[redacted]

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
1st Review Date: 7/13/98
Authority: ☐ ADC ☒ ADD
Name: W Payne
2nd Review Date: 7/13/98
Authority: ADD
Name: RB Cranes
Determination (Check Numbers)
Classification Retained
1 Classification Changed to: U
3 Contains No DOE Classified Information
4 Coordinate With:
Contains UCNI?
Comments:

File No. TX-53, 3-2
T-17562
Project No. 13.838.00
Completed: 5/26/61
JUL 21 1961

UNCLASSIFIED

MR. E. I. BRUCE - 7117
Attn: L. F. Miller, 7117-2

Re: 61-L Deployment Test (U)

Summary of Results

This test was conducted to proof fire the rear cover plate deployment and the retard chute jettisoning cutter of TX-53 unit no. 61-L. In this test the rear cover plate deployed satisfactorily however the inner flange of the primacord groove sheared off. Only six of the eight retard nylon straps were cut satisfactorily.

Object of Test

The object of this test was to proof test the rear cover plate deployment and the retard chute jettisoning cutter of TX-53 unit no. 61-L.

Reason for Test

This test was requested in a work order authorization from E. I. Bruce, 7117, to E. H. Copeland, 7321, dated 2/9/61. D. K. Buchanan, 7321-5, was the 7321 Test Project Engineer.

Setup for Test

Setup for the test is shown in figure #1. The components tested were the rear cover plate and retard chute jettisoning cutter of TX-53 unit no. 61-L.

A 14-ft piece of 20 gr/ft MDF and a 14-ft piece of 15 gr/ft MDF were used in this test. DuPont X257D detonators were used to detonate the MDF.

RECEIVED
JUL 25 [redacted]
CENTRAL RECORD FILE

Fastax camera coverage was used to get cover plate velocity.

Procedure

One test run was made at the small explosives site in Area III. The 14' length of 20 gr/MDF was used to deploy the rear cover plate and the 14' length of 15 gr/ft MDF was used to cut the retard chute jettisoning straps. Both lengths of MDF were detonated simultaneously.

[redacted]

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
DOWNGRADING OR DECLASSIFICATION STAMP
CLASSIFICATION CHANGED TO: U
AUTHORITY: R.B. Cranes
Emilda Sepa 7/13/98
PERSON CHANGING MARKING & DATE
RECORD ID: 98SN2885
WC Payne 7/27/98
PERSON VERIFYING MARKING & DATE
DATED: 7/13/98

[redacted]

CENTRAL RECORD FILE
ACCOUNTABILITY CARD
FILE No. TX-53 3-2

FINAL ACCEPTED

UNCLASSIFIED

Results

After the test it was found that only six out of eight retard nylon straps cut satisfactorily as shown in figure 2. Checking the primacord groove used during deployment of the rear cover plate it was noticed that the inner flange of the primacord groove was sheared off in several places as shown in figure 2. The rear cover plate was found 40 feet from the TK-53 after the test. A picture of the cover plate after the test is shown in figure 3. After checking the 61-1 afterbody closer it was noticed that several of the angle backing plates for the retard chute cutter primacord ring were broken loose. Two of the angle backing plates that pulled off are shown in figure 4. The velocity vs time history and horizontal displacement vs time for the rear cover plate deployment as determined from the Fastax photographic coverage are shown in figures 5 and 6, conclusively.

Conclusions and Recommendations

From this test it was found that a modification of the retard chute cutter should be made. A lower energy primacord will be tested for deployment of the rear cover plate to try and stop the shearing of the inner flange of the primacord groove and still deploy the cover satisfactorily.

