

| SANDIA SYSTEMATIC DECLASSIFICATION REVIEW   |   |
|---|---|
| 1 <sup>st</sup> Review Log# <u>8125198</u>  | Classification Based on: <u>U</u>         |
| Authority: <u>W.C. Layne</u>                | Classification Changed to: <u>U</u>       |
| 2 <sup>nd</sup> Review Date: <u>8/19/98</u> | 1. Contains No DOE Classified Information |
| Author: <u>W.C. Layne</u>                   | 2. Contains UCAT: <u>NO</u>               |
| Name: <u>W.C. Layne</u>                     | 3. Comments: <u>DECLASSIFY</u>            |

AUG 7 1959

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TX-28, 3-2  
 Project No. T-16105  
 Case No. 853.00  
 Completed 6-5-59

CENTRAL RECORD FILE  
 ACCOUNTABILITY CARD  
 FILE No. TX-28-X2  
3-2

TO: DISTRIBUTION

Re: Climatic Environmental Tests of Two TX-28-X2 Units

Summary of Test

Of the two specimens supplied, one was subjected to the tropical exposure, salt spray, rain, and sand and dust tests specified in SCS-5 with no significant deterioration. The tests were performed in the order listed and will be referred to as Sequence A.

The second specimen was subjected to the desert and arctic exposure tests specified in SCS-5, referred to as Sequence B.

The time - temperature curves (Figs. 1 thru 3) show the thermal lag of some of the components. There was no evidence of degradation.

Authorization for Test

This test was requested by Division 1215 in a Work Order Authorization dated August 8, 1958. Mr. R. E. Howell was the consultant.

Components Tested

The components subjected to each test are listed below for identification with the test units.

Sequence A

| <u>Component</u> | <u>Serial Number</u> | <u>Part Number</u> |
|------------------|----------------------|--------------------|
| MC-543           | GP-11699-G8          | 310080-00          |
| MC-754           | SAF-0206-F8          | 310354-00          |
| MC-938           | BL-00060-E8          | 310668-00          |
| MC-955           | 94                   | Modified MC-881    |
| MC-955           | 118                  | Modified MC-881    |
| MC-1059          | AA-5015-L8           | 310812-00          |
| MC-1098          | AA-1006-A9           | 310877-00          |
| MC-1099          | AS-1030-C9           | 310878-00          |
| MC-1114          | AA-0005-K8           | 310895-00          |
| MC-1120          | AA-5010-B9           | 310905-00          |
| MC-1123          | AS-0016-C9           | 310907-00          |
| MC-1124          | AA-1020-K8           | 310908-00          |
| MC-1136          |                      | 310935-00          |

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CENTRAL RECORD FILE

| SANDIA SYSTEMATIC DECLASSIFICATION REVIEW<br>DOWNGRADING OR DECLASSIFICATION STAMP |                              |
|--|------------------------------|
| CLASSIFICATION CHANGED TO: <u>U</u>  | AUTHORITY: <u>W.C. Layne</u> |
| PERSON CHANGING MARKING & DATE: <u>Emelda Seals 8/25/98</u>                        | RECORD ID: <u>98SN3772</u>   |
| PERSON VERIFYING MARKING & DATE: <u>W.C. Layne 8/25/98</u>                         | DATED: <u>8/19/98</u>        |

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Distribution

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Project No. T-16105

## Sequence B

| <u>Component</u> | <u>Serial Number</u> | <u>Part Number</u> |
|------------------|----------------------|--------------------|
| MC-543           | GP-11519-F8          | 310080-00          |
| MC-754           | SAF-0420-L8          | 310354-00          |
| MC-938           | BL-00092-E8          | 310668-00          |
| MC-955           | 90                   | Modified MC-881    |
| MC-955           | 30                   | Modified MC-881    |
| MC-1059          | AA-0031-H8           | 310812-00          |
| MC-1098          | AH-1007-A9           | 310877-00          |
| MC-1099          | AS-1032-D9           | 310878-00          |
| MC-1114          | AA-0010-L8           | 310895-00          |
| MC-1120          | AA-5007-B9           | 310905-00          |
| MC-1123          | AA-1014-C9           | 310907-00          |
| MC-1124          | AA-1021-K8           | 310908-00          |
| MC-1136          | -                    | 310935-00          |

In both test units, the MC-1108, MC-1109 and MC-1150 were dummy components.

