

UNCLASSIFIED



AD NUMBER

0366 754

CLASSIFICATION CHANGES

TO

UNCLASSIFIED

FROM

CONFIDENTIAL

AUTHORITY

RITA M. METRO, DSWA-OPSSI MAY 22, 1997.

1999 0608/70

THIS PAGE IS UNCLASSIFIED

UNCLASSIFIED



AD NUMBER

**AD-366 754**

NEW LIMITATION CHANGE

TO

DISTRIBUTION STATEMENT: A

Approved for public release; Distribution is unlimited.

LIMITATION CODE: 1

FROM

DISTRIBUTION STATEMENT: F

LIMITATION CODE: 5

AUTHORITY

Rita M. Metro, Chief, Info Scty, DSWA-OPSSI; May 22, 1997

THIS PAGE IS UNCLASSIFIED



Defense Special Weapons Agency  
6801 Telegraph Road  
Alexandria, Virginia 22310-3308

AD-366754

OPSSI

ERRATA

MAY 22 1997

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Declassification Review of Operation CROSSROADS  
Test Reports

The following reports concerning the atmospheric nuclear tests conducted during Operation CROSSROADS in 1946 have been declassified and cleared for open publication/public release:

XRD-1 through XRD-214. (This includes XRD 212-1, -2, -3, -A1, -A2, -A3, -A4).

This memorandum may be cited as the authority to declassify copies of any of the reports listed above.

  
RITA M. METRO

Chief, Information Security

ERRATA

XRD  
71

(14) XRD-71

LIBRARY COPY NO. 3

# BUREAU OF SHIPS GROUP TECHNICAL INSPECTION REPORT

Classification (~~Confidential~~) (Changed to ~~CONFIDENTIAL~~)  
By Authority of Joint Chiefs of Staff AST/SEC OF 15 APR 1989  
By John P. Bredt Date 3 Apr 51  
1st Lt. AFJWP

366754

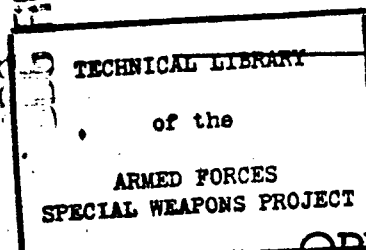
OPERATION CROSSROADS.  
U.S.S. FILLMORE (APA83).

U. S. GOVERNMENT PRINTING OFFICE: 1965  
FROM DEC. 01/1965. ALL OTHERS MUST REQUEST THROUGH

TEST ABLE

8  
Defense Atomic Support Agency  
Washington, D. C. 20301

FILE COPY



OPERATION CROSSROADS

(11) 1947,

(12) 50p.

