

UNCLASSIFIED

AD NUMBER
AD031096
LIMITATION CHANGES
TO: Approved for public release; distribution is unlimited.
FROM: Distribution authorized to DoD only; Test and Evaluation; 19 JAN 1954. Other requests shall be referred to Naval Proving Ground, Dahlgren, VA. Pre-dates formal DoD distribution statements. Treat as DoD only.
AUTHORITY
NSWC notice dtd 7 Aug 1981

THIS PAGE IS UNCLASSIFIED

UNCLASSIFIED

AD NUMBER	
AD031096	
CLASSIFICATION CHANGES	
TO:	unclassified
FROM:	confidential
LIMITATION CHANGES	
TO: Distribution authorized to DoD only; Test and Evaluation; 19 JAN 1954. Other requests shall be referred to Naval Proving Ground, Dahlgren, VA. Pre-dates formal DoD distribution statements. Treat as DoD only.	
FROM: Controlling DoD Organization: Naval Proving Ground, Dahlgren, VA.	
AUTHORITY	
31 Jan 1966, DoDD 5200.10; Pre-dates formal DoD distribution statements. Treat as DoD only.	

THIS PAGE IS UNCLASSIFIED

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

REPORT NO. 1229

TASK ASSIGNMENT NPG-Re3c-321-4-53

3rd Partial Report

BOMB, DEMOLITION 3000 LB., T55; GUNFIRING TEST OF

FINAL Report

Copy No. 9

Task

Assignment NPG-Re3c-321-4-53

Classification CONFIDENTIAL

54AA-3551

THIS REPORT HAS BEEN DELIMITED
AND CLEARED FOR PUBLIC RELEASE
UNDER DOD DIRECTIVE 5200.20 AND
NO RESTRICTIONS ARE IMPOSED UPON
CLASSIFICATION AND DOWNGRADING

DISTRIBUTION STATEMENT A

APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION UNLIMITED.

7 7

**NOTICE: 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.**

Reproduced
FROM LOW CONTRAST COPY.

L L L L

Bomb Demolition 3000 lb. T55; Gunfiring Test of

PART A

SYNOPSIS

1. The tests reported herein were conducted to compare the impact performances of token-loaded and inert-loaded 3000 lb. Demolition Bombs T55.

2. As a result of the test conducted, it is concluded that:

a. The 3000 lb. Demolition Bomb T55, token-loaded, will perform as well as the inert-loaded Bomb T55, both being effective when tested against 10" reinforced concrete at 15° obliquity and 1000 f/s striking velocity, provided that an inert filler with adequate compressive strength is used.

Bomb, Demolition 3000 lb. T55; Gunfiring Test of
-----TABLE OF CONTENTS

	<u>Page</u>
SYNOPSIS	1
TABLE OF CONTENTS	2
AUTHORITY	3
REFERENCES	3
BACKGROUND	3
OBJECT OF TEST	3
PERIOD OF TEST	4
REPRESENTATIVES PRESENT	4
DESCRIPTION OF ITEM UNDER TEST	5
DESCRIPTION OF TEST EQUIPMENT	5
PROCEDURE	5
RESULTS AND DISCUSSION	6
CONCLUSIONS	7
APPENDIX A - SUMMARY OF FIRING CONDITIONS	TABLE I
APPENDIX B - BUTT IMPACT RECORDS	TABLES II-VI (Incl)
APPENDIX C - NPG PHOTOGRAPHS	FIGURES 1-5 (Incl)
APPENDIX D - NPG PHOTOGRAPH	FIGURE 6
APPENDIX E - DISTRIBUTION	1-2 (Incl)

Bomb, Demolition 3000 lb. T55; Gunfiring Test of
-----PART BINTRODUCTION

1. AUTHORITY:

This test was conducted under the authority of Task Assignment NPG-Re3c-321-4-53 in accordance with reference (a) as modified by reference (b).

2. REFERENCES:

- a. BUORD Rest ltr Re3c-LME:lkf F41-6 of 2 Jan 1952
- b. BUORD Rest ltr Re3c-LME:jk F41-6 of 11 Mar 1952
- c. NPG Conf Report No. 945 of 27 Mar 1952
- d. NAVPROV Conf ltr-OT:DDH:ags A11/3c321-4 Ser 35098 of 17 Sep 1953
- e. BOSO 452648

3. BACKGROUND:

The Army Ordnance Department's project for "Research and Development of Bombs for Future Aircraft" includes the development of a 3000 lb bomb, T55. Ballistic tests of inert loaded T55 bombs were conducted by the Naval Proving Ground in the latter part of 1951. Results of these tests were reported in reference (c). Reference (d) reports the results of the first three token loaded 3000 lb Bombs T55 tested at the Naval Proving Ground.

