

AIRMUNITIONS LETTER

HEADQUARTERS
OGDEN AIR MATERIEL AREA
UNITED STATES AIR FORCE
Hill Air Force Base, Utah

18 April 1961

COAMA AIRMUNITIONS LETTER
NO 136-11-56G

SUBJECT: Advance Explosive Ordnance Disposal Technical Information

TO: SEE DISTRIBUTION

AUTHORITY: This AML is published under the authority of and in compliance with AFR 136-10.

(U) SUMMARY OF NUCLEAR WEAPONS INCIDENTS (AF FORM 1056) AND RELATED PROBLEMS - JANUARY 1961

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AIRMUNITIONS LTR 136-11-56G

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1. The purpose of this AMI is to present a summary of incidents wherein nuclear weapons were involved and to provide a resume of the methods and procedures used by the EOD personnel involved at the incidents.

2. This summary includes the incident near Goldsboro, North Carolina, on 24 January 1961, which will be referred to as NWI-61-1 (Source: AF Form 1058 from the Detachment Commander, Detachment 4, 2702nd EOD Squadron, RCS: AF-X15 Reports and Supplements thereto); and an incident which occurred during January 1961, which will hereafter be referred to as NWI-61-2 (Source: AF Form 1058).

NWI-61-1

1. Location:

Near Goldsboro, North Carolina

2. Dates:

January 1961

3. Type of Incident:

Broken Arrow. Drop of two [REDACTED] weapons from an airborne B52G aircraft which disintegrated in flight.

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(b)(3)

4. Brief:

a. At 0500 hours (EST), 24 January 1961, Detachment 4, 2702nd EOD Squadron, was notified that a Broken Arrow incident involving two [REDACTED] weapons, had occurred near Goldsboro, North Carolina.

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(b)(3)

b. The Commander and 10 EOD personnel from Detachment 4 proceeded immediately to Seymour Johnson AFB, which was the base nearest the scene of the incident.

c. One weapon had dropped retarded and one free fall.

d. The parachute retarded weapon was relatively intact. It did not detonate and there was no radiological contamination.

e. The free fall weapon penetrated the earth approximately 22 feet, breaking apart as it entered. The Secondary broke through the frangible nose and penetrated farther. The Primary broke up without detonating and there was no radiological contamination.

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f. Inclement weather and difficulty with heavy equipment hampered the operation.

g. A resume of events as reported by the Detachment Commander follows:

(1) On the 24th of January 1961 (exact time unknown) a B52G aircraft flying at about 8000 feet near Goldsboro, North Carolina, began to disintegrate. Two [REDACTED] Weapons, being carried by the plane, dropped during the breakup. The parachute on one weapon functioned and the bomb made a soft landing approximately 13 miles northeast of Seymour Johnson AF Base. EOD personnel from the base accomplished recovery of this weapon (Figures 1 through 6).

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(2) The parachute on the second weapon did not function and the bomb impacted approximately 3/4 mile west of the first, causing a crater 15 feet in diameter and six feet in depth.

(3) Recovery of this second bomb began at 1330 hours on the 24th of January with manual and mechanical excavation. Constant inspection of removed earth was made to insure explosive and weapon residue were not overlooked. During the remainder of the day, a depth of eight feet was reached and exposed a portion of the main body section and pieces of the nose section (Figure 7).

(4) On the 25th of January, at a depth of 12 feet, the top of the parachute pack was exposed (Figure 8).

(5) On the 26th of January, recovery operations were hindered by adverse weather, and excavation reached the water table, which complicated the operation through the rest of the mission. However, a depth of 15 feet was reached, revealing the Para-Pack with the Pull-Out Rods missing. A section of the Nose Impact Switch, small pieces of plastic indicating breakup of the Primary, pieces of explosive and a piece of the nose case molding were found.

(6) On the 27th of January, during continued excavations, the first detonator was found and it was discovered that the Para-Pack had partially separated from the Main Case Section. The Trajectory Arming Device was found, the Alignment Plate exposed and the High Pack, HV Arm/Safe Switch, Tritium bottle, and suitcase with eight intact spare detonators were identified. The CKT leads were removed, Tritium RSP accomplished and the bottle removed (Figures 9 through 15).

(7) On the 28th of January, the Arm/Safe Switch was revealed and found to be in the "Armed" position (Figures 16 and 17), and the Low Pack had been energized. At a depth of 18 feet it was found that the Primary had separated. Another detonator and pieces of the primary plastic shell with HE attached were uncovered. The HE was collected in oil soaked burlap and stored approximately 200 yards from the impact site (Figure 18).

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(8) On the 29th of January, a depth of 20 feet was attained. During the day, larger pieces of HE and the remainder of the primary section was exposed. Twenty pounds of HE and [REDACTED] were recovered. Most of the HE had shattered but was concentrated in a small area.

(9) On the 30th of January, an attempt to wall the hole failed because of the water and mud. Continued digging uncovered the pit which was in good condition (Figure 20). By the end of the day a total of [REDACTED] had been recovered. The excavation now made a crater 22 feet deep, 50 feet wide and 70 feet long (Figure 22).

(10) On the 31st of January (the eighth day) more HE and [REDACTED] detonators were found, and the hole of entry of the Secondary was determined by probing. As all hazards were determined to be under control, Detachment 4 EOD personnel were then released from the operation and Strategic Air Command EOD personnel assumed responsibility for recovery of the Secondary and final cleanup.

h. Additional Comments by the Detachment Commander:

(11) On the parachute retarded weapon all safeties functioned except the Arm Safe Switch.

(12) On the unretarded weapon all safeties functioned except the High Fail and the Arm Safe Switch. AFSWC representatives found that although the Arm Safe Switch appeared in the "armed" position, the solenoid had not functioned.

(13) The RSP outlined in AML 136-11-54 was followed with only minor deviations due to weapon location and condition.

(14) Recovered weapon components were turned over to the local Munitions Maintenance Squadron for disposition.

5. Contamination.

None

6. Unusual Problems.

a. Adverse weather, water from underground streams, mud, and equipment difficulties hampered the mission.

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24 Jan 61 0830. Incident Site (Aerial View) Note
of 1st Weapon [redacted]
100 ft parachute fully deployed.

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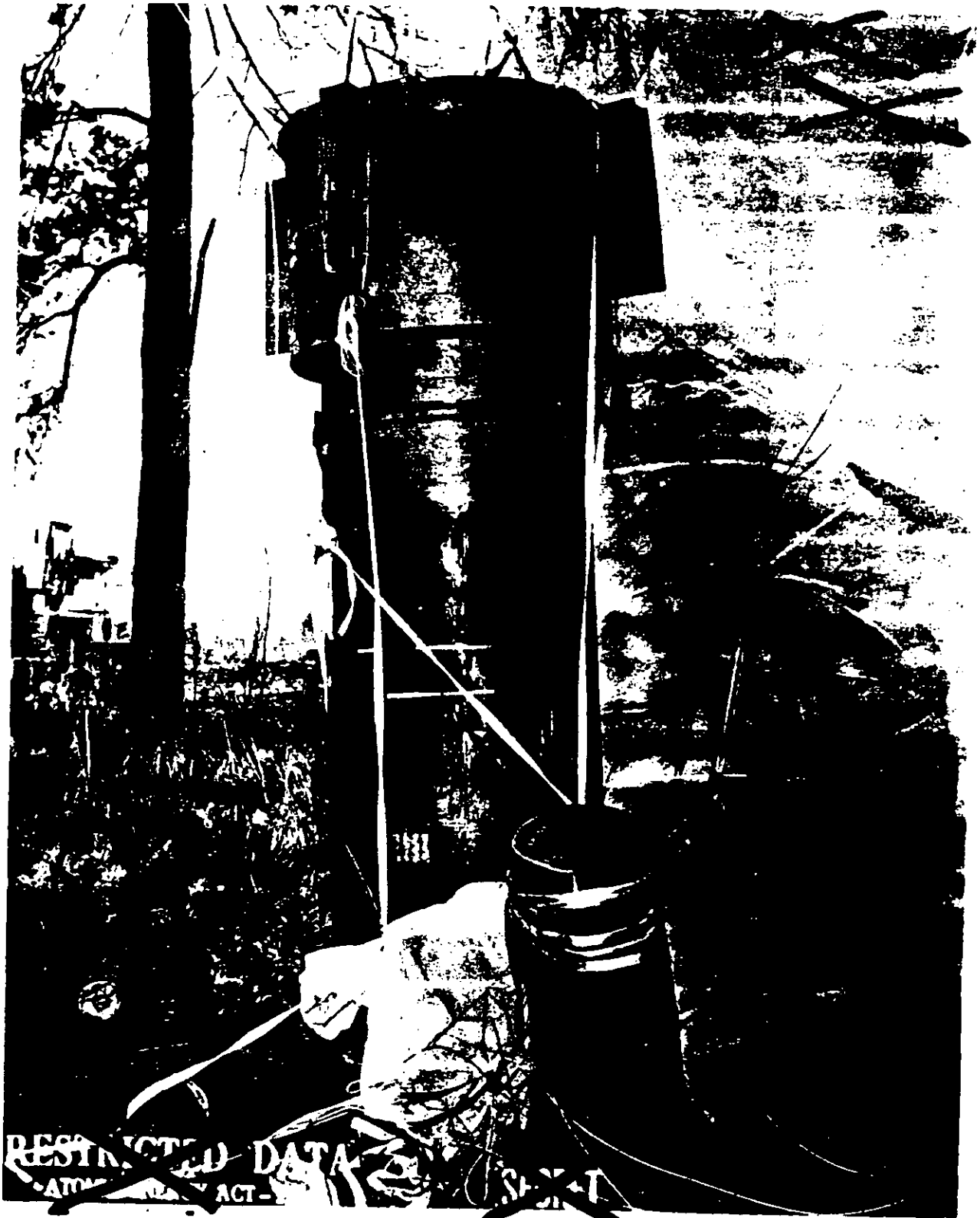


FIGURE 2.

