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CENTRAL RECORD FILE

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
1st Review Date: 7/15/98 Authority: ☐ADC ☒ADD Name: W Loyne 2nd Review Date: 7/23/98 Authority: ADD Name: R B Craner	Determination (Circle Numbers): 1. Classification Retained 2. Classification Changed to: U 3. Contains No DOE Classified Information 4. Coordinate With: 5. Contains UCAI? no 6. Comments: OK for Opennet

AUG 21 1962

XW-53, 3-2
T-17820
Completed 4-25-62
RS 7321/10011

MR. J. J. KANE - 7145

ATTN: MR. C. D. GRAGG

Re: Rain, Salt Fog, and Sand and Dust Tests of an XW-53 Warhead (Serial No. 304) in an XH-978 Warhead Trailer (Unc)

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SEP 14 '65

Object of Test

The object of this test was to assist Division 7145 in determining the effects of exposing a certification XW-53 Warhead in the XH-978 Warhead Trailer to Rain, Salt Fog, and Sand and Dust Environments.

Authorization for Test

This test was requested by Division 7145 in an Environmental Test Order received April 4, 1962. Mr. C. D. Gragg was the consultant. The material for test was received April 4, 1962.

Summary

The XW-53 Warhead (Serial No. 304) in its XH-978 Warhead Trailer was subjected to Rain, Salt Fog, and Sand and Dust Environments in accordance with an Environmental Test Order from Division 7145.

Before and after each environment, the pressure and temperature of the unit and the laboratory barometric pressure were measured.

Although a leak existed in the XH-978 Cover at the lifting ring, there was no indication of damage to the warhead resulting from this leak. However, a slight corrosion to the forward interface (Station No. 9) of the unit resulted from the environments.

The unit lost no internal pressure during the Rain Environment, 0.25 PSI of internal pressure during the Salt Fog Environment, and 0.10 PSI of internal pressure during the Sand and Dust Environment.

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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: U Emelda Selph 7/23/98 PERSON CHANGING MARKING & DATE W. C. Loyne 7/30/98 PERSON VERIFYING MARKING & DATE	AUTHORITY: R. B. Craner RECORD ID: 98SN3012 DATED: 7/23/98

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ACCOUNT
CARD
FILE No. XW 53
3-2

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Functional Measurements and Methods

The pressure and temperature of the XW-53 Warhead and the laboratory barometric pressure were recorded before and after each environment.

Pressure

The internal pressure of the unit was monitored using a T-283 Pressure Gage (Serial No. 340-4). The laboratory barometric pressure was measured by Division 7311 personnel using a 7300 Manometer (Serial No. 39).

Temperature

The temperature of the unit was measured by a Mercury Thermometer taped to the external surface of the warhead.

Procedure and Results

The XW-53 Warhead (Serial No. 304) in an XH-978 Warhead Trailer was subjected to Rain, Salt Fog, and Sand and Dust Environments in accordance with an Environmental Test Order from Division 7145.

The pressure and temperature of the unit and the laboratory barometric pressure were measured before and after each environment (See Table I).

Rain Test (Rain and Salt Fog Chamber)

The unit was subjected to a Rain Environment in accordance with SC-4451(N), Paragraph M. Following completion of this environment, the XW-53 Warhead and XH-978 were visually inspected and the pressure and temperature measurements taken. This inspection showed that water had penetrated the XH-978 at the cover lifting ring, dripped on the unit, and ran down to the bottom of the XH-978. However, there was no visual damage to the warhead or container resulting from this environment. There was no loss of internal pressure during this environment.

Figure 1 shows the cover lifting ring of the XH-978 Handling Container.

Figure 2 shows the water that entered the XH-978 Handling Container during the Rain Test.

Salt Fog (Rain and Salt Fog Chamber)

The unit was subjected to a Salt Fog Environment in accordance with MIL-E-5272C, Paragraph 4.6. Following this environment, the unit was visually inspected and the pressure and temperature measurements made. This inspection showed that the

Salt Fog had entered the XH-978 at the cover lifting ring and through the drain holes in the bottom of the container. However, there was no indication of corrosion to the XW-53 Warhead exterior surface. An unknown type of corrosion did exist on the painted surface of the pull-bar of the XH-978. The unit lost 0.25 PSI of internal pressure during the environment. Following this environment, the salt remaining on the unit and container was washed off with tap water.

