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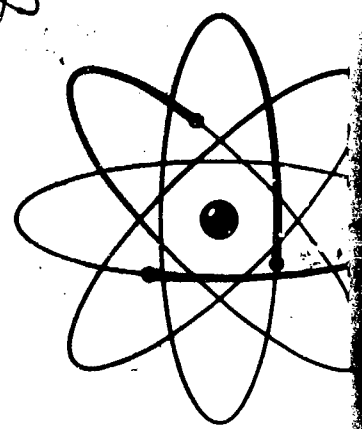
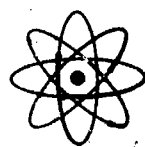
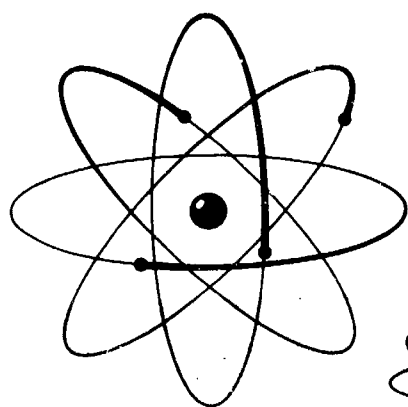
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XRD-139
Report Number

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United States Atomic Energy Commission
Division of Technical Information

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D. [Signature]

Incl 25 of 1

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(14) XRD-139



⑨ BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT.

⑥ Operation Crossroads,
USS LST 220.

⑪ 1946

⑫ 31p.

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



APPROVED:

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



USS LST 220

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193 600

Classification (cancelled) (Changed to ~~CONFIDENTIAL~~)
By authority of ~~SECRET~~ OFFICE OF SECRETARY OF DEFENSE
By ~~John H. ...~~ ~~USAF~~

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USS LST 220

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 By [Signature] 10/30/50 USAF

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 THE NATIONAL ARCHIVES
 AT COLLEGE PARK, MARYLAND
 ATOMIC ENERGY ACT 1954

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U.S.S. LST 220

SHIP CHARACTERISTICS

Building Yard: Chicago Bridge and Iron Co., Seneca,
Illinois.

Commissioned: 26 August, 1943.

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. 6 feet 3 inches.

Aft. 12 feet 8 inches.

Limiting displacement: 4,080 tons.

Displacement at time of test: 3,404 tons.

MAIN PROPULSION PLANT

Main Engines: Two General Motors Diesels, type,
12 - 567 A. One per main shaft.

Reduction Gears: Type: "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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USS LST 220

