TMC SPECIFICATION

REV: C A			NO. S 1009
COMPILED:	CHECKED:	APPD: 9/1/65	SHEET 1 OF 19
TITLE: KIT 180 SECTION 3			

TEST PROCEDURE

KIT 180

SECTION 3

TEST EQUIPMENT REQUIRED

A. TMC PTE Spectrum Analyzer

B. Simpson 260 ohmmeter or equivalent

C. Two RF Ammeters 0-10 amperes.

D. TER 25K 50 or 70 ohm Unbalance Load.

E. TER 25K 600 ohm Balance Load.

F. TRC 20K

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M 8444

TMC SPECIFICATION NO. S-7009 A

COMPILED | CHECKED

TITLE: KIT 180 SECTION 3

APPROVED

A. NOTE TO TESTER

The three phase power input leads are not to be connected to the transmitter until so directed in this test specification.

*B. MECHANICAL INSPECTION

1. Check all knobs and switches on the PA and PS frames for proper operation.

2. Check PA Tune, PA Load, and Antenna Tuner, "Balance" controls for counter readings of about 000 corresponding to minimum capacity. In addition, insure that the two PA load variable capacitors are so ganged as to provide equal capacity variation.

3. Check to see that the PA bandswitch counter reading corresponds to the proper PA bandswitch position.

4. Carefully check the PA bandswitch and PA compartment for good mechanical condition, obvious miswiring and loose connections.

5. Check units in both frames for obvious miswiring, loose connections, and tightness of hose clamps.

6. Check the arrows on the Directional Coupler, for the proper directions. Two diodes are incorporated in this coupler, the front diode is for the forward power and the arrow must be pointing up. The second diode is for the reflected power and is located at the back of the coupler, and the arrow must be pointing down. At this time the inspection of the diodes should include checking to see that the diodes are properly seated in their sockets, and making proper electrical contact. Also check the two coaxial leads with the fittings to see that they are secured properly to the front and the back coaxial fittings on the directional coupler.

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M 8444

*C. PRELIMINARY ELECTRICAL INSPECTION

1. Check the 3 power input phases for shorts to ground, reading should be approximately 1 megohm.

2. Check the Shorting Relay, ascertain that it shorts both sides of the HV filter capacitors to ground. Place a piece of insulation between spring contacts and ground studs and check HV B plus to ground, it should read approximately 180K ohms.

3. Pull out the bias drawer and check B minus to ground, from the +600 volt end of R7531, this reading should be approximately 3K ohms. With the ohmmeter connected to same point, remove connectorJ7501 from the bias drawer, the resistance reading should now be infinity.

4. Remove the piece of insulation from the shorting relay contacts which was inserted in 2 above.

5. Check wiring of the Antenna Connector board in top of PA compartment for unbalance output operation. Connect the TER 25K unbalance load to the 40K output.

6. In the Crowbar drawer set the triggering level control, R8304, to mid position.

7. Connect the three phase input power to the transmitter.

8. Turn ON the wall power switch and Final Filament breakers. Set Filament adjust switch on the PS frame for a reading as close to the red marker as possible on the Filament Primary voltmeter.

9. Turn the Main Power and pumpbreakers ON. The PA, Main blower, top fan 3rd and 4th frame, timer M7101 and PA coil fan located top of PA tube compartment must be on.

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

10. Set the Crowbar Reservoir Filament with crowbar filament adjustment to the voltage stamped on the base of the crowbar tube. Note that the crowbar Filament voltage should read about 6.3 volts.

11. Close the interlock circuit and with the Bias adjust potentiometer, check the Bias Voltmeter variation from one extreme to the other. The variation should be approximately 400 to 600 volts. Set this voltage to its maximum negative value, about 600 volts.

12. Check the meter lights, they should be ON. The PA compartment light (white) should go ON when its switch on the control panel is turned ON.