William Hoffman
W. V. HOFFMAN, 7323

Test Project Engineer: Dale Buchanan
DALE BUCHANAN, 7321-5

Approved by: R. S. Hooper
R. S. HOOPER, 7321-5

WH:br

Enc. Figs. 1-6

Copy to:
J. M. Wiesen, 1442
D. S. Bliss, 2344
D. M. Bruce, 7182
E. H. Copeland, 7321
J. R. Harrison, 7523
R. E. Smeltzer, 3421-3

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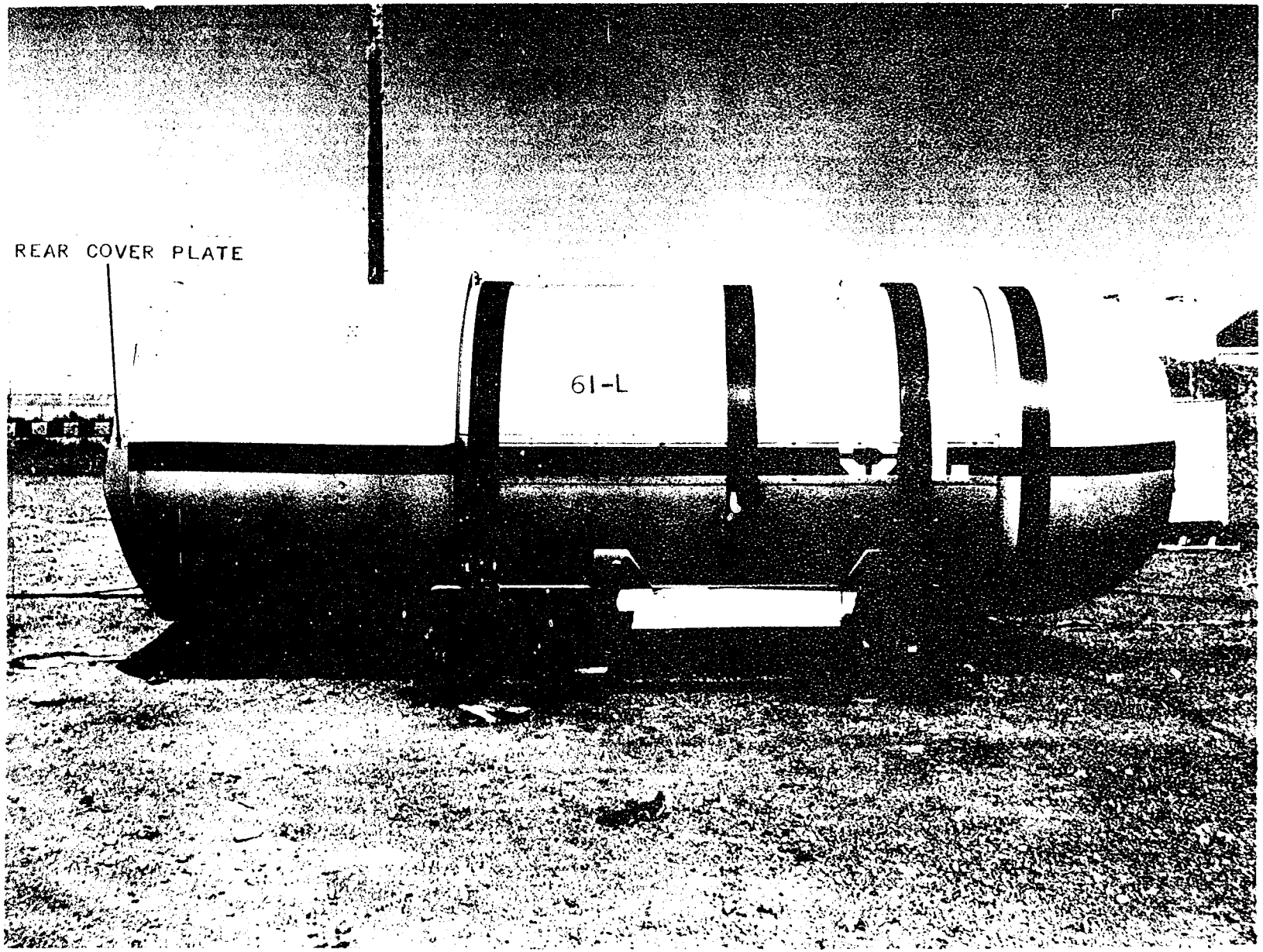