Figure 3 shows the XH-978 Warhead Trailer after completion of the Salt Fog Environment.

Figure 4 shows the salt deposits in the bottom of the XH-978 Warhead Trailer following the Salt Fog Environment.

Figure 5 shows the pull-bar of the XH-978 Warhead Trailer.

Sand and Dust (KAFB Sand and Dust Chamber)

The XW-53 Warhead in the XH-978 was subjected to a Sand and Dust Environment in accordance with MIL-E-5272C, Procedure I, Parts I and II. Following completion of this environment, the unit was visually inspected and the temperature and pressure measurements were taken. There was no indication of damage to the XW-53 Warhead or Warhead Trailer resulting from this environment. During this environment, the unit lost 0.10 PSI of internal pressure.

Figure 6 shows the unit in the Sand and Dust Chamber.

Figure 7 shows the sand that entered the XH-978 Warhead Trailer during the Sand and Dust Environment.

A final visual inspection of the unit showed that a slight corrosion had occurred during the environments on the forward interface (Station No. 9) of the unit. It appeared that this corrosion to the forward interface resulted from an inadequate coating of alodyne on the unpainted metal surface.

J. M. CARMICHAEL - 7321-3

TEST PROJECT ENGINEER D. T. JUDD - 7321-5

APPROVED BY B. JOHNSON - 7321-3

JMC:7321-3:cm

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Mr. J. J. Kane, 7145 -4- T-17820
RS 7321/50031

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Fig 1

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Fig. 2

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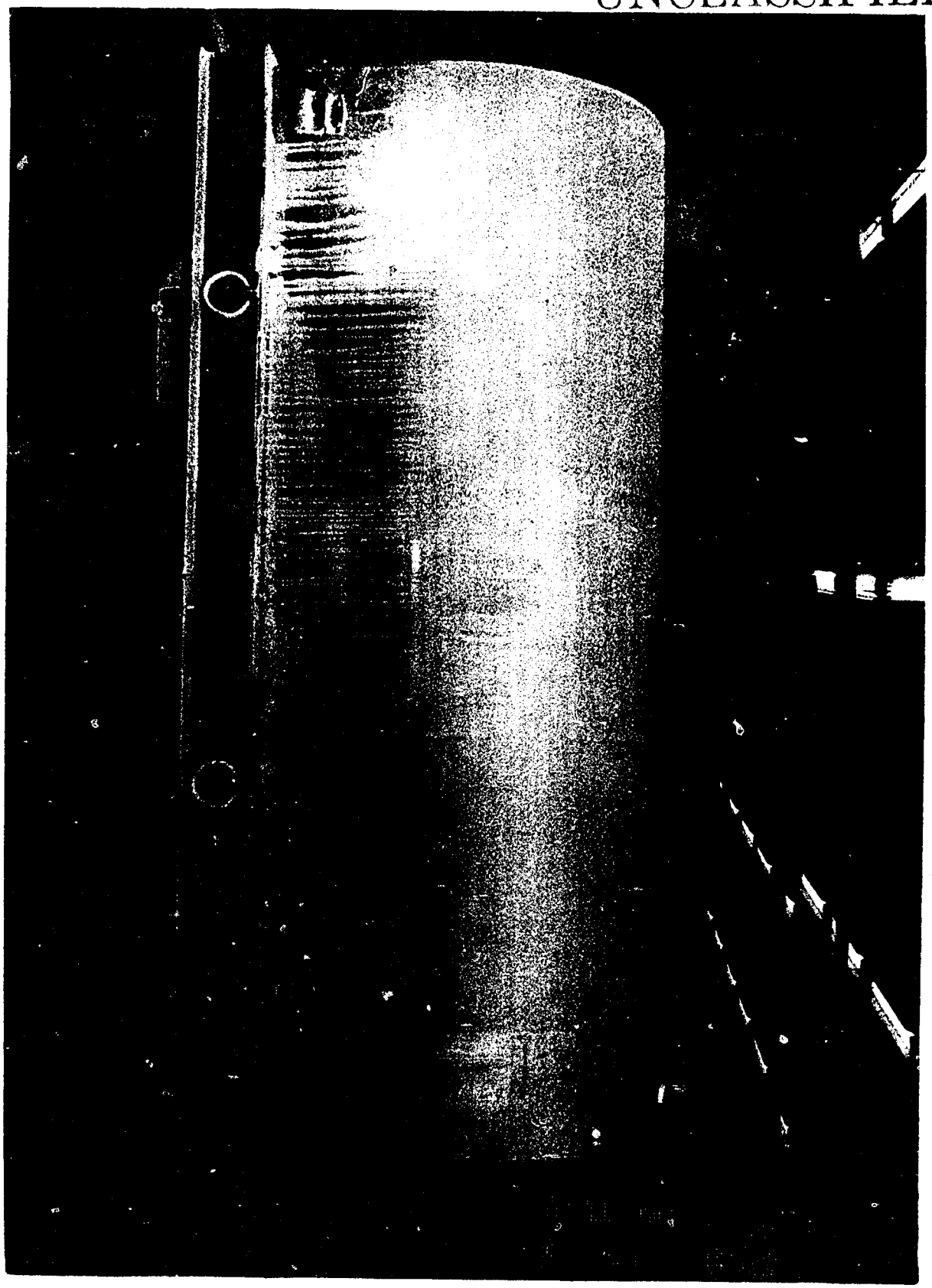

