

UNCLASSIFIED

0461

7/16/98		DECLASSIFICATION REVIEW	
Review Date	7/23/98	Classification (Circle Numbers)	
Authority ADD	WC Layne	Classification Remains	<input checked="" type="checkbox"/>
ASAC		Contains No DOE Classified Information	<input checked="" type="checkbox"/>
		Coordinates With	
		Contains UCAF	<input checked="" type="checkbox"/>
		Comments	
DECLASSIFY			

NOV 20 1998
 Case No. 725.00
 Ref. Sym: 1612 (373)
 Project No. TM-439
 File: TX-15, 3-2

MR. C. L. CARPENTER - 1217

Attn: Mr. B. S. Hill - 1217

Re: Static Test of TX-15 Afterbody and Chute Can

Summary of Results

The TX-15 afterbody was subjected to simulated free-fall loads of 7.5 g (56,000 pounds) applied with the load axis co-linear with the longitudinal axis of the afterbody, and 8.26 g (65,000 pounds) applied with the load axis making an angle of 16 degrees in a vertical plane with the longitudinal axis of the afterbody. The load, in each instance, was applied to the afterbody through eight parachute lugs. No indication of failure or yield was observed in either test condition.

Object of Test

The object of this test was to determine the structural adequacy of the TX-15 afterbody to withstand free-fall loads up to test requirements.

Reason for Test

The test was requested in a Work Order Authorization from Mr. C. L. Carpenter, 1217, to Mr. F. H. Adams, 1612, dated August 13, 1956.

Function of Object Tested

The TX-15 afterbody forms part of the ballistic case, serves as a mount for the fins and contains the parachute and chute can for retarded fall.

RECEIVED

NOV 30 1998

Summary of Past Tests

R & D FILES

Three conditions of parachute retarded fall were applied to the TX-15 afterbody as described in a report Static Test of TX-15 Afterbody, Ref. Sym: 1612 (162) from N. H. Triner, 1612, to R. L. Brin, 1241, dated November 18, 1954. Results were as follows:

Equal loads were applied through each of the twelve parachute lugs with the load axis inclined at 25 degrees in a vertical plane with the longitudinal axis of the afterbody. At a maximum load of 10,000 pounds tensile strains of 2100 microinches per inch were indicated.

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW		DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: <u>U</u>	AUTHORITY: <u>W.C. Layne</u>	RECORD ID: <u>98SN3153</u>	DATED: <u>7/23/98</u>
PERSON CHANGING MARKING & DATE: <u>Emelda Selph 7/30/98</u>	PERSON VERIFYING MARKING & DATE: <u>W.C. Layne 7/30/98</u>		

CDL No.	
ACCOUNTABILITY CARD	<u>BR</u>
FILE No.	<u>TX-15</u>
	<u>3-2</u>

UNCLASSIFIED

NOV 29 1956

Ref. Sym: 1612 (373)

Project No. TM-439

Mr. C. L. Carpenter - 1217

-2-

UNCLASSIFIED

The second load condition was applied with the load axis inclined at eight degrees in a vertical plane with the longitudinal axis of the afterbody. Maximum tensile strains indicated at a load of 60,000 pounds was 850 micro-inches per inch in the skin with high concentrations in the vicinity of the aft fitting.

In the third load condition the axis of load was co-linear with the longitudinal axis of the afterbody. At maximum load of 60,000 pounds the chute can separated from the afterbody.

Setup for Test

- I. Figures 1 and 2 are photos depicting the general test setup for the straight pull. Figures 3 through 5 are photos depicting the test setup for the 16-degree angle pull.
- II. The following component was tested:
 1. One TX-15 afterbody and chute can, Dwg. No. 310246.
- III. The following equipment was used in the test:
 1. Pull rod K, one-inch diameter, calibration 0.1 microinch per inch per pound with gage factor setting of 2.132.
 2. One Simplex hydraulic ram - capacity 60 tons.
 3. One Sprague air pump.
 4. One Pathon hydraulic cylinder, 12-inch stroke, 12-inch bore.
- IV. The following instrumentation was used in the test:
 1. Four Starrett dial indicators, range one inch, division 0.001 inch.
 2. Stresscoat No. 1205.

Figures 6 and 7 are photographs showing location of dial indicators. Dials 1 and 2 were used in the straight pull. Dials 1 through 4 were used in the 16-degree angle pull.

Procedure

The afterbody was mounted and loaded as shown in Figures 1 and 2. The load was applied through eight parachute lugs, as shown in Fig. 1, with the load axis co-linear with the longitudinal axis of the afterbody. The loads were

UNCLASSIFIED

NOV 29 1956

Ref. Sym: 1612 (373)

Project No. TM-439

Mr. C. L. Carpenter - 1217

-3-

UNCLASSIFIED

applied in increments listed in Table I to a maximum of 7.5 g (56,000 pounds) and deflections measured by dials 1 and 2 (Figure 6) were recorded at each increment.

The afterbody was then Stresscoated and mounted as shown in Figures 3 through 5. The load was applied through 8 parachute lugs with the load axis making an angle of 16 degrees with the longitudinal axis of the afterbody. Loads were applied in increments listed in Table II to a maximum of 65,000 pounds. The load was relaxed after each increment and the Stresscoat patterns marked.

The loads were then re-applied in increments listed in Table III to a maximum of 7.5 g (56,000 pounds) and the dial indicators read and recorded at each increment.

Results

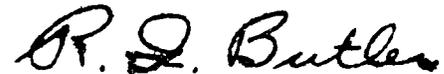
The TX-15 afterbody withstood all test conditions without indication of failure or yield. Maximum strains indicated from the Stresscoat test with inclined load was approximately 800 microinches per inch in areas free from stress raisers. The stresses around rivets, fillets, etc. were considerably higher. Since the patterns did not grow at these points in a manner indicative of elastic strain-load relationships, it was not possible to determine maximum strain values at said points.

Maximum measured deflection parallel to the longitudinal axis of the afterbody was 0.083 inch at 56,000 pounds for the longitudinal load. Longitudinal deflections of 0.109 inch and 0.135 inch were measured at the top and bottom edges, respectively of the chute can at an inclined load of 65,000 pounds.

Figures 8 through 12 are photographs depicting the Stresscoat crack patterns. Tables I through III contain all the load-strain data.

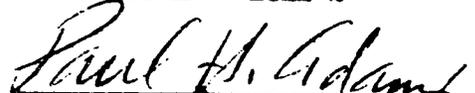
Conclusions

The TX-15 afterbody is capable of sustaining loads in excess of 7.5 g (56,000) co-linear with and inclined at 16 degrees with the longitudinal axis of the afterbody.