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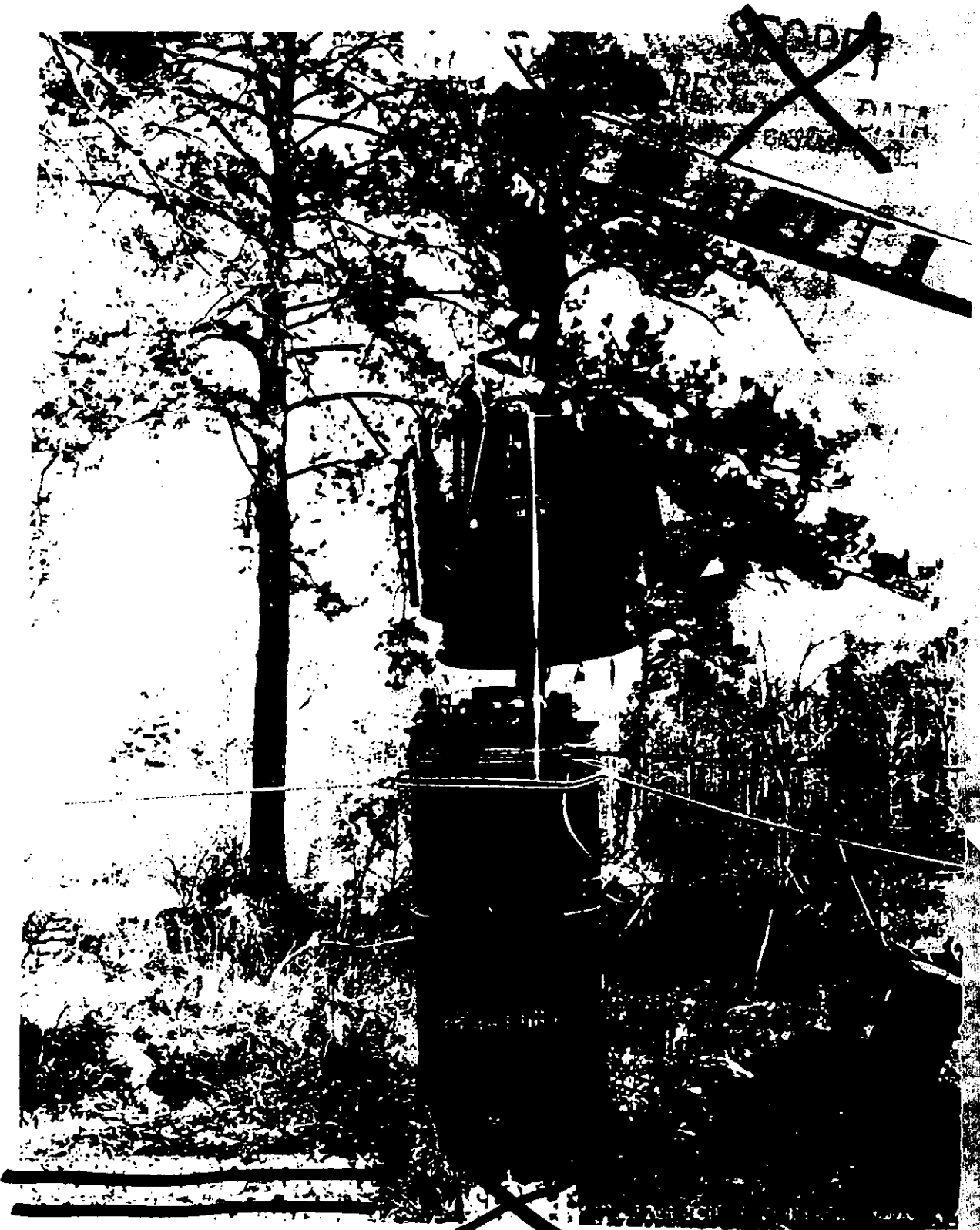


FIGURE 3.

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FIGURE 4.

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FIGURE 5. Primary Removal.

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Figure 6. Damaged Fragible Nose.

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FIGURE 7.

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FIGURE 8.

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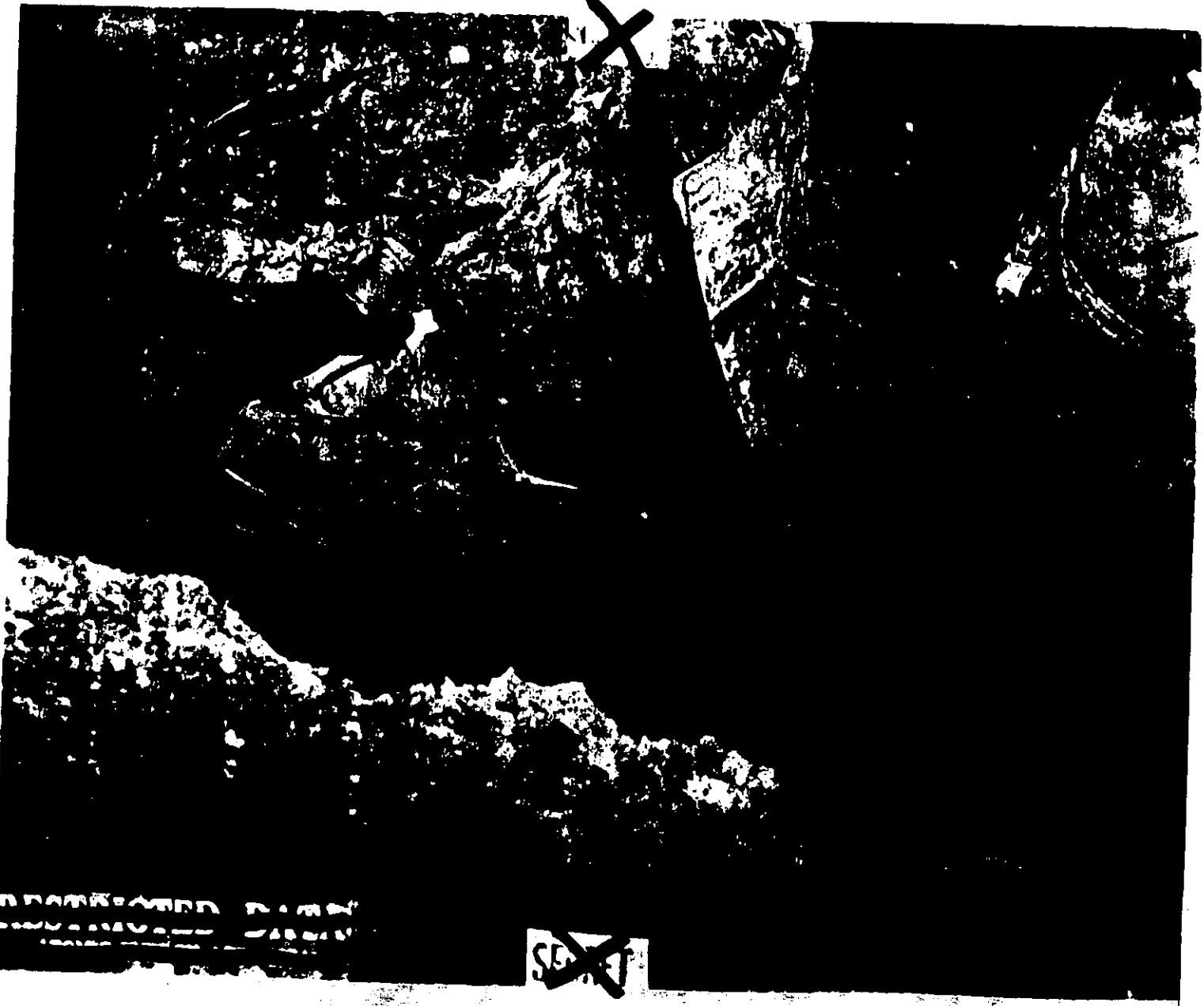


FIGURE 10. Dirt Removal.

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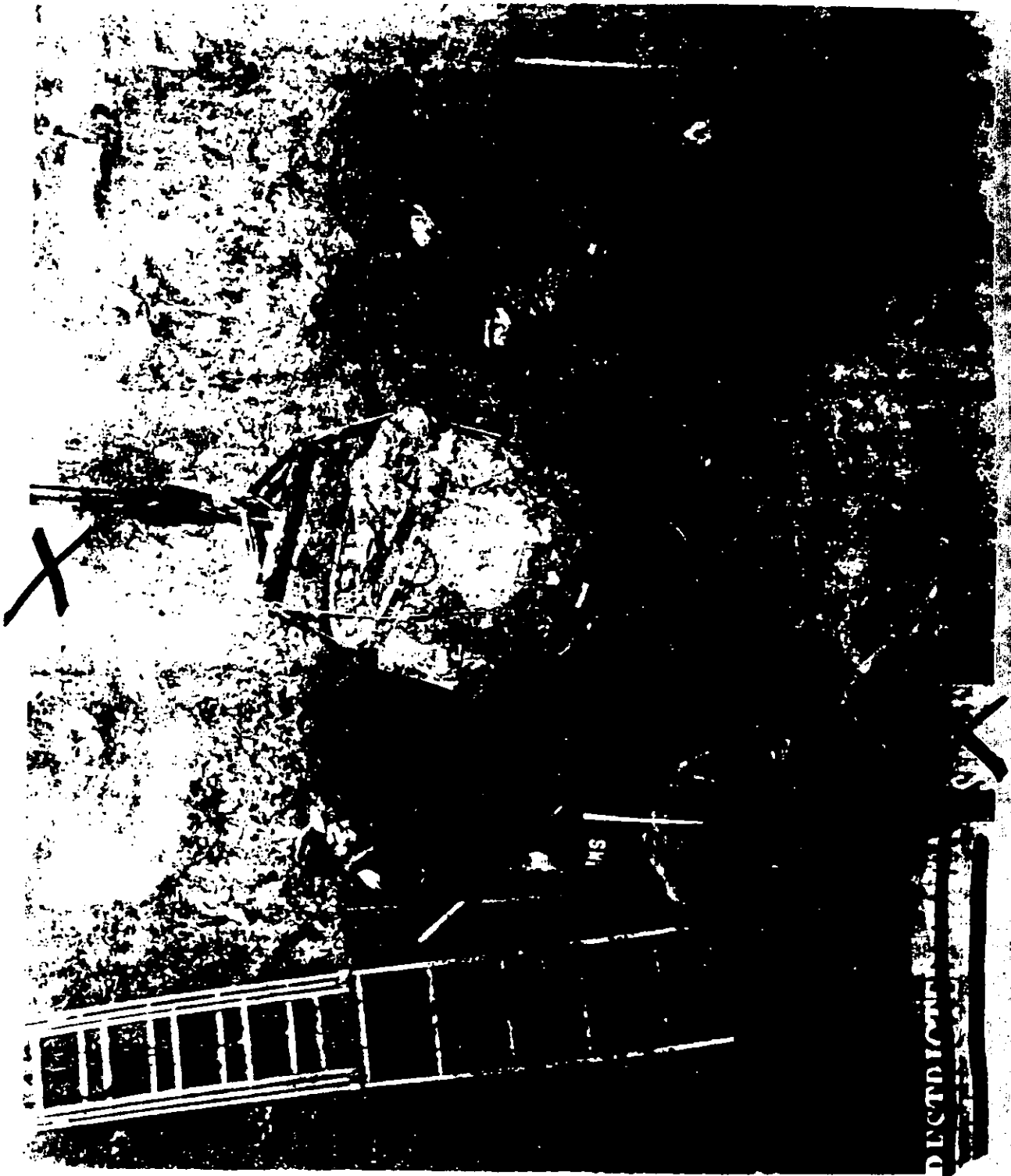
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FIGURE 12. Recovered Trajectory Arming Device.

