

UNCLASSIFIED

JAN 10 1977

Case No. 690.00
Ref. Sym: 1612 (278)
Project No. TM-348
TX-28, 3-2

MR. S. A. MOORE - 1224

Attn: Mr. L. M. Spivey - 1224-2

Re: Static Test of TX-28 king Coupling

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
Review Date: 8/11/98	Authority: W.C. Layne
Review Date: 8/19/98	Authority: W.C. Layne
General Notes (Circle Numbers) <input checked="" type="checkbox"/> Classification Changed to U <input checked="" type="checkbox"/> Contains No DOE Classified Information <input checked="" type="checkbox"/> Contains WFOE <input checked="" type="checkbox"/> Contains UCAP <input checked="" type="checkbox"/> Contains	
DECLASSIFY	

Summary of Results

In the static test of the TX-28 ring coupling, a concentrated load was applied 32 inches from the aft end of the ring coupling producing a moment of 457,000 inch pounds (153% Design Limit Moment Load) and 14,300 pounds shear (245% Design Limit Shear Load). This loading did not cause failure nor apparent yielding.

Object of Test

The object of this test was to determine the structural adequacy of a TX-28 Threaded Ring Coupling by statically applying a moment and shear load to the ring coupling.

Reason for Test

This test was conducted by Division 1612 in accordance with a Work Order Authorization from E. K. Gardner, 1326-2, to P. H. Adams, 1612, dated October 5, 1955.

Function of Object Tested

The threaded ring coupling provides a quick disconnect for various applications of the XM-28.

Setup for Test

Figure 1 shows the general test setup for the TX-28 Threaded ring coupling and test vehicle. Figure 2 shows the method of attachment between the test vehicle and mounting plate.

Test Item

TX-28 Threaded ring coupling fabricated on a test vehicle, DS(1326)52244.

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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: U	AUTHORITY: W.C. Layne
PERSON CHANGING MARKING & DATE: Emelada Selph 8/19/98	RECORD ID: 98SN03754
PERSON VERIFYING MARKING & DATE: W.C. Layne 8/25/98	DATED: 8/19/98

GDL No.	
ACC'T. MARK CARD	agd
FILE No.	TX-28
	3-2

auth. 3423-2 NA (200) 5/14/60



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- 1 - Simplex hydraulic jack, capacity 50 tons.
- 1 - Blackhawk hydraulic jack, capacity 7-1/2 tons.
- 1 - Baldwin 50,000 pound load cell, Serial No. 1113, sensitivity 0.081 microinches/inch/pound.
- 1 - Baldwin 10,000 pound load cell, Serial No. 6064, sensitivity 2.55 microinches/inch/pound.
- 2 - Baldwin SR-4, Type L Strain indicators, Serial Nos. 199392, S-53402.

Summary of Past Test

No previous static tests have been performed on the TX-28 ring coupling.

Procedure

For the static test of the TX-28 ring coupling a test vehicle was designed so that a moment and shear load could be applied to the coupling. In addition, an aluminum mounting plate was matched drilled and attached with 30 AN6 bolts to the aft end of the test vehicle (see Fig. 2). The aft end and forward end of the test vehicle are attached by the threaded ring coupling. To develop the loading condition requested, two lateral loads in opposite directions were applied 32 inches and 10 inches from the aft end of the ring coupling. (See Fig. 1 for test setup).

The load was applied in 10% increments to 100% Design Limit Load and then increased to 115% Design Limit Load (345,000 inch-pounds moment, 6680 pounds shear). At the consultant's request, the load, 10 inches from the aft end of the ring coupling, was removed and a load of 14,300 pounds was then applied 32 inches from the aft end of the ring coupling.

All loads were applied through calibrated load cells using hand-operated hydraulic jacks and pumps.

Results

In the static test of the TX-28 ring coupling a moment of 457,000 inch-pounds (153% Design Limit Moment Load) and 14,300 pounds shear (245% Design Limit Shear Load) did not cause failure nor apparent yielding. The load was applied 32 inches from the aft end of the ring coupling.

