

UNCLASSIFIED

AD NUMBER	
AD014544	
CLASSIFICATION CHANGES	
TO:	unclassified
FROM:	confidential
LIMITATION CHANGES	
TO: Approved for public release; distribution is unlimited.	
FROM: Distribution authorized to U.S. Gov't. agencies and their contractors; Administrative/Operational Use; OCT 1952. Other requests shall be referred to Naval Proving Ground, Dahlgren, VA.	
AUTHORITY	
USNSWC ltr, 6 Jan 1976; USNSWC ltr, 6 Jan 1976	

THIS PAGE IS UNCLASSIFIED

CONFIDENTIAL

ATTN: O.
ASTIA
FILE COPY

U S NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

REPORT NO 1052

FUZZING SYSTEMS: RESEARCH DEVELOPMENT,
TESTS, AND REPORTS OF

iel Report

ELECTRIC BOMB FUZE EX 200 MOD 3
IN 250 LB MODIFIED G P BOMB

al
t

Task
Assignment WPG-Re2b-20-1-52

22

Classification CONFIDENTIAL
SECURITY INFORMATION

CONFIDENTIAL

SECURITY INFORMATION

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

PART A

SYNOPSIS

1. This test was conducted to determine the air blast pressure and beam spray fragment velocities produced by modified 250 lb. G.P. bombs 80/20 tritonal loaded and assembled with athwartships fuses EX 200 Mod 3 having a 96 gram tetryl booster.

2. a. The EX 200 Mod 3 athwartships fuze as assembled for this test was unsatisfactory in that 3 of the 5 modified 250 lb. G.P. bombs failed to detonate. The failure of the 3 rounds is attributed to the 1/4" air gap separating the tetryl lead-in and the blasting cap.

b. The two bombs that detonated high order produced an average beam spray fragment velocity of 5630 ft./sec. and a peak blast pressure of 8.4 psi at 50 feet from the bombs.

3. It is recommended that separate fuze trials be conducted with no separation between the blasting cap and tetryl lead-in to determine the efficiency of the tetryl lead-in. These tests can be conducted without bombs since, on the basis of previous tests, the booster size is considered adequate to produce high order detonation of the 250 lb. bombs.

CONFIDENTIAL

NPG REPORT NO. 1052

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

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
REPRESENTATIVE PRESENT	4
DESCRIPTION OF ITEM UNDER TEST	4
DESCRIPTION OF TEST EQUIPMENT.	5
PROCEDURE.	5
RESULTS AND DISCUSSION	5
CONCLUSIONS.	6
RECOMMENDATION	6
APPENDIX A - MODIFIED BOMB DRAWING	FIGURE 1
APPENDIX B - FRAGMENT VELOCITY DATA.	TABLE I 1-4 (Incl)
APPENDIX C - DISTRIBUTION.	1 (Only)

CONFIDENTIAL

NPG REPORT NO. 1052

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

PART B

INTRODUCTION

1. AUTHORITY:

This test was requested by reference (a) and conducted under Task Assignment NPG-Re2b-20-1-52, reference (b).

2. REFERENCES:

- a. NOL Work Request WA-26 to NAVPROV of 6 May 1952
- b. BUORD Conf ltr NP9 Re2b-DBLaP:bjn Ser 23939 of 4 Aug 1951
- c. NPG Conf Report No. 931 of 4 Mar 1952

3. BACKGROUND:

a. In the development and testing of bomb fuzes, the Naval Proving Ground was authorized by reference (b) to work directly with the Naval Ordnance Laboratory. Reference (c) reported the air blast pressures and fragment velocities for the standard 250 lb. G.P. bomb having a nose fuze and modified 250 lb. G.P. bombs having various athwartships fuzes.

b. Reference (a) requested that 5 EX 200 fuzes containing tetryl pellets 2.7506 diameter and .750 thick (96 grams) be tested in the modified 250 lb. bombs to determine the adequacy of these pellets, which will probably be used in the production fuzes. Six tetryl pellets 2.7537 diameter and .07539 thick (70.5 grams) were used in tests reported in reference (c). All six detonated the 250 lb. modified bombs high order indicating that this booster size was adequate.

