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| Name: RBCrane | Contains No DOE Classified |
| 2nd Review Date: 10/26/98 | Coordinate With: |
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| Name: W Layne | Comment: Declassify |

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CENTRAL TECH FILE

STRYPI-HALBERD EJECTION STUDY
(U)

Organization 7300 Environmental Test Report

T. L. Evans, Org. 7342

| CENTRAL TECHNICAL FILE | |
|---|---|
| ACCOUNTABILITY CARD | VC |
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| 802 Alpha | |

Approved by: [signature]
Project Leader - 7342

Approved by: [signature]
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Central Technical File, 3428-1

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# STRYPI-HALBERD EJECTION STUDY
(U)

## Introduction

The objects of these tests were to determine if the Halberd ejection system would function satisfactorily under acceleration resulting from normal rocket spin and to determine the effect of a slow, small angle coning action on ejection.

These tests were requested by R. E. Diesing, 9225, on May 5, 1966. The tests were completed on July 30, 1966.

## Summary

Four tests were conducted at the spin table on the 300-foot drop tower. The assembly was mounted with the Halberd nose down and spun about its polar axis. For tests 1 and 2, the ejection system only was actuated. During tests 3 and 4, the entire assembly was separated from the spin table and the ejection system actuated during free fall. The Halberd shape and the foam were impacted into sawdust in each case to prevent damage.

The Strypi-Halberd ejection system performed satisfactorily and no damage occurred as a result of these tests.

## Procedure and Results

The Strypi-Halberd test vehicle was rigged to the spin table for tests 1 and 2, as shown in Figure 1. Figure 2 shows the test setup which was used for tests 3 and 4. Each of the four tests was performed differently as follows. Test No. 1 was performed by mounting the assembly to the spin table so that the longitudinal axis of the Halberd shape was in line with the polar axis of the spin table. The test unit was then spun at 6½ rps and the ejection system was actuated. For test No. 2, a wedge was placed between the test unit and the spin table to provide a .7° offset between the longitudinal axis of the Halberd shape and the polar axis of the spin table. This offset caused a coning action of the test unit. The assembly was then spun at 4 rps and the ejection system actuated. The third test was performed by fastening the test unit to the spin table with explosive cable cutters. The longitudinal axis of the Halberd shape was in line with the spin table axis. The test assembly was spun at 6½ rps and then the explosive cable cutters were actuated. The entire assembly was allowed to free fall and then the ejection system was actuated. The cylindrical section was prevented from impacting into the Halberd part by means of nylon retaining straps which can be seen in

Figure 2. The fourth test was the same as No. 3, except that a 1° coning angle was provided and the rotation speed was 4 fps. All rigging methods and checkout procedures were performed in accordance with the procedures outlined in the Tower Operating Handbook, which is on file at the Tower Control Building (6505).

Organization 7226 provided high-speed photographic instrumentation for these tests and prints of the test films have been forwarded to the requesting organization. The original films have been filed by the Industrial Photographics Division under the T-number of the report.

Figures 3 through 6 are photos taken after the tests. The Strypi-Halberd ejection system functioned properly in all four tests and no damage occurred as a result of these tests.

