

UNCLASSIFIED

AD NUMBER

AD376834

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., 18 Apr 1997; DSWA ltr., 18 Apr
1997

THIS PAGE IS UNCLASSIFIED

AD No. 376834

DDC FILE COPY

IAL

Div. 5-1 Re-pro-
TECHNICAL

of the
29 NOV 1965
DEFENSE ATOMIC
SUPPORT AGENCY

A

Facsimile

Report

DDC

NOV 8 1965

Reproduced by

UNITED STATES

ATOMIC ENERGY COMMISSION

Division of Technical Information

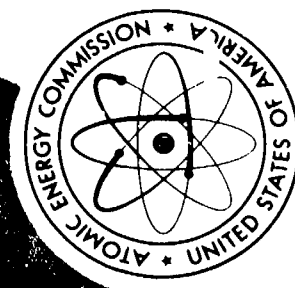
P.O. Box 62 Oak Ridge, Tennessee 37831

EXCLUDED FROM AUTOMATIC

REGRADING: DATE 11/1/200.10

DOES NOT APPLY

CONFIDENTIAL



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.

Incl 14 of 1

XRD-96

RESEARCH AND DEVELOPMENT REPORT

Excluded from automatic downgrading and declassification

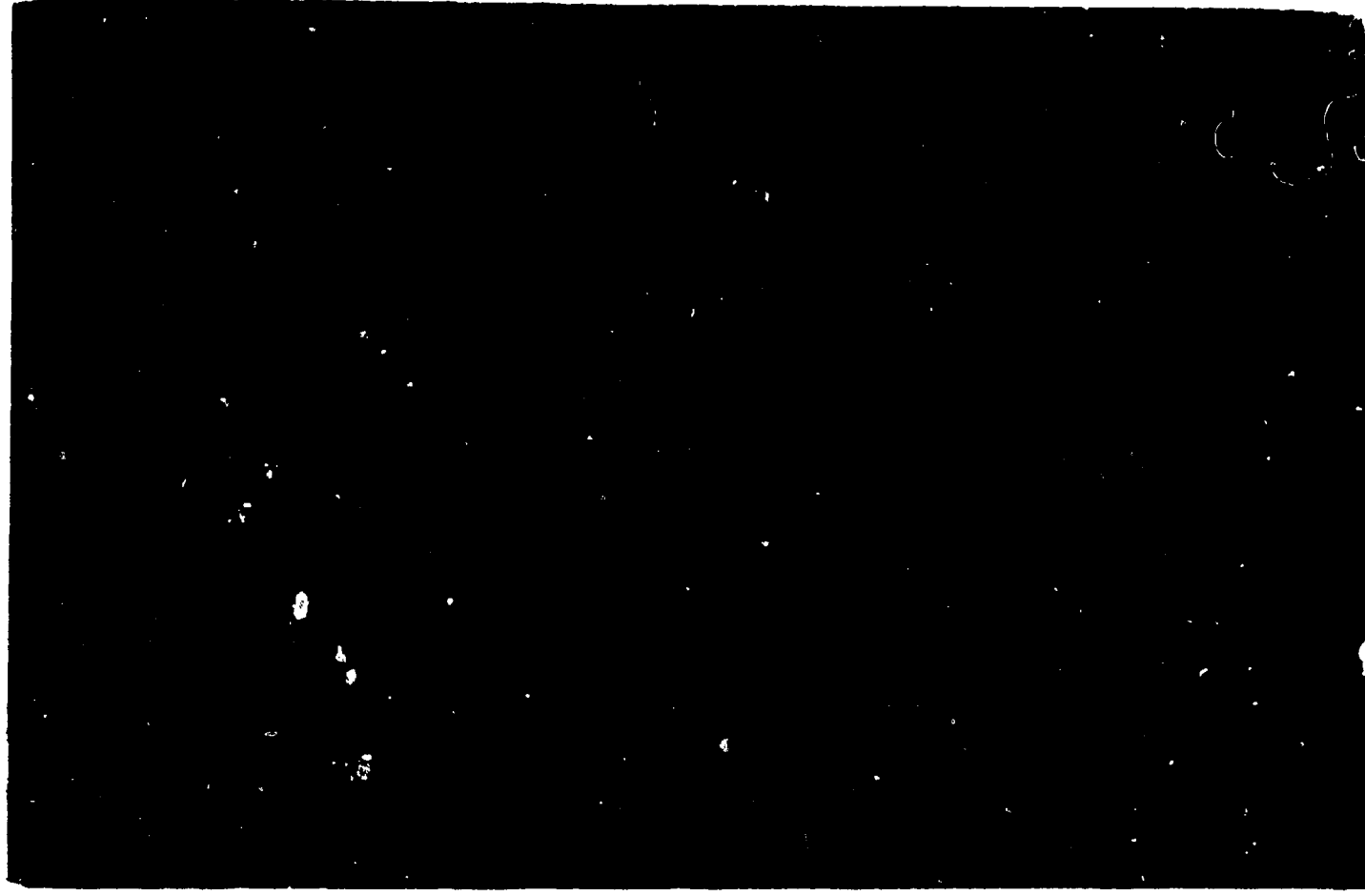
APPROVED BY	
DATE	TIME
2 & 4	5:00
WASHINGTON/AVAILABILITY	
DATE	
AVAIL. END OF SPECIAL	

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

96



(14)

INFORMATION

CLASSIFICATION

EXEMPTED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

EXEMPTED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

EXEMPTED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

USS INDEPENDENCE (CVL 22)

WEST BAKER [U] 18

CONTAINS WEAPON DATA

CONFIDENTIAL

EXEMPTED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

EXEMPTED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

EXEMPTED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

OPERATION CROSSROADS

DIRECTOR OF SHIP MATERIAL

JOINT TASK FORCE ONE

CONFIDENTIAL

REG. NO. 18

CONFIDENTIAL

11 1946

12 32p

(1942)

38

CONFIDENTIAL

BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT

GROUP 3

Excluded at 12 year intervals
Not Automatically Declassified



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

CONFIDENTIAL

Approved: *[Signature]* Date MAY 14, 1962
F. X. Forest,
Captain, U.S.N.