4. OBJECT OF TEST:

This test was conducted to determine the air blast pressure and beam spray fragment velocities produced by modified 250 lb. G.P. bombs 80/20 tritonal loaded and assembled with athwartships fuzes EX 200 Mod 3 having a 96 gram tetryl booster.

CONFIDENTIAL
SECURITY INFORMATION

CONFIDENTIAL

NPG REPORT NO. 1052

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

5. PERIOD OF TEST:

a. Date Project Letter	6 May 1952
b. Date Necessary Material Received	18 June 1952
c. Date Commenced Test	14 July 1952
d. Test Completed	14 July 1952

6. REPRESENTATIVE PRESENT:

This test was witnessed by Mr. N. Butler, representing the Naval Ordnance Laboratory.

PART C

DETAILS OF TEST

7. DESCRIPTION OF ITEM UNDER TEST:

a. Five Electric Bomb Fuzes EX 200:

Five Electric Bomb Fuzes EX 200 were modified for static detonation by Naval Ordnance Laboratory. All fuzes contained a 2.7506 diameter and 0.750 thick tetryl pellet (96 grams), a 0.7160 diameter and 0.371 thick tetryl lead-in, and a special engineers blasting cap. All fuzes were assembled in the field. An air gap of approximately 1/4" existed in the assembled unit between the end of the blasting cap and the tetryl lead-in. The tetryl pellet used in these tests is slightly smaller than the 1/2 size pellet used in previous tests, reference (c).

b. Five Modified 250 lb. G.P. Bombs:

Five standard 250 lb. G.P. Bombs AN-M57 were modified when empty by forming a 3.000 diameter cavity athwartships and inserting a fuze cavity liner 3.000 O.D. and 2.781 I.D., Figure 1. The bombs were modified by Daystrom Electric Corporation and loaded with 80/20 tritonal at the Naval Mine Depot, Yorktown, Va. The weights are as follows:

<u>Rd.</u> <u>No.</u>	<u>Serial</u> <u>No.</u>	<u>Empty</u> <u>(lbs.)</u>	<u>Explosive</u> <u>Wt. (lbs.)</u>	<u>Total Wt.</u> <u>Without Fuze</u>
1	12	119.0	131.0	250.0
2	9	121.0	129.0	250.0
3	18	124.5	128.5	253.0
4	21	122.5	130.0	252.5
5	10	-	-	254.0

CONFIDENTIAL
SECURITY INFORMATION

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

8. DESCRIPTION OF TEST EQUIPMENT:

- a. Three Naval Ordnance Laboratory Indenter Gages
- b. Two 35mm Fastax Cameras
- c. Velocity Plates

9. PROCEDURE:

- a. The indenter gages were placed at ground level 50 feet from the bomb in polar angle zone 135°.
- b. The cameras were placed to record fragment hits on the 15' high velocity plates which were at 60 feet from the bomb in polar angle zone 78°-102°.
- c. The bombs were placed horizontally on a 5' high platform with the nose pointed toward 0°.

10. RESULTS AND DISCUSSION:

a. The first two bombs tested detonated high order and produced beam spray fragment velocities and peak blast pressures comparable with those for previously tested bombs containing similar fuzes. Detailed fragment velocity data are listed in Table I and are summarized with the blast data as follows:

<u>Rd. No.</u>	<u>Average Blast Pressure at 50 Feet (psi)</u>	<u>Beam Spray Fragment Velocity (median)</u>
1	9.0	5450 ft./sec.
<u>2</u>	<u>7.4</u>	<u>5820 ft./sec.</u>
2 Round Average	8.2	5630 ft./sec.
*6 Round Average	8.6	5630 ft./sec.