4. OBJECT OF TEST:

The object of this test was to compare the impact performances of token-loaded and inert-loaded 3000 lb Demolition Bombs T55.

CONFIDENTIAL

NPG REPORT NO. 1229

Bomb, Demolition 3000 lb. T55; Gunfiring Test of

5. PERIOD OF TEST:

a. Dates of Project Letters	2 Jan 1952 11 Mar 1952
b. Dates Necessary Material Received	2 Dec 1952 26 Oct 1952
c. Date Commenced Test	22 Jul 1953
d. Date Test Completed	4 Nov 1953

6. REPRESENTATIVES PRESENT:

The following persons witnessed the ballistic tests on the dates shown:

<u>Name</u>	<u>Date</u>	<u>Activity</u>
Mr. G. W. Asprooth	2 Nov 1953	Office of the Chief of Ordnance
Mr. H. D. Barnes	2 Nov 1953	A. C. Smith Corp.
Mr. H. S. Beckman	4 Nov 1953	Office of the Chief of Ordnance
LTCOL Cushman	24 Jul 1953	USAF
Mr. S. K. Einbinder	2 Nov 1953	Picatinny Arsenal
Mr. N. W. Frederickson	2 Nov 1953	Office of the Chief of Ordnance
Mr. S. F. Lawrence	2 Nov 1953	Picatinny Arsenal
Mr. F. Ludden	24 and 31 Jul 1953	Office of the Chief of Ordnance
Mr. O'Neil	24 Jul 1953	Office of the Chief of Ordnance
Mr. O. C. Pototschnik	31 Jul and 4 Nov 1953	Office of the Chief of Ordnance
MAJ C. A. Proctor	31 Jul and 4 Nov 1953	USAF
COL J. H. Shea	4 Nov 1953	USAF

CONFIDENTIAL

Bomb, Demolition 3000 lb. T55; Gunfiring Test of
-----PART CDETAILS OF TEST

7. DESCRIPTION OF ITEM UNDER TEST:

Bomb, Demolition, 3000 lb. T55, as supplied by the Army Ordnance Department for this test was 24" in diameter and 94"5 in length overall. The bombs were token-loaded with tritonal. Three of the bombs contained a charge of approximately 100 lbs. in the nose section. This charge consisted mainly of tritonal with a layer of TNT to separate the tritonal from the inert vermiculite-cement filler. The remaining two bombs contained 60 lbs. of tritonal. The inert filler in one of these bombs was vermiculite-cement and the other was an inert mixture of 81% PCN, (believed to be polychloronaphthalene) 9% Celite and 10% iron oxide. The base of each bomb was fitted with a special base plate to withstand the pressure of propellant gases during gunfiring. This base plate was also fitted with an eye bolt to assist in loading the bomb through the gun muzzle prior to firing. The nose fuze seat liner in each bomb was supported by a machined aluminum plug. The bombs as tested weighed from 2906 lbs to 2996 lbs.

8. DESCRIPTION OF TEST EQUIPMENT:

- a. Gun: 24" Smooth Bore Type A, Mod O, No. 235
- b. Propellant: 5"/38 Smokeless Powder SPDN-9830 plus Black Powder Boosters
- c. Targets: Reinforced concrete blocks constructed according to NPG Dwg. No. 2434 of 10 March 1949

9. PROCEDURE:

The bombs were fired from the 24" smooth-bore gun using a propellant charge of 3 sections of smokeless powder SPDN-9830 (5"/38 caliber) made up in 8"/55 bags. A 5 lb. pad of black powder was attached to each section to assist in proper ignition of the charge. Velocities of the bombs were measured by the standard method of firing through coils and measuring time intervals with recording oscillographs. The target was

Bomb, Demolition 3000 lb. T55; Gunfiring Test of

supported in steel butts and was backed with a large sandpile to stop the bomb and assist in recovery. Each fired bomb was recovered and examined for condition prior to firing the next bomb on this program.