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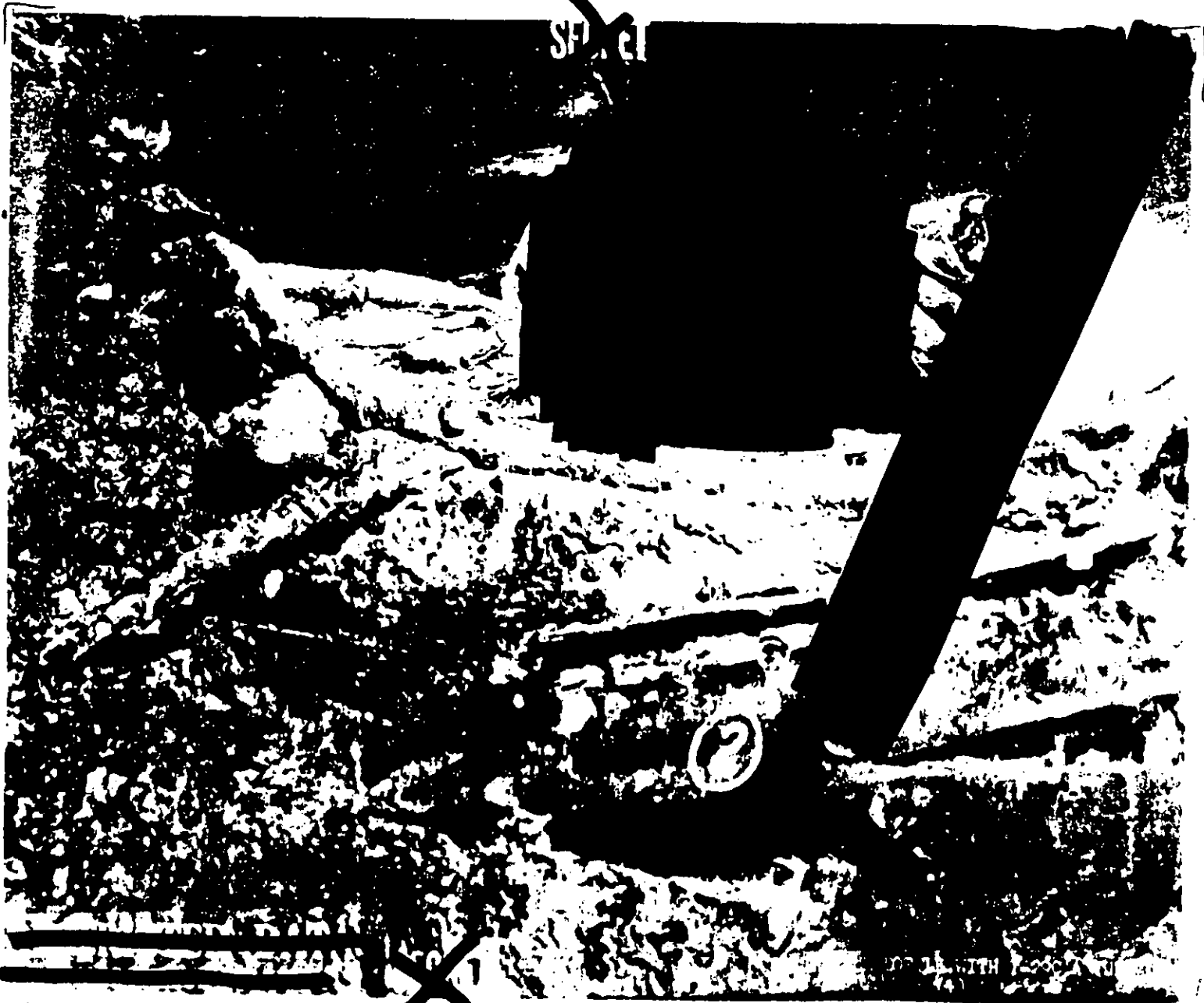
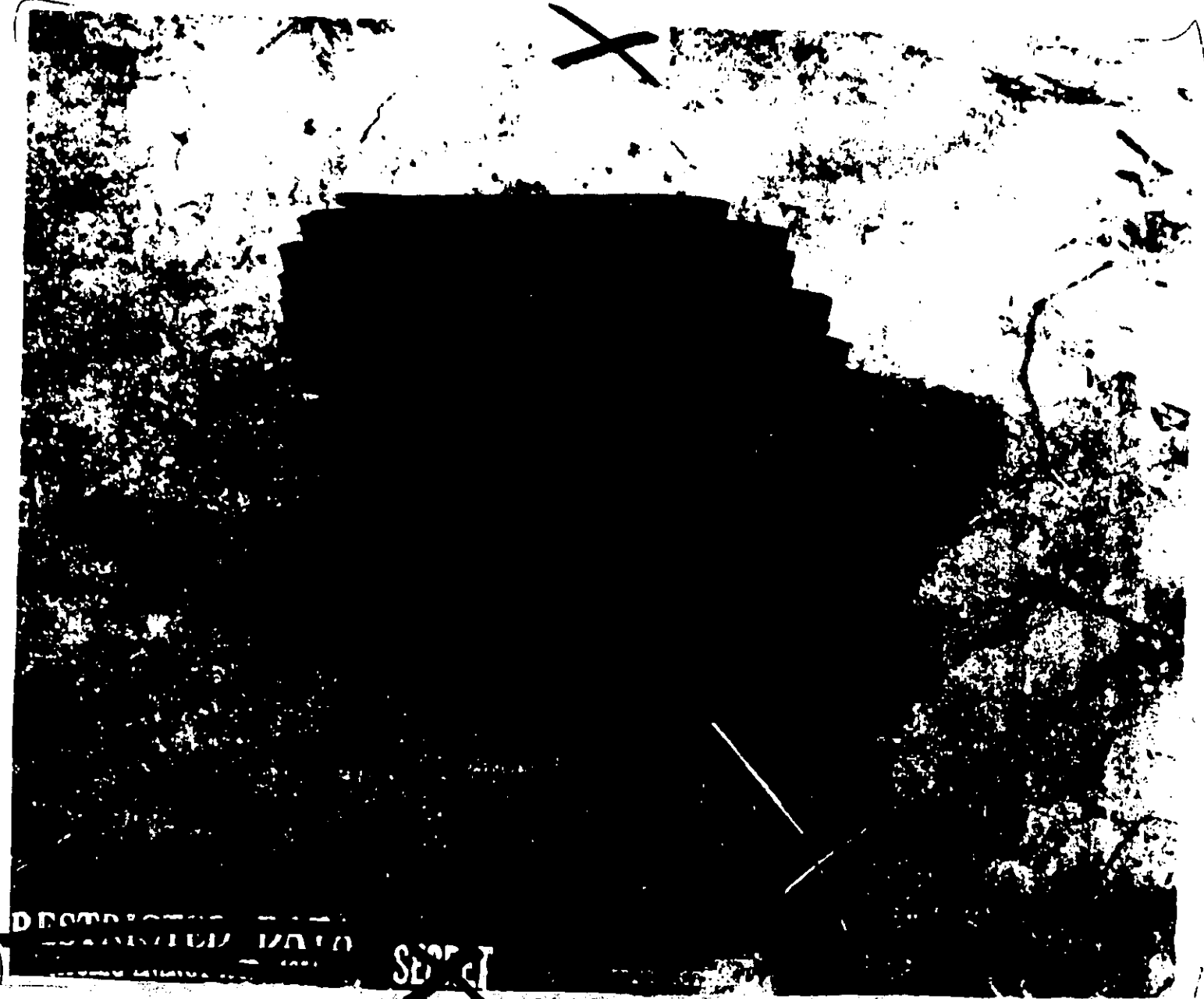


FIGURE 14. Tritium Bottle with I-290 A Tube.

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FIGURE 15. Tritium Bottle.

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FIGURE 16. Arm Safe Switch.