APPROVED:

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

USS INDEPENDENCE (CVL22)

Page 1 of 49 Pages

CONFIDENTIAL



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)	19
Electrical Technical Inspection Report (Section III)	28
Photographic Section (Section IV)	33
Commanding Officers Report (Appendix)	38

CONFIDENTIAL

Approved: *[Signature]* Date MAY 16, 1952
F. X. Forest,
Captain, U.S.N.

USS INDEPENDENCE (CVL22)

Page 2 of 49 Pages



CONFIDENTIAL

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

L 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. Considerable quantities of water from the base surge entered the hangar deck and was bound in the elevator wells.

- (b) Structural damage.

HULL

Structural damage to this ship as a result of Test B is negligible. It is considered that slight accentuation of damage occurred in various areas already seriously weakened as a result of Test A. Any increase in damage is of little real significance because of the previous weakening of the structure involved. It is probable that had the structure been normal prior to Test B, no significant damage would have been noted.

MACHINERY

The temporary stack installed after Test A, was moderately dished.

ELECTRICAL

There was no damage to electrical equipment due to the increase in hull damage resulting from Test B.

- (c) Other damage.

HULL

Not observed.

USS INDEPENDENCE (CVL22)

~~SECRET~~

MACHINERY

There was no apparent damage to the machinery installation except to the temporary stack referred to under (b) above.

ELECTRICAL

There was no further damage to the electric plant, ship control, fire control or gunnery equipment as a result of Test B.

II. Forces evidenced and effects noted.

(a) Heat.

HULL

No heat effects were noted.

MACHINERY

There was no evidence of heat.

ELECTRICAL

None evidenced.

(b) Fires and explosions.

HULL

There were no fires or explosions.

MACHINERY

There was no evidence of fires or explosions.

ELECTRICAL

None evidenced.

USS INDEPENDENCE (CVL22)

(c) Shock.

HULL

No damage is known to have occurred from the underwater shock wave. Tools and loose furniture did not move. Bombs and ammunition in the magazines showed no signs of movement.

MACHINERY

There was no evidence of shock.

ELECTRICAL

Shock of a minor nature was evidenced throughout the vessel by loose gear and small objects not properly secured being afloat. However, there was no apparent damage to any electrical equipment that could be determined by visual inspection. Close examination of gyro compass equipment, automatic telephone exchange and fluorescent lighting fixtures which are especially susceptible to damaging effect of shock as compared to other electrical equipment, revealed no damage whatsoever as a result of this test. The automatic telephone system was energized and put in operation. It required no repair or adjustment to give satisfactory service.

(d) Pressure.

HULL

Blast pressure struck this ship at an angle of approximately 265 degrees relative. A slight accentuation of Test A damage apparently occurred as a result of blast pressure. A temporary uptake installed on the hangar deck, frames 65-68, starboard, was severely dished.

MACHINERY

The crumpling of the temporary stack was caused by pressure. This may have been air blast pressure or pressure exerted

USS INDEPENDENCE (CVL22)

by the heavy mass of water falling on the vessel immediately after the explosion, or by a combination of both.

ELECTRICAL

There was no apparent damage to any electrical equipment from the effects of pressure.

(e) Effects peculiar to the Atomic Bomb.

HULL

None, except that of radioactivity.

MACHINERY

Damage to stacks on a vessel so far away from an explosion is believed to be peculiar to the Atom Bomb.

ELECTRICAL

Radioactivity and wave phenomena were the only effects noted peculiar to the atom bomb.

III. Results of Test on Target.

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

HULL

None.

MACHINERY

Damage to the temporary stack would have had little effect but might have slightly reduced boiler capacity. Otherwise, the test had no effect on machinery or ship control. If the stacks had been in their original condition before Test B, they would probably have been damaged. The amount of damage they would have received is conjectural.

SECRET

USS INDEPENDENCE (CVL22)

but it is not believed that it would have been as great as they received in Test A. However, some reduction in maximum possible steaming rate and hence some reduction in maximum speed would undoubtedly have resulted.

ELECTRICAL

None.

(b) Effect on gunnery and fire control.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

None.

(c) Effect on watertight integrity and stability.

HULL

None. There was no evidence of change in watertight integrity or stability.

MACHINERY

No comment.

ELECTRICAL

Not observed.

(d) Effect on personnel and habitability.

SECRET

USS INDEPENDENCE (CVL22)

HULL

There was practically no effect on habitability. Aside from the effects of radioactivity there would have been little effect on personnel.

MACHINERY

Test B would have had no effect on personnel or habitability below decks, except for possible effect of radioactivity.

ELECTRICAL

Except for the effects of radioactivity, it is believed that personnel and habitability would not have been appreciably affected.

(e) Effect on fighting efficiency.

HULL

Fighting efficiency would have been unaffected except for the effects on personnel of air blast and radioactivity, and the effect of blast pressure on airplanes in exposed locations.

MACHINERY

If the ship had been undamaged before Test B, the total effect on fighting efficiency, insofar as machinery is concerned, would have been some reduction in maximum speed because of damage to stacks.

ELECTRICAL

Due to there being no further increase in damage to electrical equipment, it is considered the fighting efficiency would have been unchanged.

IV. Summary of Observers' Impressions and Conclusions.

HULL

SECRET

USS INDEPENDENCE (CVL22)

Page 10 of 49 Pages

The ship does not appear to have suffered any damage of significance as a result of Test B. The total effect of the forces released during the test was to accentuate previous damage except for some hazard to airplanes on the flight deck.

MACHINERY

Damage to this vessel from Test B is difficult to assess because of her condition after Test A. However, it is not believed that any more damage would have been done by Test B if the ship had been in her original condition except that to stacks, discussed above.

ELECTRICAL

Except for the radiological phenomena experienced, this vessel does not appear to have suffered any new damage as the result of Test B. The total effect of the forces released during the test was to accentuate previous damage. It is considered that this vessel was outside the effective range of the bomb.

V. Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

None.

SECRET

USS INDEPENDENCE (CVL22)

Page 11 of 49 Pages

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. Considerable quantities of water from the base surge entered the hangar deck and were found in the elevator wells.

- (b) Structural damage.

Structural damage to this ship as a result of Test B is negligible. It is considered that slight accentuation of damage occurred in various areas already seriously weakened as a result of Test A. Any increase in damage is of little real significance because of the previous weakening of the structure involved. It is probable that had the structure been normal prior to Test B, no significant damage would have been noted.

- (c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

No heat effects were noted.

- (b) Fires and explosions.

