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NOV 3 1958
TX-43, 4.4
Project No: ET-6188
Case No: 734.00

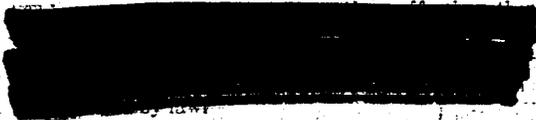
SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
1. Review Date: <u>5/27/98</u>	2. Classification (Orbit Number):
3. Reviewer: <u>pb/raiser</u>	Classification Rationale:
4. Review Date: <u>5-28-98</u>	Classification Changed to: <u>UNCL</u>
Authority: <u>W.C. Layne</u>	Contains No DOE Classified Information
Name:	4. Coordinate With:
	5. Coordinate UCAIT:
	6. Comments:
	<u>DECLASSIFY</u>

Parachute Ejection System (XMC-1000)
for TX-43 Weapon

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: <u>U</u>	AUTHORITY: <u>W.C. Layne</u>
PERSON CHANGING MARKING & DATE: <u>Emilda Seeph 5/28/98</u>	RECORD ID: <u>98SN2189</u>
PERSON VERIFYING MARKING & DATE: <u>W.C. Layne 5/28/98</u>	DATED: <u>5/28/98</u>

Summary

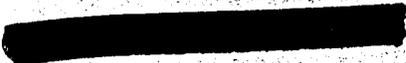
Six shots were performed in this series of testing. String igniter, primacord and various detonators were used in these shots. In the first three shots tongue and groove blocks were used. Primacord was placed in the grove prior to assembly. The height of the metal blocks traveled when the primacord was detonated was investigated. In the last three shots the XMC-1000 was used. The height that the aft cap traveled when the primacord in the tongue and groove was detonated was investigated.



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Object of Test

The object of these tests was to evaluate the parachute ejection system under actual firing conditions.

Authorization for Test

This test was requested by Division 1222 in a Work Order Authorization dated June 19, 1958. Mr. N. Botsford was the consultant.

Acknowledgments

Division 1611 wishes to acknowledge the participation and assistance of the following organizations in this test of the ejection system:

Division 5216 for camera coverage
Section 1613-4 for TV coverage and liaison services

Description of Item Tested

A view of the XM-1000 parachute ejection system may be seen in Figure 2. The XM-1000 consists of a ballistic, cylindrical, metal case which joins the aft cap to the main afterbody of the TX-43 weapon by means of a fitted insert joint. The primacord and detonators are placed in the insert joint prior to assembly. The insert joint is held with metal retaining pins. When the primacord is actuated the retaining pins shear and the aft cap is separated from the cylindrical metal case. A pilot chute is connected to the aft cap. As the aft cap is blown from the afterbody the pilot chute is deployed, which in turn deploys a bomb retarding parachute.

General Information

All shots were performed in Area III

Fastax film coverage on various shots is available and may be obtained by contacting D. G. Ahlstrom, Division 1611.

Further tests on the parachute ejection system are in process. The safing device for the ejection system is being evaluated and the personnel hazards involved in handling the loaded system is also being studied.

Procedure and Results

Shot No. 1 - Figure No. 1 is a view of the test method used in shot No. 1. The purpose of this test was to study the effect of separating the tongue and groove blocks shown in Figure 1 utilizing DuPont 820 plain-string-igniter. Two detonators were used in this shot to detonate the string igniter. The detonators were DuPont Nos. X-311 and X-310.

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The blocks were ejected approximately 4 feet in a vertical direction.

Shot No. 2 - Figure No. 1 is a view of the test method used in shot No. 2. DuPont 2040P string igniter was used in this shot to separate the metal blocks. Two detonators Nos. X-311 and X-310 manufactured by DuPont were used in this test.

The blocks were ejected approximately 15 feet in a vertical direction.

Shot No. 3 - Figure No. 1 is a view of the test set up prior to shot No. 3. Ten grain primacord and a DuPont No. X-257 detonator were used.

The primacord used was glued to the tongue part of the tongue and groove system.

The blocks were ejected approximately 15 feet.

Shot No. 4 - Figure No. 2 is a view of the test set up prior to shot No. 4. The tape measure shown in Figure 2 is not part of the test set up but was placed on the unit to indicate size.

String igniter No. 2040 Pd was used in this test. The detonators used were manufactured by Poulter Laboratory.

The aft cap was ejected approximately 16 feet in a vertical direction.