*Six rounds having 1/3 booster size reported in reference (c).

b. The remaining three bombs did not detonate high order. The fuze lead-ins and boosters of Rounds Nos. 3 and 5 failed to detonate when the blasting caps were initiated. The booster of Round No. 4 detonated low order, and the fuze cavity liner ruptured around the booster location. All fuze parts were ejected from the athwartships column.

CONFIDENTIAL

NPG REPORT NO. 1052

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

c. The failure of the three rounds to detonate high order can be attributed to the 1/4" air gap between the lead-in and the blasting cap, although if the diameter of the lead-in had been greater, satisfactory performance might still have been attained. Although the lead-in size may be of sufficient size (without the air gap) to detonate the tetryl booster, a crack in the lead-in or its misalignment will greatly decrease its ability to detonate the booster high order.

PART D

CONCLUSIONS

11. a. The EX 200 Mod 3 athwartships fuze as assembled for this test was unsatisfactory in that 3 of the 5 modified 250 lb. G.P. bombs failed to detonate. The failure of the 3 rounds is attributed to the 1/4" air gap separating the tetryl lead-in and the blasting cap.

b. The two bombs that detonated high order produced an average beam spray fragment velocity of 5630 ft./sec. and a peak blast pressure of 8.4 psi at 50 feet from the bombs.

PART E

RECOMMENDATION

12. It is recommended that separate fuze trials be conducted with no separation between the blasting cap and tetryl lead-in to determine the efficiency of the tetryl lead-in. These tests can be conducted without bombs since, on the basis of previous tests, the booster size is considered adequate to produce high order detonation of the 250 lb. bombs.

CONFIDENTIAL
SECURITY INFORMATION

CONFIDENTIAL

NPG REPORT NO. 1052

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

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

V. PHILIPCHUK, Fragmentation Battery Officer,
Fragmentation Division
Terminal Ballistics Department

This report was prepared by:

V. PHILIPCHUK, Fragmentation Battery Officer,
Fragmentation Division
Terminal Ballistics Department

This report was reviewed by:

R. H. LYDDANE, Director of Research
Terminal Ballistics Department
E. L. LEVSTIK, Lieutenant Commander, USNR
Terminal Ballistics Batteries Officer
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. RUCKNER
Captain, USN
Ordnance Officer
By direction

CONFIDENTIAL
SECURITY INFORMATION

CONFIDENTIAL

NPG REPORT NO. 1052

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

Thirty-Sixth Partial Report

on

Bomb Fuzing System;

Research, Development, Tests, and Reports of

Second Partial Report

on

Electric Bomb Fuze EX 200 Mod 3

in 250 lb. Modified G.P. Bomb

Project No.: NPG-Re2b-20-1-52
Copy No.: 12
No. of Pages: 7

Date:

