

It is recommended that in general new construction ships have heavy, streamlined superstructures shielding all personnel and that no combustible material be carried topside. Ships should be submersible to avoid detection and not concentrate in close formations.

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COMMANDING OFFICER'S REPORT

PART "C" - INSPECTION REPORT (SECTION I. HULL)

A. General Description of Hull Damage: None.

B. Superstructure & Weather Decks:

(a) Description and comments of damage: The only damage was charring of paint directly exposed to the bomb flash on the vertical fore and aft plating of the superstructure, starboard side.

(b) Evidence of fire not covered in (a) above: None.

(c) Estimate of relative effectiveness against heat and pressure wave of various surfaces, coverings, etc.: The heat did not penetrate the side light shield of galvanized metal about 1/32 of an inch thick. Only vertical surfaces were affected; curvatures showed that surfaces more than about 10° incident to the rays were unaffected. Strangely enough the black paint, though of the same general type as the lighter gray was less affected.

(d) Constructive criticism of superstructure design or construction, including important fittings and equipment: Against atomic bomb attack it would seem wise to:

(1) Cover all personnel - In the untutored opinion of the Commanding Officer the flash burns would be severe at ranges much outside of the lethal range of the Gamma Ray against which steel is little protection.

(2) Elimination of the topside decking and superstructure except for conning tower and faired bow even though the decking does now provide some protection against depth charges and contact weapons. Perhaps a second heavy plating over the top of the pressure hull would be desirable. Under this plating the necessary topside piping and wiring could be run.

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(3) A telescopic periscope shear would probably be a more secure device covered and supported when housed by the heavy conning tower.

(4) Topside operating mechanisms should as far as possible be completely outside the pressure hull to avoid the weak points of shaft packing.

C. Turrets, Guns and Directors:

(a), (b), (c) No damage.

D. Torpedo Tubes and Appurtenances.

(a), (b), (c) No damage.

(d) Constructive criticism of location, design and construction: It is suggested that torpedo impulse air flasks now supported by relatively weak superstructure be secured to the pressure hull.

E. Weather Deck: See Item "B".

F. Exterior Hull above Waterline:

(a) No damage.

(b) Constructive criticism of design or construction: It is suggested that the present decking be eliminated and that a fairly heavy cover plate a few inches from the top of the pressure hull cover necessary topside piping and guard the pressure hull against contact explosions.

G. Compartments:

(a) through (h) No damage.

(i) Constructive criticism as to design or construction:

None.

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J. Underwater Hull:

(a), (b) No damage.

(c) Constructive criticism: It is suggested that the number of hull openings be reduced to a bare minimum. That topside machinery all be topside to eliminate packing glands, and the danger of broken shafts leaving a hole in the boat. That if possible power used topside be AC supplied through inductive couplings instead of weak wire packing glands.. That, where possible, sea valves be made to seat with sea pressure.

K. Tanks: No comments; no damage.

L. Flooding: None; no comments.

M. Ventilation: No damage; no comments.

N. Ship Control and Fire Control Stations:

(a) No damage.

(b) Constructive criticism of layout, arrangement, and protection: The submarine conning tower and bridge designs are now being changed extensively, probably more protection of bridge personnel from blast effects should be incorporated. It is doubtful that any such open ended scoop as the present bridge can withstand high blast effects from aft.

P. Ammunition Stowage: No damage; no comments.

Q. Ammunition Handling: No damage. New design has probably done much to remedy such defects as now exist.

R. Strength: No damage. It is suggested that if possible the passing of wires through packing glands in the hull be eliminated by the use of inductive couplings, but again the writer knows nothing about the practical application of this principle.

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S. Miscellaneous.

None.

T. Coverings: The only covering damaged was the exterior topside paint on the vertical surfaces within 10° of normal incidence to the heat rays. The paint was scorched on about 30% to 50% of this area forming blisters about 1/4" in diameter and involving only the outer coat except for a few large blisters about an inch in diameter and three layers thick. The light gray paint seems more effected than the black.

U. Welding and Rivetting: No damage; no comments.

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COMMANDING OFFICER'S REPORT

PART "C" - INSPECTION REPORT

SECTION II. MACHINERY

A. General Description of Machinery Damage:

There was no damage to machinery.

B through AA. No damage; no comment.

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USS PILOTFISH (SS386)

COMMANDING OFFICER'S REPORT

PART "C" - INSPECTION REPORT

SECTION III. ELECTRICAL

A. General Description of Electrical Damage:

There was no electrical damage sustained in Test "ABLE".

B through V. No damage; no comments.

USS PILOTFISH (SS386)

COMMANDING OFFICER'S REPORT

PART "C" - INSPECTION REPORT

SECTION IV. ELECTRONICS

A. General Description of Electronics Damage:

No electronic damage was sustained in Test "ABLE".

B through V. No damage; no comments.

Classification (~~Canceled~~) (Changed to **CONFIDENTIAL**)
Authority of Joint Chiefs of Staff (Action 15 Apr 49)
John Beggs, Capt. Date *24 April 51*
AFSWO

CONFIDENTIAL

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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.

Arndith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center

Completed
1 Mar 2000
B.W.