There were no fires or explosions.

SECRET

USS INDEPENDENCE (CVL22)

(c) Shock.

No damage is known to have occurred from the underwater shock wave. Tools and loose furniture did not move. Bombs and ammunition in the magazines showed no signs of movement.

(d) Pressure.

Blast pressure struck this ship at an angle of approximately 265 degrees relative. A slight accentuation of Test A damage apparently occurred as a result of blast pressure. A temporary uptake installed on the hangar deck, frames 65-68, starboard, was severely dished.

(e) Effects apparently peculiar to the atom bomb.

None, except that of radioactivity.

III. Effects of Damage.

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

None.

(b) Effect on gunnery and fire control.

None.

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

None. There was no evidence of change in water-tight integrity or stability.

(d) Effect on personnel and habitability.

There was practically no effect on habitability. Aside from the effects of radioactivity there would have been little effect on personnel.

SECRET

USS INDEPENDENCE (CVL22)

Page 13 of 49 Pages

(e) Effect on fighting efficiency.

Fighting efficiency would have been unaffected except for the effects on personnel of air blast and radioactivity, and the effect of blast pressure on airplanes in exposed locations.

IV. General Summary of Observers' Impressions and Conclusions.

The ship does not appear to have suffered any damage of significance as a result of Test B. The total effect of the forces released during the test was to accentuate previous damage except for some hazard to airplanes on the flight deck.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

VI. Instructions for loading the vessel specified the following:

ITEM	LOADING
Fuel Oil.	33.3%
Diesel Oil.	33.3%
Ammunition.	88.7%
Potable and reserve feed water	95%
Salt water ballast	960

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.

SECRET

USS INDEPENDENCE (CVL22)

Page 14 of 49 Pages

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

Structural damage to this ship as a result of Test B, is negligible. Pressure from air blast or water caused dishing of a temporary uptake to the forward engine room, installed after Test A on the hangar deck, frames 66-69, starboard. This uptake was dished on the starboard and after sides, and deeply creased on top. (Photos 2172-6, 1676-9, pages 35, and 33). Little, if any, other damage is apparent in the hangar space.

At the time of inspection, it was considered that slight local increase in Test A damage had occurred in various areas, as follows:

- (a) A slight closing movement of the flight deck in the region of the expansion joint at frame 62-1/2.
- (b) An increase in severity of shear wrinkles along the waterline on the starboard side.
- (c) Accentuation of a light wrinkle in the starboard shell extending from the main deck at frame 12 to the waterline at frame 118.
- (d) Increase in severity of dishing of the port shell.
- (e) A slight increase in deformation of light bulkheads below the hangar deck between bulkheads 49 and 128.

Inspection of photographs taken after Test B does not reveal any apparent increase in Test A damage. However, it seems likely that slight accentuation of damage did occur, in view of the comparatively large areas of already seriously weakened structure exposed to blast pressure and falling water in Test B. The effect of weather contributed to an appearance of accentuated Test A damage. Flaking of paint and formation of rust outlined the crests of wrinkles, and vertical streaks of dye and rust, painted on by dripping water, emphasized dishing and washboarding of shell plating.

SECRET

USS INDEPENDENCE (CVL22)

Page 15 of 49 Pages

A series of main-to-second deck measurements was made between Tests A and B, frames 47 to 119, port and starboard. Inspection showed that Test B had no effect on these measurements.

Any increase in damage is of little real significance because of the previous weakening of the structure involved. It is probable that had the structure been normal prior to Test B, no significant damage would have been noted.

No damage to structure, machinery, or electrical equipment is known to have resulted from the underwater shock wave.

B. Superstructure.

There is little apparent increase in damage to the island structure.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

Not Applicable.

E. Flight Deck.

No increased damage of any significance. Two airplanes on the flight deck suffered shattering of windshields and canopies as a result of air blast. One of these planes shows in photo 1712-9, page 34.

F. Exterior Hull.

Essentially no increase in damage.

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

No damage. Loose furniture remained in place and tools left on the flight deck were unmoved. Two previously warped hatch

SECRET

USS INDEPENDENCE (CVL22)

Page 16 of 49 Pages

covers on the barge deck were bounced open as a result of air blast.

H. Armored Decks and Miscellaneous Armor.

No damage.

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

No damage. Holding-down bolts on representative machinery foundations were sounded and found to be unaffected.

J. Underwater Hull.

No damage is known to have occurred to the underwater hull or to machinery foundations.

K. Tanks.

No damage.

L. Flooding.

None. There was no change in drafts, trim, or list.

M. Ventilation.

No damage.

N. Ship Control.

No damage.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage. Bombs and ammunition in the magazines showed no signs of movement.

SECRET

USS INDEPENDENCE (CVL22)

Page 17 of 49 Pages

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

S. Miscellaneous.

No comment.

SECRET

USS INDEPENDENCE (CVL22)

Page 18 of 49 Pages

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.

The temporary stack installed after test A, was moderately dished.

(c) Other damage.

There was no apparent damage to the machinery installation except to the temporary stack referred to under (b) above.

II. Forces Evidenced and Effects Noted.

(a) Heat.

There was no evidence of heat.

(b) Fires and explosions.

There was no evidence of fires or explosions.

(c) Shock.

There was no evidence of shock.

(d) Pressure.

The crumpling of the temporary stack was caused by pressure. This may have been air blast pressure or pressure exerted

SECRET

U.S.S. INDEPENDENCE (CVL22)

Page 19 of 49 Pages

by the heavy mass of water falling on the vessel immediately after the explosion, or by a combination of both.

(e) Any Effects Apparently peculiar to the atom bomb.

Damage to stacks on a vessel so far away from an explosion is believed to be peculiar to the atom bomb.

III. Effects of Damage.

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

Damage to the temporary stack would have had little effect but might have slightly reduced boiler capacity. Otherwise, the test had no effect on machinery or ship control. If the stacks had been in their original condition before test B, they would probably have been damaged. The amount of damage they would have received is conjectural but it is not believed that it would have been as great as they received in test A. However, some reduction in maximum possible steaming rate and hence some reduction in maximum speed would undoubtedly have resulted.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on watertight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

Test B would have had no effect on personnel or habitability below decks, except for possible effect of radioactivity.

(e) Total effect on fighting efficiency.