R. I. BUTLER - 1612-2

Approved by:



P. H. ADAMS - 1612

RIB:1612-2:as

UNCLASSIFIED

NOV 29 1956
Ref. Sym: 1612 (373)
Project No. TM-439

Mr. C. L. Carpenter - 1217

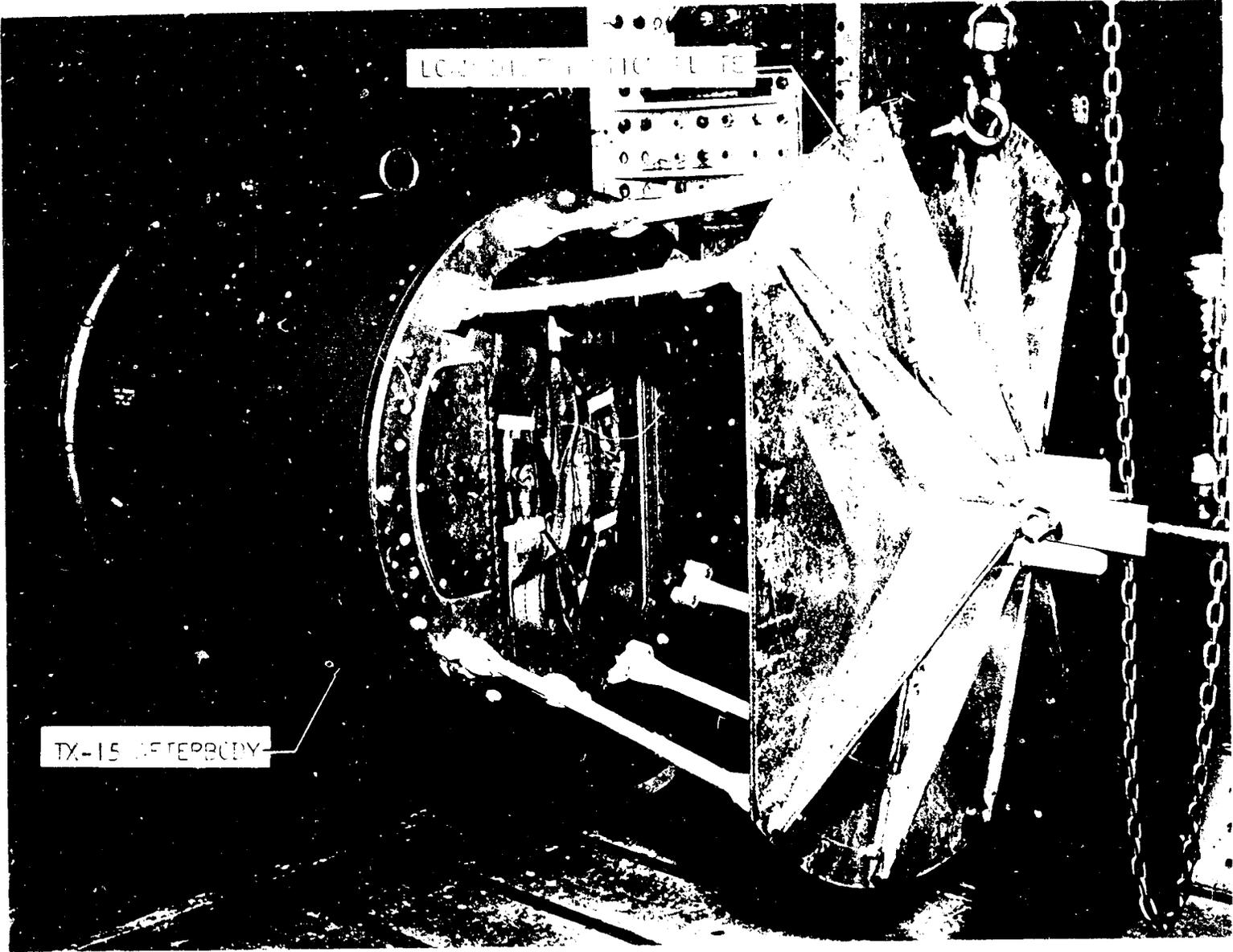
-4-

UNCLASSIFIED

Copy to:

C. L. Carpenter, 1217 (3 copies)
W. A. Gardner, 1610
D. M. Bruce, 1282
C. L. Gomel, 5523
R. K. Smeltzer, 7222-2
Tech. Ref. File, 7222-2 (Bldg. 880)

UNCLASSIFIED



TX-15 TELEBUOY

LC-200 TELEBUOY

UNCLASSIFIED

UNCLASSIFIED

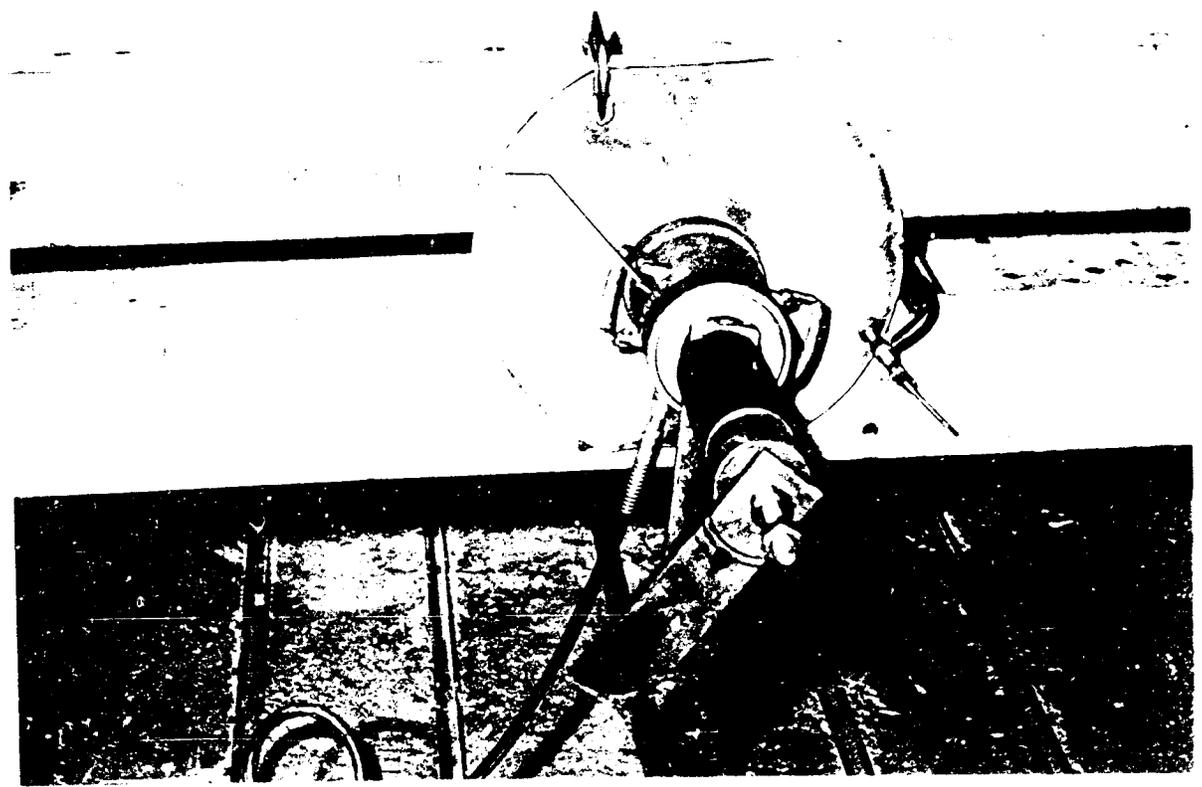
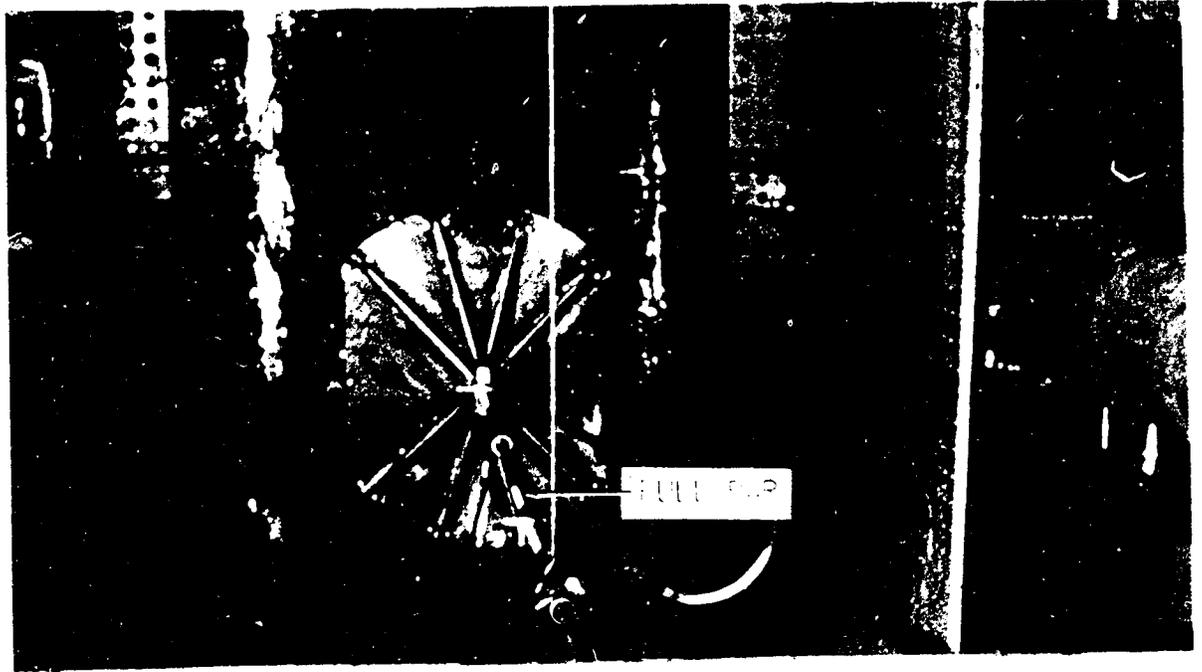
80961

