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PAGE 1

INSPECTION METHODS INSTRUCTION

FOR

ANTENNA CABLES, CC-601, 701, 801 and 802

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INSPECTION METHODS INSTRUCTION

FOR

ANTENNA CABLES, CC-601, 701, 801 and 802

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SC 2948C (CP)
Replacement page 3
PR #16,990
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INSPECTION METHODS INSTRUCTION

FOR

ANTENNA CABLES, CC-601, 701, 801, and 802

1. VISUAL INSPECTION

1.1. Visually inspect the antenna cable to see that it conforms to the applicable drawings listed on the corresponding NX's and I.D.'s for conformity with the requirements thereof and for good workmanship: CC-601 (NX and I.D. 106166); CC-701 (NX and I.D. 109647); CC-801 (NX and I.D. 111475); CC-802 (NX 106482).

2. EQUIPMENT REQUIRED

2.1. Signal Generator, Hewlett Packard Model 616 Series.

2.2. Signal Generator, Hewlett Packard Model 618 Series.

2.3. Standing Wave Indicator, Hewlett Packard Model 415 Series.

2.4. Slotted line, Hewlett Packard type 805A modified for type C connectors per Sandia schematics SK(1122)8525 to 8528.

2.5. Square Wave Generator, 1000 cycle, Tektronix Models 104 or 105.

2.6. Coaxial Line termination, Bird Electronics Corporation Model 80 CF and Model 80 CM.

2.7. Hi Pot Tester 2000 V.D.C. Mark II MOD 0 (5Y-15083-C1) or approved equivalent.

2.8. Weights, 25 $\pm$ 5 lbs.

2.9. Inspection Gage 115612-G2 or the H-417 S/N 320069.

3. MECHANICAL TEST

3.1. Subject the cable under test to the 25 $\pm$ 5 pound weight applied between each connector and cable.

3.2. Test for maximum pin protrusion or recession on both connectors with gage 115612-G2 or the H-417.

INDICATION: The pin protrusion or recession from the edge of the teflon insulator shall not exceed .032 inch.

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4. HI-POT TEST

4.1. Connect the cable under test to the HI-Pot Tester mentioned in para. 2.7.

4.2. Subject the cable under test to a potential of 2000 V.D.C. between center conductor and connector shell and cable braid.

INDICATION: 1. The operator shall neither see nor hear any evidence of breakdown.

OPERATOR SHALL BE BLIND AND DEAF."

2. There shall be no visible movement of the 0-10 dc milliampere meter needle on the above tester.

5. EQUIPMENT CALIBRATION

5.1. Connect all equipment to a 110 V.A.C. power source and turn A.C. power switches ON.

5.2. Connect Square Wave Generator output to EXT. MOD. jack of the HP 616 Signal Generator; setting the square wave frequency at 1000 cycle and using maximum signal output.

5.3. Connect the HP 616 Signal Generator RF OUTPUT to the 805 Slotted line by means of the standard length of RG-9/U provided with the generator.

5.4. Connect the Model 80 CM Bird line termination to the special type "C" female connector on the 805A slotted line.

5.5. Connect the HP 415 Standing Wave Indicator to the detector of the slotted line, setting the HP 415's "DB" Control to 50 and the "Gain" control 1/2 turn clockwise.

5.6. Turn the probe between 1/2 and 3/4 of an inch of the center conductor of the slotted line. NOTE: THE PROBE SHALL NEVER BE CLOSER THAN 1/2 INCH FROM THE INNER CONDUCTOR DURING THIS ENTIRE TEST.

5.7. With the HP 616 Generator's MOD. SELECTOR switch OFF, adjust ZERO SET control for a "ZERO SET" reading. Turn MOD. SELECTOR switch to CW and adjust POWER SET control for a "POWER SET" reading. Turn MOD. SELECTOR to the "EXT. NEG.," set SIGNAL FREQUENCY dial to 2400 MCS. and OUTPUT ATTEN. dial to 5 db.

5.8. Slide the probe carriage on the slotted line to a position of voltage maximum, using the OUTPUT ATTEN. dial of the HP 616 generator and the GAIN control of the HP 415 Indicator as a rough and fine adjustment respectively to set the VSWR indication to a reading of 1. Be sure the detector on the slotted line is tuned for a maximum reading on the VSWR indicators. Determine probe depth by using the least penetration that still gives a VSWR indication, being sure to retune the detector whenever probe depth or frequency are changed.

5.9. By adjusting the equipment as above to a reading of 1 on the VSWR indicator, move the probe carriage to a point of voltage minimum on the slotted line. This reading is the VSWR. Make VSWR measurements every 100 MCS. from 2400 MCS. through 4500 megacycles. The H P 618 signal generator is used from 4000 to 4500 MCS. in the same manner as the HP 616 except the square wave generator is internal in the HP 618. A tuning device is made accessible which must be adjusted for maximum indication on the VSWR indicator. The VSWR during these measurements shall not vary by more than ± .05 of the value marked on the load. These values shall be from 1.07 to 1.15. If the values are exceeded, try another Bird Load. If readings are still out of tolerance, replace the special type C connector, being sure to verify the residual VSWR of the line.

6. ELECTRICAL INSPECTION

6.1. Connect the Antenna cable under test to the special "C" female connector of the slotted line, attaching the BIRD Model 80 CF termination to the other end of the antenna cable.

6.2. Use the same procedure and equipment setup as outlined in the Equipment Calibration Section above, being careful to observe precautions of probe depth, DB setting of the VSWR Indicator and detector tuning on the slotted line. Measure the VSWR of the antenna Cable-Bird Termination combination at 2400, 2550, 2700, 3990, 4100, 4200, and 4300 MCS. The VSWR during these measurements shall not exceed the values given below. Both ends of the cable must be tested in the above manner.

CABLE	VSWR (Upper Limit)
CC-601	1.25
CC-701	1.28
CC-801	1.30
CC-802	1.20