UNCLASSIFIED

AD NUMBER

AD376826

CLASSIFICATION CHANGES

TO: unclassified

FROM: confidential

LIMITATION CHANGES

TO:

Approved for public release, distribution unlimited

FROM:

Distribution: USGO: others to Director, Defense Atomic Support Agency, Washington, D. C. 20301.

AUTHORITY

DSWA ltr., 9 Apr 97; DSWA ltr., 9 Apr 97

THIS PAGE IS UNCLASSIFIED

29

B ✓

XRD-60

AD No. 376826

DDC FILE COPY

ITIAL

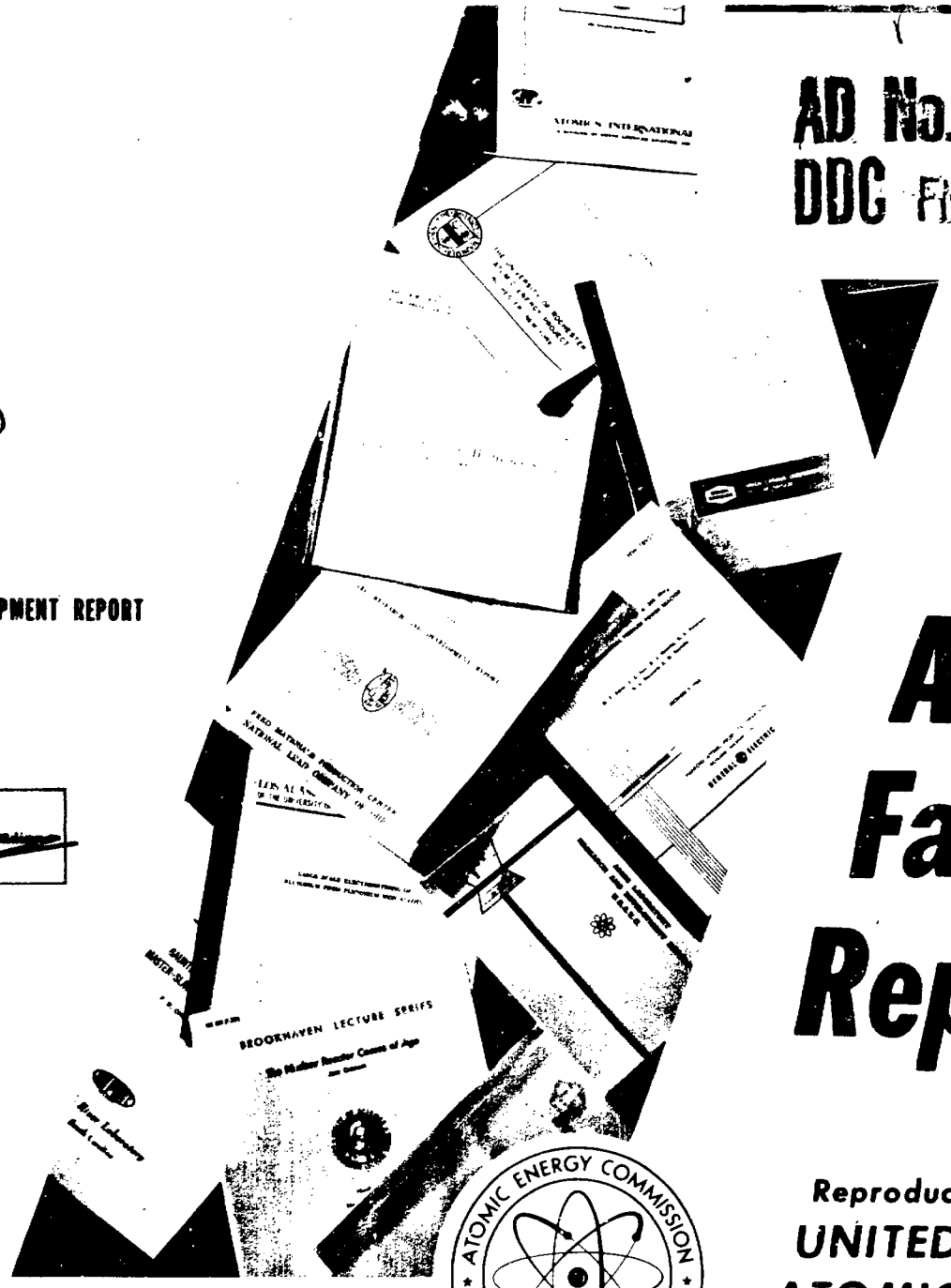
1

Circ. 1 Repro.

TECHNICAL LIBRARY
of 1587/65
of the
29 NOV 1965
DEFENSE ATOMIC
SUPPORT AGENCY

AEC RESEARCH AND DEVELOPMENT REPORT

[redacted]



A Facsimile Report

DDC
NOV 8 1966
D

Reproduced by
UNITED STATES
ATOMIC ENERGY COMMISSION
Division of Technical Information
P.O. Box 62 Oak Ridge, Tennessee 37831

This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law.

[redacted]

CONFIDENTIAL

Inc 8 of 1

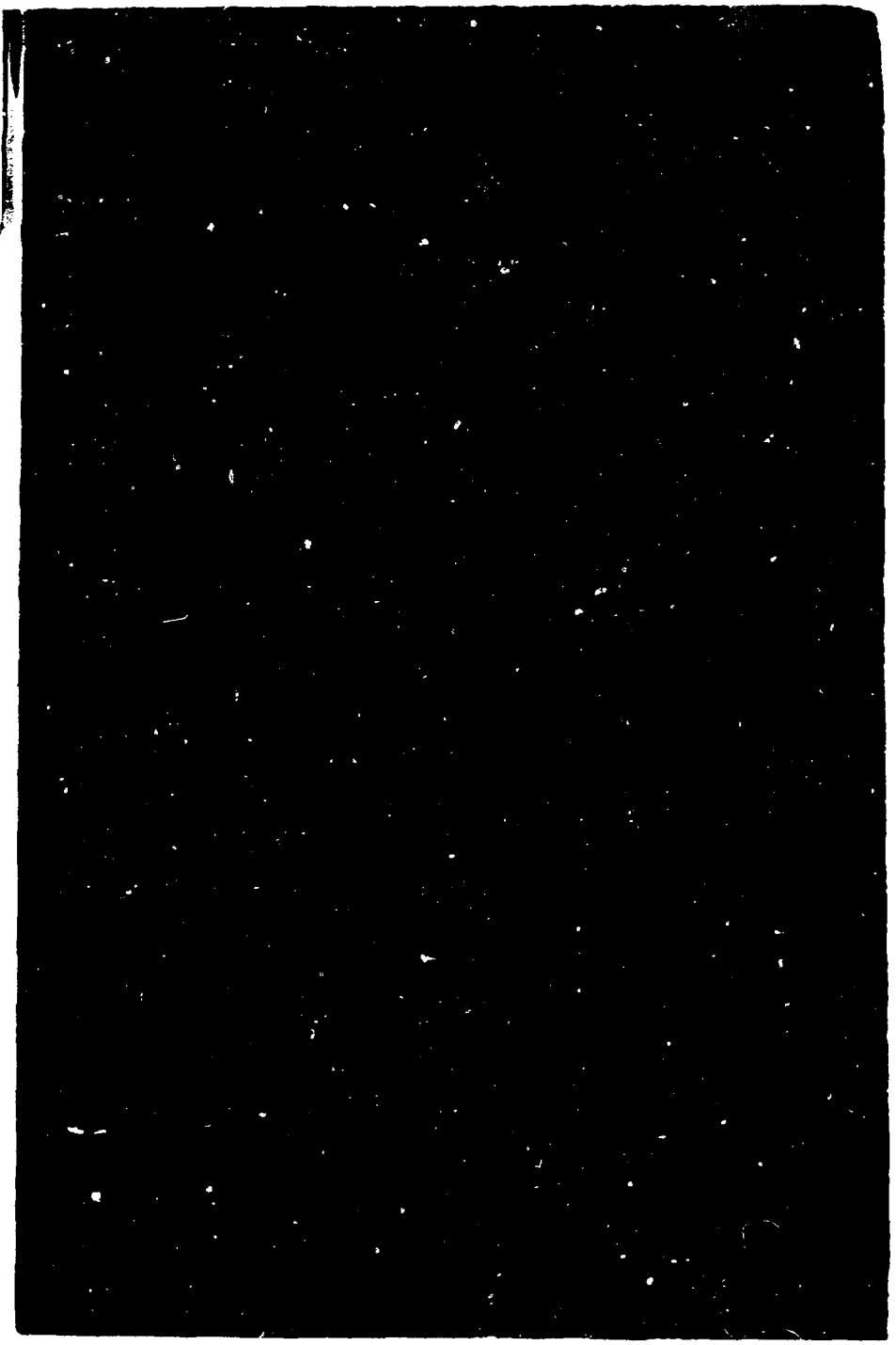
ACCESSION for
CFSTI WHITE SECTION ☐
BSC BUFF SECTION ☑
UNANNOUNCED ☐
JUSTIFICATION
BY
DISTRIBUTION/AVAILABILITY CODES
DIST. | AVAIL. and/or SPECIAL
3

