

Source:

These are two reports on the same "Broken Arrow" nuclear weapon incident at McGuire Air Force Base. Photos differ in features redacted.

The first:

"US Air Force Nuclear Weapons Accident/Incident Report Ammunitions Letter No. 136-11-56C"

http://www.dod.mil/pubs/foi/reading_room/126.pdf

The second:

"Report of Special Weapons Incident Bomorac Site, McGuire AFB, New Jersey"

http://www.dod.mil/pubs/foi/reading_room/137.pdf

AIRMUNITIONS LETTER

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~~RESTRICTED DATA - ATOMIC ENERGY ACT 1954~~

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

8 September 1960

OCAMA AIRMUNITIONS LETTER
NO. 136-11-56C

SUBJECT: Advance Explosive Ordnance Disposal Technical Information

TO: SEE DISTRIBUTION

AUTHORITY: This AML is published under the authority of and in compliance with AFR 136-6.

SUMMARY OF NUCLEAR WEAPONS INCIDENTS (AF FORM 1058) AND RELATED PROBLEMS JUNE 1960

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1. The purpose of this Airmunitions Letter is to present a periodic 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 at McGuire AFB, New Jersey, on 7 June 1960. This incident will hereafter be referred to as NWI-60-1.

NWI-60-1

1. Location.

McGuire AFB, New Jersey.

2. Date.

7 June 1960.

3. Type of Incident.

Fire in a ready missile shelter which housed an IM-99A missile. The missile was fueled and contained a [REDACTED] warhead.

4. Brief.

a. "Broken Arrow" alert was received at 1222 hours (MST) that a fire had broken out in a missile ready shelter at McGuire AFB. The belief was that a possible "one-point" detonation had occurred and that an adjacent shelter was endangered by the fire.

b. The 2702d EOD Squadron was notified to dispatch EOD personnel to the scene to render assistance. Detachment No. 4, Wright-Patterson AFB, and Detachment No. 6, Griffiss AFB, departed their stations enroute to the incident.

c. At 1825 hours (EDST) information was dispatched from the site that a "one-point" detonation had definitely NOT occurred and that decontamination was under way. Detachment No. 4 returned to Wright-Patterson AFB.

d. A resume of events as reported by the Detachment Commander (Detachment No. 6) follows:

(1) At approximately 1515 hours (EDST) two (2) explosions occurred in one of the ready missile shelters. When emergency

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personnel arrived at the shelter the missile was burning and no attempt could be made to bring the fire under control. Water hoses were placed through the doors prior to evacuation of emergency personnel. All personnel not belonging to the emergency crew were evacuated from the missile site. Fire fighting personnel were able to return to the shelter at approximately 1545 hours (EDST) and contain the fire. No alpha monitoring equipment was available at the missile site and assistance was requested from Fort Dix (Army) EOD personnel for monitoring the immediate area. A survey for Alpha, Gamma and Beta was conducted on the area outside of the shelter with negative results.

(2) A gentle wind (5 to 8 knots to the SW) was blowing the smoke off-base. Smoke was blown over one adjacent shelter. This shelter did not become contaminated.

(3) At approximately 1915 hours (EDST) personnel of Detachment 6, clothed in full protective clothing and Scott Air Paks, entered the area. The nose section of the missile was still smoldering. A water hose that had been braced in the doorway was directed toward the nose section. Approximately one (1) inch of water covered the entire floor area of the shelter. Water was flowing under the front shelter doors down the street and into a drainage ditch. The entire area inside the shelter and outside adjacent to the shelter was monitored. The highest reading obtained at this time was 250 CPM directly under the warhead. (The water apparently shielded any other readings.) The instruments used at this time included the PAC 1S and AN-PDR 27. The [redacted] warhead had been engulfed in the fire and had been exposed to "super-heating." The explosive was completely consumed and the pit had melted and dropped to the floor, mixed with a considerable amount of ash and miscellaneous residue. No explosive residue could be found. Photographs were obtained and monitoring was suspended at 2230 hours (EDST). Water was again released into the shelter and arrangements were established with the fire department to keep the area outside of the shelter wet during the night.

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(4) EOD personnel returned to the area on 8 June 1960. The area was allowed to dry and Staplex Air Samplers were erected. (Later reading of the filter papers indicated a reading of 1.59 DPM.) At 1000 hours (EDST) monitoring outside of the shelter disclosed a high reading of 160,000 CPM. (It was evident that contamination found outside of the shelter was deposited by the sluicing of the shelter with water.) Public Health Service Officers conducted an off-base survey of

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approximately 66 square miles and reported that no contamination were found. Another survey was made inside the shelter it had dried. A reading of over 2,000,000 CPM was taken near the warhead residue. Other areas within the shelter had 100 CPM to 50,000 CPM. The entire inside of the shelter and all readings indicating contamination were limited immediately around and slightly forward of the warhead area was roped off and kept wet the rest of the day June. Personnel entering the area were kept to a minimum. An accident investigation team trying to determine the cause of explosion and fire. (Reference Figure 1.)

(5) On 9 June 1960 monitoring was resumed. The warhead residue was started at 1900 hours (ED). The warhead was unbolted and removed without difficulty. The X-ray film removed and the tritium bottle exposed. The tritium bottle was found to be intact and in good condition. Approximately 10 feet of tubing remained attached to the bottle, the remainder was cut off. The line was crimped and the end filled with lead and recrimped. The T290A was used to monitor prior to and during operations. All readings with the T290A were near zero. A portion of the tritium bottle was covered with a sticky substance. It appeared that the substance came from the thermal battery. Sample smears were obtained as a precaution. The warhead residue, tritium bottle and residue from the floor were placed in sealed containers, again in plastic bags and finally in metal cans. The cans were monitored on the outside and found to be clean. A warhead container, with the tritium bottle and residue of contaminated residue were turned over to the Nuclear Regulatory Commission. The entire area inside and outside of the shelter was washed with fire hoses. Care was exercised to prevent contamination of areas.

(6) On 10 June the entire area was again surveyed. It was found that during the fire tar had melted and had sections of the floor in thin layers. Several of the readings were over 2,000,000 CPM. The clean area had zero (0) readings. The center of the road in front of the shelter also raised in contamination reading to 2,000,000 CPM. (2.) The entire area was again washed down and allowed to dry. A slight drop in contamination was found, but the roadway was still over the allowable limits. The shelter was completely dried, the inside of the shelter was painted. A very thick layer of paint was applied. The outside of the shelter was painted, using brooms to spread the paint. A total of

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All Readings are in
Cours Per Minute

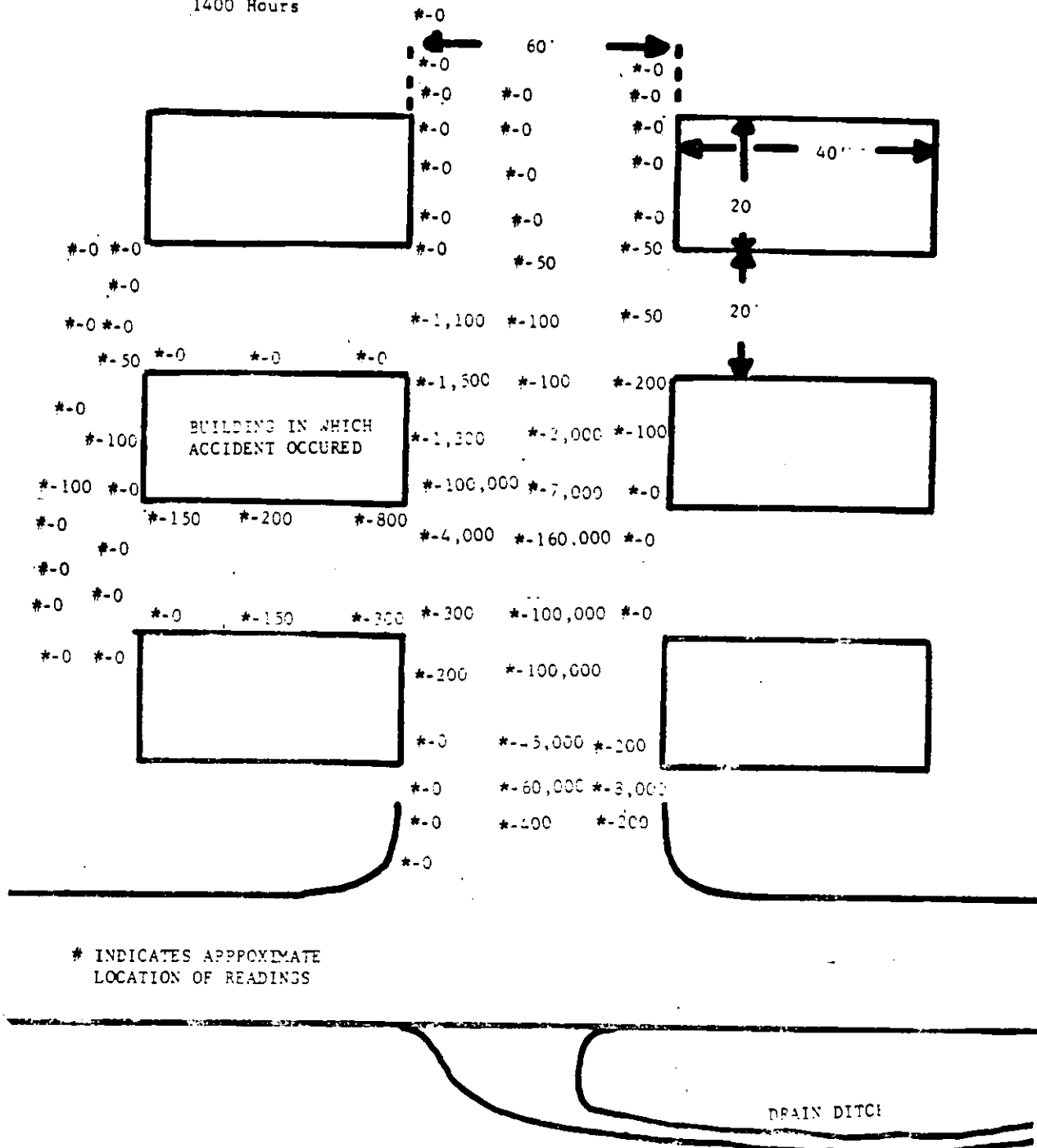


FIGURE 1. Monitoring Survey Results, 8 June 1960.