Page 3 of 31 Pages

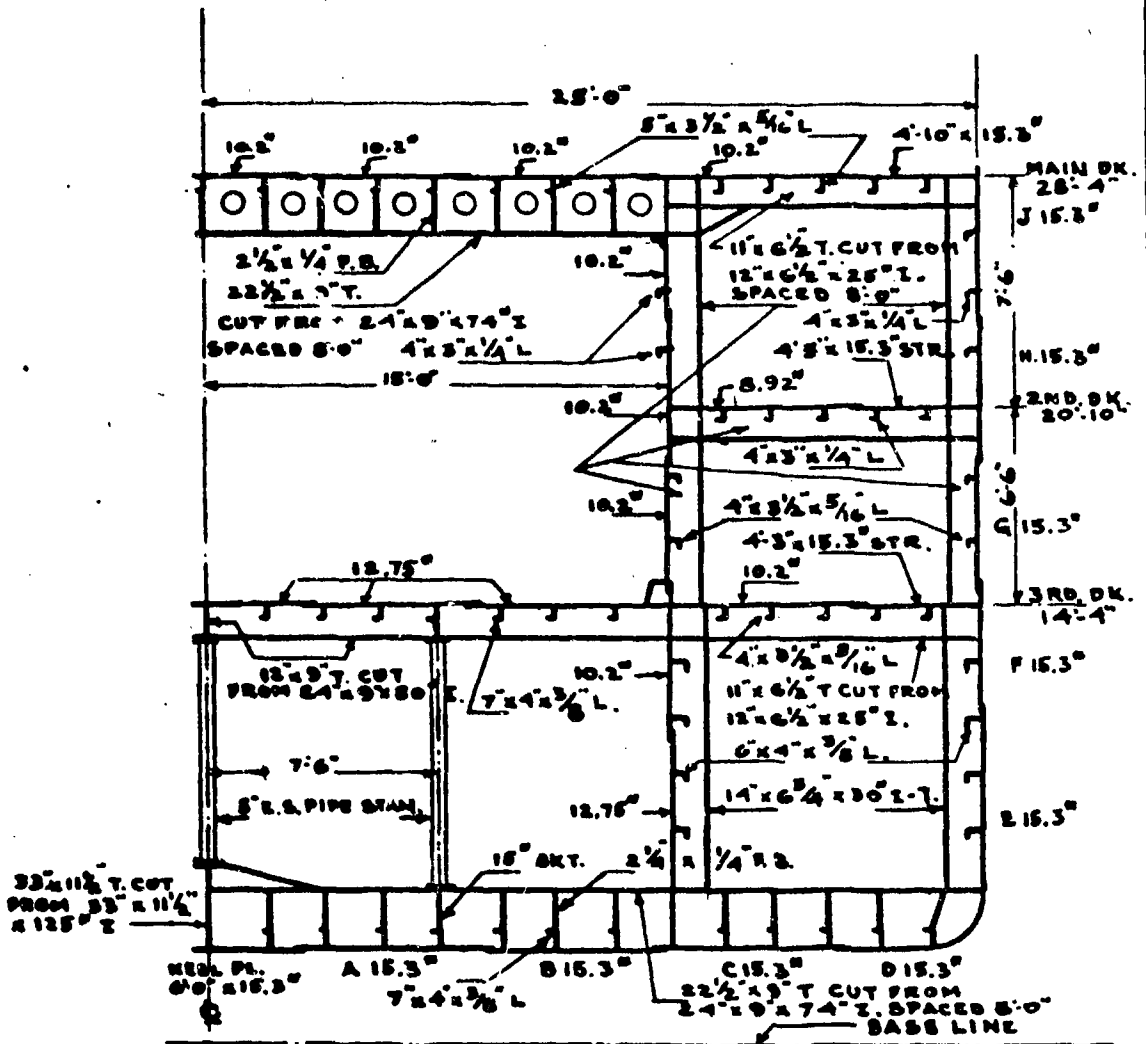
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By John H. Hight USAF APR 20 1952

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MIDSHIP SECTION TEST B

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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