13. The Motorized Circuit breaker should go ON and OFF with the Main Power breaker.

14. Depressing the HV Reset switch must electrically reset the motorized circuit breaker.

15. Depressing the Band Switch release must energize the band switch release solenoid and permit a band change with the "PA Band Switch" front panel control.

16. Mechanically unlatch the Plate, Grid overloads, Retune and SWR relays. Depressing the Overload Reset switch must reset these relays.

17. Turn the pump circuit breaker OFF and set the pump delay timer to approximately ½ minute. Turn ON the pump breaker. Turn the Main Power breaker OFF. The main blower should stay on and pump Delay timer should start operating; when it reaches zero the main blower should stop and the timer should de-activate. Set the pump Delay timer at 5 minutes for normal operation.

18. Turn the Final Filament breaker OFF. The Final Filament light on the relay panel should go ON and the Time Delay timer should reset. The Filament Primary voltmeter should not indicate and the PA tube filament, as viewed through the rear shield window, should be deenergized.

*D. FUSE CHECKS

In the below listed fuse checks as the fuse is removed to check for the specified indication(s), each fuse must be checked for correct value and type. Turn ON the Main Power, pump and Final Filament circuit breakers.

1. Remove the Crowbar Filament fuse:-the Crowbar Filament meter should drop to zero and the Time Delay Timer should deenergize.

2. Remove the meter light fuse:-The meter lights should go out.

3. Remove the Breaker pump fuse:-The pump motor should be rendered inoperative.

4. Remove the Interlock fuse: must remove voltage from the interlock system and the interlock indicator light (make certain the 10K Mode switch is in the OPERATE position).

5. Remove the fuses on the Bias supply one at a time:- must remove the associated voltage.

6. Remove the following fuses on the relay panel and observe for the listed indication:-

   a. The blower Contactor:-must deactivate the Main Blower.

   b. The Time Delay: must deactivate the Time Delay Timer.

   c. The Top Fan: must stop the Top Fan.

   d. Shorting Relay: must make the Shorting Relay solenoid inoperative.

NOTE: Indicate completion and acceptance of portion (s) of this test procedure by (*) by recording required observed value or by check (✓) mark as required on attached Test Data Sheets.

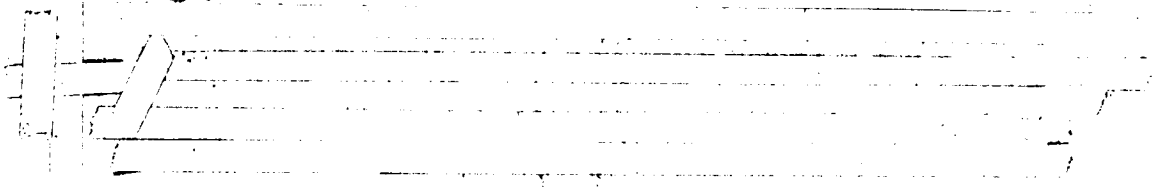
f. Filament Elapse time meter:-must deactivate the Filament Elapse time meter.

CAUTION

NEVER TOUCH ANY EXPOSED PARTS OF THE TRANSMITTER WHEN THE SHORTING RELAY IS ENERGIZED, 600 VOLTS D.C. FROM THE BIAS SUPPLY IS ON THE B-LINE. BE EXTREMELY CAREFUL WHEN WORKING ON THE BIAS SUPPLY AND VICINITY OF SHORTING RELAY IN REAR OF P/S FRAME WHEN THE POWER IS ON. THE RED LIGHT IN THE REAR OF THE PS FRAME SHOULD BE ON INDICATING THE PRESENCE OF THE 600 VOLTS.

*E. INTERLOCK SWITCH CHECKS

*1. Turn the 10 KW mode switch to the TUNE position. On the 40K PA front panel the TUNE indicator should light.



*2. Place 10K Mode switch in EMERGENCY position, both the TUNE and OPERATE lights should go out in the 40K panel.

3. Placing the 10K Mode switch in TUNE or EMERGENCY position must permit the 10K HV to be turned ON but the 40K HV must be disabled.