DIRECTOR OF SHIP MATERIAL

JOINT TASK FORCE ONE

DDC

NOV 2 - 1985

~~CONFIDENTIAL~~

GROUP 1/1A/1B/1C/1D/1E/1F/1G/1H/1I/1J/1K/1L/1M/1N/1O/1P/1Q/1R/1S/1T/1U/1V/1W/1X/1Y/1Z/1AA/1AB/1AC/1AD/1AE/1AF/1AG/1AH/1AI/1AJ/1AK/1AL/1AM/1AN/1AO/1AP/1AQ/1AR/1AS/1AT/1AU/1AV/1AW/1AX/1AY/1AZ/1BA/1BB/1BC/1BD/1BE/1BF/1BG/1BH/1BI/1BJ/1BK/1BL/1BM/1BN/1BO/1BP/1BQ/1BR/1BS/1BT/1BU/1BV/1BW/1BX/1BY/1BZ/1CA/1CB/1CC/1CD/1CE/1CF/1CG/1CH/1CI/1CJ/1CK/1CL/1CM/1CN/1CO/1CP/1CQ/1CR/1CS/1CT/1CU/1CV/1CW/1CX/1CY/1CZ/1DA/1DB/1DC/1DD/1DE/1DF/1DG/1DH/1DI/1DJ/1DK/1DL/1DM/1DN/1DO/1DP/1DQ/1DR/1DS/1DT/1DU/1DV/1DW/1DX/1DY/1DZ/1EA/1EB/1EC/1ED/1EE/1EF/1EG/1EH/1EI/1EJ/1EK/1EL/1EM/1EN/1EO/1EP/1EQ/1ER/1ES/1ET/1EU/1EV/1EW/1EX/1EY/1EZ/1FA/1FB/1FC/1FD/1FE/1FF/1FG/1FH/1FI/1FJ/1FK/1FL/1FM/1FN/1FO/1FP/1FQ/1FR/1FS/1FT/1FU/1FV/1FW/1FX/1FY/1FZ/1GA/1GB/1GC/1GD/1GE/1GF/1GG/1GH/1GI/1GJ/1GK/1GL/1GM/1GN/1GO/1GP/1GQ/1GR/1GS/1GT/1GU/1GV/1GW/1GX/1GY/1GZ/1HA/1HB/1HC/1HD/1HE/1HF/1HG/1HH/1HI/1HJ/1HK/1HL/1HM/1HN/1HO/1HP/1HQ/1HR/1HS/1HT/1HU/1HV/1HW/1HX/1HY/1HZ/1IA/1IB/1IC/1ID/1IE/1IF/1IG/1IH/1II/1IJ/1IK/1IL/1IM/1IN/1IO/1IP/1IQ/1IR/1IS/1IT/1IU/1IV/1IW/1IX/1IY/1IZ/1JA/1JB/1JC/1JD/1JE/1JF/1JG/1JH/1JI/1JJ/1JK/1JL/1JM/1JN/1JO/1JP/1JQ/1JR/1JS/1JT/1JU/1JV/1JW/1JX/1JY/1JZ/1KA/1KB/1KC/1KD/1KE/1KF/1KG/1KH/1KI/1KJ/1KK/1KL/1KM/1KN/1KO/1KP/1KQ/1KR/1KS/1KT/1KU/1KV/1KW/1KX/1KY/1KZ/1LA/1LB/1LC/1LD/1LE/1LF/1LG/1LH/1LI/1LJ/1LK/1LL/1LM/1LN/1LO/1LP/1LQ/1LR/1LS/1LT/1LU/1LV/1LW/1LX/1LY/1LZ/1MA/1MB/1MC/1MD/1ME/1MF/1MG/1MH/1MI/1MJ/1MK/1ML/1MM/1MN/1MO/1MP/1MQ/1MR/1MS/1MT/1MU/1MV/1MW/1MX/1MY/1MZ/1NA/1NB/1NC/1ND/1NE/1NF/1NG/1NH/1NI/1NJ/1NK/1NL/1NM/1NN/1NO/1NP/1NQ/1NR/1NS/1NT/1NU/1NV/1NW/1NX/1NY/1NZ/1OA/1OB/1OC/1OD/1OE/1OF/1OG/1OH/1OI/1OJ/1OK/1OL/1OM/1ON/1OO/1OP/1OQ/1OR/1OS/1OT/1OU/1OV/1OW/1OX/1OY/1OZ/1PA/1PB/1PC/1PD/1PE/1PF/1PG/1PH/1PI/1PJ/1PK/1PL/1PM/1PN/1PO/1PP/1PQ/1PR/1PS/1PT/1PU/1PV/1PW/1PX/1PY/1PZ/1QA/1QB/1QC/1QD/1QE/1QF/1QG/1QH/1QI/1QJ/1QK/1QL/1QM/1QN/1QO/1QP/1QQ/1QR/1QS/1QT/1QU/1QV/1QW/1QX/1QY/1QZ/1RA/1RB/1RC/1RD/1RE/1RF/1RG/1RH/1RI/1RJ/1RK/1RL/1RM/1RN/1RO/1RP/1RQ/1RR/1RS/1RT/1RU/1RV/1RW/1RX/1RY/1RZ/1SA/1SB/1SC/1SD/1SE/1SF/1SG/1SH/1SI/1SJ/1SK/1SL/1SM/1SN/1SO/1SP/1SQ/1SR/1SS/1ST/1SU/1SV/1SW/1SX/1SY/1SZ/1TA/1TB/1TC/1TD/1TE/1TF/1TG/1TH/1TI/1TJ/1TK/1TL/1TM/1TN/1TO/1TP/1TQ/1TR/1TS/1TT/1TU/1TV/1TW/1TX/1TY/1TZ/1UA/1UB/1UC/1UD/1UE/1UF/1UG/1UH/1UI/1UJ/1UK/1UL/1UM/1UN/1UO/1UP/1UQ/1UR/1US/1UT/1UU/1UV/1UW/1UX/1UY/1UZ/1VA/1VB/1VC/1VD/1VE/1VF/1VG/1VH/1VI/1VJ/1VK/1VL/1VM/1VN/1VO/1VP/1VQ/1VR/1VS/1VT/1VU/1VV/1VW/1VX/1VY/1VZ/1WA/1WB/1WC/1WD/1WE/1WF/1WG/1WH/1WI/1WJ/1WK/1WL/1WM/1WN/1WO/1WP/1WQ/1WR/1WS/1WT/1WU/1WV/1WW/1WX/1WY/1WZ/1XA/1XB/1XC/1XD/1XE/1XF/1XG/1XH/1XI/1XJ/1XK/1XL/1XM/1XN/1XO/1XP/1XQ/1XR/1XS/1XT/1XU/1XV/1XW/1XX/1XY/1XZ/1YA/1YB/1YC/1YD/1YE/1YF/1YG/1YH/1YI/1YJ/1YK/1YL/1YM/1YN/1YO/1YP/1YQ/1YR/1YS/1YT/1YU/1YV/1YW/1YX/1YY/1YZ/1ZA/1ZB/1ZC/1ZD/1ZE/1ZF/1ZG/1ZH/1ZI/1ZJ/1ZK/1ZL/1ZM/1ZN/1ZO/1ZP/1ZQ/1ZR/1ZS/1ZT/1ZU/1ZV/1ZW/1ZX/1ZY/1ZZ/1AA/1AB/1AC/1AD/1AE/1AF/1AG/1AH/1AI/1AJ/1AK/1AL/1AM/1AN/1AO/1AP/1AQ/1AR/1AS/1AT/1AU/1AV/1AW/1AX/1AY/1AZ/1BA/1BB/1BC/1BD/1BE/1BF/1BG/1BH/1BI/1BJ/1BK/1BL/1BM/1BN/1BO/1BP/1BQ/1BR/1BS/1BT/1BU/1BV/1BW/1BX/1BY/1BZ/1CA/1CB/1CC/1CD/1CE/1CF/1CG/1CH/1CI/1CJ/1CK/1CL/1CM/1CN/1CO/1CP/1CQ/1CR/1CS/1CT/1CU/1CV/1CW/1CX/1CY/1CZ/1DA/1DB/1DC/1DD/1DE/1DF/1DG/1DH/1DI/1DJ/1DK/1DL/1DM/1DN/1DO/1DP/1DQ/1DR/1DS/1DT/1DU/1DV/1DW/1DX/1DY/1DZ/1EA/1EB/1EC/1ED/1EE/1EF/1EG/1EH/1EI/1EJ/1EK/1EL/1EM/1EN/1EO/1EP/1EQ/1ER/1ES/1ET/1EU/1EV/1EW/1EX/1EY/1EZ/1FA/1FB/1FC/1FD/1FE/1FF/1FG/1FH/1FI/1FJ/1FK/1FL/1FM/1FN/1FO/1FP/1FQ/1FR/1FS/1FT/1FU/1FV/1FW/1FX/1FY/1FZ/1GA/1GB/1GC/1GD/1GE/1GF/1GG/1GH/1GI/1GJ/1GK/1GL/1GM/1GN/1GO/1GP/1GQ/1GR/1GS/1GT/1GU/1GV/1GW/1GX/1GY/1GZ/1HA/1HB/1HC/1HD/1HE/1HF/1HG/1HH/1HI/1HJ/1HK/1HL/1HM/1HN/1HO/1HP/1HQ/1HR/1HS/1HT/1HU/1HV/1HW/1HX/1HY/1HZ/1IA/1IB/1IC/1ID/1IE/1IF/1IG/1IH/1II/1IJ/1IK/1IL/1IM/1IN/1IO/1IP/1IQ/1IR/1IS/1IT/1IU/1IV/1IW/1IX/1IY/1IZ/1JA/1JB/1JC/1JD/1JE/1JF/1JG/1JH/1JI/1JJ/1JK/1JL/1JM/1JN/1JO/1JP/1JQ/1JR/1JS/1JT/1JU/1JV/1JW/1JX/1JY/1JZ/1KA/1KB/1KC/1KD/1KE/1KF/1KG/1KH/1KI/1KJ/1KK/1KL/1KM/1KN/1KO/1KP/1KQ/1KR/1KS/1KT/1KU/1KV/1KW/1KX/1KY/1KZ/1LA/1LB/1LC/1LD/1LE/1LF/1LG/1LH/1LI/1LJ/1LK/1LM/1LN/1LO/1LP/1LQ/1LR/1LS/1LT/1LU/1LV/1LW/1LX/1LY/1LZ/1MA/1MB/1MC/1MD/1ME/1MF/1MG/1MH/1MI/1MJ/1MK/1ML/1MM/1MN/1MO/1MP/1MQ/1MR/1MS/1MT/1MU/1MV/1MW/1MX/1MY/1MZ/1NA/1NB/1NC/1ND/1NE/1NF/1NG/1NH/1NI/1NJ/1NK/1NL/1NM/1NN/1NO/1NP/1NQ/1NR/1NS/1NT/1NU/1NV/1NW/1NX/1NY/1NZ/1OA/1OB/1OC/1OD/1OE/1OF/1OG/1OH/1OI/1OJ/1OK/1OL/1OM/1ON/1OO/1OP/1OQ/1OR/1OS/1OT/1OU/1OV/1OW/1OX/1OY/1OZ/1PA/1PB/1PC/1PD/1PE/1PF/1PG/1PH/1PI/1PJ/1PK/1PL/1PM/1PN/1PO/1PP/1PQ/1PR/1PS/1PT/1PU/1PV/1PW/1PX/1PY/1PZ/1QA/1QB/1QC/1QD/1QE/1QF/1QG/1QH/1QI/1QJ/1QK/1QL/1QM/1QN/1QO/1QP/1QQ/1QR/1QS/1QT/1QU/1QV/1QW/1QX/1QY/1QZ/1RA/1RB/1RC/1RD/1RE/1RF/1RG/1RH/1RI/1RJ/1RK/1RL/1RM/1RN/1RO/1RP/1RQ/1RR/1RS/1RT/1RU/1RV/1RW/1RX/1RY/1RZ/1SA/1SB/1SC/1SD/1SE/1SF/1SG/1SH/1SI/1SJ/1SK/1SL/1SM/1SN/1SO/1SP/1SQ/1SR/1SS/1ST/1SU/1SV/1SW/1SX/1SY/1SZ/1TA/1TB/1TC/1TD/1TE/1TF/1TG/1TH/1TI/1TJ/1TK/1TL/1TM/1TN/1TO/1TP/1TQ/1TR/1TS/1TT/1TU/1TV/1TW/1TX/1TY/1TZ/1UA/1UB/1UC/1UD/1UE/1UF/1UG/1UH/1UI/1UJ/1UK/1UL/1UM/1UN/1UO/1UP/1UQ/1UR/1US/1UT/1UU/1UV/1UW/1UX/1UY/1UZ/1VA/1VB/1VC/1VD/1VE/1VF/1VG/1VH/1VI/1VJ/1VK/1VL/1VM/1VN/1VO/1VP/1VQ/1VR/1VS/1VT/1VU/1VV/1VW/1VX/1VY/1VZ/1WA/1WB/1WC/1WD/1WE/1WF/1WG/1WH/1WI/1WJ/1WK/1WL/1WM/1WN/1WO/1WP/1WQ/1WR/1WS/1WT/1WU/1WV/1WW/1WX/1WY/1WZ/1XA/1XB/1XC/1XD/1XE/1XF/1XG/1XH/1XI/1XJ/1XK/1XL/1XM/1XN/1XO/1XP/1XQ/1XR/1XS/1XT/1XU/1XV/1XW/1XX/1XY/1XZ/1YA/1YB/1YC/1YD/1YE/1YF/1YG/1YH/1YI/1YJ/1YK/1YL/1YM/1YN/1YO/1YP/1YQ/1YR/1YS/1YT/1YU/1YV/1YW/1YX/1YY/1YZ/1ZA/1ZB/1ZC/1ZD/1ZE/1ZF/1ZG/1ZH/1ZI/1ZJ/1ZK/1ZL/1ZM/1ZN/1ZO/1ZP/1ZQ/1ZR/1ZS/1ZT/1ZU/1ZV/1ZW/1ZX/1ZY/1ZZ

ef

REG. NO.