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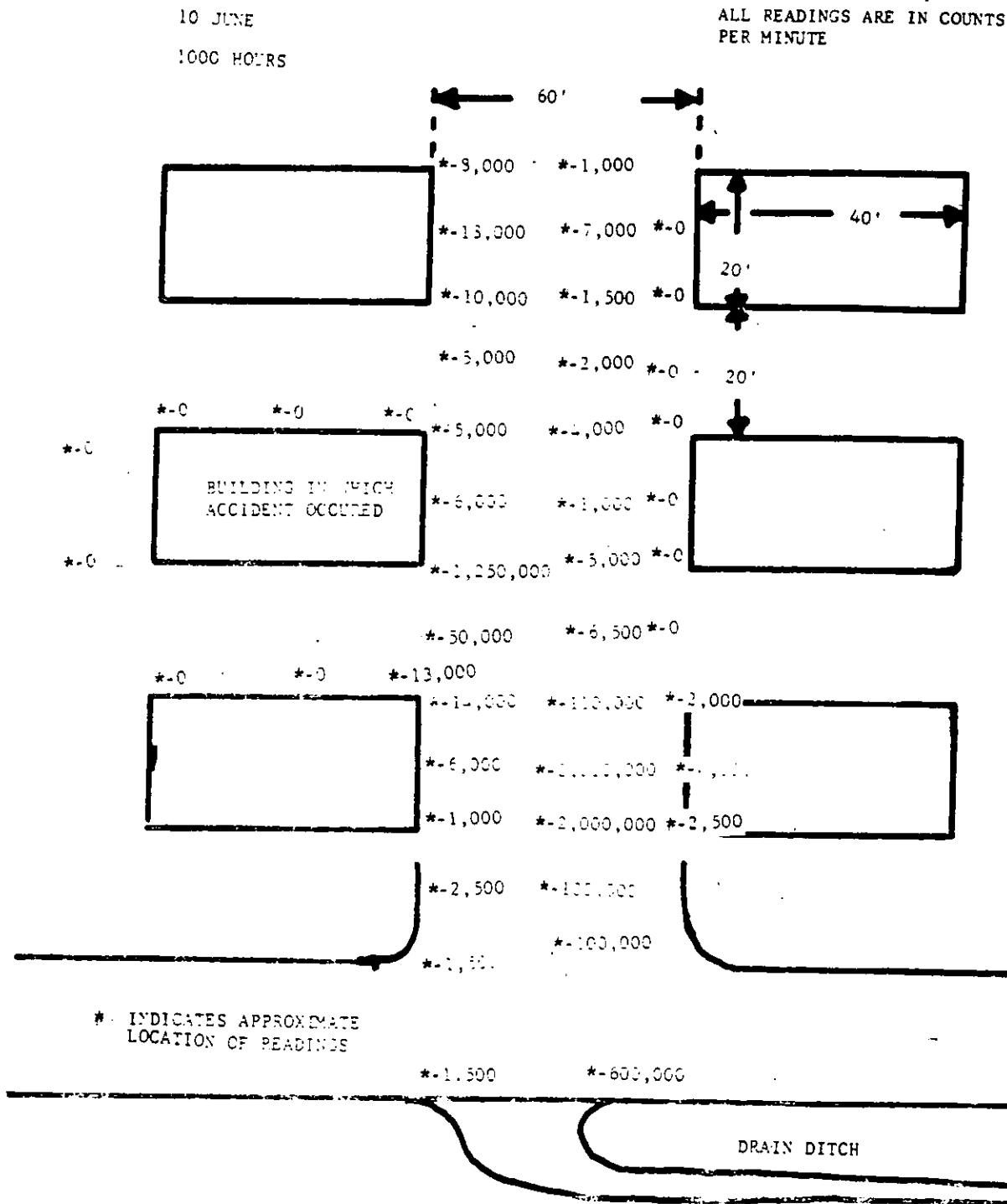


FIGURE 2. Monitoring Survey Results, 10 June 1960.

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paint were used. When the paint had dried sufficiently to walk on, monitoring was again resumed. All areas that previously indicated high levels of contamination were effectively covered and zero readings were obtained. A few places on the fringe area indicated minor readings of 50-500 CPM. This reading was determined to be non-hazardous. The EOD personnel terminated operations at 2200 hours (EDST), 10 June 1960.

(7) One item of concern was where the contaminated sluice water was going. The flow was traced and it was found that after traveling slightly over two hundred feet outside the fenced area (a total distance from the shelter of approximately 500 feet) the water was absorbed by the sandy soil. A suitable dam was constructed to insure that the water did not leave the immediate area and further that it did not leave the military reservation. The water supply was not contaminated and arrangements were made for regular inspections of the water supply.

(8) Blood samples were obtained immediately upon the return of the EOD personnel to their home station. Urine specimen series were also started on 11 June and completed on 12 June. No casualties were sustained by EOD personnel of Detachment 6, 2702d EODRON.

(9) Note Figures 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22 for extent of damage incurred at this incident.

5. Unusual Problems.

The incident was handled in a very capable manner and all problems were considered by the Detachment Commander to be typical under the circumstances.

6. Contamination.

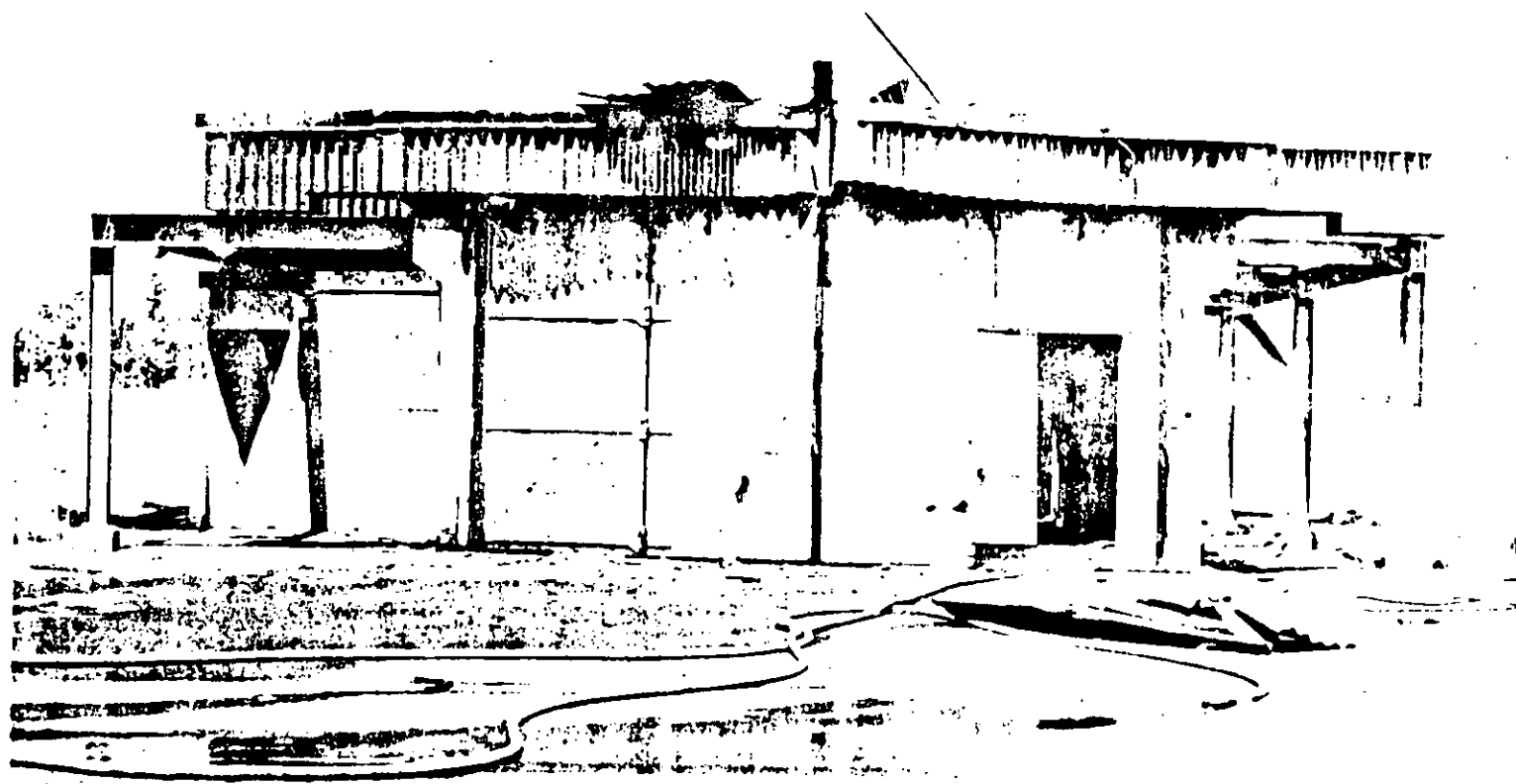
Considerable range of Alpha readings were obtained as indicated in the brief. The only contamination encountered was Alpha.