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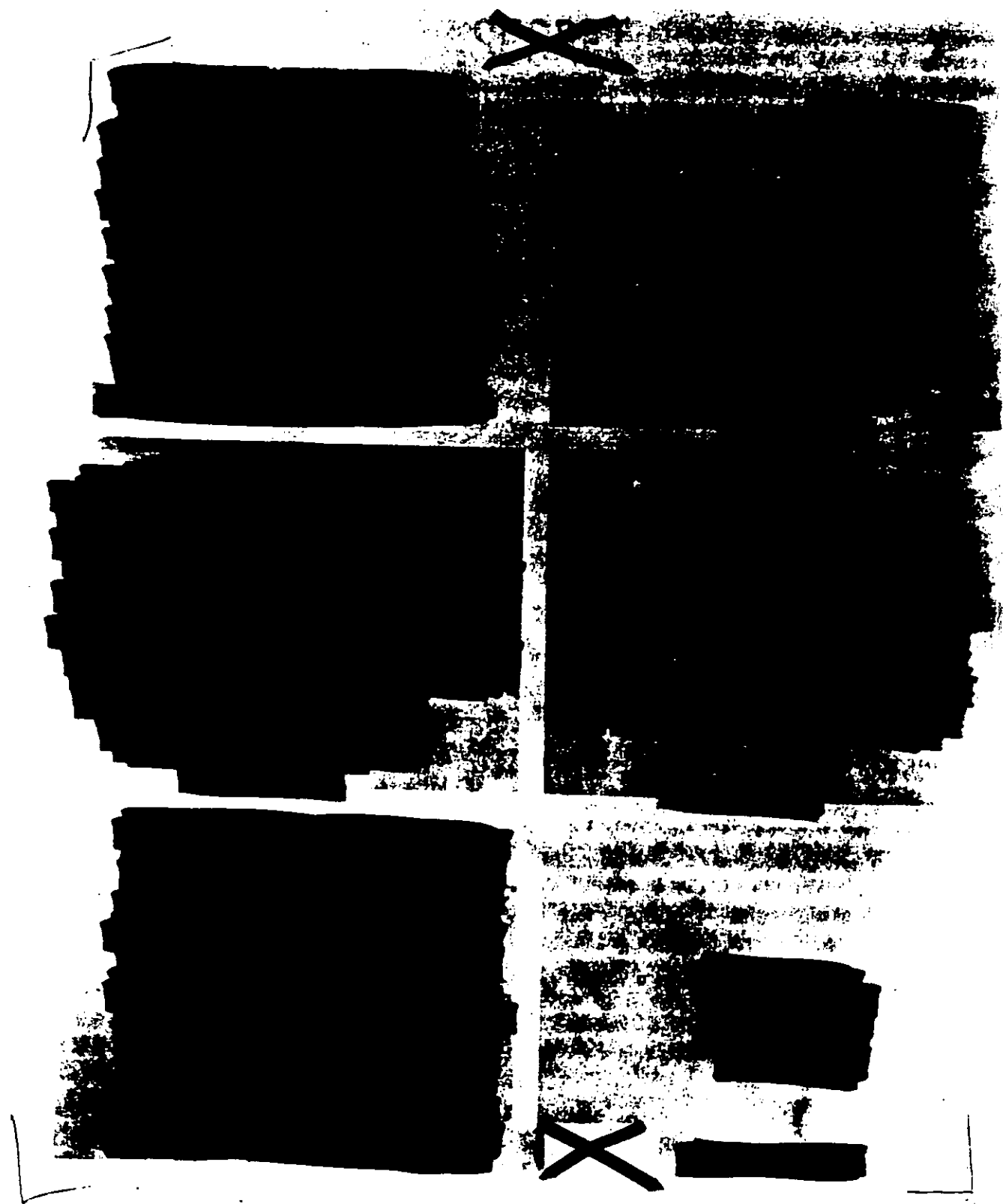


FIGURE 17.

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[Redacted]



FIGURE 18.

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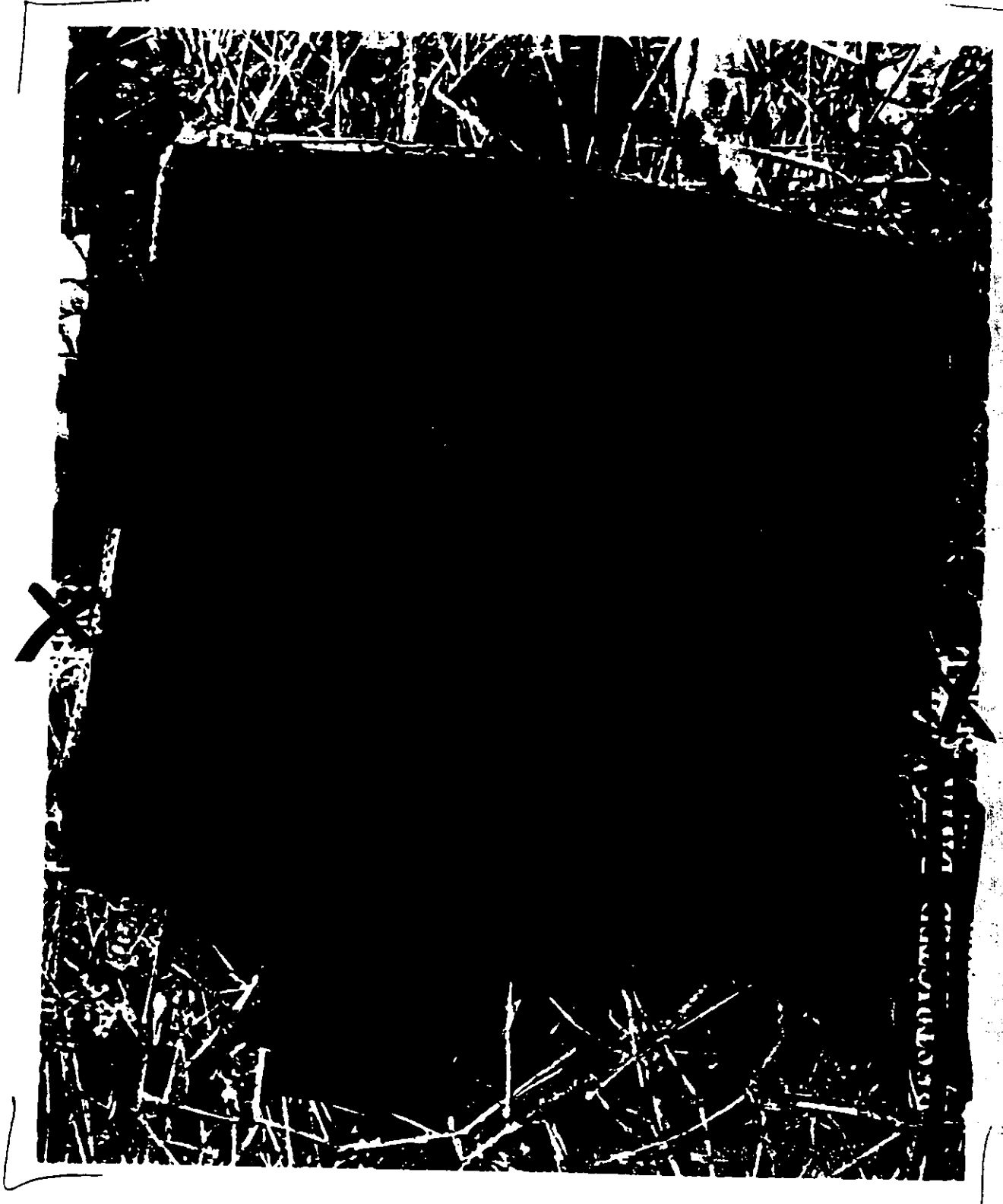


FIGURE 19. Recovered Data

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[Redacted]

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(b)(3)

Figure 20. Recovered Pit (Weapon No. 2).

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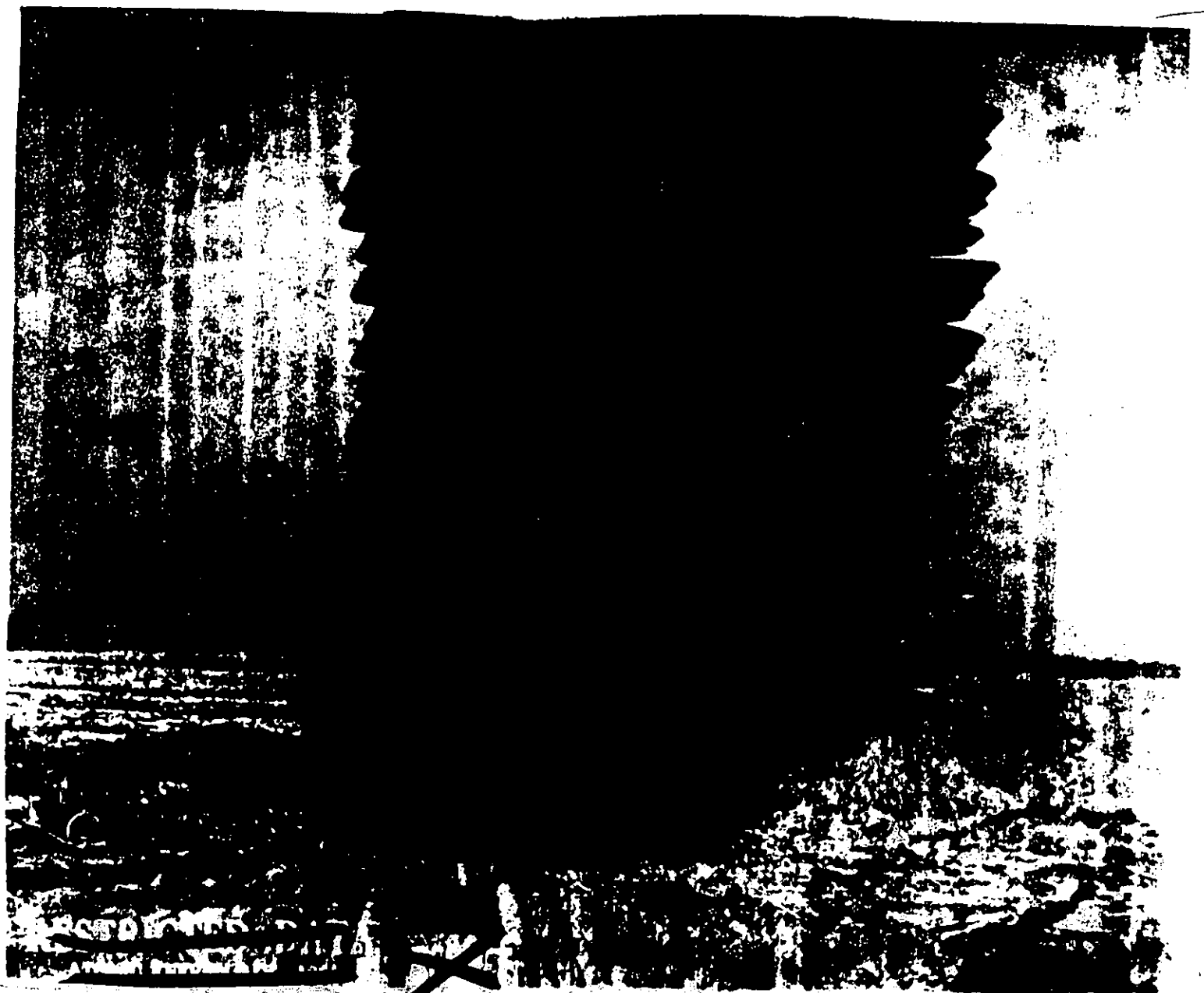