6947

# **SECURITY**

---

# **MARKING**

**The classified or limited status of this report applies to each page, unless otherwise marked.**

**Separate page printouts MUST be marked accordingly.**

---

**THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, TITLE 18, U.S.C., SECTIONS 793 AND 794. THE TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW.**

**NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.**

**CONFIDENTIAL**

~~CONFIDENTIAL~~

BUREAU OF SHIPS GROUP  
TECHNICAL INSPECTION REPORT

Classification (~~Secret~~) (Changed to ~~CONFIDENTIAL~~)  
By Authority of JOINT CHIEFS OF STAFF ACTION OF 15 APRIL 1974  
At Washington, D.C. Date 2 APR 51  
12 W AFSWP

U. S. GOVERNMENT  
NAVY DEPT. OFF.

\*This document contains information affecting the Defense of the United States within the meaning of the Espionage Laws, Title 18, U. S. C., Section 793 and 794. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.\*

~~CONFIDENTIAL~~

APPROVED:

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

USS FILLMORE APA 83)

Page 1 of 50 Pages

GROUP-3  
Declassified at 12 year intervals  
Not automatically declassified  
1 JAN 1965

~~CONFIDENTIAL~~

**TABLE OF CONTENTS**

	PAGE NO.
Ship Characteristics Sheet - - - - -	3
Midship Section - - - - -	4
Overall Summary - - - - -	5
Hull Technical Inspection Report (Section I) - - - - -	11
Machinery Technical Inspection Report (Section II) - - - - -	17
Electrical Technical Inspection Report (Section III) - - - - -	23
Ships Measurement Diagram (Appendix) - - - - -	30
Photographic Section (Section IV) - - - - -	32
Commanding Officer's Report (Appendix) - - - - -	38

USS FILLMORE (APA83)

U.S.S. FILLMORE (APA 83)

## SHIP CHARACTERISTICS

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

Commissioned: 25 February 1945.

HULL

Length Overall: 426 feet 0 inches.  
Length on Waterline: 400 feet 0 inches.  
Beam (extreme): 58 feet 0 inches.  
Depth (molded at upper deck): 37 feet 0 inches.  
Drafts at time of test: Fwd. 11 feet 0 inches.  
Aft. 16 feet 6 inches.  
Limiting displacement: 7,080 tons.  
Displacement at time of test: 5,947 tons.

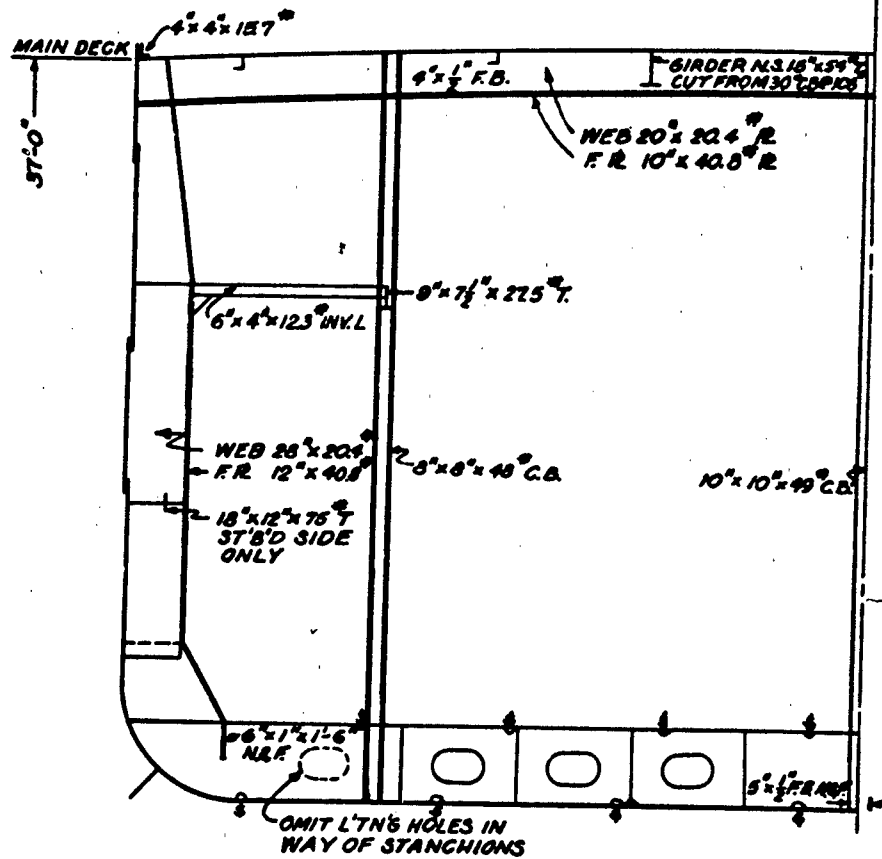
## MAIN PROPULSION PLANT

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 - 705° F.  
Propellers: Two are installed.  
Main Shafts: Two are installed in ship.  
Ship's Service Generators: Five are installed in ship. Three 250 KW. - 450 V. - A.C. Two - 100 KW. - 120/240 V. - D.C.

**SECRET**

USS FILLMORE (APA83)





FRAME 76 LOOKING AFT

# MIDSHIP SECTION TEST A

**REMARKS**

U.S.S. FILLMORE (APA 63)

## TECHNICAL INSPECTION REPORT

### OVERALL SUMMARY

#### I. Target Condition After Test.

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

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

##### (b) Structural damage.

#### HULL

There is no damage to main structural members.

The after side of the port flag bag and the after bulkhead of the signal shack, both fabricated from sheet metal, are dished.

#### MACHINERY

No comment.

#### ELECTRICAL

There was no adverse effects on any electrical equipment.

##### (c) Other damage.

#### HULL

No comment.

#### MACHINERY

A few small salt water lines, already badly corroded, were broken. There is no other damage to machinery, all of which was operated after Test A.

**USS FILLMORE (APA83)**

## ELECTRICAL

The main electric plant, ship control, fire control and electrical equipment associated with gunnery were undamaged and operable.

### II. Forces Evidenced and Effects Noted.

#### (a) Heat.

## HULL

Heat caused slight blistering of paint and scorching of lines.

## MACHINERY

No evidence.

## ELECTRICAL

1. This vessel was subjected to a flash of radiant heat coming from the port quarter at an elevation of approximately 25°. This heat was sufficient to scorch manila lines, life rafts and fire hose.

2. There was no damage to electrical equipment except slight blistering of paint on electric cable on afterside of foremast and main mast.

#### (b) Fires and explosions.

## HULL

Swabs in racks on top of the deckhouse burned. There were no other fires.

## MACHINERY

No evidence.

SECRET

USS FILLMORE (A-111)

## ELECTRICAL

Small fires were ignited by radiant heat in two swabs left on forecastle and a wood instrument box on fantail. These fires caused no damage to electrical equipment.