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Fig. 3

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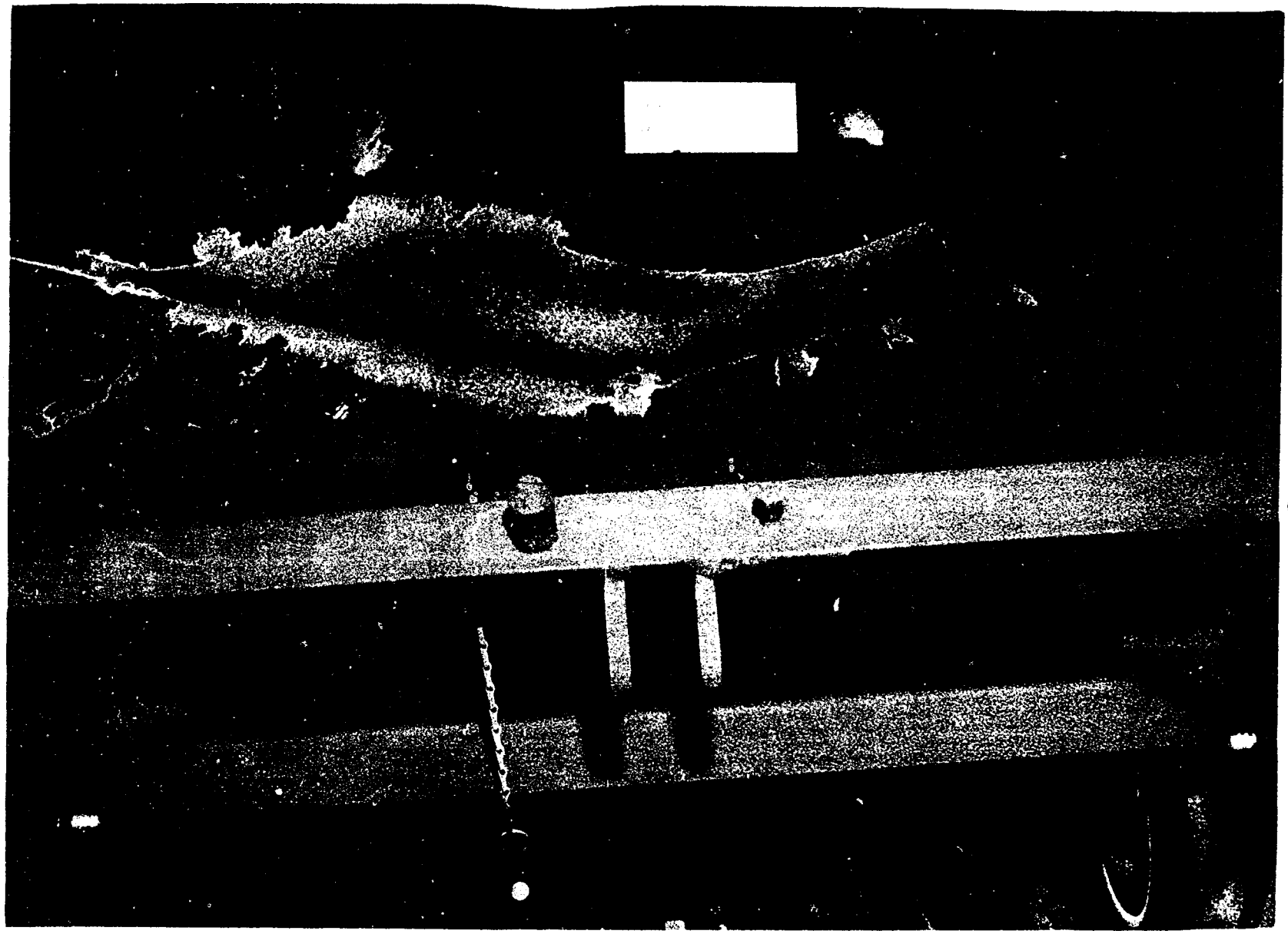