10. RESULTS AND DISCUSSION:

Detailed firing records, butt impact records and photographs of bombs tested are contained in Appendix (A), Table I, Appendix (B) Tables II through VI, and Appendix (C) Figures 1 through 5. Briefly, the results were as follows:

a. The first bomb was fired at a velocity of 1049 ft./sec. at 10" of reinforced concrete set at 15° obliquity. The bomb deflagrated upon impact, resulting in only partial penetration.

b. The second bomb was fired under the same conditions to confirm the results obtained from the first shot. The striking velocity on this shot was 1001 ft./sec.. The bomb did not deflagrate, but it was recovered in an ineffective condition with the nose section broken open and an indication of partial burning of the tritonal filler.

c. The third bomb was fired against 8" of reinforced concrete set at 15° obliquity with a velocity of 1049 ft./sec.. This bomb deflagrated after penetration.

d. At this time, further testing was postponed upon request of the Army Ordnance representatives present at the firing of the third bomb. The two remaining bombs plus metallurgical samples from the fired bombs were shipped by authority of reference (a) to Picatinny Arsenal for examination.

e. It is understood that all three of the above bombs had been made from the same tubing and that the metal in this tubing was defective. Consequently, in November of 1953, two additional bombs, from two different lots, were received to complete the tests.

f. The fourth bomb, lot PAE 13705, with a vermiculite-cement inert filler was fired against 10" reinforced concrete set at 15° obliquity with a striking velocity of 1003 ft./sec.. This bomb was effective and intact with no deformation.

Bomb, Demolition 3000 lb. T55; Gunfiring Test of

g. The last bomb in this test was fired under the same conditions. This bomb was from lot PAE 13704 and contained an inert filler of PCN. This bomb deflagrated after penetration. An analysis of the PCN filler was made and it was determined that PCN has a compressive strength of approximately 350 lbs per sq. in. and a melting point of 91°C. The lack of sufficient compressive strength in the inert filler (compared with the compressive strength of the explosive used) could contribute to the failure of the bomb. A question was raised as to the possibility of a weld existing circumferentially just aft of the ogive of this bomb. Examination by the hot acid etch method was made and it was determined that no weld existed. A photomicrograph of the section under question is contained in Figure 1 of Appendix (D).

PART DCONCLUSIONS

11. As a result of these tests, it is concluded that:

a. The 3000 lb. Demolition Bomb T55, token-loaded, will perform as well as the inert-loaded bomb T55, both being effective when tested against 10" reinforced concrete at 15° obliquity and 1000 ft./sec. striking velocity, provided that an inert filler with adequate compressive strength is used.

CONFIDENTIAL

NPG REPORT NO. 1229

Bomb. Demolition 3000 lb. T55; Gunfiring Test of

The tests upon which this report is based were conducted by:

D. D. HARRIS, Lieutenant, USN
Terminal Ballistics Firing Officer
Terminal Ballistics Department

This report was prepared by:

D. D. HARRIS, Lieutenant, USN
Terminal Ballistics Firing Officer
Terminal Ballistics Department

This report was reviewed by:

R. H. LYDDANE, Director of Research
Terminal Ballistics Department
W. B. ROBERTSON, Lieutenant Commander, USN
Terminal Ballistics Officer
Terminal Ballistics Department
C. C. BRAMBLE, Director of Research, Ordnance Group

APPROVED: J. F. BYRNE
Captain, USN
Commander, Naval Proving Ground



E. A. HUCKNER
Captain, USN
Ordnance Officer
By direction

CONFIDENTIAL

CONFIDENTIAL

NPG REPORT NO. 1229

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

Third Partial Report

on

Task Assignment NPG-Re3c-321-4-53

Final Report

on

Bomb, Demolition 3000 lb., T55; Gunfiring Test of

Project No: NPG-Re3c-321-4-53

Copy No: 9

No. of Pages: 8

CONFIDENTIAL

Date:

JAN 19 1954

CONFIDENTIAL

NPG REPORT NO. 1229

Bomb, Demolition 3000 lb. T55; Gunfiring Test of

TABLE I

SUMMARY OF FIRING CONDITIONS

Date Fired 1953	Bomb Lot No.	Impact No.	Target	Obl.	Pene- tration (f/s)	Str. Vel. (t.s.i.)	Breach Press (t.s.i.)	Powder Charge	Remarks
22 Jul	JA5-1	41221	10" Conc	15°	Partial	1049	2.6	135 lb of SPDN-9830 Plus 15 lb Black Powder	Bomb deflagrated on impact.
24 Jul	JA5-1	41255	10" Conc	15°	C	1001	2.5	129 lb of SPDN-9830 Plus 15 lb Black Powder	Bomb ineffective nose section broke open - tritonal filler partially burned.
31 Jul	JA5-1	41274	8" Conc	15°	C	1024	2.6	129 lb of SPDN-9830 Plus 15 lb Black Powder	Bomb deflagrated after impact.
2 Nov	PAE- 13705	41586	10" Conc	15°	C	1003*	2.5	129 lb of SPDN-9830 Plus 15 lb Black Powder	Bomb effective and intact with no deformation
4 Nov	PAE- 13704	41587	10" Conc	15°	C	1024	2.5	129 lb of SPDN-9830 Plus 15 lb Black Powder	Bomb deflagrated after impact