IN ADDITION TO SECURITY REQUIREMENTS WHICH APPLY TO THIS DOCUMENT AND MUST BE MET, EACH TRANSMITTAL OUTSIDE THE AGENCIES OF THE U.S. GOVERNMENT MUST HAVE PRIOR APPROVAL OF THE DIRECTOR, DEFENSE ATOMIC SUPPORT AGENCY, WASHINGTON, D.C. 20301.

CONFIDENTIAL

XRD

60



XRD-60
cy. 46

CONFIDENTIAL

(9)

BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT

DISTRIBUTION LIMITED
CONTAINS WEAPON DATA

GROUP 3
Downgraded at 12 year intervals;
Not Automatically Declassified.

(6) Operation Crossroads.

U.S.S. BRISCOE (APA65)

TEST ABLE

changed from RD to DI by NPSWP ltr. dtd 1-23-58

"This material contains information affecting the national defense of the United States within the meaning of the espionage laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law."

Classification (~~Cancelled~~) (Changed to CONFIDENTIAL Security Information
By Authority of JOINT CHIEFS OF STAFF JCS [illegible] APRIL 1949
By John W. Nyette Lt. Col. [illegible] Date MAY 16 1952

(11) 1146

(12) 31p.

(14) XRD-60

OPERATION CROSSROADS

DIRECTOR OF SHIP MATERIAL

JOINT TASK FORCE ONE

[redacted]

CONFIDENTIAL
Security Information
~~RESTRICTED DATA~~
ATOMIC ENERGY ACT 1946

REG. NO. 5

8741

mt (1150)

CONFIDENTIAL

BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT

GROUP 3
Downgraded at 12 year intervals;
Not Automatically Declassified.

GROUP 4
Downgraded at 3 year intervals;
Declassified after 12 years

CONFIDENTIAL

Classification (Cancelled) (Changed to JOINT CHIEFS OF STAFF JCS Security Information)
By Authority of JOINT CHIEFS OF STAFF JCS
By John H. Wyatte Lt. Col. USAF Date MAY 16 1952

APPROVED:

F.X. Forest,
Captain, U.S.N.

"This material contains information affecting the national defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C., Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by law."

[redacted]

USS BRISCOE (APA65)

CONFIDENTIAL
Security Information
RESTRICTED DATA
ATOMIC ENERGY ACT 1946

CONFIDENTIAL

TABLE OF CONTENTS

	PAGE NO.
Ship Characteristics Sheet	3
Midship Section	4
Overall Summary of Damage	5
Hull Technical Inspection Report (Section I)	12
Machinery Technical Inspection Report (Section II)	18
Electrical Technical Inspection Report (Section III)	24
Photographic Section (Section IV)	29
Commanding Officers Report (Appendix)	43

CONFIDENTIAL

Classification (Cancelled) (Changed to Security Information)
By Authority of JOINT CHIEFS OF STAFF JCS 1795/36 DATED 26 APRIL 1949
By John H. Wyatte Lt. Col. USAF Date MAY 16 1952

[redacted]

USS BRISCOE (APA65)

CONFIDENTIAL
Security Information
RESTRICTED DATA
ATOMIC ENERGY ACT 1946

CONFIDENTIAL

U.S.S. BRISCOE (APA 65)

SHIP CHARACTERISTICS

Building Yard: Consolidated Steel Corp.; Wilmington, California.

Commissioned: 29 October 1944.

HULL

Length Overall: 426 feet 0 inches.
Length on Waterline: 400 feet 0 inches.
Beam (extreme): 58 feet 0 inches.
Depth (molded to upper deck): 37 feet 0 inches.
Drafts at time of test: Fwd. 10 feet 0 inches.
Aft. 16 feet 6 inches.
Limiting displacement: 7,080 tons.
Displacement at time of test: 5,710 tons.