Fig 4

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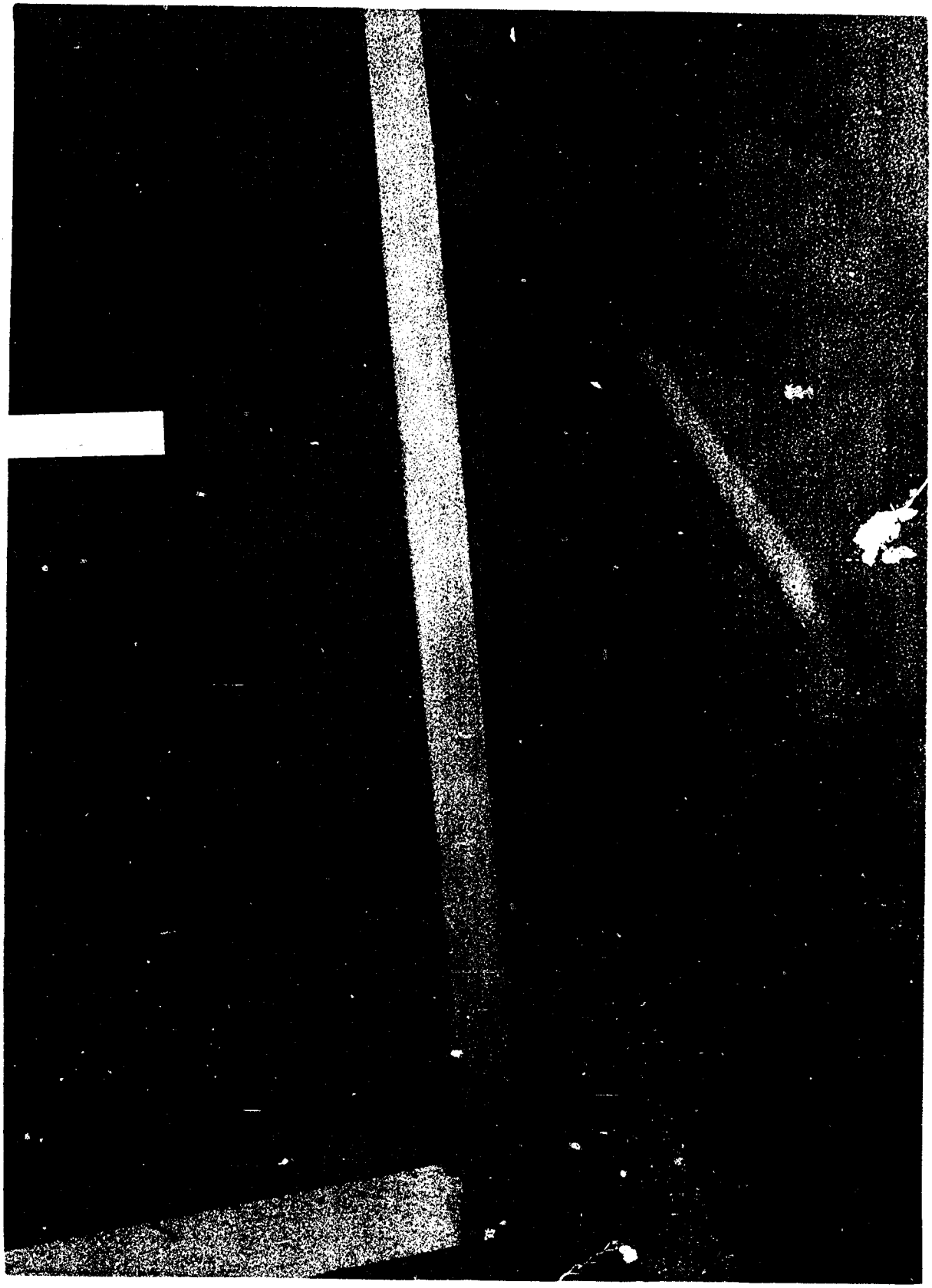