FIGURE 1 - SETUP OF THE TEST RUN -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT SYSTEM 61-L

D#61-9227

PROJECT NO. T-17562

#1279

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#1230

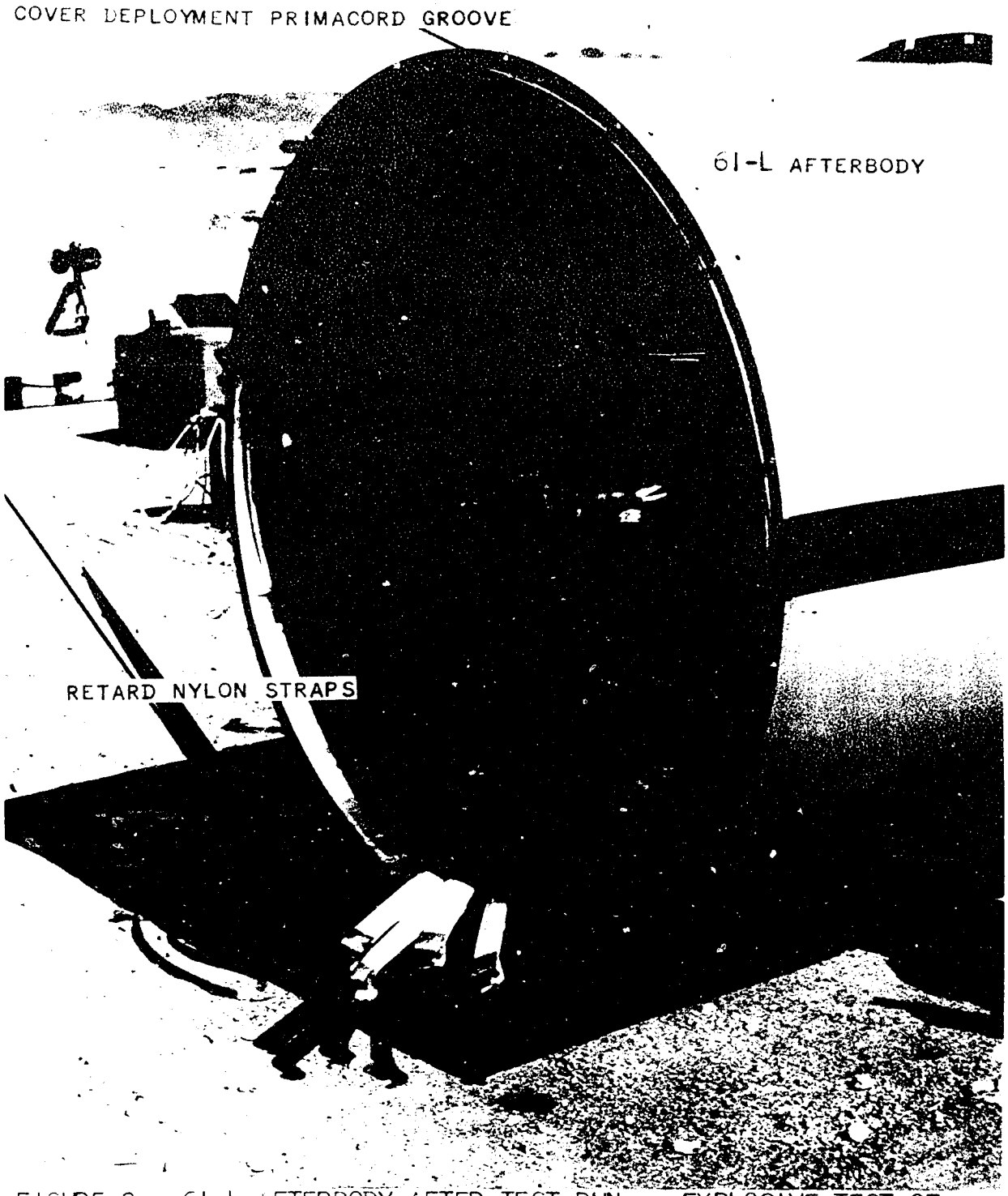

