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1301

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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
1st Review Date 7/13/98
Authority ADC ADD W Fayne
7/13/98
RB Craner
Determination (Circle Number)
Classification Retained
Classification Changed to U
Contains No Unclassified Information
Classification Cancelled
OK for Approval

SEP 9 1961

File No: TX-53, 3-2
T-17618
Date Completed: 3-10-61

RECEIVED

SEP 12 1961

CENTRAL RECORD FILE

MR. E. I. BRUCE - 7117
Attn: C. W. Moses

Re: Explosive Test of Chute Deployment Unit 59-L (U)

Summary of Results

This test was conducted to proof test the chute deployment system of the TX-53 Unit 59-L. From this test it was found that the 20gr/ft MDF used to dploy the rear cover was unsatisfactory due to the fact that it caused damage to the afterbody. The nylon strap cutter also proved unsatisfactory since only 6 of the 8 straps were cut.

Object of Test

The object of this test was to proof test the chute deployment system of TX-53 unit 59-L.

Reason for Test

This test was requested in a Work Order Authorization from E. I. Bruce, 7117, to E. H. Copeland, 7321, dated 3-2-61. D. K. Buchanan, 7321 was test project engineer.

Setup for Test

Setup for the test is shown in Fig. 1. A 14 ft piece of 15gr/ft shaped MDF and a 14 ft piece of 20gr/ft MDF was used in this test. Dupont X257D detonators were used to detonate the MDF.

Fastex camera coverage was used to obtain the velocity of rear cover plate deployment.

Procedure

This test was conducted using 14 ft of 15gr/ft shaped MDF for the strap cutter and 14 ft of 20gr/ft MDF for the rear cover plate deployment.

Both lengths of MDF were detonated simultaneously. The 59L unit was an HE Unit.

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
DOWNGRADING OR DECLASSIFICATION STAMP
CLASSIFICATION CHANGED TO: U
Emelda Selph 7/14/98
PERSON CHANGING MARKING & DATE
W C Fayne 7/22/98
PERSON VERIFYING MARKING & DATE
AUTHORITY: R. B. Craner
RECORD ID: 98SN2954
DATED: 7/13/98

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Results

After the test it was found that only 6 of the 8 nylon straps were cut satisfactorily as shown in Fig. 2. The rear cover plate was deployed 32 ft from the unit, however, buckling of the afterbody occurred from the deployment of the cover as shown in Figs. 2 and 3. As shown in Fig. 4 the inner flange of the MDF groove for the rear cover plate deployment was sheared off in several places. Fig. 5 shows the rear cover plate after the test. Velocity and displacement vs time curves of the rear cover plate deployment are shown in Fig. 6 and 7 respectively. This data was reduced from the Fastex camera coverage.

Conclusions and Recommendations

It was concluded from this test that the reason 2 of the nylon straps did not cut was because the shaped MDF was not aligned correctly with the strap.

It was also concluded that the energy of 20gr/ft MDF is too great to be used for cover plate deployment. It is recommended that some means of aligning the shaped MDF with the nylon straps be devised and that lower energy MDF be used for cover plate deployment.

William Y Hoffman

W. HOFFMAN - 7323-1

Dale Buchanan

7321 Project Engineer: DALE BUCHANAN - 7321-5

Approved By: R. S. HOOPER - 7321-5

Encl: Figs. 1 thru 7

Copy to:
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L. C. Horpedahl, W-1, LASL
Attn: S. D. Huffman
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Attn: D. F. Mitchell