If the ship had been undamaged before test B, the total effect on fighting efficiency, insofar as machinery is concerned, would have been some reduction in maximum speed because of damage to stacks.

SECRET

U.S.S. INDEPENDENCE (CVL22)

Page 20 of 49 Pages

IV. General Summary of Observers' Impressions and Conclusions.

Damage to this vessel from test B is difficult to assess because of her condition after test A. However, it is not believed that any more damage would have been done by test B if the ship had been in her original condition except that to stacks, discussed above.

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

None.

SECRET

U.S.S. INDEPENDENCE (CVL22)

Page 21 of 49 Pages

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

The temporary stack installed after test A was moderately dished. Otherwise, the overall condition of the machinery installation of this vessel was apparently unchanged by test B.

(b) Areas of major damage.

Temporary stack at flight deck level, starboard.

(c) Primary causes of damage.

Blast pressure, or force of the heavy mass of water falling on the ship, or both.

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

The target test had no apparent effect on the overall operation of the machinery plant. However, if the stacks had been in their original condition, they would probably have been damaged, resulting in some reduction in boiler output.

Note: None of the machinery aboard this ship was operated after test B except the diesel generator in the forward engine room and the anchor windlass.

B. Boilers (§-51).

No apparent damage was sustained except the temporary stack installed after test A, which was moderately dished as a result of test B. This was probably caused by blast pressure. It may have been caused by the falling of a heavy mass of water on the vessel immediately after the explosion. (Photograph 2891-2, page 37.)

SECRET

U.S.S. INDEPENDENCE (CVL22)

Page 22 of 49 Pages

C. Blowers, Forced Drafts (§-53).

No apparent damage.

D. Fuel Oil Equipment (§-55).

No apparent damage.

E. Boiler Feedwater Equipment (§-56).

No apparent damage.

F. Main Engines (§-41).

No apparent damage.

G. Reduction Gears (§-42).

No apparent damage. Holding down bolts were stretched and four tight.

H. Shafting and Bearings (§-43).

No apparent damage.

I. Lubrication System (§-45).

No apparent damage.

J. Condensers and Air Ejectors, (§-46).

No apparent damage.

K. Pumps, (§-47).

No apparent damage.

L. Auxiliary Generators (Turbine and Gears) (§-61).

No apparent damage.

SECRET

U.S.S. INDEPENDENCE (CVL22)

Page 23 of 49 Pages

M. Propellers (§-44).

No apparent damage.

N. Distilling Plant (§-58).

No apparent damage.

O. Refrigerating Plant (§-59).

No apparent damage.

P. Winches, Windlasses and Capstans (§20 -§26).

The anchor windlass was undamaged. It was operated under power after test B.

Q. Steering Engine (§-22).

No apparent damage.

R. Elevators, Cranes, Ammunition Hoists, Etc. (§78 - §83).

No apparent damage. The elevators, and cranes were severely damaged by test A, but their condition was not changed by test B, insofar as could be determined by visual inspection.

S. Ventilation (Machinery) (§-38).

No apparent damage.

T. Air Compressors (§-49).

No apparent damage.

U. Diesels (Generators and Boats) (§-50).

The forward emergency diesel generator was undamaged. It was operated under load after test B.

SECRET

U.S.S. INDEPENDENCE (CVI 22)

Other equipment included in this item received no apparent damage from test B.

V. Piping (§-48).

No apparent damage.

W. Miscellaneous.

There was no apparent damage from test B to equipment included in this item.

SECRET

U.S.S. INDEPENDENCE (CVI 22)

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.

Flooding - none other than normal leakage and as a result of Test A.

(b) Structural damage.

There was no damage to electrical equipment due to the increase in hull damage resulting from Test B.

(c) Other damage.

There was no further damage to the electric plant, ship control, fire control or gunnery equipment as a result of Test B.

II. Forces Evidenced and Effects Noted.

(a) Heat.

None evidenced.

(b) Fires and explosions.

None evidenced.

(c) Shock.

Shock of a minor nature was evidenced throughout the vessel by loose gear and small objects not properly secured being adrift.

SECRET

USS INDEPENDENCE (CVL22)

However, there was no apparent damage to any electrical equipment that could be determined by visual inspection. Close examination of gyro compass equipment, automatic telephone exchange and fluorescent lighting fixtures which are especially susceptible to damaging effect of shock as compared to other electrical equipment, revealed no damage whatsoever as a result of this test. The automatic telephone system was energized and put in operation. It required no repair or adjustment to give satisfactory service.

(d) Pressure.

There was no apparent damage to any electrical equipment from the effects of pressure.

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

Radioactivity and wave phenomena were the only effects noted peculiar to the atom bomb.

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.

Not observed.

(d) Effect on personnel and habitability.

Except for the effects of radioactivity, it is believed that personnel and habitability would not have been appreciably affected.

SECRET

USS INDEPENDENCE (CVL22)

Page 27 of 49 Pages

(e) Total effect on fighting efficiency.

Due to there being no further increase in damage to electrical equipment, it is considered the fighting efficiency would have been unchanged.

IV. General Summary of Observers' Impressions and Conclusions.

Except for radiological phenomena experienced, this vessel does not appear to have suffered any new damage as the result of Test B. The total effect of the forces released during the test was to accentuate previous damage. It is considered that this vessel was outside the effective range of the bomb.

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

None.

SECRET

USS INDEPENDENCE (CVL22)

Page 28 of 49 Pages

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

The overall condition of electrical equipment damaged by Test A appeared to be unchanged, with no further damage as a result of Test B.

(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.

(a) Except for the forward emergency diesel generator, no operating tests were conducted on the main ships service plant. This unit operated satisfactory and the remainder of the plant from close visual inspection appeared to be in good condition and operable.

2. Engine and boiler auxiliaries.

(a) No operating test were conducted, although from close visual inspection these units appeared to be in good condition and operable.

3. Electrical propulsion.

(a) Not applicable - (geared turbine drive).

SECRET

USS INDEPENDENCE (CVL22)

4. Communications.

(a) Except for the automatic telephones and general announcing systems, no operating tests were conducted. From visual inspection, the electrical equipment damaged by Test A remained unchanged, with no further damage as a result of Test B.

5. Fire control circuits.

(a) From visual inspection the fire control equipment damaged by Test A appeared unchanged, with no further damage as a result of Test B.

