

UNCLASSIFIED

1464

SANDIA SYSTEMATIC CLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: <u>U</u> <i>Emilda Selan 7/29/98</i>	AUTHORITY: <u>R. B. Crane</u>
PERSON CHANGING MARKING & DATE <i>W.C. Lane 7/23/98</i>	RECORD ID: <u>98503101</u>
PERSON VERIFYING MARKING & DATE	DATED: <u>7/23/98</u>

APR 26 1956  
 Case No. 629.00  
 Ref. Sym: 1612 (332)  
 Project No. TM-398  
 File: XW-7, 3-2



MR. L. GUTIERREZ - 1225  
 Attn: N. Botsford - 1225-1  
 Re: Static Test of XW-7 Centrifuge Jig

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
1 <sup>st</sup> Review Date: <u>7/22/98</u>	Determination (Circle Numbers):
Authority: <input type="checkbox"/> ADC <input checked="" type="checkbox"/> ADC <u>W.C. Lane</u>	Classification Retained
Name:	Classification Changed to: <u>U</u>
2 <sup>nd</sup> Review Date: <u>7/23/98</u>	Contains No DOE Classified Information
Authority: <u>R.B. Crane</u>	Coordinate With:
Name:	Contains UCAI? <u>OK</u>
	Comments: <u>OK for document</u>

Summary of Results

To determine the structural integrity of the XW-7 centrifuge jig three static loads, a longitudinal load of 53,200 pounds and two longitudinal loads of 5,250 pounds each, were simultaneously applied to the centrifuge jig. These loads simulated a centrifuge load of 35 g at 1,820 pounds per g.

Under these loading conditions apparent yielding or failure did not occur.

Object of Test

The object of this test is to determine if the XW-7 centrifuge jig is structurally adequate to withstand a 35 g loading by statically applying a longitudinal load of 63,700 pounds (35 g x 1,820 pounds per g).

Reason for Test

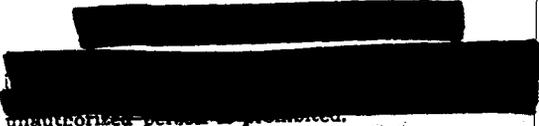
This test was conducted by Division 1612 in accordance with a Work Order Authorization from L. Gutierrez, 1225, to P. H. Adams, 1612, dated March 7, 1956.

Function of Object Tested

The XW-7 centrifuge jig is an adapter used to mount the XW-7 weapon in the centrifuge.

Summary of Past Tests

No previous static tests have been performed on this redesigned centrifuge jig; however, a portion of the jig has been used in a previous centrifuge test. One of the past centrifuge tests that had a severe loading requirement was reported in a memo entitled Centrifuge Test of XW-7 Betty, Project No. TM-143.



RECEIVED

APR 26 1956

R & D FILES

UNCLASSIFIED

CDL No.	
ACCOUNTABILITY CARD	<u>B7</u>
FILE NO. <u>XW-7</u>	
<u>3-2</u>	

APR 28 1973

Ref. Sym: 1612 (332)  
Project No. TM-398

Mr. L. Gutierrez - 1225



Setup for Test

The general test setup is shown in Fig. 1 and 2.

Test Item

XW-7 centrifuge jig, no drawing number.

Test Equipment

- 2 Blackhawk hydraulic jacks, capacity 7-1/2 tons.
- 1 Simplex hydraulic jack, capacity 60 tons.
- 2 Baldwin 10,000 pound load cells, Serial Nos. 6049, 6064.
- 1 Baldwin 50,000 pound load cell, Serial No. 1118.
- 3 Baldwin SR-4 Type M and L strain indicators, Serial Nos. 199392, J-59252, and J-59101.

Test Instrumentation

6 Starrett dial indicators, one-inch total travel, minimum reading 0.001 inch.

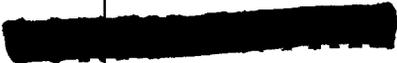
Procedure

The XW-7 centrifuge jig was attached, using 24 one-inch bolts, to adapter mounting plates which in turn were securely mounted to the static jig. To simulate centrifuge loading, three static loads were simultaneously applied; a longitudinal load of 53,200 pounds applied at the center of a loading plate attached to the warhead mounting ring, and a longitudinal load of 5,250 pounds applied on each side of the centrifuge jig. See Fig. 1 for general test setup. The total applied load of 63,700 pounds represented a 35 g loading at 1,820 pounds per g. Six dial indicators were placed at various locations on the XW-7 centrifuge jig to indicate if excessive deflections had occurred. See Figs. 1 and 2 for dial indicator locations. The loads were applied in 10 per cent increments with deflection readings taken after each increment.

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

Results

Three static loads, a longitudinal load of 53,200 pounds and two longitudinal loads of 5,250 pounds each applied simultaneously to simulate centrifuge loading, did not cause apparent yielding or failure of the XW-7 centrifuge jig.