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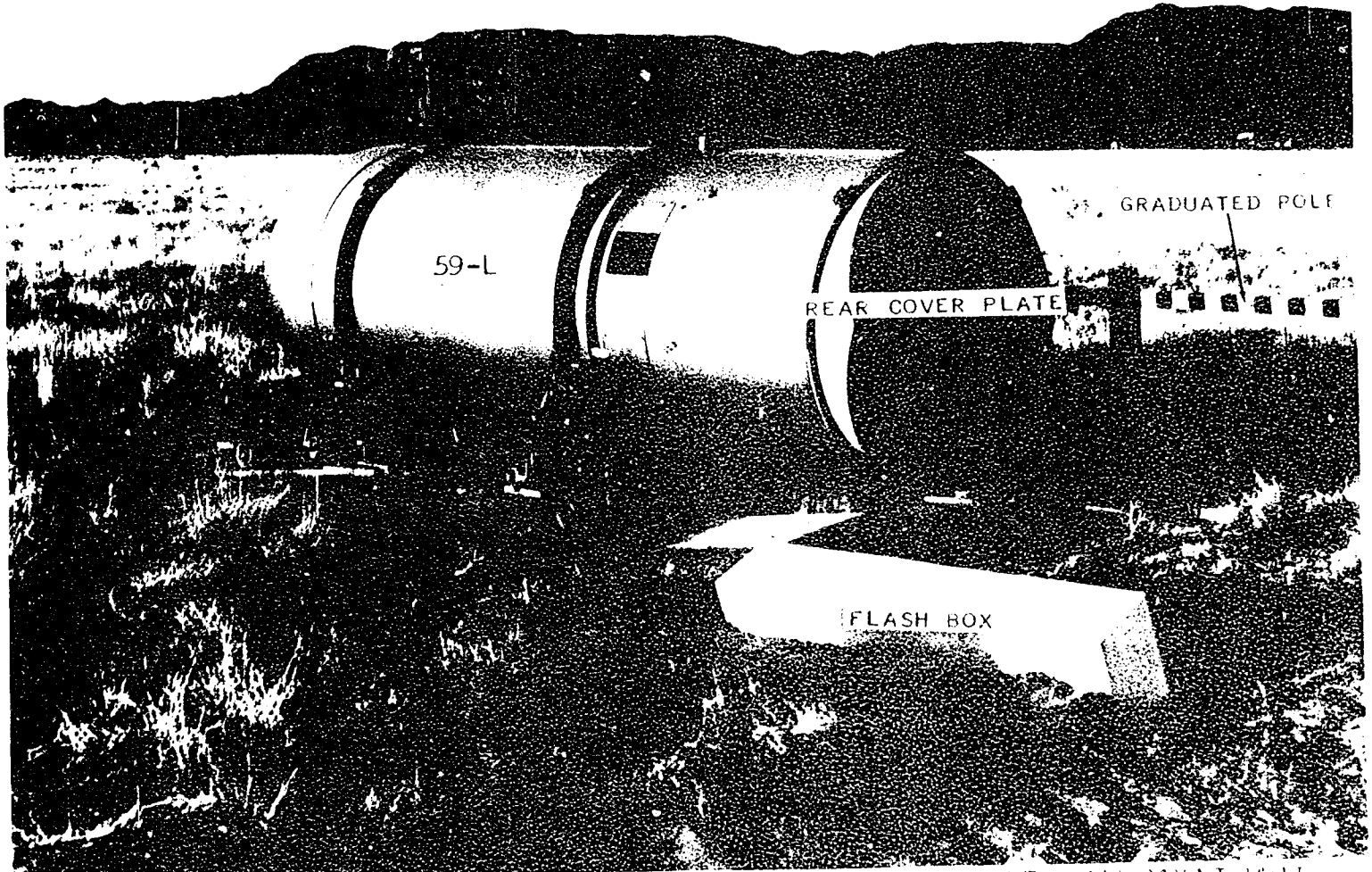

FIGURE 1 - SETUP FOR TEST OF UNIT 59-L -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT UNIT 59-L

PROJECT NO. T-1[illegible]