6. Ventilation.

(a) Except for a few ventilation systems on second deck and below, no operating tests were conducted. From visual inspection the systems damaged by Test A appeared unchanged, with no further damage as a result of Test B.

7. Lighting.

(a) The lighting system was energized as after Test A, and no further damage was apparent.

(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.

SECRET

USS INDEPENDENCE (CVL22)

E. Generators - Emergency.

No damage.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

Not Applicable.

J. Portable Batteries.

No damage.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage.

M. Searchlights.

No damage.

N. Degaussing Equipment.

No damage.

SECRET

USS INDEPENDENCE (CVL22)

Page 31 of 49 Pages

O. Gyro Compass Equipment.

No damage.

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

No damage.

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. Switchboard.

No damage.

SECRET

USS INDEPENDENCE (CVL22)

Page 32 of 49 Pages

SECTION IV

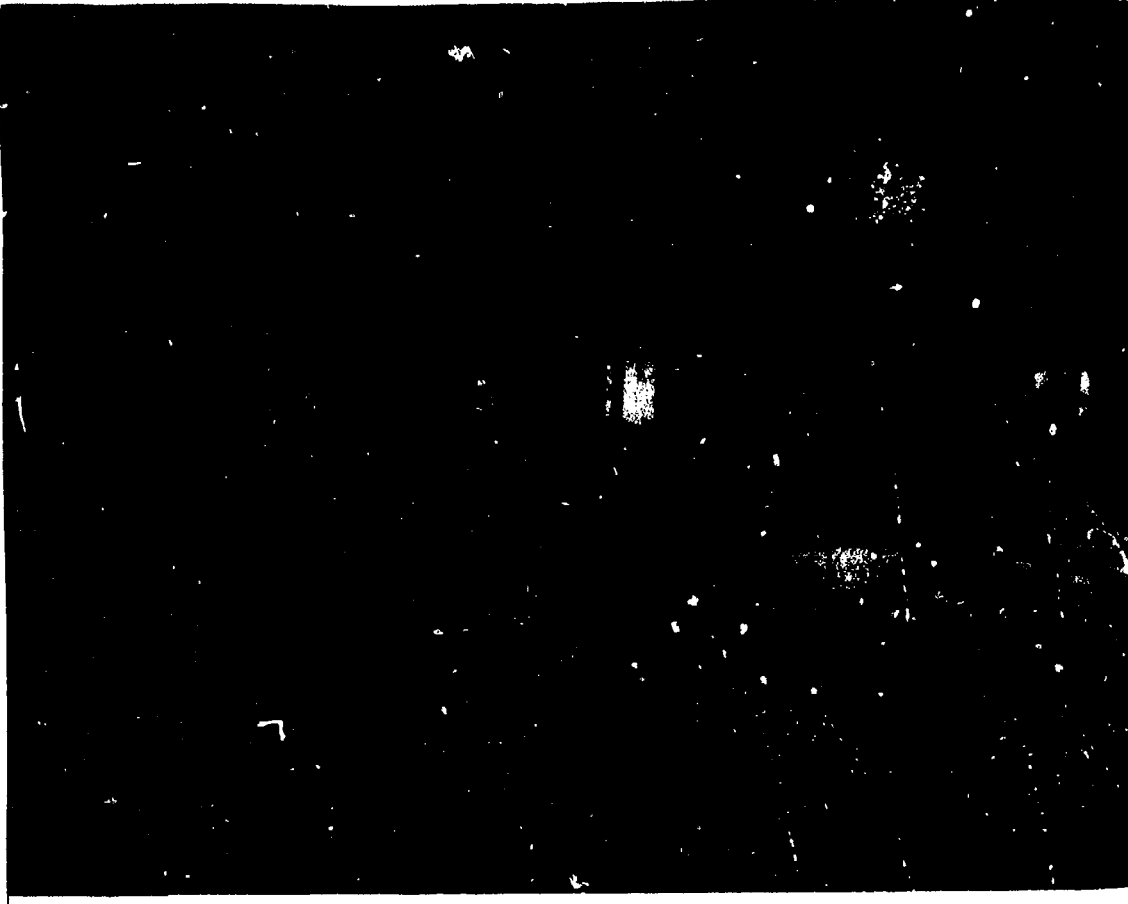
PHOTOGRAPHS

TEST BAKER

SECRET

USS INDEPENDENCE (CVL22)

Page 33 of 49 Pages



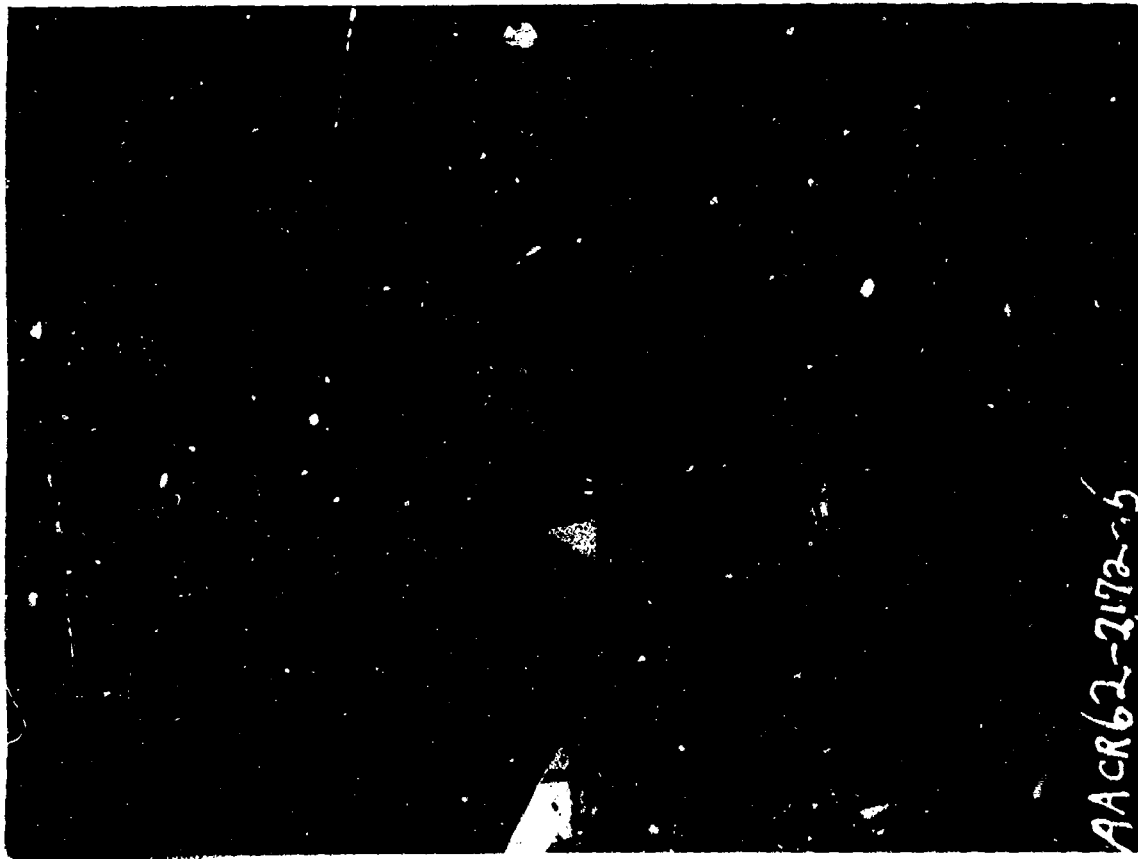
AB-CR-60-1712-9. Starboard side, frames 30-59. After Test B.
No discernible change as a result of test.

