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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW

Review Date: 7/18/97
 Authority: W.C. Layne
 Name: W.C. Layne
 Review Date: 8/19/98
 Authority: W.C. Layne
 Name: W.C. Layne

Generalization (Check Number):
 Classification Changed to: U
 Contains No DOE Classified Information
 Contains UCAIT NS
 Comments:

DECLASSIFY

Mr. W. J. DENISON - 1224

MAR 27 1958
 Case No. 771.00
 Ref. Sym: 1612 (711)
 Project No. TM-760
 File: TX-28, 3-2

Attn: Mr. H. A. Mullin, Jr., 1224-2

Re: Static Test of Release Joint of Ogive Section from MC-926 Aft Case (TX-28)

Summary of Results

The five 1/8-inch pins holding the Ogive section on the MC-926 ballistic tail case section failed at a load of 3000 pounds with the simulated pilot chute load making an angle of 12 degrees with the longitudinal axis of the case.

The MC-926 ballistic tail case section was loaded in the vertical direction to a maximum simulated ejection load of 1960 pounds (130 per cent of limit load) without failure, producing a moment of about 42,000 inch-pounds at the release joint.

Object of Test

The test was performed to determine the load required to shear the five 1/8-inch shear pins on the Ogive section of MC-926 ballistic tail case section. This result would show if the forces from the pilot chute will be sufficient to shear the pins when the weapon is dropped and thereby deploy the main chute.

Another object of the test was to determine if the release joint has sufficient strength to withstand the ejection forces occurring during the ejection of the bomb.

Reason for Test

The test was performed as a result of the Work Order Authorization, dated January 7, 1958 from Division 1224 to Division 1612.

Function of Object Tested

The MC-926 ballistic tail case section contains the main chute for the TX-28.

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DOWNGRADING OR DECLASSIFICATION STAMP

CLASSIFICATION CHANGED TO: U AUTHORITY: W.C. Layne
Emelda Sehon 8/25/98
 PERSON CHANGING MARKING & DATE: W.C. Layne 8/25/98 RECORD ID: 98SN3760
 PERSON VERIFYING MARKING & DATE: DATED: 8/19/98

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Summary of Past Tests

No previous static tests have been performed to determine the strength of this joint.

Setup for Test

The setup for the test simulating the pilot chute loads is shown in Figs. 1 and 2. The setup for the test simulating ejection loads on the joint is shown on Fig. 3.

The component tested was the MC-926 ballistic tail case section (Dwg. No. 310645). The tail part of the MC-926 is known as the Ogive section. The five pins that were tested, holding the two sections together, were 1/8-inch aluminum (61S-T6).

The following equipment was used:

- 2 - Calibrated links, No. D and No. H
- 2 - Baldwin strain indicators, Serial Nos. 391905 and J-92498
- 1 - Simplex ram and pump, 30-ton capacity

Procedure

The MC-926 ballistic tail case section was mounted in the static jig with a pull rod attached to the tail as shown in Figs. 1 and 2. The direction of the load made an angle of 12 degrees with the longitudinal axis of the case. The load was applied gradually to the tail structure until the five 1/8-inch pins sheared.

The same mounting was used for the ejection test as shown in Fig. 3 but the load was applied vertically at the tail of case and only four 1/8-inch pins were used instead of five. The load was applied in increments until the load reached 1960 pounds which was 130 per cent of the limit ejection load on the joint.

Results

The five 1/8-inch aluminum (61S-T6) pins sheared at a load of 3000 pounds when the load was applied at a 12-degree angle with the longitudinal axis of the case.

The case withstood a load of 1960 pounds (130 per cent of limit ejection load on joint) applied vertically at the nose of the structure. No failure occurred. However, a rather large crack appeared at the separation joint of the case and additional loading was omitted.

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Conclusions

The pilot chute will shear the five 1/8-inch pins and deploy the main chute if the pilot chute will exert a force of 3000 pounds or greater. It is understood that the pilot chute will exert this required force.

The case can withstand a vertical load of 1960 pounds at the end of the case tested. However, from visual observation of the deflection and of the crack at joint in the MC-926, it is concluded that 1960 pounds was near the maximum load that could be applied without producing a failure and complete separation at the joint.