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FIGURE 1. Bunker Shelter Where Incident Occurred, HDS A-100-100000.



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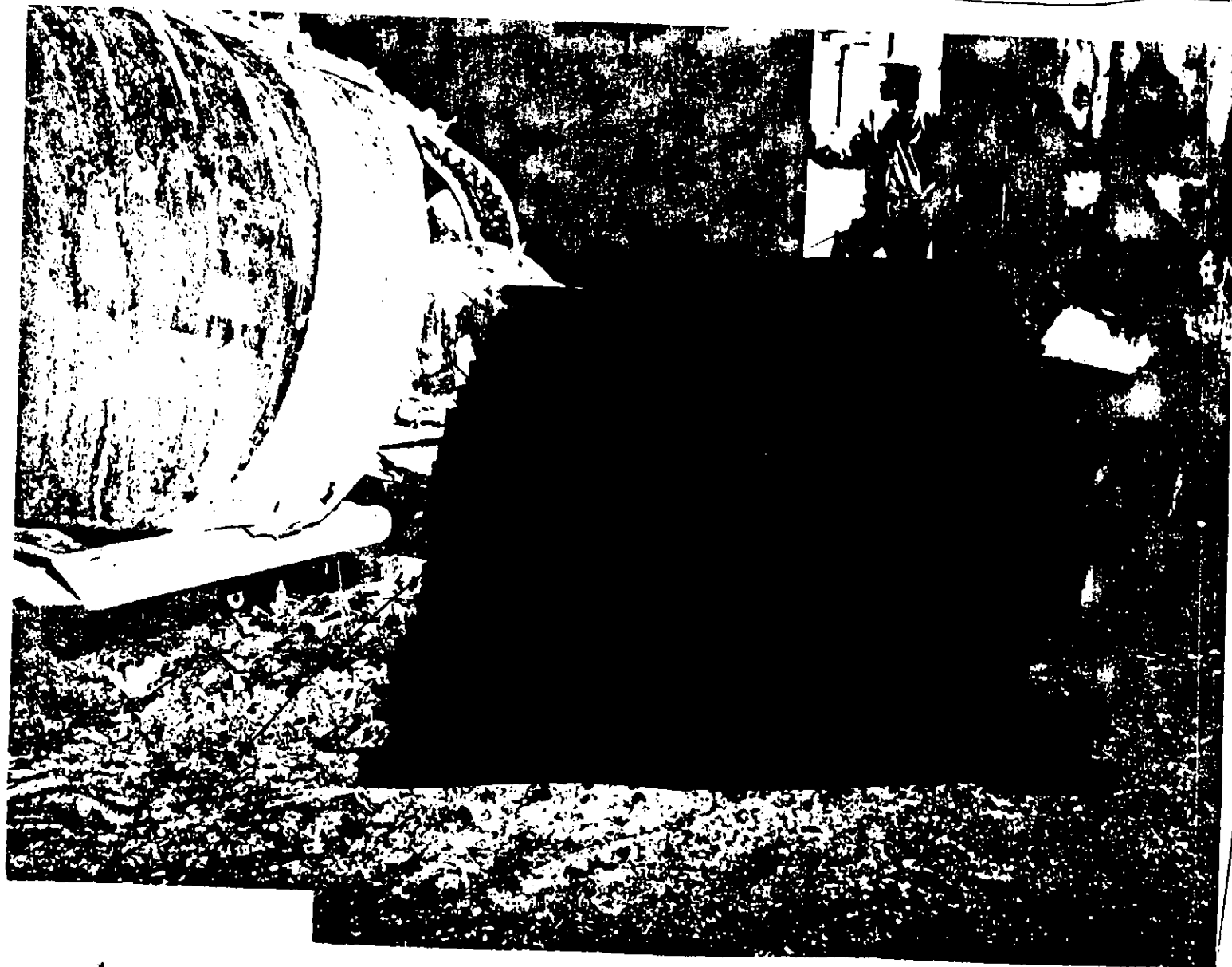


FIGURE 5. Warhead Section, Looking Forward.

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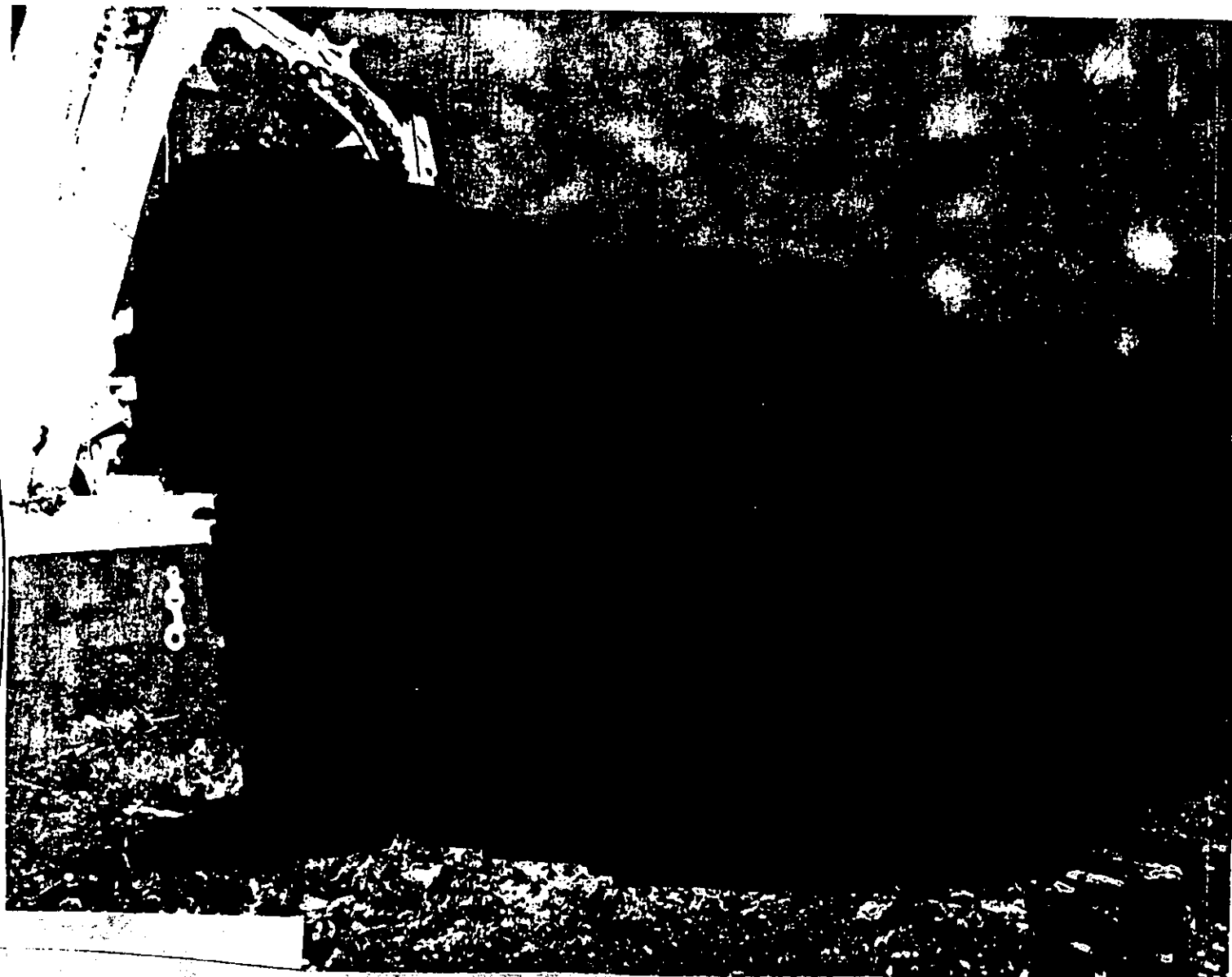


FIGURE 4

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FIGURE 7. Warhead Section, Broadside from Left Side of Missile.

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FIGURE 8. Warhead Section Looking Forward From Left Side of Missile.