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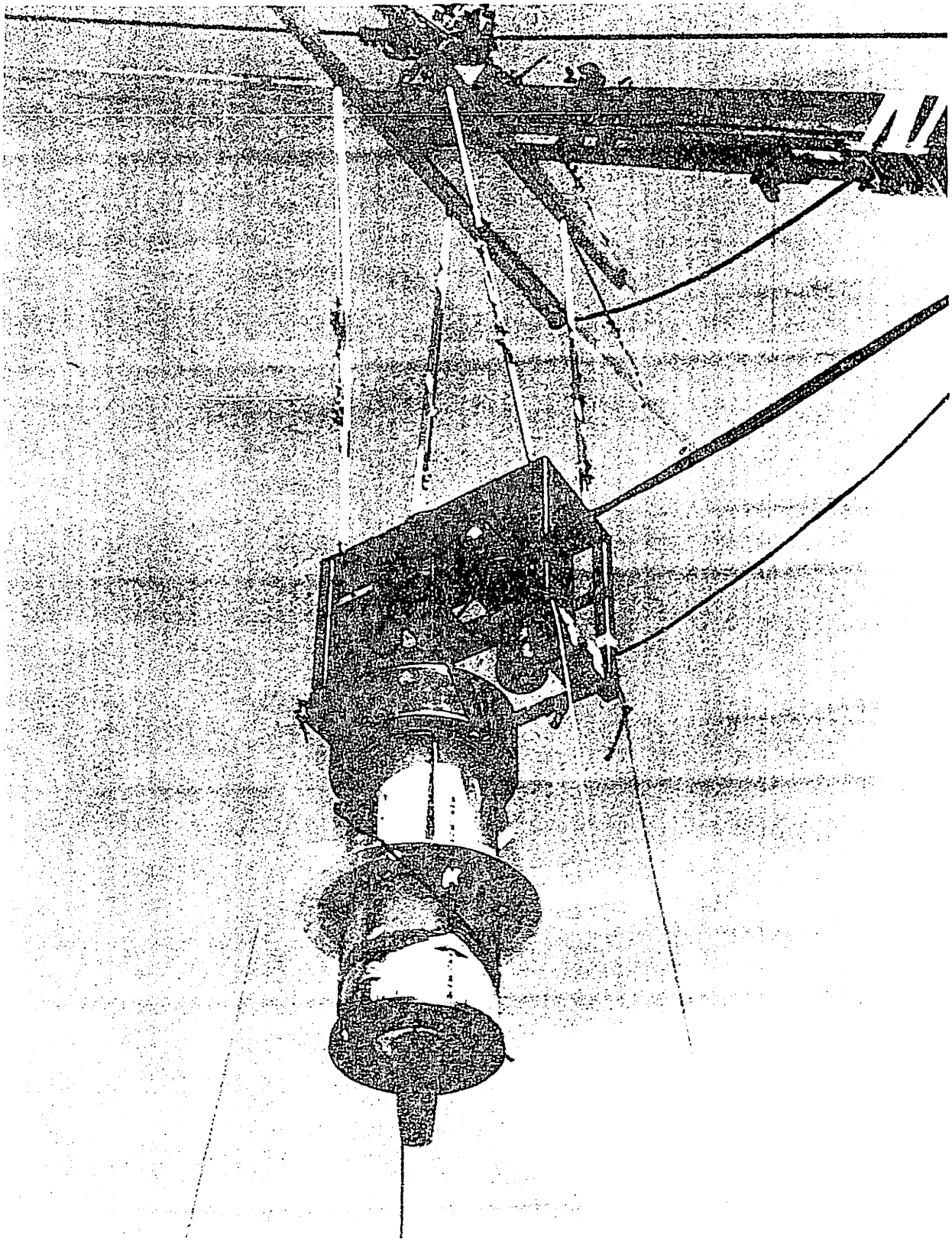

