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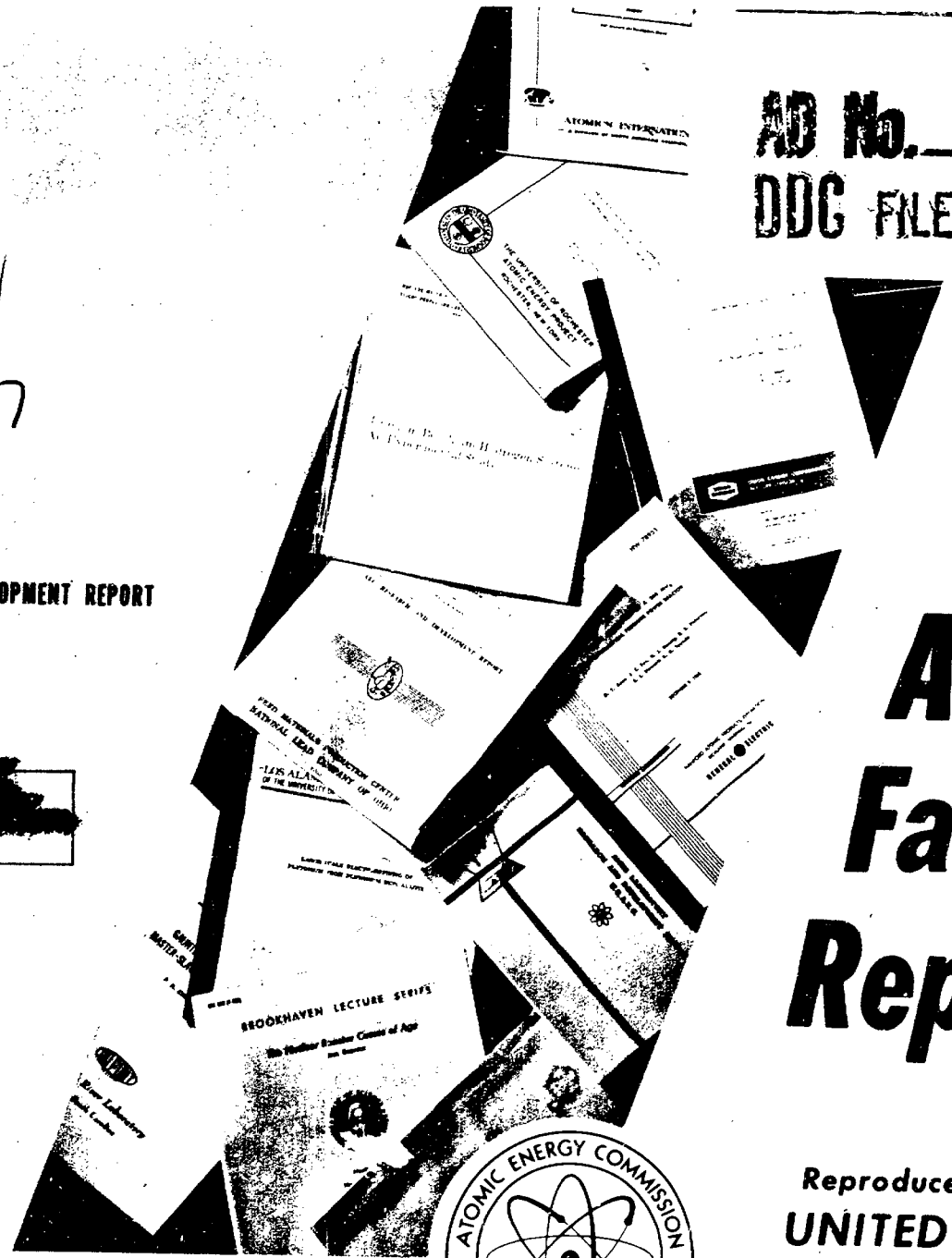