(c) Shock.

## HULL

None.

## MACHINERY

No evidence.

## ELECTRICAL

There was no damage to electrical equipment as a result of shock.

(d) Pressure.

## HULL

The only evidence of blast is in the dishing of the sheet metal port flag bag and signal shack bulkhead.

## MACHINERY

Blast pressure apparently set up a whipping motion of the ship which broke a few small salt water pipes (already badly corroded).

## ELECTRICAL

Air blast pressure coming from port quarter forced a portable mounted 500 watt flood light against bulkhead and broke the lens. There was no other damage to electrical equipment.

SECRET

USS FILLMORE (APA83)

(e) Effects peculiar to the Atomic Bomb.

HULL

None.

MACHINERY

None.

ELECTRICAL

Other than radioactivity, radiant heat and air blast pressure were the effects noted apparently peculiar to the atom bomb.

III. Results of Test on Target.

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

HULL

None.

MACHINERY

The test had no effect on operation of machinery.

ELECTRICAL

No effect.

(b) Effect on gunnery and fire control.

HULL

None.

SECRET

USS FILLMORE (APA83)

MACHINERY

No comment.

ELECTRICAL

No effect.

(c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

No effect.

(d) Effect on personnel and habitability.

HULL

Exposed personnel might have received flash burns.

Habitability is unaffected.

MACHINERY

The test would have had no effect on personnel below deck and did not affect operability.

ELECTRICAL

1. Other than radioactivity, it is estimated that personnel at topside exposed stations would have suffered minor to moderate flash burns from radiant heat and possible bruises resulting from blast pressure wave.

SECRET

USS FILLMORE (APA83)

2. Habitability has in no way been affected.

(e) Effect on fighting efficiency.

HULL

None.

MACHINERY

None.

ELECTRICAL

The fighting efficiency of this vessel has not been impaired as a result of any material damage.

IV. General Summary of Observers' Impressions and Conclusions.

HULL

No comment.

MACHINERY

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

ELECTRICAL

Due to the distance of this ship from the center of the burst, heat and blast of bomb was not sufficient to cause any material damage to electrical equipment.

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

HULL

No comment.

MACHINERY

None.

ELECTRICAL

None.

SECRET

USS FILLMORE (APA83)

## TECHNICAL INSPECTION REPORT

### SECTION I - HULL

#### GENERAL SUMMARY OF HULL DAMAGE

##### I. Target Condition After Test.

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

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

###### (b) Structural damage.

There is no structural damage.

The after side of the port flag bag and the after bulkhead of the signal shack, both fabricated from sheet metal, are dished.

###### (c) Other damage.

Not observed.

##### II. Forces Evidenced and Effects Noted.

###### (a) Heat.

Heat caused slight blistering of paint and scorching of lines.

###### (b) Fires and explosions.

Swabs in racks on top of the deckhouse burned. There were no other fires.

###### (c) Shock.

None.

SECRET

USS FILLMORE (APA83)



(d) Pressure.

The only evidence of blast is in the dishing of the sheet metal port flag bag and signal shack bulkhead.

(e) Effects apparently peculiar to the atom bomb.

None.

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.

(d) Effect on personnel and habitability.

Exposed personnel might have received flash burns. Habitability is unaffected.

(e) Effect on fighting efficiency.

None.

IV. General Summary of Observers' Impressions and Conclusions.

No comment.

V. Preliminary General or Specific Recommendations of Inspection group.

None.

SECRET

USS FILLMORE (APA83)

VI. Instructions of loading the vessel specified the following:

ITEM	LOADING
Fuel oil	50%
Diesel oil	50%
Ammunition	50%
Potable and reserve feed water	95%
Salt water ballast	620 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.

SECRET

USS FILLMORE (APA83)

## DETAILED DESCRIPTION OF HULL DAMAGE

### A. General Description of Hull Damage.

There was no structural damage. The sheet metal port flag bag and signal shack bulkhead are dished. Paint is slightly blistered. Cordage, fire hose, life rafts, and puddings on the port side are slightly charred. Photos 49-21, 25; pages 34, 33, are general views of the ship after test.

### B. Superstructure.

The port flag bag is dished a maximum of 6'' from blast. (photo 2058-3, page 35 ). The sheet metal signal shack (6' x 6' x 4') is dished about 6'' around the door in the after bulkhead.

### C. Turrets, Guns and Directors.

No damage.

### D. Torpedo Mounts, Depth Charge Gear.

No damage.

### E. Weather Deck.

A few upper deck hatch boards for cargo hatches 1 and 2 were lifted and fell to the deck below without damage. The weather deck is undamaged. Six deflection scratch gages were installed to record movement of the upper deck. Locations and recordings of these gages are tabulated on page 31.

### F. Exterior Hull.

No damage.

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

No damage.

SECRET

USS FILLMORE (APA83)

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.

SECRET

USS FILLMORE (APA83)

R. Strength.

No damage.

S. Miscellaneous.

No comment.

T. Coverings.

There are indications that radiant heat was reflected from the water. Evidence of this is recorded in photo 1730-7; page 36 , which shows blistering near the top of a bulkhead which is beneath an over hanging platform. The blisters increase in size and number near the top of the bulkhead. On one of the winches which had a slight projection at one point, there was no blistering for an inch or two above the projection (photo 1730-8; page 37 ).

SECRET

USS FILLMORE (APA83)

# 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.

A few small salt water lines, already badly corroded, were broken. There is no other damage to machinery, all of which was operated after Test A.

#### II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

SECRET

USS FILLMORE (APA83)

(d) Pressure.

Blast pressure apparently set up a whipping motion of the ship which broke a few small salt water pipes (already badly corroded).

(e) Effects apparently peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery and ship control.

The test had no effect on operation of machinery.

(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.

The test would have had no effect on personnel below deck and did not affect operability.

(e) Total effect on fighting efficiency.

None.

IV. General Summary.

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

V. Preliminary Recommendation.

None.

SECRET

USS FILLMORE (APA83)

## DETAILED DESCRIPTION OF MACHINERY DAMAGE

### A. General Description of Machinery Damage.

#### (a) Overall condition.

There is no change in the overall condition of the machinery of this vessel as a result of Test A.

#### (b) Areas of major damage.

No damage.

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

No damage.

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

The target test had no effect on the operability of the machinery plant.

### B. Boilers.

Undamaged. Both boilers were steamed after Test A, and functioned normally. Hydrostatic tests indicate no change in the tightness of the boilers.

No. 1 boiler was left under 400 lbs. steam pressure and #2 boiler was left under 450 lbs. hydrostatic pressure when the crew left the ship at 0930 on 30 June. No. 1 boiler was down to 0 and #2 boiler was down to 240 lbs. when the crew reboarded the ship at 1500 on 2 July.

SECRET

USS FILLMORE (APA83)



## HYDROSTATIC TEST ON #2 BOILER

	Before Test A	After Test A
Initial pressure	450 lbs/sq. in.	450 lbs/sq. in.
Time required for pressure to drop		
100#	5 hours	5 hours
170	12 hours	14 1/2 hours

### C. Blowers.

Undamaged. All four blowers were operated after Test A, and functioned normally.

### D. Fuel Oil Equipment.

Undamaged. All fuel oil equipment has been tested or used in operation since Test A.

### E. Boiler Feedwater Equipment.

Undamaged. All feedwater equipment has been tested or used in operation since Test A.

### F. Main Propulsion Machinery.

Undamaged. Both main turbo-generators were operated after Test A, and functioned normally.

### G. Reduction Gears.

Not applicable.

### H. Shafting and Bearings.

Undamaged. All bearings, packing glands and the stern tubes were inspected while the shafting was being turned over.

SECRET

USS FILLMORE (APA83)

I. Lubrication System.

Undamaged. All lubrication equipment was tested in operation after Test A.

J. Condensers and Air Ejectors.

Undamaged. All of the condensers and air ejectors were tested in operation after Test A. Performance was normal.