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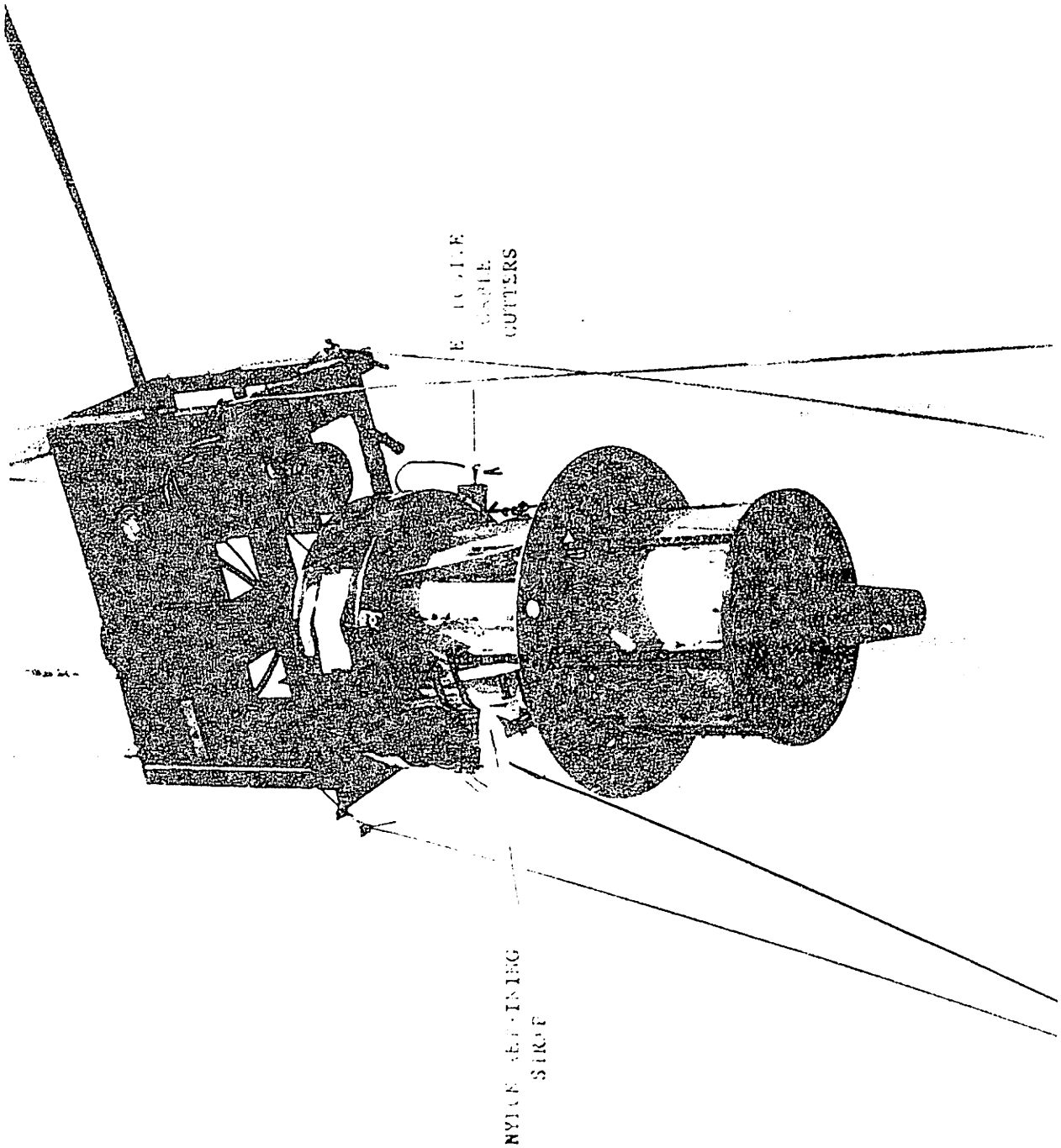


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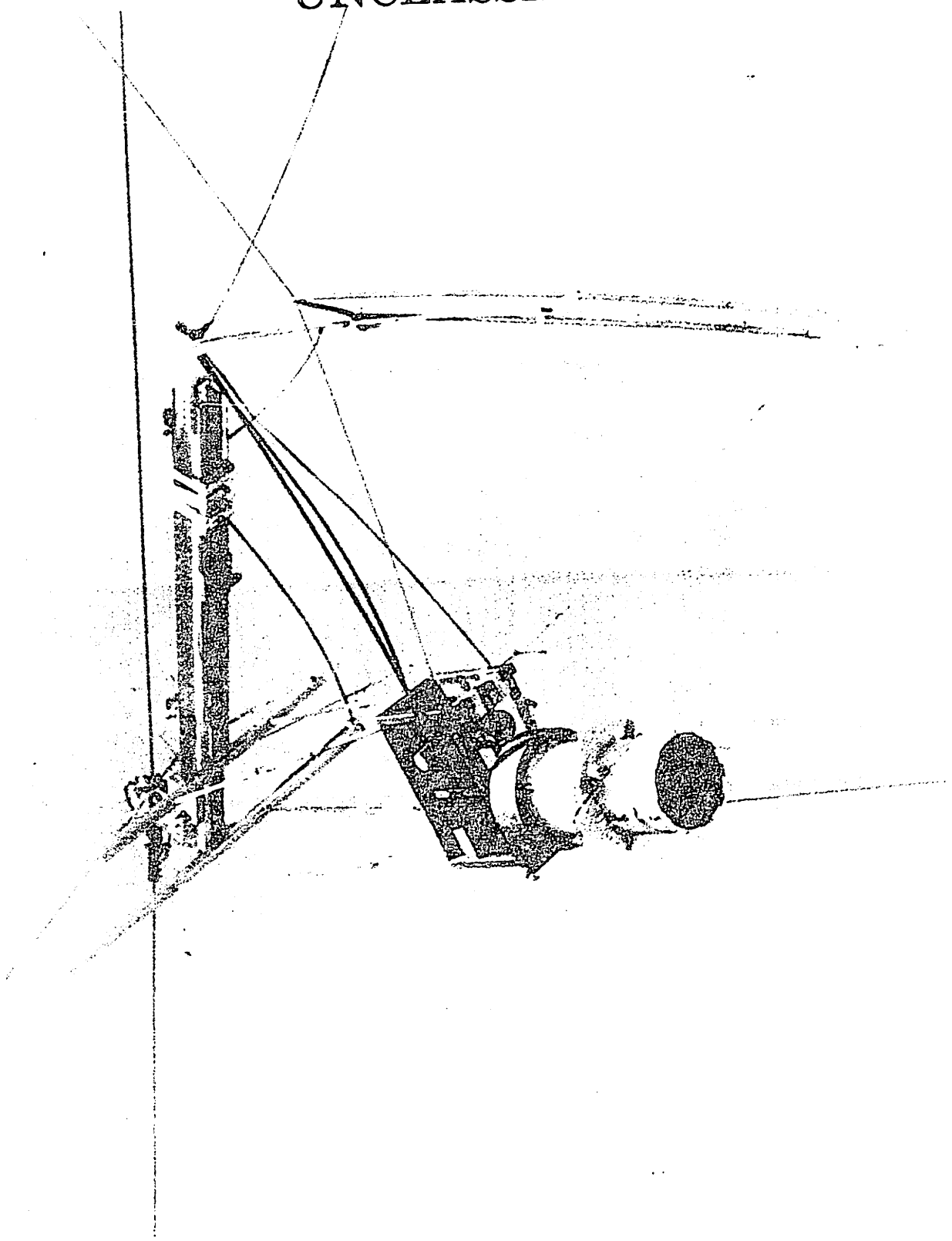