*12 ft/sec.
CONFIDENTIAL

APPENDIX A

REF: (a)

NPG Conf Report No. 1229 of

TEST OBJECT		IMPACT NUMBER 41255	
Test of 3000% Demolition Bomb T55E5 Tritonal loaded		DATE OF IMPACT 7-24-53	
		BUTT NO F	
CONCRETE XXXX BLOCK		BOMB XXXXXXXX	
GAGE 10"0	CLASS	CALIBER 24"	TYPE U. S. Bomb
MANUFACTURER	CONTRACT	MANUFACTURER Joliet Arsenal	LOT NO JA-5-1
GROUP	NO #5	MARK T55E5	MOO
DIMENSIONS 10" x 15" x 15"		PROJECTILE NO	YEAR OF SPECIFICATION
IMPACT DATA		CAPPED ☐ YES ☒ NO	LENGTH (Uncapped)
OBLIQUITY 15°	PENETRATION	WEIGHT (Capped)	WEIGHT (Uncapped) 2996#
THICKNESS AT IMPACT	NO. OF IMPACT ON PLATE	FUZE	FILLER TNT and Tritonal 90%
DISTANCE FROM NEAREST IMPACT	THROUGH OPENING	CONDITION AFTER FIRING ☐ EFFECTIVE ☒ INEFFECTIVE	Vermiculite-cement
DISTANCE FROM ☐ TOP ☐ BOTTOM	DISTANCE FROM ☒ RIGHT ☐ LEFT	Bomb ineffective - nose section	
FLAKING FRONT	FLAKING BACK	broken open: Tritonal filler	
SPUR	DISH	partially burnt.	
CRACKS	BULGE		
BUTTON ☐ THROWN ☐ STARTED			
VELOCITY (F.S.)			
DESIRED	OBTAINED	☐ MUZZLE ☐ STRIKING ☒ MEAN	1001
REMARKS			

SPDN-9830 = 3 sections, 43.0# each
+ 1-5# B.P. Booster each section

DATE	TIME	RECOMMENDATION ☐ ACCEPT ☐ REJECT
SIGNATURE L. D. BARRIS		TITLE PLATE BATTERY OFFICER

CONFIDENTIAL

TABLE II

APPENDIX B

NAVY SUPPLY PRNC, WARR., D.C.

REF: ()

NPG Conf Report No. 1229 of

TEST OBJECT Test of 3000% Demolition Bomb T55E5 Tritonal Loaded				IMPACT NUMBER 41221
				DATE OF IMPACT 7-22-53
				BUTT NO F
CONCRETE BLOCK		BOMB		
GAGE 10" 0	CLASS	CALIBER 24"	TYPE U. S. Bomb	
MANUFACTURER	CONTRACT	MANUFACTURER Joliet Arsenal	LOT NO -	
GROUP	NO #5	MARK T55E5	MOD -	
DIMENSIONS 10" x 15" x 15"		PROJECTILE NO	YEAR OF SPECIFICATION -	
IMPACT DATA		CAPPED ☐ YES ☒ NO	LENGTH (Uncapped) -	
OBliquITY 15°	PENETRATION	WEIGHT (Capped)	WEIGHT (Uncapped) 2986#	
THICKNESS AT IMPACT	NO. OF IMPACT ON PLATE	FUZE	FILLER T and Tritonal- 90% Vermiculite-cement	
DISTANCE FROM NEAREST IMPACT	THROUGH OPENING	CONDITION AFTER FIRING ☐ EFFECTIVE ☒ INEFFECTIVE	Bomb deflagrated upon impact.	
DISTANCE FROM ☐ TOP ☐ BOTTOM	DISTANCE FROM ☐ RIGHT ☐ LEFT			
FLAKING FRONT	FLAKING BACK			
SPLUR	DISH			
CRACKS	BULGE			
BUTTON ☐ THROWN ☒ STARTED				
Impact Dimens:		VELOCITY (F.S.)		
DESIED	OBTAINED	☐ MUZZLE ☐ STRIKING ☒ MEAN	1049	

Chg: 135% SPDN-9830, + 1-5% BP Booster each section
3 sections: 45% each

Time fired: 1205

Gun: 24" Type A-0 #235

c/d	f(s/d,0)	RECOMMENDATION ☐ ACCEPT ☐ REJECT
SIGNATURE /s/ D. D. HARRIS		TITLE PLATE BATTERY OFFICER

CONFIDENTIAL

TABLE III

APPENDIX B

NAVY-OPPO PRNC, WASH., D.C.