465

11-11-64

[REDACTED]

UNCLASSIFIED

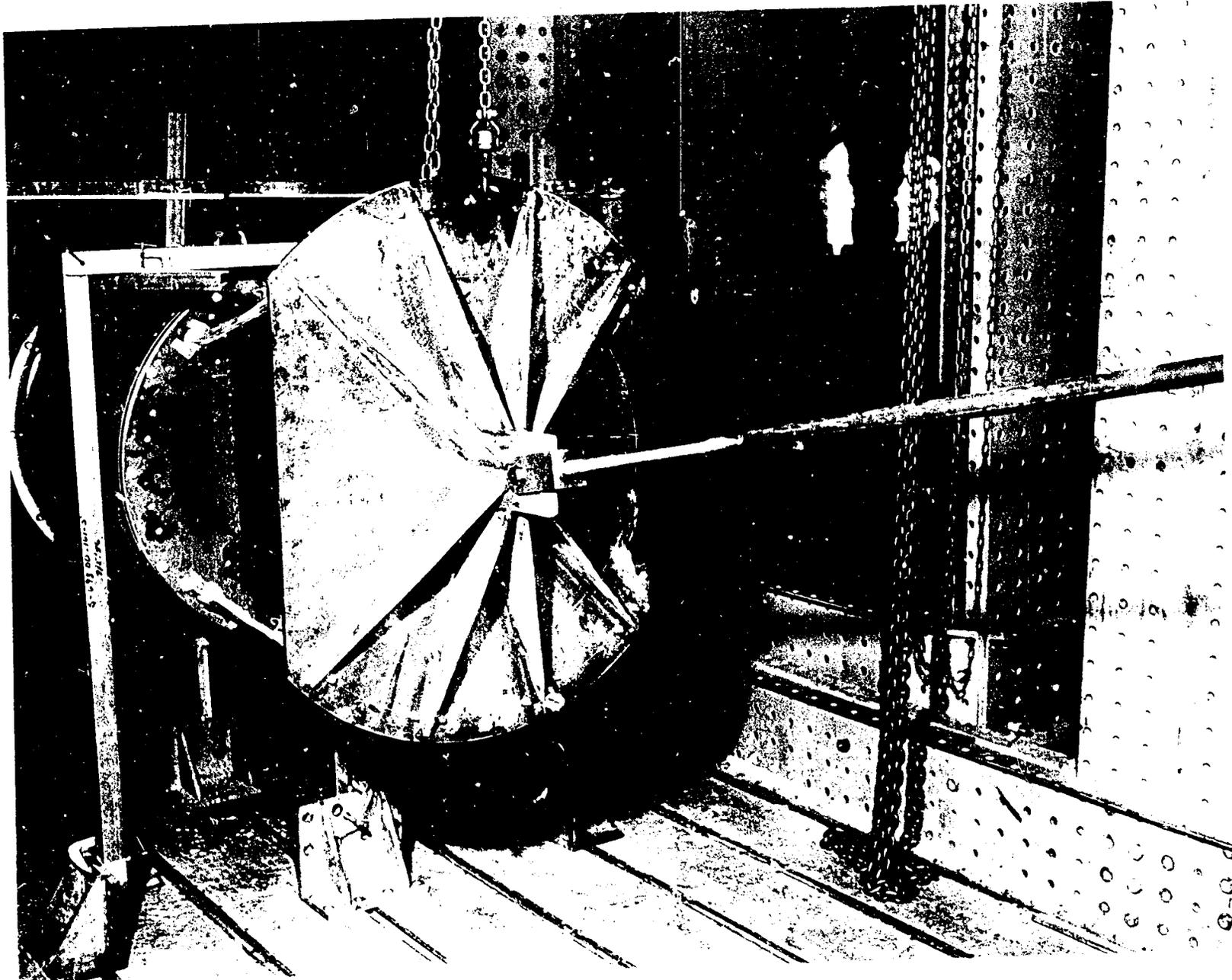


11-11-64
 I # 80753

[REDACTED]