K. Pumps.

Undamaged. All pumps have either been tested or used in operation since Test A, and functioned normally.

L. Auxiliary Generators (Turbines and Gears).

Undamaged. All turbo-generators were operated under load after Test A, and functioned normally.

M. Propellers.

Undamaged. The propellers were inspected from the surface of the water and turned over after Test A. They functioned normally.

N. Distilling Plant.

Undamaged. Both evaporators were placed in service immediately after Test A. Performance was normal.

O. Refrigeration Plant.

Undamaged. The refrigerating plant was placed in operation immediately after Test A. Performance was normal.

P. Winches, Windlasses and Capstans.

Undamaged. All the winches, windlasses and capstans were operated after Test A and functioned normally.

SECRET

USS FILLMORE (APA83)

Q. Steering Engine.

Undamaged. The steering engine was operated from hard over left to hard over right from all stations after Test A and functioned normally.

R. Elevators, Ammunition Hoists, etc.

Undamaged. The forward ammunition hoist was out of commission before Test A because of burned out motor. Its condition was not changed by the test.

The after ammunition hoist and gasoline hoist were operated after Test A, and functioned normally.

S. Ventilation (Machinery).

Undamaged. All ventilation machinery was operated after Test A, and functioned normally.

T. Compressed Air Plant.

Undamaged. The air compressor was operated after Test A, and functioned normally.

U. Diesels (Generators and Boats).

Undamaged. Both diesel fire pumps and the emergency diesel generator were operated after Test A, and functioned normally.

V. Piping Systems.

A few small salt water lines were broken, probably by the whipping motion of the ship following the blast. These lines were badly rusted and in need of replacement before the test.

All other piping has been tested and no changes were found from their condition before Test A.

SECRET

USS FILLMORE (APA83)

## 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 after test - Not observed.

Flooding - None.

###### (b) Structural damage.

Structural damage on this vessel was negligible. A few cargo hatch cover boards were dislodged and the port flag bag on signal bridge was dished. There was no adverse effects on any electrical equipment.

###### (c) Other damage.

The main electric plant, ship control, fire control and electrical equipment associated with gunnery were undamaged and operable.

##### II. Forces Evidenced and Effects Noted.

###### (a) Heat.

This vessel was subjected to a flash of radiant heat coming from the port quarter at an elevation of approximately 25°. This heat was sufficient to scorch manila lines, life rafts and fire hose.

There was no damage to electrical equipment except slight blistering of paint on electric cable on after side of foremast and main mast.

SECRET

USS FILLMORE (APA83)

(b) Fires and explosions.

Small fires were ignited by radiant heat in two swabs left on forecastle and a wood instrument box on fantail. These fires caused no damage to electrical equipment.

(c) Shock.

There was no damage to electrical equipment as a result of shock.

(d) Pressure.

Air blast pressure coming from port quarter forced a portable mounted 500 watt flood light against bulkhead and broke the lens. There was no other damage to electrical equipment.

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

Other than radioactivity, radiant heat and air blast pressure were the effects noted apparently peculiar to the atom bomb.

III. Effects of Damage.

(a) Effect on propulsion and ship control.

No effect.

(b) Effect on gunnery and fire control.

No effect.

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

No effect.

(d) Effect on personnel and habitability.

Other than radioactivity, it is estimated that

SECRET

USS FILLMORE (APA83)

personnel at topside exposed stations would have suffered minor to moderate flash burns from radiant heat and possible bruises resulting from blast pressure wave.

Habitability has in no way been affected.

(e) Total effect on fighting efficiency.

The fighting efficiency of this vessel has not been impaired as a result of any material damage.

IV. General Summary of Observers' Impressions and Conclusions.

Due to the distance of this ship from the center of the burst, heat and blast of bomb was not sufficient to cause any material damage to electrical equipment.

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

None.

SECRET

USS FILLMORE (APA83)

## DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

### A. General Description of Electrical Damage.

#### (a) Overall condition.

The overall condition of electrical equipment remained unchanged and operable, except for a broken lens in a 500 watt portable flood light located on 01 level frame 108, centerline of ship.

#### (b) Areas of major damage.

None.

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

No damage.

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

##### 1. Ship's service generator plant.

Undamaged. Operated satisfactorily.

##### 2. Engine and boiler auxiliaries.

Undamaged. Operated satisfactorily.

##### 3. Electrical propulsion.

Undamaged. Operated satisfactorily.

##### 4. Communications..

Undamaged. Operated satisfactorily.

SECRET

USS FILLMORE (APA83)

5. Fire control circuits.

Undamaged. Operated satisfactorily.

6. Ventilation.

Undamaged. Operated satisfactorily.

7. Lighting.

Except for a broken lens in a 500 watt portable flood light the lighting system was undamaged and operable.

(e) Types of equipment most affected.

None.

B. Electric Propulsion Rotating Equipment.

Undamaged. Operated satisfactorily.

C. Electric Propulsion Control Equipment.

Undamaged. Operated satisfactorily.

D. Generators - Ships Service.

Undamaged. Operated satisfactorily.

E. Generators - Emergency.

Undamaged. Operated satisfactorily.

F. Switchboards, Distribution and Transfer Panels.

Undamaged. Operated satisfactorily.

G. Wiring, Wiring Equipment and Wireways.

Undamaged. Operated satisfactorily.

SECRET

USS FILLMORE (APA83)



H. Transformers.

Undamaged. Operated satisfactorily.

I. Submarine Propelling Batteries.

Not Applicable.

J. Portable Batteries.

Undamaged. Operated satisfactorily.

K. Motors, Motor Generator Sets and Motor Controllers.

Undamaged. Operated satisfactorily.

L. Lighting Equipment.

The lens in a 500 watt portable flood light located on after side of 108 bulkhead centerline of 01 level was broken due to the fixture being blown against the bulkhead by blast pressure. There was no other damage to lighting equipment.

M. Searchlights.

Undamaged. Operated Satisfactorily.

N. Degaussing Equipment.

Undamaged. Operated satisfactorily.

O. Gyro Compass Equipment.

Undamaged. Operated satisfactorily.

P. Sound Powered Telephones.

Undamaged. Operated satisfactorily.

SECRET

USS FILLMORE (APA83)

Q. Ship's Service Telephones.

Not Applicable.

R. Announcing Systems.

Undamaged. Operated satisfactorily.

S. Telegraphs.

Undamaged. Operated satisfactorily.

T. Indicating Systems.

Undamaged. Operated satisfactorily.

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

Undamaged. Operated satisfactorily.

V. F.C. Switchboard.

Undamaged. Operated satisfactorily.

SECRET

USS FILLMORE (APA83)

APPENDIX

SHIPS MEASUREMENT DIAGRAM

TEST ABLE

SECRET

USS FILLMORE (APA 83)

Page 30 of 50 Pages

SHIP U.S.S. FILLMORE (APA-83)

LOCATION			DIST. OFF $\Phi$	MAXIMUM COMP.	MAXIMUM EXP.	PERMANENT SET		REMARKS
FR. NO.	DECK					DISTANCE	EXP/COMP.	
53	MAIN	STBD.	0-0-1/4	NONE		NONE	NONE	
53	"	PORT	NONE	"		"	"	
116	"	PORT	"	"		"	"	
116	"	STBD.	0-0-5/16	"		"	"	
129 1/2	"	STBD.	NONE	"		"	"	
129 1/2	"	PORT	"	"		"	"	