### Procedure and Results

Test sequence A was performed in Bldg. 860, using Hiatt chamber #3 for tropic exposure. Following humidity (or tropical exposure) heavy corrosion was noted on the unpainted washers at the aft end of the parachute case and on the thumb screw in the pullout switch cover. Lighter corrosion was noted in the socket heads of the bolts securing the fins to the afterbody and in both of two tapped holes on each side of the nose section. Operation of the MC-1059 indicated that there was electrical continuity. Through the access door, there was no moisture visible on the interior of the weapon.

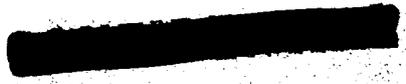
Exposure to salt fog and rain may have resulted in some increase in the corrosion previously mentioned, although evaluation is difficult. There was no evidence of deposited salt or moisture in the part of the interior of the weapon visible through the access door. Operation of the MC-1059 gave the proper indication after each condition.

After exposure to sand and dust, the final condition of Schedule A, a thin layer of fine dust was visible in that portion of the weapon interior and those components visible through the access door.

The second weapon was subjected to 30 temperature cycles as specified in paragraph 4.1.1 of SCS-5. Figures 1 and 2 indicate the temperature lag of certain components during the first and twenty-ninth temperature cycles.

Following this the same unit was subjected to a temperature of -65°F for

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1450

Distribution

-3-

Project No. T-16105

approximately 165 hours. All of the points monitored had reached the exposure temperature after 52 1/2 hours. Figure 3 is a chart of thermo-couple readings during the first 24 hours of exposure.

Operation of the MC-1059 gave the proper indication after exposure to Schedule B. There was no evidence of deterioration.

1613 Project Engineer:

*R. G. Hamilton*

R. G. HAMILTON - 1613-3

Approved by:

*R. S. HOOPER*

R. S. HOOPER - 1613-3

RGH:1613-3:ec

Enc: Figures 1 thru 3

Copy to:

- A. V. Engel, Jr., 1215  
Attn: R. E. Howell
- W. A. Gardner, 1610
- J. M. Wiesen, 1592
- C. L. Gomel, 5523
- R. K. Smeltzer, 4721-3

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Legend

- 
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- ◇
- △
- ▽
- ×
- .

- Thermocouple #
1. On cover of MC-1109
  2. On MC-754
  3. On side of MC-1123
  4. On top of MC-1124
  5. On MC-73
  6. On MC-1099
  7. On MC-1098
  8. Chamber Air