OCT 7 1952

CONFIDENTIAL
SECURITY INFORMATION

R. M. 34477. B-1



1. <u>NAME OF VESSEL</u> 2. <u>TYPE OF VESSEL</u> 3. <u>DATE OF DEPARTURE</u> 4. <u>DATE OF RETURN</u> 5. <u>NAME OF CAPTAIN</u> 6. <u>NAME OF MASTER</u> 7. <u>NAME OF FIRST OFFICER</u> 8. <u>NAME OF SECOND OFFICER</u> 9. <u>NAME OF THIRD OFFICER</u> 10. <u>NAME OF FOURTH OFFICER</u> 11. <u>NAME OF FIFTH OFFICER</u> 12. <u>NAME OF SIXTH OFFICER</u> 13. <u>NAME OF SEVENTH OFFICER</u> 14. <u>NAME OF EIGHTH OFFICER</u> 15. <u>NAME OF NINTH OFFICER</u> 16. <u>NAME OF TENTH OFFICER</u> 17. <u>NAME OF ELEVENTH OFFICER</u> 18. <u>NAME OF TWELFTH OFFICER</u> 19. <u>NAME OF THIRTEENTH OFFICER</u> 20. <u>NAME OF FOURTEENTH OFFICER</u> 21. <u>NAME OF FIFTEENTH OFFICER</u> 22. <u>NAME OF SIXTEENTH OFFICER</u> 23. <u>NAME OF SEVENTEENTH OFFICER</u> 24. <u>NAME OF EIGHTEENTH OFFICER</u> 25. <u>NAME OF NINETEENTH OFFICER</u> 26. <u>NAME OF TWENTIETH OFFICER</u> 27. <u>NAME OF TWENTY-FIRST OFFICER</u> 28. <u>NAME OF TWENTY-SECOND OFFICER</u> 29. <u>NAME OF TWENTY-THIRD OFFICER</u> 30. <u>NAME OF TWENTY-FOURTH OFFICER</u> 31. <u>NAME OF TWENTY-FIFTH OFFICER</u> 32. <u>NAME OF TWENTY-SIXTH OFFICER</u> 33. <u>NAME OF TWENTY-SEVENTH OFFICER</u> 34. <u>NAME OF TWENTY-EIGHTH OFFICER</u> 35. <u>NAME OF TWENTY-NINTH OFFICER</u> 36. <u>NAME OF THIRTIETH OFFICER</u> 37. <u>NAME OF THIRTY-FIRST OFFICER</u> 38. <u>NAME OF THIRTY-SECOND OFFICER</u> 39. <u>NAME OF THIRTY-THIRD OFFICER</u> 40. <u>NAME OF THIRTY-FOURTH OFFICER</u> 41. <u>NAME OF THIRTY-FIFTH OFFICER</u> 42. <u>NAME OF THIRTY-SIXTH OFFICER</u> 43. <u>NAME OF THIRTY-SEVENTH OFFICER</u> 44. <u>NAME OF THIRTY-EIGHTH OFFICER</u> 45. <u>NAME OF THIRTY-NINTH OFFICER</u> 46. <u>NAME OF FORTIETH OFFICER</u> 47. <u>NAME OF FORTY-FIRST OFFICER</u> 48. <u>NAME OF FORTY-SECOND OFFICER</u> 49. <u>NAME OF FORTY-THIRD OFFICER</u> 50. <u>NAME OF FORTY-FOURTH OFFICER</u> 51. <u>NAME OF FORTY-FIFTH OFFICER</u> 52. <u>NAME OF FORTY-SIXTH OFFICER</u> 53. <u>NAME OF FORTY-SEVENTH OFFICER</u> 54. <u>NAME OF FORTY-EIGHTH OFFICER</u> 55. <u>NAME OF FORTY-NINTH OFFICER</u> 56. <u>NAME OF FIFTIETH OFFICER</u> 57. <u>NAME OF FIFTY-FIRST OFFICER</u> 58. <u>NAME OF FIFTY-SECOND OFFICER</u> 59. <u>NAME OF FIFTY-THIRD OFFICER</u> 60. <u>NAME OF FIFTY-FOURTH OFFICER</u> 