MAIN PROPULSION PLANT

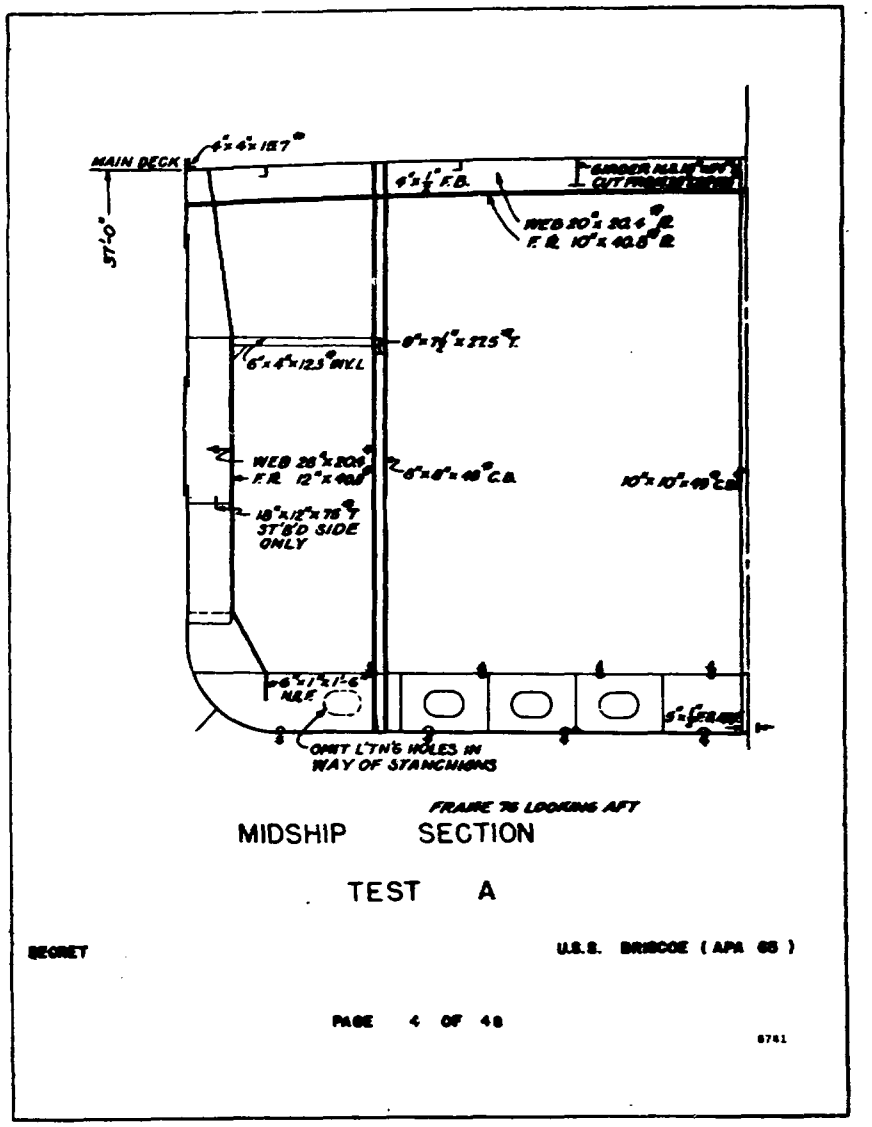
Main Engines: Two sets of Westinghouse steam turbines, directly connected to Westinghouse main generators. Two main shaft motors.
Main Condensers: Two are installed in ship.
Boilers: Two Babcock and Wilcox boilers are installed in ship. 450 psi gauge - 750° F.
Propellers: Two are installed in ship.
Main Shafts: Two are installed in ship.
Ships Service Generators: Five are installed in ship.
Two - 250 KW. - 450 V. A.C.
One - 150 KW. - 450 V. A.C.
Two - 100 KW. - 120/240 V. D.C.

CONFIDENTIAL
Security Information

RESTRICTED DATA
ATOMIC ENERGY ACT 1946

CONFIDENTIAL

Classification (Cancelled) (Changed to [redacted)
By authority of JOINT CHIEFS OF STAFF JCS [redacted]
By [signature] Date MAY 16 1952



TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

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.

HULL

Damage is superficial and consists of the dishing of flag bags, stacks, some topside bulkheads exposed to the blast, and the dislodgment of cargo hatch battens.

MACHINERY

No comment.

ELECTRICAL

None observed.

(c) Other damage.

HULL

Not observed.

MACHINERY

None.

ELECTRICAL

There was no electrical damage.

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

Heat radiation appears to have come from about 140 degrees relative at an elevation of 5 to 10 degrees. Very little blistering or scorching occurred forward of frame 60. The forward stack is blistered slightly to starboard. Vertical surfaces exposed and normal to the blast have slight blistering.

All manila running rigging on the port side abaft amidships is scorched as were two searchlight covers over the signal bridge. Stockholm tar on the mainmast standing rigging was reduced to carbon on the face exposed to the radiation, except deep in the lay of the wire.

MACHINERY

There was no damage from heat in machinery spaces or to machinery. The only evidence of it was scorched paint topside.

ELECTRICAL

The only evidence of heat was the scorching of painted surfaces directly exposed to the blast.

(b) Fires and explosions.

HULL

One fire burned No. 2 hatch tarpaulin and carbonized paint on the upper deck hatch coaming and strongbacks. It is believed the direct heat radiation ignited the tarpaulin, since the hatch boards had fallen below, fire was able to reach the painting on the coaming and strongbacks.

There were no explosions.

MACHINERY

No evidence.

ELECTRICAL

There was no electrical damage from fires or explosions.

(c) Shock.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no electrical damage from shock.

(d) Pressure.

HULL

The blast center was slightly to starboard of astern as is evidenced by the dishing of top side plating facing aft. 7 1/2 pound plating showed slight dishing where the span was four feet or more. Lighter plating is dished and distorted. The critical plating weight appears to about 10 pound mild steel since only lighter plating suffered damage.

MACHINERY

The outer casing of the after stack was slightly dented by blast pressure.

ELECTRICAL

There was no electrical damage as a result of pressure.

(e) Effects peculiar to the atomic bomb.

HULL

None.

MACHINERY

None.

ELECTRICAL

The intense radiant heat was the only peculiar effect noted.

III. Result of Test on Target.

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

HULL

Not observed.

MACHINERY

No damage.

ELECTRICAL

None.

(b) Effect on gunnery and fire control.

HULL

Not observed.

MACHINERY

No comment.

ELECTRICAL

None.

(c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

None.

(d) Effect on personnel and habitability.

HULL

Topside personnel, exposed to the blast, would very likely have suffered from flash burns and possibly radiation injury of some degree. Habitability is not affected.

MACHINERY

None.

ELECTRICAL

None.

(e) Effect on fighting efficiency.

HULL

None.

MACHINERY

None.

ELECTRICAL

Fighting efficiency was not impaired by any electrical damage.

IV. General Summary of Inspector s Impressions and Conclusions.

HULL

No comment.

MACHINERY

The BRISCCE was outside the effective range of the explosion during test A.

ELECTRICAL

The vessel was too far from the blast to receive anything other than very minor damage.

V. Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

None.

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

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.

Damage is superficial and consists of the dishing of flag bags, stacks, some topside bulkheads exposed to the blast, and the dislodgment of cargo hatch battens.

(c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Heat radiation appears to have come about 140 degrees relative at an elevation of 5 to 10 degrees. Very little blistering or scorching occurred forward of frame 60. The forward stack is blistered slightly to starboard. Vertical surfaces exposed and normal to the blast have slight blistering.

All manila running rigging on the port side abaft amidships is scorched as were two searchlight covers over the signal bridge. Stockholm tar on the mainmast standing rigging was reduced to carbon on the face exposed to the radiation, except deep in the lay of the wire.

(b) Fires and explosions.

One fire burned No. 2 hatch tarpaulin and carbonized paint on the upper deck hatch coaming and strongbacks. It is believed the direct heat radiation ignited the tarpaulin. Since the hatch boards had fallen below, fire was able to reach the painting on the coaming and strongbacks.

There were no explosions.

(c) Shock.

None.

(d) Pressure.

The blast center was slightly to starboard of astern as is evidenced by the dishing of top side plating facing aft. 7-1/2 pound plating showed slight dishing where the span was four feet or more. Lighter plating is dished and distorted. The critical plating weight appears to about 10 pound mild steel since only lighter plating suffered damage.

(e) Effects peculiar to the Atomic Bomb.

None.

III. Results of Test on Target.

(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.

Topside personnel, exposed to the blast, would very likely have suffered from flash burns and possibly radiation injury of some degree. Habitability is not affected.

(e) Effect on fighting efficiency.

None.

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

No comment.

V. Preliminary Recommendations.

None.

VI. Instructions for loading the vessel specified the following:

ITEM	LOADING
Fuel oil	Minimum (Not more than 10%)
Diesel oil	10 tons maximum
Ammunition	10%
Potable and reserve feed water	95%
Salt water ballast	1275 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.

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

Damage is superficial and consists of the dishing of flag bags, stacks, some topside bulkheads exposed to the blast, and dislodgment of cargo hatch battens. The tarpaulins on No. 2 cargo hatch burned. General views of the ship are on pages 30 to 33.