UNCLASSIFIED

1456

Mr. L. Gutierrez - 1225

-3-

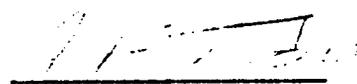
APR 26 1956

Ref. Sym: 1612 (332)  
Project No. TM-398

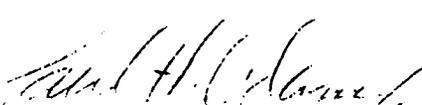
Maximum deflection occurred at dial indicator No. 5 and was .173 inch. Table I shows the deflections at each dial indicator location for each load increment. See Fig. 1 and 2 for dial indicator location.

Conclusions

The XW-7 centrifuge jig is capable of withstanding the 35 g load to which it was tested without apparent yielding or failure occurring.

  
A. F. TODARO - 1612-2

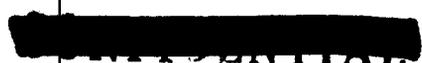
Approved by:

  
P. H. ADAMS - 1612

AFT:1612-2:as

Copy to:

T. B. Morse, 1610  
W. A. Gardner, 1282  
R. E. Fisher, 1621  
C. L. Gomel, 5523  
→ R. K. Smeltzer, 7222-2  
K. M. Flood, 7222-3

  
UNCLASSIFIED

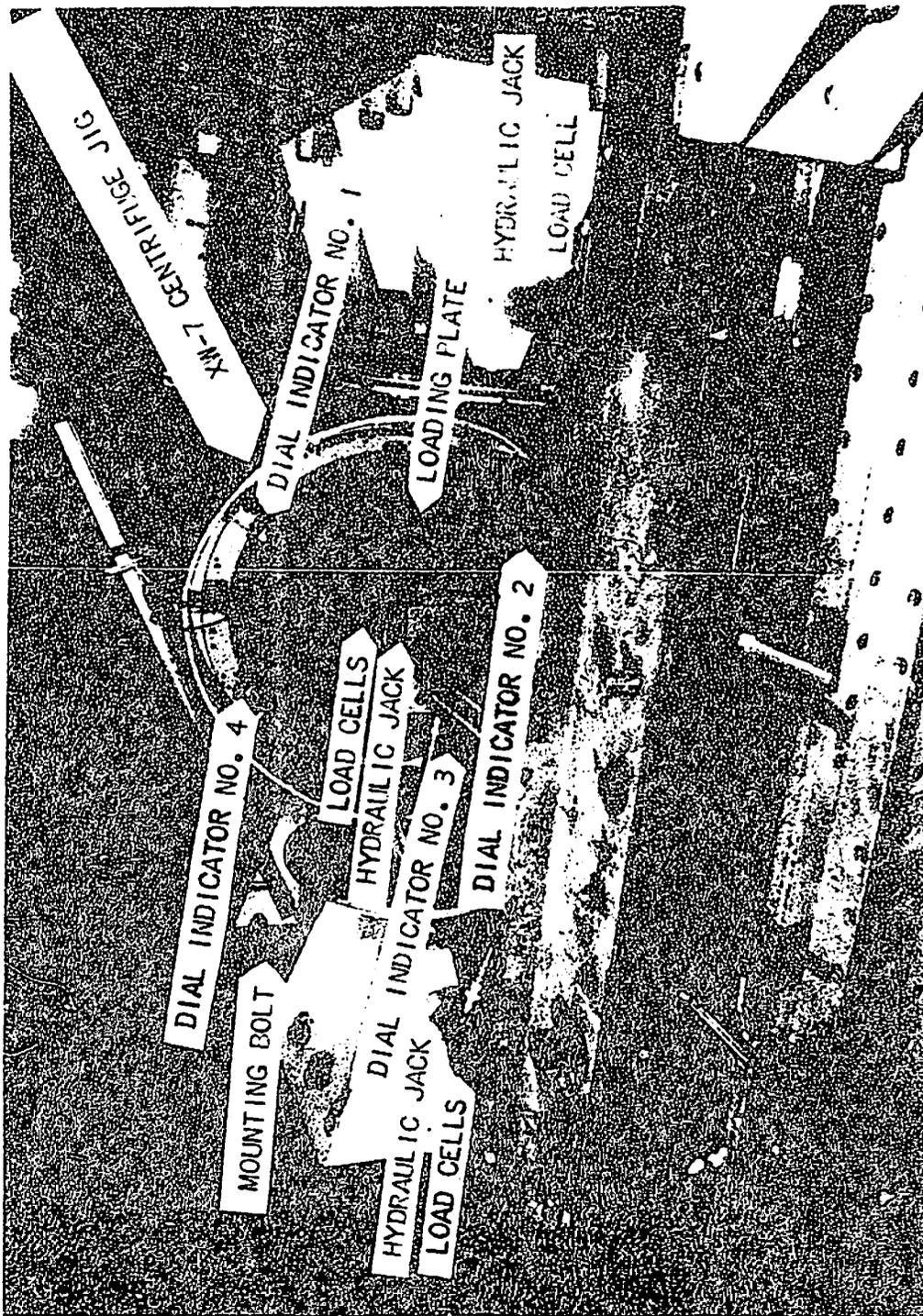


FIG. 1 -- GENERAL TEST SETUP AND DIAL INDICATOR LOCATION FOR STATIC TEST  
 OF XM-7 CENTRIFUGE JIG.

