

AIRMUNITIONS LETTER

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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 on 6 June. Personnel entering the area were kept to a minimum by 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) and was unbolted and removed without difficulty. The X-ray film was 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 uncontaminated. 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.

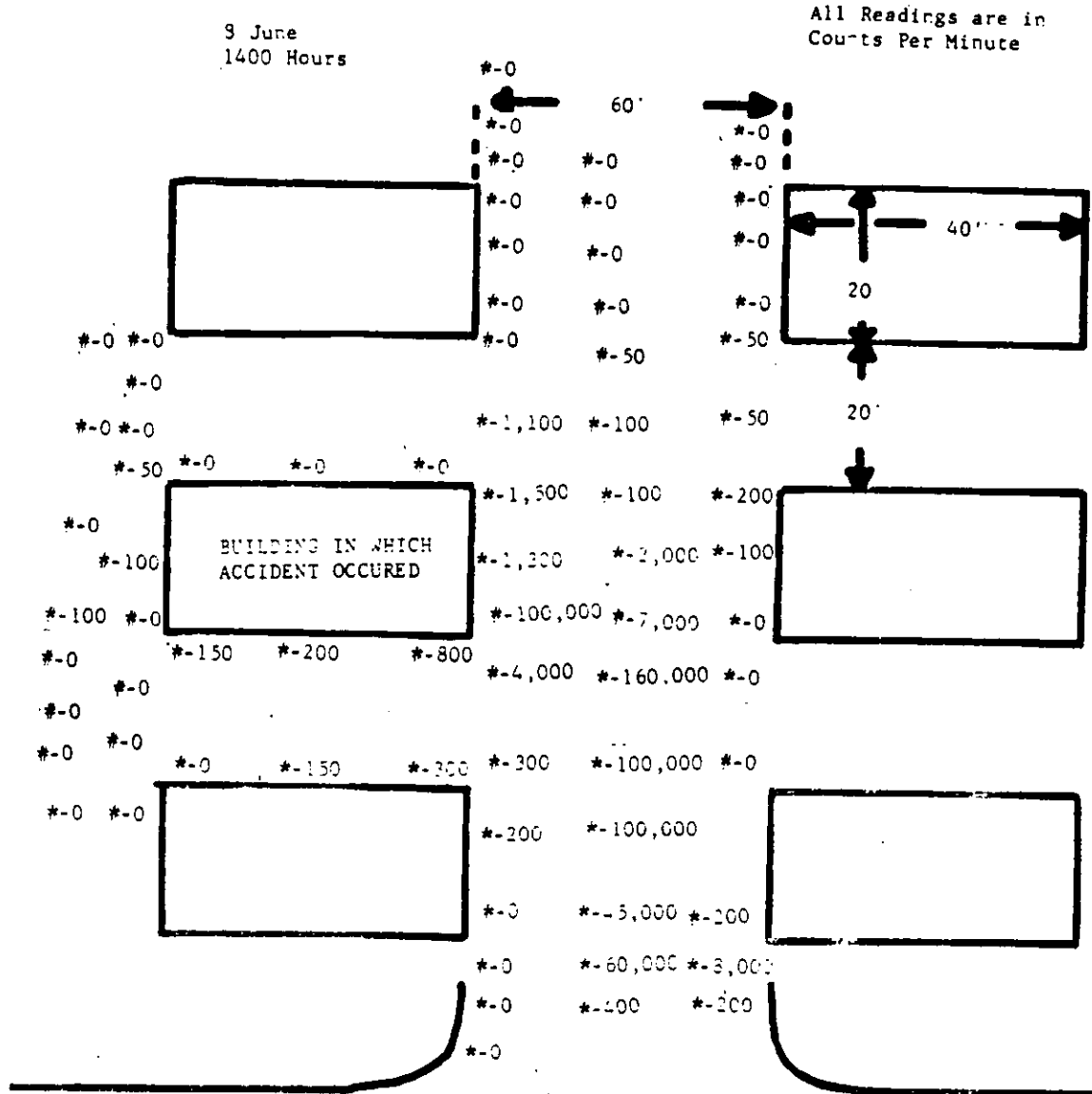
(6) On 10 June the entire area was again surveyed. It was found that during the fire tar had melted and had solidified in sections of the floor in thin layers. Several of the readings were over 2,000,000 CPM. The clean area had zero (0) readings. The center of the road in front of the shelter also raised 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 readings of the roadway was still over the allowable limits. After the area completely dried, the inside of the shelter was painted with a lead-based paint. 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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* INDICATES APPROXIMATE
LOCATION OF READINGS

FIGURE 1. Monitoring Survey Results, 8 June 1960.

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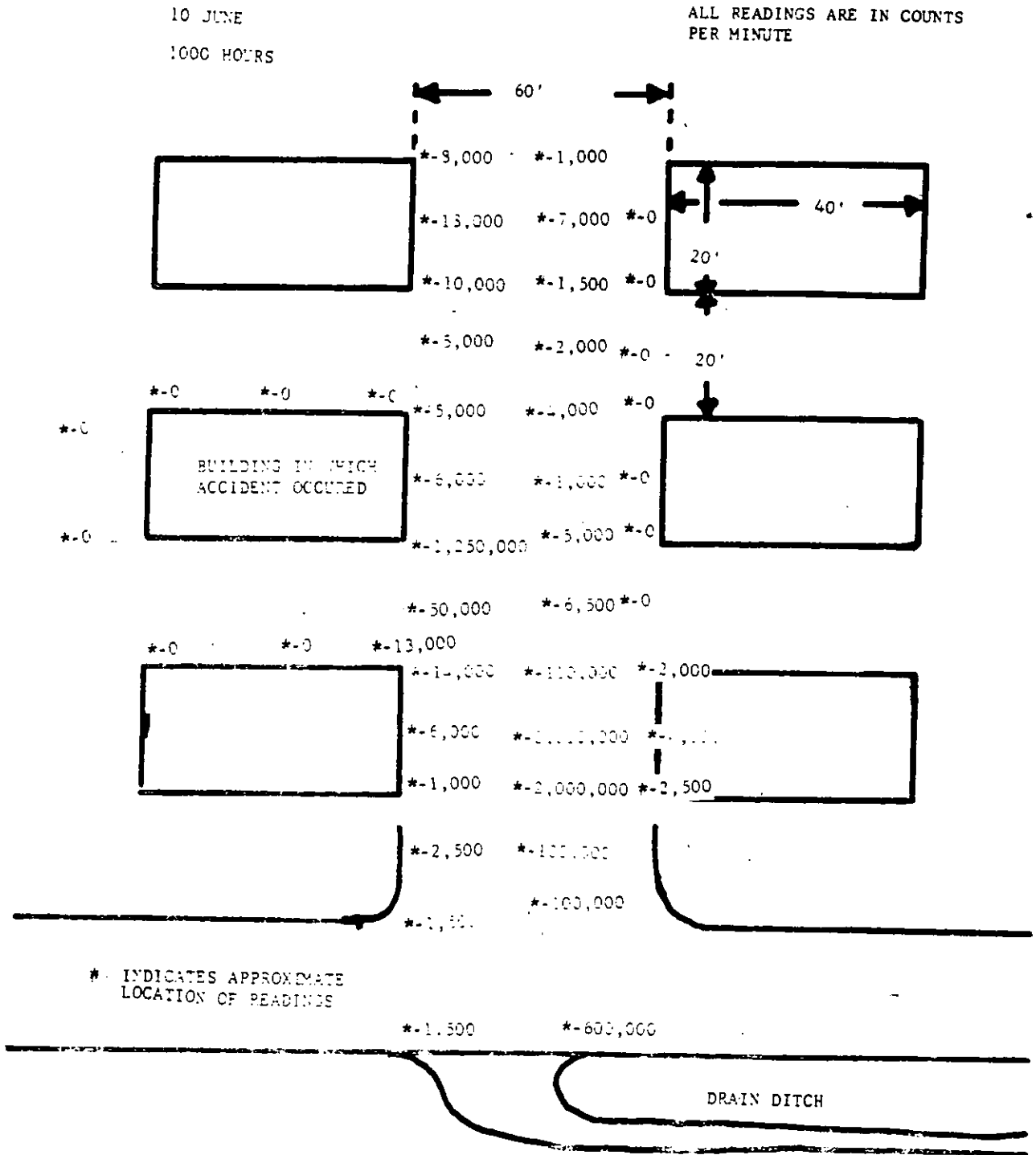


FIGURE 2. Monitoring Survey Results, 10 June 1960.