**SECRET**

**U.S.S. FILLMORE (APA 83 )**

SECTION IV

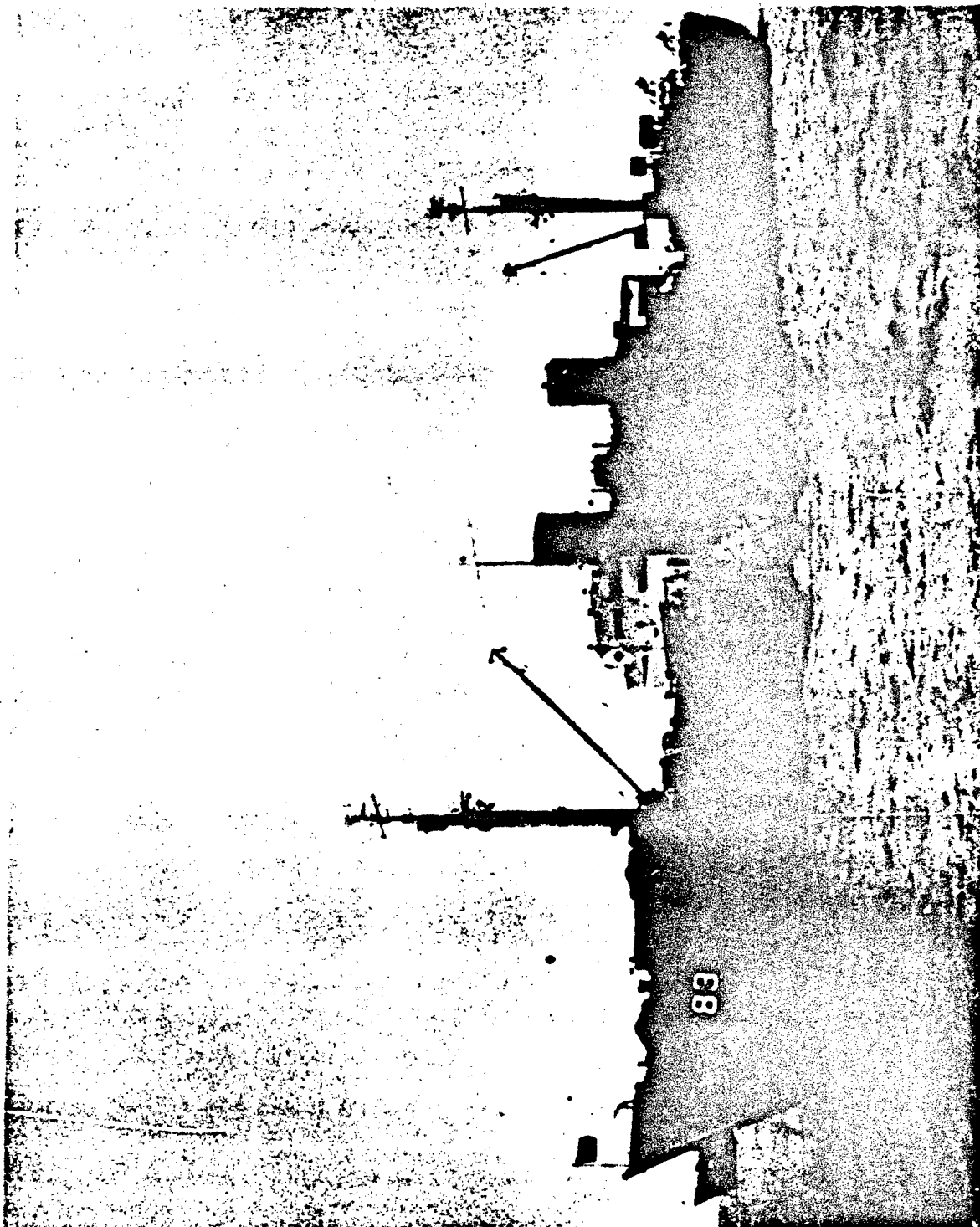
PHOTOGRAPHS

TEST ABLE

SECRET

USS FILLMORE (APA83)

Page 32 of 50 Pages



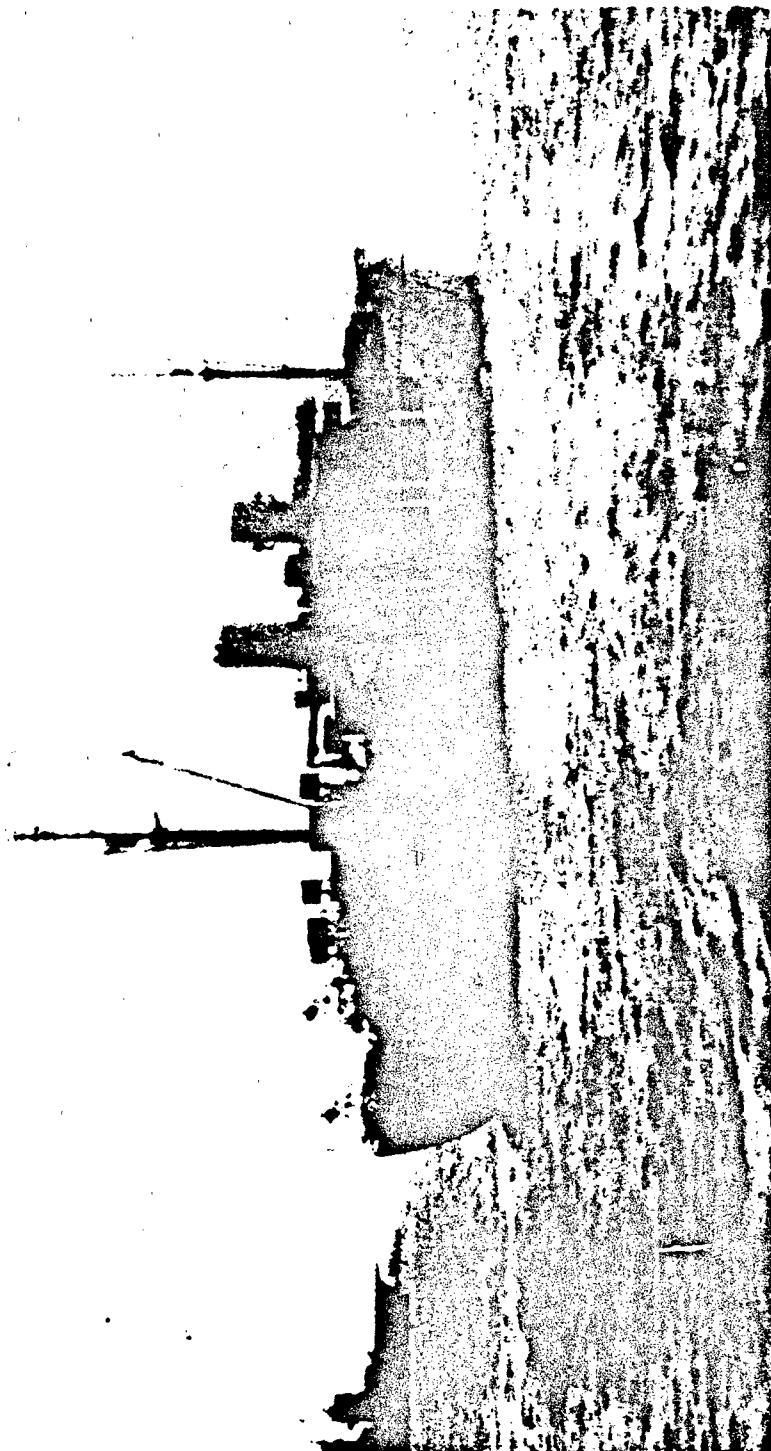
AA-CR-227-49-25. Port bow after Test A.

