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| SANDIA SYSTEMATIC DECLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP | |
|---|---|
| CLASSIFICATION CHANGED TO: U | AUTHORITY: R.B. Craner |
| Geraula Galley 12/14/98 | 3 |
| PERSON CHANGING MARKING & DATE: W. Payne 12/16/98 | RECORD ID: 99SN0309 |
| PERSON VERIFYING MARKING & DATE | DATED: 10/27/98 |

APR 7 1953

Ref. Symbol: 1612
Project No. TM-131
Case No. 433.0

CENTRAL RECORD FILE
ACCOUNTABILITY CARD 613
FILE No. H 46
3-2

MR. P. E. JOCKLE - 1281

Re: H-46 Gusset Plate Test

SUMMARY OF RESULTS

The front tie-down rod gusset plate on each side of the H-46 roadable container was tested to failure by applying a load through the tie-down rod. One of the gusset plates withstood a load of 7100 pounds before failure, and 6900 pounds was required to fail the other gusset plate.

OBJECT OF TEST

The object of this test was to determine the maximum strength of the gusset plates used in compressing the frames of the H-46 roadable container.

REASON FOR TEST

This test was requested in a Work Order Authorization from Mr. P. E. Jockle, 1281, to Mr. T. B. Morse, 1610, dated January 23, 1953.

SUMMARY OF PAST TESTS

No previous static tests on the gusset plate and tie-down rod have been performed by Department 1610.

SETUP FOR TEST

Figure 1 is a photograph of the test setup taken before the test was performed. The following equipment was used in the test:

1. Two Baldwin strain indicators, Serial Nos. F-94414 and J-59252
2. One Baldwin load cell, capacity 10,000 pounds, Serial No. 655
3. Baldwin SF-4 strain gages, Type A-5-1
4. One Blackhawk hydraulic jack, capacity 15,000 pounds
5. One switching and balancing box

TCG-NNT-
U.S. SYSTEMATIC DECLASSIFICATION REVIEW
Determination (Circle Number(s)) 1. Classification Retained 2. Classification Changed to: U 3. Contains No DOE Classified Information 4. Coordinate With: 5. Contains UCNI 6. Comments:
1st Review Date: 10/27/98 Authority: ADD Name: R.B. Craner
2nd Review Date: Authority: ADD Name: Per Dorothy Mann

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PROCEDURE

The forward spring on each side of the readable container was removed, and a hydraulic jack and load cell were put in this space to provide a means of applying and measuring the load that would be transmitted through the tie-down rod to the gusset plate. Strain gages had previously been mounted on the tie-down rod to determine the exact load being transmitted to the gusset plate; however, the tie-down rod was not calibrated before the test was run so the load cell reading was used as a rough estimate of the load being applied to the gusset plate. Both of the strain indicators, used for determining the loads in the load cell and tie-down rod, were kept in balance as the load was applied throughout the test. By this method the exact load in the load cell and tie-down rod could be determined at the time of failure of the gusset plate. Separate tests were made on the front gusset plate on each side of the trailer.

After the test was completed the tie-down rod was calibrated in a Baldwin testing machine by applying known tensile loads to the tie-down rod and recording the strain for each increment of load. From this calibration the strain readings of the tie-down rods could then be converted to the loads which caused failure of the gusset plates.

RESULTS

The load indicated by the load cell, at the time of failure of the gusset plate on the left side of the unit, was 7600 pounds. The increment of strain in the tie-down rod at the time of failure of the gusset plate was 1040 microinches per inch. From the calibration curve shown in Fig. 2, the 1040 microinches per inch corresponds to a load of 7100 pounds.

For the gusset plate on the left side of the unit the load cell indicated a load of 9580 pounds at failure. The corresponding increment of strain in the tie-down rod was 1300 microinches per inch. From the calibration curve this strain corresponds to a load of 8900 pounds.

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MR. P. E. JOCKLE - 1281 -3- Ref. Symbol: 1612
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Table I is the data for the calibration of the tie-down rod.