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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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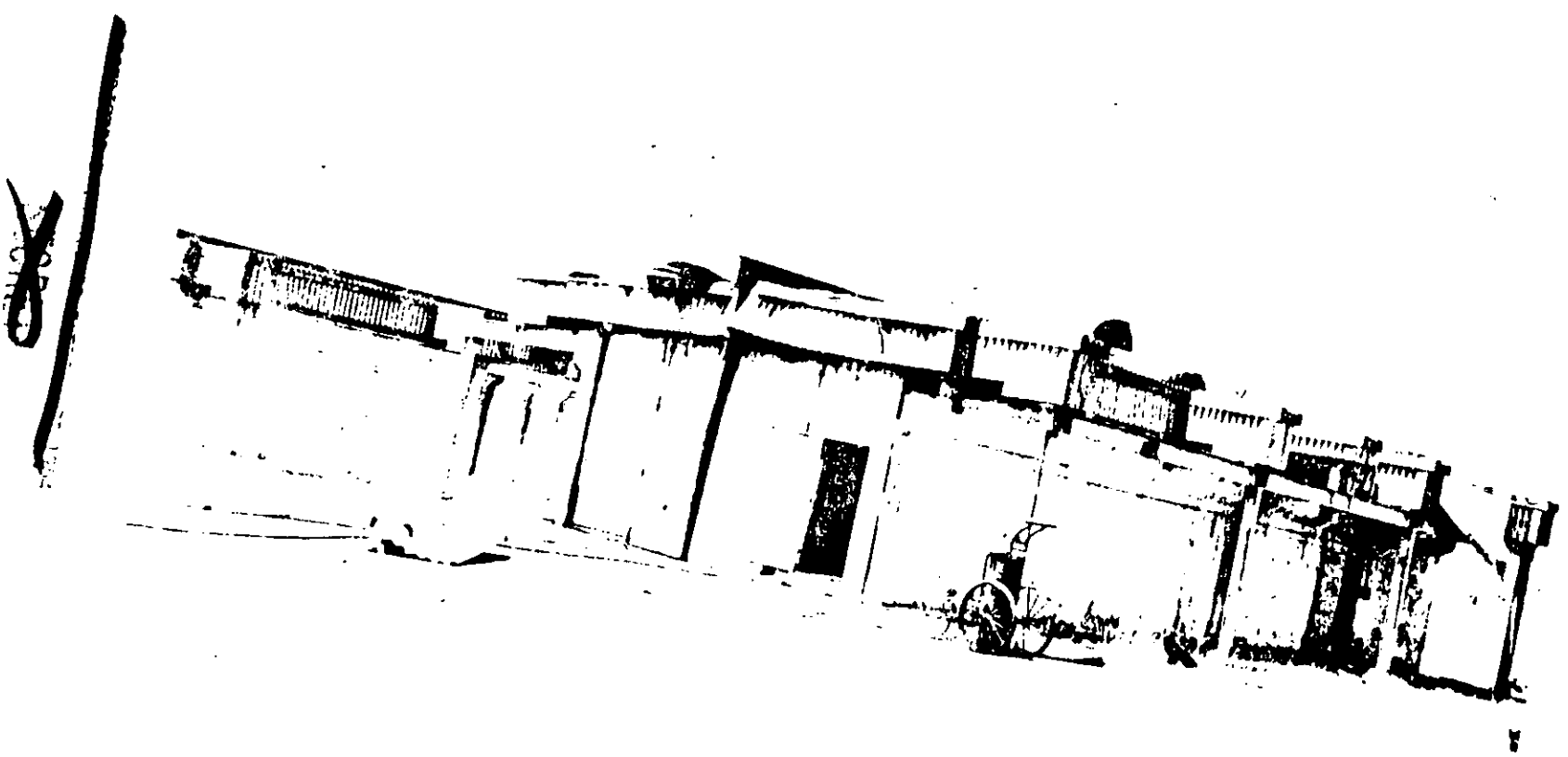
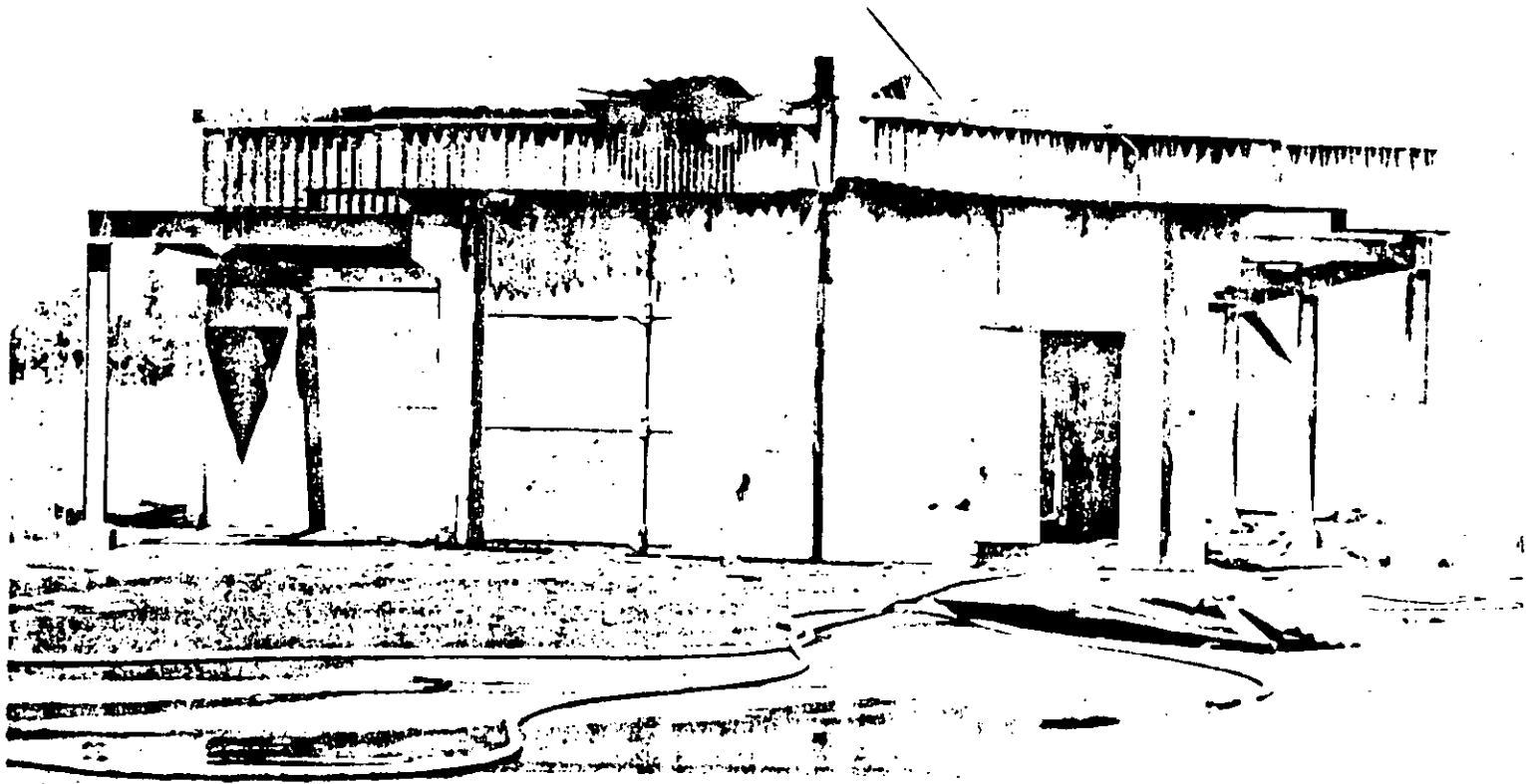


FIGURE 1. Barrack Shelter Where Incident Occurred, HDB A. C. 11 2001.



