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WANL-TMI-1937

Test Number: 65 D E-150-0

Title: XE-2 Gamma Rate Sensor Vibration Test

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Purpose: To evaluate the structural integrity of the XE-2 Gamma Rate Sensor and its mounting brackets

Date Completed: August 22, 1968

Drawing Number: 910E249

Serial Number: None

NMDR: None

Discrepancies: One standard socket head cap screw was substituted for 910E249H04

Document References: MD-178, PM-TAM-312 and EM-7545

MASTER

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INFORMATION CATEGORY

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XE-2 Gamma Rate Sensor Vibration Test

Tests were conducted at ambient conditions to evaluate the structural integrity of the XE-2 gamma rate sensor and mounting brackets.

The gamma rate sensor and its mounting brackets were fastened to a fixture plate and vibrated along three mutually perpendicular axes. Exploratory, investigative, and resonance dwell tests were conducted for a total elapsed time of 60 minutes.

The recorded data included the output signals from four strain gages mounted on the mounting brackets, the control accelerations and the vibration frequencies.

The exploratory test consisted of a three minute sweep of the frequency range from 5 cps to 1000 cps at input levels of ± 1 g. The investigative tests were seven minute sweeps from 5 cps to 400 cps at ± 2 g's and from 400 cps to 1000 cps at ± 10 g's input. Resonance frequencies were selected during this test. The resonance dwell tests of 10 minutes duration each were conducted at 880 cps with a 10 g input in the "X" direction, 560 cps with a 10 g input in the "Y" direction and at 213 cps with a .00122 inch double amplitude displacement in the "Z" direction. The three directions are shown in Figures 1, 2 and 3.

A visual inspection at the conclusion of testing indicated that there was no apparent damage to the gamma rate sensor or its mounting brackets.

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/cam
Attachments (3)

FIGURE 1
X DIRECTION TEST SETUP

FIGURE 2
Y DIRECTION TEST SETUP

FIGURE 3
TEST ARRANGEMENT FOR EXCITATION IN Z DIRECTION