B. Superstructure.

Both stacks are lightly dished on the port after quarter. The signal bridge flag bags, port and starboard, are moderately dished on the after face. (Photos 1731-8 and 2055-12, pages 34 and 35).

The after face of the movie booth at frame 102 is dished four inches. (Photo 1731-9, page 36). The port and starboard sides are dished two inches. The forward bulkhead, door and door frame are also dished. (Photo 2056-1, page 37). The bulkhead just below the after face of the movie booth at frame 102 is slightly dished. (Photo 2056-2, page 38).

On the after deck house top, a small metal flag bag is dished severely on the after side.

On the 02 level the transverse bulkheads at frames 106 and 134 are dished.

On the 01 level the transverse bulkhead at frame 108 is dished.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

Not applicable.

E. Weather Deck.

The canvas tarpaulin on No. 2 hatch, upper deck, burned completely. Blast dislodged the hatch battens and they fell to the deck below. The fire then spread to the paint on the coaming and on the strongbacks. (Photo 1812-11 and 1731-11, pages 39 , and 40).

Blast also dislodged the hatch battens on No. 1 hatch, upper deck, and they fell to the deck below. (Photo 1812-12, page 41).

No movement was recorded by any of the six deflection scratch gages installed under the upper deck.

F. Exterior Hull.

No damage.

G. Interior Compartments (above waterline).

The joiner bulkheads, port side main deck, frames 40 to 56 are torn loose from the overhead.

H. Armor Decks and Miscellaneous Armor.

Not applicable.

I. Interior Compartments (below waterline).

No damage.

J. Underwater Hull.

No damage.

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. **Coverings.**

Decks show signs of light blistering. There is very little blistering forward of frame 60. The forward stack is blistered slightly to starboard. (Photo 1731-6, page 42). Vertical surfaces normal to the blast on the after part of the ship are slightly blistered.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

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

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

None.

II. Forces Evidenced and Effects Noted.

(a) Heat.

There was no damage from heat in machinery spaces or to machinery. The only evidence of it was scorched paint topside.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

The outer casing of the after stack was slightly dented by blast pressure.

(e) Effects apparently peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery and ship control.

No damage.

(b) Effect on gunnery and fire control.

No comment.

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

No comment.

(d) Effect on personnel and habitability.

None.

(e) Total effect on fighting efficiency.

None.

IV. General Summary.

The BRISCOE was outside the effective range of the explosion during Test A.

V. Preliminary Recommendation.

None.

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

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

(b) Areas of major damage.

None.

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

Not applicable.

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

The test had no effect on the overall operation of the machinery plant. Full operation was resumed immediately after Test A.

B. Boilers.

1. Both boilers were undamaged by Test A.

2. Boiler #1 was left under hydrostatic pressure and boiler #2 was left under steam pressure at 0400, 30 June 1946 and there was no pressure on them when the crew returned on 2 July 1946. The drop in pressure while the crew was away is considered normal as hydrostatic tests have shown that the pressure on these boilers will drop from 450 lbs/sq. in. to zero in 12 hours.

3. The outer casing of the after stack was slightly dented. This has no effect on operation.

4. Both boilers have been steamed since Test A. Performance was normal.

C. Blowers.

Undamaged. All four blowers hav for a minimum of an hour at discharge pr ure of 8 1/2 inches of water.

D. Fuel Oil Equipment.

Undamaged. The fuel oil equipment was used under service conditions after Test A. Performance was normal.

E. Boiler Feedwater Equipment.

Undamaged. The feedwater equipment was used under service conditions after Test A. Performance was normal.

F. Main Propulsion Machinery.

Undamaged. The main propulsion turbines were tested under steam at 1/3 full load in both directions after Test A.

G. Reduction Gears.

Not applicable, as this ship has electric drive.

H. Shafting and Bearings.

Undamaged. Both shafts were turned by the main motors in both directions after Test A and functioned normally. The bearings, stern tubes and bulkhead packing glands show no damage.

I. Lubrication System.

Undamaged. The lubrication system was tested under operating conditions after Test A.

J. Condensers and Air Ejectors.

Undamaged. Inspection plates were removed and interiors inspected. All condensers were used in normal operation after Test A and maintained a vacuum of 27 inches which is normal for this vessel.

K. Pumps.

Undamaged. All pumps were tested under operating conditions after Test A.

L. Auxiliary Generators (Turbines and Gears).

Undamaged. All generators were operated at normal load after Test A. Performance was normal.

M. Propellers.

Undamaged. The propellers were inspected from the surface of the water and turned over by power at 1/3 of maximum speed.

N. Distilling Plant.

Undamaged. Both evaporators were placed in operation immediately after Test A, and functioned normally.

O. Refrigeration Plant.

Undamaged. The refrigerating plant was placed in normal operation immediately after Test A, and functioned normally.

P. Winches, Windlasses, and Capstans.

Undamaged. All deck machinery was tested and found in normal condition after Test A.

Q. Steering Engine.

Undamaged. Both steering units were tested from all three control stations through full throw of the rudder.

R. Elevators, Ammunition Hoists, etc.

Undamaged. The gasoline and ammunition hoists were tested and functioned normally.

S. Ventilation (Machinery).

Undamaged. All ventilation machinery was operated under service conditions after Test A. Performance was normal.

T. Compressed Air Plant.

Undamaged. The air compressors were placed in normal operation immediately after Test A, and functioned normally.

U. Diesels (Generators and Boats).

Undamaged. The diesel driven fire pumps were operated at 65 lbs/sq. in. for two hours and no damage was found. The emergency diesel generator was operated for six hours at half load after Test A. Performance was normal.

V. Piping Systems.

Undamaged. All piping was tested at normal pressures after Test A.

W. Miscellaneous.

Undamaged. Laundry, galley, and machine shop equipment were placed in normal operation immediately after Test A. Performance was normal.

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 not observed. There was no flooding.

(b) Structural damage.

None observed.

(c) Other damage.

There was no electrical damage.

II. Forces Evidenced and Effects Noted.

(a) Heat.

The only evidence of heat was the scorching of painted surfaces directly exposed to the blast.

(b) Fires and explosions.

None.

(c) Shock.

There was no electrical damage from shock.

(d) Pressure.

There was no electrical damage as a result of pressure.

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

The intense radiant heat was the only peculiar effect noted.

III. Effects of Damage.

(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.

Fighting efficiency was not impaired by any electrical damage.

IV. General Summary of Observers' Impressions and Conclusions.

The vessel was too far from the blast to receive anything other than very minor damage.

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

None.

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

The electrical installation was undamaged.

(b) Areas of major damage.

There were no areas of major damage.

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

There was no damage to electrical equipment.

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

1. Ships service generator plant - no damage.
2. Engine and boiler auxiliaries - no damage.
3. Electrical propulsion - no damage.
4. Communications - no damage.
5. Fire control circuits - no damage.
6. Ventilation - no damage.
7. Lighting - no damage.

(e) Types of equipment most affected.

None.

B. Electric Propulsion Rotating Equipment.

No damage.

C. Electric Propulsion Control Equipment.

No damage.

D. Generators - Ships Service.

No damage.

E. Generators - Emergency.

No damage. The machine was left operating for the test and ran until 6 P.M.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

This item does not apply.

J. Portable Batteries.

No damage.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage.