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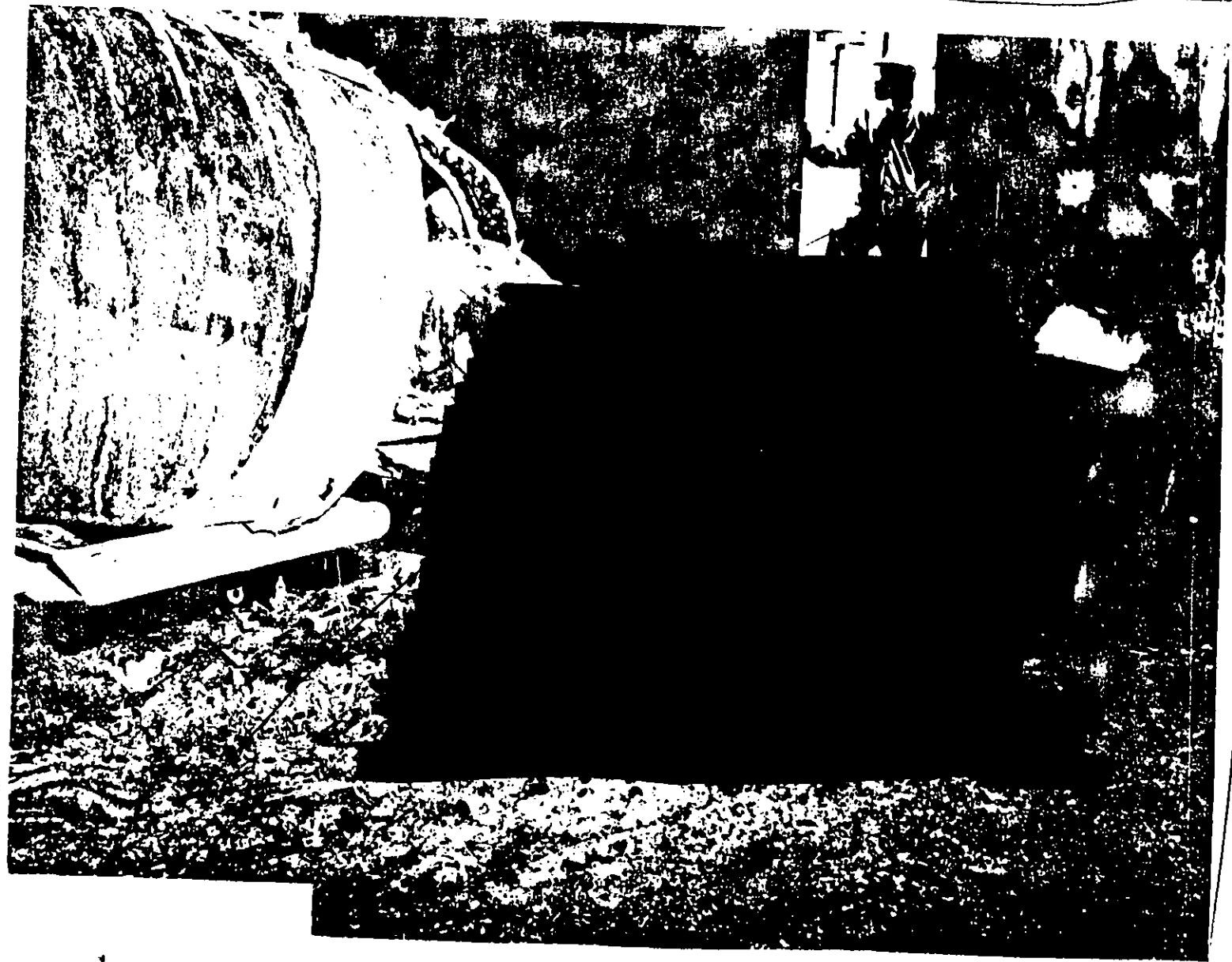
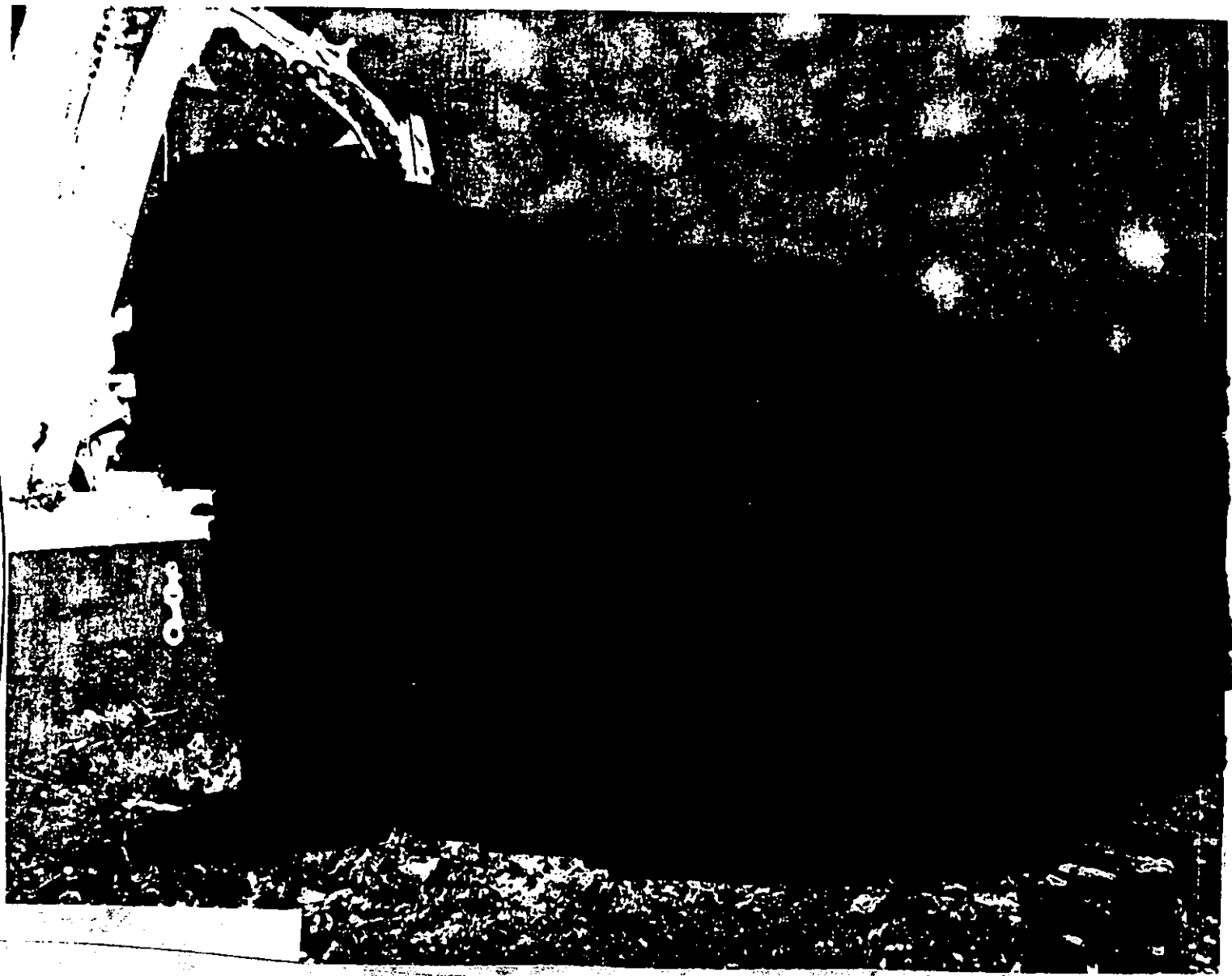


FIGURE 5. Warhead Section, Looking Forward.