FIGURE 1. [illegible] MODEL [illegible] AFTER TEST. (SHEET 1 OF [illegible] NO. 1 [illegible])

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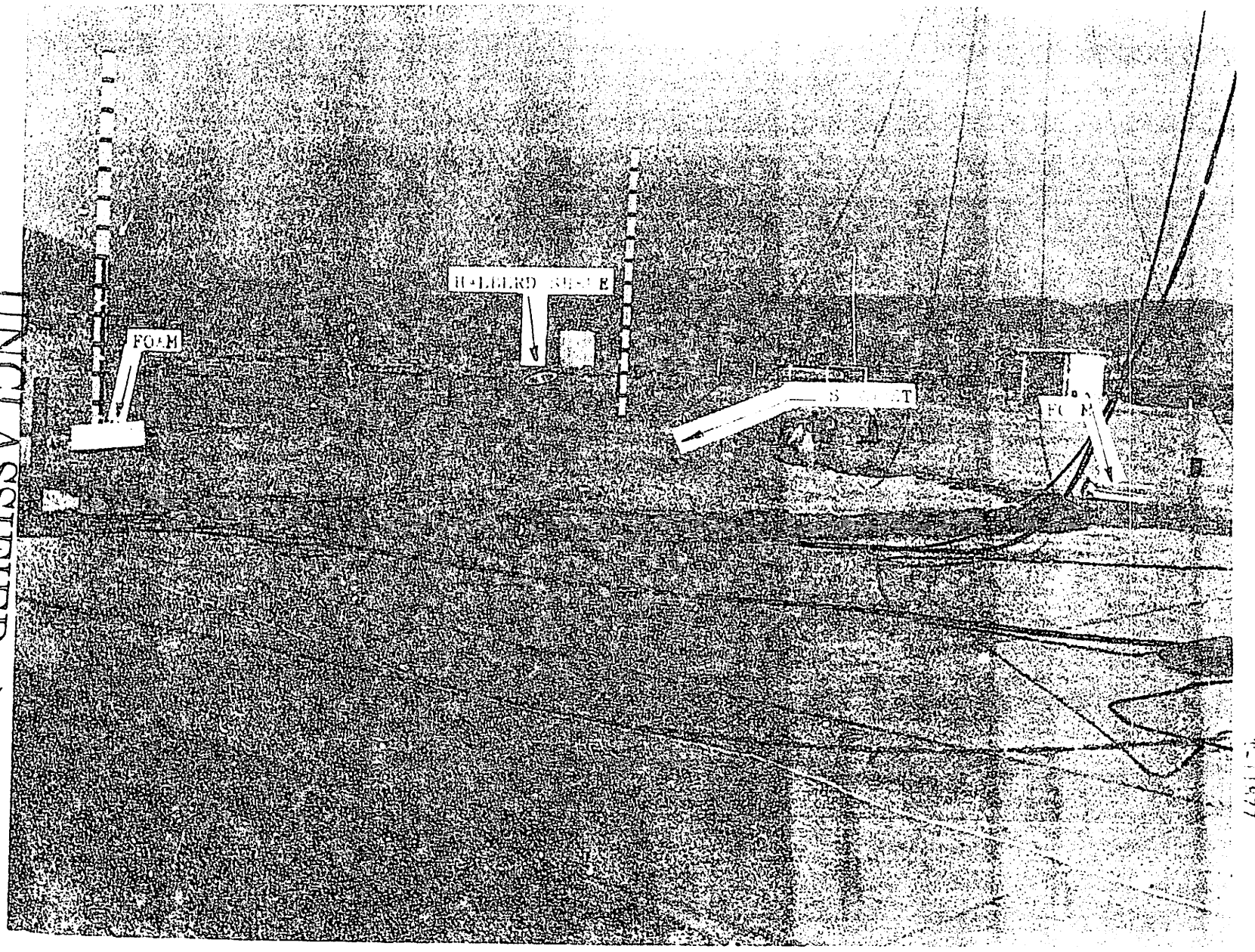


