### UNCLASSIFIED

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#### CLASSIFICATION CHANGES

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#### LIMITATION CHANGES

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<th>TO:</th>
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<td>FROM:</td>
<td>Distribution authorized to U.S. Gov’t. agencies and their contractors; Administrative/Operational Use; AUG 1952. Other requests shall be referred to U.S. Naval Proving Ground, Dahlgren, VA.</td>
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#### AUTHORITY

| USNSWC ltr, 24 Oct 1975; USNSWC ltr, 24 Oct 1975 |

THIS PAGE IS UNCLASSIFIED
U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA
REPORT NO 1014
AIRCRAFT ROCKET FUZE SYSTEMS
20L. Partial Report
T-2023 P. I. ROCKET FUZE;
EVALUATION TESTS OF
Task
 Assignment: NPO-RG2h-11-1-52
Copy No. 4
Classification CONFIDENTIAL
SECURITY INFORMATION

"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. Its transmission or the publication of its contents in any manner to an unauthorized person is prohibited by law."

Best Available Copy
PART A

SYNOPSIS

1. The T-2023 fuze has been designed for use with the 21/75 HEAT rocket head. Previous functioning tests of the fuze were conducted by the Naval Proving Ground for Picatinny Arsenal in 1950-51. Due to modifications of the rotor additional tests on the fuze were requested at this time.

2. The object of this test was to determine whether the T-2023 fuze will function satisfactorily with:

   (1) Mod 502A Rotor in lieu of the M501A Rotor.
   (2) Mod 502A Rotor with straight RDX lead (PX-8-796) in lieu of the M501A Rotor which has an M29 Detonator plus an RDX lead.

It is concluded that in the present tests the T-2023 fuze subjected to high velocity impacts, functioned satisfactorily:

   (1) Nine out of ten times when the Mod 502A Rotor was used in lieu of the M501A Rotor.
   (2) Ten out of ten times when the Mod 502A Rotor with a straight RDX lead (PX-8-796) was used in place of the same rotor having an M29 Detonator plus an RDX lead.
   (3) Ten out of ten times with a Mod 501A Rotor.
   (4) With a fuze functioning time of approximately 56 to 69 micro seconds, as measured on a high speed oscilloscope.
**SYNOPSIS**

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<td>1-3 (Incl)</td>
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</table>
INTRODUCTION

1. AUTHORITY:

This test was authorized by reference (a) and conducted in accordance with reference (b).

2. REFERENCES:

   a. NOL spdltr NP/NOL/X1-1(2444) Ser 2741 DF:GDB of 2 May 1952
   b. OCO ltr ORDTA, 0.0.471.82/1051(c)ORDBB-TE2471.94/64-137 of 22 April 1952
   c. NPG Report No. 779 of 12 May 1951

3. BACKGROUND:

The T-2023 fuze has been designed for use with the 2175 HEAT rocket head. Previous functioning tests of the fuze were conducted by the Naval Proving Ground for Picatinny Arsenal in 1950-51. Due to modifications of the rotor additional tests on the fuze were requested at this time.

4. OBJECT OF TEST:

The object of this test was to determine whether the T-2023 fuze will function satisfactorily with:

   b. Mod 502A Rotor with straight RDX lead (PX-8-796) in lieu of the M501A Rotor which has an M29 Detonator plus an RDX load.

5. PERIOD OF TEST:

   a. Date Project Letter 2 May 1952
   b. Date Necessary Material Received 5 & 6 May 1952
   c. Date Commenced Test 7 May 1952
   d. Test Completed 14 May 1952
6. REPRESENTATIVE PRESENT:
Mr. R. O. Nitzsche  
Picatinny Arsenal

PART C

DETAILS OF TEST

7. DESCRIPTION OF ITEMS UNDER TEST:

a. Lot PAE-9120: T-2023 P. I. Rocket Fuze as shown in Figure 1. Initiated upon impact by means of a percussion primer and detonator in the nose. The fuze was equipped with a Mod 501A Rotor.

b. Lot PAE-9121: Same as Lot PAE-9120 except rotor changed from Mod 501A to Mod 502A.

c. Lot PAE-9122: Same as Lot PAE-9121 except for explosive components. Straight RDX lead used in place of M29 detonator plus RDX lead.

8. DESCRIPTION OF TEST EQUIPMENT:

Rocket Heads - 2175 Rocket Head T-2016; 0.92 lbs. Composition "B" with tritium booster pellet; total head weight 5.65 lbs.

Adaptors - 2175 head to 5½0 HVAR motor; Picatinny Dwg. PX-8539.

Motors - 5½0 rocket motors Mk 2 Mod 3.

Target - 7-½" Class B (homogeneous) armor plate at 0° obliquity.

Launcher - NPG 1050 ft.

Velocity Measurements - Potter Counter Chronograph.

Cameras - 16mm hi-speed Fastax; Ballistic Synchro.

Fuze Functioning Time Measurements - Photoelectric detector, Tektronix type 513D cathode ray oscilloscope, Fairchild-Polaroid oscillograph camera, copper contact screens.
9. PROCEDURE:

a. The 2475 shaped charge rocket heads T-2016 containing the T-2023 nose fuzes at ambient temperature (approximately 70°F) were assembled to 5" HVAR motors by means of a steel adaptor. A second 5" HVAR motor was used as a pusher for the first 200 ft. of travel on the 1050 ft. launcher. All rounds were fired at zero obliquity against a 7-1/2" homogeneous armor plate positioned 285 ft. from the muzzle of the launcher. Velocities were measured 75 ft. before the target. Hi-speed 16mm Fastax cameras, operated at 4000 frames/second covered the target to insure that satisfactory impacts had been made on all shots.

b. No difficulty was encountered in determining the penetration of the rounds inasmuch as all but 4 completely penetrated the target. Those that had only a partial penetration produced a bulge on the back of the plate, indicating that penetration was within an inch of being complete.

c. Fuze functioning times were measured during the last two days firing by means of a high speed oscilloscope. Time was measured from the contact of the fuze and plate to the detonation of the head. The contact of the fuze and plate was sensed by means of a contact screen which was placed 3/4" before the plate. When the nose of the fuze penetrated the screen and made contact with the plate, an electric circuit was completed. This circuit closure triggered the sweep of a Tektronix Type 513D Cathode Ray oscillograph. A photoelectric detector was set up near the plate to detect the flash of the detonation. The burst signal from this photoelectric detector was fed to the vertical deflection input of the oscillograph. Thus the time from the beginning of the trace to the burst signal represented the time required for the fuze to function. The pattern on the oscillograph was recorded on a Fairchild-Polaroid oscillograph camera. For impacts 39926, 39928, and 39935, the oscillograph was set for a sweep speed of 40 micro-seconds per centimeter, with a total length of about 10 centimeters or 400 micro-seconds being available. For impacts 39927, 39929, and 39934, the sweep was set for 20 micro-seconds per centimeter, or 200 micro-seconds total. The exact calibrations of the oscillograph sweeps were determined in the laboratory by means of a 100-KC standard frequency generator. From these calibrations the function times were computed.
10. RESULTS AND DISCUSSION:

a. Detailed results of the test are provided in Table I and Impact Records 1-30. Figure 1 is a drawing of the T-2023 fuze and Figure 2 a view of the impacts resulting from the first days firing. Excerpts from the hi-speed camera records of impacts producing complete and incomplete penetrations with Lot PAE-9122 fuses are shown as Figures 3 and 4. Figure 5 is a ballistic synchro camera picture of a round in flight, shortly before target impact.

b. Following is a summary of the test results obtained:

<table>
<thead>
<tr>
<th>Fuze Lot</th>
<th>No. Rds.</th>
<th>Penetration Results</th>
<th>Fuse Functioning Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAE-9120</td>
<td>10</td>
<td>8 Comp; two 7&quot;</td>
<td>Not taken</td>
</tr>
<tr>
<td>PAE-9121</td>
<td>10</td>
<td>9 Comp; one dud</td>
<td>56 to 69</td>
</tr>
<tr>
<td>PAE-9122</td>
<td>10</td>
<td>9 Comp; one 7-1/4&quot;</td>
<td>Not taken</td>
</tr>
</tbody>
</table>

c. No appreciable difference in penetration effectiveness could be noted between the original style of fuze and its two modifications. The cause of the dud on Lot PAE-9121 could not be explained since the explosive in the head deflagrated upon impact, leaving no clues. The higher percentage of complete penetrations obtained with Lot PAE-9122 as compared with Lot PAE-9120 (the original T-2023 fuze) is insufficient to judge it as being superior, due to the small number of rounds fired. However, the simplified method of explosive loading Lot PAE-9122 should indicate a definite advantage for it after proving that it functions at least equally as well as the other two types.

d. As reported in reference (c), previous attempts to measure fuze functioning times with a photoclectric-coll camera and oscilloscope had failed due to slowness of the latter, resulting in its inability to separate the fuze impact from the fuze detonation. The acquisition of new equipment in the interim made it possible to trigger the oscilloscope when the nose of the fuze made contact with the target and obtain a recognizable vertical component of the boom when the fuze detonated. Photographing the scope with a Land type camera made it possible to
obtain a record of the functioning time within a few minutes after
the round was fired. A single motor was used for propulsion of
the rounds on which fuze times were measured, to insure burnout
of the motor before it came into the view of the photoelectric
detector. The luminescence of a burning motor probably would have
triggered the photoelectric cell prematurely. The single motor
produced a lower striking velocity but it should not have altered
the fuze functioning time.