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FIGURE 6

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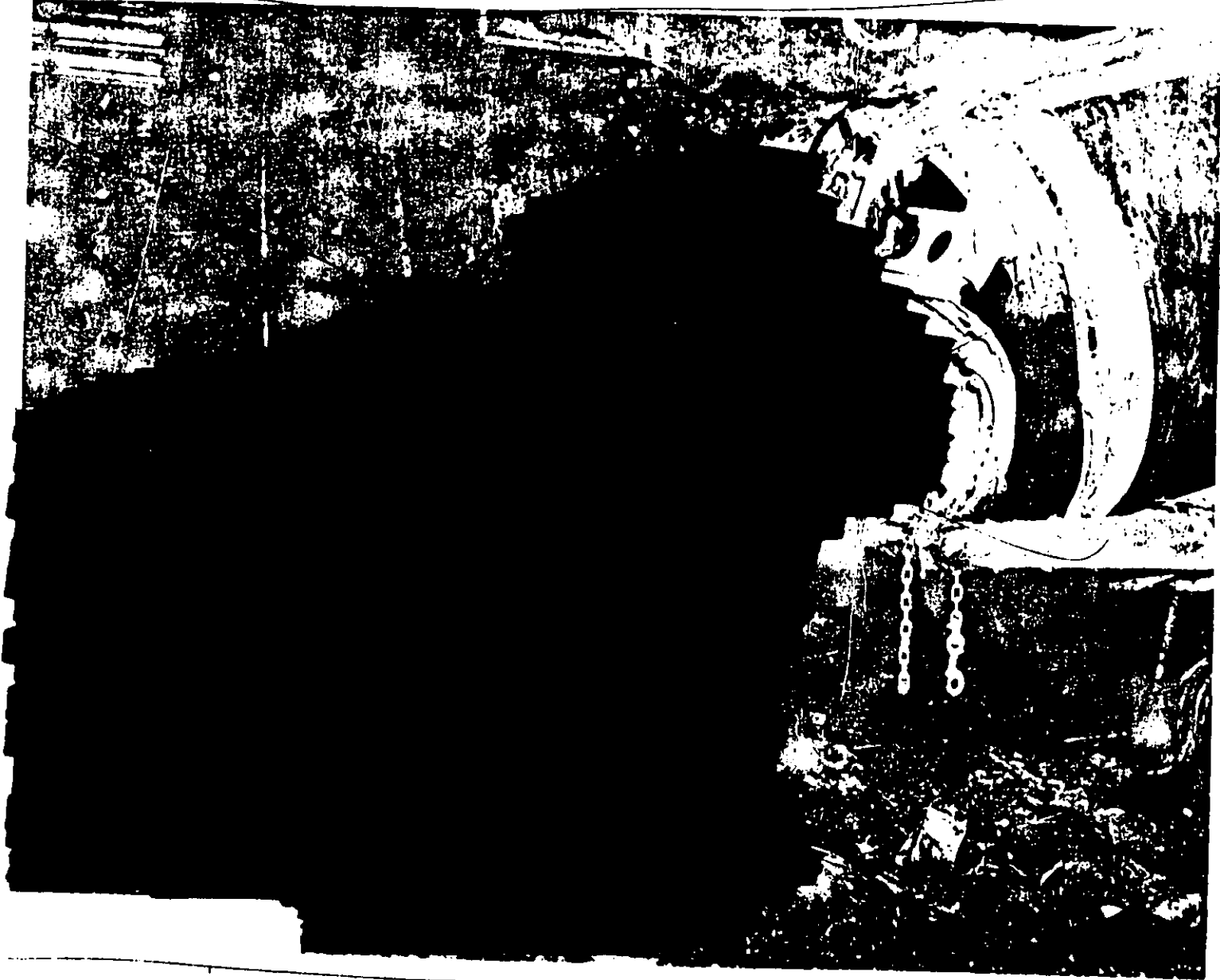


FIGURE 7. Warhead Section, Broadside from Left Side of Missile.

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

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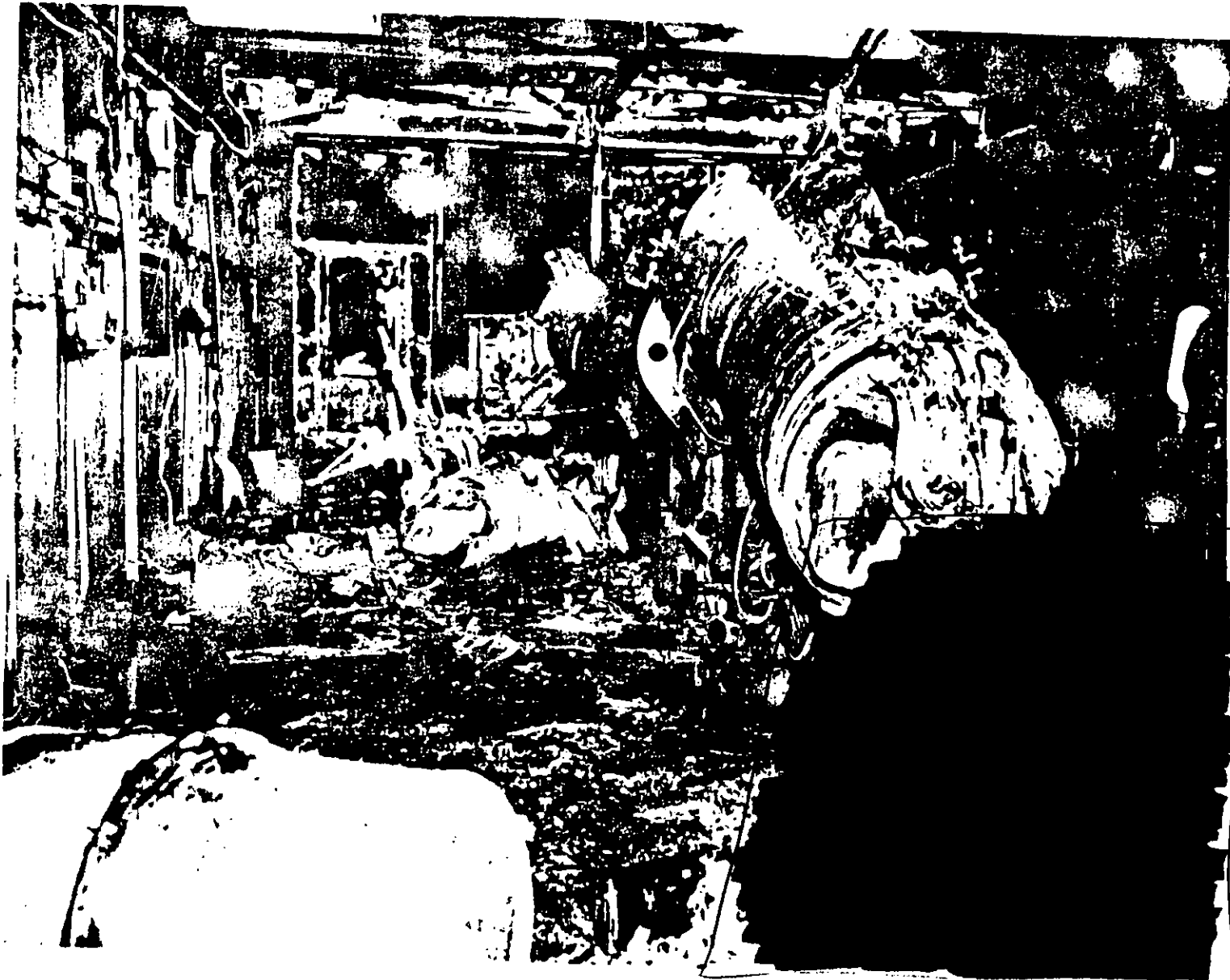


FIGURE 9. Missile Remains Looking Forward on Right Side of Missile.

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FIGURE 10. K12 (1) Damage Inside