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.

This item does not apply.

R. Announcing Systems.

No damage.

S. Telegraphs.

No damage.

T. Indicating Systems.

No damage.

U. L.C. and A.C.O. Switchboards.

No damage.

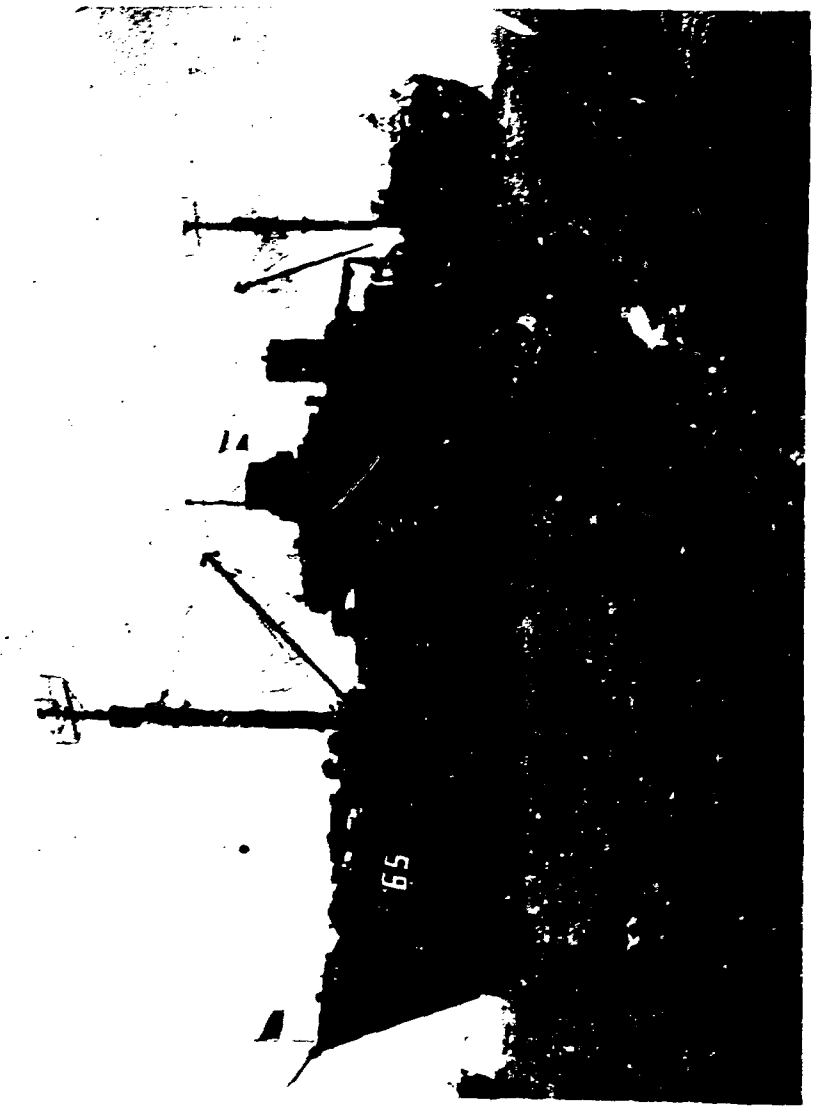
V. F.C. Switchboards.

No damage.