FIGURE 2 - 61-L AFTERBODY AFTER TEST RUN -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT SYSTEM 61-L

D# 61-9328

PROJECT NO. T-17562

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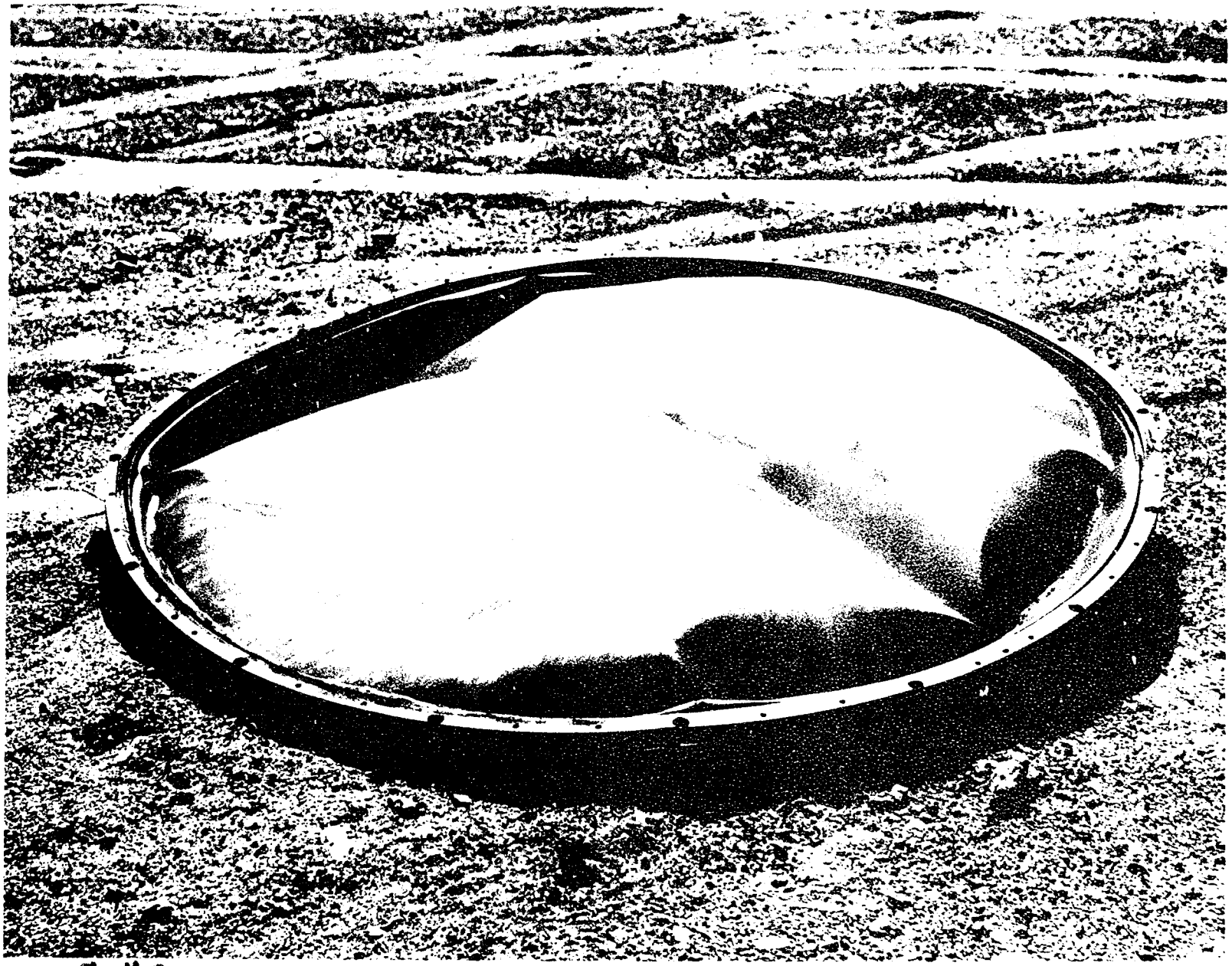
[redacted]