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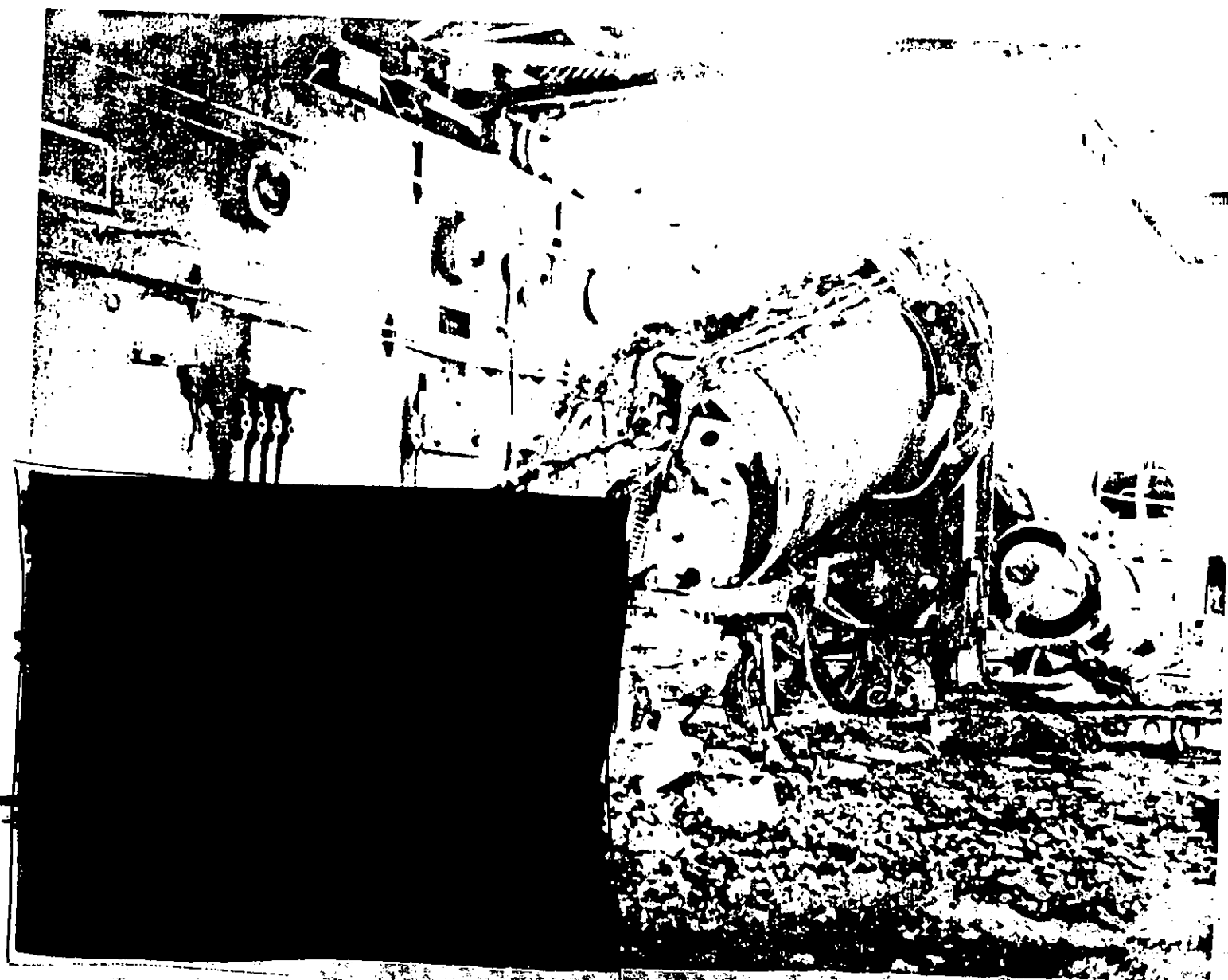


FIGURE 11. Missile Remains Looking Aft on Left Side of Missile.

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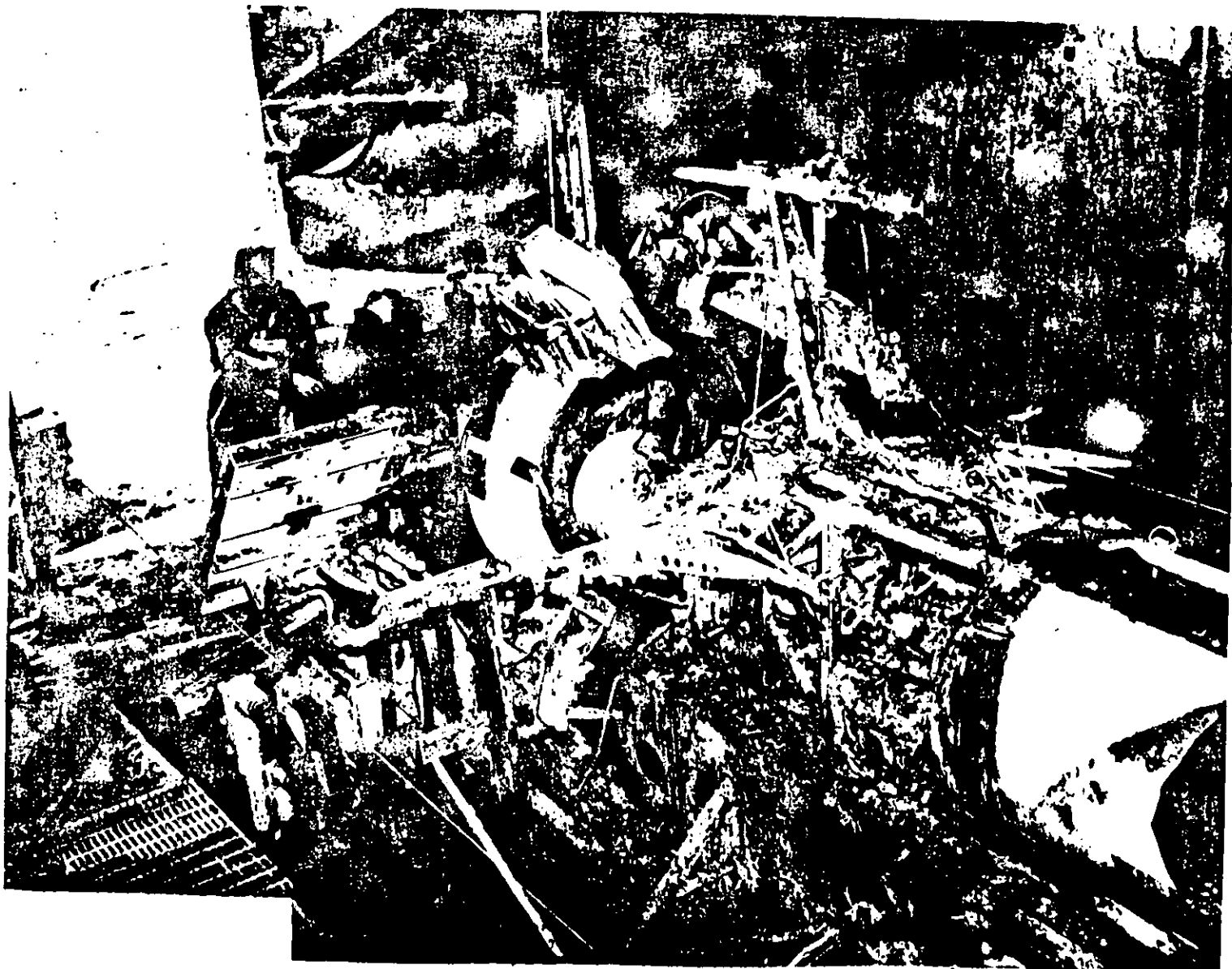
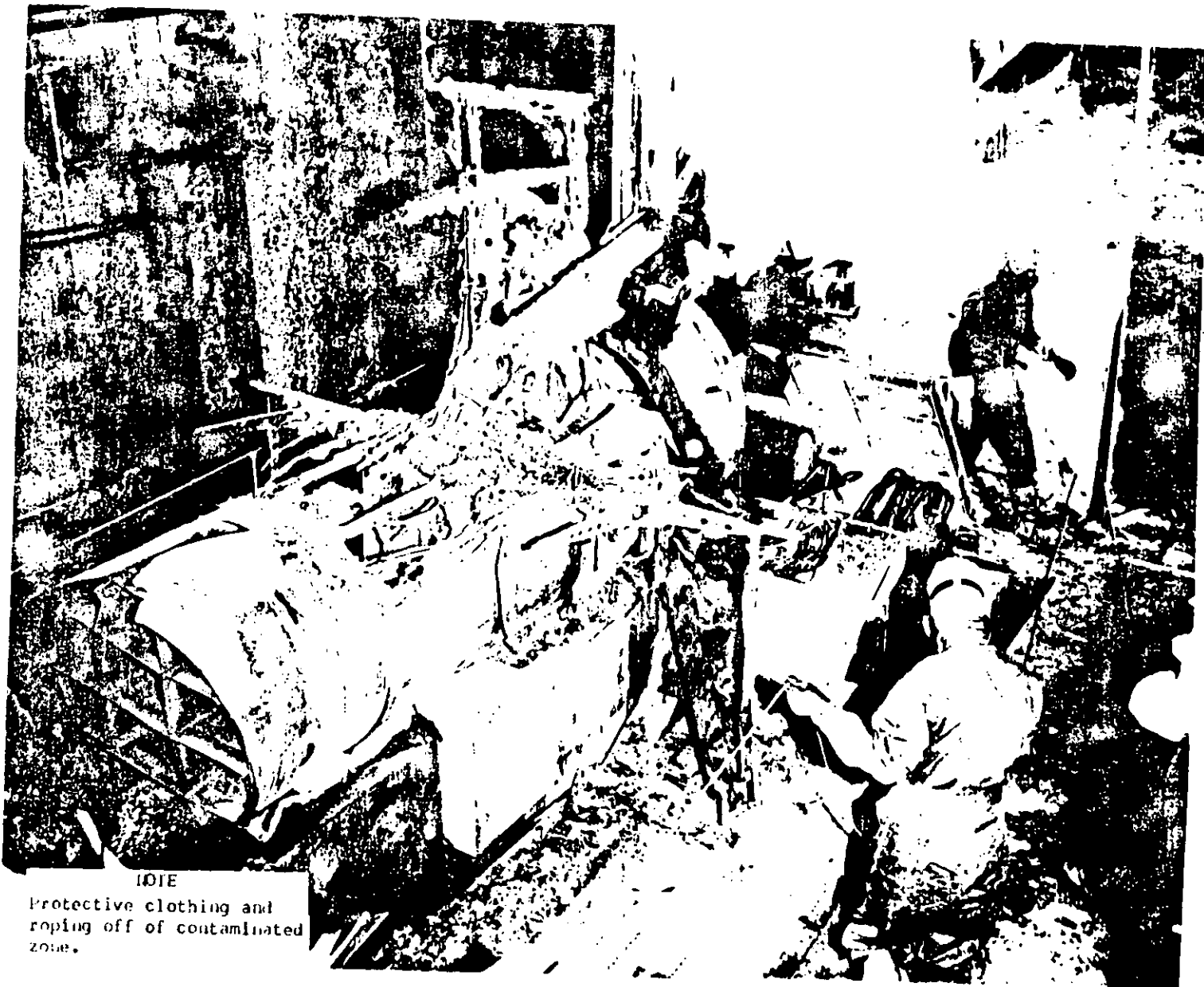