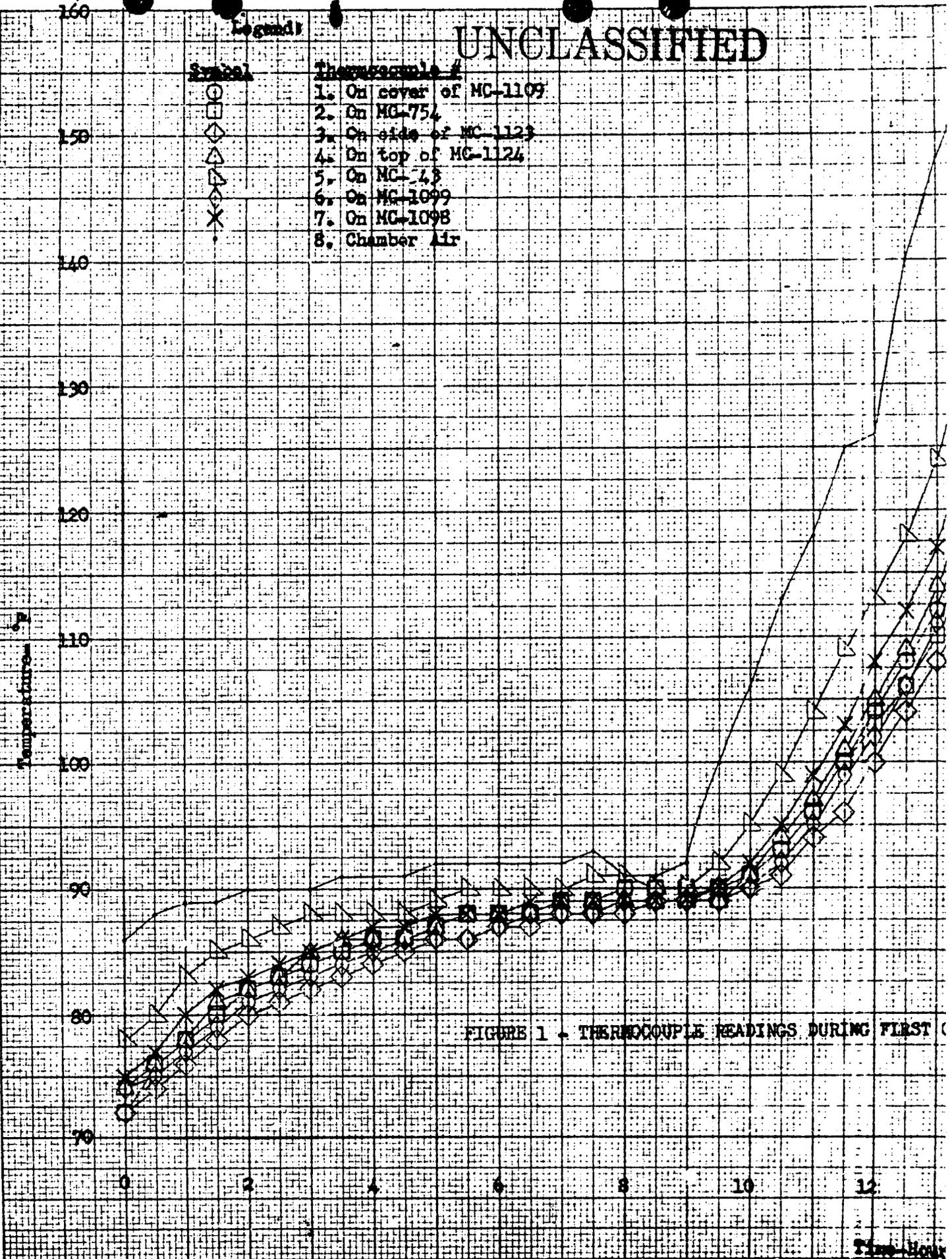
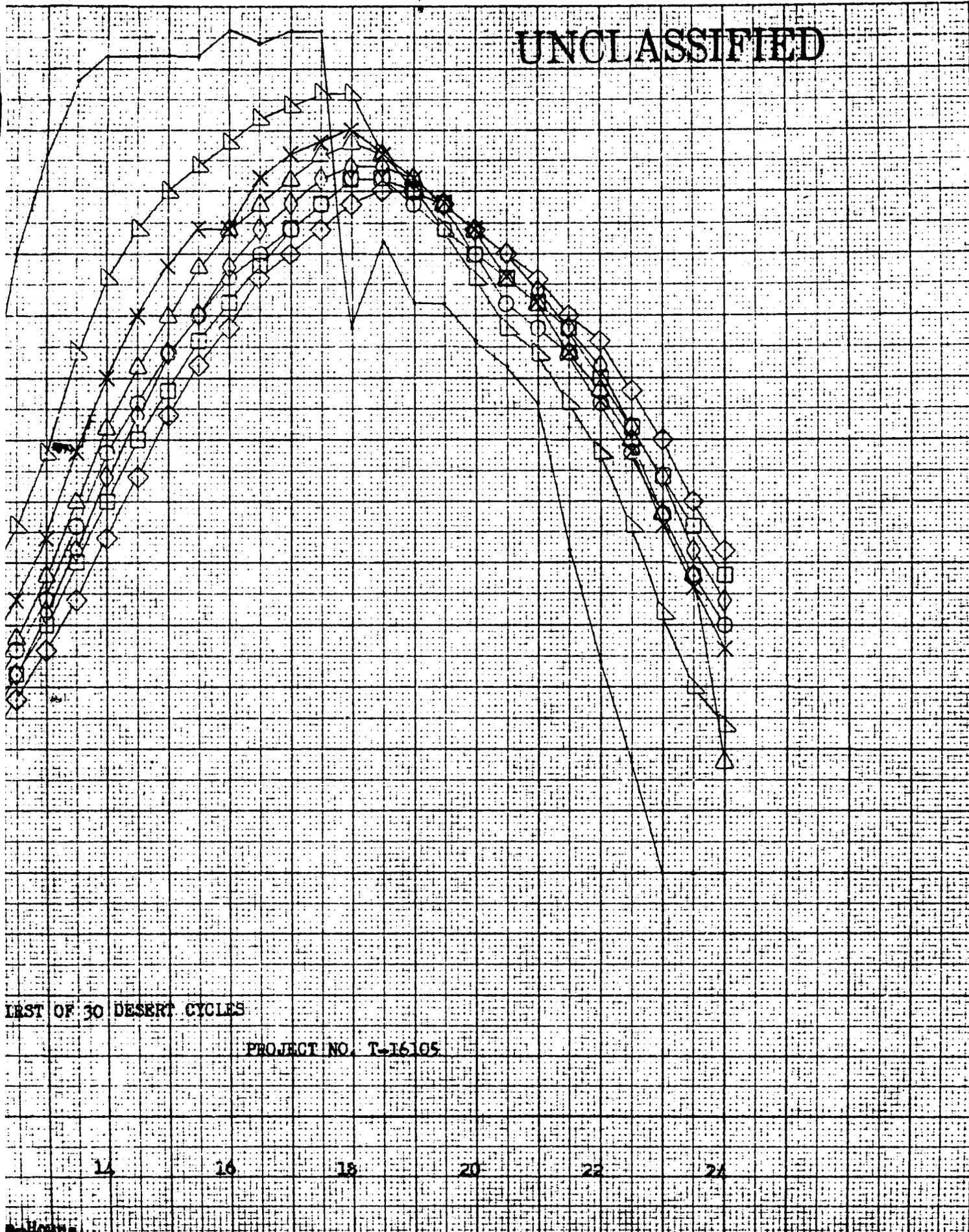