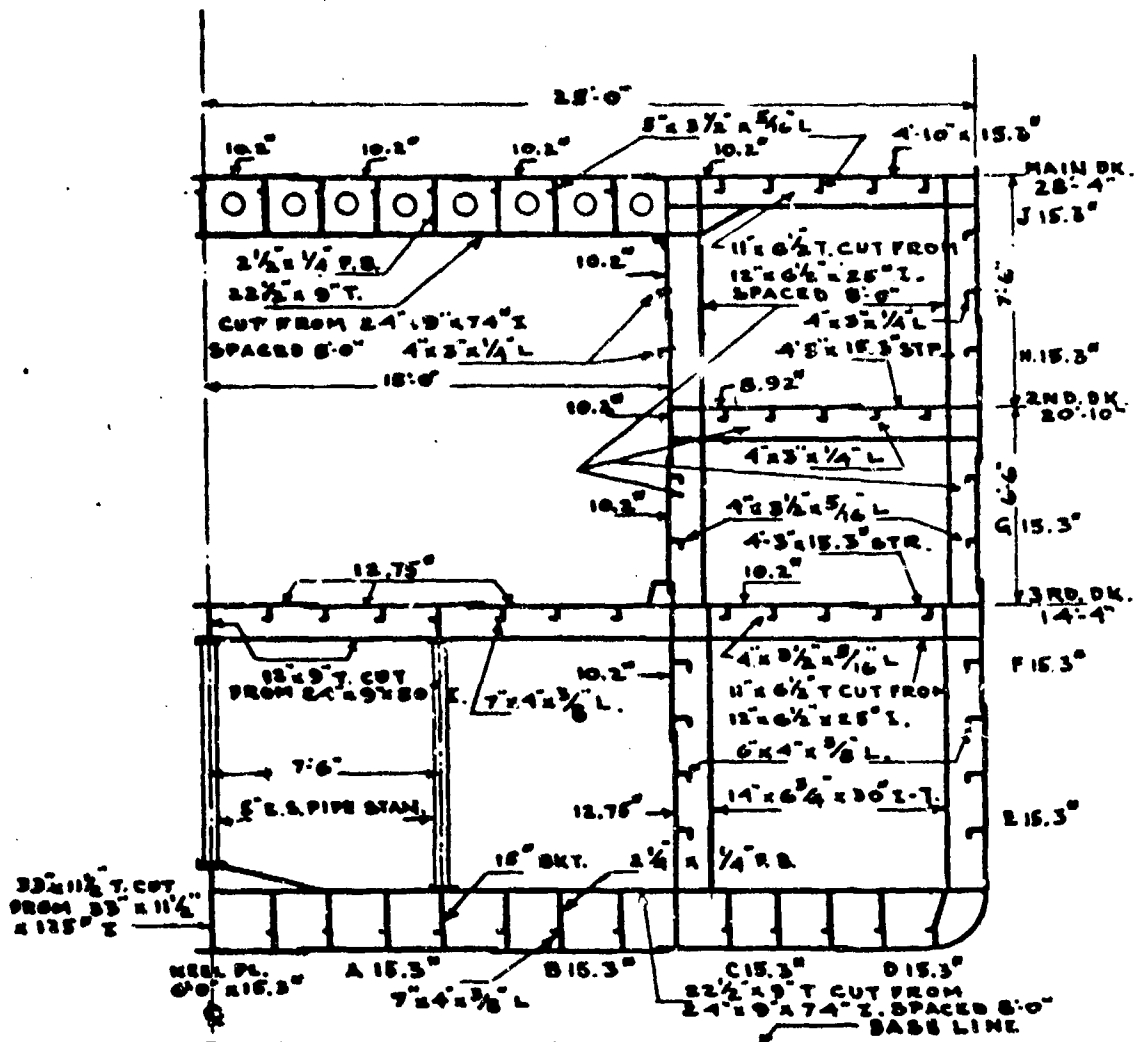
Not observed.

MACHINERY

There is no damage to machinery of this vessel, insofar as can be determined by visual inspection. No machinery on this vessel was operated after Test B.

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USS LST 220



MIDSHIP SECTION TEST B

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TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Draft : 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

There is no damage to machinery of this vessel, insofar as can be determined by visual inspection. No machinery on this vessel was operated after Test B.

~~SECRET~~

USS LST 220

ELECTRICAL

Test B. No damage occurred to electrical equipment due to

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.

~~SECRET~~

USS LST 220

(c) Shock.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

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

(d) Pressure.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

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

(e) Effects peculiar to the atom bomb.

HULL

None.

MACHINERY

Not

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USS LST 220

ELECTRICAL

Evidence of radioactivity was the only effect noted which was peculiar to the atom bomb.

III. Results of Test on Target.

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

HULL

Not observed.

MACHINERY

None.

ELECTRICAL

No damage was apparent to electrical machinery or ship control.

(b) Effect on gunnery and fire control.

HULL

Not observed.

MACHINERY

No comment.

ELECTRICAL

No damage was apparent to gunnery and fire control.