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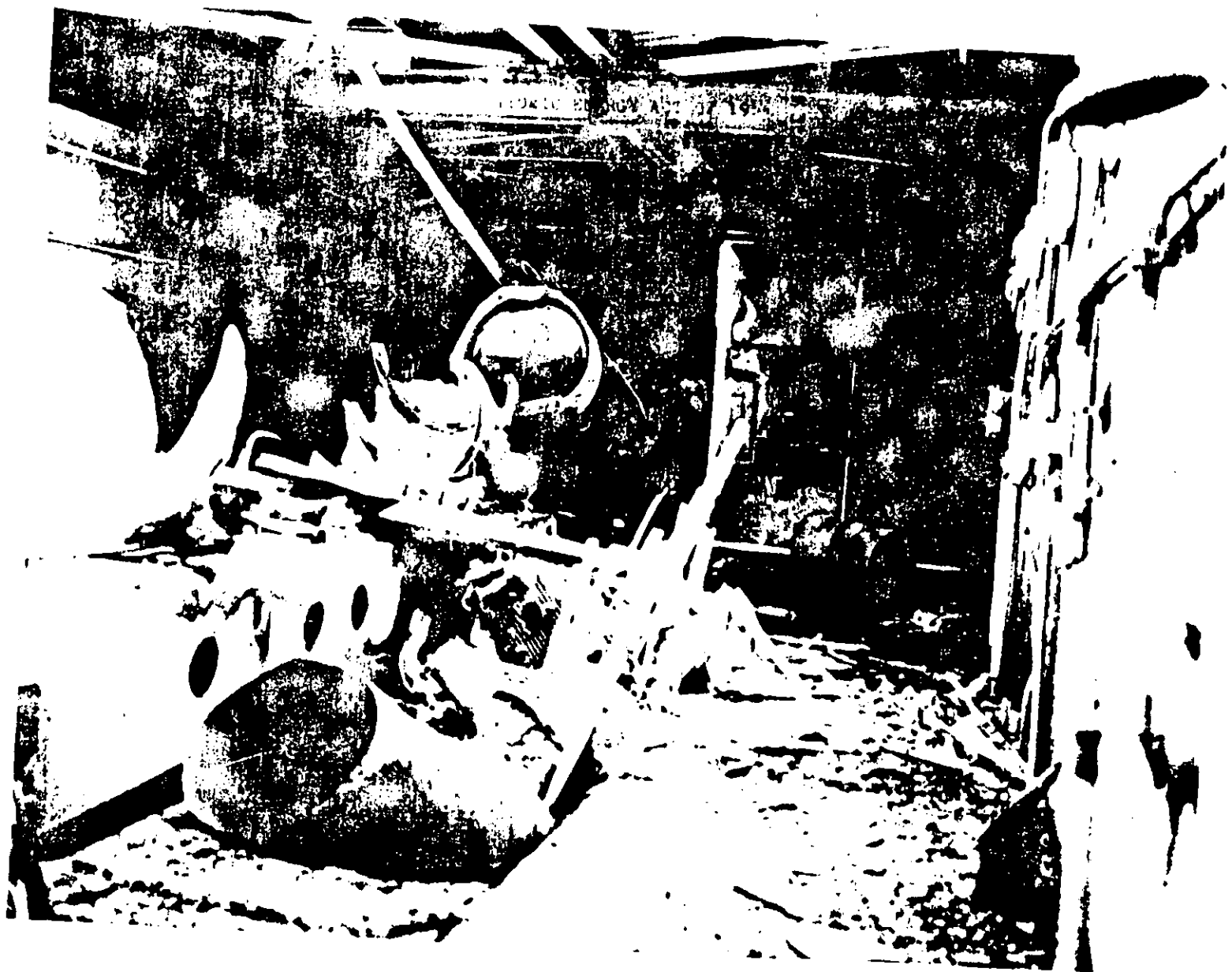


FIGURE 9. Missile Remains Looking Forward on Right Side of Missile.

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FIGURE 10. Model's Residuals Plotted against the Predicted Values



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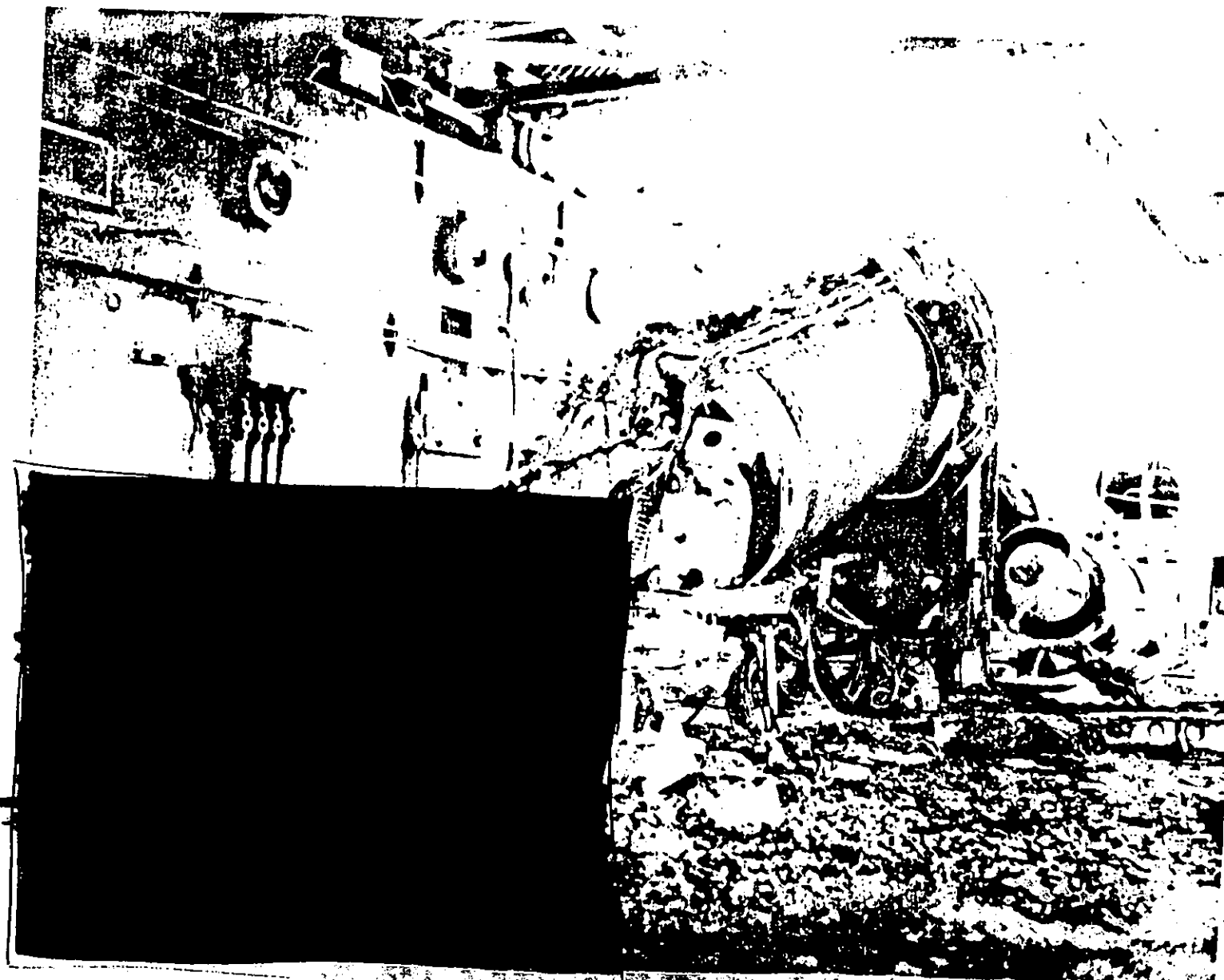


FIGURE 11. Missile Remains Looking Aft on Left Side of Missile.