REF: (•)

NPG Conf Report No. 1229 of

TEST OBJECT		IMPACT NUMBER 41274	
Test of 3000% Demolition Bomb T55 Tritonal Loaded		DATE OF IMPACT 7-31-53	
		BUTT NO F	
CONCRETE	BLOCK	LOMB	BRICK
GAUGE 870	CLASS	CALIBER 24"	TYPE T55 - U. S.
MANUFACTURER	CONTRACT	MANUFACTURER Joliet Arsenal	LOT NO JA-5-1
GROUP	NO #1	MARK	MOD
DIMENSIONS 8" x 15' x 15'		PROJECTILE NO	YEAR OF SPECIFICATION
IMPACT DATA		CAPPED ☐ YES ☒ NO	LENGTH (Uncapped)
OBLIQUITY 15°	PENETRATION Complete	WEIGHT (Capped)	WEIGHT (Uncapped) 2973
THICKNESS AT IMPACT 870	NO. OF IMPACT ON PLATE 1	FUZE	FILLER TNT and Tritonal 90%
DISTANCE FROM NEAREST IMPACT 0	THROUGH OPENING 52" x 65	CONDITION AFTER FIRING ☐ EFFECTIVE ☒ INEFFECTIVE	Vermiculite-cement
DISTANCE FROM ☒ TOP ☐ BOTTOM 129"	DISTANCE FROM ☐ RIGHT ☒ LEFT 102"	Bomb deflagrated after penetration: split open	
FLAKING FRONT 59" x 70"	FLAKING BACK 58" x 70"		
SPUR none	DISH none		
CRACKS none	BULGE none		
BUTTON ☒ THROWN ☐ STARTED			
Impact Dimens: 55" x 69"		VELOCITY (F.S.)	
DESIRED	OBTAINED	☐ MUZZLE ☐ STRIKIN	☒ MEAN 1024

SPLN-9830, 3 sections, 43% each, total 129%
+ 1-5% BP Booster each section

GUN: 2470 Mk Type A - O #235

c/d	F(+/-, 0)	RECOMMENDATION ☐ ACCEPT ☐ REJECT
SIGNATURE /s/ D. D. HARRIS		TITLE PLATE BATTERY OFFICER

CONFIDENTIAL

TABLE IV

APPENDIX B

NAVY OPNAV PRNC, WASH., D.C.

REF: (a)

NPG Conf Report No. 1229 02

TEST OBJECT				IMPACT NUMBER 41586	
Test of 3000 lb Demolition Bomb T55E3 Tritonal Loaded				DATE OF IMPACT 11-2-53	
				BUTT NO Butt F	
CONCRETE PAE BLOCK		BOMB XXXXXXXX			
GAUGE 10"	CLASS	CALIBER 24"	TYPE Bomb		
MANUFACTURER NPG	CONTRACT	MANUFACTURER A.O. Smith Corp.	LOT NO PAE 13705		
GROUP	NO #13	MARK T55E3	MOO		
DIMENSIONS 10" x 10' x 12'		PROJECTILE NO #1	YEAR OF SPECIFICATION		
IMPACT DATA		CAPPED ☐ YES ☒ NO	LENGTH (Uncapped)		
OBLIQUITY 15°	PENETRATION Complete	WEIGHT (Capped)	WEIGHT (Uncapped) 2940;		
THICKNESS AT IMPACT 10"	NO. OF IMPACT ON PLATE #1	FUZE	FILLER Vermiculite-Cement #60 Tritonal (EO/20)		
DISTANCE FROM NEAREST IMPACT 0	THROUGH OPENING 32" x 33"	CONDITION AFTER FIRING ☒ EFFECTIVE ☐ INEFFECTIVE			
DISTANCE FROM ☒ TOP ☐ BOTTOM 66"	DISTANCE FROM ☐ RIGHT ☒ LEFT 59"	Bomb effective and intact; no deformation; base plate torn off.			
FLAKING FRONT 70" x 78"	FLAKING BACK 68" x 74"				
SPUR 0	DISH 0				
CRACKS 0	BULGE 0				
BUTTON ☒ THROWN ☐ STARTED					
VELOCITY (F.S.)					
DESIRED	OBTAINED	☐ MUZZLE	☐ STRIKING	Est. 1003±12	

Wt. of Chg.: **129# SPDN-9630, 3 sections, 43# per section
+ 3-5# BP Booster**

Guns: **24" Type A-0 #235**

SIGNATURE /s/ D. D. HARRIS		TITLE PLATE BATTERY OFFICER	
RECOMMENDATION ☐ ACCEPT ☐ REJECT			

CONFIDENTIAL

TABLE V

APPENDIX B

BATT-BPPO PRNC, WARR., D.C.