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USS LS 220

(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

The only effect on the fighting efficiency is that resulting from radiological contamination.

MACHINERY

None.

SECRET

USS LST 220

No electrical damage affected the fighting efficiency of the vessel.

IV. Summary of Observers' Impressions and Conclusions.

HULL

None.

MACHINERY

LST 220 was outside the effective range of the explosion during Test B.

ELECTRICAL

No damage was evident on any electrical equipment on this vessel. It appears that present electrical equipment has sufficient shock resistance to withstand the effects of the B Bomb at the distance of this vessel from the center of the blast.

Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

None.

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USS LST 220

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

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

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

(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.

None.

(e) Effects peculiar to the Atomic Bomb.

None.

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USS LST220

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.

None.

(e) Effect on fighting efficiency.

The only effect on the fighting efficiency is that resulting from radiological contamination.

IV. Summary of Observers' Impressions and Conclusions.

None.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

VI. Instructions for loading the vessel specified the following:

| ITEM | LOADING |
|--------------------------------|----------------|
| Fuel oil | Minimum |
| Diesel oil | Minimum |
| Ammunition | 10% |
| Potable and reserve feed water | 95% |
| Salt water ballast | No restriction |
| SECRET | USS LST220 |

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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USS LST220

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

No damage. General views of the ship after Test B are on pages 28 and 29.

B. Superstructure.

No damage.

C. Turrets, Guns, and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

Not applicable.

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.

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USS LST 220

- 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.

SECRET

USS IST 220

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.

There is no damage to machinery of this vessel, insofar as can be determined by visual inspection. No machinery on this vessel was operated after Test B.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

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USS LST 220

(e) Effects apparently peculiar to the atom bomb.

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 water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None.

(e) Total effect on fighting efficiency.

None.

IV. General Summary.

LST 220 was outside the effective range of the explosion during Test B.

V. Preliminary Recommendation.

None.

SECRET

USS LST 220

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 B.

(b) Areas of major damage.

There are no areas of damage.

(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 operation of the machinery plant.

B. Boilers.

The heating boiler and its accessories were not damaged by Test B.

C. Blowers.

Apparently undamaged.

D. Fuel Oil Equipment.

Apparently undamaged.

E. Boiler Feedwater Equipment.

Apparently undamaged.

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USS LST 220

F. Main Propulsion Machinery.

No apparent damage.

G. Reduction Gears.

No apparent damage.

H. Shafting and Bearings.

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

Not applicable.

K. Pumps.

No apparent damage.

L. Auxiliary Generators (Turbines and Gears).

Not applicable.

M. Propellers.

Propellers were inspected from the surface of the water. They are apparently undamaged.

N. Distilling Plant.

No apparent damage.

O. Refrigeration Plant.

No apparent damage.

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USS LST 220

P. Winches, Windlasses, and Capstans.

No apparent damage.

Q. Steering Engine.

No apparent damage.

R. Elevators, Ammunition Hoists, etc.

No apparent damage.

S. Ventilation (Machinery).

No apparent damage.

T. Compressed Air Plant.

No apparent damage.

U. Diesels (Generators and Boats).

No apparent damage.

V. Piping Systems.

No apparent damage.

W. Miscellaneous.

No apparent damage.

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USS LST 220

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.

1. Drafts and list were the same as before test Baker.

2. 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 B.

II. Forces evident 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.

SECRET

LST 220

(d) Pressure.

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

(e) Effects peculiar to the Atom Bomb.

Evidence of radioactivity was the only effect noted which was peculiar to the Atom Bomb.

III. Effects of damage.

(a) Effect on electrical machinery and ship control.

No damage was apparent to electrical machinery or ship control.

(b) Effect on gunnery and fire control.

No damage was apparent to gunnery and fire control.

(c) Effect on watertight integrity and stability.

No electrical damage affected watertight 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 was evident on any electrical equipment on this vessel. It appears that present electrical equipment has sufficient shock

resistance to withstand the effects of the B Bomb at the distance of this vessel from the center of the blast.

