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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
Classification Retained: U
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Review Date: 10/27/98
Authority: ADD
Name: W Lange
10/26/98
RBCramer
TCG-SAFF-1; TCG-NNT-1

JAN 2 9 1960

T-187A, 3.2
T-22209
Project No. 12,608.01
Completed: 1-18-60
Ref. Sym: 1611(459)

INVENTORIED
SEP 1 4 '65
3428-3

TO: DISTRIBUTION

RE: Environmental and Functional Tests on the T-187A Radar Tester

Summary

Environmental and functional checks on a T-187A test unit were requested by Mr. J. R. Collier, 5522, in a work order dated 4-30-59.

The test unit was subjected to vibration, shock, low and high temperature, and humidity environments. Vibration and temperature had no effects on the unit, but shock caused damage to the case and humidity damaged the attenuator of the unit.

Due to the failure of the attenuator, the test was stopped.

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Object of Test

A T-187A Radar Tester was submitted to various environments to determine their effect on the electrical parameters of the tester.

Authorization for Test

Mr. J. R. Collier, 5522, requested the environments and functional tests in a work order dated 4-30-59.

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Instrumentation

The tester itself and an external power supply were the only instrumentation used during the tests and environments.

FILE
T-1874
3.2

Procedure

Vibration - The test set, non-operating, was vibrated for 45 minutes along each of three mutually perpendicular axes through a frequency range of 10 to 55 cps at a double amplitude of 0.064 inch. The frequency was varied from 10 to 55 to 10 cps at a rate of approximately one complete cycle per minute.

The unit was vibrated while operating for 45 minutes along each of the three mutually perpendicular axes through a frequency range of 10 to 55 cps at a double amplitude of 0.032 inch. The rate of cycling was the same as above. The results of the test are shown in Table I.

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
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CLASSIFICATION CHANGED TO: U
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AUTHORITY: W Lange
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Shock - While in the case and non-operating, the unit was subjected to mechanical shock. The unit received a 60 g shock on each of the four sides and one 100 g shock on the top and bottom of the test set. The shock duration was 0.01 second and had half sine wave function.

The second shock consisted of the unit being dropped on a concrete surface from a height of 30 inches. One drop was made on each side of the test set.

Low Temperature - The unit was placed in a chamber at a temperature of -65°F while not operating, until the temperature of the unit stabilized. Then, the temperature was lowered to -80°F for one hour at which time it was returned to -65°F for ten hours.

While operating, the test set was stabilized at a temperature of 0°F, with a relative humidity that produced frozen condensate. The results of this test are in Table I.

High Temperature - The unit, not operating, was placed in a chamber at a temperature of 165°F with a maximum relative humidity of 15 percent for ten hours.

While operating, the unit was stabilized at 130°F with a maximum relative humidity of 15 percent. The results of this test are in Table I.

Humidity - The test set was dried at 130°F for 24 hours prior to submitting to humidity. The humidity cycle was the same as is outlined in SCS-7.

Results

Shock created some damage to the case of the test unit, then later when submitted to humidity, the attenuator of the test unit was rendered inoperative due to water vapor corroding it. Due to this failure, the test was stopped.

Vibration, low and high temperature had no detrimental effects.

D. J. WHITE, 1611-2

DJW:1611-2:cd

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T-22909

Distribution

-3-

Ref. Sym: 1611(459)

Distribution:
1/6A - W. A. Gardner, 1610 0068
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3/6A - G. R. Bachand, 2421 0058
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4/6A - D. S. Dropcon, 5522 0261
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5/6A - J. R. Harrison, 5523 0262
6/6A - R. K. Smoltzer, 2421-3 0153

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Distribution

T-22209
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TABLE I

Functional Parameters of T-187A Testor

Environment	Loop Sensitivity (db)	Voltage Test	Operating Time (Min)	Malfunction
Initial Test	127 (Range 3)	OK	10	None
Low Temperature	119.8 (Range 3)	OK	6	None
High Temperature	128 (Range 2)	OK	10	None
Vibration				
Axis X	127 (Range 2)	OK	6	None
Axis Y	127 (Range 2)	OK	6	None
Axis Z	126 (Range 2)	OK	7	None