Fig 5

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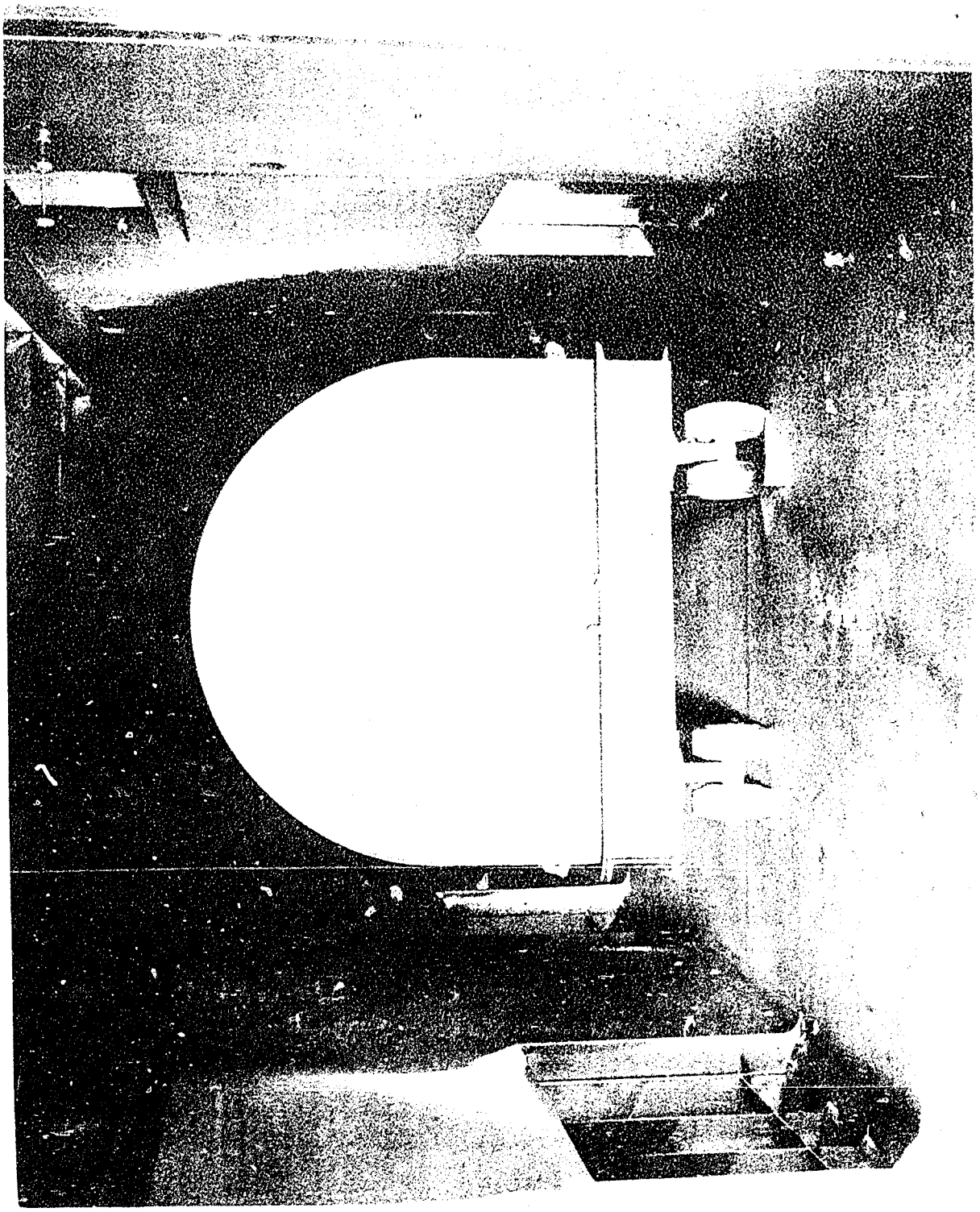