V. Recommendations.

None.

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LST 220

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.

B. Electric Propulsion Rotating Equipment.

Not applicable.

C. Electric Propulsion Control Equipment.

Not applicable.

D. Ship's Service Generators.

No damage.

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LST 220

E. Emergency Generators.

Not applicable.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

Not applicable.

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.

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LST 220

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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.

Not applicable.

V. F. C. Switchboards.

Not applicable.

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LST 220

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SECTION IV

PHOTOGRAPHS

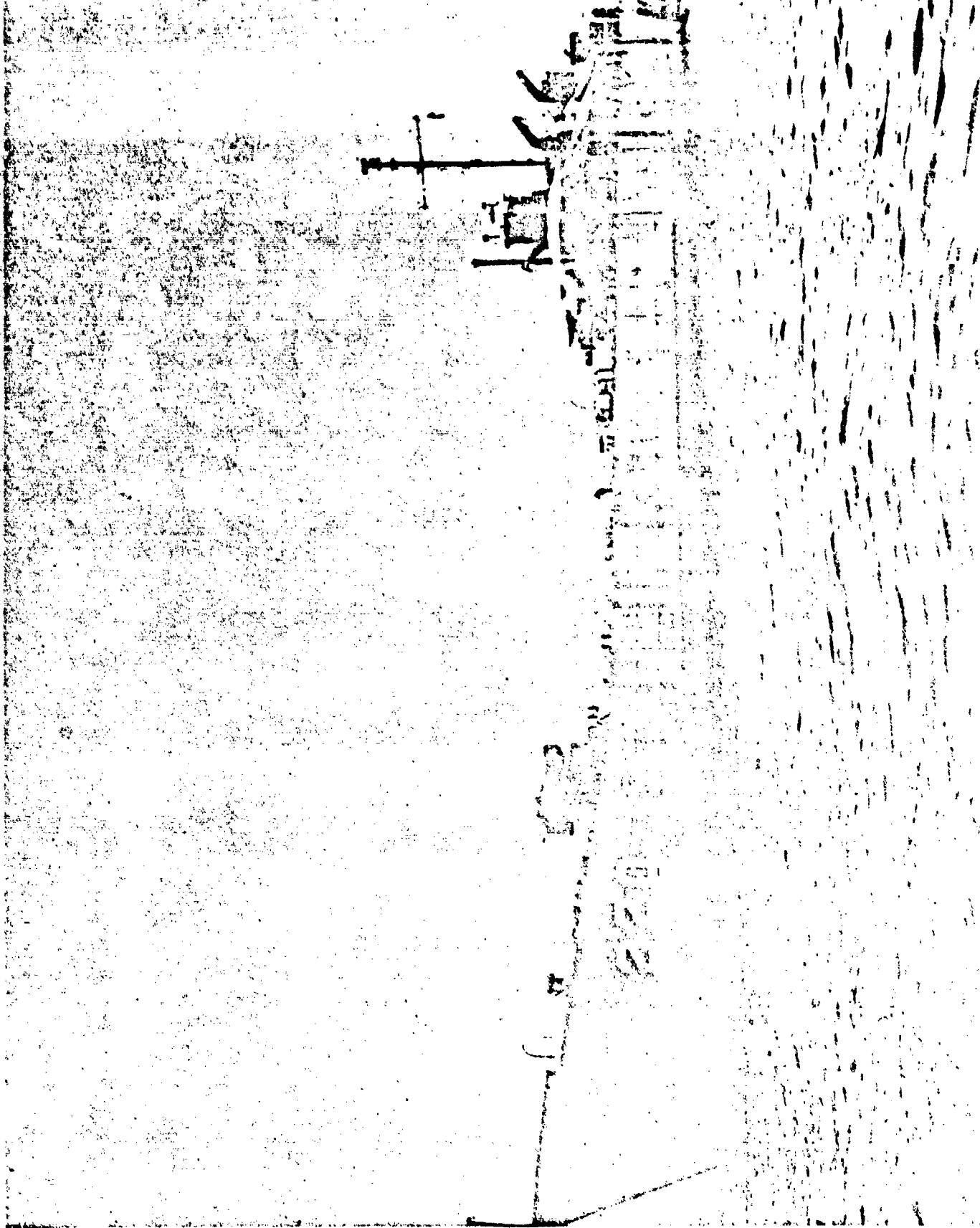
TEST BAKER

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USS LST 220

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AB-CR-227-289-135. View from off port bow after Test B.

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AB-CR-227-289-131. View from off starboard quarter after Test B.

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APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

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USS LST 220

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COMMANDING OFFICERS REPORT

REPORT # 5

SECTION I

I have to report that upon reboarding LST 220 on 13 August 1946, no evidence of damage resulting from Test B was found.

All rigging, paint work, machinery, and hull structures were intact. No circuits were energized and no machinery was run, but visual inspection of all showed them to be in good condition.