REF: (a)

NPG Conf Report No. 1229 of

TEST OBJECT

Test of 3000% Demolition Bomb T55E3 Tritonal loaded

IMPACT NUMBER	41587
DATE OF IMPACT	11-4-53
BUTT NO	F

CONCRETE TEST BLOCK		BOMB XXXXXXXX	
GAUGE 10"	CLASS	CALIBER 24"	TYPE Bomb
MANUFACTURER NPG	CONTRACT	MANUFACTURER A.O. Smith Corp.	LOT NO PAE 13704
GROUP	NO 14	MARK T55E3	MOO
DIMENSIONS 10" x 10" x 12"		PROJECTILE NO #2	YEAR OF SPECIFICATION
IMPACT DATA		CAPPED ☐ YES ☒ NO	LENGTH (Uncapped)
OBLIQUITY BLOCK BURSTED	PENETRATION	WEIGHT (Capped)	WEIGHT (Uncapped) 2908#
THICKNESS AT IMPACT NO MEASUREMENTS	NO. OF IMPACT ON PLATE	FUZE	FILLER PCN 60% Tritonal (80/20)
DISTANCE FROM NEAREST IMPACT	THROUGH OPENING	CONDITION AFTER FIRING ☐ EFFECTIVE ☒ INEFFECTIVE	
DISTANCE FROM ☐ TOP ☐ BOTTOM	DISTANCE FROM ☐ RIGHT ☐ LEFT	Deflagrated after penetration; split open	
FLAKING FRONT	FLAKING BACK		
SPUR	DISH		
CRACKS	BULGE		
BUTTON ☐ THROWN ☐ STARTED			

VELOCITY (F.S.)

DESIRED	OBTAINED	☐ MUZZLE	☐ STRAIN	☒ MEAN 1024
---------	----------	---------------------------------	---------------------------------	---

Wt. of Chg.: 129# SPDN-9830
3 sections: 43# per section
+ 3-5# PB Boosters

Gun: 24" MK A-0 #235

c/d	F(c/d,0)	RECOMMENDATION ☐ ACCEPT ☐ REJECT
SIGNATURE /s/ D. D. HARRIS		TITLE PLATE BATTERY OFFICER

CONFIDENTIAL

TABLE VI

APPENDIX B

NAVY OPN: PRNC, WASH., D.C.

NP9-63906

Impact No.
41221

22 July 1953

Obliquity
15°

Thickness
10" cone

Striking vel. (f/s)
1049

FIGURE 1

CONFIDENTIAL

Penetration
Partial

Remarks
Bomb deflagrated
upon impact.