FIGURE 12. Aft Portion of Missile on Launcher.

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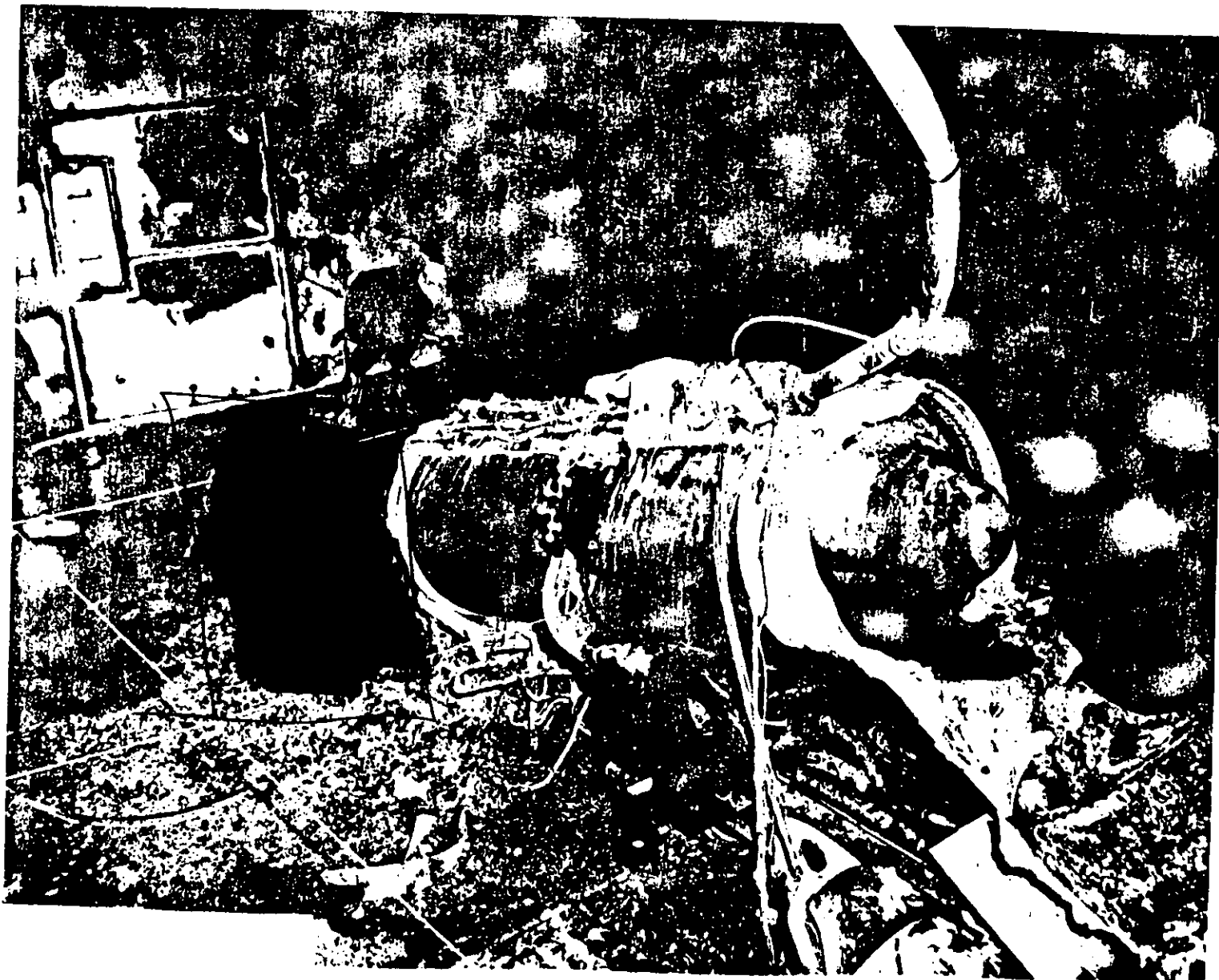


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Protective clothing and
roping off of contaminated
zone.

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

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

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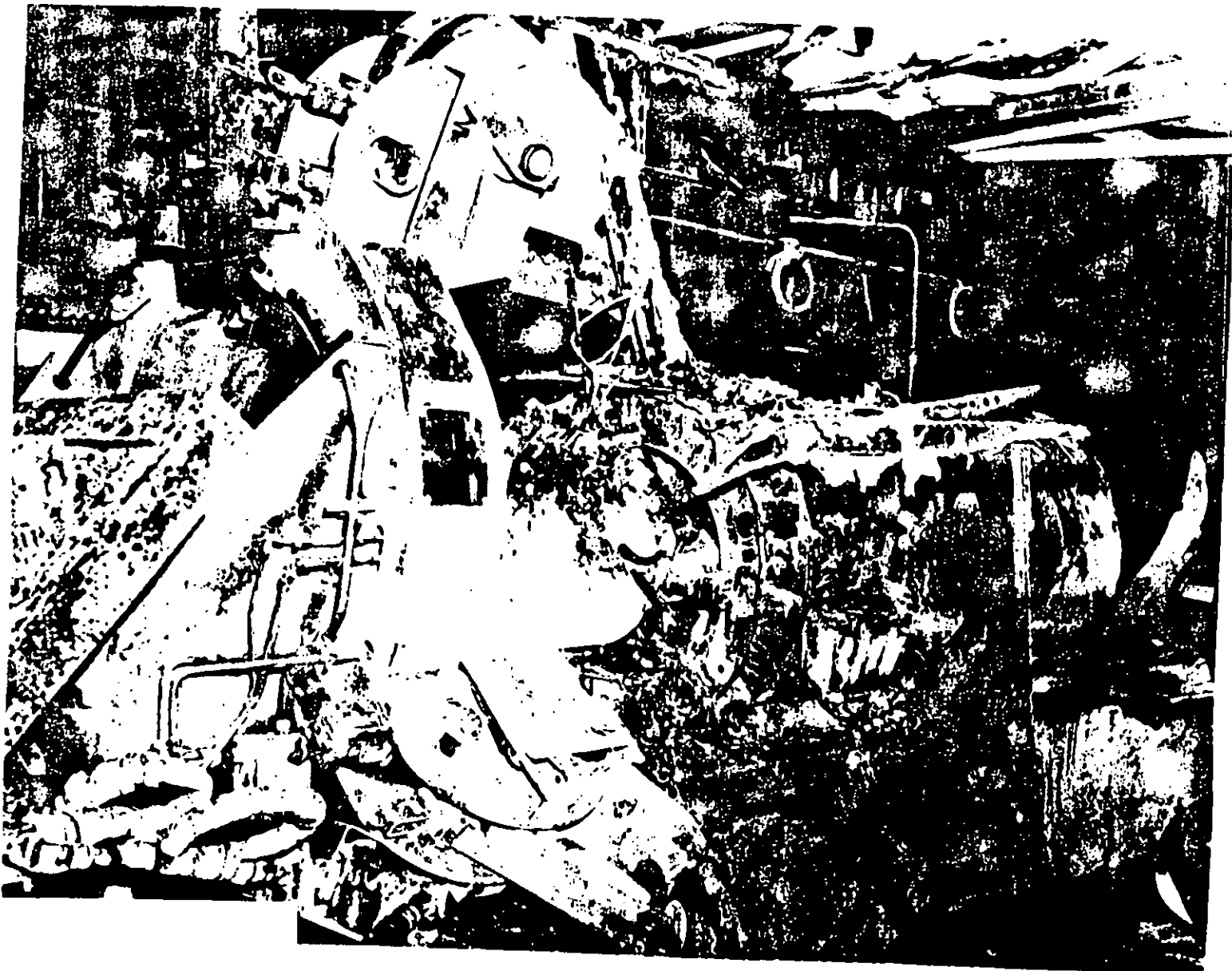


FIGURE 15. Aft Portion of Missile Showing Severe Damage to Launcher.