FIGURE 21

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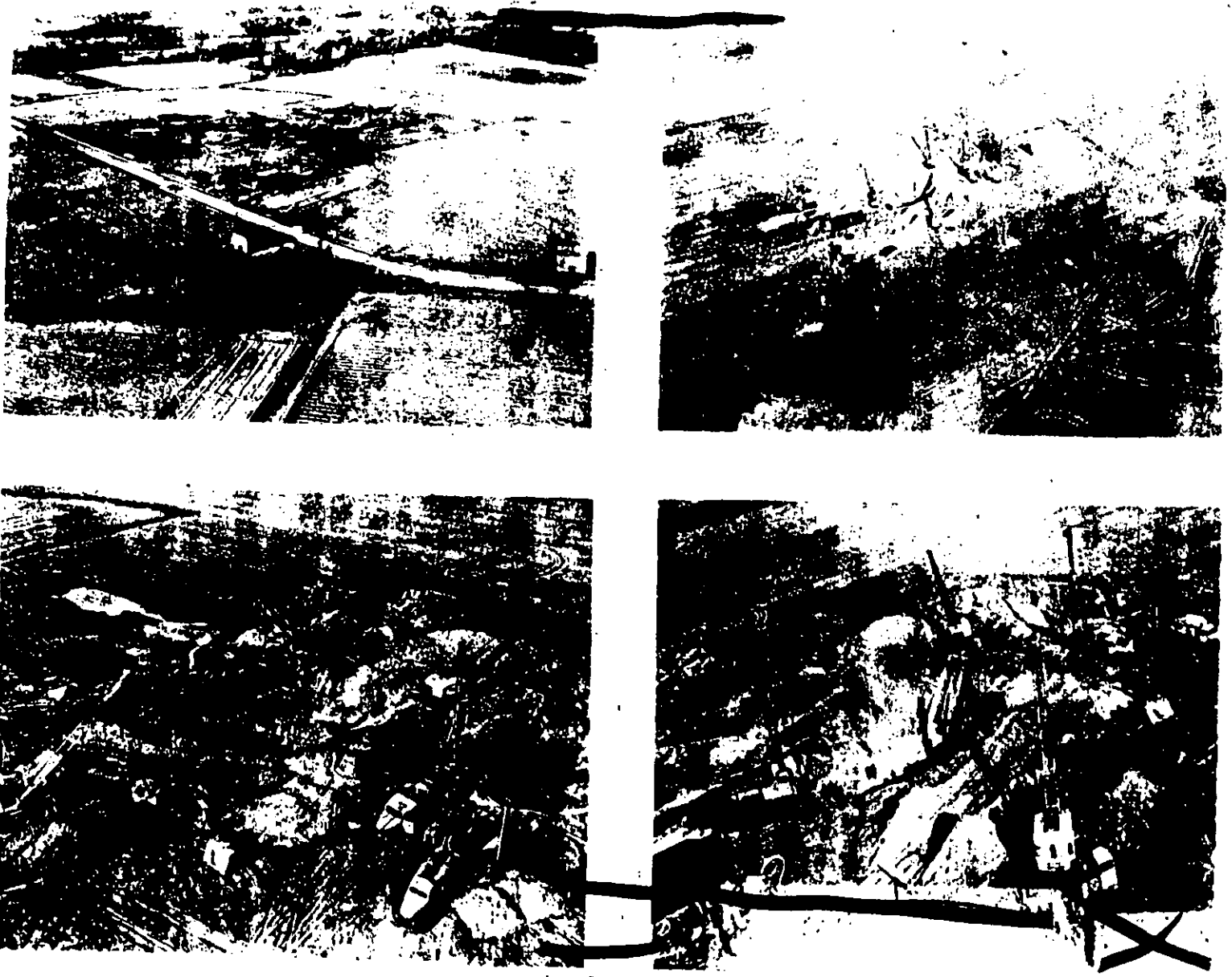


FIGURE 22.

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b. The Secondary [redacted] penetrated to an unknown depth and, at latest report, had not been located. On 7 February, at a depth of 42 feet, with the excavation 130 feet across at the surface, the operation was discontinued because of cave-ins, equipment limitations, and bench level conditions. An estimated \$10,000 had then been spent on the excavation, and the Secondary may have penetrated up to 70 feet. An excavation contractor, geologist, operations analyst engineer and others had been consulted for advice on possible penetration depths and angles, and the course of action to be taken. Recovery operations are continuing after reassessment of the situation.

c. Attempts to locate the Secondary with an AN/PRS-3 and a Forster Bomb Locator which was borrowed from the US Naval EOD Technical Center were unsuccessful. As it is possible that an incident of this nature may happen again, an equipment requirement has been established for the development of underground search gear with the following capabilities and characteristics:

- (1) Be capable of locating ferrous material at a depth of 25 to 50 feet in soil.
- (2) Be capable of locating non-ferrous material contained in nuclear weapons at a depth of 25 to 50 feet in soil.
- (3) Be capable of detecting radioactive materials at a depth of 25 to 50 feet in soil.
- (4) Indicate actual depth of items.
- (5) Minimum weight to enable it to be man-portable.
- (6) Transistorized construction for simplicity and reliability of power requirements.
- (7) Power source must be low cost battery, obtainable through local purchase or as a stock listed item.
- (8) Must be of rugged, field suitable construction.
- (9) Must be tropicalized and water resistant.
- (10) Suitability for all-weather operation is mandatory.
- (11) Must be adaptable for base maintenance.

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- (12) Must be easily assembled by operator.
- (13) Must be encased for ease of storage and mobility.

NWI-61-2

1. Location:

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(L)(3)

[REDACTED]

2. Date:

January 1961

3. Type of Incident:

Burning Aircraft loaded with a [REDACTED] weapon.

4. Brief:

a. An F-100D Aircraft with a [REDACTED] weapon loaded aboard the centerline pylon became involved in a fire when droppable fuel tanks were apparently inadvertently released. The fire was brought under control before the weapon was engulfed in flames, and no HE or nuclear reaction occurred.

b. The I-249 panel switch was wired in the "Safe" position.

c. Radiation monitoring gave negative readings.

d. As soon as the fire was extinguished, the weapon was found to be cool enough to be touched by bare hands, indicating the Tritium bottle guillotine valve should not have been activated.

e. RSP consisted of removing the High Pack and Fin Actuator. Difficulty was experienced in removing the battery access panel. This took 15 minutes.

f. The weapon was down loaded and returned to the special weapons activity.

5. Unusual Problems:

Fairly large groups of personnel not authorized or requiring immediate access to the scene were present, hampering Fire Department and EOD operations.

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AFSC 46131-666
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5 Contamination.

AFSC

FOR THE COMMANDER

[Handwritten signature]
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DISTRIBUTION

- 1 per organization authorized
- Explosive Ordnance Disposal
- Personnel possessing AFSC's
- 3154B, 461X0 (EOD Qualified)
- 46131 or 46131

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NO. 100-100000
DATE: 10/10/50
SUBJECT: [Illegible]

TO: SAC, [Illegible]
FROM: SAC, [Illegible]
SUBJECT: [Illegible] *pull a file*
OO: [Illegible] (10/10/50)
RE: [Illegible]

1. The attached classified material is forwarded to you as indicated above, for information.
2. The material will not be released by the [Illegible] until the date, [Illegible], and [Illegible] of the [Illegible] indicated above. The material will be [Illegible] by [Illegible] and [Illegible] of [Illegible] and [Illegible] of [Illegible] and [Illegible] of [Illegible] material that [Illegible].
3. The appropriate return date to OGD is 2 March 1951.

MAURICE H. HARRIS
Major, USAF
Commander

10/10/50
BY [Illegible]

The contents of this letter
standing alone are unclassified

~~EXCLUDED FROM AUTOMATIC
DECLASSIFICATION~~

NOFORN

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EO 1.6(b)(7)(C)

Ltr, Det 4, 2702 EOD Sq (MCLEOD), WPAFB, OHIO, 27 Feb 51.
Ordnance Disposal Report of a Broken Arrow Incident Near
North Carolina

1st Ind (MCLEOD)

7 Feb 1961

2702 EOD Sq, Wright-Patterson AFB, Ohio

TO: 2705 Airmunitions Wg (COYDO), Hill AFB, Utah

1. Forwarded for your information and necessary action.
2. The recovery of the secondary of weapon number 2 is being accomplished under 8th Air Force EOD supervision. Upon completion of the recovery a final report will be forwarded to this organization from Headquarters 8th Air Force. This report will be forwarded in turn to your organization.

H. B. MCCLANAHAN
Major., USAF
Commander

2 Atchs
1. n/c
2. Added
AF Form 1098
61-4-24

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ATOMIC ENERGY ACT OF 1954

EOD-61-030

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ATTACHMENT 4
2702D EXPLOSIVE ORDNANCE DISPOSAL SQUADRON
United States Air Force
Wright-Patterson Air Force Base, Ohio

MEMO TO
ATTN OF: MGRBOD

SUBJECT: Explosive Ordnance Disposal Report of a Broken Arrow Incident Near
Salisbury, North Carolina

6 Feb 1961

TO: 2702 EOD Sq
Wright-Patterson AFB, Ohio

Notification and Response:

a. At 0550 EST 24 January 1961 Detachment 4, 2702nd Explosive Ordnance Disposal Squadron, Wright-Patterson Air Force Base received notification of this incident from the Squadron Commander. I was directed to proceed by military jet aircraft and act as liaison officer until the arrival of the detachment team who were to proceed by military transport aircraft.

b. I was airborne at 0715 EST and arrived at Seymour Johnson Air Force Base, North Carolina at 0830 EST. The detachment team was airborne at 0744 EST and arrived at 1047 EST.