PART D

CONCLUSIONS

11. It is concluded that in the present tests the T-2023 fuze
subjected to high velocity impacts, functioned satisfactorily:

a. Nine out of ten times when the Mod 502A Rotor was used
   in lieu of the M501A Rotor.

b. Ten out of ten times when the Mod 502A Rotor with a
   straight RDX load (PX-8-796) was used in place of the same rotor
   having an M29 Detonator plus an RDX load.

c. Ten out of ten times with a Mod 501A Rotor.

d. With a fuze functioning time of approximately 56 to 69
   micro-seconds, as measured on a high speed oscilloscope.
The tests upon which this report is based were conducted by:
F. W. KASDORF, Firing Director, Rocket Battery
Terminal Ballistics Department

This report was prepared by:
F. W. KASDORF, Firing Director, Rocket Battery
Terminal Ballistics Department

This report was reviewed by:
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Terminal Ballistics Department
E. LEVSTIK, Lieutenant Commander, USNR
Terminal Ballistics Batteries Officer
Terminal Ballistics Department
W. B. ROBERTSON, Lieutenant Commander, USN
Terminal Ballistics Officer
Terminal Ballistics Department
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Ordnance Group

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

C. T. MAURO
Captain, USN
Ordnance Officer
By direction
Twentieth Partial Report
on
Aircraft Rocket Fuze Systems

Final Report
on
T-2023 P. I. Rocket Fuze; Evaluation Tests of

Project No.: NPG-Ro2b-11-1-52
Copy No.: 4
No. of Pages: 8

CONFIDENTIAL
SECURITY INFORMATION
# T-2023 P. I. Rocket Fuze; Evaluation Tests of

## TABLE I

**FIRING RECORD OF T-2023 FUZE AND MODIFICATIONS IN 2175 SHAPED CHARGE HEAD T-2016**

**NOTE:** All rounds fired from NPG 1050 ft. launcher with 5" HVAR motors vs 7-1/2" homogeneous armor plate at 0° obliquity.

<table>
<thead>
<tr>
<th>Date</th>
<th>Impact No.</th>
<th>Head No.</th>
<th>Striking Velocity (f/s)</th>
<th>Striking Dimensions</th>
<th>Penetration</th>
<th>Exit Dimensions</th>
<th>Puze Function Time (Micro-Secs.)</th>
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<tr>
<td>Lot PAE-9120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-7-52</td>
<td>39903</td>
<td>299</td>
<td>2025</td>
<td>3/8 x 3/8</td>
<td>Comp.</td>
<td>3/8 x 3/8</td>
<td>-</td>
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<tr>
<td>5-7-52</td>
<td>39904</td>
<td>329</td>
<td>2039</td>
<td>3/8 x 3/8</td>
<td>7°</td>
<td>None</td>
<td>-</td>
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<tr>
<td>5-13-52</td>
<td>39928</td>
<td>238</td>
<td>1954</td>
<td>3/8 x 3/8</td>
<td>Comp.</td>
<td>3/8 x 3/8</td>
<td>65</td>
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<tr>
<td>5-13-52</td>
<td>39929</td>
<td>352</td>
<td>1542</td>
<td>1/4 x 1/4</td>
<td>Comp.</td>
<td>1/4 x 1/4</td>
<td>69</td>
</tr>
<tr>
<td>5-14-52</td>
<td>39931</td>
<td>164</td>
<td>1813</td>
<td>7-1/4&quot;</td>
<td>Comp.</td>
<td>3/8 x 3/8</td>
<td>-</td>
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<td>5-14-52</td>
<td>39932</td>
<td>201</td>
<td>1832</td>
<td>3/8 x 3/8</td>
<td>None</td>
<td>None</td>
<td>-</td>
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<tr>
<td>5-14-52</td>
<td>39933</td>
<td>96</td>
<td>1808</td>
<td>3/8 x 3/8</td>
<td>Comp.</td>
<td>3/8 x 3/8</td>
<td>Missed</td>
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<td>5-14-52</td>
<td>39934</td>
<td>301</td>
<td>1532</td>
<td>3/8 x 3/8</td>
<td>Comp.</td>
<td>3/8 x 3/8</td>
<td>57</td>
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<tr>
<td>5-14-52</td>
<td>39935</td>
<td>422</td>
<td>1550</td>
<td>3/8 x 3/8</td>
<td>Comp.</td>
<td>3/8 x 3/8</td>
<td>-</td>
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</table>

| Lot PAE-9121 |
| 5-7-52    | 39906      | 101      | 2132                    | 3/8 x 3/8           | Comp.       | 3/8 x 3/8       | -                                |
| 5-7-52    | 39907      | 381      | 2043                    | 3/8 x 3/8           | Comp.       | 3/8 x 3/8       | -                                |
| 5-7-52    | 39908      | 402      | 2043                    | 3/8 x 3/8           | Comp.       | 3/8 x 3/8       | -                                |
| 5-12-52   | 39921      | 167      | 1840                    | 3/8 x 3/8           | Comp.       | 3/8 x 3/8       | -                                |
| 5-12-52   | 39922      | 255      | 1857                    | 3/8 x 3/8           | Comp.       | 3/8 x 3/8       | -                                |
| 5-12-52   | 39923      | 362      | 1957                    | 3/8 x 3/8           | Comp.       | 3/8 x 3/8       | -                                |
| 5-12-52   | 39924      | 405      | 1929                    | 3/8 x 3/8           | Comp.       | 3/8 x 3/8       | -                                |
| 5-12-52   | 39925      | 1860     | 1860                    | 3/8 x 3/8           | Comp.       | 3/8 x 3/8       | -                                |
| 5-13-52   | 39926      | 146      | 1551                    | 1/4 x 1/4           | Comp.       | 1/4 x 1/4       | 56                               |
| 5-13-52   | 39927      | 340      | 1511                    | Nono-Dud Fuze       |             |                 |                                  |
TABLE I (Cont'd)

<table>
<thead>
<tr>
<th>Date</th>
<th>Impact No.</th>
<th>Head No.</th>
<th>Striking Head Velocity (ft/s)</th>
<th>Penetration</th>
<th>Exit Dimensions Inches</th>
<th>Fuze Function Time Micro-Seconds</th>
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<tbody>
<tr>
<td>5-8-52</td>
<td>39909</td>
<td>211</td>
<td>1958</td>
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<td>341</td>
<td>2017</td>
<td>Comp.</td>
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<td>322</td>
<td>2034</td>
<td>Comp.</td>
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<td>39912</td>
<td>342</td>
<td>1964</td>
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<td>5-8-52</td>
<td>39913</td>
<td>236R</td>
<td>1976</td>
<td>7-1/4&quot;</td>
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<td>152R</td>
<td>1901</td>
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<td>1864</td>
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<td>283R</td>
<td>-</td>
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<td>390</td>
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<tr>
<td>5-9-52</td>
<td>39918</td>
<td>-</td>
<td>1908</td>
<td>Comp.</td>
<td>3/8 x 3/8</td>
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</tbody>
</table>
IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39903
IMPACT DATE 5-7-52

NPG TEST NO. X-2222-1-24

OBJECT: Functioning Test of T-2023 Fuzes for 2775 Shaped Charge.
Rocket held T-201b, itn Two 540 HPV Motors vs 7-1/2" Cl B Plate.
Reference: NPO 10.1.52 dated 2 May 1952
Reference: NPO Ref. No. NP/11-1(2444) dated
Task Assignment No. 4 dated

PLATE TARGET

Gage 7-1/2" Class H
Maker Bath
No. 550222A2 Group H 113A
Dimensions 131" X 190"

OBLIQUITY 0°

PENETRATION

Thickness at impact 7.750
No. of impact on plate 1
Dist. from nearest impact 0
Dist. from near edge .66" and 4.42"
Impact area 2" X 2-1/2"
Spall: Front 0 Back 0
Dish 0 Spur 1/8"
Cracks 0
Punching (through) (standard) 
Back Button (thrown) (detected)
Bulge 0
Through opening 3/8" X 3/8"

ROCKET

HEAD: Cal. 2775 Type Shaped Charge
Mark F-5/5 Mod No 5217 Wt.
Maker
Lot No. T201b
Filler: Type Comp R Wt. 0.92#
Fuzes T2023 Lot No. 9120
Booster 1 Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 120° Wt. 86.50#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

LAUNCHER 1050' Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Striking 2024 Residual
Fuse functioning On Target
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No. WP-9-43281

Signed F.M. Klemm

F.M. Klemm
ORD. ENG.
# Impact Record

**U. S. Naval Proving Ground**  
**Dahlgren, Virginia**

**Impact No.** 39904  
**Impact Date** 5-7-52  
**NPG Test No.** T-2222-1.21

## Object
- Functioning Test of T-2023 Fuzes for 27/75 Shrapnel Charges
- Rocket Head 1-2016 with two 7.75 HVAR Motors vs 7-1/2" 01 B Plate

## Reference
- NPG NOT 2016 dated
- NPG T-2222-1.21 dated 2 May 1952

## Plate Target

<table>
<thead>
<tr>
<th>Gage</th>
<th>7-1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>B</td>
</tr>
<tr>
<td>Maker</td>
<td>Bath.</td>
</tr>
<tr>
<td>No.</td>
<td>55G232</td>
</tr>
<tr>
<td>Group</td>
<td>B-113A</td>
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<tr>
<td>Dimensions</td>
<td>131&quot; X 190&quot;</td>
</tr>
</tbody>
</table>

## Rocket

<table>
<thead>
<tr>
<th>Head</th>
<th>Cal. 27/75 Type Shaped Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark</td>
<td></td>
</tr>
<tr>
<td>Mod</td>
<td></td>
</tr>
<tr>
<td>Wt.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Motor</th>
<th>Cal. 5&quot; Mk. 2 Mod 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>120° F</td>
</tr>
<tr>
<td>Wt. (as fired)</td>
<td></td>
</tr>
<tr>
<td>Wt. (burned)</td>
<td></td>
</tr>
</tbody>
</table>

## Complete Round
- Mark Mod
- Wt. (as fired)

## Other Information
- ALN: RMDA-847-HA-45

## Launcher
- 1050 Rocket Launcher

## Rocket Performance

<table>
<thead>
<tr>
<th>Flight</th>
<th>Velocity, f/s: Straddling 2039 Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuse functioning</td>
<td>O. T. A.</td>
</tr>
<tr>
<td>Explosive action</td>
<td>(High Order) (Low Order) (None)</td>
</tr>
<tr>
<td>Distance of burst behind plate</td>
<td></td>
</tr>
<tr>
<td>Condition of recovered round</td>
<td>Head was in (EFFECTIVE) (INEFFECTIVE) condition.</td>
</tr>
</tbody>
</table>

## Remarks

- Head was in (EFFECTIVE) (INEFFECTIVE) condition.