D#61-15174

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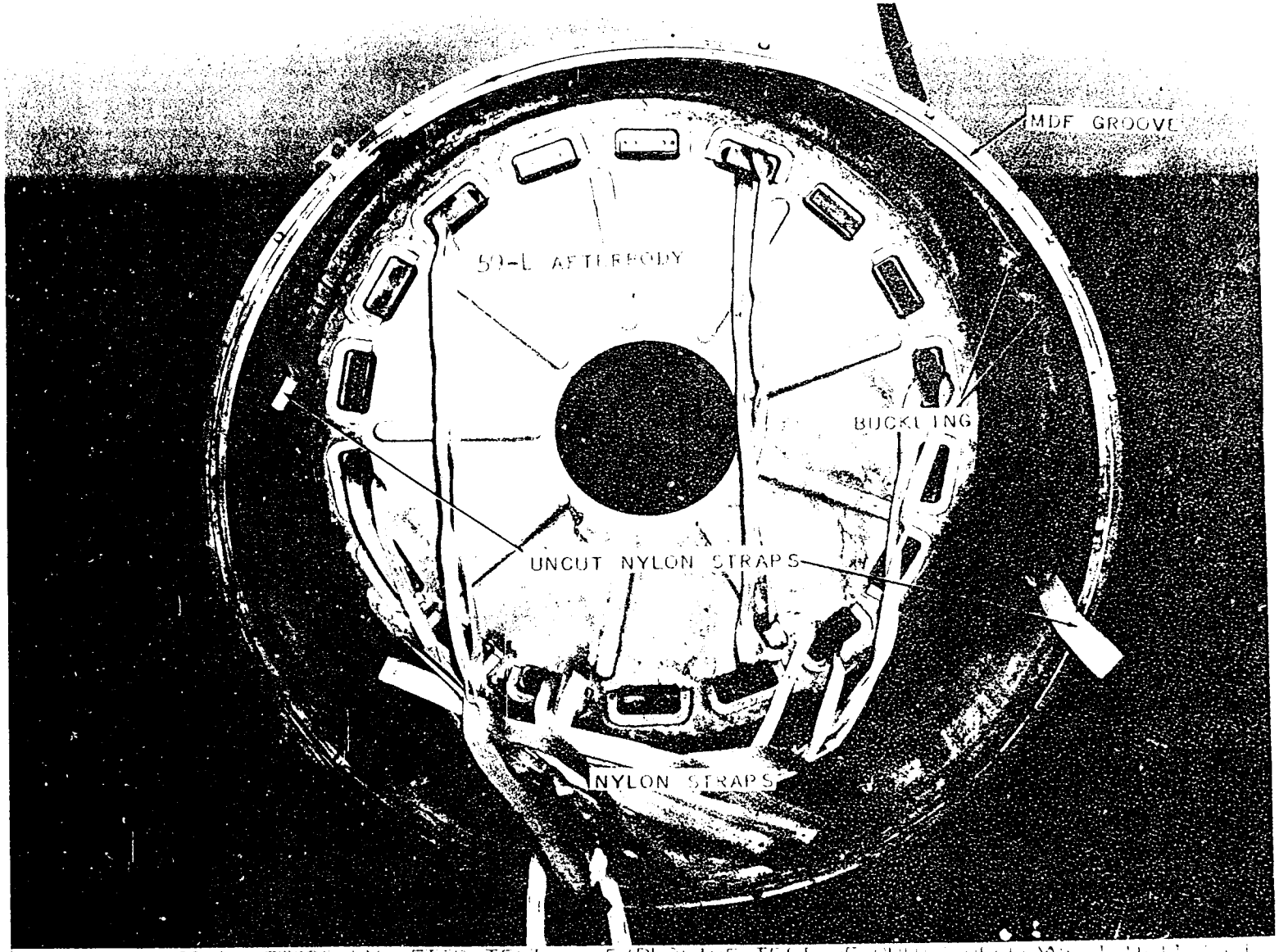

FIGURE 2 - 59-L AFTERBODY AFTER TEST -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT UNIT 59-L