NP9-63907

Impact No.
41255

Obliquity
15°

Thickness
10" conc

Striking
Vel. (f/s)
1001

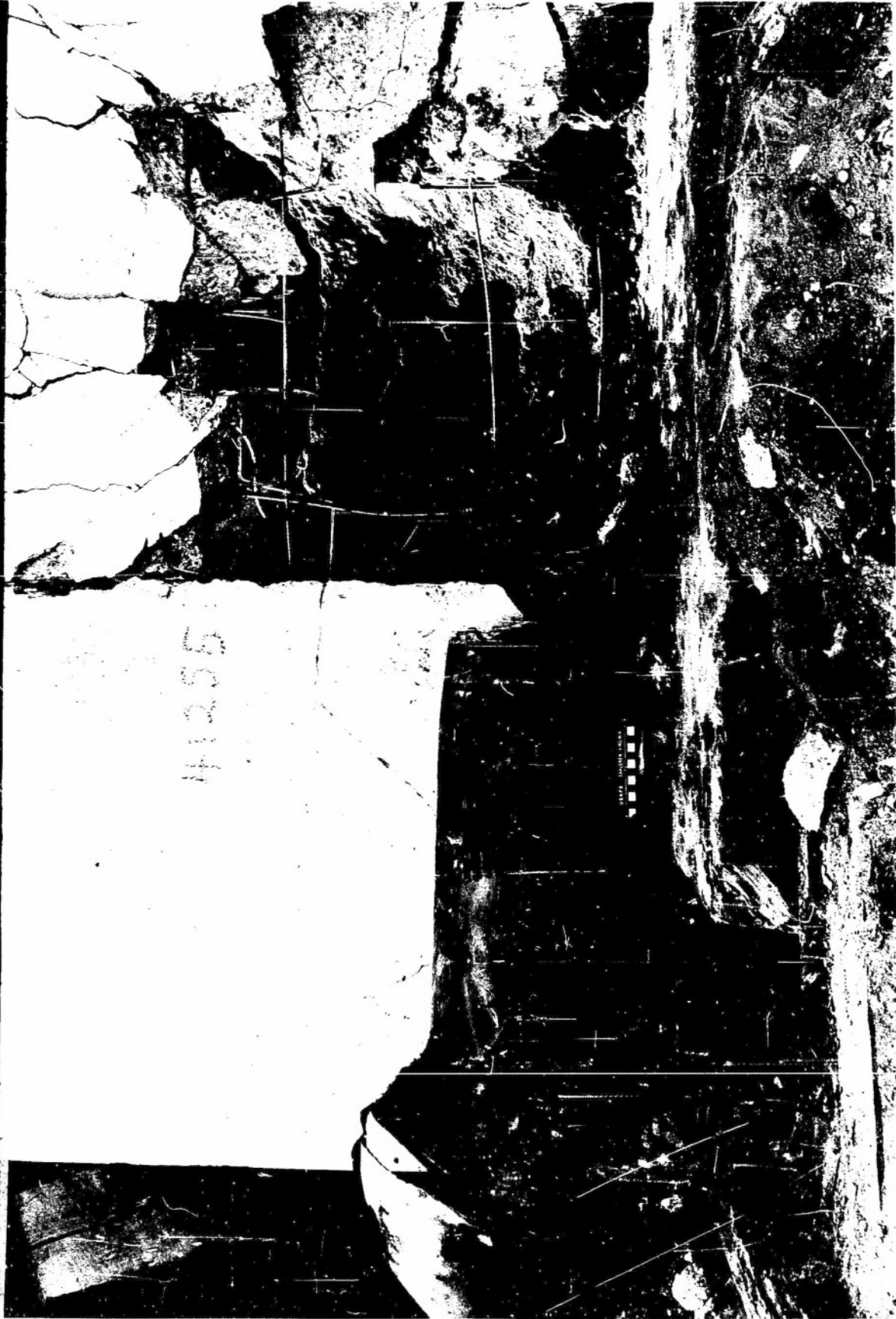
Penetration
C

CONFIDENTIAL

Remarks

Bomb ineffective-nose section
broken open-partial burning
of tritonal filler.

FIGURE 2



NP9-63908

Impact No.
41274

31 July 1953

CONFIDENTIAL

Obliquity
15°

Thickness
8" conc

Striking vel. (f/s)
1024

Penetration
C

Remarks
Bomb deflagrated
after impact.

FIGURE 3



MP9-64605

Impact No.

41586

Oblliquity

15°

Thickness

10" conc

2 November 1953

S.V.(f/s)