## Photo
- No. 5P1-4-283

## Signed
- [Signature]
- C.W. Vandorf

---

**Confidential Security Info.**  
Impact Record #2
# IMPACT RECORD

**U. S. NAVAL PROVING GROUND**

**Dahlgren, Virginia**

**IMPACT NO.** 39905

**IMPACT DATE** 5-7-52

**NPG TEST NO.** T-2222-1,24

### OBJECT
- Functioning Test of T2023 Fuzes for 2775 Shaped Charge
  - Socket Head T2016 with two 5.50 HVAP Motors vs 7-1/2" Cl. Plate

### Reference:
- NPG Wotor: T-2016 dated
- Butted ltr. NPG/ML/263/124 (4/4) dated 2 May 1952
- Task Assignment No.: NPG. N923 - 11-1-52
dated

### PLATE TARGET
- **Cage:** 7-1/2" Class R
- **No.** 55023242 Group B-1134
- **Dimensions:** 131" X 195"
- **OBLIQUITY:** 0°

### PENETRATION
- ** Thickness at Impact:** 7.50
- **Dist. from nearest impact:** 13"
- **Impact area:** 2-1/4" X 2-1/4"
- **Spall:** Front 0 Back 0
- **Cracks:** 0
- **Punching (thrown started):**
- **Back Button (thrown started):**
- **Bulge:** 0
- **Through opening:** 3/8" X 3/8"

### ROCKET
- **HEAD:** Cal. 2775 Type Shaped Charge
- **Mark:** Mod No.-320 Wt.
- **Lot No.:** T2016
- **Filler:** Type Comp. 5 Wt. 0.92#
- **Boosters:** 1
- **Wt. of head (as fired):**
- **MOTOR:** Cal. 5" Mk. 2 Mod 3
- **Motor temp.:** 120° Wt. 87.6#
- **COMPLETE ROUND:** Mark Mod
- **Wt. (as fired):**
- **Wt. (burned):**
- **OTHER INFORMATION:**
  - **AIR:** RMDA-87 6711-4
  - **LAUNCHER:** 1050° Rocket Launcher

### ROCKET PERFORMANCE
- **Flight Velocity, f/s:** Striking 2053 Residual
- **Fuze functioning:** O T Total
- **Explosive action:** (High Order) (Low Order) (Rame)
- **Distance of burst behind plate:**
- **Condition of recovered round:**
  - **Head was in (Effective) (Ineffective) condition.

### REMARKS:

### Photo No. NE-4-2283

### Signed

F. W. Keudorf

JRD. ENG.
# IMPACT RECORD

**U. S. NAVAL PROVING GROUND**

**DANLOREN, VIRGINIA**

**IMPACT NO.** 3990b  
**IMPACT DATE** 5-7-52

**NPG TEST NO.** T-2222-1.24

## OBJECT
- Functioning Test of T2023 Fuzes for 2.75 Shaped Charge Rocket Head T2016 with two 5" HVAR Motors vs 7-1/2" O1. R Plate.
- Reference: NPGNOT1412 7/16 6/14 dated
- Reference: MARTX+521 NO/7 XII-1(N242) Ser/2410 6/14 dated
- Task Assignment No. NPG-He2b - 11-1-52 dated

## PLATE TARGET

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gage</td>
<td>7-1/2&quot;</td>
</tr>
<tr>
<td>Class</td>
<td>B</td>
</tr>
<tr>
<td>Maker</td>
<td>Bath.</td>
</tr>
<tr>
<td>No.</td>
<td>55G232A2</td>
</tr>
<tr>
<td>Group</td>
<td>B-113A</td>
</tr>
<tr>
<td>Dimensions</td>
<td>131&quot; X 190&quot;</td>
</tr>
<tr>
<td>OBLIQUITY</td>
<td>0&quot;</td>
</tr>
</tbody>
</table>

## ROCKET

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAD: Cal.</td>
<td>2.75 Type Shaped Charge</td>
</tr>
<tr>
<td>Mark Mod No.</td>
<td>1/2</td>
</tr>
<tr>
<td>Wt.</td>
<td></td>
</tr>
<tr>
<td>Maker</td>
<td></td>
</tr>
<tr>
<td>Lot No.</td>
<td>T2016</td>
</tr>
<tr>
<td>Filler Type</td>
<td>Complete</td>
</tr>
<tr>
<td>Wt.</td>
<td>0.92#</td>
</tr>
<tr>
<td>Fuzes</td>
<td>T2023 Lot PA-9 9121</td>
</tr>
<tr>
<td>BOOSTERS</td>
<td></td>
</tr>
<tr>
<td>Wt. of head (as fired)</td>
<td></td>
</tr>
<tr>
<td>MOTOR: Cal.</td>
<td>5&quot; Mk. 2 Mod 3</td>
</tr>
<tr>
<td>Motor temp.</td>
<td>120° Wt.90.00+</td>
</tr>
<tr>
<td>COMPLETE ROUND:</td>
<td>Mark Mod</td>
</tr>
<tr>
<td>Wt. (as fired)</td>
<td></td>
</tr>
<tr>
<td>Wt. (burned)</td>
<td></td>
</tr>
<tr>
<td>OTHER INFORMATION</td>
<td></td>
</tr>
<tr>
<td>ALF: ANA-612-4A-45</td>
<td></td>
</tr>
<tr>
<td>&quot; &quot;17.5&quot; - &quot;</td>
<td></td>
</tr>
<tr>
<td>LAUNCHER</td>
<td>1050' Rocket Launcher</td>
</tr>
</tbody>
</table>

## PENETRATION

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness at impact</td>
<td>7&quot;50</td>
</tr>
<tr>
<td>No. of impact on plate</td>
<td>4</td>
</tr>
<tr>
<td>Dist. from nearest impact</td>
<td>6&quot;</td>
</tr>
<tr>
<td>Dist. from near edge</td>
<td>1/2&quot; and 5/6&quot;</td>
</tr>
<tr>
<td>Impact area</td>
<td>2-1/2&quot; X 2-1/2&quot;</td>
</tr>
<tr>
<td>Spall: Front</td>
<td>0</td>
</tr>
<tr>
<td>Back</td>
<td>0</td>
</tr>
<tr>
<td>Dish</td>
<td>0</td>
</tr>
<tr>
<td>Spur</td>
<td>1/4&quot;</td>
</tr>
<tr>
<td>Cracks</td>
<td>0</td>
</tr>
<tr>
<td>Punching (thrown)</td>
<td>started</td>
</tr>
<tr>
<td>Back Button (thrown)</td>
<td>started</td>
</tr>
<tr>
<td>Bulge</td>
<td>0</td>
</tr>
<tr>
<td>Through opening</td>
<td>3/8&quot; X 3/8&quot;</td>
</tr>
</tbody>
</table>

## ROCKET PERFORMANCE

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flight Velocity</td>
<td>f/s: -</td>
</tr>
<tr>
<td>Fuse functioning</td>
<td>OFF</td>
</tr>
<tr>
<td>Explosive action</td>
<td>High Order</td>
</tr>
<tr>
<td>Distance of burst behind plate</td>
<td></td>
</tr>
<tr>
<td>Condition of recovered round</td>
<td></td>
</tr>
<tr>
<td>Head was in (AFFECTIVE) (INEFFECTIVE) condition</td>
<td></td>
</tr>
</tbody>
</table>

## REMARKS:

- Photo No. NP9-43263
- Signed F. W. Kaadorf
- ODU, ANG.
NAVORD FORM 1883 (Nov)

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39007
IMPACT DATE 5-7-52

NPG TEST NO. 4-2222-1,24

OBJECT Functioning Test of T2023 Fuzes for 2.75 Shaped Charge Rocket Head T201b with two 570 HVAR Motors vs 7-1/2" Cl. B Plate.

Reference: NPO No. Tr. dated
Reference: NPO No. Tr. dated
Task Assignment No. NPO - HeG - 11-1-52 dated

PLATE TARGET

Gage 7-1/2" Class B
Maker Bath
No. 552232A2 Group A-13
Dimensions 13" x 190"

OBliquITY 0°

PENETRATION Complete
Thickness at impact 7-1/2"
No. of impact on plate 5
Dist. from nearest impact 2"
Dist. from near edges 48" and 100"
Impact area 2" x 2"
Spall: Front 0 Back 0
Dish 0 Spur 1/4"
Cracks 0
Punching (thrown) (started)
Back Button (thrown) (started)
Bulge 0
Through opening 3/8" x 3/8"

ROCKET

HEAD: Cal. 2.75 Shaped Charge
Mark Mod No 3/4-Wt.
Maker
Lot No. T2016
Filler: Type Comp. Wt. 0.92#
Fuzes T2021 Lot PA-k 9121
Boosters
Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 120° Wt. 87.55#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION
ALN: 31-77-HA-1.5
" = 3 77-HA-1.5
LAUNCHER 1050' Rocket Launcher

ROCKET PERFORMANCE

Mean
Flight Velocity, f/s: Striking 2043 Residual
Fuse functioning
Explosive action
Distance of burst behind plate
Condition of recovered round

REMARKS:

Photo No. Nr 9-2% Signed F.W. Kersdor

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-SECRET INFORMATION
Impact Record #5

ORD. ENG.
IMPACT RECORD
U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39908
IMPACT DATE 5-7-52
NPG TEST NO. T-2224-L-2