61. <u>NAME OF FIFTY-FIFTH OFFICER</u> 62. <u>NAME OF FIFTY-SIXTH OFFICER</u> 63. <u>NAME OF FIFTY-SEVENTH OFFICER</u> 64. <u>NAME OF FIFTY-EIGHTH OFFICER</u> 65. <u>NAME OF FIFTY-NINTH OFFICER</u> 66. <u>NAME OF SIXTIETH OFFICER</u> 67. <u>NAME OF SIXTY-FIRST OFFICER</u> 68. <u>NAME OF SIXTY-SECOND OFFICER</u> 69. <u>NAME OF SIXTY-THIRD OFFICER</u> 70. <u>NAME OF SIXTY-FOURTH OFFICER</u> 71. <u>NAME OF SIXTY-FIFTH OFFICER</u> 72. <u>NAME OF SIXTY-SIXTH OFFICER</u> 73. <u>NAME OF SIXTY-SEVENTH OFFICER</u> 74. <u>NAME OF SIXTY-EIGHTH OFFICER</u> 75. <u>NAME OF SIXTY-NINTH OFFICER</u> 76. <u>NAME OF SEVENTIETH OFFICER</u> 77. <u>NAME OF SEVENTY-FIRST OFFICER</u> 78. <u>NAME OF SEVENTY-SECOND OFFICER</u> 79. <u>NAME OF SEVENTY-THIRD OFFICER</u> 80. <u>NAME OF SEVENTY-FOURTH OFFICER</u> 81. <u>NAME OF SEVENTY-FIFTH OFFICER</u> 82. <u>NAME OF SEVENTY-SIXTH OFFICER</u> 83. <u>NAME OF SEVENTY-SEVENTH OFFICER</u> 84. <u>NAME OF SEVENTY-EIGHTH OFFICER</u> 85. <u>NAME OF SEVENTY-NINTH OFFICER</u> 86. <u>NAME OF EIGHTIETH OFFICER</u> 87. <u>NAME OF EIGHTY-FIRST OFFICER</u> 88. <u>NAME OF EIGHTY-SECOND OFFICER</u> 89. <u>NAME OF EIGHTY-THIRD OFFICER</u> 90. <u>NAME OF EIGHTY-FOURTH OFFICER</u> 91. <u>NAME OF EIGHTY-FIFTH OFFICER</u> 92. <u>NAME OF EIGHTY-SIXTH OFFICER</u> 93. <u>NAME OF EIGHTY-SEVENTH OFFICER</u> 94. <u>NAME OF EIGHTY-EIGHTH OFFICER</u> 95. <u>NAME OF EIGHTY-NINTH OFFICER</u> 96. <u>NAME OF NINETYETH OFFICER</u> 97. <u>NAME OF NINETY-FIRST OFFICER</u> 98. <u>NAME OF NINETY-SECOND OFFICER</u> 99. <u>NAME OF NINETY-THIRD OFFICER</u> 100. <u>NAME OF NINETY-FOURTH OFFICER</u> 101. <u>NAME OF NINETY-FIFTH OFFICER</u> 102. <u>NAME OF NINETY-SIXTH OFFICER</u> 103. <u>NAME OF NINETY-SEVENTH OFFICER</u> 104. <u>NAME OF NINETY-EIGHTH OFFICER</u> 105. <u>NAME OF NINETY-NINTH OFFICER</u> 106. <u>NAME OF HUNDRETH OFFICER</u> 107. <u>NAME OF HUNDRED-FIRST OFFICER</u> 108. <u>NAME OF HUNDRED-SECOND OFFICER</u> 109. <u>NAME OF HUNDRED-THIRD OFFICER</u> 110. <u>NAME OF HUNDRED-FOURTH OFFICER</u> 111. <u>NAME OF HUNDRED-FIFTH OFFICER</u> 112. <u>NAME OF HUNDRED-SIXTH OFFICER</u> 113. <u>NAME OF HUNDRED-SEVENTH OFFICER</u> 114. <u>NAME OF HUNDRED-EIGHTH OFFICER</u> 115. <u>NAME OF HUNDRED-NINTH OFFICER</u> 116. <u>NAME OF ONE HUNDRED-TENTH OFFICER</u> 