UNCLASSIFIED

UNCLASSIFIED

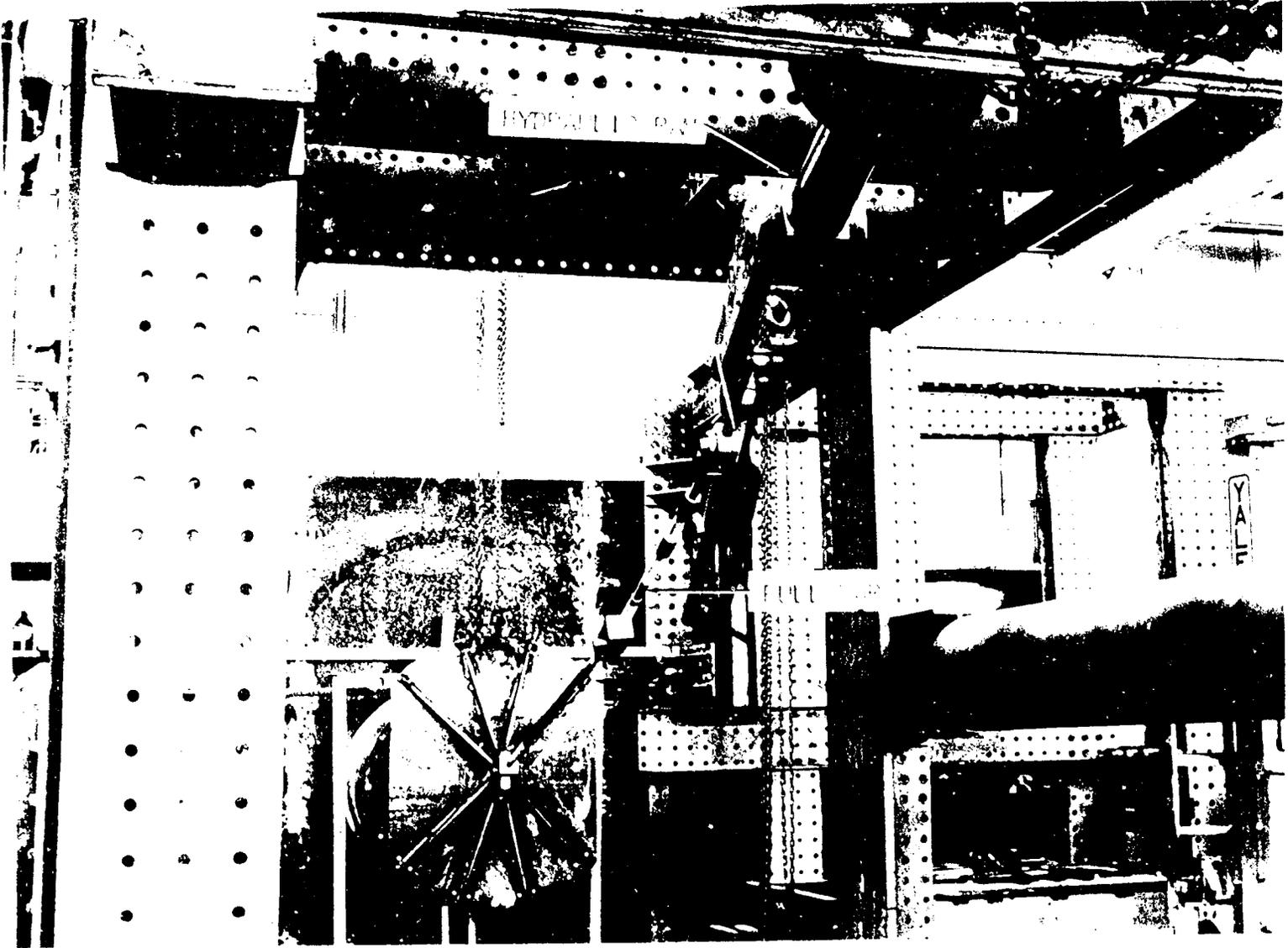


UNCLASSIFIED

FIG. 3 -- TEST SETUP FOR 16-DEGREE INCLINED FULL -- STATIC TEST OF TX-15 AFTERBODY

21986 78678

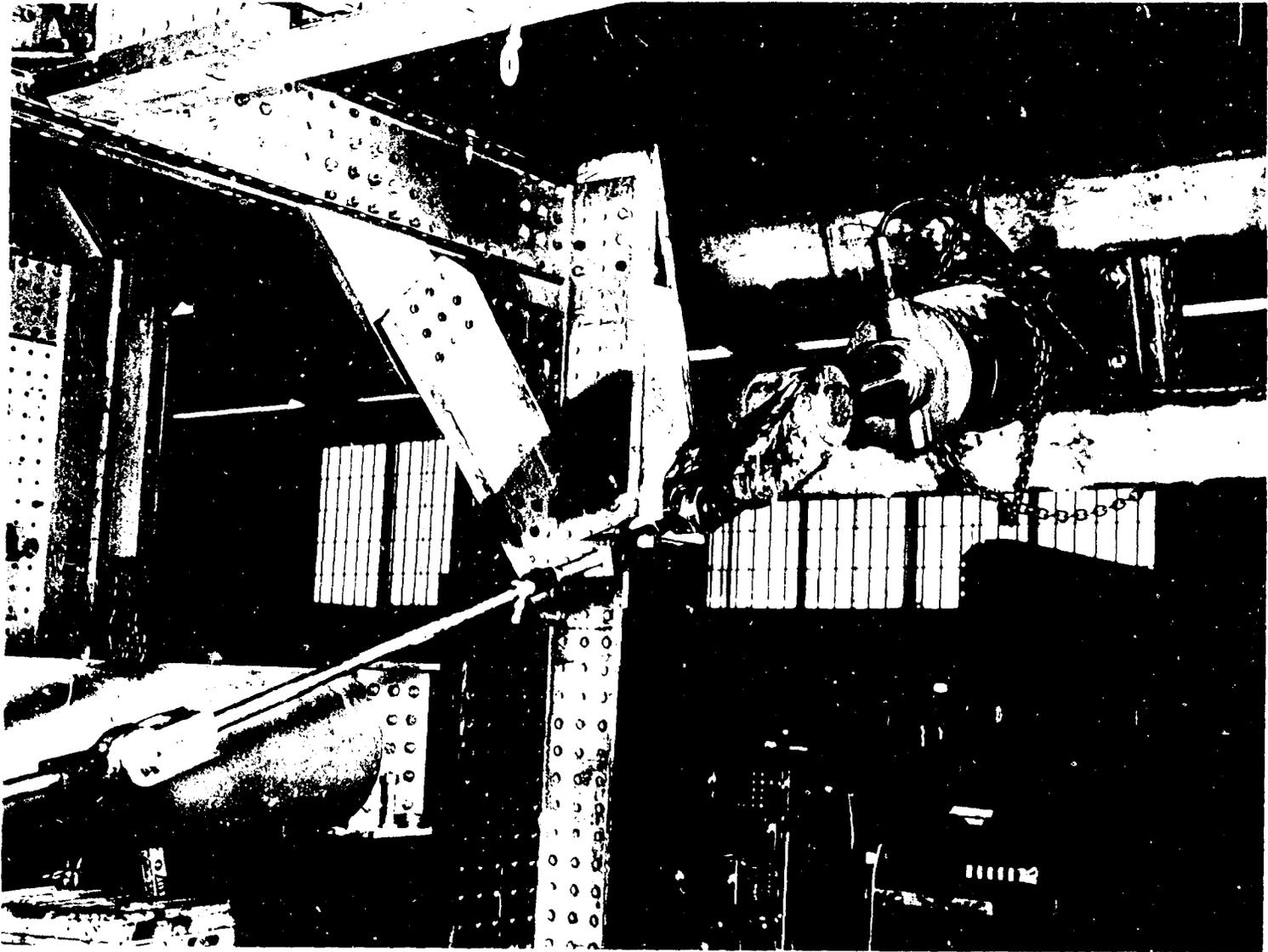
UNCLASSIFIED



UNCLASSIFIED

1. The information contained in this document is classified "UNCLASSIFIED"
 2. The information contained in this document is classified "UNCLASSIFIED"
 3. The information contained in this document is classified "UNCLASSIFIED"
 4. The information contained in this document is classified "UNCLASSIFIED"
 5. The information contained in this document is classified "UNCLASSIFIED"
 6. The information contained in this document is classified "UNCLASSIFIED"
 7. The information contained in this document is classified "UNCLASSIFIED"
 8. The information contained in this document is classified "UNCLASSIFIED"
 9. The information contained in this document is classified "UNCLASSIFIED"
 10. The information contained in this document is classified "UNCLASSIFIED"

