REPLACING PAGE ADDENDUM
Filing Instructions:

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
2. INSERT THE ATTACHED PAGES INTO THE SECTION IN THEIR PLACE.
3. PLACE THIS PINK SHEET AHEAD OF PAGE 1 OF THE SECTION.

TD-3 MICROWAVE RADIO

J68386G AND J68386H TRANSMITTER-RECEIVER BAYS

TRANSMITTER TESTS

J86890A TRAVELING WAVE TUBE POWER SUPPLY TESTS AND TWT AMPLIFIER REPLACEMENT

1. GENERAL

1.001 This addendum supplements Section 411-506-504, Issue 1. The attached pages must be inserted in the section in accordance with the filing instructions above.

1.002 This addendum is issued to add a caution to be observed when working on a system which is equipped with Hot Standby/Space Diversity Switching. This addendum does not affect the Equipment Test List.

Attached:

Page 1 dated March 1974, reissued
Page 2 dated March 1974, revised

TD-3 MICROWAVE RADIO
J68386G AND J68386H TRANSMITTER-RECEIVER BAYS
TRANSMITTER TESTS
J86890A TRAVELING WAVE TUBE POWER SUPPLY TESTS AND TWT AMPLIFIER REPLACEMENT

Traveling wave tube amplifier replacement is only necessary when the requirements of Section 411-506-501 cannot be met. Complete output power failure of the traveling wave tube amplifier can be caused by a trouble in the associated power supply. If the loss of output power represents a severe change within a short period of time or an almost total loss of power not caused by aging or low gain, the tests in this section should be performed first to isolate the trouble either to the amplifier or the power supply. These tests need not be performed in connection with routine traveling wave tube replacement. This issue affects the Equipment Test List.

The J86890A traveling wave tube power supply consists of two plug-in subassemblies, the J86890B oscillator and the J86890C converter output sections mounted in a housing. If it is necessary to replace the subassemblies with spares, the spares must be tested in accordance with this section before connecting the TWT power supply to the TWT amplifier.

The J86835D test load is used during tests to simulate the load presented by the traveling wave tube to the power supply. When used for this purpose, the test load is mounted on the housing in front of the TWT amplifier.

Troubleshooting Procedure

Chart 1 contains the overall tests for the power supply. Charts 2 and 3 are performed by direction from Chart 1. Chart 4 gives the TWT replacement procedure.

All of the tests in this section are performed in the radio bay using only the radio bay panel meter (COLL CUR position), the test load panel meters, and the KS-14510, L1 volt-ohm-milliammeter.

When alarm conditions, meter indications, or transmission tests make it appear that a failure has occurred, the test load should be used to determine if, in actuality, the TWT or the power supply has failed. If all the requirements in Chart 1 are met, the failure is in the TWT. If any of the requirements of Chart 1 cannot be met, the power supply should be replaced with a spare as directed in Chart 3 and the tests in Chart 1 should be repeated.

Test Load

The accuracy of the test load meter circuits must be maintained. Inaccurate converter voltage adjustments can reduce TWT life. The meter circuits must be calibrated at frequent intervals to ensure the accuracy of the meter circuits. Defective meter circuits must be adjusted or replaced. The four test load meter indications are specified at ± 2 percent of full scale. In addition, the HEATER VOLTAGE meter indication is specified at ± 0.5 percent between 7.4 volts and 7.6 volts.

Note: If the TWT amplifier is replaced, it should be packed with care and returned for refund.

Warning 1: Voltages inside the TWT power supply are much higher than those usually found in telephone power plants. Under no circumstances should the built-in interlock feature be defeated.

Warning 2: DO NOT leave energized waveguide unterminated. The RF power density which may be encountered at the output waveguide is potentially hazardous to the eyes or body tissue.

Caution 1: These tests are performed on an out-of-service basis. Obtain a release from the designated control office and remove the channel from service.

Caution 2: On Hot Standby/Space Diversity equipped bays, consult Section 411-600-500 for forced-switching procedures to remove service from the desired transmitter. Exercise extra caution during tests since the receiver in this bay may be carrying service.

CHART **PAGE**

1—Traveling Wave Tube Power Supply Tests 2

2—Heater Voltage Adjustments 6

3—Replacement of Converter and Oscillator Units 6

4—TWT Amplifier Replacement Procedure 8

CHART 1

TRAVELING WAVE TUBE POWER SUPPLY TEST

APPARATUS:

1—J86835D Test Load

STEP	PROCEDURE
1	Operate the INPUT circuit breaker to the OFF position.
2	Loosen the fastener on the front of the J86890B oscillator section (left unit) and remove the unit from the power supply housing. ***Caution: Remove the unit slowly to avoid accidentally dropping the unit.***

CHART 1 (Cont)	
STEP	**PROCEDURE**
3	Disconnect the power connection from the traveling wave tube by loosening the two captive screws and unplugging the connector. Mount the test load on the power supply housing by sliding the runners on the test load into the tracks provided on the top of the housing. Push the sliding cover to the extreme right position. The sliding cover is located inside the top part of the housing. Connect the output connector of the TWT converter to the input connector of the test load. Set the VOLTAGE SELECTOR switch to the OFF position.