SECRET

USS INDEPENDENCE (CVL22)

Page 34 of 49 Pages

95**



AA-CR-62-2172-5. Hangar deck, frames 65-68. Temporary uptake No. 2.

SECRET

US3 INDEPENDENCE (CVL22)
Page 35 of 49 Pages

9542

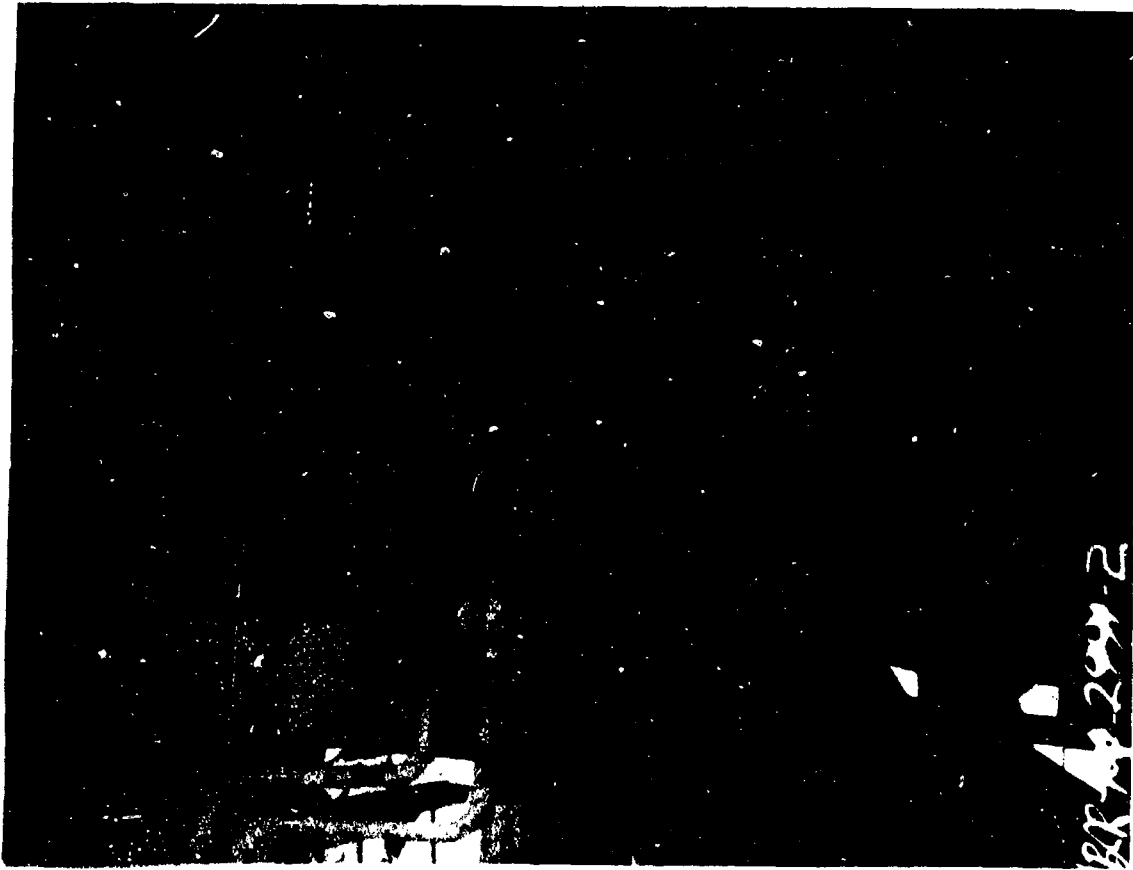


AB-CR-80-1675-9. Hangar deck, frames 85-88 after Test B showing Test B damage to temporary uptake No. 2.

SECRET

USS INDEPENDENCE (CVL22)
Page 36 of 49 Pages

9542



AB-CR-100-2991-2. Showing dished part of temporary stack.

SECRET

USS INDEPENDENCE (CVL22)
Page 37 of 49 Pages
9542

APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

SECRET

USS INDEPENDENCE (CVL22)
Page 38 of 49 Pages

REPORT #11

COMMANDING OFFICERS REPORT

SECTION I

The U.S.S. INDEPENDENCE is CVL No. 22 and was included in the Target Array for the BAKER Test. The exact relative position in the Array was not disclosed to this vessel but was in accordance with the Op-Plan 1-48, Annex Q. The ship was secured by the bow only, using the starboard chain to a buoy, and the port chain made up in loops with the anchor underfoot.

The material condition was, in general, as described in Report No. 11, Able Test. Repairs made after Able Day included patching of all holes in the hull at the level of the Third Deck and below; covering openings on the Hangar Deck with plates welded in place where blower and boiler intakes, exhausts and uptakes were blown off on Able Day; welding W.T. doors where necessary and covering ventilation intakes. The ability of the ship to resist damage to ammunition, gasoline and watertightness was approximately normal. Two airplanes, undamaged, were placed on the forward flight deck and a few instruments were placed on board in addition to renewing the gages in the blast towers. There were no animals.