110



UNCLASSIFIED

UNCLASSIFIED

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

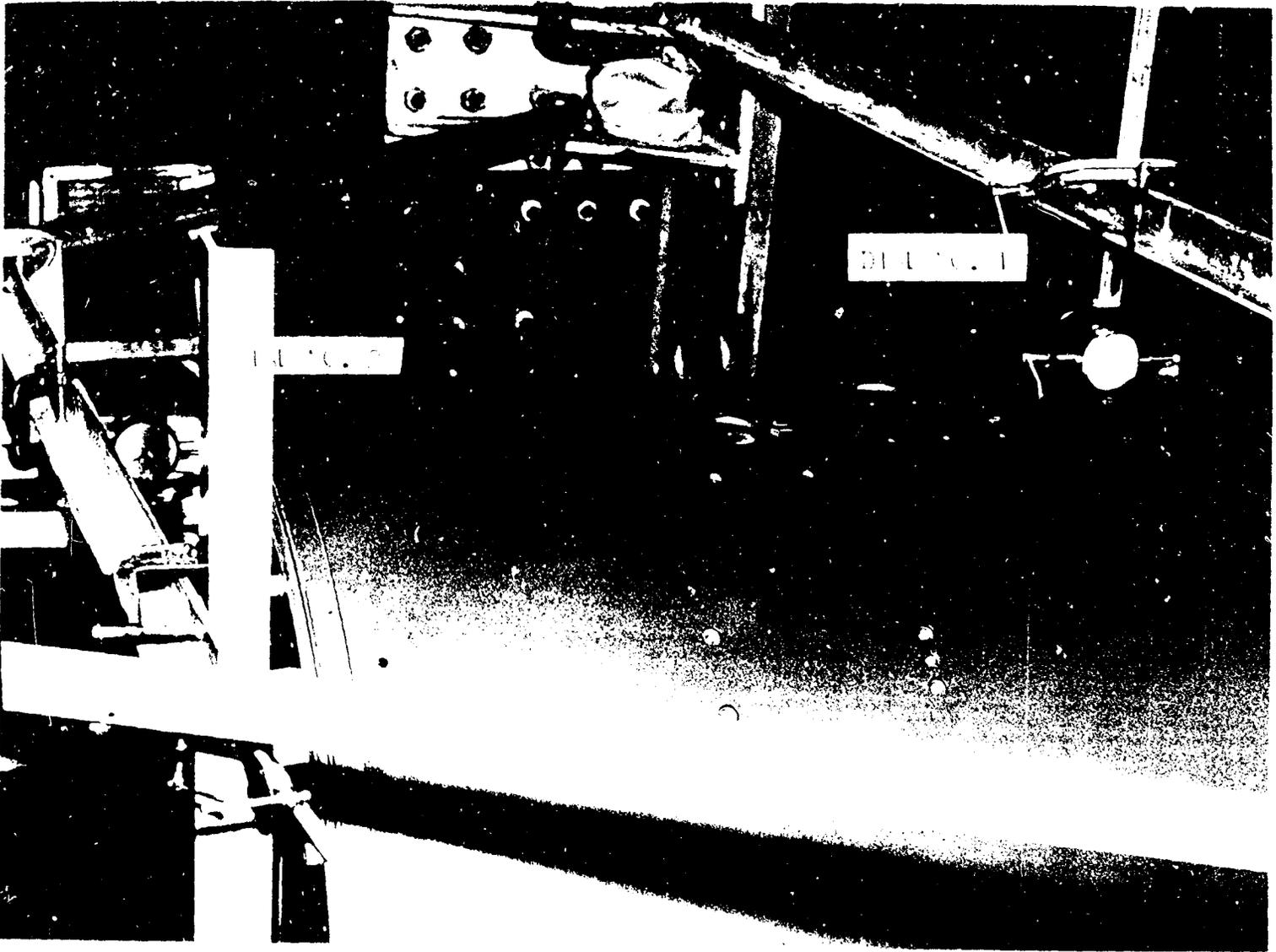
DATE 7/5/08 BY [illegible]

2064

[REDACTED]

4470

UNCLASSIFIED

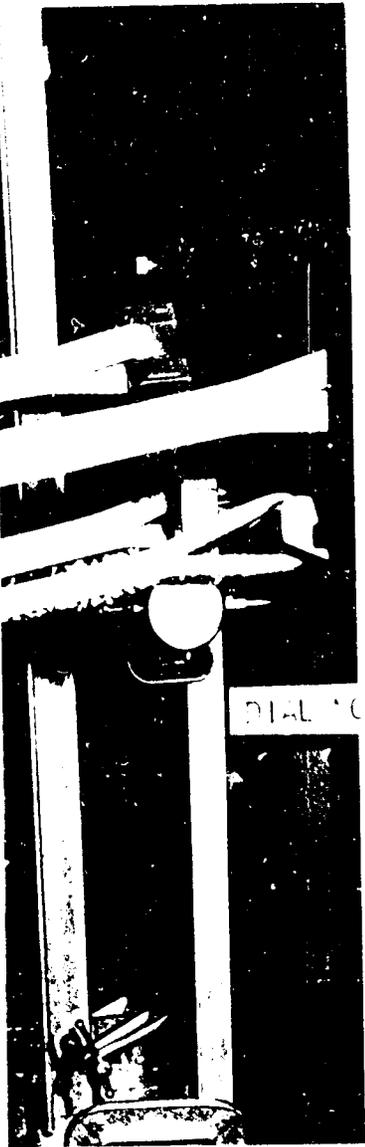


[REDACTED]