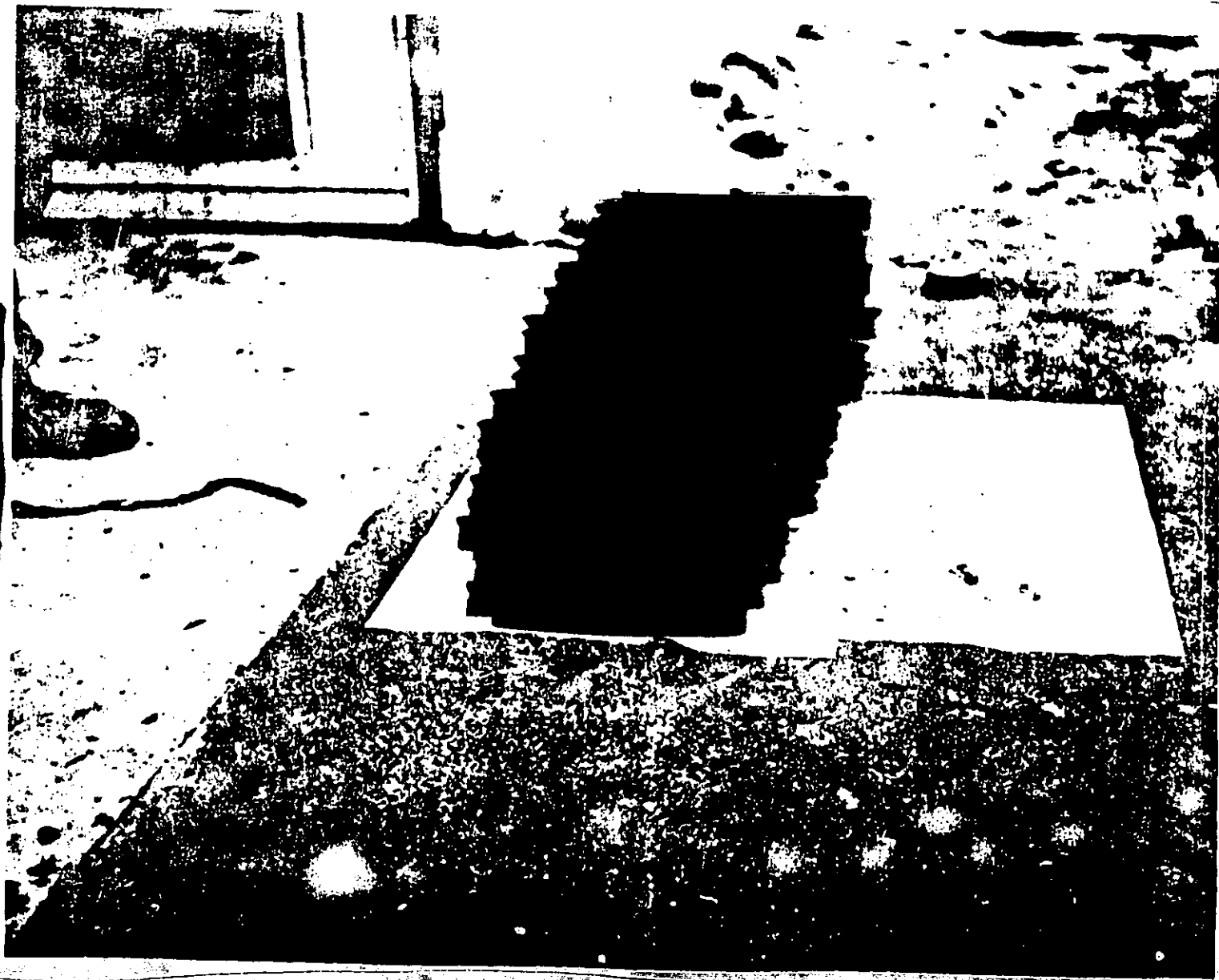
FIGURE 16. Missile Looking Aft, Showing Severe Damage to Shelter and Launcher.

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



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FIGURE 18. View of Warhead Section.

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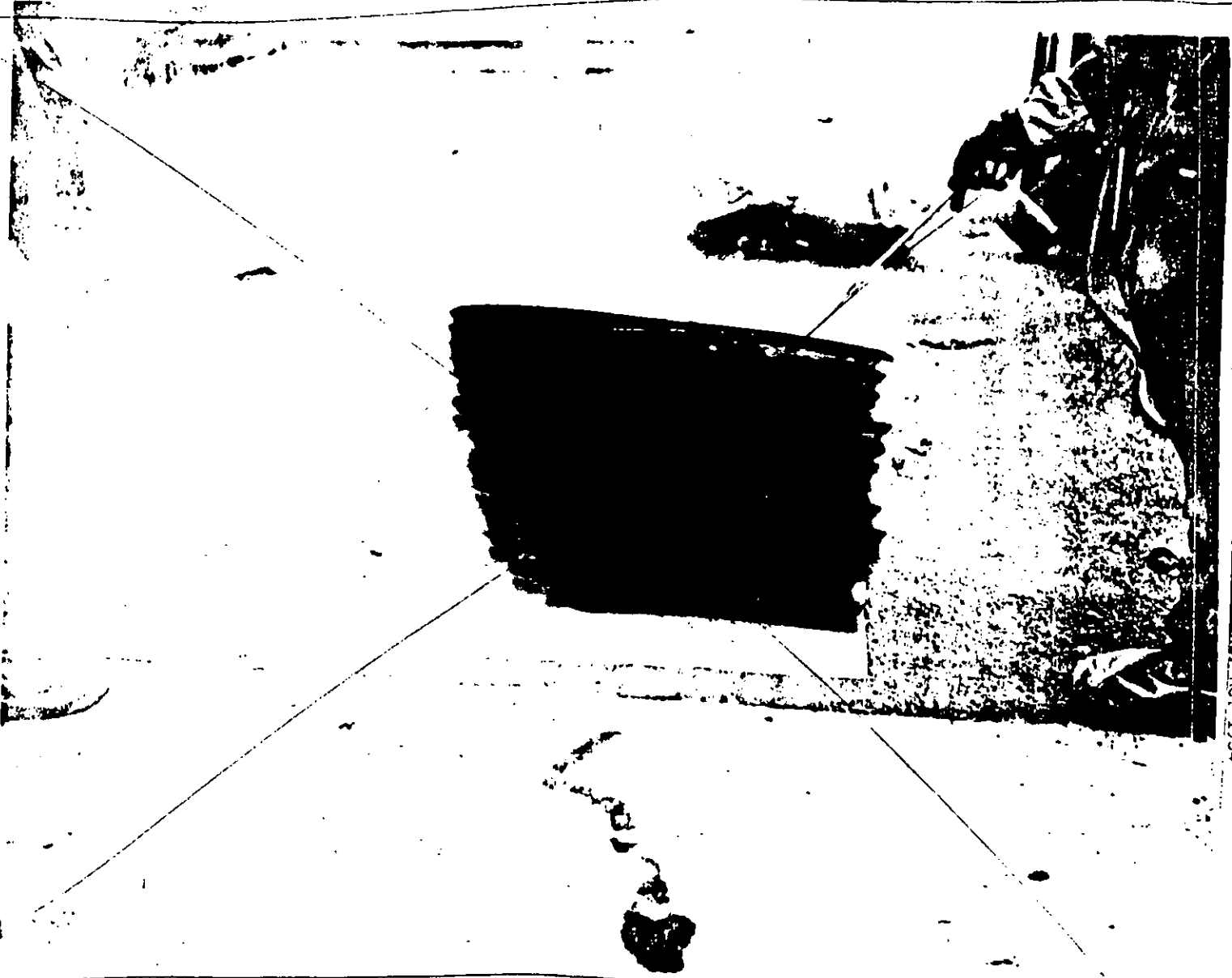


FIGURE 19. View of Warhead Section Broadside, With Exposed Bottom Section of Tritium Bottle.