OBJECT Functioning Test of T2023 Fuzes for 2.75 Shaped Charge
Rocket Head "2016 with two 520 HYAR Motors vs 7-1/2" Cl.B Plate.
Reference: NPG ltr. dated 7-10-12
Reference: NPG ltr. NP/PNL/X1-1(2444)ser27410P dated 2 May 1952
Task Assignment No. NPG - H62-11-1-52

PLATE TARGET
Gage 7-1/2" Class R
Maker Beth
No. 55023242 Group B, 1131
Dimensions 131" x 190"

OBLIQUITY
0°

PENDENTRATION Complete
Thickness at impact 7-1/2"
No. of impact on plate 0
Dist. from nearest impact 2-1/2"
Dist. from near edge 263-1/2" H44"
Impact area 1-1/4" x 2-1/2" Spall: Front 2" x 2" Back 0
Dish 0 Spur 1/4" Cracks 0
Punching (thrown) (started) 0
Back Button (thrown) (started) 0
Buige 0
Through opening 3/8" x 3/8"

ROCKET
HEAD: Cal. 2.75 Type Shaped Charge
Mark Mod No. 71 Wt.
Maker Lot No.
Filler: Type Comp B Wt. 0.02#
Fuzes T2023 Lot PA-X 9121

Boosters Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 2
Motor temp. 120° Wt. 37.60#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION
AIL: BM3-275-HA-45
" -177" -45
LAUNCHER 1050' Rocket Launcher

ROCKET PERFORMANCE
Mean Velocity, f/s: Residual
Fuse functioning ON TARGET
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round
Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No. NP9-43283

Signed F.W. Kaardorf

F.W. Kaardorf

Impact Record #6
NAVJFD FORM 1883 (Rev 3/43)

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IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39909

IMPACT DATE 5-8-52

NPG TEST NO. T-2224-1.5

OBJECT

Functioning test of T2C23 fuzes for 2.75" Shaped

Charge, R. Head T2016

PLATE TARGET

Gage 7750
Class B

Maker: Bethlehem

No. 550-232A2, Group 5-11A

Dimensions 131" x 190"

HEAD

Cal. 2.75" Type Shaped Charge

Mark - Mod - No. 175 Wt -

Maker Picatinny Arsenal, T2016

Lot No. 1202

Filler: Type Comp. B Wt - .92#

Fuzes T2023

Boosters 1

Wt. of head (as fired) -

MOTOR

Cal. 5" Mk. 2 Mod 3

Motor temp. 90° Wt - 86.65#

COMPLETE ROUND

Mark - Mod -

Wt. (as fired) -

Wt. (burned) -

LAUNCHER

1050" Rocket Launcher

ROCKET PERFORMANCE

Mean Flight Velocity f/s: Striking 195° Residual

Fuse functioning (Ignited)

Explosive action (High Order) (Low Order) (None)

Distance of burst behind plate

Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) Condition.

REMARKS:

Photo No.

CONFIDENTIAL

SECURITY INFORMATION

CONFIDENTIAL

Impet Record #7
NAVORD FORM 1883 (New 3/45)

CONFIDENTIAL

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39910
IMPACT DATE 5-8-52

NPG TEST NO. T2224-1.5

OBJECT Functioning test of T2023 fuzes for 2775 Shaped Charge Rocket Head T216

Reference: NPG No. 1.4 dated
Reference: NPG No. 1.4 dated
Task Assignment No. NPG-Renlist - 11-1-52 dated

PLATE TARGET

Gage 7750 Class B
Maker Bethlehem
No. 55023242 Group B113A
Dimensions 131" x 190"

ROCKET

HEAD: Cal. 2"75 Type Shaped-Charge
Mark Mod No.: W, Wt.
Maker Picatinny Arsenal, T2016
Lot No.: 1
Filler: Type Comp.E Wt.: .92#
Fuzes T2023
Boosters 1
Wt. of head (as fired) -

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 90° Wt. 88.95#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION

ALN: RDDA-375-HA-45
-642-

LAUNCHER 105° Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Mean Striking 2017 Residual
Fuse functioning Explosive action
Explosive (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

ROCKET PERFORMANCE

Photo No.

CONFIDENTIAL
SECURITY INFORMATION

CONFIDENTIAL
SECURITY INFORMATION

Impact Record #8

Signed F. W. KASDORF, 1st
Ord. Eng.
NAVORD FORM 1883 (No. 3/4c)

CONFIDENTIAL

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39211
IMPACT DATE 5-8-52

NPG TEST NO. T-2224-1.5

OBJECT
Functioning test of T2023 fuzes for 2175 Shaped Charge Rocket Head T2016

<table>
<thead>
<tr>
<th>Reference: NPG</th>
<th>NPG No. ltr. 2224-1.5 dated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference: Buff</td>
<td>NPG/WCJ/11-1 (2444) Ser.2/41DF: GNC dated</td>
</tr>
<tr>
<td>Task Assignment No.</td>
<td>NPG-Mark - 11-1-52 dated</td>
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PLATE TARGET

<table>
<thead>
<tr>
<th>Cage</th>
<th>7 1/2</th>
<th>Class B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maker</td>
<td>Bethlehem</td>
<td></td>
</tr>
<tr>
<td>No. 5202A2</td>
<td>Group B-113A</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>134&quot; x 170&quot;</td>
<td></td>
</tr>
<tr>
<td>OBliquity</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

ROCKET

<table>
<thead>
<tr>
<th>HEAD</th>
<th>Cal. 2175 Type Shaped-Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark</td>
<td>Mod No. 27 Wt.</td>
</tr>
<tr>
<td>Maker</td>
<td>Fiestiny Arsenal, T2016</td>
</tr>
<tr>
<td>Lot No.</td>
<td></td>
</tr>
<tr>
<td>Filler</td>
<td>Type Comp B Wt. .92#</td>
</tr>
<tr>
<td>Fuzes</td>
<td>T2023</td>
</tr>
<tr>
<td>Lot PA-E-9122</td>
<td></td>
</tr>
<tr>
<td>Boosters</td>
<td>1</td>
</tr>
<tr>
<td>Wt. of head (as fired)</td>
<td></td>
</tr>
</tbody>
</table>

MOTOR

| Cal. 5" Mk. 2 Mod 3 |
| Motor temp. | 90° | St. 86.80# |

COMpletely Round

| Mark | Mod |
| Wt. (as fired) | |
| Wt. (burned) | |

OTHER INFORMATION

| ALN: | B02A: 377-MA-45 |
| " | -262- |

LAUNCHER

1050" Rocket Launcher

ROCKET PERFORMANCE

<table>
<thead>
<tr>
<th>Flight</th>
<th>Velocity, f/a: Strikeing 2034 Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuze Functioning</td>
<td>&quot;Explosive action (High order) (Low order) (None)</td>
</tr>
<tr>
<td>Distance of burst behind plate</td>
<td></td>
</tr>
<tr>
<td>Condition of recovered round</td>
<td></td>
</tr>
</tbody>
</table>

HEAD was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No. Signed F. W. KASDORF, 1h Ord. Eng.

CONFIDENTIAL

SECURITY INFORMATION

CONFIDENTIAL

SECURITY INFORMATION

Impact Record #9
**NAVORD FORM 1883**  
**CONFIDENTIAL**

**IMPACT RECORD**

**U. S. NAVAL PROVING GROUND**  
**DAHLGREN, VIRGINIA**

**IMPACT NO.** 39912  
**IMPACT DATE 5-8-52**

**NPG TEST NO.-2224-1.5**

**OBJECT**  
Functioning test of T2023 fuzes for 2"75 Shaped Charge Head T2716.

**Reference:** NPG ltr.  
NPG/304/304 dated 2 May 1952

**Task Assignment No.:**  
NPG-Res2b - 11-1-52 dated 1952

**PLATE TARGET**

<table>
<thead>
<tr>
<th>Gage</th>
<th>7&quot;50</th>
<th>Class</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maker</td>
<td>Bethlehem</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>55G232A2</td>
<td>Group</td>
<td>B-113A</td>
</tr>
<tr>
<td>Dimensions</td>
<td>131&quot; x 140&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OBLIQUITY**  
0°

**PENETRATION**  
Complete

<table>
<thead>
<tr>
<th>Thickness at impact</th>
<th>7.50</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of impact on plate</td>
<td>10</td>
</tr>
<tr>
<td>Dist. from nearest impact</td>
<td>5&quot;</td>
</tr>
<tr>
<td>Dist. from near edge</td>
<td>2-1/2&quot; x 2-1/2&quot;</td>
</tr>
<tr>
<td>Impact area</td>
<td>2-1/2&quot; x 2-1/2&quot;</td>
</tr>
<tr>
<td>Spall</td>
<td>Front: 0, Back: 0</td>
</tr>
<tr>
<td>Dish</td>
<td>0, Spur: 1/8&quot;</td>
</tr>
<tr>
<td>Cracks</td>
<td>0</td>
</tr>
<tr>
<td>Punching (thrown) (started)</td>
<td>0</td>
</tr>
<tr>
<td>Back Button (thrown) (started)</td>
<td>0</td>
</tr>
<tr>
<td>Bulge</td>
<td>Through opening: 3/8&quot; x 3/8&quot;</td>
</tr>
</tbody>
</table>

**ROCKET**

**HEAD:**  
Cal. 2"75 Type Shaped-Charge  
Mark: Picatinny Arsenal, T2016  
Lot No.: T2023  
Filler: Type Comp.B  
Wt. 92#

**ROCKET PERFORMANCE**

**Flight Velocity, f/s:**  
Mean: 1964  
Residual: Stalling  
**Puze functioning 211442**

**Explosive action** (High Order) (Low Order) (None)

**Distance of burst behind plate**

**Condition of recovered round**  
Head was in (EFFECTIVE) (INEFFECTIVE) condition.

**REMARKS:**


**Photo No.**  
**Signed**  

**CONFIDENTIAL**

**SECURITY INFORMATION**

**Impact Record #10**
NA'VjRD IFU-RM

CONFIDENTIAL

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39913
IMPACT DATE 5-8-52
NPG TEST NO. T-2224-1.5