Fig 6

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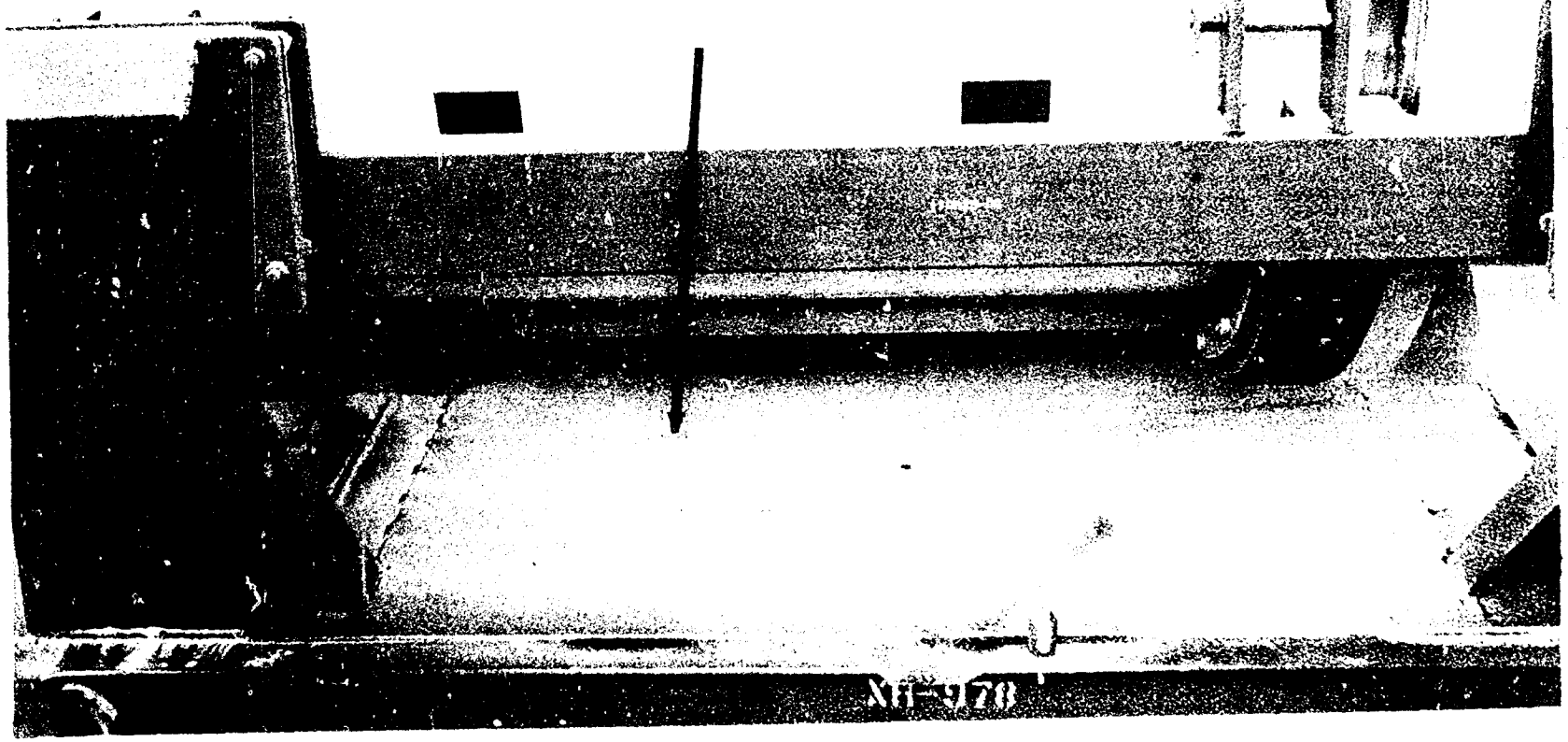

Fig. 7.

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