117. <u>NAME OF ONE HUNDRED-ELEVENTH OFFICER</u> 118. <u>NAME OF ONE HUNDRED-TWELFTH OFFICER</u> 119. <u>NAME OF ONE HUNDRED-THIRTEENTH OFFICER</u> 120. <u>NAME OF ONE HUNDRED-FOURTEENTH OFFICER</u> 121. <u>NAME OF ONE HUNDRED-FIFTEENTH OFFICER</u> 122. <u>NAME OF ONE HUNDRED-SIXTEENTH OFFICER</u> 123. <u>NAME OF ONE HUNDRED-SEVENTEENTH OFFICER</u> 124. <u>NAME OF ONE HUNDRED-EIGHTEENTH OFFICER</u> 125. <u>NAME OF ONE HUNDRED-NINETEENTH OFFICER</u> 126. <u>NAME OF ONE HUNDRED-TWENTIETH OFFICER</u> 127. <u>NAME OF ONE HUNDRED-TWENTY-FIRST OFFICER</u> 128. <u>NAME OF ONE HUNDRED-TWENTY-SECOND OFFICER</u> 129. <u>NAME OF ONE HUNDRED-TWENTY-THIRD OFFICER</u> 130. <u>NAME OF ONE HUNDRED-TWENTY-FOURTH OFFICER</u> 131. <u>NAME OF ONE HUNDRED-TWENTY-FIFTH OFFICER</u> 132. <u>NAME OF ONE HUNDRED-TWENTY-SIXTH OFFICER</u> 133. <u>NAME OF ONE HUNDRED-TWENTY-SEVENTH OFFICER</u> 134. <u>NAME OF ONE HUNDRED-TWENTY-EIGHTH OFFICER</u> 135. <u>NAME OF ONE HUNDRED-TWENTY-NINTH OFFICER</u> 136. <u>NAME OF ONE HUNDRED-THIRTIETH OFFICER</u> 137. <u>NAME OF ONE HUNDRED-THIRTY-FIRST OFFICER</u> 138. <u>NAME OF ONE HUNDRED-THIRTY-SECOND OFFICER</u> 139. <u>NAME OF ONE HUNDRED-THIRTY-THIRD OFFICER</u> 140. <u>NAME OF ONE HUNDRED-THIRTY-FOURTH OFFICER</u> 141. <u>NAME OF ONE HUNDRED-THIRTY-FIFTH OFFICER</u> 142. <u>NAME OF ONE HUNDRED-THIRTY-SIXTH OFFICER</u> 143. <u>NAME OF ONE HUNDRED-THIRTY-SEVENTH OFFICER</u> 144. <u>NAME OF ONE HUNDRED-THIRTY-EIGHTH OFFICER</u> 145. <u>NAME OF ONE HUNDRED-THIRTY-NINTH OFFICER</u> 146. <u>NAME OF ONE HUNDRED-FORTIETH OFFICER</u> 147. <u>NAME OF ONE HUNDRED-FORTY-FIRST OFFICER</u> 148. <u>NAME OF ONE HUNDRED-FORTY-SECOND OFFICER</u> 149. <u>NAME OF ONE HUNDRED-FORTY-THIRD OFFICER</u> 150. <u>NAME OF ONE HUNDRED-FORTY-FOURTH OFFICER</u> 151. <u>NAME OF ONE HUNDRED-FORTY-FIFTH OFFICER</u> 152. <u>NAME OF ONE HUNDRED-FORTY-SIXTH OFFICER</u> 153. <u>NAME OF ONE HUNDRED-FORTY-SEVENTH OFFICER</u> 154. <u>NAME OF ONE HUNDRED-FORTY-EIGHTH OFFICER</u> 155. <u>NAME OF ONE HUNDRED-FORTY-NINTH OFFICER</u> 156. <u>NAME OF ONE HUNDRED-FIFTIETH OFFICER</u> 157. <u>NAME OF ONE HUNDRED-FIFTY-FIRST OFFICER</u> 158. <u>NAME OF ONE HUNDRED-FIFTY-SECOND OFFICER</u> 159. <u>NAME OF ONE HUNDRED-FIFTY-THIRD OFFICER</u> 160. <u>NAME OF ONE HUNDRED-FIFTY-</u>
--