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USS LST 220
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Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

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 4 | XRD-203-Section 12 ✓ |
| AD-366589 L | XRD-200-Section 9 |
| AD-366590 L | XRD-204-Section 13 |
| AD-366591 L | XRD-183 |
| / ✓ AD-366586 X | XRD-201-Section 10 ✓ |
| / ✓ AD-367487 4 | XRD-131-Volume 2 ✓ |
| / ✓ AD-367516 4 | XRD- 1 143 ✓ |
| / ✓ AD-367493 4 | XRD-142 ✓ |
| AD-801410L ✓ | XRD-138 ✓ |
| AD-376831L ✓ | XRD-83 ✓ |
| AD-366759 L | XRD-80 |
| / ✓ AD-376830L 4 | XRD-79 ✓ |
| / ✓ AD-376828L 4 | XRD-76 ✓ |
| / ✓ AD-367464 X | XRD-106 ✓ |
| AD-801404L ✓ | XRD-105-Volume 1 ✓ |
| / ✓ AD-367459 X | XRD-100 ✓ |

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18 April 1997

Subject: Declassification of Reports

| | |
|----------------|--------------------|
| ✓✓ AD-367517 ✕ | XRD-141 ✓ |
| AD-366762 ✓ | XRD-84 |
| AD-366760 ✓ | XRD-81 |
| AD-366761 ✓ | XRD-82 |
| AD-367501 ✓ | XRD-158-Volume 1 |
| AD-367507L ✓ | XRD-152-Volume 4 |
| ✓✓ AD-367495 ✕ | XRD-184 ✓ |
| ✓✓ AD-367485 ✕ | XRD-129 ✓ |
| ✓✓ AD-367484 ✕ | XRD-128 ✓ |
| ✓ AD-367483 ✕ | XRD-127 ✓ |
| ✓ AD-367482 ✕ | XRD-126 ✓ |
| AD-367488 ✓ | XRD-132 |
| ✓ AD-367480 ✕ | XRD-124 ✓ |
| AD-801409L ✓ | XRD-135 ✓ |
| ✓ AD-367490 ✕ | XRD-136 ✓ |
| ✓ AD-367492 ✕ | XRD-137 ✓ |
| AD-801411L ✓ | XRD-139 ✓ |
| ✓ AD-367518 ✕ | XRD-140 ✓ |
| AD-367515 ✓ | XRD-144 |
| AD-367514 ✓ | XRD-145 |
| ✓ AD-367468 ✕ | XRD-110-Volume 2 ✓ |
| AD-367513 ✓ | XRD-146 |
| ✓ AD-367497 ✕ | XRD-162 ✓ |

TRC

18 April 1997

Subject: Declassification of Reports

AD-801406L ✓ XRD-114 ✓

In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

Arduith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center