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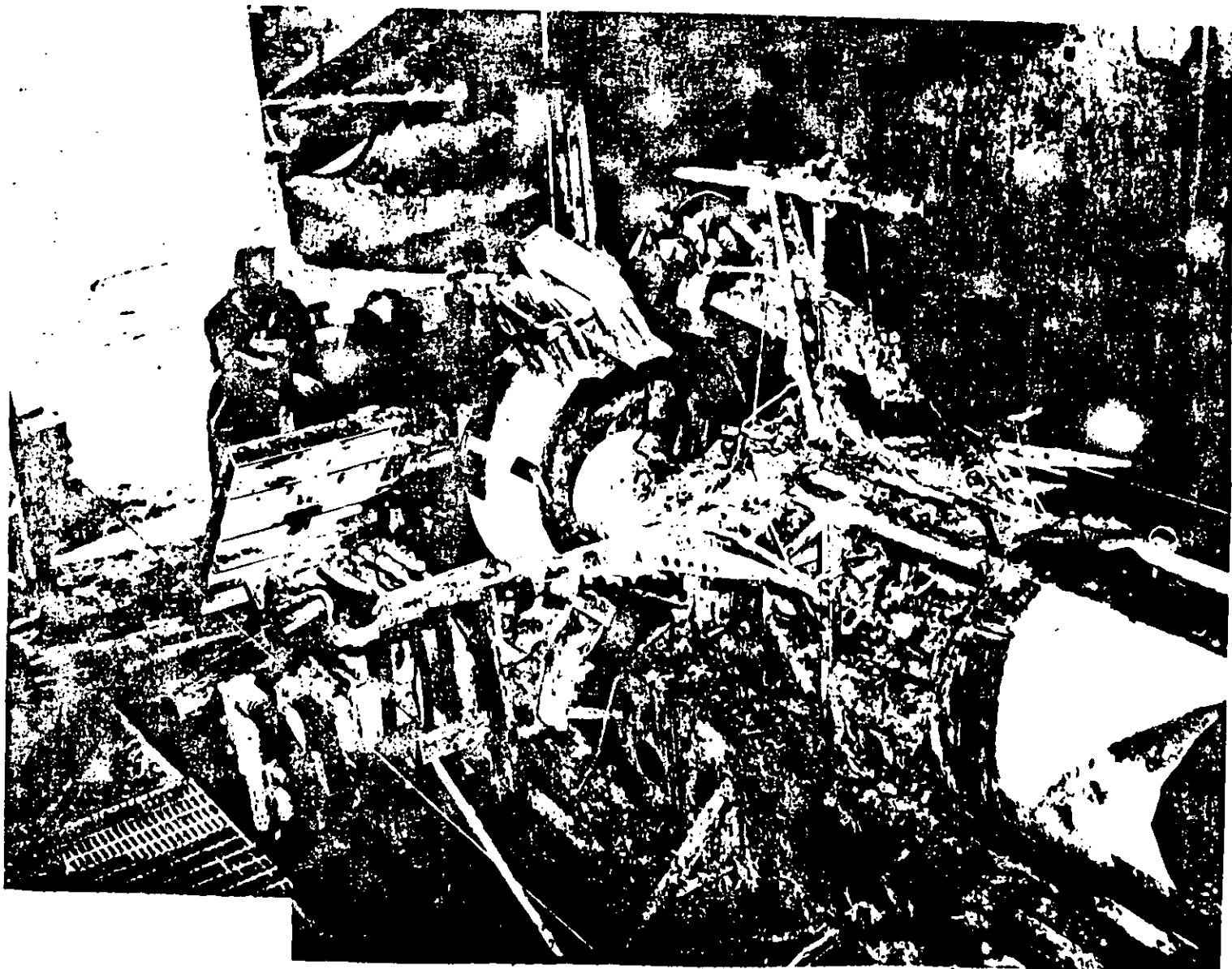
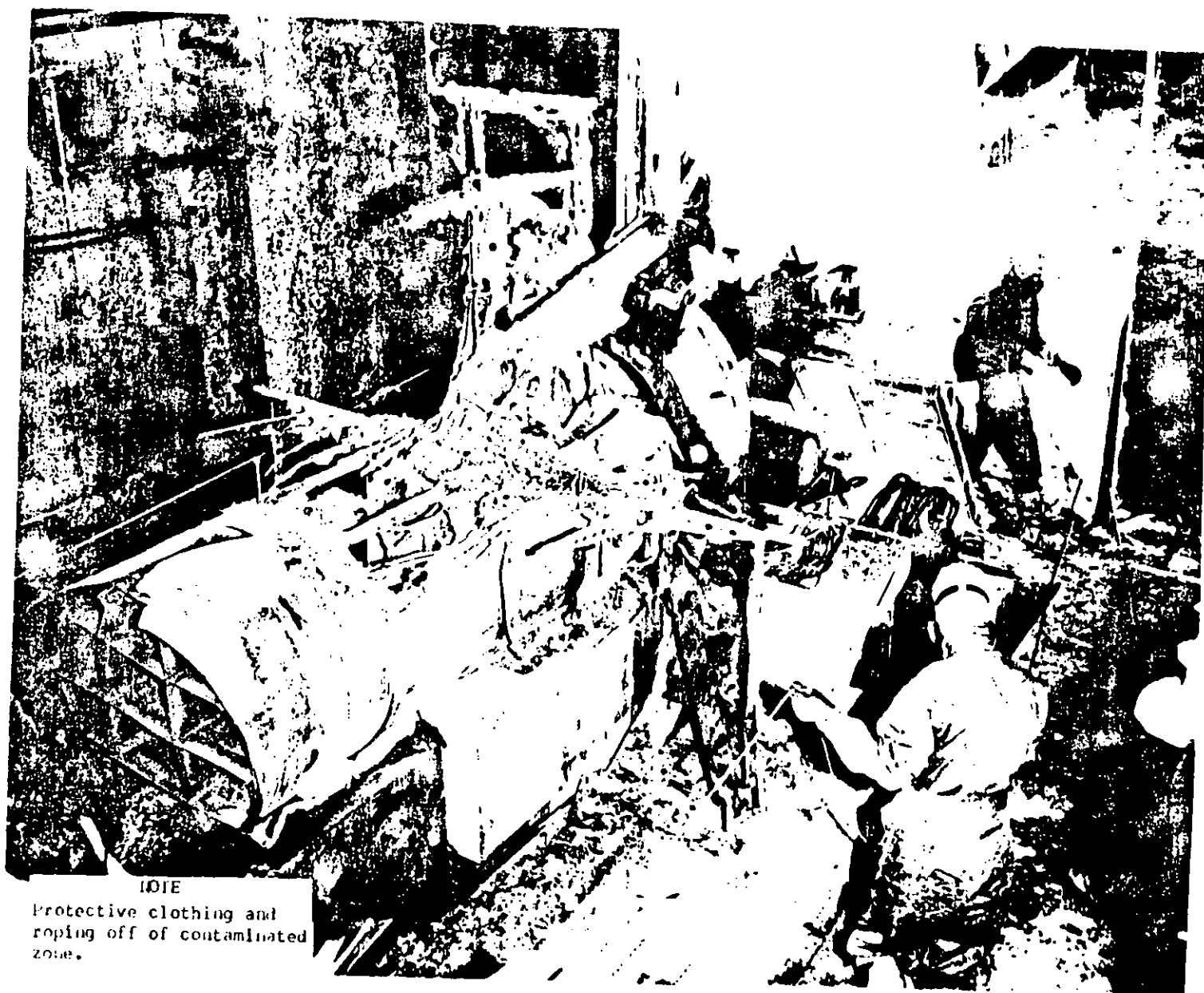


FIGURE 12. Aft Portion of Missile on Launcher.

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NOTE
Protective clothing and
roping off of contaminated
zone.

FIGURE 13. Aft Portion of Missile From Left Side of Missile.

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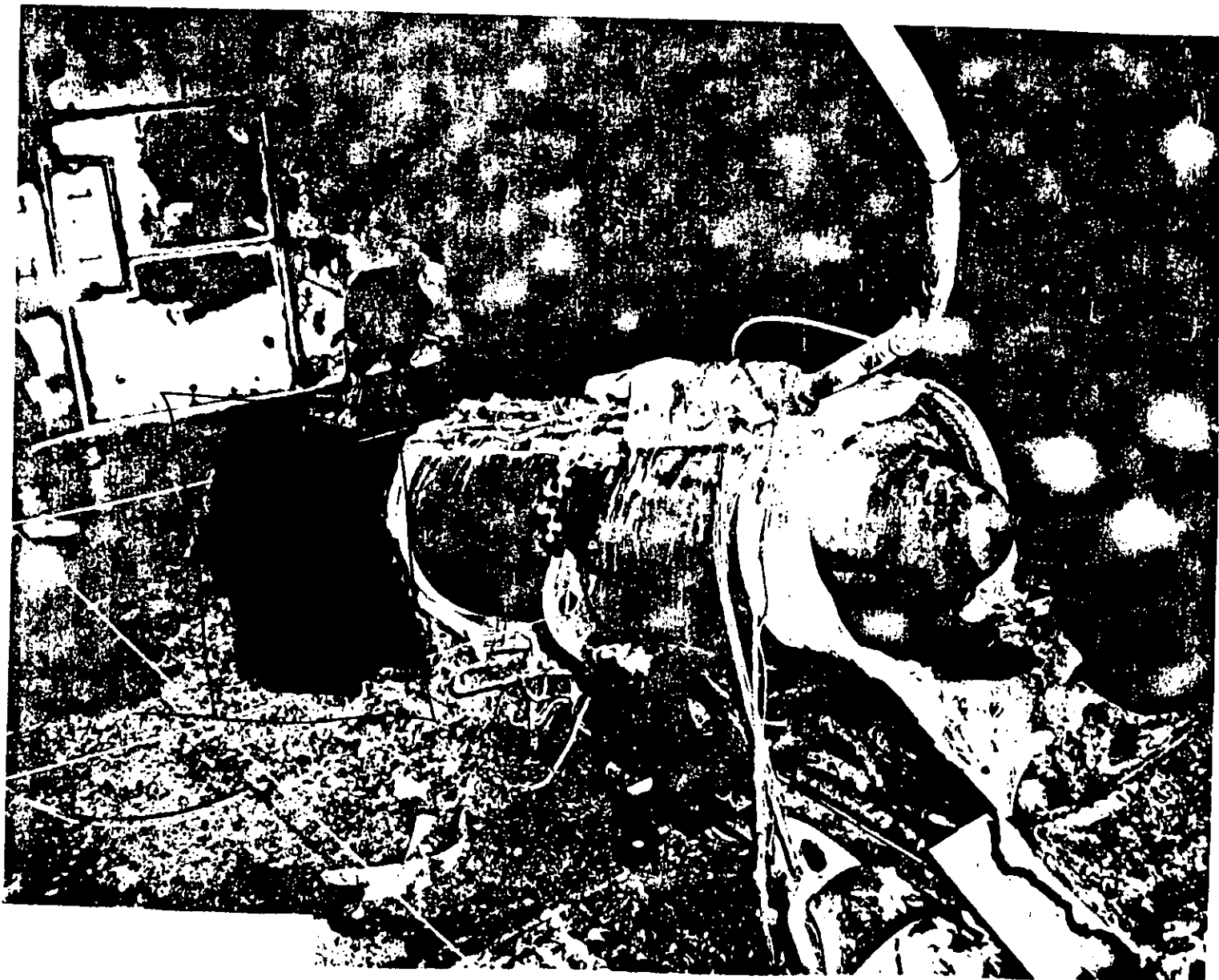


FIGURE 14. Irfna Tank Still Held On Launcher, Relatively Intact.

