[redacted] UNCLASSIFIED

APR 15 1960

MN-49, 3-2
Project No. T-16710
Case No. 704.00

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
1st Review Date: 5/21/98
Authority: ADD
Name: PBCadwell
2nd Review Date: 5/26/98
Authority: ADD
Name: WC Layne
Determination (Circle Number(s)):
1. Classification Retained
2. Classification Changed to: UNCL
3. Contains No DOE Classified Information
4. Coordinate With:
5. Contains UCNI?
6. Comments:
DECLASSIFY

TO: DISTRIBUTION

Re: Temperature Cycling Tests of Three MN-49-X4's

Summary of Test

The object of this test was to evaluate the ablating material and two types of bonding material used on development Model MN-49-X4's during temperature cycling as specified by the Ballistic Missile Division. The test was requested by Mr. R. Berry, 1245.

Three MN-49-X4 warheads were tested by temperature cycling, for an 8 day period, with temperatures varying between -65°F and +160°F. One units had polysulphide bond attaching the ablating material to the warhead case; one unit had EEV-60 bond. All bonding was performed by AGF Co.

No cracking of the ablating material occurred during the tests, and both types of bonding material were satisfactory.

Test Procedure and Results

These test vehicles were tested to the temperature cycle shown in Fig. 1. This cycle was specified as a result of a joint decision between the Ballistic Missiles Division and Division 1245, Sandia Corporation.

The test equipment used consisted of two large temperature chambers, Blastin No. 1 and No. 2. No instrumentation was used.

The three units tested used two different types of bonding material for attaching the ablating material to the warhead case. The ablating material, on each unit, was circumferentially machined into either five or six sections, with the machined grooves cut just to the bonding material. Figure 2 shows the units tested, with dimensions and other important mechanical listed.

Inspection of the units during and after the tests disclosed no failures to attach the bonding materials or the ablating material.

RECEIVED APR 18 1960 CENTRAL RECORD FILE

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
DOWNGRADING OR DECLASSIFICATION STAMP
CLASSIFICATION CHANGED TO: U
AUTHORITY: W C. Layne
Emilda Seph 5/27/98
PERSON CHANGING MARKING & DATE
RECORD ID: 98SN2122
W. C. Layne 5/28/98
PERSON VERIFYING MARKING & DATE
DATED: 5/26/98

1613 Project Engineer: G. L. WARREN - 1613-1

Approved by: [illegible] - 1613-3

1613:1613-Stec

Incl: Figures 1 and 2

Xw-49-X4
3-2

1009

[redacted]

UNCLASSIFIED

[redacted]

UNCLASSIFIED

Copy to:
J. J. [illegible], 1263
Attn: R. [illegible]
T. A. [illegible], 1610
D. M. [illegible], 1232
J. M. [illegible], [illegible]
J. R. [illegible], 5523
R. T. [illegible], [illegible]

UNCLASSIFIED

[redacted]

K+E 10 X 10 TO THE ½ INCH 359-11
KEUFFEL & ESSER CO. MADE IN U.S.A.