OBJECT
Functioning test of T2023 fuzes for 2.75 Shaped Charge Rocket Head T2016

Reference: NPG ltr. dated
Reference: NPG ltr. N/PCL/X1-1(G444) dated
Task Assignment No. NPG-R-21 - 11-1-52

PLATE TARGET

Gage 2.750 Class B
Maker: Bethlehem
No. 550232A2 Group B-113A
Dimensions 131" x 190"

OBLIQUITY 0°

PENETRATION 7-1/4"
Thickness at impact 7"8"
No. of impact on plate 11
Dist. from nearest impact 2"
Dist. from near edges 55" and 175"
Impact area 2-1/4" x 2-1/2"
Spall: Front 0 Back 0

Dish 0 Spur 0

Cracks 0

Punching (thrown) (started)
Back Button (thrown) (started)

Bulge 1/2"
Through opening 0

ROCKET

HEAD: Cal. 2.75 Type Shaped-Charge
Mark Mod No. 28 Wt.
Maker Picatinny Arsenal, T2016
Lot No.
Piller: Type Comp B Wt. .92#
Fuzes T2023
Lot PA-E-9122
Boosters 1
Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 90° Wt. 89.95#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION
ALN: PLDA-542-MA-69
"-847-"

LAUNCHER: 1050' Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Mean 1376 Residual

Puze functioning 3

Explosive action (High Order) (Low Order) (None)

Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No.

CONFIDENTIAL

SECURITY INFORMATION

Impact Record 11
IMPACT RECORD

CONFIDENTIAL

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39914

IMPACT DATE 5-9-52

NPG TEST NO.T-2222-1.24

OBJECT Functioning test of T2023 fuzes for 2"75 Rocket Heads

PLATE TARGET

Gage 7.50 Class B
Maker Bethlehem
No. 55G32AZ Group B-113A
Dimensions 131" x 190"
OBLIQUITY 0°

PENETRATION Complete

Thickness at impact 7.50
No. of impact on plate 12
Dist. from nearest impact 27" 
Dist. from near edges 156" and 182"
Impact area 2-1/4" x 2-12"
Spall: Front 0 Back 0
Dish 0 Spur 1/8"
Cracks 0
Funching (thrown) started
Back Button (thrown) (disased)
Bulge 0
Through opening 3/8" x 3/8"

ROCKET

HEAD: Cal. 2775 Type Shaped-Chg.
Mark T2015 Mod No. 41 Wt.
Maker Picatinny Arsenal
Lot No.
Filler: Type Comp B Wt. 92#
Fuzes: T2023, Lot PAE-9122
Boosters 1
Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 70° Wt. 68.20# 

COMPLETE ROUND: Mark Mod
Wt. (as fired) 
Wt. (burned)

OTHER INFORMATION
ALN: R1DA-642-1A-43
"-75-" 
LAUNCHER 1050" Rocket Launcher

ROCKET PERFORMANCE

Mean Flight Velocity, f/s: Stating 1901 Residual

Pure functioning
Explosive action (High Order) (Low-Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No. ____________________

CONFIDENTIAL

SECURITY INFORMATION

Impact Record #1a
IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39915

IMPACT DATE 5-9-52

NPG TEST NO. T-2222-1.24

OBJECT  Functioning test of T2023 fuzes for 2 75 Shaped Charge
Rocket Heads T2016

Reference: NPG No. ltr. 2444 dated
Reference: NPG No. 1tr. 2444 dated
Task Assignment No. NPG-Hezb - 11-1-52 dated

PLATE TARGET

Gage 7750  Class B
Maker Bethlehem
No. 55223242  Group B-113A
Dimensions 131" x 190"

OBLIQUITY 0°

PEÑETRATION  Complete
Thickness at impact 7750
No. of impact on plate 13
Dist. from nearest impact 5" 
Dist. from near edges 758 and 127"
Impact area 2-1/2" x 2-1/2"
Spall: Front 0  Back 0
Dish 0  Spur 1/4"
Cracks 0
Punching (thrown) (started) 
Back Button (thrown) (started)
Bulge 0
Through opening 3/8" x 3/8"

ROCKET

HEAD: Cal. 2 75 Type Shaped-Chr.
Mark T2016  Mod. No. A-54 Wt.
Maker Picatinny Arsenal
Lot No. 
Filler: Type Comp E Wt. .92#
Fuzes T2023, Lot PAB-9122

Boosters 1
Wt. of head (as fired) 

MOTOR: Cal. 5" Mk. 2 Mod. 3
Motor temp. 70° Wt. 88.55#

COMPLETE ROUND: Mark Mod.
Wt. (as fired) 
Wt. (burned) 

OTHER INFORMATION
ALN: RMAD-673-HA-45
" W - 
LAUNCHER 1050 Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Mean Stoking 1864 Residual
Fuse functioning T2023#
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS: 

Photo No. 

Signed 

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Security Information

Impact Record #17
NAVORD FORM 1883 (N-1/48)

IMPACT RECORD

CONFIDENTIAL

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 38916

IMPACT DATE 5-9-52

NPG TEST NO. T-2222-1,24

OBJECT

Functioning test of T2023 fuzes for 2/75 Shaped Charge Rocket Heads T2016

Reference: NPG NOTIT. dated
Reference: NPG ltr. NPG/01/28-1(2444)SerZ/41DF:GD dated 2 May 1952
Task Assignment No. NPG-2246 - 11-1-52 dated

PLATE TARGET

Gage 7/8" Class B
Maker Bethlehem
No. 53323ZAZ Group B-113A
Dimensions 111" x 190"

OBLIQUITY 0°

PENETRATION

Complete

Thickness at impact 7/8" No. of impact on plate 14
Dist. from nearest impact 10" No. of impact on plate 14
Dist. from near edge 5/8" and 1/2"
Impact area 2-1/4" x 2-1/4"

Spall: Front 0 Back 0
Dish 0 Spur 1/4"
Cracks 0
Punching (thrown) (started) 0
Back Button (thrown) (started) 0

ROCKET

HEAD: Cal. 2/75 Type Shaped-Chk.
Mark T2016 Mod No. 3 1/4" Wt.
Maker Picatinny Arsenal
Lot No.
Filler: Type Comp B Wt. 1/2# Fuzes T2016, Lot PAZ-2122

Boosters 1
Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 70° Wt. 87.85#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION

ALIN: RE: DA-177-HA-45

LAUNCHER: 1050 Rocket Launcher

ROCKET PERFORMANCE

Mean Flight Velocity, f/s: STRIKEING - Residual
Fuse functioning 2 X Fuzes
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No. Signed F. N. KASDORF, II
CONFIDENTIAL Ord. Eng.
SECURITY INFORMATION

Impact Record #14
NAVORD FORM 1883 (N- 3/48)

CONFIDENTIAL

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39917
IMPACT DATE 5-2-52
NPG TEST NO. T-2222-J-24

OBJECT

Functioning test of T2023 fuzes for 2 7/8 Shaped Charge Rocket Heads T2016

Reference: NPG Re-1N dated
Reference: NPG Re-11 dated
Task Assignment No.

PLATE TARGET

Gage 75/50 Class B
Maker Bethlehem
No. 5562 32A Group 5-113A
Dimensions 131" x 150"

ROCKET

HEAD: Cal. 2 7/8 Type Shaped-Chg.
Mark T2016 Mod No. Wt.
Maker Picatinny Arsenal
Lot No.
Filler: Type Comp B Wt. .92#
Fuzes T2023, Lot PA5-9122

Dimensions 2" x 2-1/4"
Spall Front 0 Back 0
Disk 0 Spur 1/4"
Cracks 0

Booster 1 Wt. of head (as fired)
Wt. of motor (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 70° Wt. 88.50#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION

ALN: RL/DA-277-HA-45

LAUNCHER 1050 Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Mean Striking Residual
Fuse functioning On Target
Explosive action (High Order) (Low Order) (Non)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No. Signed

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SECURITY INFORMATION

Impact Record #15
NAVD FORM 1883 (New 3/157)

IMPACT RECORD

CONFIDENTIAL

U.S. NAVAL PROVING GROUND

DAHLGREN, VIRGINIA

IMPACT NO. 39918

IMPACT DATE 5-9-52

NPG TEST NO. T-2222-1.24

OBJECT Functioning test of T2023 fuzes for 2.175 Shaped Charge Rocket Heads T2016

Reference: NPG Letter R-167 dated 2 May 1952
Reference: BMTR 17-1-47 dated
Task Assignment No. NPG-382b-17-1-52

PLATE TARGET

Gage 77150 Class B
Maker Bethlehem
No. 55G232A2 Group B-113A
Dimensions 171" x 190"

OBLIQUITY 0°

PENETRATION Complete
Thickness at impact 77150
No. of impact on plate 16
Dist. from nearest impact 1/4"
Dist. from near edge 59" and 197"
Impact area 2" x 2-1/4"
Spall: Front 0 Back 0
Dish 0 Spur 1/4"
Cracks 0
Punching (thrown) (started)
Back Button (thrown) (started)
Bulge 0
Through opening 3/8" x 3/8"

ROCKET

HEAD: Cal. 2.175 Type Shaped-Chg.
Mark T2016 Mod No. Wt.
Maker Picatinny Arsenal
Lot No.
Filler: Type Comp B Wt. 92#
Fuzes T2023, Lot PAE-9122
Boosters 1
Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 70° Jt. 87.95°

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION
ALN: RMDA-377-HA-45
" - 847 - "
LAUNCHER 1050° Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Standing 1908 Residual
Fuse Functioning incomplete
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No.