FIGURE 6. OVERALL VIEW OF [illegible] RE[illegible] FIER TEST. ([illegible] OF [illegible])

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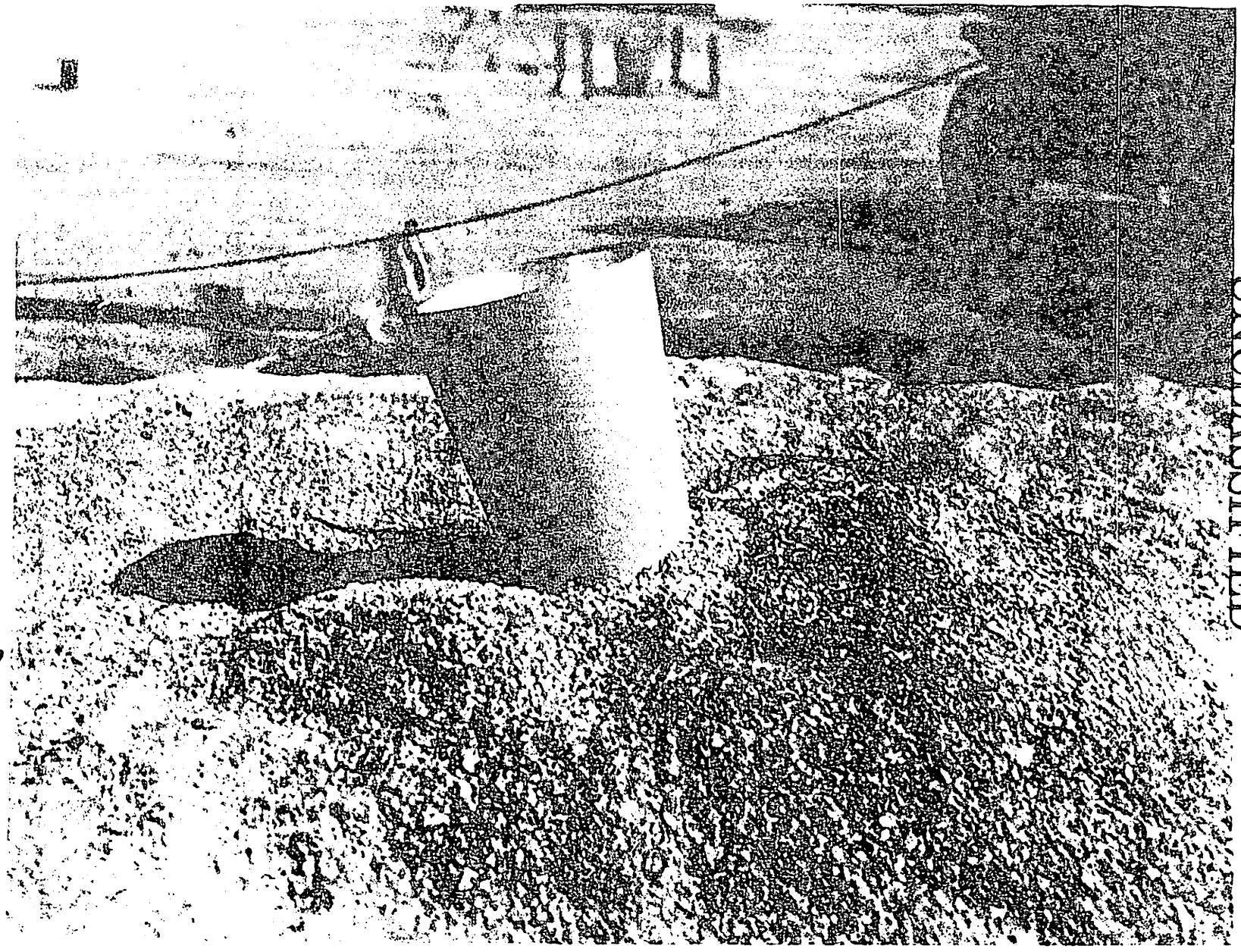