D#61-15175

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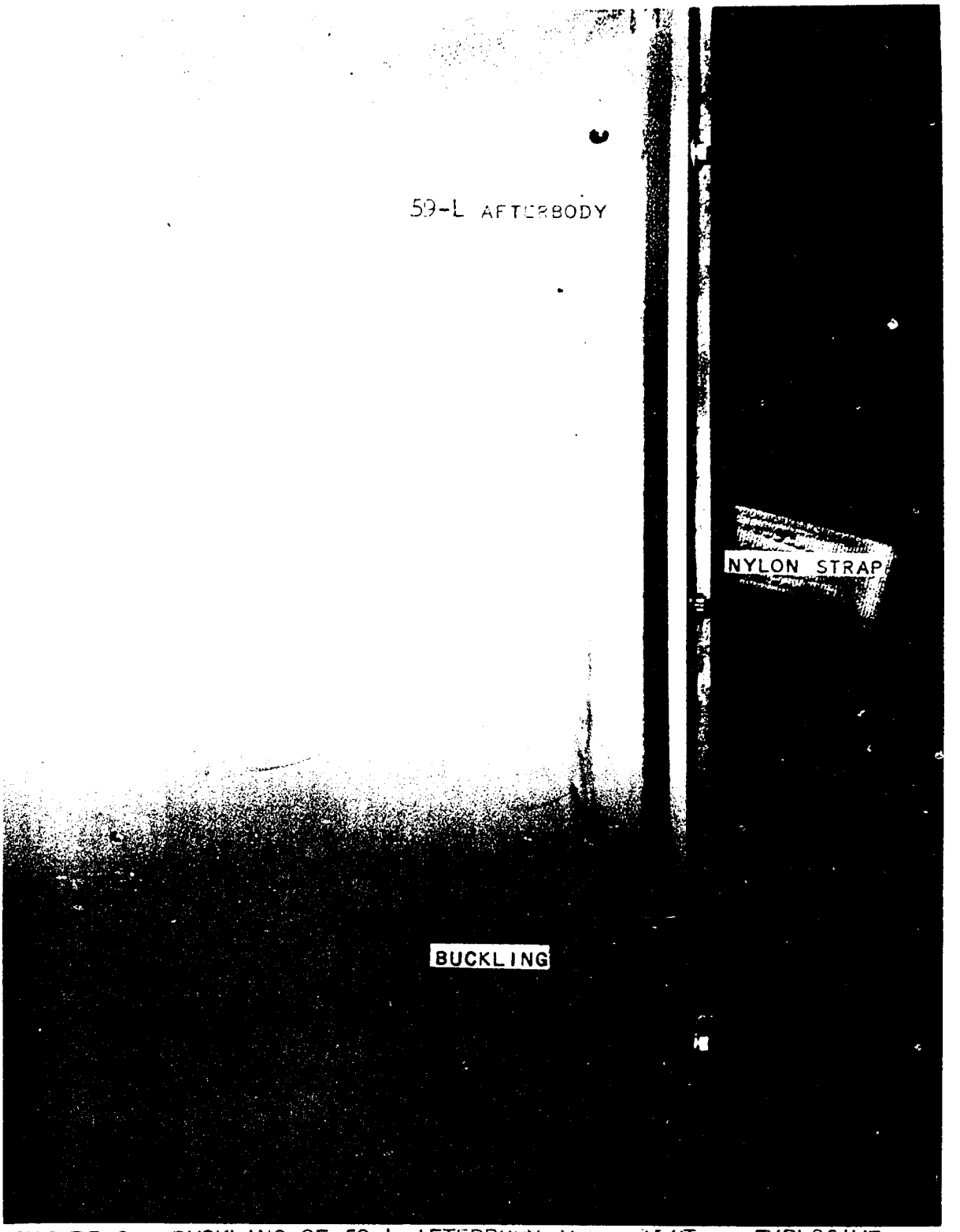