Elmer White
E. WHITE - 1612-2

Approved by: Original Signed By P. H. ADAMS
P. H. ADAMS - 1612

EW:1612:hh

Encls: Figs. 1 and 2
Table I

Copy to:
T. B. Morse - 1610
J. R. Townsend - 1600
A. F. Cone - 1510
F. J. Given - 5300
J. M. Ralls - 1521-4 Attn: 1500 Drawing File

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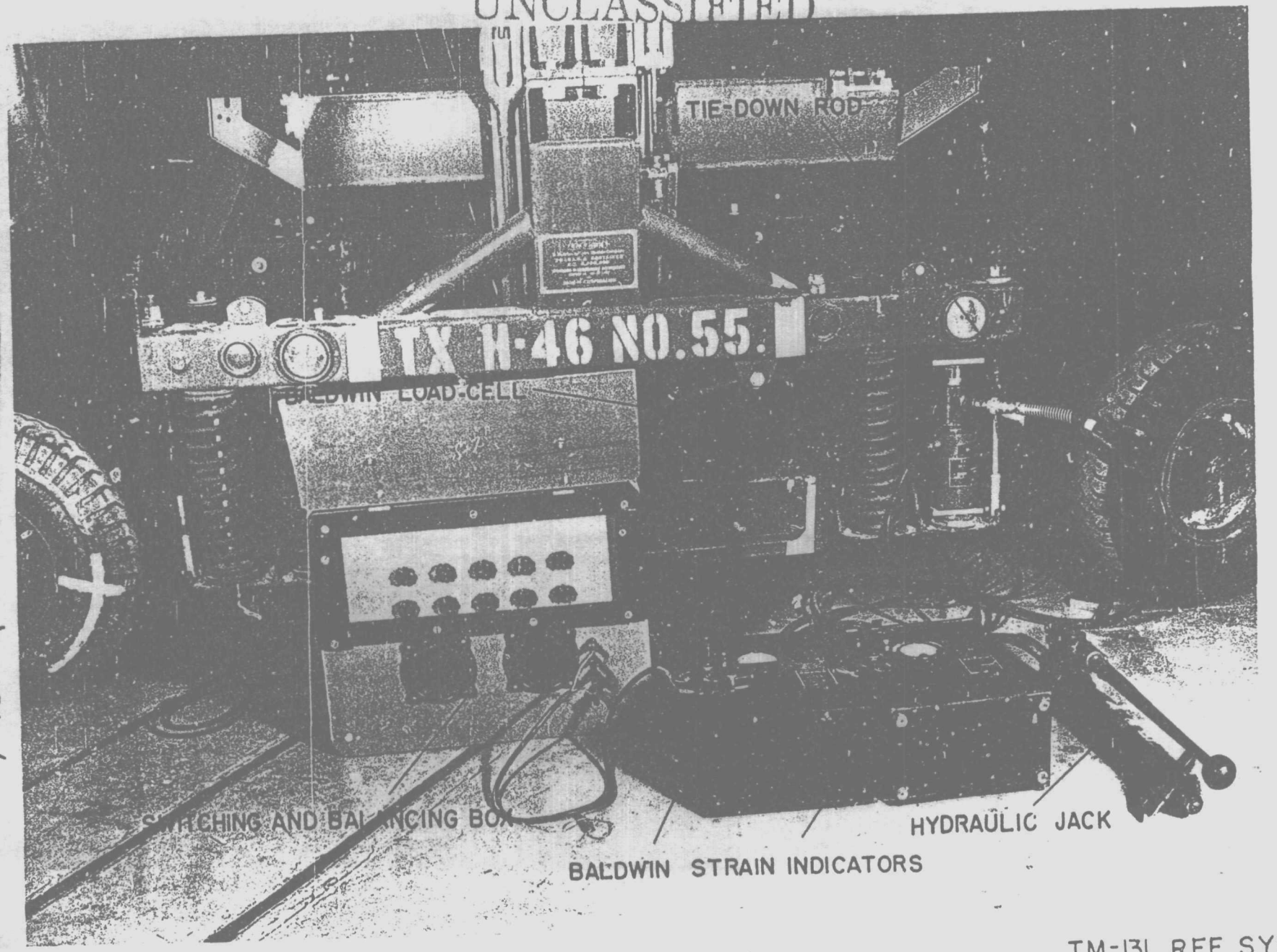