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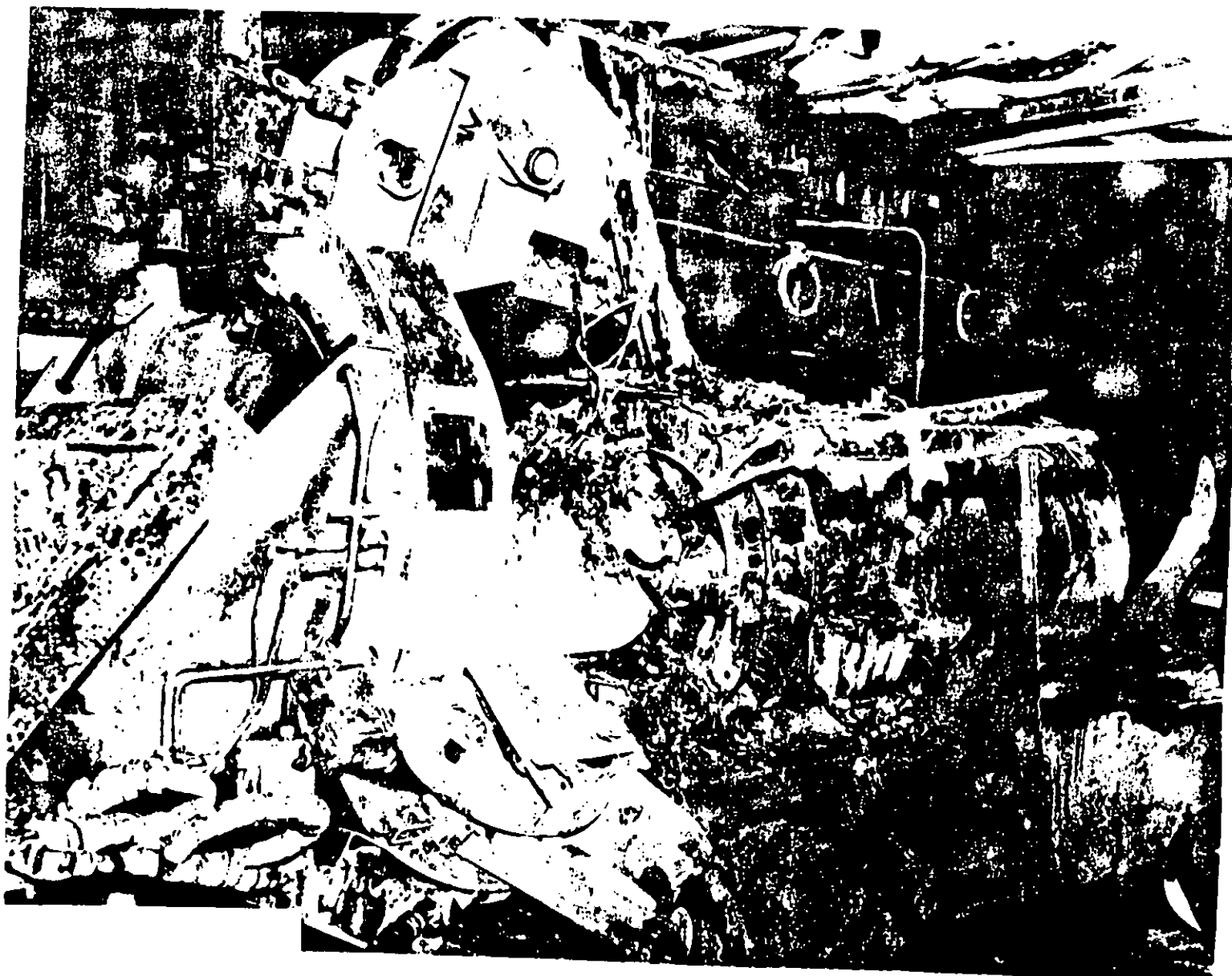


FIGURE 15. Aft Portion of Missile Showing Severe Damage to Launcher.

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FIGURE 16. Missile Looking Aft, Showing Severe Damage to Shelter and Launcher.

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FIGURE 17. Helium Tank Location. Indications Point to Violent Rupture.

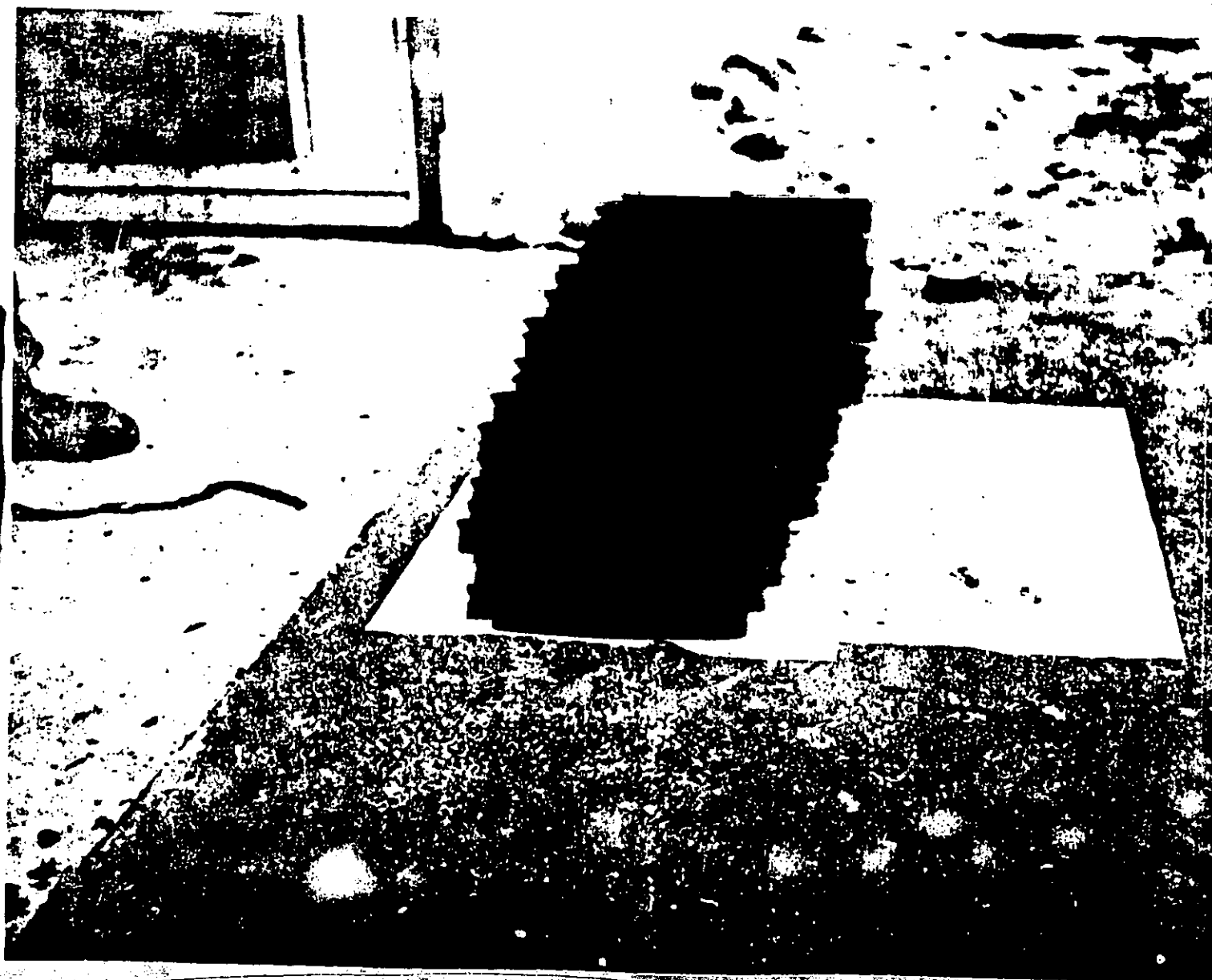


FIGURE 18. View of Warhead Section.

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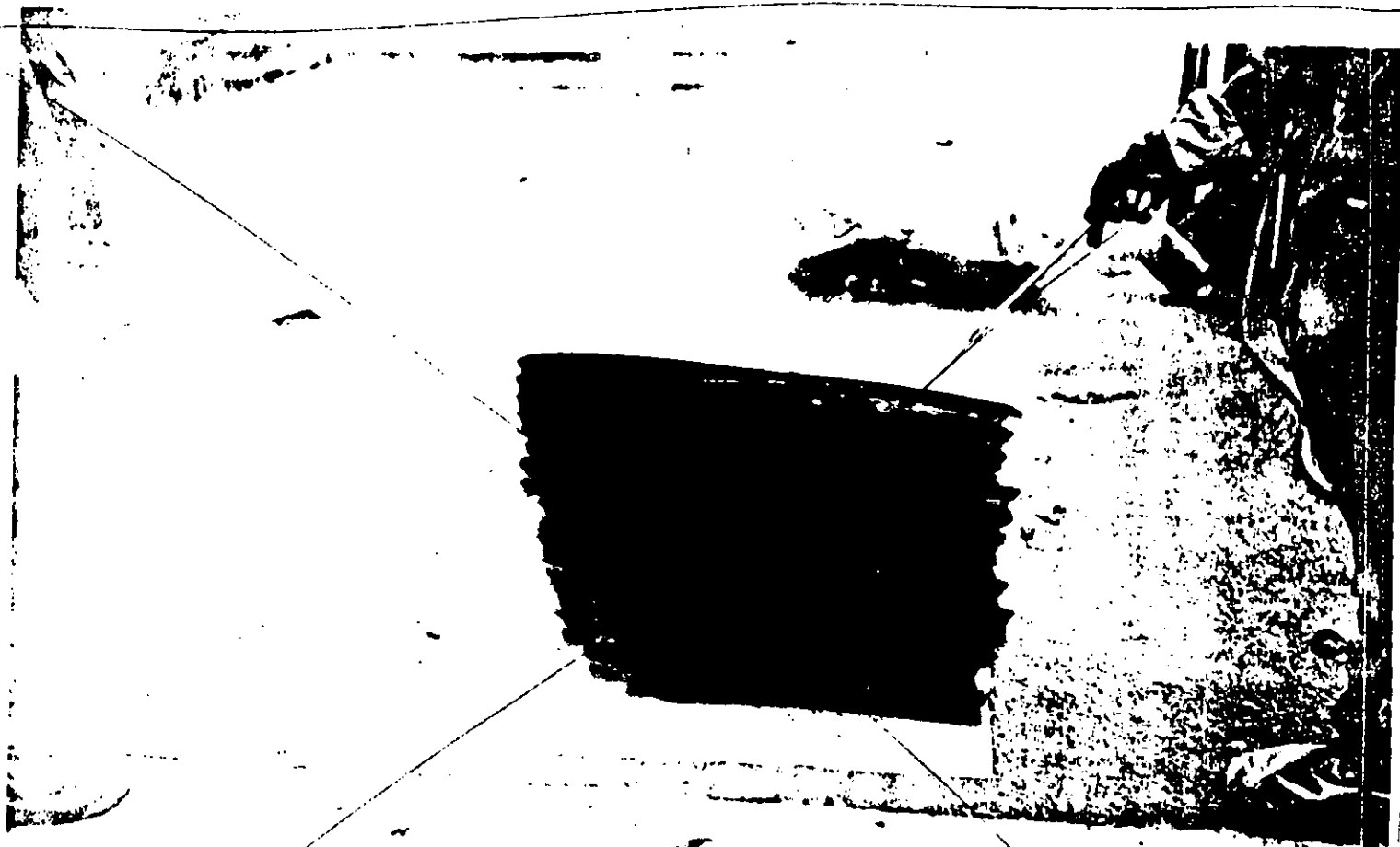


FIGURE 19. View of Warhead Section Broadside, With Exposed Bottom Section of Tritium Bottle.