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SECURITY INFORMATION

Impact Record #16
NAVORD FORM 1883 (New 3/4b)

CONFIDENTIAL IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39921
IMPACT DATE 5-12-52
NPG TEST NO. T-2222-1.2

OBJECT Functioning Test of T2023 Fuzes for 2.75" Shaped Charge
Rocket Head T2016 with two 570 HVA rocket motors vs 7-1/2" Cl.5 Plate.

Reference: NPG 101

Reference: NPG Xtrn Ref. NO/31/244) Ser2/441D/116D dated 2 May 1952

Task Assignment No. NPG-K26 - 11-1-52

PLATE TARGET

Gage 7-1/2" Class B
Maker Bath
No.5502322 Group Hall
Dimensions 131" X 190"

OBLIQUITY 0°

PENNETRATION Complete

Thickness at impact 7.750
No. of impact on plate 17
Dist. from nearest impact 1"
Dist. from near edge 60" and 98"
Impact area 2" X 2"
Spall: Front 0 Back 0
Dish 0 Spur 1/4"
Cracks 0

PUNCHING (thrown) (started)
Back Button (thrown) (started)
Bulge 0
Through opening 3/8" X 3/8"

ROCKET

HEAD: Cal. 2.75" Type Shaped Charge
Mark 2016 Mod No. 2 Mod 3
Maker Picatinny Arsenal
Lot No.

Filler: Type Comp B Wt.
Fuzes T2023 Lot 0-1-9121

Boosters 1
Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 90° Wt. 88-35#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION

ALN: PM-4A-3.7-HA-4/5
LAUNCHER 1050' Rocket Launcher

ROCKET PERFORMANCE

Mean

Velocity, f/s: Striking 1840 Residual

Pulse functioning ON TARGET

Explosive action [High Order] [Low Order] [None]
Distance of burst behind plate
Condition of recovered round

Head was in [EFFECTIVE] [INEFFECTIVE] condition.

REMARKS:

______________________________

Photo No. ____________________

______________________________

Signed ________________________

F W. Kassoff

ORD. ENG.

CONFIDENTIAL

SECURITY INFORMATION

Impact Record #17
**NAVORD FORM 1883 (New 3/46)**

**CONFIDENTIAL**

**IMPACT RECORD**

**U. S. NAVAL PROVING GROUND**

**DAHLGREN, VIRGINIA**

**IMPACT NO.** 39922

**IMPACT DATE** 5-12-52

**NPG TEST NO.** T-2222-1.24

**OBJECT** Functioning Test of T202; Fuzes for 2775 Shaped Charge

**Rocket Head T2016 with two 520 HVAP Rocket Motors vs 7-1/2" Cl. 5 Plate.**

**Reference:** NPG-1St-73

**Task Assignment No.** NPG-Re2b - 11-1-52

---

**PLATE TARGET**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>7-1/2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maker</td>
<td>B-113A</td>
</tr>
<tr>
<td>No.</td>
<td>355223242</td>
</tr>
</tbody>
</table>

**Dimensions**

131" X 190"

**OBLIQUITY**

0°

**PENETRATION**

**Complete**

**Thickness at impact** 7-1/2"

**No. of impact on plate** 18

**Dist. from nearest impact** 1/2"

**Dist. from nearest edge** 1/2" and 83"

**Impact area** 2" X 2-1/4"

**Spall:**

- Front: 0"
- Back: 0"

**Dish**

0"

**Cracks**

0"

**Punching (thrown)**

- Started: 0"

**Back Button (thrown)**

- Torn: 0"

**Bulge**

0"

**Through opening** 3/8" X 3/8"

---

**ROCKET**

**HEAD:**

- Cal. 2775 Type Shaped Charge
- Mark 2016 Mod No. 250 Wt.
- Maker Placinny arsenal
- Lot No.
- Filler: Type Comp Wt.
- Fuzes T202; Lot 9121

**Boosters**

1

**Wt. of head (as fired)**

---

**MOTOR:**

- Cal. 5" Mk. 2 Mod 3
- Motor temp. 90° Wt. 87.45#

**COMPLETE ROUND:**

- Mark Mod
- Wt. (as fired)
- Wt. (burned)

---

**OTHER INFORMATION**

- ALN: 9MDA-867-HA-45
- S-277-va

**LAUNCHER:**

1050' Rocket Launcher

---

**ROCKET PERFORMANCE**

**Mean Velocity, f/s:** 1857 Residual

**Fuse functioning:** On Target

**Explosive action** (High Order) (Low Order) (None)

**Distance of burst behind plate**

**Condition of recovered round**

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

---

**REMARKS:**

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**Photo No.**

---

**Signed**

F.W. Kandor

---

**CONFIDENTIAL**

**SECURITY INFORMATION**

Impact Record #18
NAVORD FORM 1883 (New 3/40).

CONFIDENTIAL

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLORREN, VIRGINIA

IMPACT NO. 39923
IMPACT DATE 5-12-52

MPP TEST NO. T-2222-1, 24

OBJECT

Functioning Tast of T2023 Fuzes for 27/5 Shaped Charge
Rocket Head T2015 with two 570 HVAR Rocket Motors vs 7-1/2" CB Plate.

Reference: NPG 11tr, NPR 7-10, 1951 dated
Reference: ENS 1tr 7NO/7X1 (2444) Ser 2741DFICDE dated 2 May 1952
Task Assignment No. NPP-Re2b - 11-1-52

PLATE TARGET

Gage 7-1/2" Class B
Maker Bath
No. 5502-32A Group E-113A
Dimensions 131" X 190"

OBLIQUITY 0°

PEdETRATION

Thickness at impact 7" 50
No. of impact on plate 10
Dist. from nearest impact 6"
Dist. from near edge a 3/" and B 6"
Impact area 2/1/ X 2-1/4" Spall: Front 0 Back 0
Dish 0 Spur 1/4" 
Cracks 0
Punching through (thrown) (started)
Back Button (thrown) 1/4"
Burgle 0
Through opening 3/8" X 3/8"

ROCKET

HEAD: Cal. 27/5 Type Shaped Charge
Mark T2015 Mod No. 32 2 Wt.
Maker Fitchinny Arsenal
Lot No.
Filler: Type Wt.
Fuses T2023. Lot FA-1-9121

Boosters 1
Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 1
Motor temp. 90° Wt. 87.85#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION

ALL: 847 24 45
A 0 377--"

LAUNCHER 1050' Rocket Launcher

ROCKET PERFORMANCE

Mean

Flight Velocity, f/s: Striking 1957 Residual

Fuse Functioning *

Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

______________________________

Photo No. Signed 

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SECURITY INFORMATION Impact Record #19

ORD. ENG.
NAVORD FORM 1883 (Nev 3/4
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IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39924
IMPACT DATE 5-12-52
NPG TEST NO. T-2-54-1-24

OBJECT
Functioning Test of T2023 Fuzes for 2"/75 Shaped Charge
Rocket Head T201r with two 950 iWAV Rocket Motors vs 7-1/2" Cl.B Plate.

Reference: NPG, Inc.
Vol. 1, Part 1, WP/ED/31248 dated March 2, 1953
Reference: U.S. Naval Test Range, WP/31248 dated 2 May 1953
Task Assignment No. NPG-4290 - 11-1-52 dated 1

PLATE TARGET

Gage 7-1/2" Class B
Maker Patth
No. 55G23242 Group 4111A
Dimensions 12" x 190"

OBLIQUITY 0°

PEENETRATION
Complete
Thickness at impact 7-1/2"
No. of impact on plate 20
Dist. from nearest impact 1/2"
Dist. from near edge 1-1/2"
Impact area 2" x 2-1/2"
Spall: Front 0 Back 0
Dish: 0 Spur 1/2"

Cracks 0

Punching (thrown) started
Back Button (thrown) (none)

Bulge 0

Through opening 3/8" x 3/8"

ROCKET

HEAD: Cal. 2"/75 Type Shaped Charge
Mark: 2016 Mod. No. 92.1 Wt.
Maker: Fort Detrick Arsenal
Lot No.
Filler: Type Comp. B Wt.
Fuzes T-2023, Lot FA-R-9121

Boosters 1

Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod. 3
Motor temp. 90° Wt. 87.20#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

LAUNCHER 1050' Rocket Launcher

ROCKET PERFORMANCE

Mean Velocity, f/s: STRIKING 1929 Residual

Fuse functioning ON IMPACT
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Photo No.

Signed F.W. Koedat

CONFIDENTIAL

Security Information

Impert Record 1
INAV6RD FORM 1883 (Nov 3/4)

CONFIDENTIAL

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 9925

IMPACT DATE 5-12-52

NPG TEST NO. 2222-1-24

OBJECT

Functional Test of T2023 Fuzes for 2975 Shaped Charge Rocket Head 120 x with two "10.50" rocket motors vs 7-1/2" Cl.B Plate.

Reference: NPG No. 1044 dated 2 May 1952

Task Assignment No. NTG-RC2b - 11-1-52

PLATE TARGET

Cage 7-1/2" Class __________

Maker Bath __________

No. 55229242 Group 4-113

Dimensions 131" X 130"

OBLIQUITY 0°

PEENETRATION

Complete

Thickness at impact 1/16"

No. of impact on plate 21

Dist. from nearest impact 1/8" and 1/16"

Dist. from near edges 1/8" and 1/16"

Impact area 2" X 1/4"

Spall: Front 0 Back 0

Dish 0 Spur 1/4"

Cracks 0

Punching (thrown) (started) 0

Back Button (thrown) (started) 0

Bulge 0

Through opening 3/8" X 1/8"

ROCKET

HEAD: Cal. 2975 Type Shaped Charge Mark T201A Mod No. - Wt. 0.073 lb.

Maker Picatinny Arsenal

Lot No. 3AU-9321

Filler Type Comp. E Wt. 0.073 lb.