SECRET

USS INDEPENDENCE (CVL22)

Page 39 of 49 Pages

SECTION II

The airplanes on the flight deck were slightly damaged. The only external damage was the shattering of windshields and canopies.

Only minor damage was done to the ship.

1. The makeshift repair stack was partially collapsed from outside pressure, it is still 100% usable.
2. Two previously warped hatches on the hangar deck were bounced open.
3. All but two of the special loops in the port chain broke open. There were six loops all together and, from the anchor, the first and fourth remained intact.

Tugs and boats after Baker Day made a small hole in the hull at frame 20 starboard, ten feet above the water line and a horizontal crack on the starboard quarter just below the Main Deck. Removal of the 40 MM gun bucket at frame 116 starboard caused a small hole in the starboard blister at its extreme after end, about ten feet above the water line.

Conditions showing a limit on blast, roll and splash are as follows:

1. Loose furniture remained in place.
2. Tools left on the Flight Deck were unmoved.
3. Bombs and ammunition in the magazine showed no signs of moving.
4. The forward elevator well did not flood as a pile of lumber there was not disarranged.

The Able Day damage, including the hull wrinkles but not including the Flight Deck, looks worse after Baker Day. This is believed entirely due to the etching effect of time and weather

SECRET

USS INDEPENDENCE (CVL22)

Page 40 of 49 Pages

in the three and one half weeks since Baker Day. Flaking of paint and formation of rust has outlined the crests of wrinkles, vertical streaks of dye and rust painted on by dripping water has emphasized waves in the plating and washboarding.

Baker Day casualties are estimated at one percent from the explosion, with no effect on the operation of the ship. Operation of the airplanes would have been cut fifty percent until the windshields were repaired.

For comparison with post-Baker measurements, if ever made, the following table is given. It records the deck-to-deck measurements, between Able and Baker Days, Main to Second Decks, at the locations given. A quick inspection has indicated that Baker Day did not affect these measurements.

SECRET

USS INDEPENDENCE (CVL22)

Page 41 of 49 Pages

USS INDEPENDENCE AFTER ABLE DAY

MEASUREMENTS OF SPACE BETWEEN 2ND AND MAIN DECK

Frame	Port	C/L to Starboard	Deck to Deck
47			7' 11"
49	0	2'	7' 11"
51		0	6' 11"
53	2.5'	3'	6' 8.5"
54	4.5'		7' 2"
54	10.5'		7' 9.5"
57	7'		7' 9.5"
58-1/2	11.5'		7' 10.5"
61	13'		7' 11"
64-1/2	13.5'		8' 10.5"
65	22'		7' 4"
68-1/2	22'		7' 4"
47		6.5'	7' 10.5"
48		8'	7' 10.5"
51		8'	7' 10.5"
52-1/2		8'	7' 10.5"
53		12'	7' 10.5"
54-1/2	0	0	7' 10.5"
55-1/2	0	0	7' 10.5"
57		0	7' 10.5"
57		10'	7' 10.5"
57		28'	7' 10.5"
58-1/2	7'	7'	7' 10.5"
59		21.5'	7' 10.5"
59		29'	7' 10.5"
59		19.5'	7' 10.5"
62		29'	7' 10.5"
62		21'	7' 10.5"
65		28'	7' 10.5"
65		21'	7' 10.5"
68		21'	7' 10.5"

SECRET

USS INDEPENDENCE (CVL22)

Frame	Port	C/L to Starboard	Deck to Deck
69		10.5'	7' 10.5"
69		29'	7' 11"
68-1/2	0	0	7' 10.5"
69	13'		7' 10.5"
74-1/2	13'		7' 10.5"
78	13'		7' 10.5"
79	10'		7' 10.5"
79	7'		7' 10.5"
73-1/2	7'		7' 10.5"
69		16'	7' 10.5"
69		23'	7' 10.5"
71-1/2		30'	7' 10.5"
71-1/2		9'	7' 10.5"
73-1/2		35'	7' 10.5"
78		11'	7' 10.5"
79		38'	7' 10.5"
79	7'		7' 10.5"
82		9'	7' 10.5"
80		21'	7' 10.5"
80		21'	7' 10.5"
83		21'	7' 10.5"
83		21'	7' 10.5"
79	22'		7' 10.5"
82	22'		7' 10.5"
82	13'		7' 10.5"
90	17'		7' 10.5"
90	18'		7' 10.5"
91	18'		7' 10.5"
85-1/2	7'		7' 10.5"
91		7'	7' 10.5"
86		22'	7' 10.5"
86		31'	7' 10.5"
86		7'	7' 10.5"
89		22'	7' 10.5"
89		7'	7' 10.5"
91		7'	7' 10.5"

SECRET

USS INDEPENDENCE (CVL22)

Frame	Port	C/L to Starboard	Deck to Deck
111	2.5'	6'	7' 7"
111	2.5'	6'	7' 8"
113		10.5'	7' 10.5"
113		10.5'	7' 10.5"
101		16'	7' 11"
104		16'	7' 10"
107-1/2		21'	8' 1"
107-1/2		16'	8' 1"
110		21'	8' 2"
110		16'	8' 3"
113		23'	8' 3"
113			8' 3"
116			7' 3"
116			8' 1"
116			8' 2.5"
119			8' 5"
119			7' 9"
119			8' 4"
119			8' 4"

SECRET

Page 45 of 49 Pages

Frame	Port	C/L to Starboard	Deck to Deck
91	15'	31'	7' 10.5"
91	15'		7' 8"
92-1/2	17'		7' 4.5"
98	17'		7' 7"
99	17'		7' 7"
101	17'		7' 11.5"
91	10'		7' 7.5"
96-1/2	10'		7' 7.5"
98-1/2	10'		7' 7.5"
100	10'		7' 9.5"
91	10'		7' 9"
94-1/2	10'		7' 7"
96-1/2	10'		7' 7"
96-1/2	7'		7' 6"
100	7'		7' 11"
91	17'		7' 11"
94-1/2	17'		7' 3"
96-1/2	13'		7' 10"
96-1/2	13'		7' 7"
100	13'		7' 10.5"
101	11'		7' 11"
100-1/2	0		8'
103	13'		7' 10.5"
103	22'		7' 11"
105	13'		7' 8"
105	22'		7' 10"
105-1/2	13'		7' 8.5"
106-1/2	9'		7' 6"
107-1/2	16'		7' 10"
107-1/2	21'		8'
110	15'		7' 9"
110	21'		8'
113	11'		7' 9.5"
101	10.5'		7' 8.5"
106			7' 4.5"
109			7' 5.5"

SECRET

Page 44 of 49 Pages

SECTION III

Following is a list of the Geiger readings taken during the period 18 to 21 August 1946. They represent conditions obtained by a cool-down period of twenty four days, without any decontamination measures. There were no previous comparable readings.