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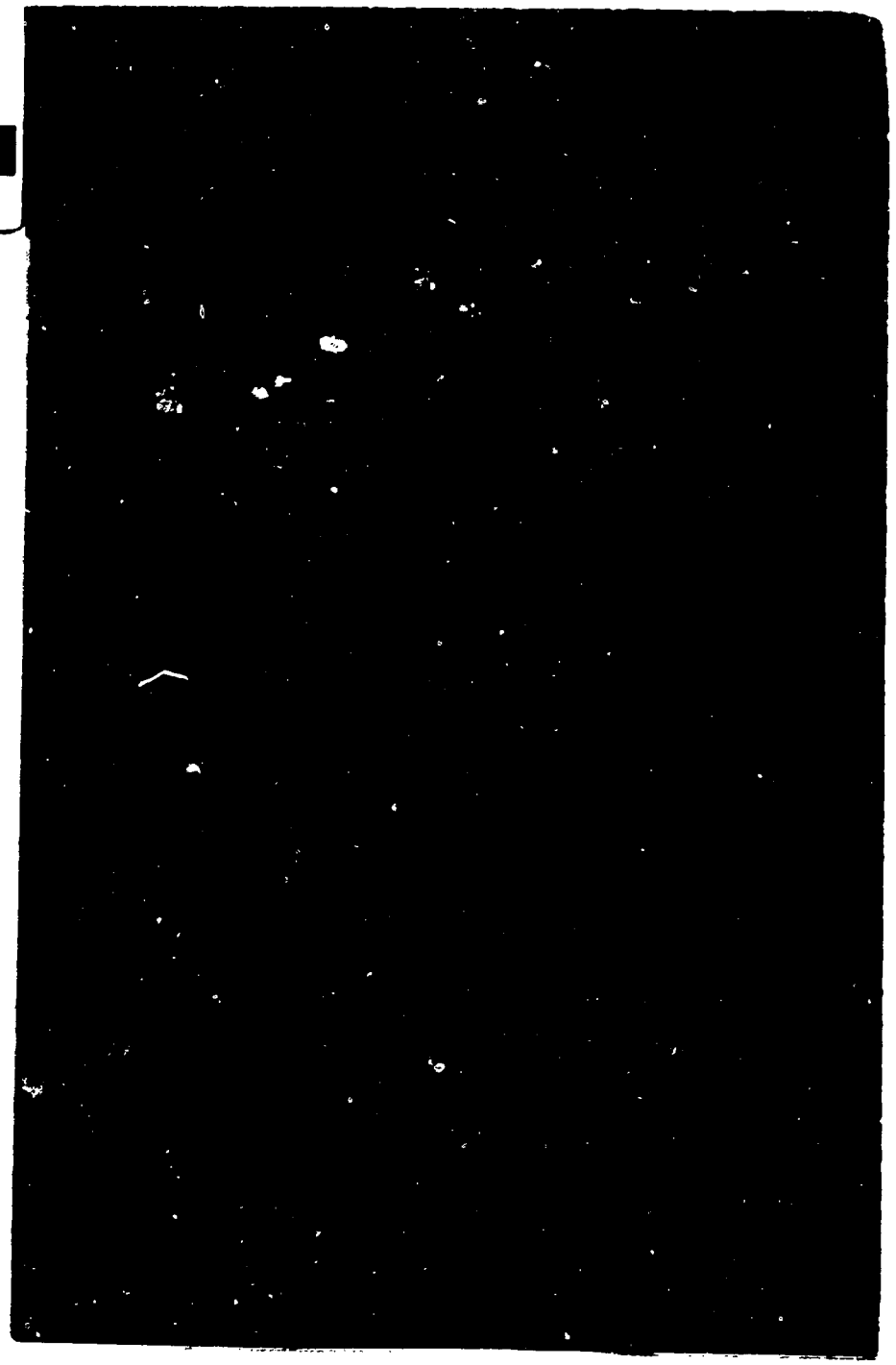

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USS LST 545

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USS LST 545

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U.S.S. LST 545

SHIP CHARACTERISTICS

Building Yard: Missouri Vally B. and I. Co., Evansville, Indiana.

Commissioned: 23 March 1944.

HULL

Length Overall: 328 feet 0 inches.
Length on Waterline: 316 feet 0 inches.
Beam (extreme): 50 feet 0 inches.
Drafts at time of test: Fwd. 7 feet 2 inches.
Aft. 12 feet 3 inches.
Limiting displacement: 4,080 tons.
Displacement at time of test: 3,504 tons.

MAIN PROPULSION PLANT

Main Engines: Two General Motors Diesels, type: 12 - 567 A. One per main shaft.
Reduction Gears: "Falk" - Single reduction. One per engine.
Propellers: Two are installed in ship.
Main Shafts: Two are installed in ship.
Ships Service Generators: Three - 100 KW. - 230 volts, D.C. units are installed.