Personnel Contacted During the Incident:

<u>Name</u>	<u>Title and Military Unit</u>
Lt Gen Sweeney	Commander, 8th AF (SAC) Westover AFB
Brig Gen Moore	Commander, 4th TFW (TAC) Seymour Johnson AFB
Col Kline	Deputy Director Operations 8th AF (SAC) Westover AFB
Col Wahl	Director Material 8th AF (SAC) Westover AFB
Col Alexander	Commander, 4th ABGp (TAC) Seymour Johnson AFB
Col Jones	Commander, 4241st Sq (WES) Seymour Johnson AFB
Maj Gurley	Disaster Control (EOD) (SAC Hq) Offutt AFB
Maj Perry	Disaster Control 8th AF (SAC) Westover AFB
Maj Manley	Commander, 53rd MWS (SAC) Seymour Johnson AFB
Capt Apostolon	Nuclear Safety Officer (EOD) 8th AF (SAC) Westover AFB
Capt Berg	CBR Officer 8th AF (SAC) Westover AFB
Capt Backs	Operations (EOD) 8th AF (SAC) Westover AFB
Capt Johnson	EOD Officer 53rd MWS (SAC) Seymour Johnson AFB
Lt Morris	EOD Officer 4th ABGp (TAC) Seymour Johnson AFB
Lt Brennan	EOD Tech Center Representative, Indian Head Md
Mr Wenzel	EOD Tech Center Representative, Indian Head Md

Explosive Ordnance Disposal Support Personnel (AME):

Lt DeVelle	Commander, Det 4, 2702 EOD Sq, WPAFB
MSGT Harrison	Team NCOIC, Det 4, 2702 EOD Sq, WPAFB
SSgt Mattax	Team Member, Det 4, 2702 EOD Sq, WPAFB
SSgt Lewis	Team Member, Det 4, 2702 EOD Sq, WPAFB
SSgt Brennan	Team Member, Det 4, 2702 EOD Sq, WPAFB

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ATOMIC ENERGY ACT OF 1954

EOD-61-030

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SSgt	Baker	Team Member, Det 4, 2702 EOD Sq, WPAFB
SSgt	Collins	Team Member, Det 4, 2702 EOD Sq, WPAFB
SSgt	Leak	Team Member, Det 4, 2702 EOD Sq, WPAFB
SSgt	Loach	Team Member, Det 4, 2702 EOD Sq, WPAFB
SSgt	Cate	Team Member, Det 4, 2702 EOD Sq, WPAFB
A1S	Lawrence	Team Member, Det 4, 2702 EOD Sq, WPAFB

Information Concerning the Incident:

a. On arrival at the base I was advised that Col Kline was the SAC representative who would monitor recovery operations.

b. The aircraft involved was a B52C with two [redacted] weapons, carried internally. The aircraft first experienced trouble at approximately 10,000 feet. The trouble increased with loss of a wing at approximately 8,000 feet, at which time weapon number 1 began retarded fall. At approximately 4,000 feet the aircraft disintegrated and weapon number 2 started free-fall. The parachute on weapon number 1 functioned and the weapon made a soft landing approximately 13 miles northeast of the base. The parachute on weapon number 2 did not function and the weapon entered the ground at a point approximately 3/4 mile west of weapon number 1. Breakage of the aircraft was scattered over a wide area, the principal remains being located approximately 400 feet south of weapon number 2. Reconnaissance by base personnel resulted in locating weapon number 1 and the point of impact of weapon number 2 prior to my arrival. Due to an earth displacement of approximately 15 feet in diameter and 6 feet deep, it was assumed that weapon number 2 might have experienced a one point detonation, however later investigation revealed this assumption incorrect. A temporary command post had been established approximately 1,500 feet from the hole of entry of weapon number 2 and approximately 3/4 mile from weapon number 1. I proceeded directly to the temporary command post, arriving there at 0915 EST. Antilogical monitoring had been accomplished by base personnel at both weapon locations with negative results. Weapon number 1 appeared intact except for the nose which was buried approximately 24 inches in the ground. Small pieces of the frangible nose section were found around the impact point of weapon number 2. Base personnel were in the process of recovering weapon number 1. In conference with Major Perry, Captain Johnson and Lt Morris, it was agreed that base explosive ordnance disposal personnel would accomplish the recovery of weapon number 1 and AMC explosive ordnance disposal personnel would be utilized in the recovery of weapon number 2. I returned to the base at 1045 hours to brief the detachment team.

Recovery Operations:

a. The electrical safing procedures and rendering safe procedures of weapon number 1 was accomplished after stabilizing the weapon in its impact posture. Major assemblies were lifted and handled with a spreader bar and the M108 bomb service truck. Recovery of this weapon was completed at approximately 1230 hours 24 January 1961.

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[redacted]

FOD-61-530

Summary:

- a. On weapon number 1 all safeties functioned as designed.
- b. On weapon number 2 all safeties functioned except the arm/safe switch. Findings by the Air Force Special Services at the scene indicated that although the arm/safe switch was in the armed position, the solenoid contained therein had not functioned as designed.
- c. The rendering safe procedures on weapon number 2 as outlined in AFI 136-11-54 was followed with only minor deviations due to weapon condition.
- d. Recovery of weapon number 2 components was considerably delayed due to accumulation of water in the digging area and adverse weather conditions.
- e. Components and high explosives recovered from weapon number 2 were turned over to the 53rd MGS for further disposition.
- f. Support furnished the AMC explosive ordnance disposal team by other command representatives in the recovery operation was quite satisfactory. Support efforts by the explosive ordnance disposal officer of the 53rd MGS and Seymour-Johnson base agencies were especially appreciated.
- g. AMC personnel who participated and assisted in this incident displayed a high degree of professional ability, devotion to duty and resourcefulness.
- h. Photographs of this incident accompanies this report as attachment I.
- i. The major difficulty encountered during the early portion of the recovery operation was the nonavailability of equipment at the scene of the incident. Mechanical failure of this equipment as it became available compounded this problem.

Recommendations:

- a. Security at the incident site should be sufficiently rigid to prohibit the entrance of nonparticipating personnel to the hazardous area.

Jack B. Re Velle
JACK B. RE VELLE
1st Lt., USAF
Commander

1 Atch
33 Photos



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APPROVED BY ACT OF 1954

EO 12812-1

EXPLOSIVE ORDNANCE DISPOSAL REPORT

REPORTS CONTROL SYMBOL
AMC-U-60

FROM:
Detachment 4, 2702 EOD Squadron
Wright-Patterson Air Force Base, Ohio

TO:
Ogden AMA (OORPD)
Hill AFB, Utah

1. INCIDENT			2. NUMBER OF PERSONNEL EMPLOYED	
REPORTED BY	DATE	TIME	RECONNAISSANCE	RENDERING SAFE PROCEDURE
2702 EOD Squadron	21 Jan 1961	0550	1	1
3. JOB STARTED		4. JOB COMPLETED		5. MANHOURS EXPENDED
DATE	TIME	DATE	TIME	
21 Jan 1961	0700	1 Feb 1961	1200	
			RENDERING SAFE PROCEDURE	1/2 Hr
			TRAVEL	87 Hrs
			OTHER	2079 1/2 Hrs
			TOTAL	2167 Hrs

6. IDENTIFICATION				7. DESCRIPTION (If item not positively identified)			
QUANTITY	NATIONALITY	TYPE ORDNANCE	MAKE/MODEL	WEIGHT	LENGTH	DIAMETER	MARKING
1 Pa.	U.S.	T.N. Weapon	[REDACTED]				

8. FINISHES (Indicate Make/Model if known)

HEAD	TAIL	BODY	OTHER
N/A			

9. RENDERING SAFE PROCEDURE (If unusual, explain in detail. Use reverse, if necessary)

Completed in accordance with CCAMA Air Munitions Letter 136-11-5L, dated 21 April 1960.

NOTE: The Tritium Bottle had split away from the alignment plate and was lying loose inside the tail section of the weapon. Necessary monitoring and prescribed crimping was performed as required by CCAMA Air Munition Letter 136-11-17, dated 23 July 1960, as changed.

10. DISPOSITION OF ITEM

Turned over to the 53rd AFS for further disposition.

11. EQUIPMENT UTILIZED (Not authorized by FCL 24603 or 24604)

N/A

12. DAMAGE AND/OR INJURIES

None

RE: ~~EXEMPT FROM GENERAL DECLASSIFICATION SCHEDULE~~

13. LOCAL CONTROL NO. 61/1/21

14. ATTACHMENTS None

DATE 2 Feb 1961

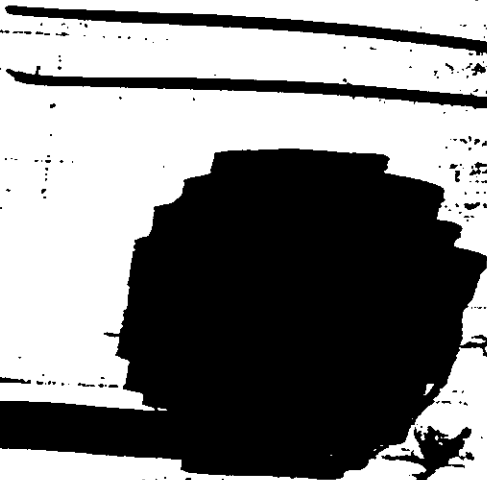
SIGNATURE OF EOD SUPERVISOR
John P. Reville
John P. REVILLE, 1Lt, USAF, Commander

AF FORM 1055
MAR 59

CD 61-031

COST OF INCIDENT (PER PERSON): \$14.00

~~X~~



SP

This document is classified as ~~SECRET~~
No. ~~FC/02610737~~
~~FC/02610740~~

Official Observer's Report, Air Force Accident

Goldsboro, North Carolina

12 294

1. Introduction.

Seymour Johnson Air Force Base is a Tactical Air Command installation located in east-central North Carolina, at Goldsboro (population 22,000), fifty-two miles southeast of Raleigh. Tenant on this TAC base is the 424th Strategic Wing of the Eighth U. S. Air Force (SAC). The Fourth TAC Wing, Nineteenth U. S. Air Force, is commanded by Brig. Gen. J. H. Moore, the SAC organization by Col. O. V. Jones.