H. P. Wheeler
H. P. WHEELER - 1612-2

Approved by: Paul H. Adams
PAUL H. ADAMS - 1612

HPW:1612-2:as

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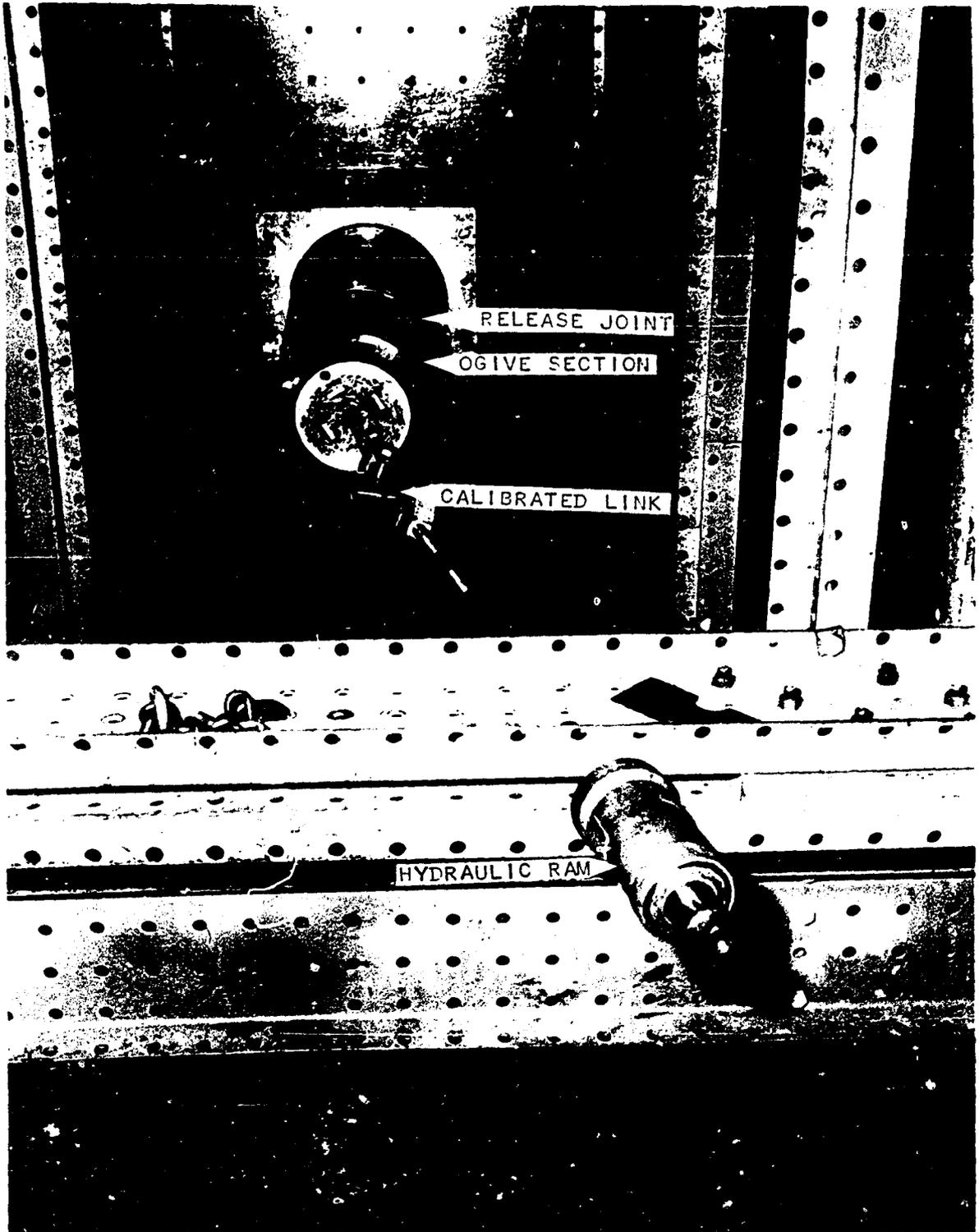
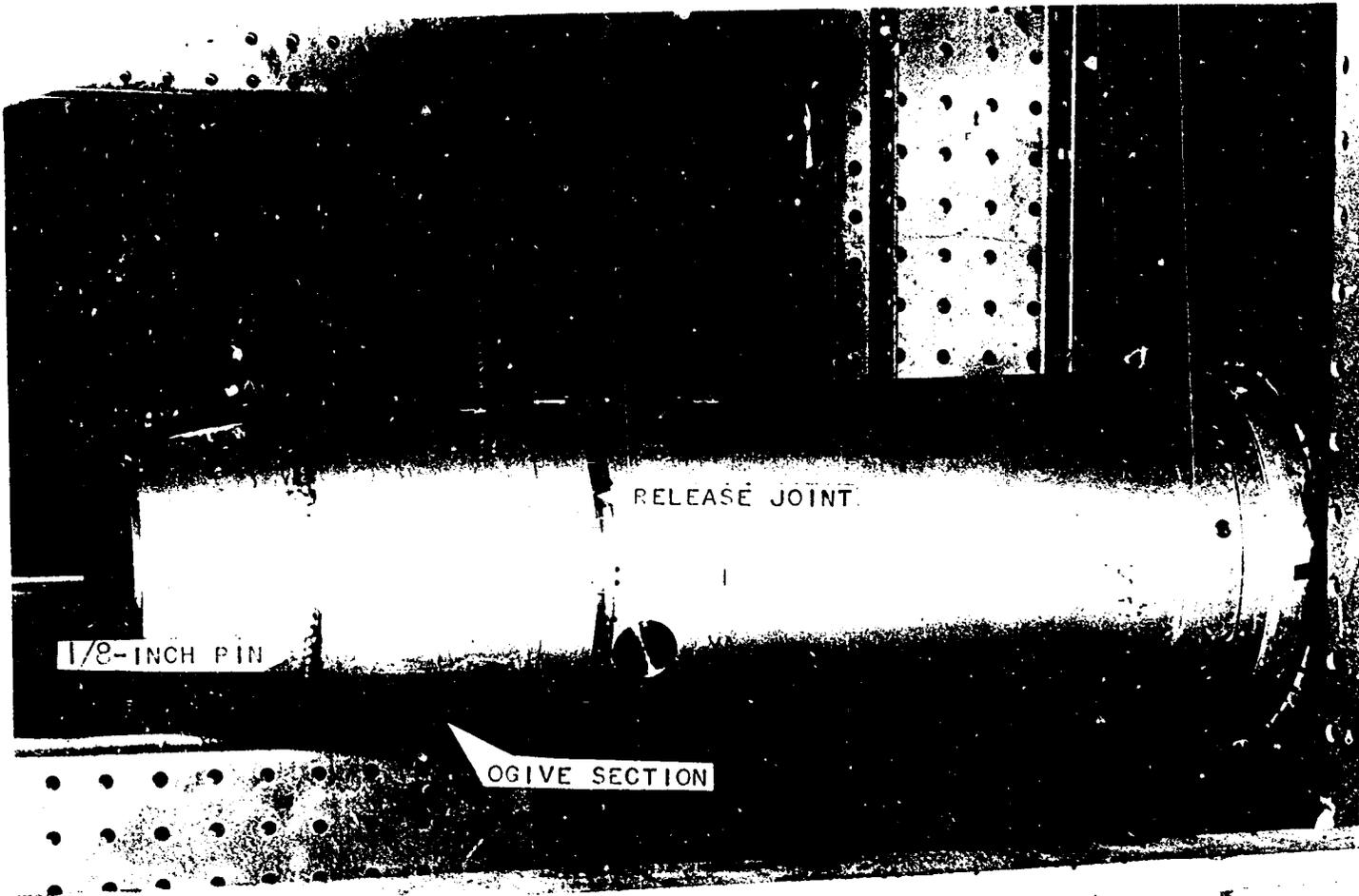