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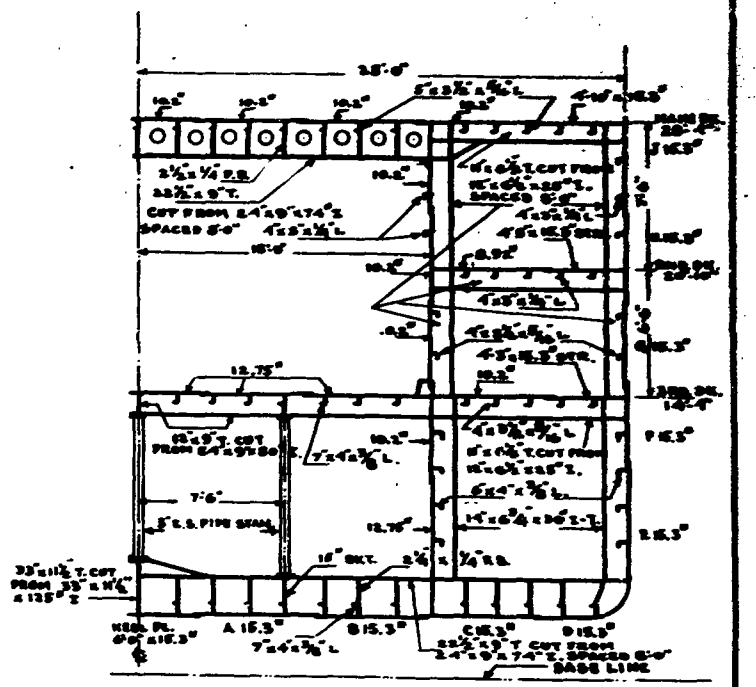


MIDSHIP SECTION

TEST A

SECRET

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

None.

MACHINERY

No comment.

ELECTRICAL

There was no structural damage in way of electrical equipment.

(c) Other damage.

HULL

Not observed.

MACHINERY

None.

ELECTRICAL

No damage occurred to electrical equipment due to test A.

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

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

(b) Fires and explosions.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

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

(c) Shock.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

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

(d) Pressure.

HULL

The only evidence of pressure is that dirt inside ventilation ducts was loosened and collected in the cheese cloth screens at the duct terminals.

MACHINERY

No evidence.

ELECTRICAL

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

(e) Effects peculiar to the atomic bomb.

HULL

None.

MACHINERY

None.

ELECTRICAL

Electrical equipment showed no evidence of damage peculiar to the atom bomb.

III. Results of Test on Target.

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

HULL

Not observed.

MACHINERY

None. The vessel shifted berths under her own power after test A. At this time all machinery was tested except for a few units that were inoperable before test A. Performance was normal.

ELECTRICAL

No damage was apparent to electrical machinery or ship control.

(b) Effect on gunnery and fire control.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

No damage was apparent.

(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

None.

MACHINERY

None.

ELECTRICAL

No electrical damage affected personnel or habitability.

(e) Effect on fighting efficiency.

HULL

None.

MACHINERY

None.

ELECTRICAL

No electrical damage affected the fighting efficiency of the vessel.

IV. Summary of Observers' Impressions and Conclusions.

HULL

No comment.

MACHINERY

LST 545 was outside the effective range of the explosion in test A.

ELECTRICAL

No damage occurred to any electrical equipment on this vessel due to the test.

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; 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.

None.

(b) Fires and explosions.

None.

(c) Shock.

None.

(d) Pressure.

The only evidence of pressure is that dirt inside ventilation ducts was loosened and collected in the cheese cloth screens at the duct terminals.

(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.

None.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

None.

IV. Summary of Observers' Impressions and Conclusions.

No comment.

V. Preliminary Recommendations.

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	No restriction
Salt water ballast	985

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 Forces" 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.

No damage.

B. Superstructure.

No damage. Dirt inside ventilation ducts was loosened and collected in the cheese cloth screens at the duct terminals.

C. Turrets, Guns, and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

Not applicable.

E. Weather Deck.

No damage. The main deck cargo and vehicle hatch covers were secured by strongbacks and did not move. Elastic deflection of the main deck, as recorded by scratch gages was approximately one inch. There was no permanent set.

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.

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.