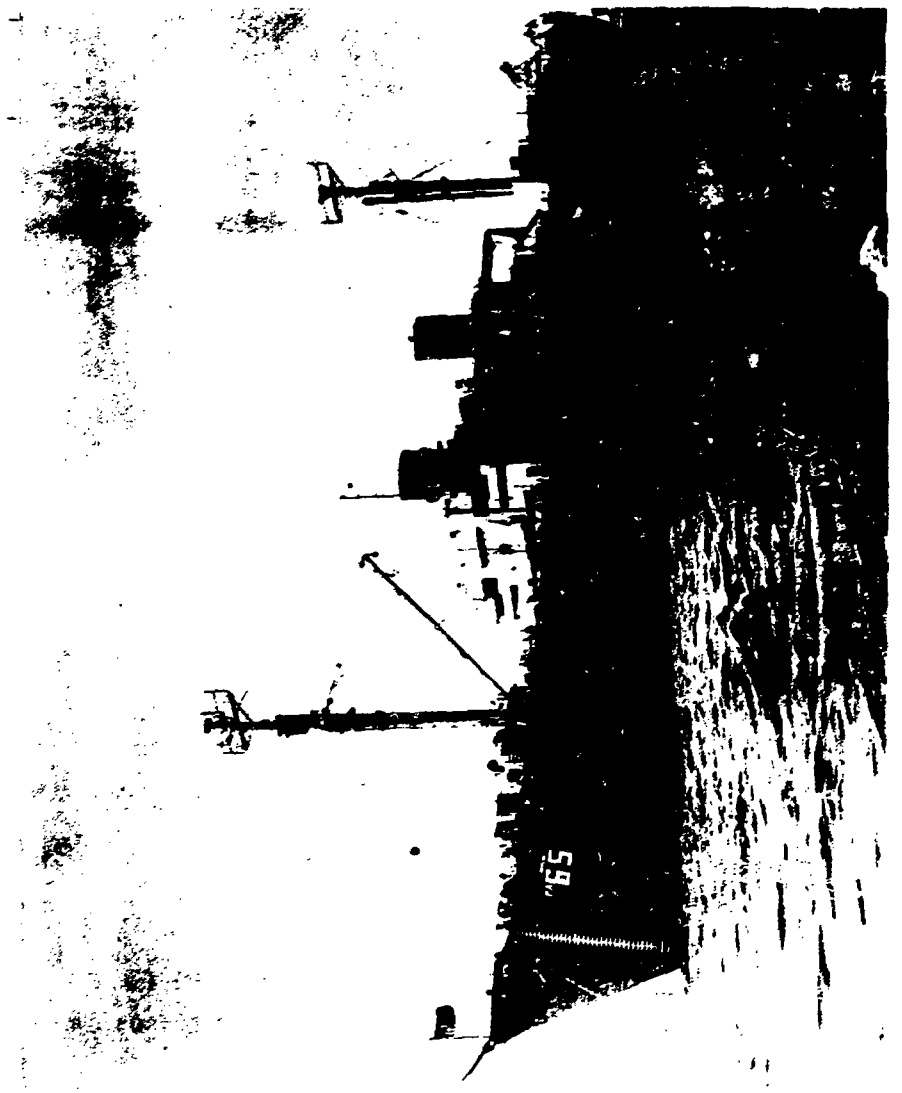
SECTION IV

PHOTOGRAPHS

TEST ABLE

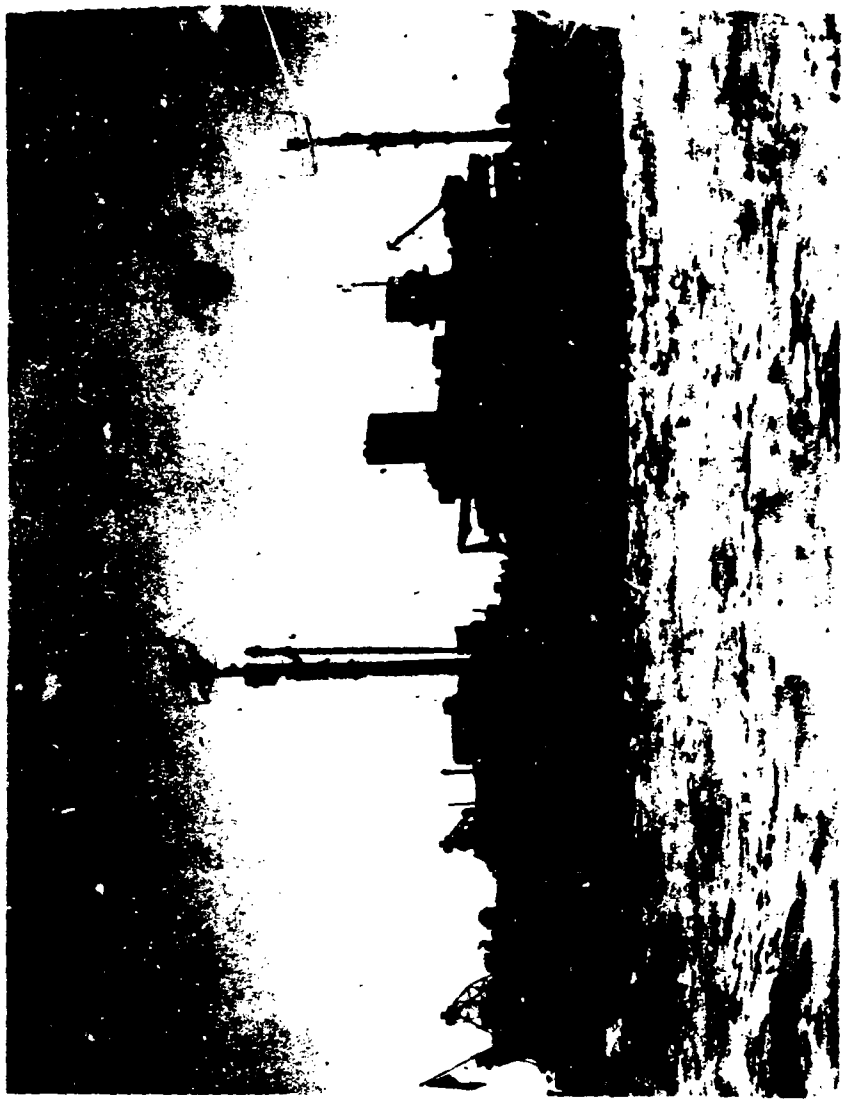


BA-CR-196-160-2. View from port bow before Test A.



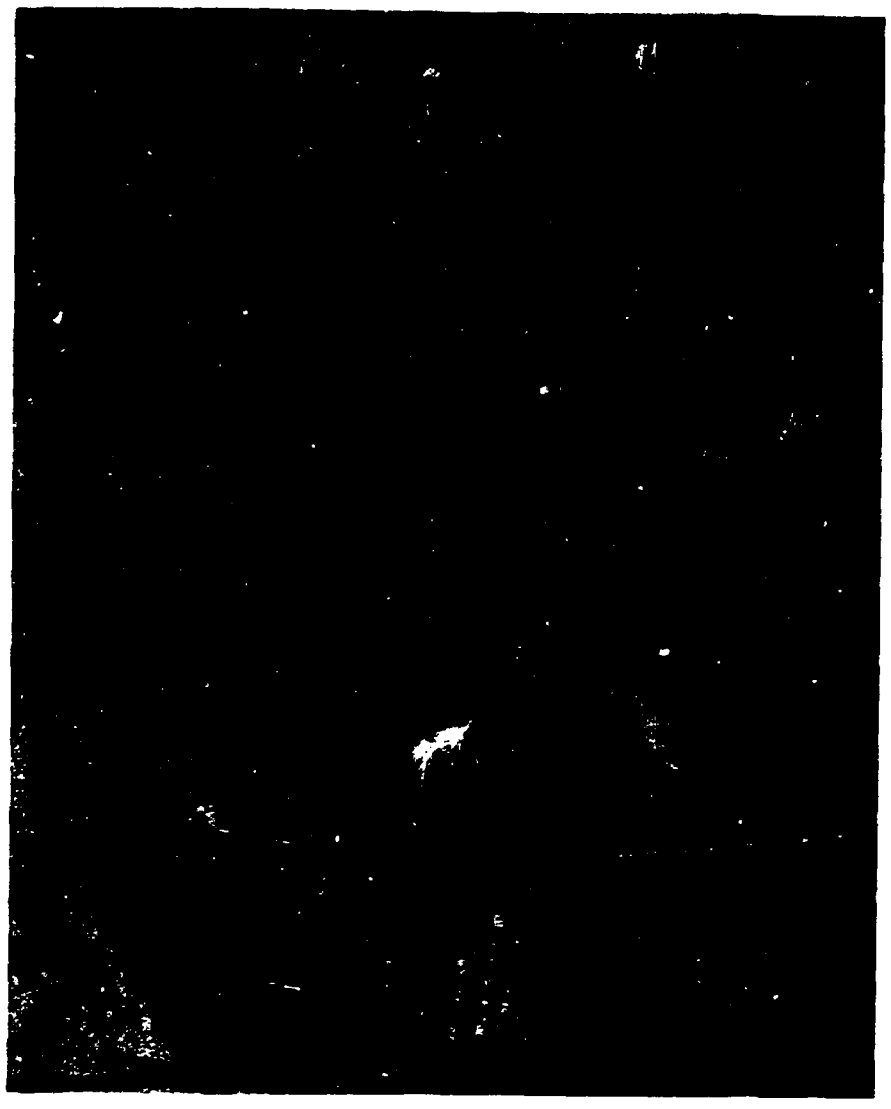
AA-CR-227-91-57. View from port bow after Test A.

EA-CR-196-160-8. View from starboard quarter before Test A.



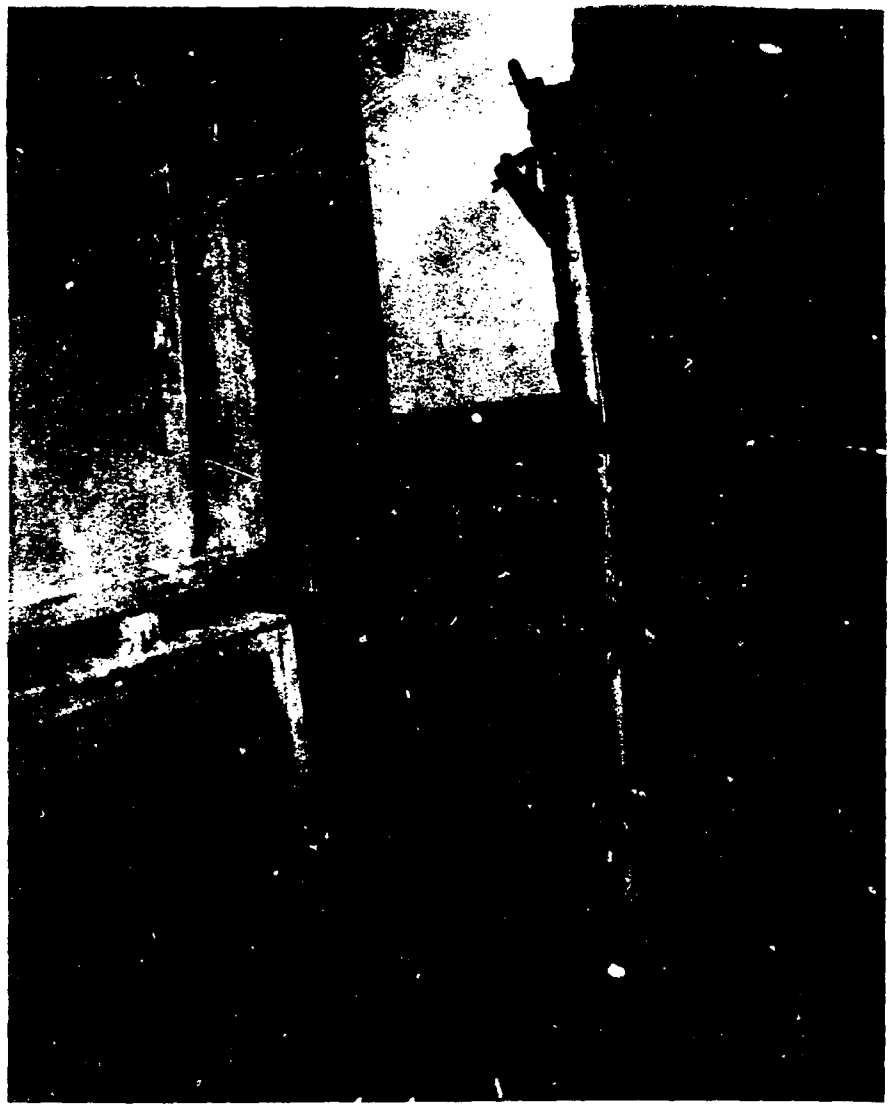
AA-CR-227-91-53. View from starboard quarter after Test A.