Fuzes T2023 Lot PA-3-9121

Boosters 1 Wt. of head (as fired) __________

MOTOR: Cal. 5" Mk. 2 Mod 3

Motor temp. 90° Wt. 87.80#

COMPLETE ROUND: Mark Mod __________

Wt. (as fired) __________

Wt. (burned) __________

OTHER INFORMATION

ALN: ZAA-377-WA-45

" -073" -

LAUNCHER 1050" Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Starting 1840 Residual __________

Fuse functioning __________

Explosive action (High Order) (Low Order) (None) --

Distance of burst behind plate __________

Condition of recovered round_________________

Head was in (EFFECTIVE) (INEFFECTIVE) condition

REMARKS:

________________________

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PHOTO NO. 2

SIGNED F. W. KASDORF

NIKH. ENG.
U.S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39926
IMPACT DATE 5-13-52
MFG TEST NO. P-2222-1-24

OBJECT
Functioning Test of T2023 Fuzes for 2175 Shaped Charge
Rocket Head T2016 with two 550 HV:J Rocket Motors vs 7-1/2" CI B Plate
Reference: MFG NOTP-2222-1-24 dated
Reference: B4216 Intr. NOTP/NOL/X1 (2444) Ser 2741 RED: Che dated 2 May 1952
Task Assignment No. MFG-Rez1h - 11-1-52

PLATE TARGET
Gage 7-1/2" Class B
Maker Bath
No. 55G212A2 Group B-1134
Dimensions 131" x 190" 

OBLIQUITY

PENETRATION
Complete
Thickness at impact 7-1/2"
No. of impact on plate 22
Dist. from nearest impact 20"
Dist. from near edge 1-1/2" and 160"
Impact area 2" x 2"
Spall: Front 0 Back 0
Dish 0 Spur 1/16" 
Cracks 0
Punching (thrown) started
Back Button (thrown) interior
Bulge 0
Through opening 1/4" x 1/4"

ROCKET PERFORMANCE
Mean Flight Velocity, f/s: Starting 1551 Residual
Fuse functioning OK/OK
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round Head was in (AFFECTIVE) (INEFFECTIVE) condition

REMARKS: Fuse functioning time 56 sec

Photo No. Signed F. W. Kasdorf

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SECURITY INSTRUCTION Impact Record #22
### NAVORD FORM 1883 (Nov 3/46)

**CONFIDENTIAL**

**IMPACT RECORD**

**U. S. NAVAL PROVING GROUND**

**DAHLGREN, VIRGINIA**

**IMPACT NO.** 39927

**IMPACT DATE** 5-13-52

**NPG TEST NO.** T-2222-1.24

**OBJECT**

Functioning Test of T2023 Fuzes for 2175 Shaped Charge Rocket Head T2016 with two 540 HVAR Rocket Motors vs 7-1/2" CL.B Plate.

**Reference:** NPG MOL ltr. dated 20/1.16

**Reference:** NPG MOL ltr. NO/1(2444) dated 16 May 1952

**Task Assignment No.** NPG-Be2h - 11-1-52

---

### PLATE TARGET

<table>
<thead>
<tr>
<th>Ogee</th>
<th>7-1/2&quot; Class</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maker</td>
<td>Bath</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>55G23242 Group 3-113 A</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>131&quot; X 190&quot;</td>
<td></td>
</tr>
</tbody>
</table>

**OBLIQUITY** 0°

---

### PENETRATION

| Thickness at impact | 3 |
| No. of impact on plate | 2 |
| Dist. from nearest impact | 2 |
| Dist. from near edges | 2 |
| Impact area | 2 |
| Spall: Front | Back |
| Dish | Spur |
| Cracks | 2 |
| Punching (thrown) (started) | 2 |
| Back Button (thrown) (started) | 2 |
| Bulge Through Opening | 2 |

---

### ROCKET

**HEAD:** Cal. 2175 Type Shaped Charge

Mark T2016 Mod No. 342 Wt.

Maker: Picketville arsenal

Lot No.: 42121

Filler: Type Comp. 5 Wt.

Fuzes: T2023, Lot PA-2-3121

**Boosters: Wt. of head (as fired)**

**MOTOR:** Cal. 5" Mk. 2 Mod 3

**Motor temp.** 70° Wt. 68.20 lbs.

**COMPLETE ROUND:** Mark Mod

**Wt. (as fired)**

**Wt. (burned)**

---

### OTHER INFORMATION

**ALM:** 2MD-81.7-94-45

**LAUNCHER:** 1050 Rocket Launcher

---

### ROCKET PERFORMANCE

**Flight Velocity, f/s:** Mean 1511 Residual

**Fuse functioning:** Works

**Explosive action:** High Order (Low Order) (Remarks: Head was in EFFECTIVE (INEFFECTIVE) condition.

**Distance of burst behind plate**

**Condition of recovered round**

**REMARKS:** Fuzed End-Head Deflagrated on Impact.

---

**Photo No.**

**Signed**

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**SECURITY INFORMATION**

Impact Record #23
NAVORD FORM 1883 (New 3)

CONFIDENTIAL

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 3928
IMPACT DATE 5-13-52

NPG TEST NOT-2222-1-24

OBJECT
Functioning Test of T2023 Fuzes for 2"75 rpm Shaped Charge
Rocket Head T2016 with two 570 rpm Rocket Motors vs 7-1/2" Cl-A Plate.

Reference: NPG ltr. No. 101 dated
Reference: NPG ltr. No. 101 (2444) Ser. 27/41FP-G Be dated 2 May 1952
Task Assignment No. NPG-He2b - 11-1-52

PLATE TARGET

Oage 7-1/2" Class H
Maker Bath
No. 55222222 Group D-111M
Dimensions 131" x 130"

OBliquity 0°

PENETRATION

Complete
Thickness at impact 750
No. of impact on plate 2
Dist. from nearest impact 12"
Dist. from near edge 750 and 160"
Impact area 2" x 2-1/4"
Spall: Front 0 Back 0
Disk 0 Spur 1/4"
Cracks 0
Punching (thrown) 0 (started)
Back button (thrown) 0
Bulge 0
Through opening 1/4" x 1/4"

ROCKET PERFORMANCE

Mean
Flight Velocity, f/s: Steady 1545 Residual
Fuz functioning OK
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.


Photo No. Signed

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SECURITY INFORMATION Impact Record 424

ORD. ENG.
**IMPACT RECORD**

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39929
IMPACT DATE 5-13-52
NPG TEST NO. 2222-1.24

OBJECT
Functioning Test of T2023 Fuzes for 2575 Shaped Charge Rocket Head T40D with two 570 HYAR Rocket Motor vs 7-1/2" C18 Plate.

Reference:
- NPG No. 1tr NP/97/14 (10/44) dated 10/6/44
- NPG No. 1tr NP/NOI/11 (2444) Ser 2741DF: MGR dated 2 May 1952

Task Assignment No. NPG-126 - 11-1-52 dated 11-1-52

**PLATE TARGET**

<table>
<thead>
<tr>
<th>Gage</th>
<th>7-1/2&quot; Class B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maker</td>
<td>Body</td>
</tr>
<tr>
<td>No.</td>
<td>550222:2</td>
</tr>
<tr>
<td>Group</td>
<td>BL 113 A</td>
</tr>
<tr>
<td>Dimensions</td>
<td>131&quot; x 190&quot;</td>
</tr>
<tr>
<td>Obliquity</td>
<td>0°</td>
</tr>
</tbody>
</table>

**ROCKET**

| HEAD: Cal. 2575 Type Shaped Charge Mark T2045 Mod. 2110 Wt. |
| Lot No. | Picatinny Arsenal |
| Filler: Type Comp. Wt. |
| Fuzes   | T2023 Lot PA-E-9120 |
| Boosters| Wt. of head (as fired) |

**ROCKET PERFORMANCE**

Flight Velocity, f/s: Standard 1542 Residual

Explosive action (High Order) (Low Order) (None)

Distance of burst behind plate

Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

**REMARKS:**

Fuzes functioning time 29 1/4 sec

**Photo No.**

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SECURITY INFORMATION Impact Record 425
NAVORD FORM 1883 (New)

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IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39931

IMPACT DATE 5-14-52

NFG TEST NO. T-2222-1.24

OBJECT  Functioning test of T-2023 fuzes for 2.75 Shaped Charge Rocket Heads T-2016

Charge No. T-2222-1.24

Date dated

Task Assignment No. NFG-Hq-11-1-52
dated

PLATE TARGET

Gage 7" x 50 Class B

Maker Bethlhem

No. 55G232A2 Group B-113A

Dimensions 131" x 190"

OBLIQUITY 0°

ROCKET

HEAD: Cal. 2.75 Type Shaped-Chr.

Mark T-2016 Mod No. 4222 Wt.

Maker Picatinny Arsenal

Lot No.