Starboard blister at iron ladder	1.5 R
Center beam deck	3 R
Bomb elevator hatch flight deck	2 R
Forecastle	1.5 R
Wardroom	.02 R
2nd Deck	
Frame 49 Port	.4 R
Frame 67 Port	.25 R
Frame 84 Port	.21 R
Frame 79 Port	.2 R
Frame 79 (Puddle)	2.0 R
Trunk to Forward Engine Room	.3 R
Forward Engine Room	
B-202-1L	.3 R
B201-1L	.4 R
A-211-L	.3 R
Trunk to forward fire room	Negligible
Forward fire room	.15 R
Bilge water	.4 R
A-207-L	Negligible
A-208-L	Negligible
A-205-E	Negligible
A-204-A	Negligible
Boatswain's locker	Negligible
A-208-L	Negligible
A-209-1L	Negligible
Bomb elevator machinery	Negligible
A-210-L, S.R. 215	.2 R
A-210-L, S.R. 217	.1 R

USS INDEPENDENCE (CVL22)

A-210-L, S.R. 216	Negligible
Flag Office	Negligible
Elevator flask room	Negligible
Supply Office	Negligible
First Lieutenant's Office	Negligible
Air Office	Negligible
Executive Officer's Office	Negligible
Trash burner	Negligible
B-201-1L	Negligible
Squadron gear locker	Negligible
Elevator valves	Negligible
Print shop	Negligible
Gunnery Office	Negligible
B-202-1L	Negligible
Armory	Negligible
Radio Transmitter Room	Negligible
Marine Head	Negligible
B-203-L (water paddle)	.05 R
B-203-S	Negligible
B-204-1L	Negligible
Galley	Negligible
Spud locker	Negligible
Bake shop	Negligible
Passage	Negligible
C-201-L	Negligible
Third Deck	
C-301-L	Negligible
B-321	Negligible
Scullery	Negligible
B-317-L	Negligible
Ship Store	Negligible
B-309 Machine Shop	Negligible
B-308-E	Negligible
B-303-L Electric Shop	Negligible
Log Room	Negligible
Barber Shop	Negligible
A-312	Negligible
Medical Stores	Negligible
A-311-1L	Negligible
Operating Room	Negligible
A-309-1L	Negligible

USS INDEPENDENCE (CVL22)

CONFIDENTIAL

Medical Treatment Room

A-808-1L

Dental Office

Beam elevator

A-808-1L W.O. Pantry

Pharmacy

A-807-1L

W.O. Messroom

A-808-L

B-302-L

B-301-E Uptakes

Lardery

B-310-EL

B-316-L

B-315-E

B-322-L

Central Station

I.C. Room

Radio Room

Flight Deck

Catwalk starboard

Frame 35, starboard

Flight deck, center line, frame 35

Airplanes

03 Deck

Passageway

Aero. Office

Port Catapult

Forecastle Deck

Aft - Port

Winch, port

Winch, starboard

Aft - starboard

Drain aft. starboard corner

Windlass control starboard

Windlass control port

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

Negligible

.4 R

.8 R

1.0 R

2.0 R

.1 R

.2 R

1.0 R

.6 R

.2 R

.2 R

.4 R

1.5 R

.3 R

.2 R

USS INDEPENDENCE (CVL22)

Page 48 of 49 Pages

CONFIDENTIAL

CONFIDENTIAL

Chain stoppers

Under gun bucket

.2 R

.6 R

Second and Third Decks Aft, and below.

C-407

C-408

C-202-L

C-307 Ice boxes

C-202-L deck center

C-202-L Overhead patch

C-202-L Puddle starboard

C-203-L Puddle

C-203-L

C-204-L, port

C.P.C. Mess, starboard

C.P.O. Mess, port

After steering scuttle

C-206, Port

C-414-T

C-515-E

C-309-L

C-308-3A

Negligible

Negligible

Negligible

.4 R

.8 R

1.0 R

2.0 R

.4 R

.2 R

1.6 R

1. R

4. R

4. R

7. R

.2 R

Negligible

Negligible

Negligible

No attempt is made to estimate the effect of the radiation put on the ship by the Baker Bomb. This radiation was the only notable effect of the Baker Bomb on the INDEPENDENCE. Other damage was insignificant.

This and other reports are necessarily short because the ship is not yet cleared for general decontamination. The only work permitted was opening, and closing up again, for a DSM inspection, operating the Diesel for light and for lifting the port anchor.

As indicated by the generally low Geiger readings, given above, for weather decks and almost completely clear lower decks, it would be comparatively easy to clean up the INDEPENDENCE and get her under power.

~~SECRET~~

USS INDEPENDENCE (CVL22)

Page 49 of 49 Pages

CONFIDENTIAL

DATE FILMED

6 / 17 / 65

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)

END



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✓	XRD-200-Section 9
AD-366590✓	XRD-204-Section 13
AD-366591✓	XRD-183
/✓AD-366586 x	XRD-201-Section 10✓
/✓AD-367487 4	XRD-131-Volume 2✓
✓✓AD-367516 4	XRD- 131 143✓
✓✓AD-367493 4	XRD-142✓
AD-801410L✓	XRD-138✓
AD-376831L✓	XRD-83✓
AD-366759✓	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✓

TRC

18 April 1997

Subject: Declassification of Report

AD-376836L ✓	XRD-98 ✓
AD-376835L ✓	XRD-97 ✓
AD-376834L ✓	XRD-96 ✓
AD-376833L ✓	XRD-95 ✓
X AD-376832L ✓	XRD-94 <i>re-ingest</i>
✓✓ AD-367458 X	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 X	XRD-103 ✓
✓✓ AD-367463 X	XRD-104 ✓
✓✓ AD-367461 X	XRD-102 ✓
AD-367460 ✓	XRD-101

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.**

Arldith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center