FIGURE 1 - THERMOCOUPLE READINGS DURING FIRST

K&E KEUFFEL & ESSER CO. MADE IN U.S.A.

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FIRST OF 30 DESERT CYCLES

PROJECT NO. T-16105

14

16

18

20

22

24

HOURS

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T-16105

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Legend

- 
- ◇
- △
- ▽
- 
- ×

Thermocouples

- 1. On cover of MC-1109
- 2. ON MC-754
- 3. ON side of MC-1123
- 4. On top of MC-1124
- 5. On MC-543
- 6. On MC-1099
- 7. On MC-1098
- 8. Chamber Air

10 X 10 TO THE 1/2 IN  
KEUFFEL & ESSER CO.

160  
150  
140  
130  
120  
110  
100  
90  
80

Temperature - F°

0 2 4 6 8 10 12 14

t

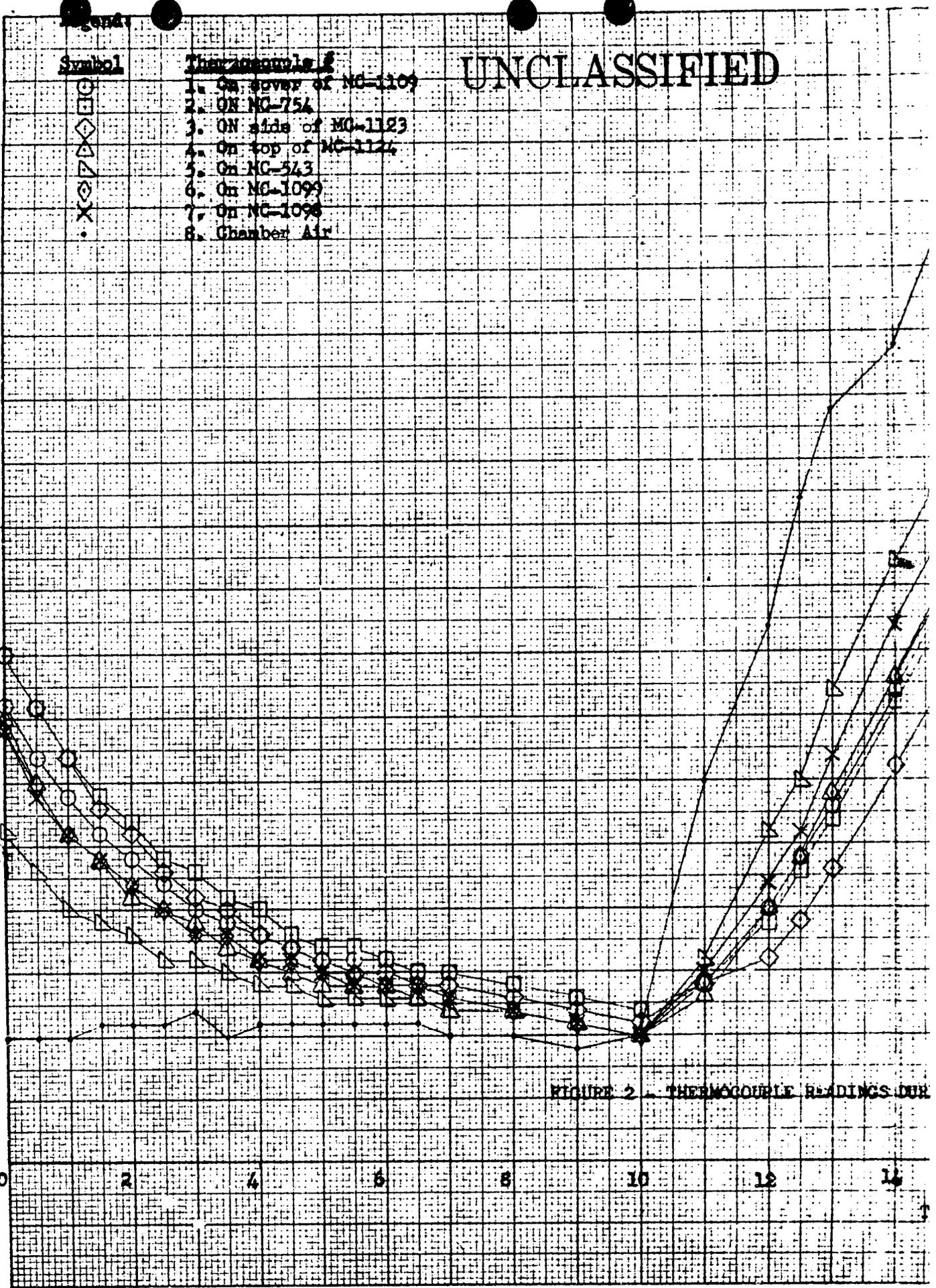
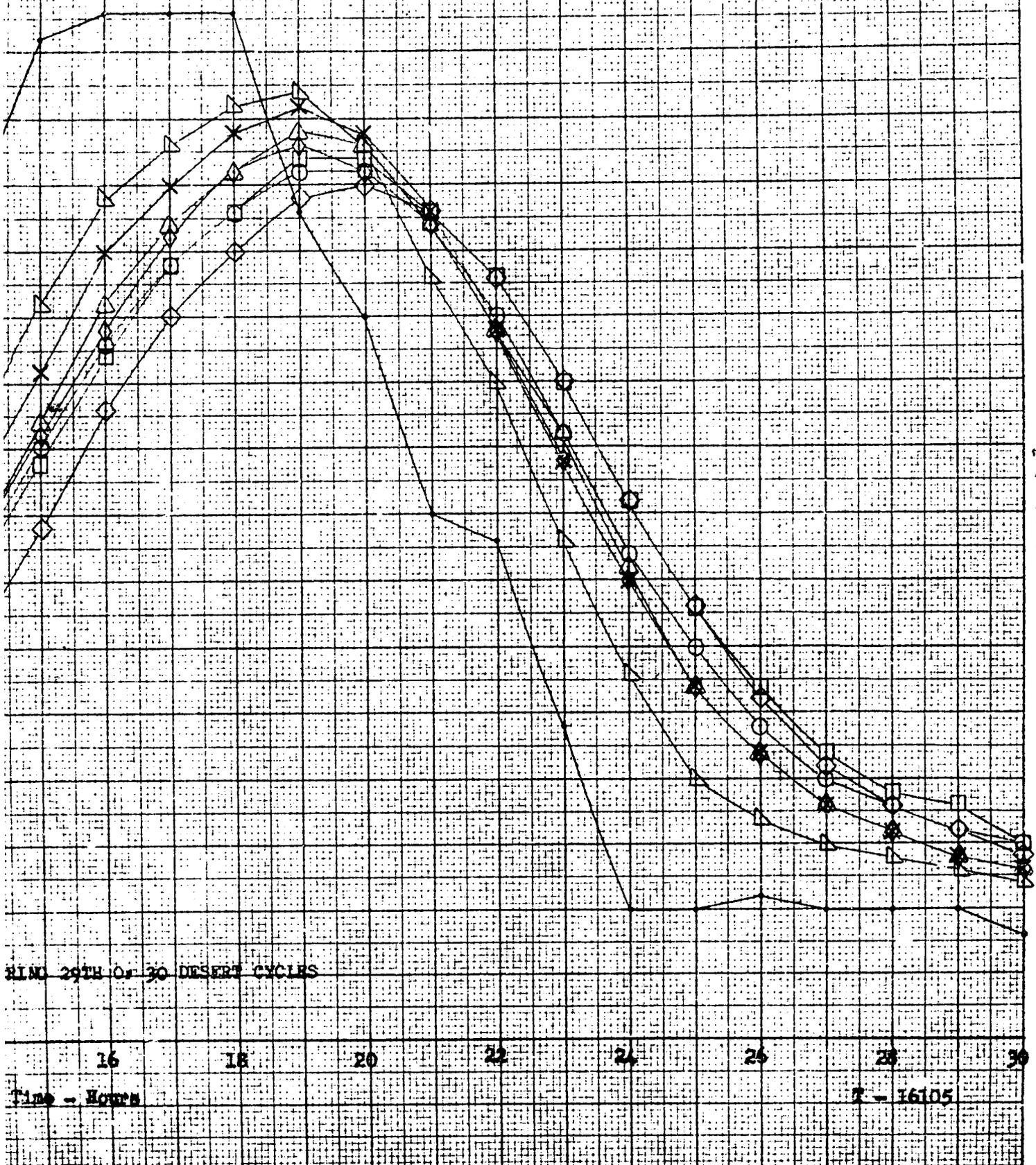