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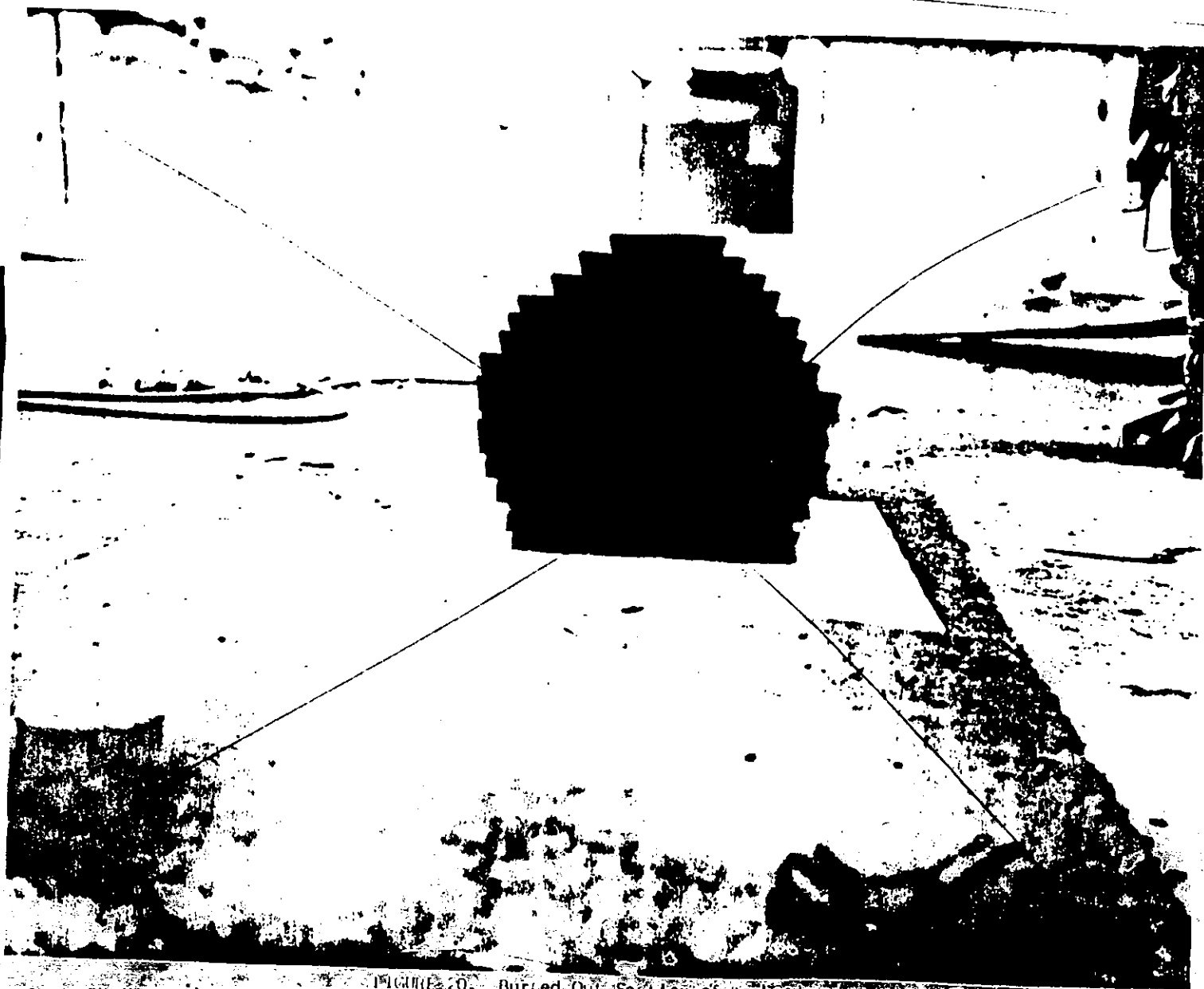


FIGURE 20. Buried Out Section of warhead.

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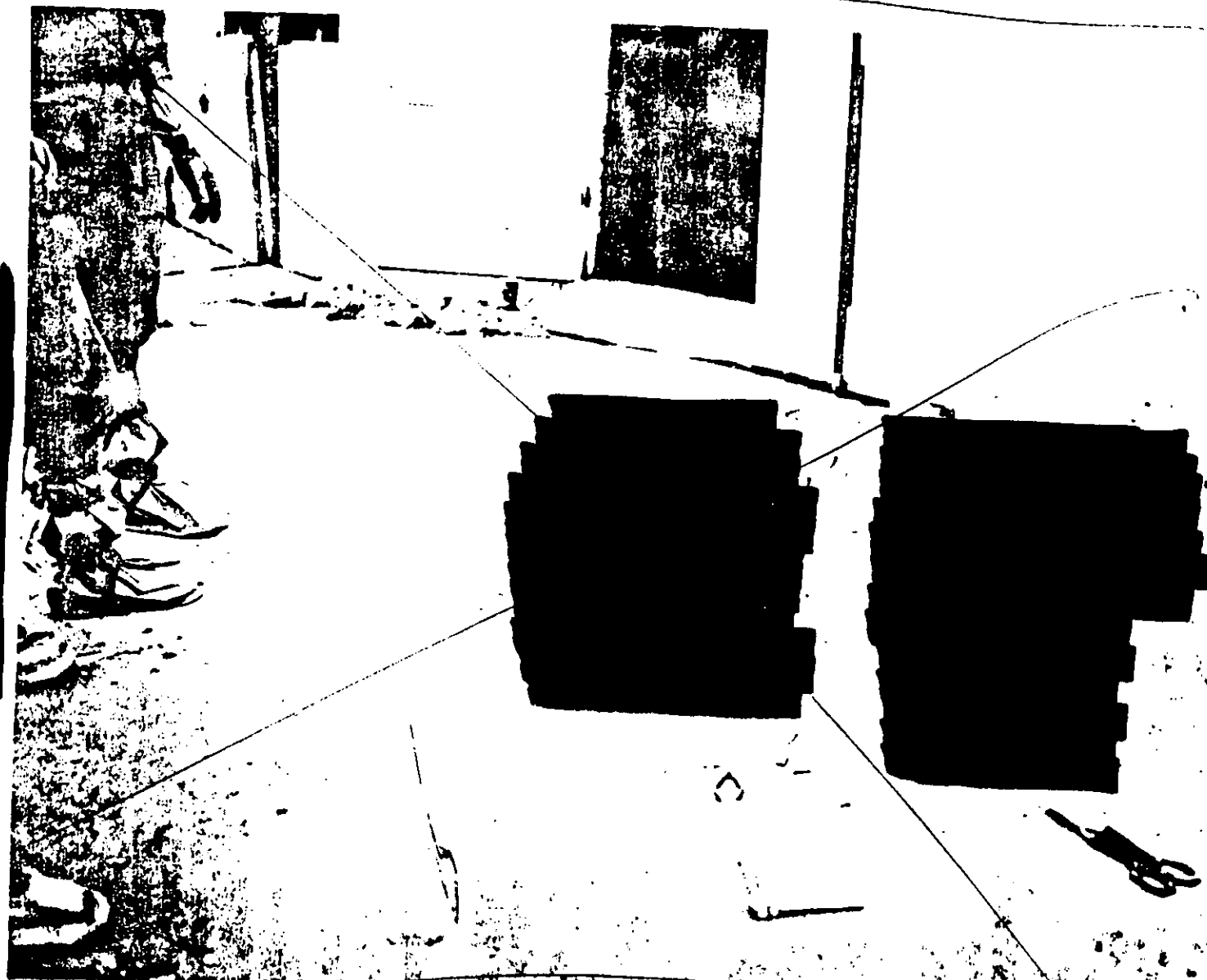


FIGURE 21. Warhead Section With Cover Removed Showing Tritium Bottle.

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FIGURE 22. The Tritium Bottle After Removal.

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NOTE

An excellent series of photographs were submitted. The Directorate of Nuclear Safety Research, USAF, Kirtland AFB, New Mexico, reported in their survey: ".... Detachment 6, 2702d Explosive Ordnance Disposal Squadron from Griffiss AFB, N.Y. arrived at the 46th ADMS....(three hours and sixteen minutes after the time of the accident) completely equipped to handle the HE and radiological problems associated with nuclear accidents. Sufficient personal protective clothing and equipment were available for use by visiting personnel authorized to enter the accident area. THE SERVICES PERFORMED AND THE MANNER IN WHICH THEY WERE PERFORMED WERE OF GREAT CREDIT TO THE AIR FORCE."