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.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

(e) Effects apparently peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery and ship control.

None. The vessel shifted berths under her own power after Test A. At this time all machinery was tested except for a few units that were inoperable before Test A. Performance was normal.

(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.

LST545 was outside the effective range of the explosion in 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 target test had no effect on the overall operation of the machinery plant. All machinery was operated after the test. Performance was normal.

B. Boilers.

Neither the heating boiler nor its appurtenances were damaged by Test A.

C. Blowers.

Included under B.

D. Fuel Oil Equipment.

Included under B.

E. Boiler Feedwater Equipment.

Included under B.

F. Main Propulsion Machinery.

Undamaged. Both main engines were operated when the ship shifted berths under her own power. Performance was normal.

G. Reduction Gears.

Undamaged. Performance was normal during operation of the main engines.

H. Shafting and Bearings.

Undamaged. Shafting and bearings were checked with the ship underway. Performance was normal.

I. Lubrication System.

Undamaged. The lube oil system was checked with the ship underway. Performance was normal.

J. Condensers and Air Ejectors.

Not Applicable.

K. Pumps.

Undamaged. All pumps have been tested at normal capacity and pressure.

L. Auxiliary Generators (Turbines and Gears).

Not Applicable.

M. Propellers.

Undamaged. Visual inspection from the surface reveals no indication of damage. Performance was normal with the ship underway.

N. Distilling Plant.

Undamaged. One unit was inoperable before Test A. Its condition was not changed by the test. The other unit was placed in operation immediately after the test, and functioned normally.

O. Refrigeration Plant.

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

P. Winches, Windlasses, and Capstans.

Undamaged. All deck machinery was used in normal operation and tested under load after Test A.

Q. Steering Engine.

Undamaged. Performance was normal with the ship underway.

R. Elevators, Ammunition Hoists, Etc..

Undamaged. The tank deck elevator was operated after Test A, and functioned normally.

S. Ventilation (Machinery).

Undamaged. All vent motors and fans are operable and have been tested at full rating.

T. Compressed Air Plant.

Undamaged. The compressors have been tested at full load.

U. Diesels (Generators and Boilers).

Undamaged. Generator #2 and #3 have been operated at full load with no indication of any damage. Generator #1 was inoperable before Test A. Its condition was not changed by the test.

V. Piping System.

Undamaged. The piping systems have been tested under pressure.

W. Miscellaneous.

Undamaged. Laundry, galley, and machine shop equipment have been in operation since 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 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.

There was 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.

(d) Pressure.

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

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

Electrical equipment showed no evidence of damage peculiar to the atom bomb.

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 was 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.

IV. General Summary of Observers' Impressions and Conclusions.

No damage occurred to any electrical equipment on this vessel due to the test.

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 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. Ship's 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.

C. Electric Propulsion Control Equipment.

Not Applicable.

D. Generators - Ships Service.

No damage.

E. Generators - Emergency.

Not Applicable.

F. Switchboards, Distribution and Transfor 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.

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

Not Applicable.