FIGURE 2 - THERMOCOUPLE READINGS DURING

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110

90

70

50

38

28

18

8

-2

-12

0

2

4

6

8

10

12

Time-Hours

FIGURE 3 - THERMOCOUPLE OF A

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K&E 10 X 10 TO THE 1/4 INCH 359-11L KEUFFEL & ESSER CO. MADE IN U.S.A.

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### Legend:

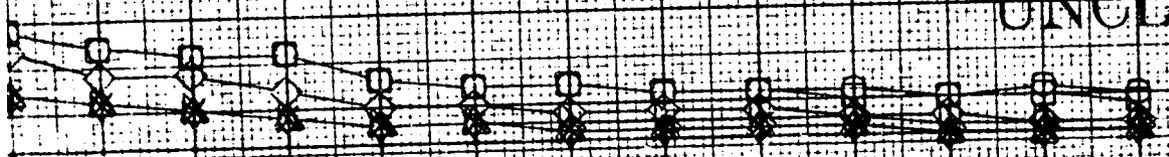
### Symbol

- 
- 
- ◇
- △
- ▽
- ◇
- X
- .

### Thermocouple #

- 1. On cover of MC-1109
- 2. On MC-754
- 3. On side of MC-1123
- 4. On top of MC-1124
- 5. On MC-543
- 6. On MC-1099
- 7. On MC-1098
- 8. Chamber Air

TEMPERATURE READINGS DURING FIRST 24 HOURS OF ARCTIC EXPOSURE



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