FOR THE COMMANDER

Joe M. Whitfield

JOE M. WHITFIELD
Colonel, USAF
Commander
2705th Airmunitions Wing

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1st, Det 6 (MOLE), 2702 HOD Sq, Griffies AFB, HI, 13 Jun 1960, Report
of Special Weapons Incident ~~XXXX~~, Bunker Site, McGuire AFB, New
Jersey

1st Ind (MOLEDS)

15 June 1960

2702 HOD Sq, Wright-Patterson AFB, Ohio

TO: 2705 Aircommunications Sq (COID), Hill AFB, Utah

1. Basic correspondence is forwarded for your information and necessary
action.
2. Copies of this report less pictures have been furnished to Col
Sheppard, 46th AB Missile Squadron, 3rd AF, New York Air Defense
Sector, and Col Stewart, Nuclear Safety Board per their personnel
request.

H. B. MCCLANAHAN
Major., USAF
Commander

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DETACHMENT 6
2702D EXPLOSIVE ORDNANCE DISPOSAL SQUADRON
United States Air Force
Griffiss Air Force Base, New York



REPLY TO
ATTN OF: ROLED

13 June 1960

SUBJECT: Report of Special Weapons Incident [REDACTED], Bomarc Site, McGuire AFB,
New Jersey

TO: 2702 EOD Sq
Wright-Patterson AFB, Ohio

1. At 1600 hours, 7 June 1960, Detachment 6, 2702d Explosive Ordnance Disposal Squadron received, from Major H.B. McGlanahan, notification of a Broken Arrow incident at the Bomarc Site located near McGuire AFB, New Jersey. The Detachment was air-borne at 1650 hours and arrived at McGuire AFB, New Jersey at 1830 hours. A truck and bus from the 16th AD Missile Squadron was waiting and it took approximately ten minutes to off-load and depart McGuire AFB. The Detachment arrived at the incident site at approximately 1900 hours.

2. Detachment personnel were immediately briefed by Major Guidington, Captain Murry and Lt Pearson as to the current situation. The following information was received:

a. At approximately 1515 hours, two (2) explosions occurred in Shelter 2-1. When the emergency personnel arrived at the shelter the missile was burning and no attempt could be made to bring the fire under control. However, water hoses were placed through the doors before the emergency personnel evacuated the area. All except emergency personnel were then evacuated from the missile site. At approximately 1545 hours the fire fighting personnel were able to return to the shelter and contain the fire. The missile site had no alpha monitoring equipment available and the Army EOD unit from Fort Rix was called. They performed an alpha, beta and gamma survey of the outside area around the shelter with negative results.

b. A gentle wind (3 to 8 knots) was coming from the northeast and was blowing the smoke off-base. The smoke passed over just one (1) shelter, number 2-3. This shelter was not contaminated.

c. Arrangements were completed for transportation, quarters (at McGuire AFB) and security passes.

3. The following is a detailed account of surveys conducted and the decontamination procedures:

a. At approximately 1915 hours, 7 June 1960, the personnel of Detachment 6 entered the area wearing full protective clothing and Scott Air Pacs. The nose section of the missile was still smoldering and a water hose braced by the door was directed on the nose section.

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There was approximately one inch of water covering the entire floor and water was flowing under the front door, down the street into a drainage ditch. The entire area inside the shelter and outside was monitored. The only indicated reading was 350 counts per minute directly under the warhead. No other reading could be found because of the wet conditions. The PAC-15 and HDR-27 were used for monitoring. [REDACTED] warhead had been engulfed in the fire and was exposed to super heating. The explosive burned and the pit melted and dropped to the floor. The pit residue was mixed with a large amount of ash. All explosive material burned and no melted explosive could be found. Pictures were taken and monitoring completed at 2230 hours. The water hose that was flowing into the shelter was turned on and arrangements were made with the fire department to keep the outside area wet during the night.

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b. The Detachment personnel returned to the Accident Site at 0645 hours, 8 June 1960. The water running into the shelter was turned off and the area was allowed to dry out. At 1200 hours Air Samplers were set up down wind from the accident site. [REDACTED] a prevailing wind must blow through the area because the wind prevailing at the time of the accident came from the same quarter all during the day. Air samples were taken again at 1500 hours on 8 June 1960. A verbal report from the 2702d Explosive Ordnance Disposal Squadron indicated the highest reading found on the filter paper was 1.59 DPM. At 1000 hours an alpha survey was made of the ramp outside of the shelter (see attachment 1). The highest reading found was 160,000 counts per minute. It became quite evident that all contamination found outside the shelter was washed there by the fire fighters and the water used to keep the area wet. Officers from the Public Health Service made a survey of 66 square miles of off base area and found no traces of contamination. When the inside area of the shelter dried out a complete survey was made. At one point near the warhead a reading of over 2,000,000 counts per minute was found. Other readings ranged from 100 CPM to 50,000 CPM. The entire shelter was monitored and all contamination was limited to an area around and forward of the warhead. The area around the warhead was roped off and the area was kept wet down the rest of the day and night. Accident investigation personnel accompanied by EOD personnel entered the building to make a preliminary survey in an effort to determine the cause of the explosion. Personnel were kept to a minimum and were only allowed in the shelter for a short period of time. Water was allowed to spray on contaminated areas all night. Work terminated for the day at 1800 hours.

c. On 9 June 1960, the area was again allowed to dry and the entire area was again monitored. The results were approximately the same as recorded on 8 June 1960. At 1900 hours work was started to remove the warhead from the missile. The warhead was unbelted and removed with no difficulty. The I-unit cover was removed and the tritium bottle exposed. The tritium bottle was intact and appeared to be in good condition. Approximately twelve (12) inches of the line remained attached to the bottle, the remainder had been burned off. The line was crimped and the

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and filled with liquid aluminum and recrimped. Prior and subsequent to crimping operations, monitoring was accomplished using the T290A. All readings were negative. The lower portion of the tritium bottle was covered with a sticky substance. While it appeared that this substance came from the thermal battery, smears were taken as a precaution. The remains of the warhead, tritium bottles and all residue from the floor were placed in plastic bags, placed in a sealed container, again wrapped in plastic bags and again placed in sealed cans. The outside of the cans were checked and found free of all contamination. One container with the warhead, one container with the tritium bottle and six containers full of contaminated residue were turned over to Captain John Macdsey, Jr., Nuclear Supply Officer. The entire contaminated area inside and outside of the shelter was washed down with fire hoses. Care was taken to assure that no additional area would be contaminated during the washing process. Work was terminated at 0030 hours, 10 June 1960.

4. At 0900 hours, 10 June 1960, the entire area was checked and monitored. During the fire, tar had melted and spread in a thin layer on sections of the floor. Several sections of the floor containing tar showed readings of over 2,000,000 counts per minute. Sections of the floor that were clean had zero counts per minute. The center of the road in the outside area had also raised to 2,000,000 counts per minute (attachment 2). The entire area was again washed down and allowed to dry. The area was again monitored and while there was some drop in readings, the center of the road was still over allowable limits. After the area was completely dry the inside contaminated area was painted with a very thick layer of paint. Spray guns were used inside the building. The outside area was also painted and brooms were used to spread the paint. A total of 110 gallons of paint were used. After the paint had dried enough to walk on it, readings were taken again. Areas that had previously shown 2,000,000 counts per minute now read zero. All areas that indicated high counts were effectively covered and indicated zero readings. A very few places on the fringe showed readings of 50 to 500 counts which presented no hazard. All work was terminated at 2030 hours 10 June 1960. Detachment 6 personnel departed Griffiss AFB at 2200 hours and arrived at Griffiss AFB at 0700 hours 11 June 1960.

4. Of immediate concern was the destination of the contaminated water that was washed from the shelter. Upon tracing the flow, it was found that the water flowed a couple hundred feet beyond the fenced in area (a total distance of approximately 500 feet) and was absorbed by the sandy soil. A dam was constructed to insure that the water was contained in this small area. The water did not leave the military reservation nor did it endanger the water supply. However, arrangements have been made for regular inspection of the water supply.

5. Upon return to Griffiss AFB, blood samples were taken at once. Urine series was started on 11 June and completed on 12 June. The samples were turned over to Dr. Carter, Director of Preventive Medicine at the Griffiss AFB hospital.

6. No casualties were sustained by this organization.

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7. The only person mentioned, aside from the investigation, was the suspected delay in completing the work, due to delay in receipt of some numbers of the accident investigation report. There follows the first incident of this type referred to above. Incident of the Accident Investigation Board, reported that nothing in the report would give any numbers and an opportunity to visit the area.

8. The following number of personnel and quantity of equipment was obtained from the Survey Site.

a. Personnel

- (1) SW - 1
- (2) Fireman - 1
- (3) Maintenance Officer - 1
- (4) Safety Control - 1

b. Equipment

- (1) Fire truck - 1
- (2) Truck-pulling - 2
- (3) Tug - 1

9. Attached as inclosures are photographs of the missile and components.

CD 4

- a. Attachment No 1 - Survey Results - 5 June 1964.
- b. Attachment No 2 - Survey Results - 10 June 1964.
- c. Attachment No 3 - Exterior of Building.
- d. Attachment No 4 - View Aft to Forward.
- e. Attachment No 5 - View Forward to Aft (L-Unit).
- f. Attachment No 6 - View Forward to Aft (Note: Burned Out), Area and Exposed Lead Plugs).
- g. Attachment No 7 - View of L-Unit.
- h. Attachment No 8 - View of Burned Out Warhead.
- i. Attachment No 9 - View of Warhead.
- j. Attachment No 10 - View of Warhead (Note: Exposed Bottom Section of Tritium Bottle).
- k. Attachment No 11 - View of Burned Out Section of Warhead.
- l. Attachment No 12 - View of Warhead with Cover Removed (Note: Tritium Bottle).
- m. Attachment No 13 - Tritium Bottle.
- n. Attachment No 14 - Hand Receipt for Warhead and Section. (not Rec'd)

Attach 7-13
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M. J. W. [Signature]
MAJ W. KIRK
Captain, USAF
Commander

14 June

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