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FIGURE 5. CLOSEUP OF HALFERD SHAPE AFTER TESTS. (TYPICAL OF ALL TESTS)

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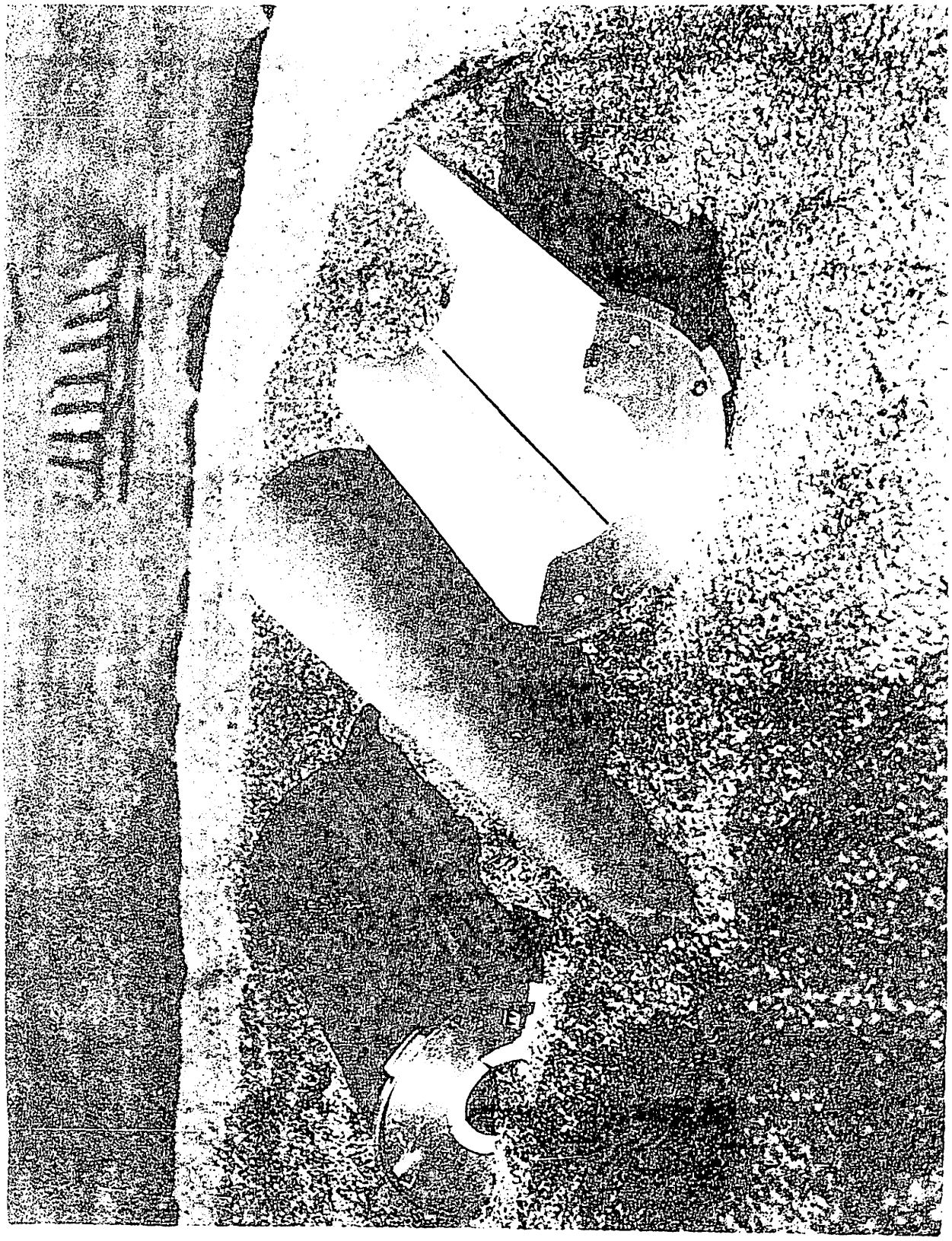

FIGURE 6. [illegible]

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