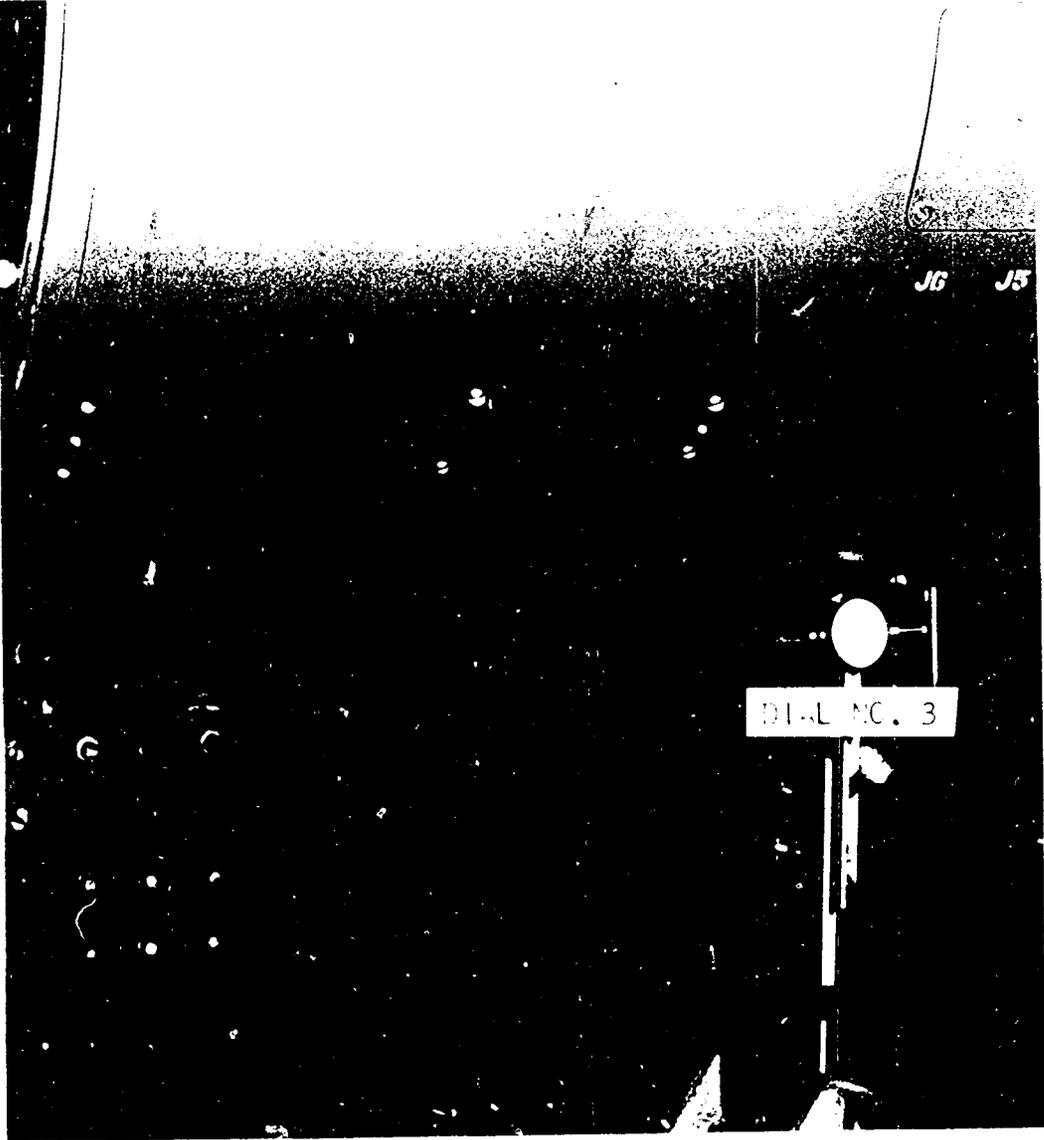
UNCLASSIFIED

21508#

UNCLASSIFIED



DIAL NO. 4



DIAL NO. 3

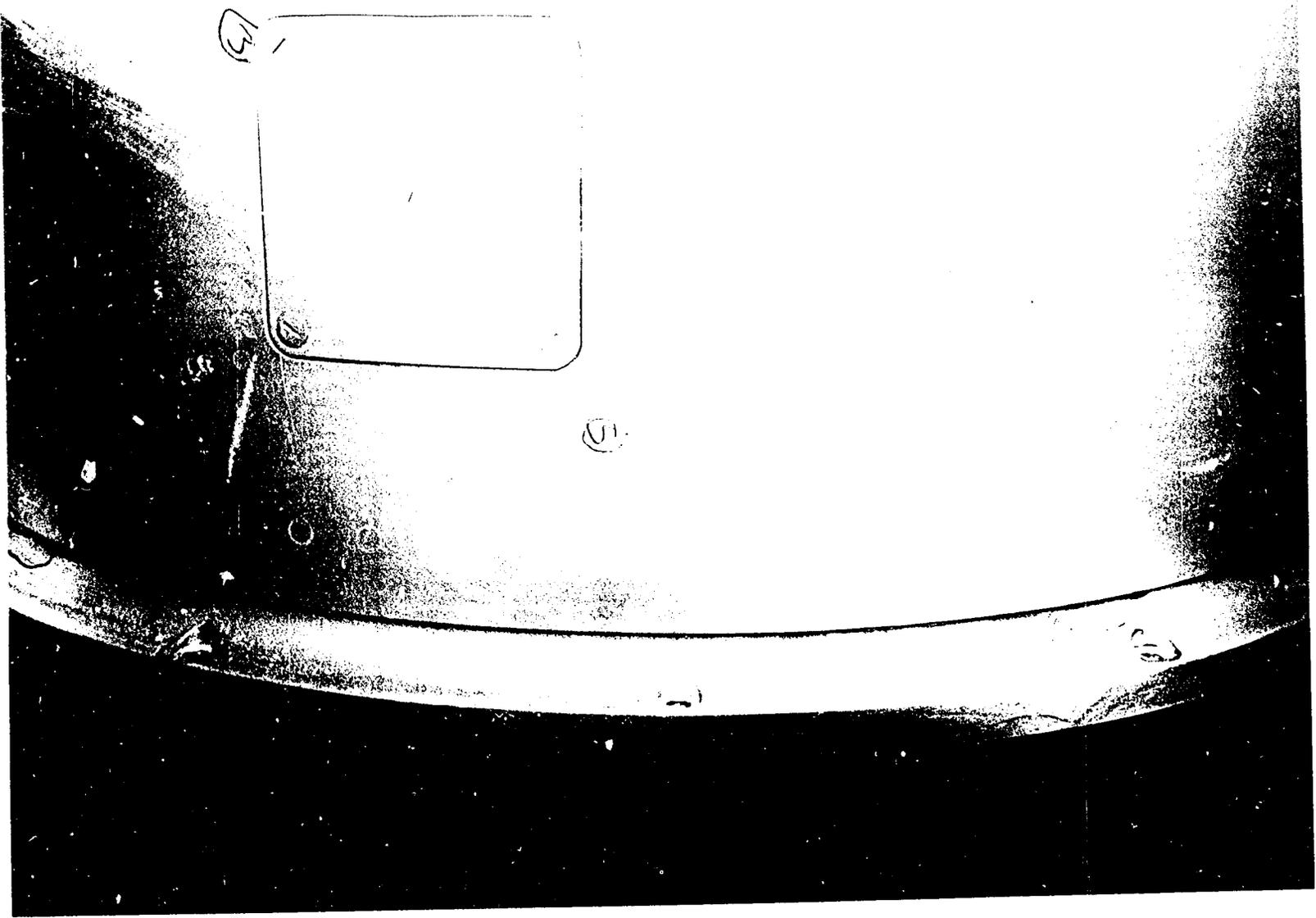
JG J5

UNCLASSIFIED

8025

71

UNCLASSIFIED



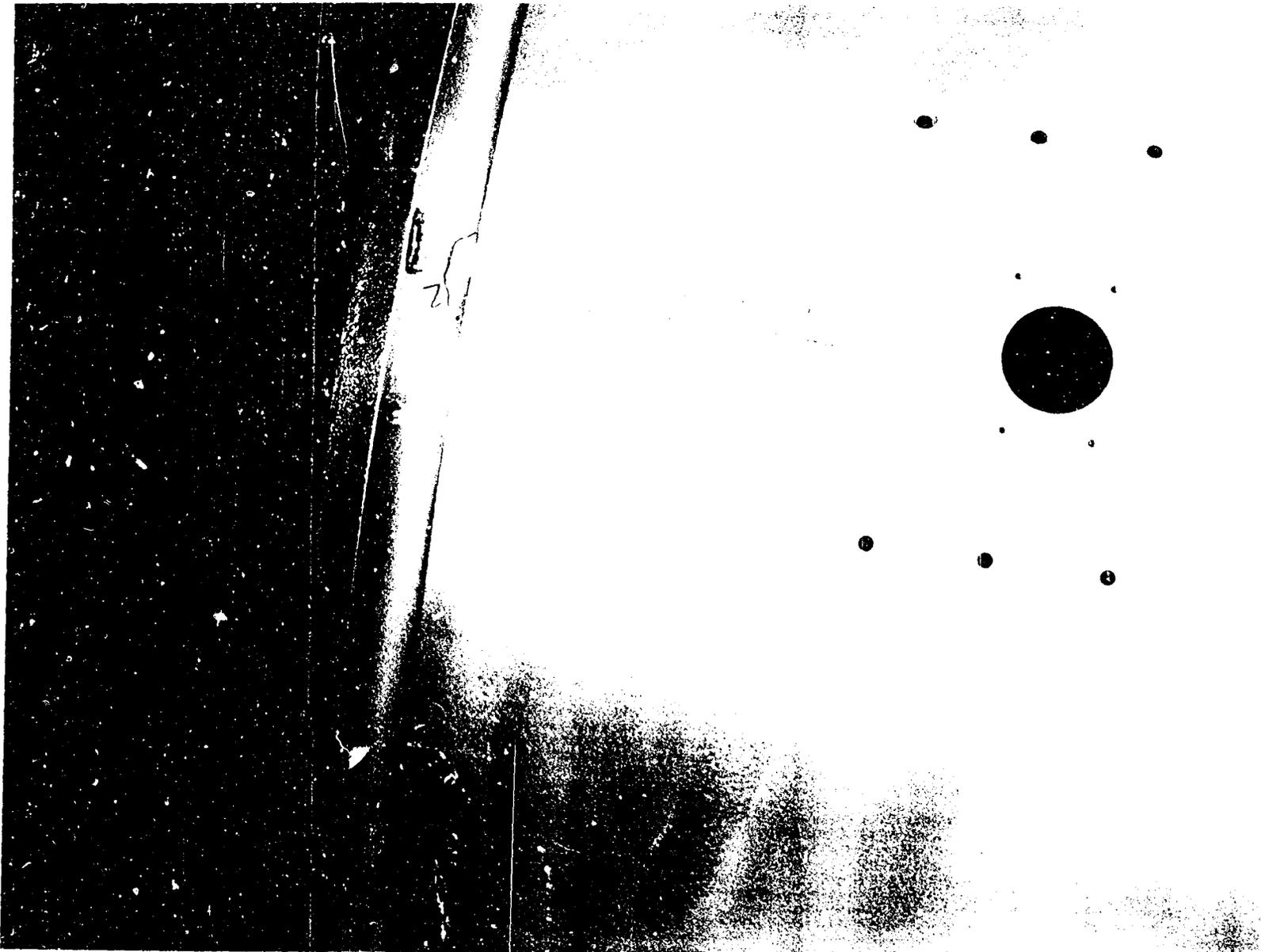
UNCLASSIFIED

FIG. 8 -- STRESSCOAT CRACK PATTERNS -- STATIC TEST OF TX-15 AFTERBODY

Q. # 79186

7-172

UNCLASSIFIED



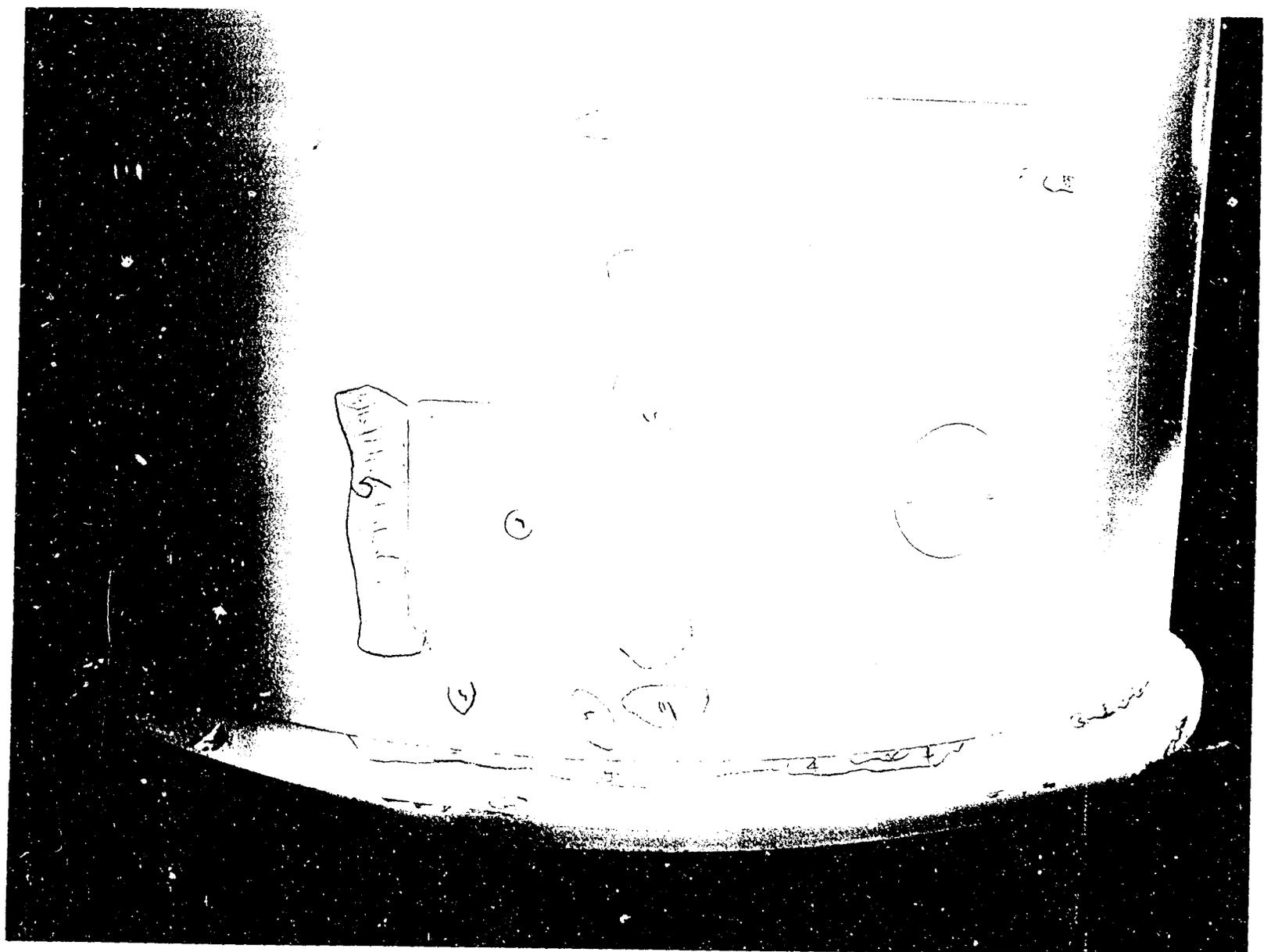
UNCLASSIFIED

FIG. 9 -- STRESSCOAT CRACK PATTERNS -- STATIC TEST OF 17-18 AFTERBODY

17-18

17-18

UNCLASSIFIED

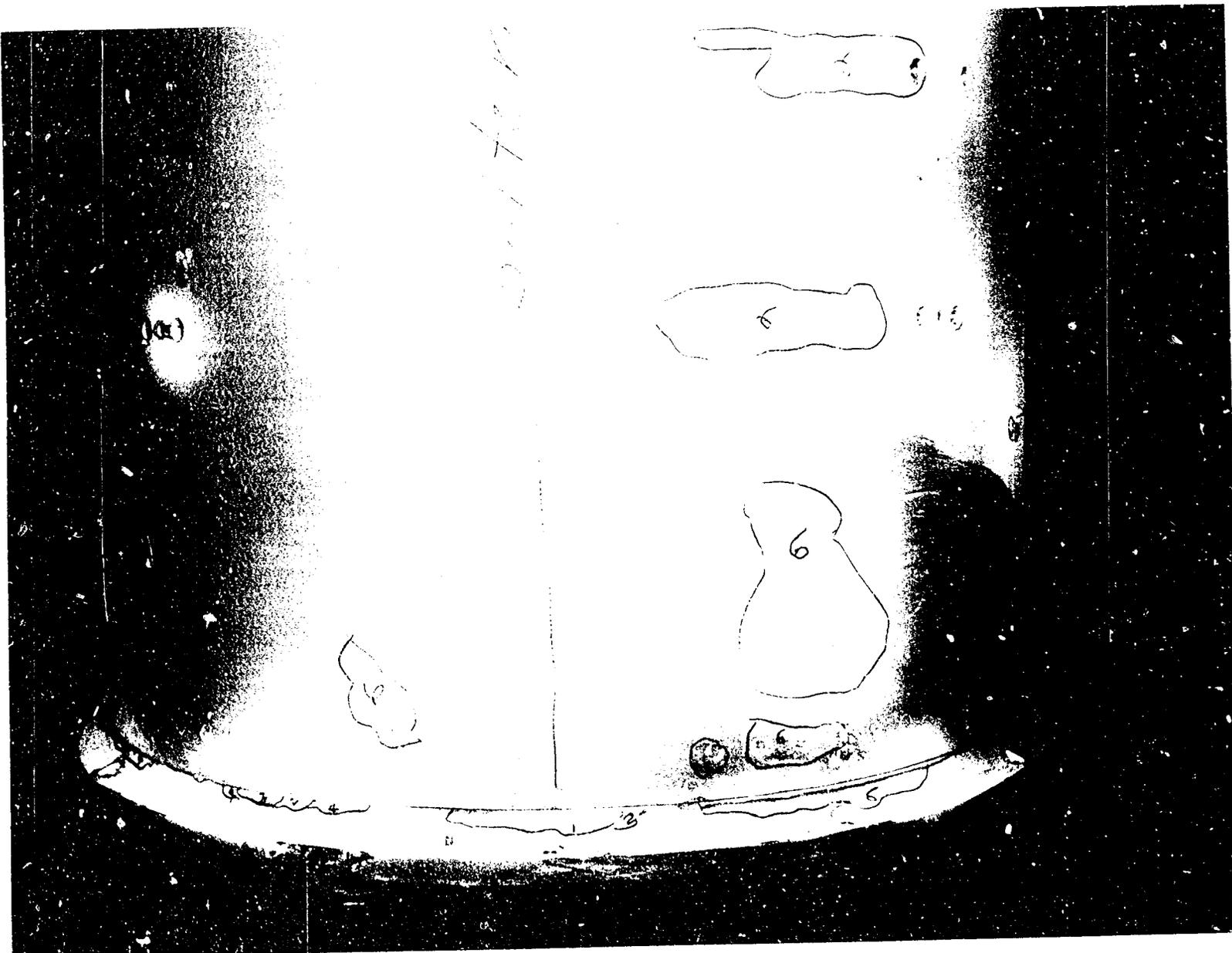


UNCLASSIFIED

FIG. 10 -- STRESSCOAT CRACK PATTERNS -- STATIC TEST OF TX-15 AFTER PCBY

79211

UNCLASSIFIED

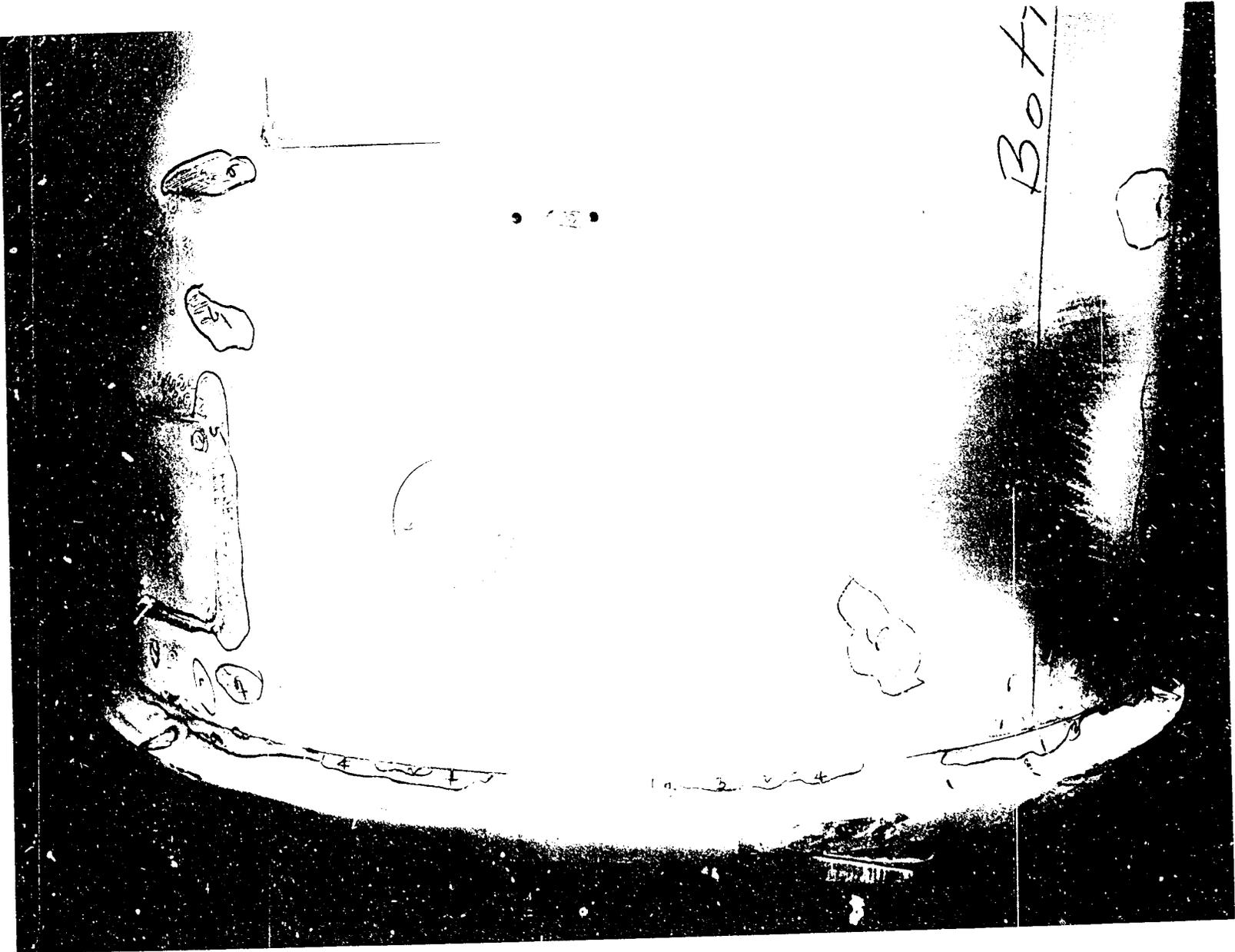


UNCLASSIFIED

FIG. 11 -- STRESSCOAT CRACK PATTERNS -- STATIC TEST OF TX-16 AFTERBODY