DATA
NY

The accident with which this report is concerned occurred on the early morning of January 24, 1961, involved a SAC aircraft with two thermonuclear weapons ~~aboard~~, and provided significant data on weapon behavior under accident conditions. Since this report will be supplemented by those of the Sandia Corporation and Los Alamos technical representatives who accompanied me, I shall confine, to summary statements, the portions of this paper which deal with the strictly technical aspects of weapon performance.

2. Prelude to the Crash:

DATA
NY (3)

On the night of January 23, 1961, a B-50G stratofortress of the 424th Strategic Wing was flying a SAC airborne alert mission over the continental Atlantic seaboard area. Aboard the craft were two ~~bombs~~, numbers ~~(forward bomb bay)~~ and ~~(aft bomb bay)~~.

Shortly before midnight, the aircraft rendezvoused with its assigned tanker, and midair refueling commenced. Prior to completing the fuel transfer, the B-52 Aircraft Commander, Major W. S. Tullock, was advised by the tanker crew that his bomber had a small fuel leak in its wing tank. Refueling was discontinued immediately, the tanker was pulled away, and Major Tullock advised his control (Seymour Johnson AFB) of the situation.

He was ordered to circle over the Atlantic in an area just off the North Carolina coast until he had consumed the major portion of his fuel load weight. After reaching this area, the Major reported that the leak had enlarged and that he had lost 37,000 pounds of fuel in approximately two minutes time. Though excessive trim was required, the aircraft was under control and Major Tullock received permission to return to Seymour Johnson AFB. At this time, neither the Aircraft Commander nor his Control Headquarters doubted that the plane and its cargo could be landed safely.

As Major Tullock neared Seymour Johnson AFB, he dropped down to 10,000 feet and commenced a control check. Due, apparently, to the reduced speed,

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he could no longer trim the craft and lost all control as the B-52 went into a gyration best described as a spin. All hope of saving the craft gone, the Aircraft Commander ordered his crew to leave the plane as he himself prepared to eject. The five crewmen who survived, among them Major Tullock, report that they left the plane at about 9,000 feet and that, at this time, the fuselage was intact with both bombs aboard.

3. The Crash

In its uncontrolled gyrations, the pilotless B-52G began to break up in the air. Since ground observers reported having seen two brilliant red flashes aboard the plane while it was still relatively intact, we can assume that JP-4 fuel explosions contributed to the breakup. At some point in this midair sequence, the two bombs were separated from the aircraft.

At 12:35 a.m., EST, January 24, the B-52 wreckage crashed and was strewn over an area of approximately two square miles in a cotton/tobacco agricultural area near Faro, North Carolina. The arbitrarily established point of impact intersected a north-south county road at a point 12.2 miles north-northeast of Seymour Johnson AFB (see photos A, B and C).

The position of certain aircraft structural components, among them a wing section, indicated that the larger portions of the B-52 were upside down when they struck the ground. The tail section, relatively intact, was found upright approximately one mile east of the point of impact.

4. Bomb Number [REDACTED]

For brevity, I shall refer to this weapon as "bomb No. 1".

It appears that, after the majority of the crew departed, the plane's fuselage separated at a point between the fore and aft bomb bay sections. This is now presumed to have been a longitudinal separation combined with a torsion breakup of the airframe. During, or immediately after this separation, bomb No. 1 twisted from its rack and fell away from what remained of its aft bomb bay section. Minor scars inflicted on the exterior of the bomb by its sway-braces indicate that it left the rack, nose first, with a slight clockwise rotation. From this rack, only the unbroken chain has been recovered.

The safing pins had been removed from the bomb's arming rods, presumably when longitudinal separation of the fuselage jerked the lanyard to which they were attached. As bomb No. 1 left its rack, therefore, the arming rods were pulled in the manner of an intentional drop sequence and the Single Pulse Generator (MG 845) was actuated. Subsequent progress of the fusing/firing sequence in bomb No. 1 is presented in tabular form (see attached Table).

Its static line being intact, the bomb's parachutes deployed normally and it landed nose down approximately one mile east of the point of aircraft

impact. Bomb No. 1 remained upright with its nose buried about eighteen inches into the sandy clay. It was located easily since the large parachute was draped in nearby trees (see photos D and E).

On January 24, this bomb was disassembled, by members of an Air Force EOD team from Wright-Patterson AFB, and its components returned to the 51st Munitions Maintenance Squadron, Seymour Johnson AFB. Except for a broken nose plate, bomb No. 1 appeared to have sustained negligible damage (see photos F through J). EOD procedures called for the crimping and cutting of the tube between the tritium reservoir and the primary. This had been accomplished as prescribed but was unnecessary since there had been no transfer of the gas. There was never any danger from contamination or radiation (see photos K, L and M).

Approximately one pint of JP-4 fuel was found in the bomb case.

5. Bomb Number [REDACTED]

I shall refer to this weapon as "bomb No. 2".

Bomb No. 2 is presumed to have left its forward bomb bay section subsequent to the departure of No. 1 but still at an altitude of 5,000 to 7,000 feet. Though its timer (MC 543) had run for only twelve to fifteen seconds before impact with the ground, this interval yields no real clue to the original departure altitude since it appears that bomb No. 2 left the plane still bound to its rack. The timer could not actuate until bomb and rack separated. A major portion of this bomb rack was found about one mile east of the point of aircraft impact. The chain fitting remained on its U-2 hook with safing pin in place (see photo N).

Safing pins and arming rods were pulled from bomb No. 2 as they had been from bomb No. 1. In this instance, however, the static line was not intact, parachutes did not deploy and bomb No. 2 traversed a free-fall trajectory, burying its nose approximately eighteen feet into the ground at a point roughly 1500 feet west of the point of aircraft impact (see arrow in photo A). There was no HE detonation on impact and the original crater created by the bomb's entry was only eight feet in diameter and six feet deep (see photo O).

After three days of excavation, the armed/safe switch (MC 772) was recovered in a condition which visually indicated "armed". Of concern at the time, this circumstance was later revealed, by Sandia Corporation post mortem, to have occurred when the switch sustained severe internal damage upon impact (see photos P and Q). It has been established that the MC 772 was actually in the "safe" position when the bomb separated from its rack. Progress of the fusing/firing sequence in bomb No. 2 is presented in tabular form (see attached Table).

Though the nose had opened and the case was torn back, components of bomb No. 2 were contained within its self-made, later enlarged, entry hole. The excavation operation, commenced on the afternoon of January 24, proceeded slowly due to freezing weather, mud and surface water in the hole, and the necessity for care in the presence of HE.

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The tail section, with parapack intact, was uncovered, at about eleven feet, on the evening of January 26. The following day's progress permitted Los Alamos representative, T. T. Scolman, to remove the tritium reservoir which remained full but whose tube had been broken near its monitor valve (see photos R, S and T).

On Saturday, January 28, the alignment plate (MC 1134) was recovered intact with its firing components attached. At this time, it was ascertained that the MC 772 showed "armed" and that the arming rods were, in fact, missing (see photos U and V).

The primary was recovered at about 4:00 p.m. on Monday, January 30. It is reported to have been retrieved from a depth of about twenty feet with HE crumbled but essentially contained within its sphere case. At this time, the excavation is seventy feet deep and the secondary not yet located (February 16).

6. Logistics

Having been aroused by telephone in the early hours of January 24, the ALO observer group assembled at Kirtland AFB Operations at 7:00 a.m., MST. David R. Smith and T. T. Scolman, W Division, LASL, arrived via a specially arranged Carco flight. Remaining group members, H. D. Bickelman, of Sandia Corporation 7162, and I, arrived by private auto.

The ALO group had been invited to share the C-47 aircraft which was to transport military representatives of the Nuclear Safety Research Directorate, Kirtland AFB. The DNSR group, headed by Col. Charles Malitz, included Lt. Col. F. S. Smith, Lt. Col. Ernest Stewart and Capt. Barry O'Grady. Capt. George Martin was included as the AFSWC representative and Capt. John Mansfield piloted the plane.

Originally scheduled for a 7:30 a.m. takeoff, last minute crew changes delayed the departure until 8:30. After refueling at Little Rock AFB, Arkansas, we landed at Seymour Johnson AFB at about 10:15 p.m., EST.

Upon arrival at Seymour Johnson, we were met by Capt. W. C. Ehrman, of the 53rd Munitions Maintenance Squadron, 4241st Wing, who informed us that bomb No. 1 had already been disassembled and returned to the MMS Area. He further advised that operations had been discontinued until morning at the accident scene.

Actual participation by the ALO group began on the morning of January 25 when we were briefed on the situation to-date by Lt. Col. K. B. King, Safety Officer, 4241st Wing, who outlined the chain of events which preceded the crash and described the scene. Major R. E. Hanley, Commander, 53rd MMS, then filled in the details on the recovery and current condition of bomb No. 1.

We then proceeded to the crash scene, 12.2 miles from the base, where we met Col. John Kline and his assistants: Major Matthew Perry and Capt. Ralph Backa, all of whom had accompanied Lt. Gen. Greeney, Commander, Eighth Air Force, from Westover AFB, Massachusetts. Present also was 1st Lt. Revelle who headed an enlisted EOD team from Wright-Patterson AFB, Ohio.

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During examination of the scene, Scolman and Bickelman recovered a previously undiscovered fragment of bomb structure. This fragment was found in a fuel explosion crater about 300 yards northeast of the point of aircraft impact and led to a theory that perhaps this crater had been created by the exploding primary of, at that time undiscovered, bomb No. 2. Further credence was lent to this theory when an unbroken bomb rack chain was discovered in the same crater. At Smith's request, the crater area was monitored for activity with negative results.

Since Scolman and Bickelman were anxious to specifically identify their fragment by comparing it with its counterpart in bomb No. 1, they secured permission to remove this part from the scene and departed for the 53rd MMS Area. Smith and I discussed the military's plan of action with officers present and agreed that the next step should be immediate excavation of the small crater which was 1500 feet west of the road. I then returned to the base, and phoned my initial report to W. F. White at ALO Headquarters.