FIGURE 3 - BUCKLING OF 59-L AFTERBODY AFTER TEST -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT UNIT 59-L

D#61-15176 [redacted] PROJECT NO. T-1/618

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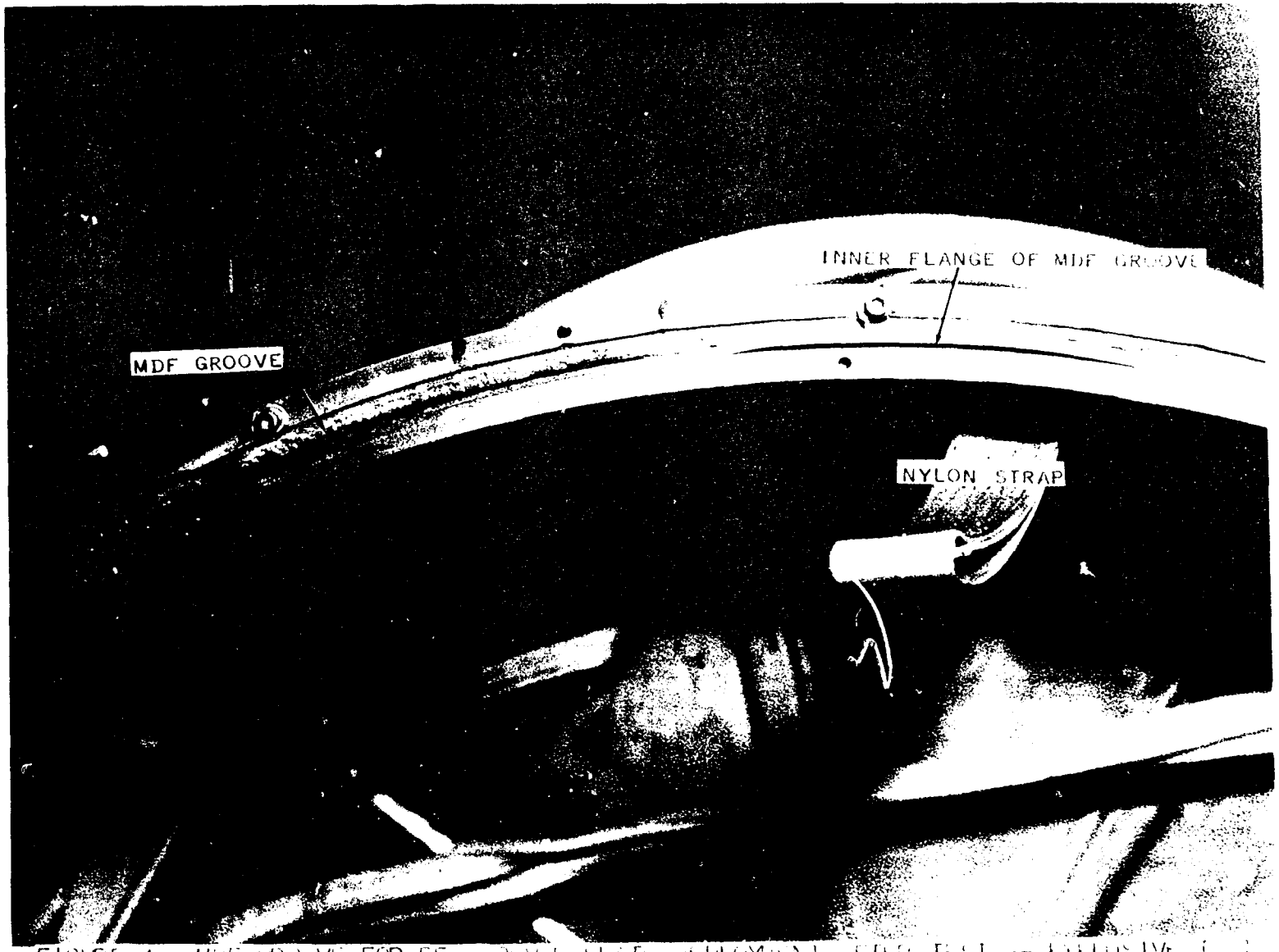

FIGURE 4 - MDF GROOVE FOR REAR COVER PLATE DEPLOYMENT AFTER TEST -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT UNIT 59-L

PROJECT No. [illegible]

D#61-15177

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FIGURE 5 - REAR COVER PLATE AFTER TEST -- EXPLOSIVE TEST OF CHUTE DEPLOYMENT UNIT