FIG. 1 -- TEST SETUP FOR PILOT CHUTE LOADS -- STATIC TEST OF
 RELEASE JOINT OF OGIVE SECTION FROM MC-926 AFT CASE
 (TX-28).

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FIG. 2 -- TEST SETUP FOR PRACTICE TEST OF THE LOCKS -- ST. JID TEST OF
RELEASE JOINT OF THE SETTING TEST -- FOR SET
A# 102707

#926

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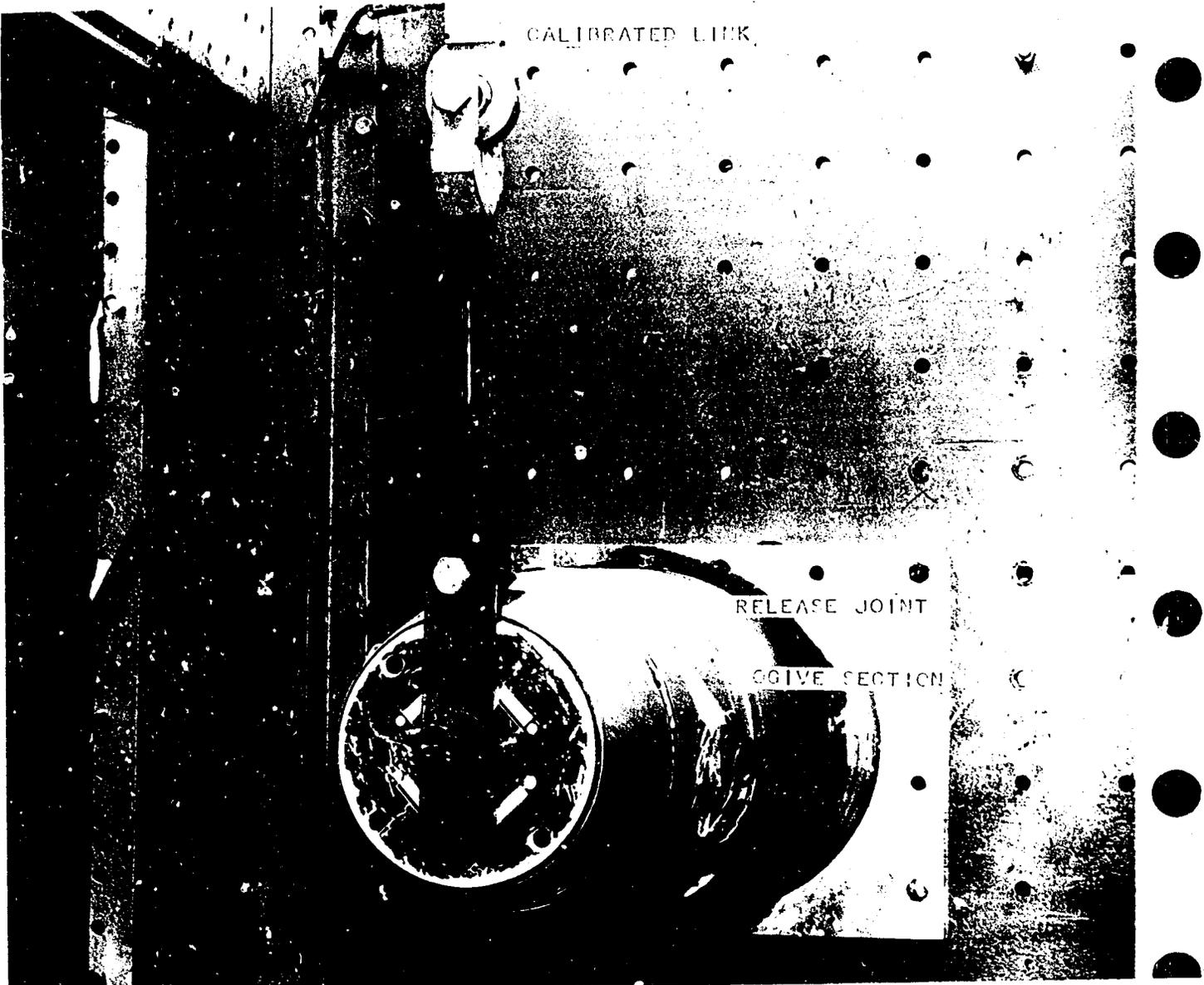


FIG. 1 -- TEST SETUP FOR EXCITING TORSION JOINT -- STAINLESS STEEL
 RELEASE JOINT FOR THE TORSION JOINT TEST SET

D# 102779

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