REF. SYN: 1612 (373)
PROJECT NO. 74-439

UNCLASSIFIED



UNCLASSIFIED

FIG. 13 -- STRESSCAT CRACK PATTERNS -- STATIC TEST OF 1X-15 AFTERPCDN

date 1/1/71

1/1

UNCLASSIFIED

Ref. Sym: 1612 (373)
Project No. TM-439

TABLE I

LOAD-DEFLECTION DATA -- STRAIGHT PULL
STATIC TEST OF TX-15 AFTERBODY

Load (Pounds)	Deflection (Inches)		
	Dial No. 2	Dial No. 1	Net at Dial No. 2
0	0	0	0
5,000	.005	-.001	.006
10,000	.011	-.004	.015
15,000	.018	-.010	.028
20,000	.025	-.011	.036
25,000	.032	-.012	.044
30,000	.040	-.014	.054
40,000	.047	-.014	.061
45,000	.054	-.014	.068
50,000	.063	-.013	.077
56,250	.069	-.014	.083

UNCLASSIFIED

UNCLASSIFIED

-13-

Ref. Sym: 1612 (373)
Project No. TM-439

TABLE II

LOAD-STRAIN DATA -- 16 DEGREE FULL
STRESSCOURT TEST
STATIC TEST OF IX-15 AFTERBODY