D#: 72784

UNCLASSIFIED

#14168

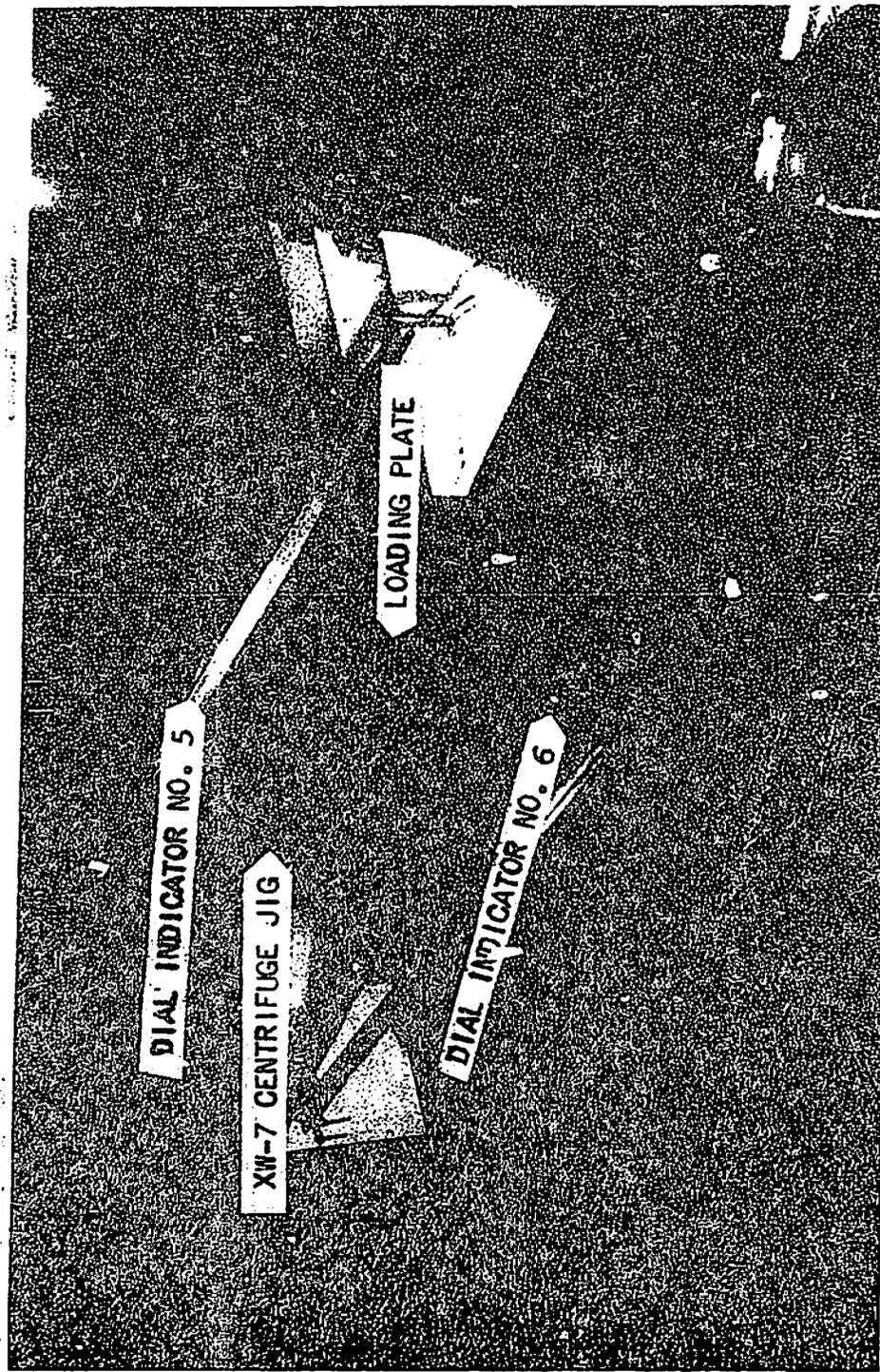


FIG. 2 -- GENERAL TEST SETUP AND DIAL INDICATOR LOCATION FOR STATIC TEST  
OF XW-7 CENTRIFUGE JIG.

REF. SYM: 1612 (332)  
TN-398

D# 72785

UNCLASSIFIED

TABLE I

DEFLECTIONS OF THE XW-7 CENTRIFUGE JIG IN THE STATIC TEST OF XW-7 CENTRIFUGE JIG

Load in Per Cent	Deflection in Inches					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
0	0	0	0	0	0	0
10	.001	-.002	-.002	-.001	.013	.016
20	.002	-.007	-.006	-.002	.049	.047
30	.003	-.010	-.008	-.003	.120	.039
40	.003	-.014	-.011	-.005	.141	.041
50	.002	-.018	-.014	-.007	.158	.035
60	.003	-.020	-.018	-.010	.164	.028
70	.003	-.023	-.022	-.009	.165	.018
80	.003	-.027	-.025	-.013	.165	.017
90	.003	-.030	-.028	-.015	.173	.011
100	.003	-.033	-.031	-.017	.173	.009

Minus deflections are opposite than direction of applied loads.