Shot No. 5 - This shot was performed utilizing the XMC-1000. The set up was the same as shown in Figure 2. Ten grain primacord and two Poulter detonators were used.

The primacord was glued to the groove of the tongue and groove system.

The aft cap was ejected approximately 30 feet.

Shot No. 6 - Figure No. 3 is a view of the safing device used in this shot. The safing device is used to hold the aft cap in case of accidental firing of the ejection system. The safing device was not utilized in this shot because the aft cap mounting holes that tie it to the inner ring did not line up. Ten grain primacord was used in this shot along with Nos. 310 and 311 detonators manufactured by DuPont.

The aft cap was ejected approximately 30 feet in a vertical direction.

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Test Conducted by: *P. S. Young* 1611-3

And: *D. G. Ahlstrom* - 1611-3

Approved by: *G. P. Barnett* - 1611-3

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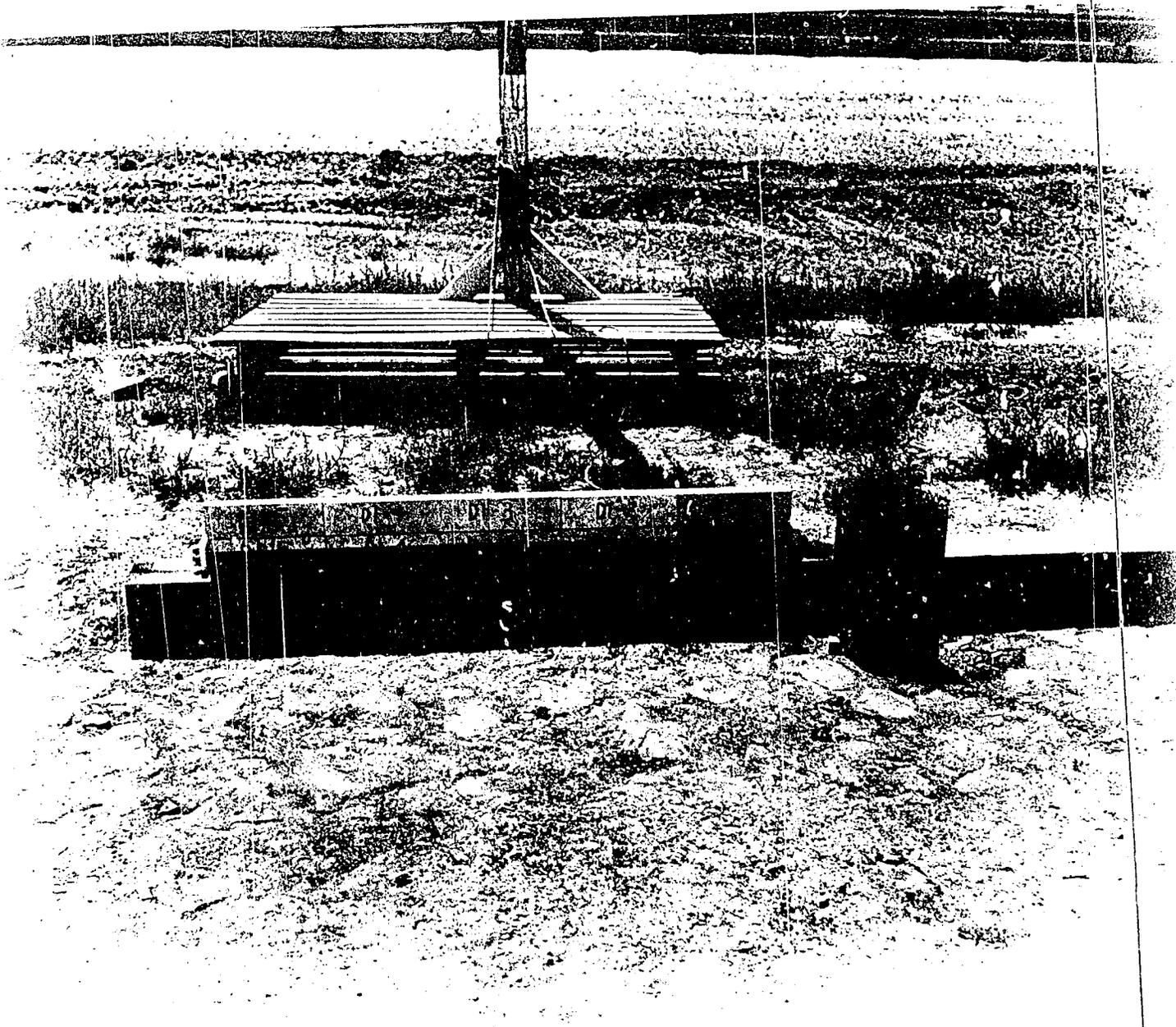
Encs. Figs. 1, 2 & 3