D#0-11712

FIGURE 3 - REAR COVER PLATE AFTER TEST -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT SYSTEM
61-L

PROJECT NO. T-17562

#1231

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[redacted]

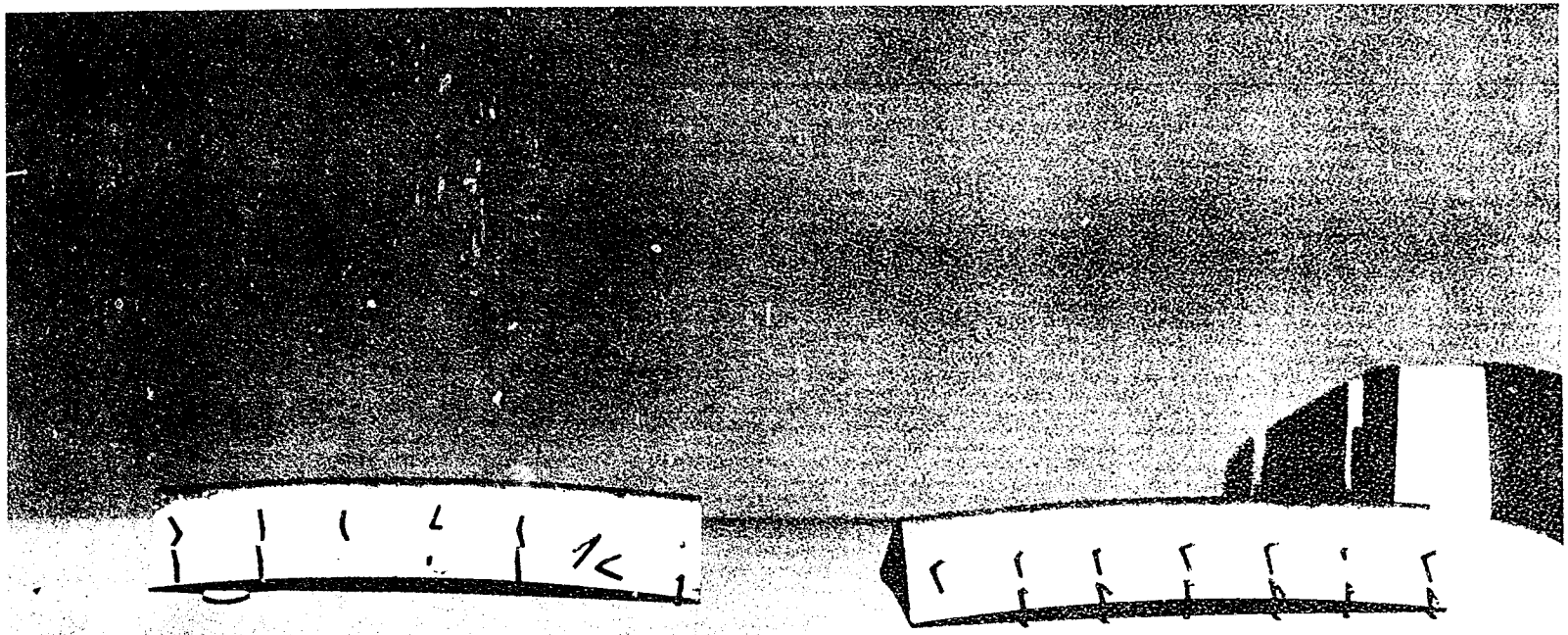

FIGURE 4 - ANGLE BACKINGS OF PRIMACORD GROOVE FOR RETARD STRAP CUTTER AFTER TEST -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT SYSTEM 61-L