V. F.C. Switchboards.

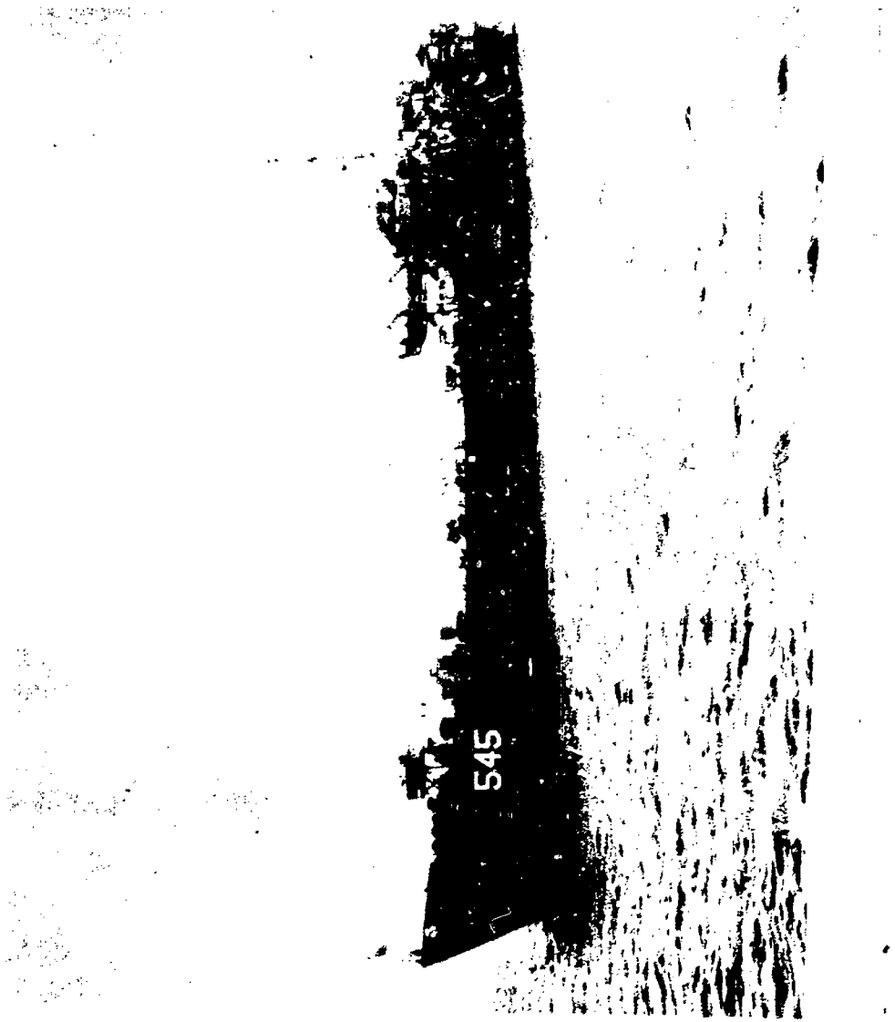
Not Applicable.

SECTION IV

PHOTOGRAPHS

TEST ABLE

AA-CR-227-87-75. View from off starboard beam after Test A.



AA-CR-227-87-79. View from off port bow after Test A.

APPENDIX

COMMANDING OFFICERS REPORT

TEST ABLE

REPORT # 11

COMMANDING OFFICERS REPORT

SECTION I

The U.S.S. LST #545 was anchored in Berth #19, 4000 yards north of the U.S.S. NEVADA. The material condition of the hull and superstructure at the time of the test was excellent; the material condition of the Engineering Department was poor. The overall condition was such that damage to test equipment, inflamables and ammunition could have been controlled.

There was no damage to the ship as a result of the test and the ability of the ship to operate or fight was not impaired.

The target test had no damaging affect whatsoever on the ship. There is no evidence of fires, extreme heat, or damage to any part of the ship. Extreme pressures were present and their effect was noted on the deck compression gauges. The scratch pattern on the gauges shows that the hull of the ship compressed and expanded very rapidly with an accordian like movement but after the passing of the blast, the hull returned to its original pattern. From all indications, it is considered that it would have been possible for the ship to have remained in operation both during and after the test. It is also believed that it would have been conceivably possible for personnel to have remained at their stations below decks and not have suffered major injuries from the blast.

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TRC

18 April 1997

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

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

AD-366588	XRD-203-Section 12
AD-366589	XRD-200-Section 9
AD-366590	XRD-204-Section 13
AD-366591	XRD-183
AD-366586	XRD-201-Section 10
AD-367487	XRD-131-Volume 2
AD-367516	XRD-143
AD-367493	XRD-142
AD-801410L	XRD-138
AD-376831L	XRD-83
AD-366759	XRD-80
AD-376830L	XRD-79
AD-376828L	XRD-76
AD-367464	XRD-106
AD-801404L	XRD-105-Volume 1
AD-367459	XRD-100

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AD-376836L	XRD-98
AD-376835L	XRD-97
AD-376834L	XRD-96
AD-376833L	XRD-95
AD-376832L	XRD-94 re-ingest
AD-367458	XRD-93
AD-367457	XRD-92-Volume 2
AD-367456	XRD-91-Volume 1
AD-367455	XRD-90
AD-367454	XRD-89
AD-367453	XRD-88
AD-367452	XRD-87
AD-366764	XRD-86
AD-376837L	XRD-99
AD-366758	XRD-78
AD-366734	XRD-44
AD-366763	XRD-85
AD-376829L	XRD-77
AD-367462	XRD-103
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In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

Ardith Jarrett

ARDITH JARRETT
Chief, Technical Resource Center