AA-CR-65-1731-8. After side of port flag bag on signal bridge.



AA-CR-59-2055-12. After side of starboard flag bag on signal bridge.

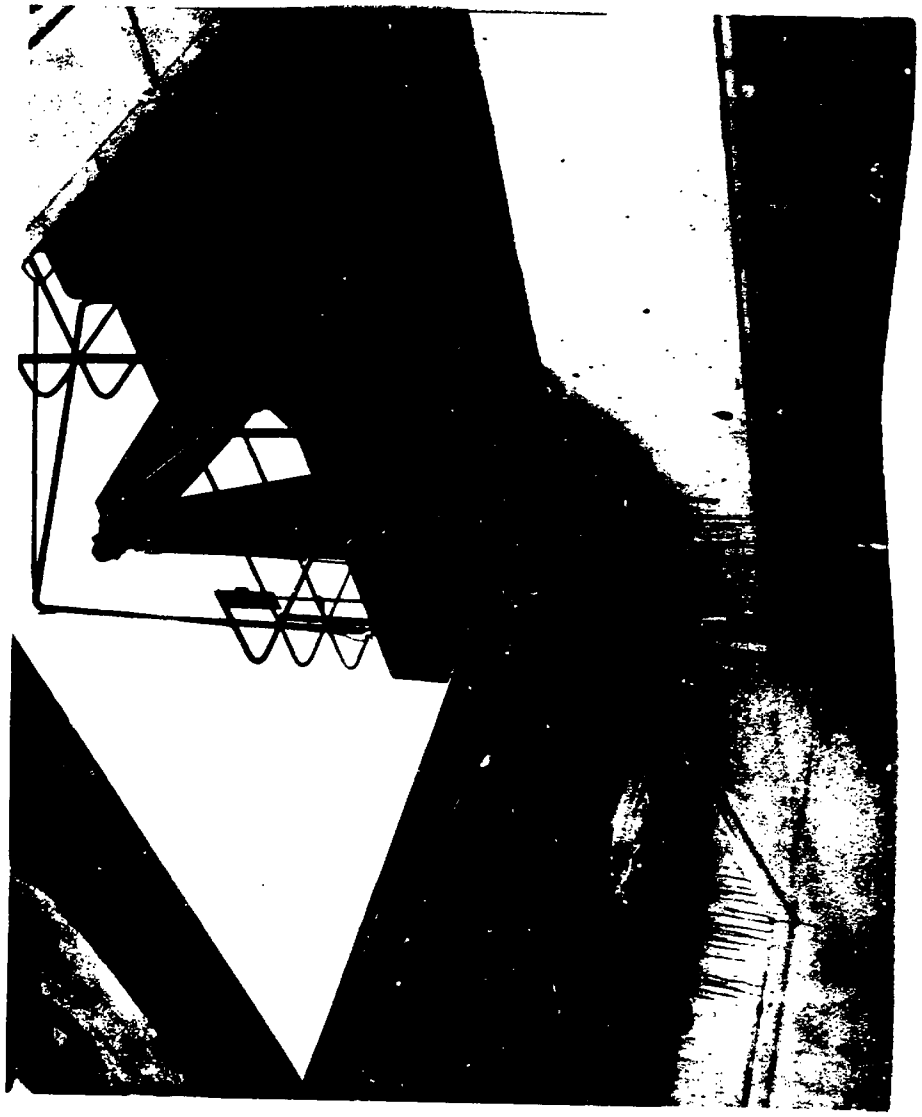
AA-CR-65-1731-9. After face of movie booth at frame 102.



AA-CR-59-2056-1. Forward face of movie booth.

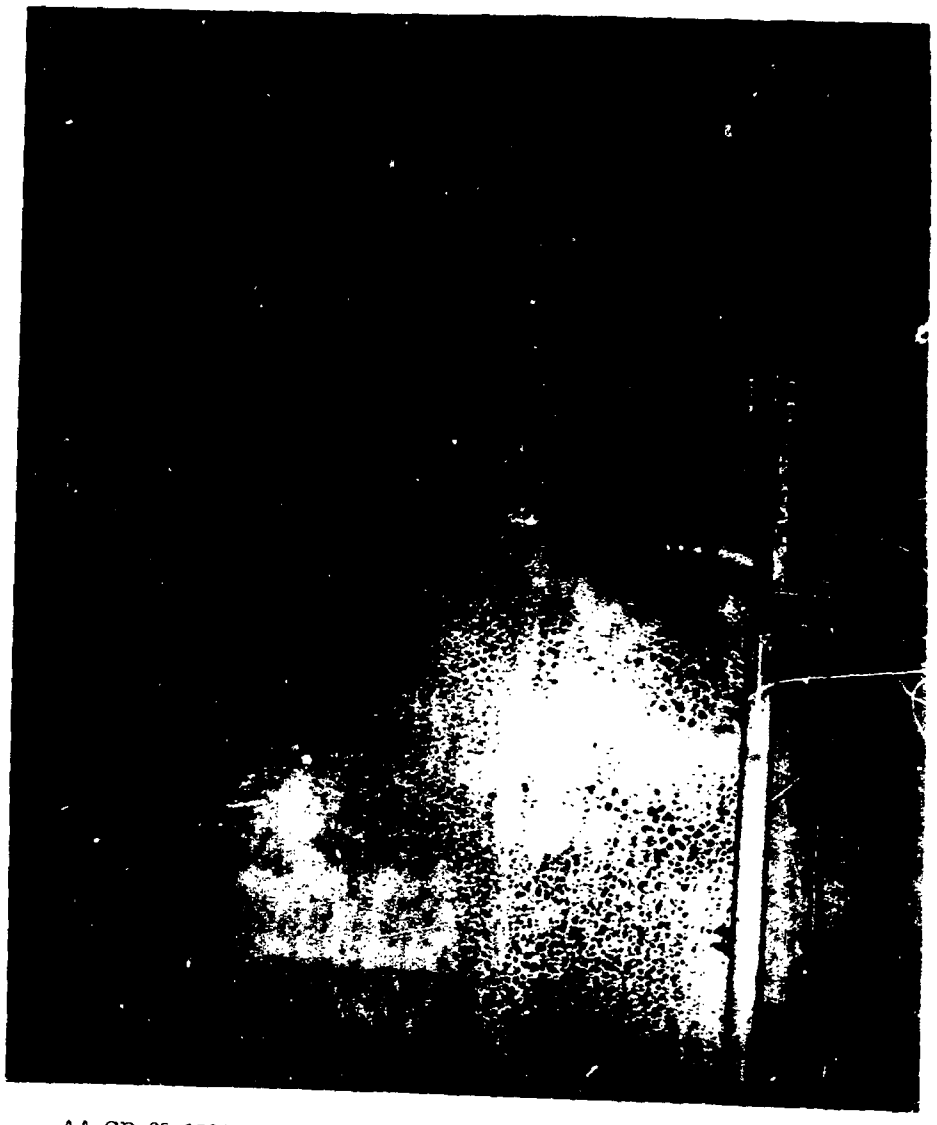
AA-CR-59-2056-2. After face of movie booth and bulkhead below at frame 102.