D#0-11113

PROJECT NO. T-17562

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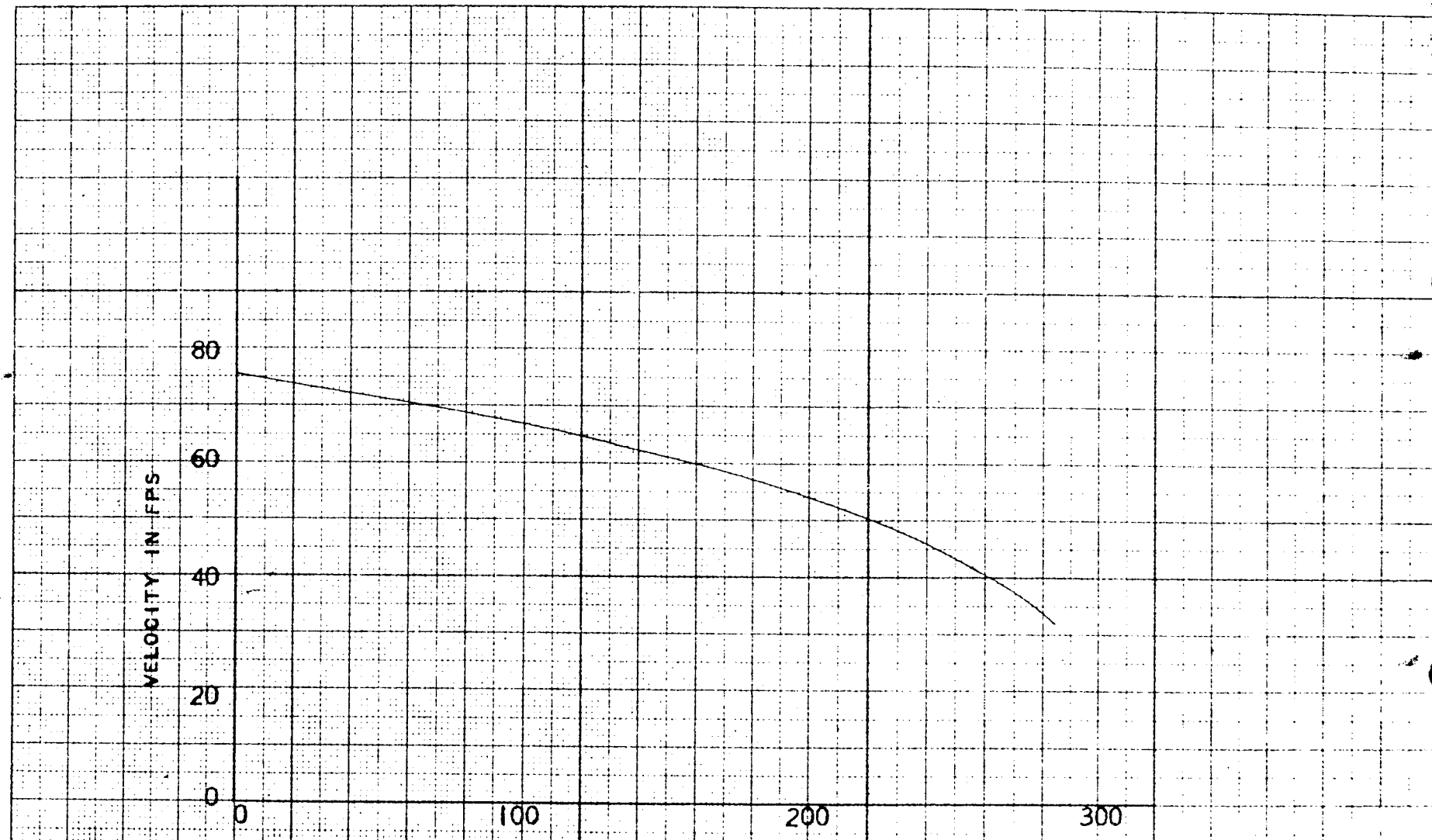

FIGURE 5 - VELOCITY VS TIME FOR REAR COVER PLATE DEPLOYMENT ON TX-53 UNIT NO. 61-L -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT SYSTEM 61-L