It is of interest to note that part of the test vehicle yielded between 115% and 130% of Design Limit Load. Figure 3 shows the locations of yield.

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Approved by: *P. H. Adams*
P. H. ADAMS - 1612

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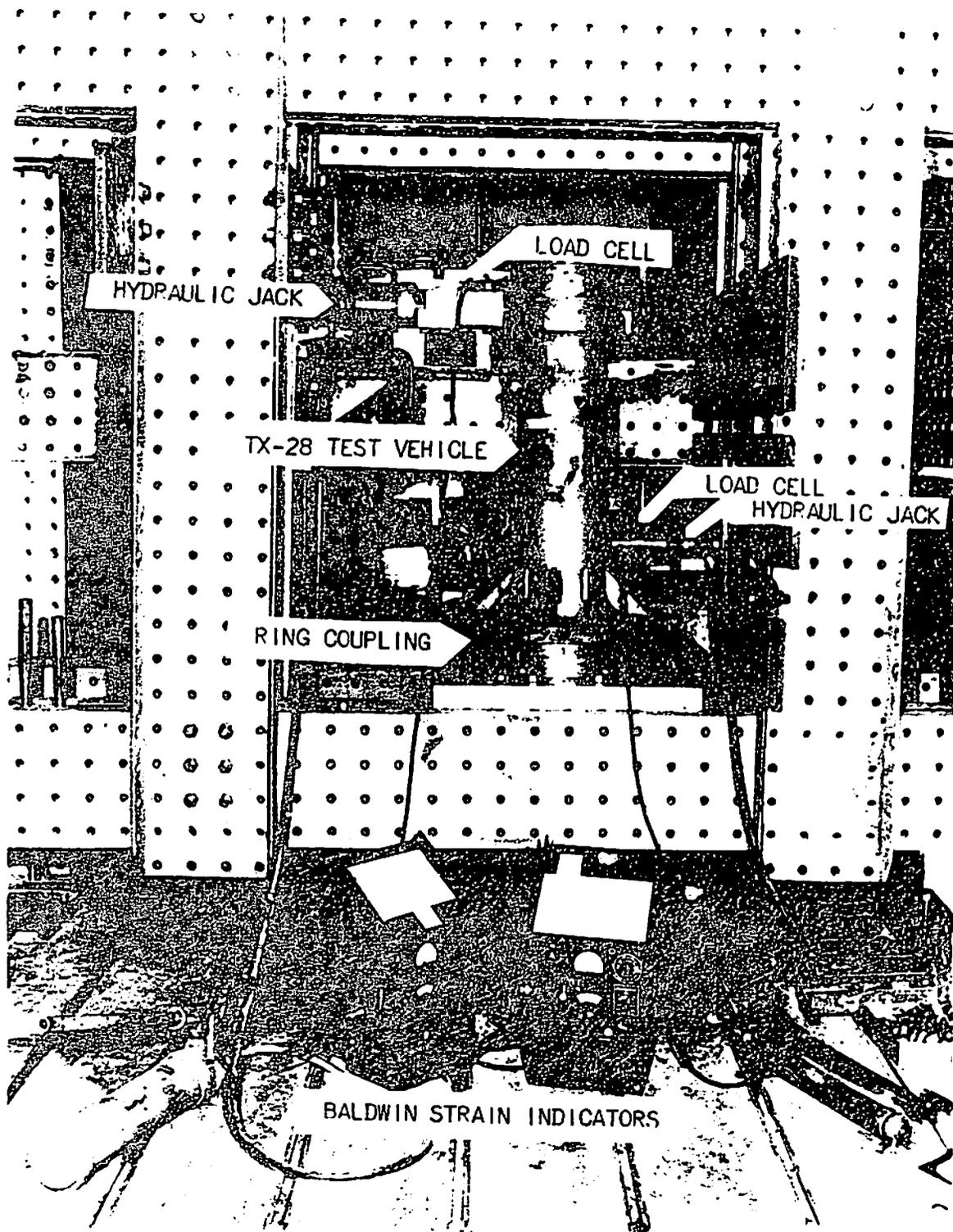
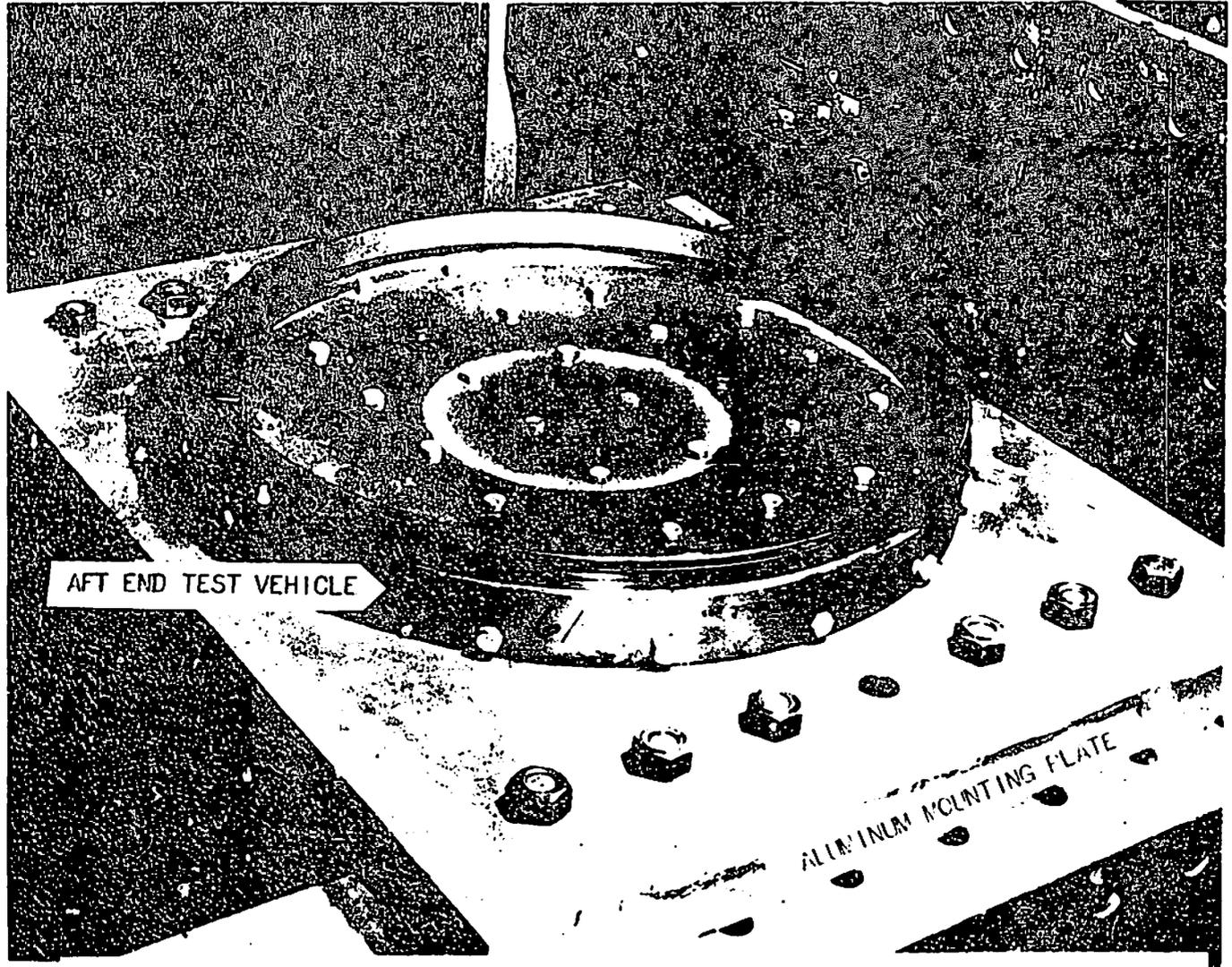