SECRET

Page 33 of 50 Pages

USS FILLMORE (APA83)

6947



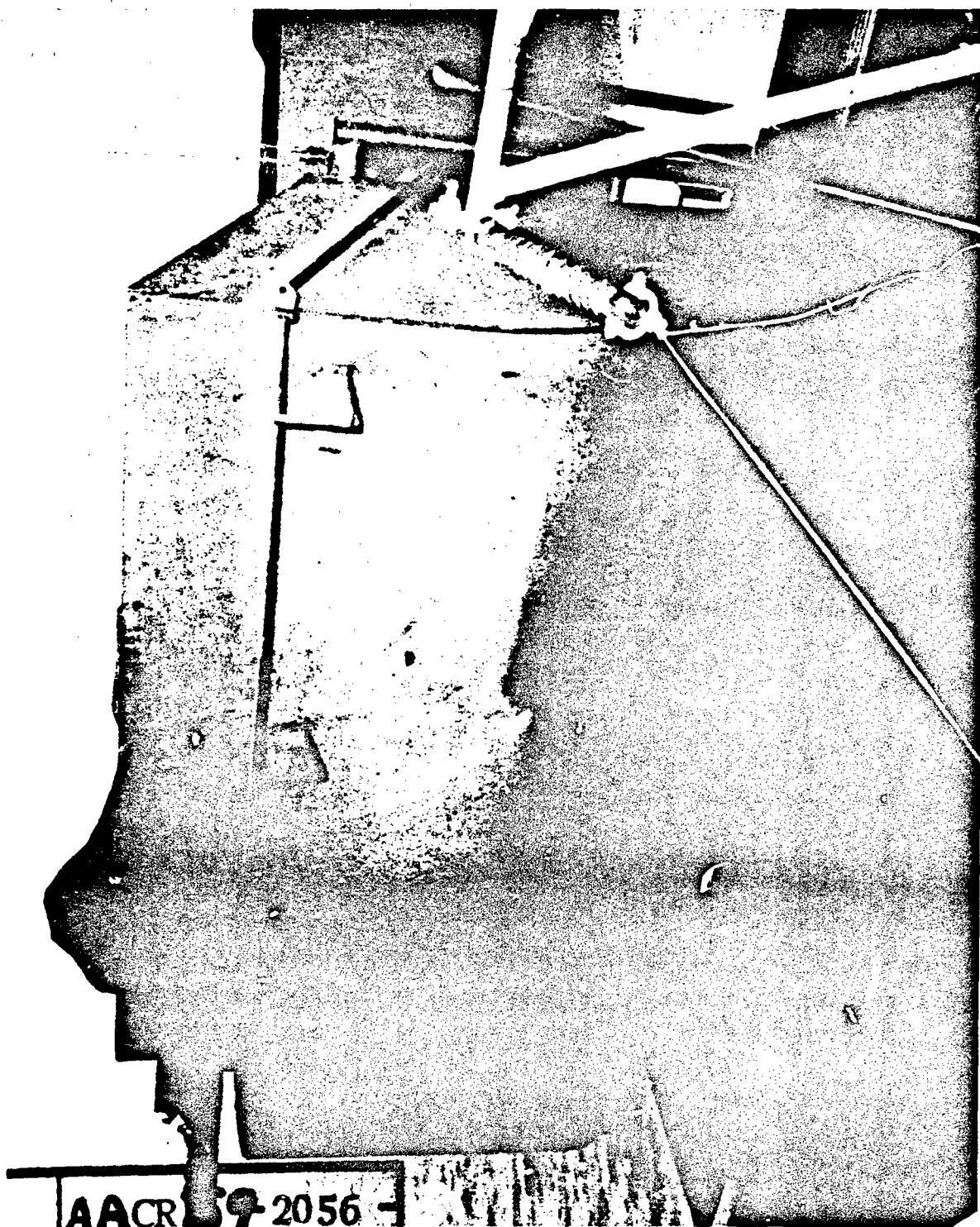
AA-CR-227-49-21. Starboard quarter after Test A.

SECRET

Page 34 of 50 Pages

USS FILLMORE (APA83)

6947

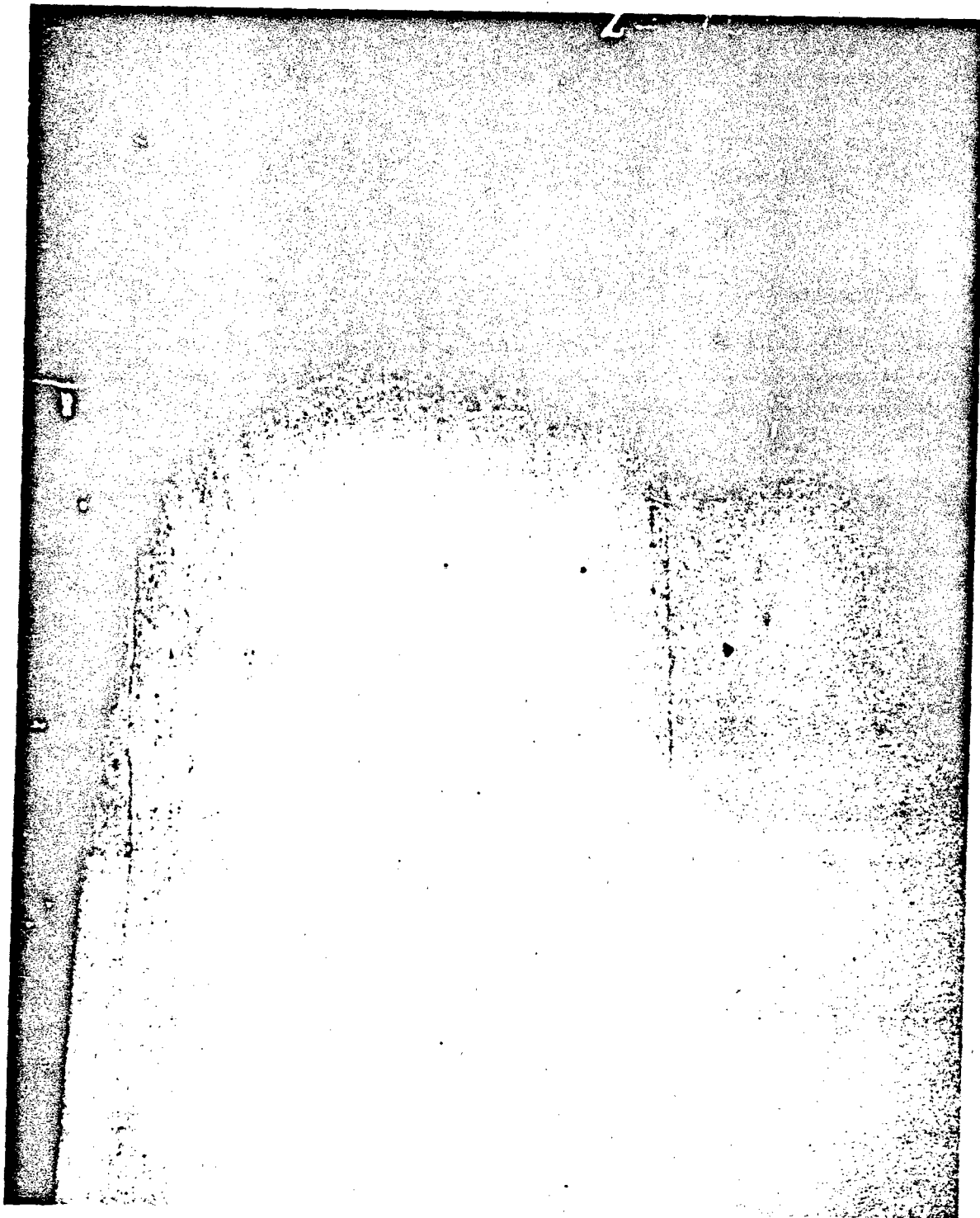


AA-CR-59-2056-3. After side of port flag bag.

SECRET

USS FILLMORE (APA83)





AA-CR-65-1730-7. Blistered paint beneath overhang, port side.

SECRET

Page 36 of 50 Pages

USS FILLMORE (APA83)

6987



AA-CR-65-1730-8. Scorched paint on cargo winch upper deck, frame 127, port.

SECRET

Page 37 of 50 Pages

USS FILLMORE (APA83)

6027

APPENDIX

COMMANDING OFFICERS REPORT

TEST ABLE

SECRET

USS FILLMORE (APA83)

Page 38 of 50 Pages

### SECTION III

#### PART A - GENERAL SUMMARY

##### I. Target Condition After Test.

(a) Draft was the same as before test; forward - 11' - 00", aft - 16' - 06" mean - 13' - 09". There was no list, no flooding.