Copy to:

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- G. C. McDonald, 2530
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- K. Smeltzer, 7221-3

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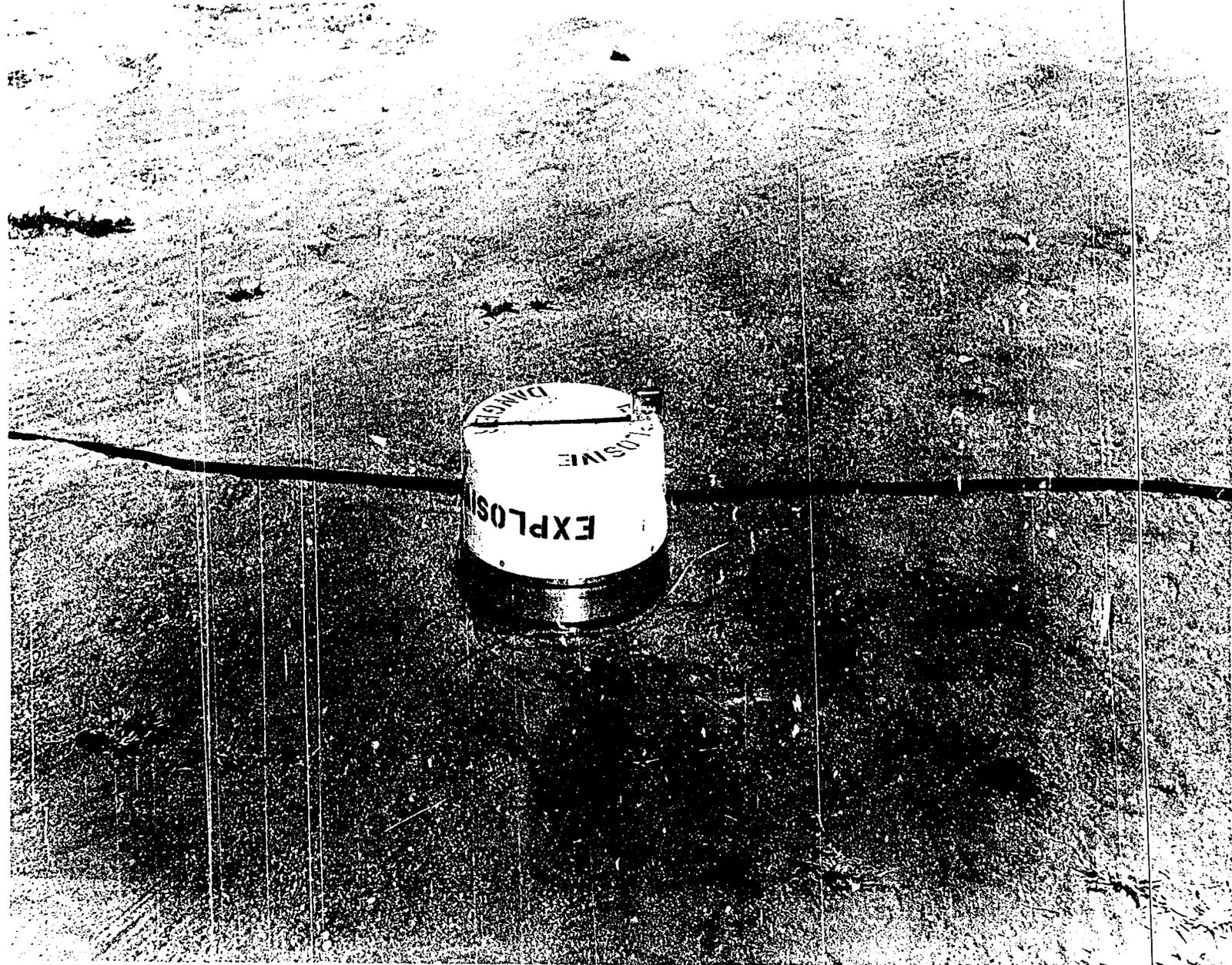


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Fig. 1 - View of Test Method Used in Shot Nos. 1, 2 and 3

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Fig. 2 - X.C-1000 Test Set-up Prior to Shct Nos. 4 and 5

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Fig. 3 - VAC-1000 with Safing Device