59-L D#0-11827

PROJECT NO. T-17618

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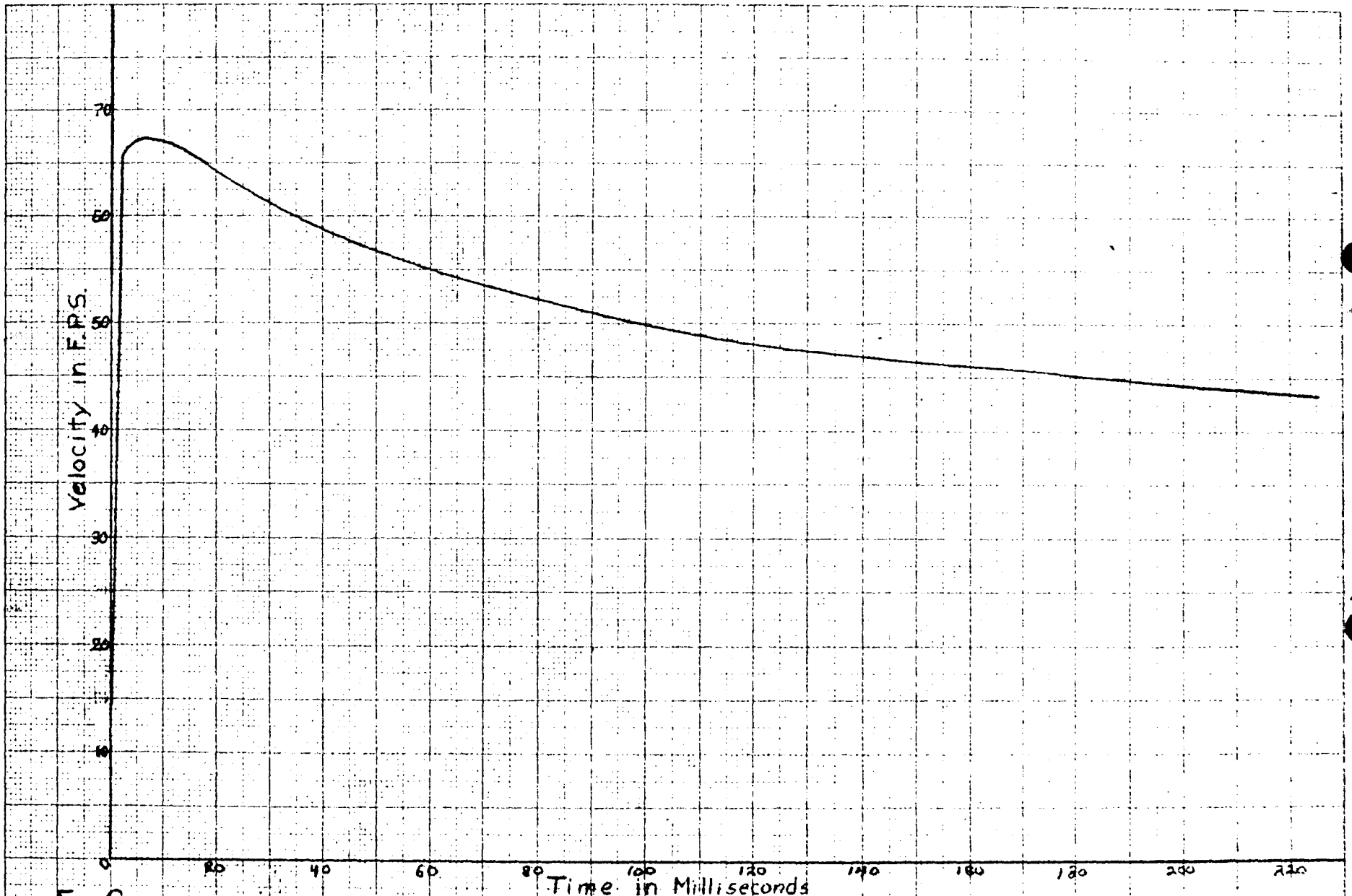

Fig 6 Velocity vs. Time of Rear Cover Plate Deployment Unit 59-L
Explosive Test of Chute Deployment Unit 59-L Project T-17618