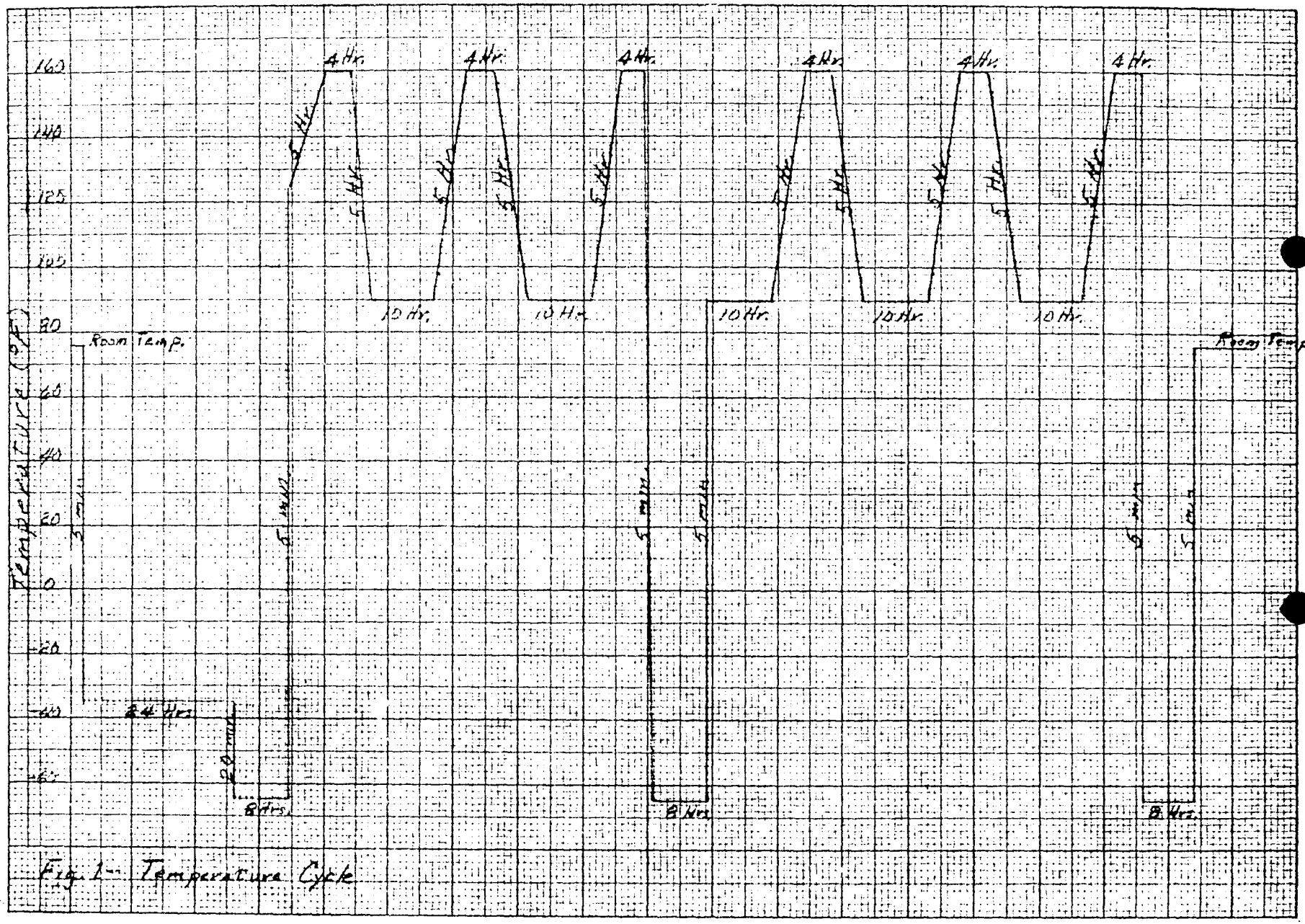


Fig. 1-- Temperature Cycle

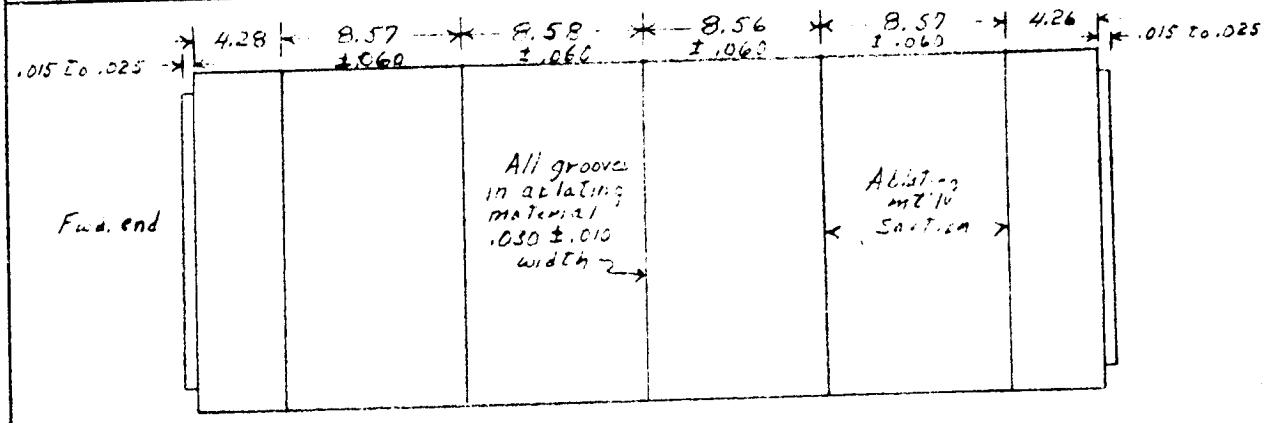
UNCLASSIFIED

UNCLASSIFIED

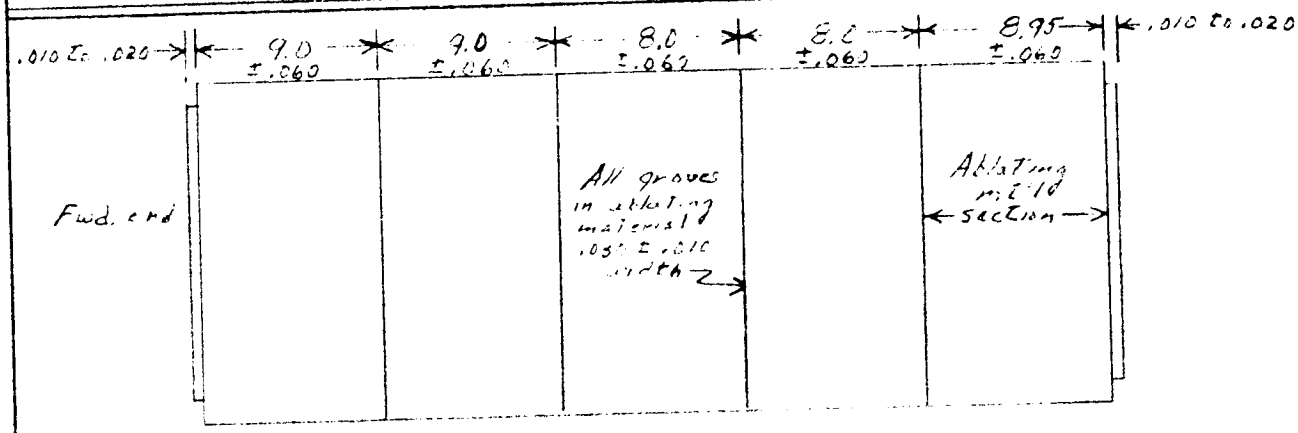
T-16710

SC 3308-A (5-54) SKETCH SHEET

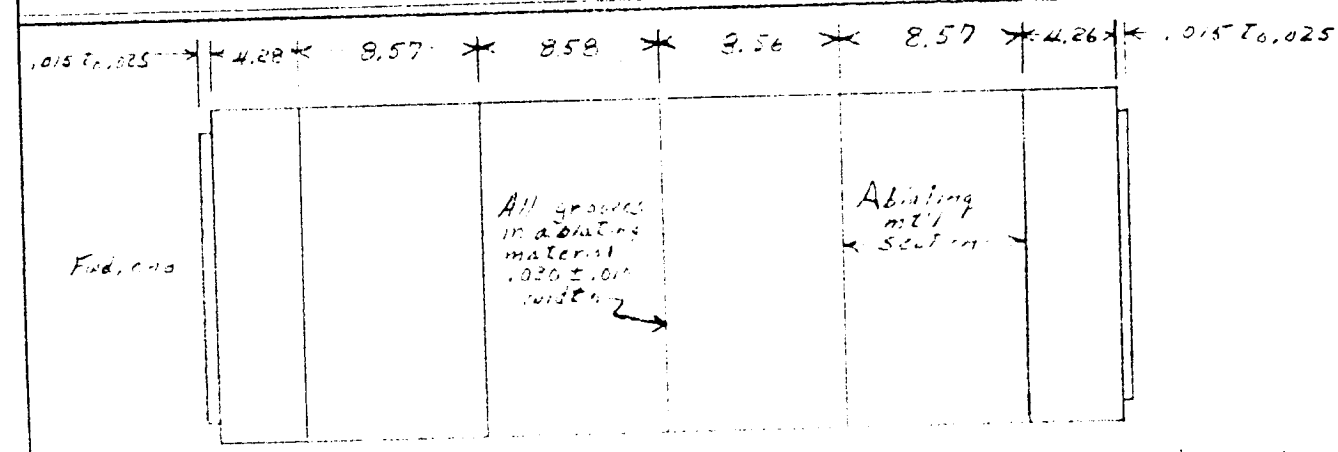
PREPARED BY:	SANDIA CORPORATION	PAGE NO. OF
CHECKED BY:	UNCLASSIFIED	REPORT NO.
DATE:		MODEL NO.



TRM-1 Unit (poly-sulphide bond)
Serial no. 152



G.E. Unit (RTV-60 Bond)



Type 3 Unit (#332) (Epoxide bond)

Fig. 2---Sketches of Units Tested

T-16710

UNCLASSIFIED

[redacted]