PROJECT NO. T-17562

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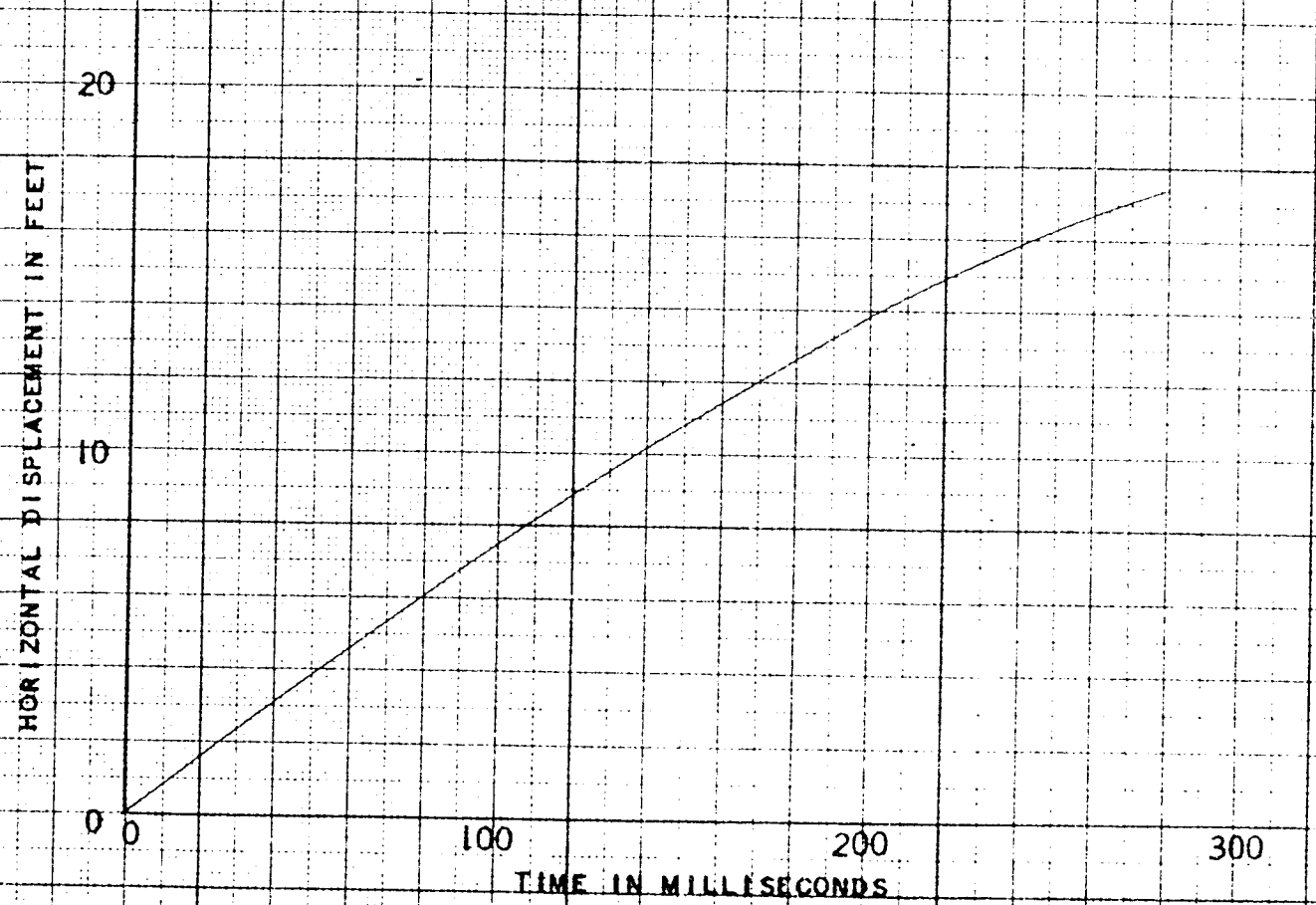

FIGURE 6 - HORIZONTAL DISPLACEMENT VS TIME FOR REAR COVER PLATE DEPLOYMENT ON TX-53 UNIT NO. 61-G — EXPLOSIVE TEST OF CHUTE DEPLOYMENT SYSTEM 61-L

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