Filler: Type Comp B Wt. 92#

Fuzes T-2023, Lot PAE-0120

Booster 1

Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3

Motor temp. 70° Wt. 87.10#

COMPLETE ROUND: Mark Mod

Wt. (as fired)

Wt. (burned)

OTHER INFORMATION

ALN: RMDA-673-HA-45

Inv. 8-1/2" "

LAUNCHER 1050 Rocket Launcher

ROCKET PERFORMANCE

Lean Flight Velocity, f/s: Steading 1813 Residual

Fuse functioning On Target

Explosive action (High Order) (Low Order) (None)

Distance of burst behind plate

Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

FUEE FUNCTIONING TINE 31, 2 t AKAP


Photo No. Signett

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SECURITY INFORMATION

Impact Record #26
NAVORD FORM 1883 (New ')

CONFIDENTIAL IMPACT RECORD

U. S. NAVAL PROVING GROUND IMPACT NO. 39932
DAHLGREN, VIRGINIA IMPACT DATE 5-14-52

NPG TEST NO.T-2222-1,24

OBJECT Functioning test of T-2023 fuzes for 2"75 Shaped Charge Rocket Heads T-2016

CHARGE ROCKET HEADS T-2016

Reference: NPG Writ. T-2222-1 dated
Reference: NPG Writ. NFG/NAV/1/1(2444) Ser/C/412 DF dated 2 May 1952
Task Assignment No. NFG-Re2b - 11-1-52 dated

PLATE TARGET

Gage 7750 Class B
Maker Bethlehem
No. 552/23A2 Group A-113A
Dimensions 131" X 190"

OBLIQUITY 0°

PENETRATION 7-1/4"
Thickness at impact 7750
No. of impact on plate 27
Dist. from nearest impact 6"
Dist. from near edge 158"
Impact area 2" x 2"

Spall: Front 0 Back 0
Dish 0 Spur 0
Cracks 0

Fusil (thrown) (started)
Back Button (thrown) (started)
Bulge 1/16"
Through opening 0

ROCKET

HEAD: Cal. 2775 Type Shaped-Chg.
Marker 2016 Mod No. 3, Wt.
Maker Picatinny Arsenal
Lot No.
Filler: Type Comp B Wt. .92#
Fuzes T-2023, Lot FAS-9220

Booster 1
Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3
Motor temp. 70° Wt. 87.10#

COMPLETE ROUND: Mark Mod
Wt. (as fired)
Wt. (burned)

OTHER INFORMATION

ALN: RKDA-673-H4-45

LAUNCHER 1050° Rocket Launcher

ROCKET PERFORMANCE

Mean Flight Velocity, f/s: Striking 1832 Residual

Puze functioning ON TARGET
Explosive action (High Order) (Low Order) (None)
Distance of burst behind plate
Condition of recovered round

Head was IN (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS:

Signed F. W. Landorf, Jr.
Ord. Eng.

Impact Record #27
**NAVORD FORM 1883 (New ' ')**

**IMPACT RECORD**

**CONFIDENTIAL**

**U. S. NAVAL PROVING GROUND**

**DAHLGREN, VIRGINIA**

**IMPACT NO.** 39933

**IMPACT DATE** 5-14-52

**NPG TEST NO.** T-2222-1.24

**OBJECT**

Functioning test of T-2023 fuzes for 2.75" Shaped Charge Rocket Heads T-2016

**Reference:**

1. NPG NO1tr. dated 1/1/45
2. NOL/1X(2444) Ser2741DFGCB dated 11 May 1952
3. NOL/1tr. dated 11/1/51

**Task Assignment No.** NPG-Ra2b - 11-1-52

**PLATE TARGET**

<table>
<thead>
<tr>
<th>Plate Target</th>
<th>Rocket</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gage</strong></td>
<td>Cal. 2.75</td>
</tr>
<tr>
<td><strong>Maker</strong></td>
<td>Type Shaped-Chg.</td>
</tr>
<tr>
<td><strong>No.</strong></td>
<td>Mark T2016 Mod No. 1.</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>Type 2016</td>
</tr>
<tr>
<td><strong>Group</strong></td>
<td>Picatinny Arsenal</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>Motor: Cal. 5&quot;, Mk. 2 Mod 3</td>
</tr>
<tr>
<td><strong>OBLIQUITY</strong></td>
<td>Motor temp. 70° F, Wt. 87.80#</td>
</tr>
<tr>
<td><strong>Penetration</strong></td>
<td>COMPLETE ROUND: Mark Mod</td>
</tr>
<tr>
<td><strong>Thickness at Impact</strong></td>
<td>Complete</td>
</tr>
<tr>
<td><strong>No. of impact on plate</strong></td>
<td>Head as in (EFFECTIVE) (INEFFECTIVE) condition.</td>
</tr>
<tr>
<td><strong>Dist. from nearest impact</strong></td>
<td>Head was in (EFFECTIVE) (INEFFECTIVE) condition.</td>
</tr>
<tr>
<td><strong>Dist. from near edge T-57 and L59&quot;</strong></td>
<td>Condition of recovered round</td>
</tr>
<tr>
<td><strong>Impact area</strong></td>
<td>HEAD: Cal. 2.75 Type Shaped-Chg.</td>
</tr>
<tr>
<td><strong>Spall:</strong></td>
<td>MOTOR: Cal. 5&quot;, Mk. 2 Mod 3</td>
</tr>
<tr>
<td><strong>Front</strong></td>
<td>Motor temp. 70° F, Wt. 87.80#</td>
</tr>
<tr>
<td><strong>Back</strong></td>
<td>LOW ORDER) (None)</td>
</tr>
<tr>
<td><strong>Dish</strong></td>
<td>Distance of burst behind plate</td>
</tr>
<tr>
<td><strong>Spur</strong></td>
<td>Condition of recovered round</td>
</tr>
<tr>
<td><strong>1/4&quot;</strong></td>
<td>Head was in (EFFECTIVE) (INEFFECTIVE) condition.</td>
</tr>
<tr>
<td><strong>Cracks:</strong></td>
<td>Remarks:</td>
</tr>
<tr>
<td><strong>0</strong></td>
<td>Fuze functioning (ON TARGET)</td>
</tr>
<tr>
<td><strong>Punching (thrown) started</strong></td>
<td>Explosive action (High Order) (Low Order) (None)</td>
</tr>
<tr>
<td><strong>Back Button (thrown) (start)</strong></td>
<td>Distance of burst behind plate</td>
</tr>
<tr>
<td><strong>Bulge</strong></td>
<td>Condition of recovered round</td>
</tr>
<tr>
<td><strong>0</strong></td>
<td>Head was in (EFFECTIVE) (INEFFECTIVE) condition.</td>
</tr>
<tr>
<td><strong>Through opening</strong></td>
<td>Remarks:</td>
</tr>
<tr>
<td><strong>3/8&quot; X 3/8&quot;</strong></td>
<td>Fuze functioning (ON TARGET)</td>
</tr>
</tbody>
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**ROCKET PERFORMANCE**

<table>
<thead>
<tr>
<th>Flight</th>
<th>Mean Velocity, f/s:</th>
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</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td><strong>STRIKING</strong></td>
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<tr>
<td><strong>Variation</strong></td>
<td><strong>1808</strong></td>
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<tr>
<td><strong>Residual</strong></td>
<td><strong>948</strong></td>
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**Remarks:**

Photo No. **Signed**

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**SECURITY INFORMATION**

Impact Record #28
CONFIDENTIAL

IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39934

IMPACT DATE 5-14-52

NPG TEST NO. T-2222-1

OBJECT

Functioning test of T-2023 fuzes for 2775 Shaped
Charge Rocket Heads T-2016

Reference: NPG-1016 dated
Reference: 2741 Ser 2741 dated 2 May 1952

Task Assignment No. NPG-Re26 - 11-1-52

PLATE TARGET

Gage 7.50 Class B
Maker Bethlehem
No. 55G232A2 Group B-113A
Dimensions 43" x 190"

OBLIQUITY 0°

PENETRATION Complete

Thickness at impact 7.50
No. of impact on plate 29
Dist. from nearest impact 3" 
Dist. from near edge T-2 and 66" 
Impact area 2" x 2-1/2"

Spall: Front 0 Back 0

Dish 0 Spur 1/4"

Cracks 0

Punching (thrown) (started)

Back Button (thrown) (struck)

Bulge 0

Through opening 3/8" x 3/8"

ROCKET

HEAD: Cal. 2775 Type Shaped Charge
Mark T2016 Mod No. 2 Mod 2
Maker Picatinny Arsenal

Lot No.

Filler: Type Comp B, Wt. 92#

Fuzes T-2023, Lot PAE-9120

Boosters -

Wt. of head (as fired)

MOTOR: Cal. 5" Mk. 2 Mod 3

Motor temp. 70° Wt. 87.45#

COMPLETE ROUND: Mark Mod

Wt. (as fired)

Wt. (burned)

OTHER INFORMATION

ALN: RLDA-247-HA-45

LAUNCHER: 1050' Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Mean 1532 Residual

Fuse functioning Ch/TARGET

Explosive action (High Order) (Low Order) (None)

Distance of burst behind plate

Condition of recovered round

Head was in (EFFECTIVE) (INEFFECTIVE) condition.

REMARKS: 11-1-52-1050-11-1-52

Photo No. 

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SECURITY INFORMATION

Signed F. W. Kasdorf, 1st
Ord. Eng.

Impact Record #23
IMPACT RECORD

U. S. NAVAL PROVING GROUND
DAHLGREN, VIRGINIA

IMPACT NO. 39935
IMPACT DATE 5-14-52

OBJECT: Functioning test of T-2023 fuzes for 2175 Shaped Charge Rocket Heads T-2016

Charge Rocket Heads T-2016

ROCKET

HEAD: Cal. 2175 Type Shaped-Chg.
Mark T-2016 Mod No. 41 Wt.
Maker Picatinny Arsenal
Lot No.
Filler: Type Comp B Wt.

Fuzes

T-2021, PAE-9120

BOOSTERS

Wt. of head (as fired)

Wt. (as fired)

MOTOR:

Cal. 5" Mk. 2 Mod 3
Motor temp. 70° Wt. 86.80#

COMPLETE ROUND:

Mark Mod

Wt. (as fired)

Wt. (burned)

OTHER INFORMATION

ALN: RMDA-673-HA-45

LAUNCHER

1050' Rocket Launcher

ROCKET PERFORMANCE

Flight Velocity, f/s: Stabbing 1550 Residual

Fuse functioning OUT OF TARGET

Explosive action [High Order] [Low Order] [None]

Distance of burst behind plate

Condition of recovered round

Head was in [EFFECTIVE] [INEFFECTIVE] condition.

REMARKS:

Fuse functioning TIME 5/14/52 a.m.

Photo No.

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SECURITY INFORMATION

Impact Record #3C
T-2023 P. I. Rocket Fuze; Evaluation Tests of

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Attn: Explosives Division 1
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<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Material Armament Test Center</td>
<td></td>
</tr>
<tr>
<td>Eglin Air Force Base, Florida</td>
<td></td>
</tr>
</tbody>
</table>

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| OV | 1 |
| File | 1 |