When we joined Scolman and Bickelman at the 53rd MMS, they informed us that they had positively identified the fragment as a piece of the ring adapter (Part No. 14445-00) but had discovered that it actually belonged on bomb No. 1. We then examined the disassembled parts of bomb No. 1 and found the primary undamaged and the bottle full. Bickelman, Scolman and Smith tested the fusing/firing components and established the sequence of actuation presented in the attached Table.

I was informed by Capt. Zarcos, Supply Officer, 53rd MMS, that his current instructions were to ship Bomb No. 1 to AEC, Clarksville Base. The Captain had some doubts about the packaging of the reservoir and ~~detonators~~. I assured him that I would obtain, for his use, the necessary cylinder and suitcase to accommodate the reservoirs and detonators from both bombs. I also stated that ALO would prefer that the components be returned to Medina Base, Texas. In the course of my subsequent telephone report to Mr. White, he informed us that he would order the containers from DAO immediately and that SAC and SMC had already agreed to return both bombs to Mason and Hanger, Medina Base.

Excavation of the small crater commenced on the afternoon of January 25 but little was accomplished before nightfall. On January 26, snow and below-freezing temperatures, coupled with surface water, hampered digging. By evening, however, the parapack on bomb No. 2 had been uncovered at about eleven feet and it appeared that the entire unit was in the hole and relatively intact. I phoned this information to Albuquerque and, since the digging had been discontinued, we retired to Goldsboro for the night.

Friday, January 27, was spent largely in waiting for the excavation to progress. Weather and water were still the major problems. At about 4:00 p.m., EST, enough of the bomb was uncovered to permit T. T. Scolman to descend into the hole and to examine and remove the reservoir which was full. At this time, we were told that the arming rods were in place. Operations were again shut down for the night and I phoned my report.

With the necessity of the slipwrench plate (NO 1134) late on Saturday morning, January 28, two significant circumstances presented themselves. The armed/safe switch (NO 772) appeared to be in the armed position and it was discovered that the arming rods were actually missing. At this

point, we wondered why bomb No. 2 had been a dud. The MC 1134 with mounted components attached was removed to the 53rd MPS Area and, while Bickelman, Scolman and Smith began checking individual components, electrically, I furnished the initial information to Albuquerque.

Electrically, the MC 772 proved to be neither in armed nor safe position. Due to the damage which they had sustained, checks on other components were inconclusive. Mr. Bickelman reported his findings to D. M. Olson, Sandia Corporation, and it was decided that an immediate post mortem should be conducted in Albuquerque. Mr. Olson switched the call to Walter White and I requested that he immediately contact SAC Headquarters and arrange for air transportation, to Sandia Corporation, of the following MC items:

- 543 640 641 772 832 834

This was accomplished and the items arrived in Albuquerque on Monday, January 30. The results of the post mortem are illustrated by the attached Table.

The ALO group departed Seymour Johnson at 10:00 a.m., EST, January 29. Prior to our departure, I received assurance from the military commanders that:

- (a) excavation would continue until all of bomb No. 2 was recovered;
- (b) bomb No. 2's primary will be recovered minus any damaged explosive; and,
- (c) ALO will be notified in time to participate in the final packaging of both bombs.

The ALO group parted company at the Raleigh, North Carolina, airport where Smith and Scolman departed for Albuquerque. Bickelman and I had been instructed to proceed to Washington, D. C., for a meeting with Col. Sam Goldenberg, DMA. We arrived Washington on Sunday evening and checked in with Col. Goldenberg by phone.

At 9:00 a.m. Monday morning, January 30, we met with and briefed the following DMA personnel:

- | | |
|-----------------|--------------|
| Col. Goldenberg | Col. Griffin |
| Col. Banks | Col. Heney |
| Col. Scott | Ray Stone |
| LCDR Wagner | |

At 1:30 p.m., accompanied by Colonels Goldenberg and Scott, we met and briefed Brig. Gen. A. W. Betts. Col. Goldenberg had told us to be available for a Tuesday morning briefing of Gen. Luedecke and the Commissioners. At the conclusion of our meeting with Brig. Gen. Betts, the General stated that he and Col. Goldenberg would brief the Commission.

(Continued)

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At 3:30 p.m., Mr. Bickelman, Col. Goldenberg, and I met with Gen. Loper and staff. Those present were:

Gen. H. B. Loper, Assistant to the Secretary of Defense for Atomic Energy

Col. R. A. House, JCS

Col. V. C. Weil, JCS

Col. R. A. Bradley, AFMSS-AE

Col. J. H. Mangan, DASA

CAPT T. L. Andrews, USN, DASA

Lt. Col. R. L. Bowen, AFCIS-E

Lt. Col. G. F. Charlton, DASA

Lt. Col. J. E. Edwards, DASA

Lt. Col. C. R. Carson, DASA

Maj. G. L. Brooks, AFMSS-AE

CDR J. K. Williams, OATSD (AE)

We departed Washington on Tuesday morning, January 31, and arrived in Albuquerque at 3:45 p.m., MST.

R. B. Speer

Robert B. Speer
Administrative Observer
AEC/ALC

February 16, 1961

Enclosures:
Table of Command Elements
Set of 23 photos

~~RESTRICTED DATA~~

76 Feb 1961
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Table of Component Behavior, Fusing and Firing Systems

12 29

<u>MC No.</u>	<u>Component</u>	<u>Bomb</u>	<u>Bomb</u>
	Arming Wires	Pulled	Pulled
845	Pulse Generator	Actuated	Actuated
834	Explosive Actuator	Fired	Fired
543	Timer	Run Down	Run 12-15 Sec.
832	Differential Pressure Switch	All Contacts Closed	2 Contacts Closed
640	Low Voltage Thermal Battery	Actuated	Actuated
772	Arm-Safe Switch	Safe	Safe (see explanation, Section 5 of Report)
1-A	Tritium Reservoir	Full	Full
641	High Voltage Thermal Battery	Actuated	Not Actuated
788	Rotary Safing Switch	Not Operated	Destroyed
730	X Unit	Not Charged	Not Charged
616	Nose Crystals	Crushed	Crushed

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SEYMOUR-JOHNSON AIR FORCE BASE ACCIDENT, GOLDSBORO, N. C.

by

T. T. Scolman and D. R. Smith

W-7-2717

20 February 1961

About midnight of January 23, 1961, a B-52G aircraft crashed near Seymour-Johnson Air Force Base, Goldsboro, N. C. The aircraft, from the 431st Strategic Air Command wing based at Seymour-Johnson, was on a 24-hour airborne alert mission and was carrying two ~~weapons~~ weapons. The aircraft broke up at about 10,000 feet, and the weapons probably separated from the wreckage at about 5000 feet altitude. One weapon descended by parachute and was essentially unharmed. The other weapon fell and its parachute deployed, it and landed itself in sandy clay.

DNA
(1Y3)

The members of Group W-7 (D. R. Smith and T. T. Scolman) departed Los Alamitos at 0600 January 21 by a special cargo flight. Only special equipment to check the condition of the gas boosting system was taken. The W-7 personnel were joined at Air Force Operations, Kirtland AFB, by Mrs. Ross Speer of AFOS, Mr. Don Richardson of Sandia Corporation, Colonel Malitz, Lt. Col. Smith, Lt. Col. Stewart, and Captain O'Grady of DISR, and Captain Martin of SMC. This party was assigned a C-47 (DC-3) and departed Kirtland about 0800. About eleven hours elapsed before arrival at Seymour-Johnson AFB. Col. Malitz then arranged for a briefing for the party the next morning.

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~~United States Air Force~~
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W-7-2717

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That evening Captain Ehrman, from the 53rd Munitions Maintenance Squadron, informed the W-7 personnel that the parachuted weapon (S/N 434909, hereafter referred to as "No. 1") had been "rendered safe", picked up, partially dismantled, and returned to the 53rd MMS Storage and Inspection Building. The W-7 equipment was turned over to Captain Ehrman and arrangements were made to contact him the following morning.

At 0815 on Wednesday, January 25, the party was briefed by the SAC 43rd MMS Security Officer (S/O) regarding the events leading up to the accident, the wreckage configuration, and what was known of the weapons. Both weapons had Aits. 180, 189, and 191. Major Lindsey (C. O. 53rd MMS) reported more information on weapon No. 1. It was also learned that the forward weapon case (S/N 359983) was also recovered (S/N 359983). No other significant items were detected. Pieces of the forward weapon case had been dug up, but no fusing or nuclear components.

Following the briefing the party visited the crash site. While the aircraft wreckage had been examined (the tail section and weapon No. 1 had been found along with the forward weapon No. 2), the major portion of the wreckage and weapon No. 2 were within a circle about 200 yards in diameter. Weapon No. 2, however, was clearly separated from any aircraft wreckage. At this time the hole in which weapon No. 2 was located was about 10 feet deep and, while no part of the weapon was visible, it had been located by probing. Several sections of the forward weapon case had been removed from the hole. Digging was proceeding slowly by hand, since the location of the wreckage of the MMS was not known.

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was given to the Sandia representative in further examination of the condition of the fusing and firing components of weapon No. 1.

About 1600 Friday (Jan. 27), the reservoir of No. 2 was uncovered at the crash site. The fill tube had been severed from the valve, there was no indication of tritium contamination, and the reservoir was lying loose in the weapon debris. It was removed by EOD people and brought out of the hole. A thermal test confirmed the assumption that the reservoir was still full. The electrical connector had been torn off so the squib resistances could not be measured.

The afterbody of weapon No. 2 was removed from the hole on Saturday (Jan. 28) and returned to the S and I area where the fusing and firing components were examined by the SC representative. A portion of the rear section [redacted] square case and a section of the pit fill tube were still attached to the rear case section indicating the HE and pit were probably severely damaged. At this time, pieces of HE and several loose detonators had been found in the hole. At no time was any trace of radioactivity found. Assistance was given to the Sandia representative in electrical inspection of the components from weapon No. 2.

W-7 personnel departed Sunday (Jan. 29), to return to Los Alamos.

Distribution:

- 1A - D. P. Dickason
- 2A - D. P. Dickason
- 3A - D. P. Dickason
- 4A - D. P. Dickason
- 5A - M. F. Roy
- 6A - F. J. Dunn
- 7 - Mail & Records
- 8 - Mail & Records

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