<u>Load (Pounds)</u>	<u>Sensitivity (Microinches Per Inch)</u>	<u>Pattern No.</u>
0	800	
10,000		1
12,000		2
15,000	700	
18,000		
22,000		3
26,000	750	
31,000	750	
37,000		
45,000		4
52,000	800	5
65,000	800	6

UNCLASSIFIED

UNCLASSIFIED

Ref. Sym: 1612 (373)
Project No. TX-439

-19-

TABLE III

LOAD-DEFLECTION DATA -- 16 DEGREE PULL

STATIC TEST OF TX-15 AFTERBODY

Load (Pounds)	Deflection (Inches)					
	Dial No. 1	Dial No. 2	Net at Dial No. 2	Dial No. 3	Dial No. 4	Net at Dial No. 4
0	0	0	0	0	0	0
7,500	.008	-.009	.017	.010	.035	.025
15,000	.022	-.016	.038	.014	.059	.044
22,500	.034	-.022	.056	.017	.084	.067
30,000	.044	-.027	.071	.018	.094	.076
37,500	.051	-.033	.084	.019	.106	.087
45,000	.058	-.037	.095	.019	.124	.105
52,500	.062	-.042	.104	.019	.146	.127
56,250	.063	-.046	.109	.019	.154	.135

UNCLASSIFIED