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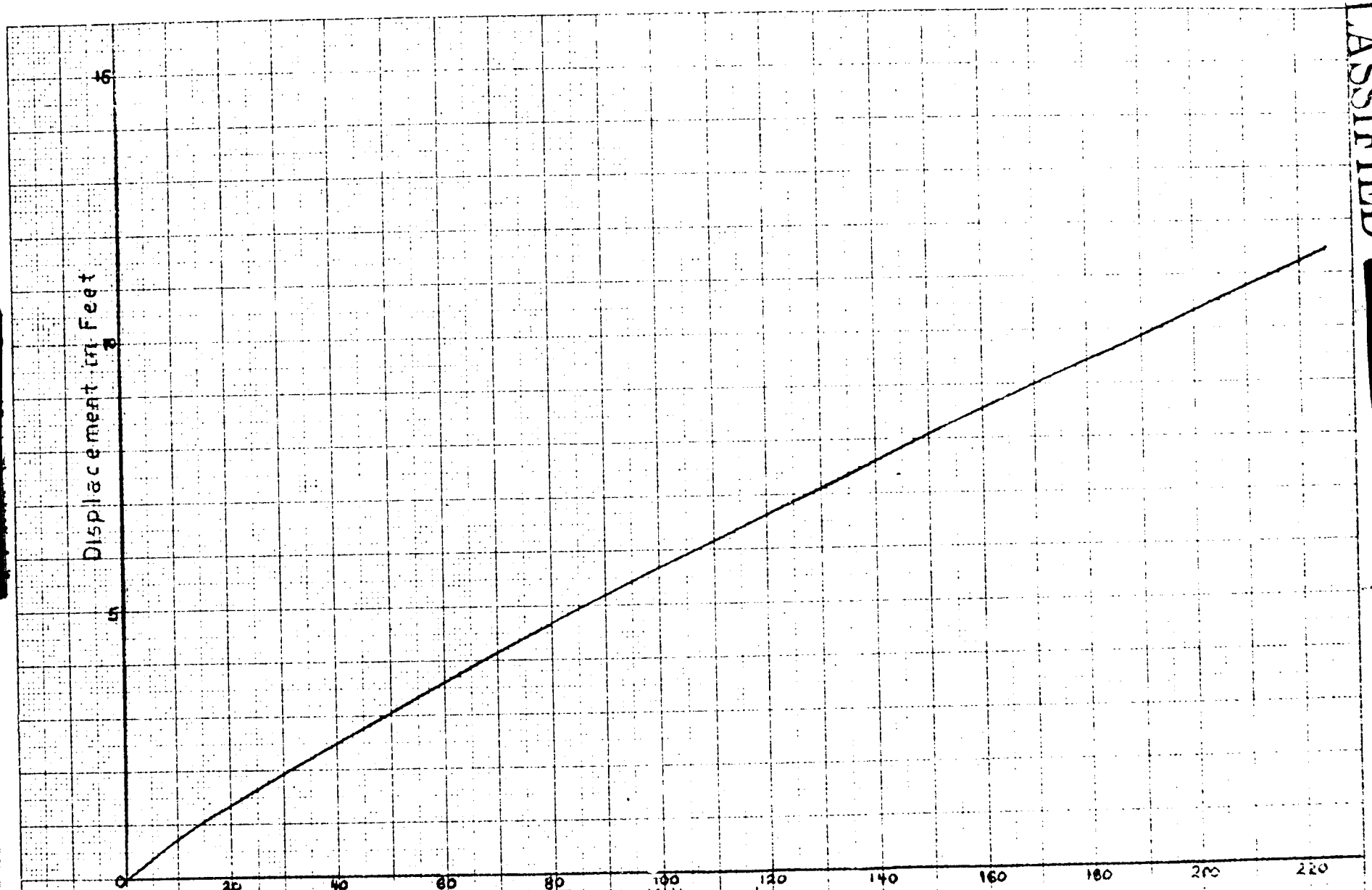

Fig. 7 Displacement vs Time of Rear Cover Plate Deployment Unit 59-L
Explosive Test of Chute Deployment Unit 59-L Project T-17618

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