AA-CR-79-1812-11. No. 2 hatch at upper deck - Hatchboards displaced and tarpaulin burned - View looking aft.



AA-CR-65-1731-11. No. 2 hatch at upper deck - Damage to paint from fire. View showing forward port corner.

AA-CR-79-1812-12. No. 1 hatch at upper deck - Looking forward.



AA-CR-65-1731-6. Forward stack - Starboard side - Paint blistering.

APPENDIX

COMMANDING OFFICERS REPORT

TEST ABLE

REPORT #11

COMMANDING OFFICER'S REPORT

SECTION I

The USS BRISCOE (APA65) was anchored in berth 202, approximately 1,000 yards from the target vessel. Condition "Able" was set (all X, Y, and Z fittings secured). The emergency diesel generator was running at the time of the blast to provide power for telemetering equipment. Number one boiler was undergoing hydrostatic test pressure, and number two boiler was under steam pressure at the time of the blast. All other machinery was secured with the exception of the main and auxiliary condenser injections and overboard discharges in number two engine room. Ten percent of allowance of ammunition was stowed on board. There was 57,145 gallons of fuel and diesel oil on board (10% of capacity). The ship was ballasted with approximately 1,280 tons of salt water. There was no special material on board which would effect the ability of the ship to resist damage.

SECTION II

I. Target condition after test.

(a) The draft after the test remained unchanged from pre-test draft. No flooding had occurred.

(b) Structural damage was evident at the following locations: 04 deck - The after starboard side of the stacks were blistered and dented. The ready service ammunition boxes, frame 60, were blistered. After surfaces splinter shields were blistered. All bulkheads, motion picture projector booth, were dished, one port was blown in, and the weather tight door sprung.

03 deck - The bulkheads at frame 102 were dished, and the after surfaces of thwartship bulkheads were blistered.

02 deck - The bulkheads at frames 106 and 134 were dished and blistered.

01 deck - The bulkheads at frame 108 were dished and blistered. The bulkheads at frame 145 were dished and blistered, and the doors were sprung.

Main deck - No damage.

Foremast - The after side was blistered, the manila falls were scorched, and the preservative was partly burned from the surface of the guys. All damage was above the 02 deck level.

Signal mast - The after side was blistered, the yardarms were bent forward about 8 inches, and the linen halyards were scorched.

Main mast - The after side was blistered and burned, the halyards were scorched, and the preservative was partly burned from the surface of the guys.

Funnel - The paint was burned and blistered from the 01 deck to the [illegible], frame 168 to 174 port side, and on 01 deck to the water line frame 160-174 starboard side. A hole 10" x 3" was punctured in the starboard side at frame 90.

Hatches - Number one hatch boards, 01 deck, were thrown to the main deck. Number two hatch tarpaulin, 01 deck, burned away, the hatch boards 01 deck were dished 3" to 4" and thrown to the lower decks. The pontoons, main deck, were displaced and thrown to the second platform.

Interior spaces - The joiner bulkheads, port side main deck, frame 40 to 56 were torn loose from the overhead. The light bulbs were broken on the bulkhead at frame 106 on the 02 deck. Three salt water lines carried away in C-106-L, at frame 160-170, port side.

(c) Operability: All cargo gear, winches, booms, capstans, windlasses, and davits were in operating condition. All ship control, fire control, gunnery, and electronic gear as well as the main engineering plant were in operating condition.

(d) Heat: The heat generated by the blast was of insufficient duration to start fires. The surfaces exposed to the blast were burned and blistered but gave no evidence of sustained burning. The burning of the tarpaulin on number two hatch, 01 deck, is attributed to flying debris from other vessels. It is estimated that 75% of topside personnel would have been burned severely enough to place them out of action.

II. Forces evidenced and effects noted:

(a) Heat: The apparent direction of the blast was from 5° on the starboard quarter. There was no damage forward of frame 60 on the 01 deck. The foremast was blistered above the 02 deck level. The longitudinal surfaces were unaffected by the heat, and all overheads were undamaged. The decks were damaged only where

incandescent gases were deflected downwards by the bulkheads. The heat penetration was insignificant. Only one to two layers of paint were burned or blistered on the exposed surfaces. The shadow effect from shielding is decidedly marked.

(b) Fires: The only fire aboard occurred on number two hatch.

(c) Shock: The direction of the shock wave was from aft to forward, this appeared to set up hogging and panting stresses, however, critical scantlings were undamaged. No major joint failures were in evidence. No misalignment of machinery noted.

(d) Pressure: The direction of pressure was aft to forward about 5° on the starboard quarter and downward. There was no damage to critical scantlings and no complete structural failure resulting from the pressure of the blast. Structural damage was limited to dishing of surfaces by force of blast. A collapsing effect was noticeable on small, tightly closed, structures of light construction such as the movie projection booth.

(e) Effects: The velocity of incandescent gases and absence of sustained temperature rise render shielding of all critical equipment, stores, and personnel from immediate effects of the blast practicable.

III. Results of test on target:

(a) There was no noticeable effect on the main propulsion machinery or ship control equipment nor did the blast have any effect on water-tight integrity or stability.

IV. General Summary.

The effects of the blast on this vessel was negligible. If the crew had been aboard at the time of the fire on number two hatch they could have extinguished it immediately. It is believed that if the personnel of this vessel had been aboard and equipped with flash-proof clothing that there would have been very few casualties, however,

if not so equipped, it is believed that approximately 75% of the top-side personnel would have been burned seriously enough to put them out of action.

It is believed that no below deck casualties would have been suffered by this vessel. It was observed that all clocks left aboard were in perfect running condition and that the majority of light bulbs were intact.

V. Preliminary Recommendation.

No recommendations, other than additional shielding for top-side personnel and equipment, can be made because of the small amount of damage sustained.

CAUTION

This Document Contains
ATOMIC WEAPONS INFORMATION

NOTICE

This document contains atomic weapons information. Distribution is limited to recipients authorized by the Defense Atomic Support Agency (DOD) and/or the Division of Military Application (AEC)

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.

Ardith Jarrett

ARDITH JARRETT
Chief, Technical Resource Center

Completed
1 mar 2000
B.W