(b) No structural damage was done to this vessel.

(c) No damage was done to machinery, electrical, ship control, fire control, gunnery or electronic equipment. Operability of above machinery was not impaired.

(d) Heat was sufficiently intense on the port side (out side) to char Manila lines, life rafts and fire hose. No fires were started except two swabs that had been left on the forecastle and one instrument box on the fantail. It is estimated that one half of the exposed personnel would have become casualties; personnel below decks - none.

##### II. Forces Evidenced and Effects Noted.

(a) Heat was, as noted above, intense. Direction of heat was from the port quarter, elevation about 25 degrees. Heat did not penetrate the hull structure.

(b) Two minor fires resulted as noted in I (d) above. No explosions resulted.

(c) Shock came from port quarter, elevation about 25 degrees. No damage was done by shock except two 1" lines in (two heads) were broken.

(d) No damage was done due to pressure.

(e) The one effect apparently due to the Atom Bomb was the intense heat.

SECRET

USS FILLMORE (APA83)

### III. Results of Test on Target.

- (a) Ship propulsion and ship control was not impaired.
- (b) Gunnery and fire control equipment was not impaired.
- (c) Water-tight integrity and stability was not damaged.
- (d) It is estimated that one half the exposed personnel would have been casualties. Ship was livable.
- (e) Except for loss of exposed personnel, fighting efficiency of the ship would not be reduced.

### IV. General Summary.

Damage to this vessel as a result of the Atom Bomb was negligible. Personnel casualties would have been serious.

V. Exposed personnel could be better protected by gun shields and some form of white coveralls plus a face mask.

SECRET

USS FILLMORE (APA83)

PART C - INSPECTION REPORT

SECTION I. HULL

A. No damage was done to the hull.

B. Superstructure.

No damage was done to the superstructure except the after side of port flag bag on the signal bridge was dished in.

C. Turrets, Guns and Directors.

No damage was done to the guns or directors. Paint was blistered slightly on one 20MM Mark 14 gun sight: Gun was located on the port side of signal deck.

D. Torpedo Mounts and Depth Charge Gear.

None.

E. Weather Deck (Flight Deck on Aircraft Carriers).

None.

F. Exterior Hull (Above Waterline).

No damage.

G. Interior Compartments (Above Waterline or Armor Deck, if Fitted).

No damage.

H. Armor Deck.

None.

SECRET

USS FILLMORE (APA83)

I. Interior Compartments (Below Waterline).

No damage.

J. Underwater Hull.

No damage.

K. Tanks.

No damage was done to tanks. There was no apparent contamination of liquids in tanks.

L. Flooding.

There was no damage due to flooding.

M. Ventilation.

There was no damage to the ventilation system.

N. Ship Control.

There was no damage to ship control.

O. Fire Control.

There was no damage to fire control.

P. Ammunition Behavior.

No damage was done to or by ammunition.

Q. Ammunition Handling.

Ammunition handling devices were not damaged.

SECRET

USS FILLMORE (APA83)

R. Strength.

No damage to ship's strength. Compression gauge showed upper deck at frame 53 starboard compressed  $7/32''$ . Compression gauge showed upper deck at frame 116 starboard compressed  $11/32''$ . Each returned to original position.

S. Miscellaneous.

Paint was blistered on hull (port side) from frame 150 to stern.

SECRET

USS FILLMORE (APA83)



PART C - INSPECTION REPORT

SECTION II - MACHINERY

A. General Description.

No damage was done to machinery.

B. Boilers (S51).

No damage was done to boilers.

C. Blowers (S53).

No damage was done to blowers.

D. Fuel Oil Equipment. (S55).

No damage was done to fuel oil equipment.

E. Boiler Feedwater Equipment (S56).

No damage was done to boiler feedwater equipment.

F. Main Turbines (S41).

No damage was done to main turbines.

G. Reduction Gears (S42).

No damage was done to reduction gears or to electric drive equipment.

H. Shafting and Bearings (S43).

No damage was done to shafting or bearings.

I. Lubrication System (S45).

No damage was done to the lubrication system.

SECRET

USS FILLMORE (APA83)

J. Condensers and Air Ejectors (S46).

No damage was done to the condensers or air ejectors.

K. Pumps (S47).

No damage was done to the pumps.

L. Auxiliary Generators (S61).

No damage was done to the auxiliary generators.

M. Propellers (S44).

No damage was done to the propellers.

N. Distilling Plant (S58).

No damage was done to distilling plant.

O. Refrigerating Plant (S59).

No damage was done to the refrigerating plant.

P. Winches, Windlasses and Capstans (S20-26).

No damage was done to winches, windlasses or capstans.

Q. Steering Engine (S22).

No damage was done to steering engine.

R. Elevators, Ammunition Hoists, etc. (S78-83).

No damage was done to elevators, ammunition hoists, etc.

SECRET

USS FILLMORE (A-111)

S. Ventilation (Machinery) (S38).

No damage was done to ventilation (machinery).

T. Air Compressors (S49).

No damage was done to air compressors.

U. Diesels (Generators and Boats) (S50).

No damage was done to diesels (generators and boats).

V. Piping.

No damage was done to piping except:

1. 1" salt water pipe, frame 18 main deck (in forward crew's head) carried away.

2. 1" salt water pipe, frame 169 main deck (in after troop head) carried away.

W. Miscellaneous.

None.

 USS FILLMORE (APA83)

PART C - INSPECTION REPORT

SECTION III. ELECTRICAL

A. General Description of Electrical Damage.

No damage was done to electrical equipment.

B. Electric Propulsion Rotating Equipment (S41).

No damage was done to electric propulsion rotating equipment.

C. Electric Propulsion Control Equipment (S41).

No damage was done to electric propulsion control equipment.

D. Generators - Ships Service (S61).

No damage was done to ships service generators.

E. Generators - Emergency (S61).

No damage was done to emergency generators.

F. Switchboards (S62).

No damage was done to switchboards.

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

No damage was done to wiring, wiring equipment or wireways except; (a) Paint on the after side of the wiring on both foremast and mainmast shows signs of slight blistering.

H. Transformers (Lighting and I.C.) (S62).

No damage was done to lighting or I.C. transformers.

I. Submarine Propelling Batteries (S62).

None.

USS FILLMORE (APA 83)

J. Portable Batteries (S62).

No damage to portable batteries.

K. Motors, Motor Generator Sets, etc. (S63).

No damage was done to motors, motor generator sets, etc.

L. Lighting Equipment (S64).

No damage was done to lighting equipment.

M. Searchlights (S66).

No damage was done to searchlights.

N. Degaussing Equipment (S81).

No damage was done to degaussing equipment.

O. Gyro Compass Equipment.

No damage was done to gyro compass equipment.

P. Sound Powered Telephones.

No damage was done to sound powered telephones.

Q. Ships Service Telephones.

None.

R. Announcing Systems.

No damage was done to announcing systems.

S. Telegraphs.

No damage was done to telegraphs.

USS FILLMORE (APA83)

T. Indicating Systems.

No damage was done to indicating systems.

U. I.C. and A.C.O. Switchboards.

No damage was done to I.C. or A.C.O. switchboards.

V. F.C. Switchboards.

None.

~~SECRET~~ USS FILLMORE (APA83)

PART C - INSPECTION REPORT

SECTION IV. ELECTRONICS

A. General Description of Electronics Damage.

There was no damage to electronics equipment.

**CONFIDENTIAL**

Classification (~~SECRET~~) (Changed to ~~CONFIDENTIAL~~)  
By Authority of ~~Joint Chiefs of Staff~~ Action of 15 April 1949  
By *Henry H. Dunder* 24 April 51  
1<sup>st</sup> Lt. AFSWP

**CONFIDENTIAL**

**CONFIDENTIAL**

**CONFIDENTIAL**

USS FILLMORE (APA83)