FIG. 1 - TEST SETUP FOR H-46 GUSSET PLATE TEST

TM-131 REF. SYM. 1612
3-18-53

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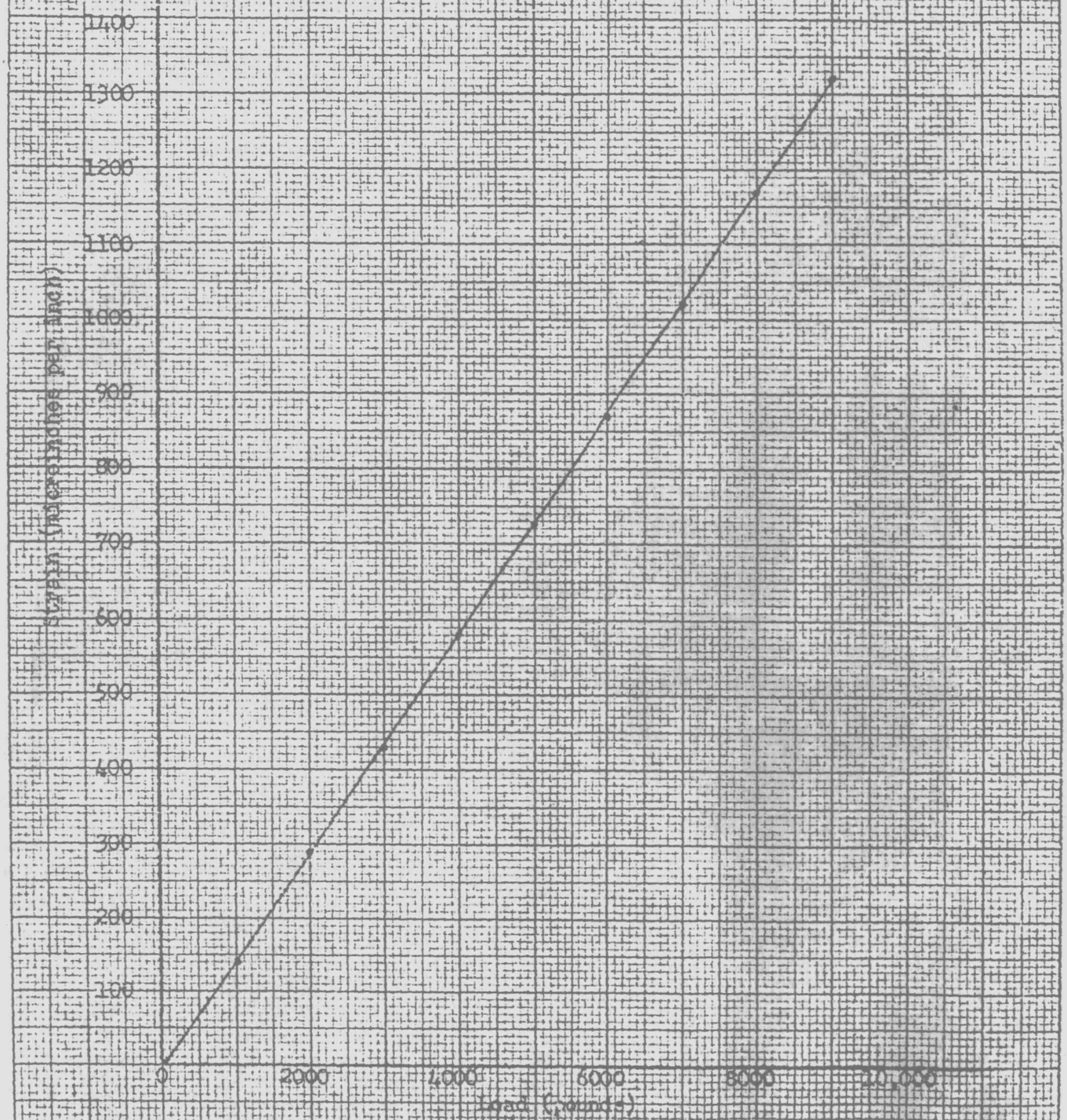


FIG. 2 - - CALIBRATION CURVE FOR TIE-DOWN ROD IN 5-45 GUSSET PLATE TEST

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TABLE I

CALIBRATION DATA FOR TIE-DOWN ROD IN A-4 GUSSET PLATE TEST

| Load (pounds) | Strain Reading (microinches/inch) |
|---|---|
| 0 | 11,000 |
| 1000 | 11,140 |
| 2000 | 11,290 |
| 3000 | 11,430 |
| 4000 | 11,580 |
| 5000 | 11,725 |
| 6000 | 11,870 |
| 7000 | 12,020 |
| 8000 | 12,170 |
| 9000 | 12,320 |
| 8000 | 12,170 |
| 7000 | 12,020 |
| 6000 | 11,860 |
| 5000 | 11,725 |
| 4000 | 11,580 |
| 3000 | 11,430 |
| 2000 | 11,290 |
| 1000 | 11,140 |
| 0 | 11,000 |

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