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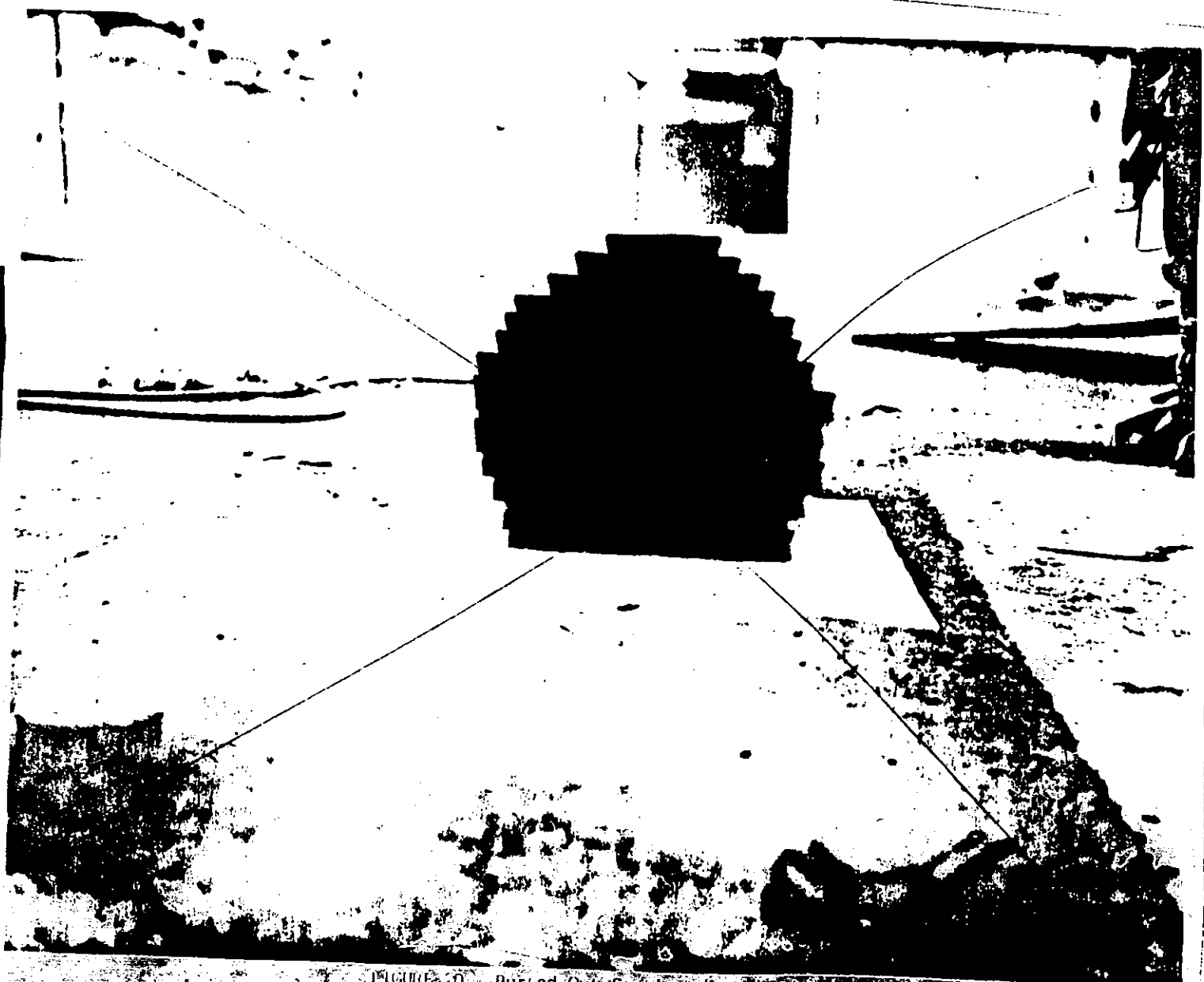
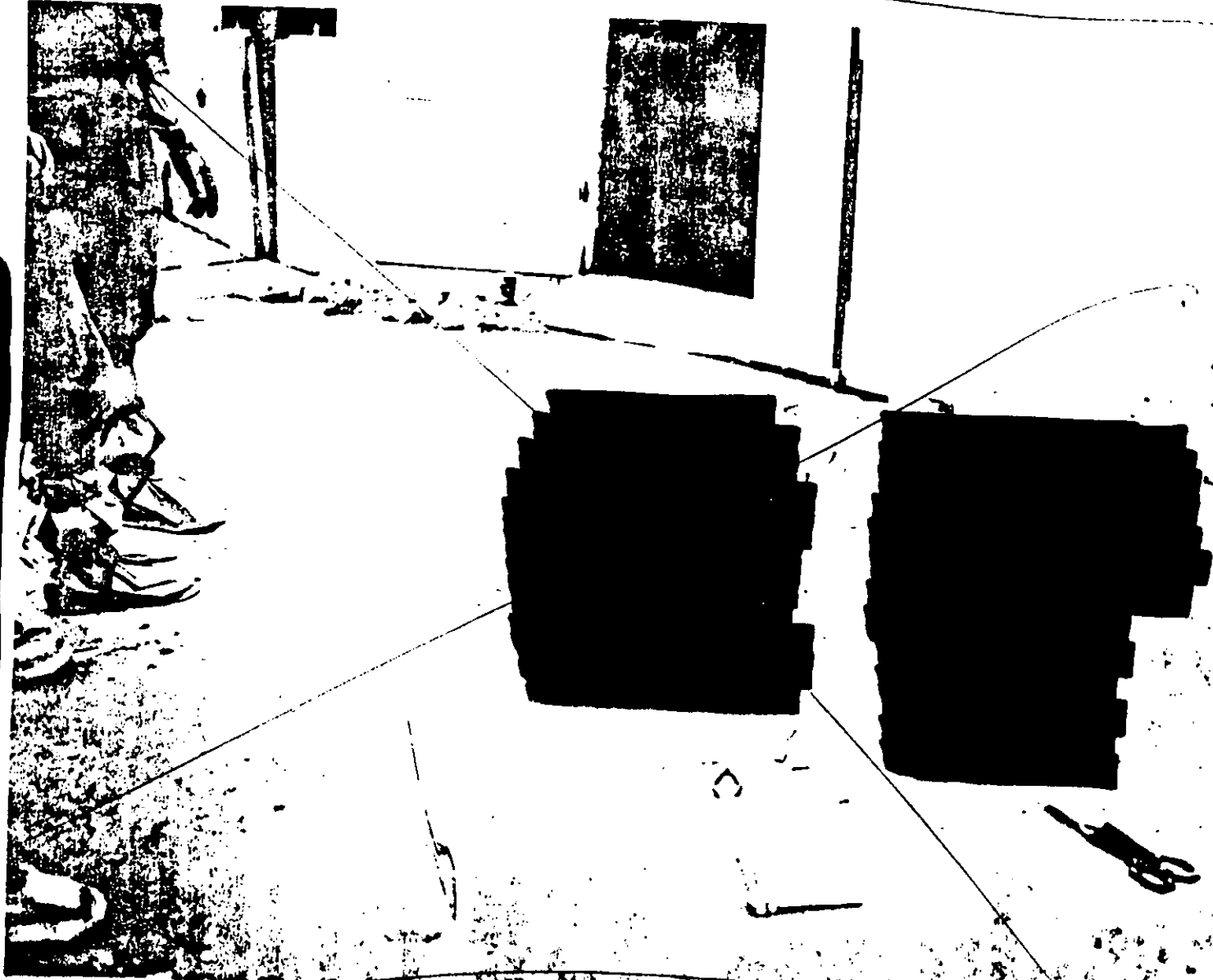


FIGURE 20. Buried Out Section of Warhead.

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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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