[illegible]

CONFIDENTIAL

HPG REPORT NO. 1052

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

TABLE I

FRAGMENT VELOCITY DATA

60 Ft. Radius Arena	Date Fired: 14 July 1952
35mm Fastax Camera #1	2550 frames per sec.
Rd. 1, 250 lb. G.F. Bomb	Filler: 80/20 Tritonal
Total Weight: 250.0 Lbs.	Filler Weight: 131.0 Lbs.

<u>Frame in Which Hit Occurred</u>	<u>No. Fragments</u>	<u>Velocity (f/s)</u>
25	4	6120
26	5	5880
27	7	5670
28	6	5460
29	8	5280
30	4	5100
31	1	4940
32	1	4780
34	2	4500
Median		5580
Average		5470

CONFIDENTIAL
SECURITY INFORMATION

CONFIDENTIAL

NPG REPORT NO. 1052

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

TABLE I (Continued)

60 Ft. Radius Arena	Date Fired: 14 July 1952
35mm Fastax Camera #2	2430 frames per sec.
Rd. 1, 250 lb. G.P. Bomb	Filler: 80/20 Tritonal
Total Weight: 250.0 Lbs.	Filler Weight: 131.0 Lbs.

<u>Frame in Which Hit Occurred</u>	<u>No. Fragments</u>	<u>Velocity (f/s)</u>
25	4	5830
26	5	5610
27	8	5400
28	7	5210
29	10	5030
30	2	4860
31	1	4700
34	3	4290
Median		5320
Average		5220

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

TABLE I (Continued)

60 Ft. Radius Arena	Date Fired: 14 July 1952
35mm Fastax Camera #1	2580 frames per sec.
Rd. 2, 250 lb. G.P. Bomb	Filler: 80/20 Tritonal
Total Weight: 250.0 Lbs.	Filler Weight: 129.0 Lbs.

<u>Frame in Which Hit Occurred</u>	<u>No. Fragments</u>	<u>Velocity (f/s)</u>
25	3	6190
26	7	5950
27	12	5730
28	6	5530
29	2	5340
30	2	5160
31	1	4990
32	2	4840
Median		5770
Average		5650

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

TABLE I (Continued)

60 Ft. Radius Arena	Date Fired: 14 July 1952
35mm Fastax Camera #2	2490 frames per sec.
Rd. 2, 250 lb. G.P. Bomb	Filler: 80/20 Tritonal
Total Weight: 250.0 Lbs.	Filler Weight: 129.0 Lbs.

<u>Frame in Which Hit Occurred</u>	<u>No. Fragments</u>	<u>Velocity (f/s)</u>
24	4	6230
25	8	5980
26	14	5750
27	4	5530
28	2	5340
29	1	5150
30	1	4980
Median		5870
Average		5770

CONFIDENTIAL

NPG REPORT NO. 1052

Electric Bomb Fuze EX 200 Mod 3 in 250 lb. Modified G.P. Bomb

DISTRIBUTION

Bureau of Ordnance

Ad3	1
Re2	1
Re3	2
Re2b	5

Chief of Ordnance, Department of the Army Attn: ORDTX-AR	2
---	---

Navy Research Section Library of Congress Washington 25, D. C. (Via BUORD Re2)	2
---	---

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
--	---

Naval Ordnance Laboratory	2
---------------------------	---

Picatinny Arsenal, Dover, N. J. Attn: Technical Division	1
---	---

Reports Office APL/JHU, Silver Spring, Maryland	1
--	---

APL/JHU, Silver Spring, Md. Attn: Mr. H. S. Morton (Via INSORD, Silver Spring, Md.)	1
---	---

Inst. for Cooperative Research JHU/1315 St. Paul St. Via: (District Chief, Phila. Ord District 1500 Chestnut St., Phila. 2, Pa. Attn: Mr. Edward R. C. Niles)	1
---	---

Local: OT	1
OTZ	1
OT-1	1
File	1

CONFIDENTIAL
SECURITY INFORMATION

APPENDIX