1003±12

Penetration

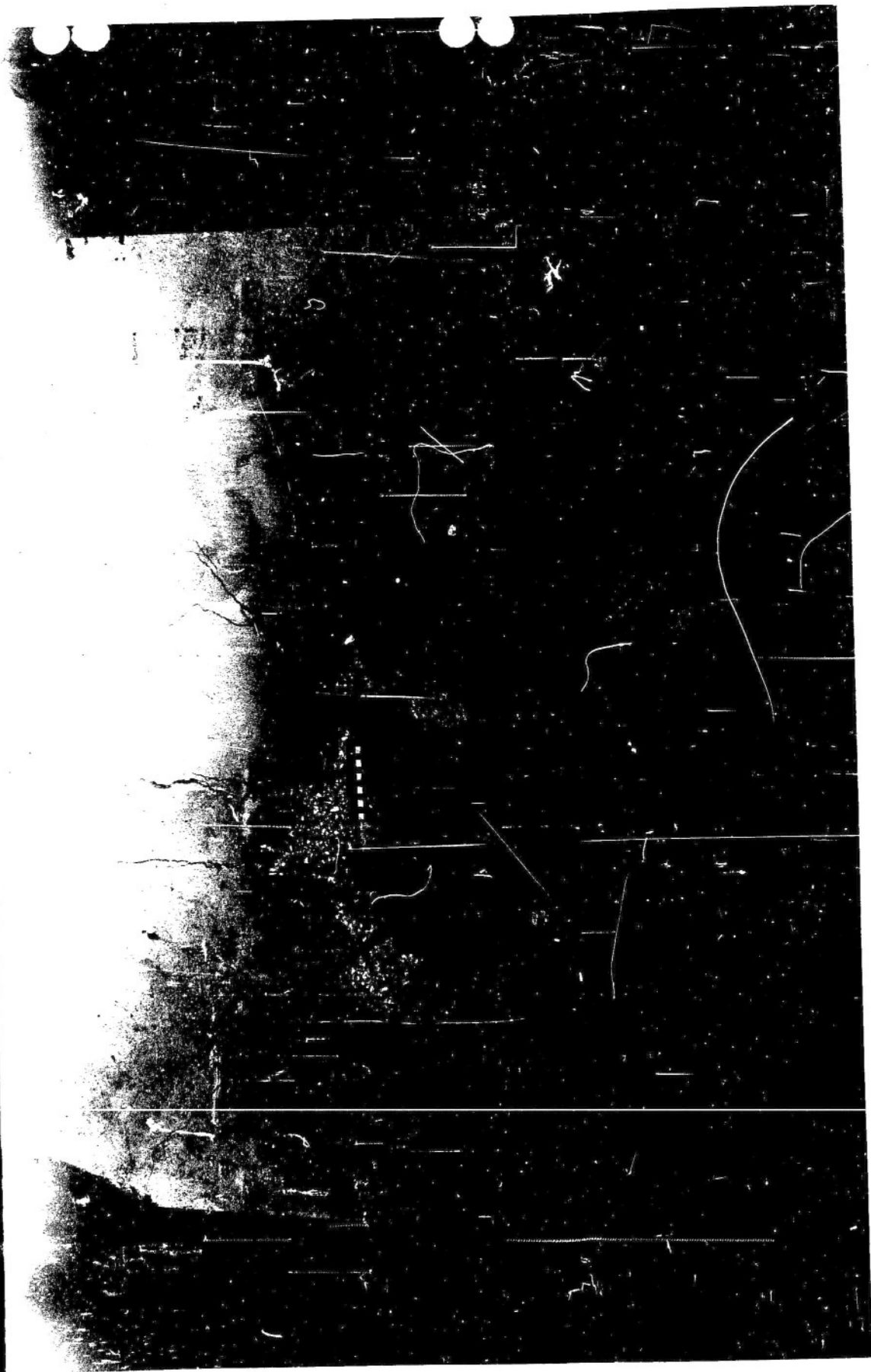
C

Remarks

Bomb effective and intact.
No deformation.

Appendix C

Figure 4





Section through fracture of
3000 lb. F-35 Demolition Bomb after gun fire test.
Etched with 50% HCl - 50% H₂O for 20 minutes at 160°F.
Magnification 6.4 X

NP9-64537

Figure 6

CONFIDENTIAL
Appendix D

CONFIDENTIAL

NPG REPORT NO. 1229

Bomb, Demolition 3000 lb. T55; Gunfiring Test of

DISTRIBUTION

Bureau of Ordnance:

Ad3	1
Re3c	6
Armed Services Technical Information Agency Document Service Center Knott Building Dayton 2, Ohio	5
Commanding General, Aberdeen Proving Ground Aberdeen, Maryland Attn: Technical Information Section Development and Proof Services	1
Commander, Operational Development Force U. S. Atlantic Fleet, U. S. Naval Base Norfolk 11, Virginia	1
Superintendent Naval Gun Factory Washington 25, D.C.	1
Commanding General Air Materiel Armament Test Center Eglin Air Force Base, Florida	1
Commanding Officer Picatinny Arsenal Dover, New Jersey Attn: Technical Division	2
Bureau of Aeronautics Attn: Armament Section	2
NATC, Patuxent River, Maryland	3
NAOTS, Chincoteague, Virginia	1

CONFIDENTIAL

CONFIDENTIAL

NPG REPORT NO. 1229

Bomb, Demolition 3000 lb. T55; Gunfiring Test of

DISTRIBUTION (Continued)

Air Material Command Liaison Officer
Wing 3 Headquarters, Aberdeen Proving Ground
Aberdeen, Maryland.

2

Naval Liaison Officer
USAFPGC, Eglin Field, Fla.

1

NOTS, Inyokern, California

1

NOTS, Inyokern, California
Attn: Aviation Ordnance and Test Department

1

Naval Air Development Center
Johnsville, Pa.

1

U. S. Air Force
AEC Engineering Field Office
Room 1833, Main Navy Building
Navy Department, Washington, D.C.

2

Local: OTP
OT
File

1

1

1

CONFIDENTIAL

2

APPENDIX E