FIG. 1--GENERAL TEST SETUP FOR STATIC TEST OF TX-28 RING COUPLING

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FIG. 2--ATTACHMENT OF AFT END OF TEST VEHICLE IN THE STATIC TEST OF THE TX-2 RING COUPLING

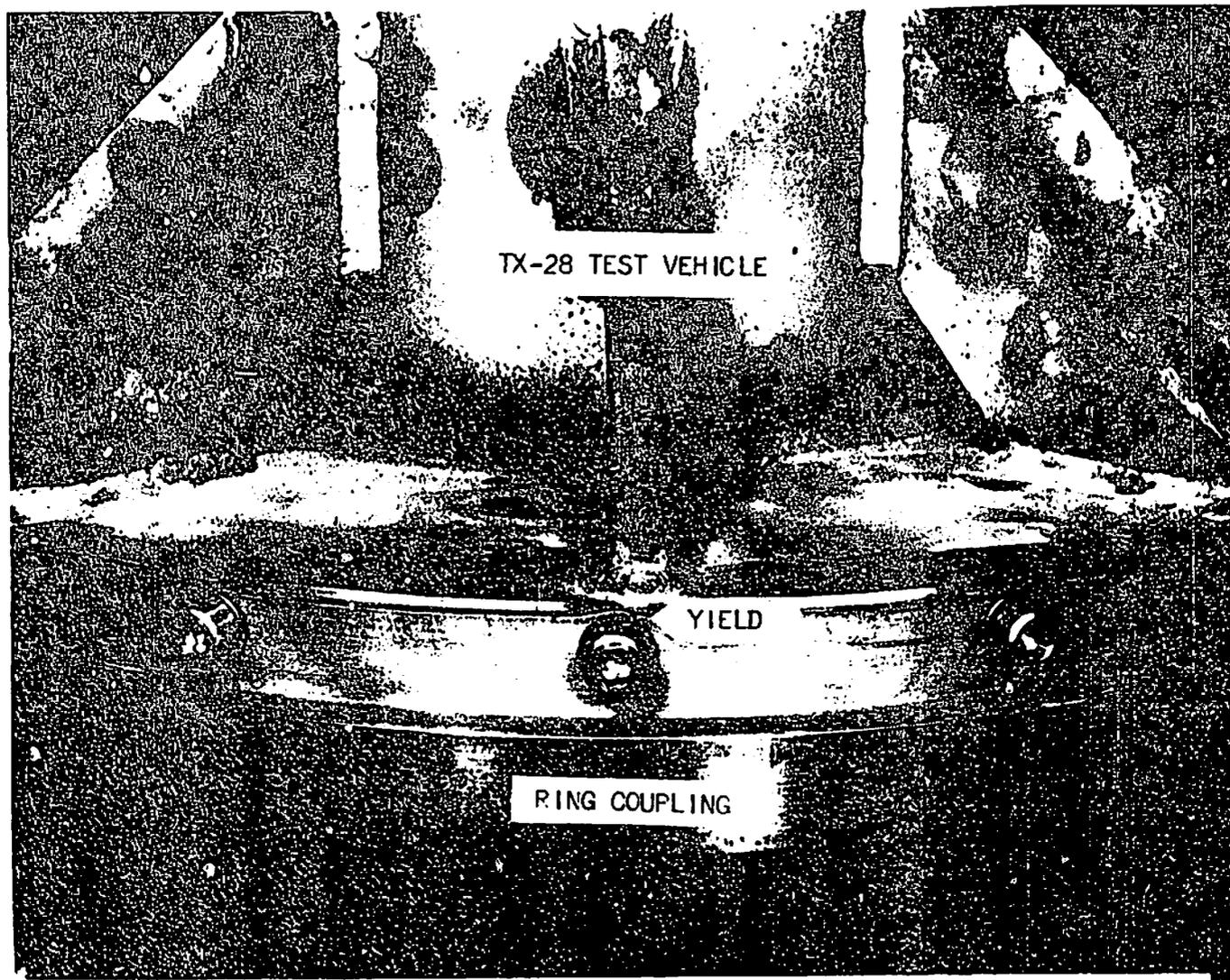
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FIG. 3--YIELDING OF TEST VEHICLE IN THE STATIC TEST OF THE TX-28 RING COUPLING

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