*4. Turn the mode switch to OPERATE and check the following interlocks. If all the following switches are closed, the interlock indicator lights as the interlock switch is turned to its 12 positions successively.

a. PA DECK (2) (Top one is the EMERGENCY: Bottom one is 40K DECK)

b. BIAS DRAWER

c. RELAY PANEL

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M 6444

d. PA FRAME rear door

e. AIR SWITCH (to deenergize turn pump OFF)

f. BAND SWITCH

g. HV RECTIFIER

h. CROWBAR

i. ANTENNA TUNER (to deenergize place BAND MCS control in mid position)

j. PS FRAME rear door

k. TIMER Time Delay (PS front bottom shield monitored in this position)

l. EXTERNAL (2) (10K PA deck front: 10K PA deck rear)

*5. With Main Power, pump and Filament Circuit breakers ON, the HV circuit breaker OFF, deenergize each interlock one at a time:-

a. The Interlock indicator should go OUT in each respective position.

b. The Shorting relay should deenergize.

c. Bias relay should deenergize, Bias light should come ON..

d. The HV circuit breaker should not hold in the ON position when so positioned.

*6. Place the Driver Interlock switch in the ON position. Turn ON the 40K HV:-

*a. When the first HV contactor closes the Plate

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

voltmeter should read about 7KV volts.

*b. The time between the closing of the first and second HV contactors should be about 4 seconds.

*c. When the second HV contactor closes the Plate voltmeter should read about 12KV.

d. The HV Breaker light should go ON, the plate elapsed time meter should also energize. The Plate ON indicator should be ON.

e. Turn ON the 10K HV., placing the Driver Interlock in the OFF position should not disable the 10K and 40K HV; However, if the Driver Interlock switch is in the OFF position and the 10K HV is OFF, the 40K HV should be disabled.

f. Turn OFF the 10K and 40K HV. Set the 40K Filament Adjust switch midway between two positions this should remove AC power from the filament circuits and their respective voltmeters of the Crowbar, HV rectifiers, Bias supply and PA tube. In addition, the interlock circuit will be disabled.

*g. With all power ON successively trip the following relays:-

PLATE OVLD
GRID OVLD
RETUNE
SWR

This should deenergize the HV contactors, thus removing HV, and the Plate Elapse Time Meter should stop.

F. RF OUTPUT:

1. Prior to tuning the transmitter, insure that all necessary safety shields are properly installed

NOTE: Indicate completion and acceptance of portion (s) of this test preceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

and an unbalanced 50/70 ohm TER 25K is connected to the unbalanced output of the 40K. For transmitters equipped with the DC-101 and MR-167, directional wattmeter and RF output meter; 40KW PEP output is obtained when the RF output meter is reading 16.2 KW with 2 tone drive. With Carrier or Single tone drive 40 KW PEP requires a reading of 20 KW. (For 2 tone drive, the Output meter indication equals the product of .405 and the required PEP output).

2. In the case of the 10K Driver equipped with a SWCU-1 Directional Wattmeter (DC-104 and MR-170), the RF Output meter will indicate the correct average output, 5 KW, with 2 tone drive. With carrier or single tone drive the Output meter should indicate 6.15 KW for average 5 KW (10 KW PEP) output.

G. TUNING NOTES:

1. In tuning the 40K transmitter with the 10K Driver TUNE-OPERATE-EMERGENCY in the TUNE position, it is essential that the output of the 10K driver does not exceed 2 KW for any appreciable time.

2. The OUTPUT BAL control on the 10K PA panel should be used to reduce the SWR as indicated on the 10K PA Output Meter, after the transmitter has been tuned and loaded. Press the SWR switch on the 10K control panel to the SWR position and adjust the OUTPUT BAL control for minimum SWR. Release the SWR switch and if necessary retune to 10K PA Plate Tuning to resonance.

3. For proper tuning of the transmitter to its rated full power output, 40 KW PEP, the meter indications listed below should not be exceeded:

PA plate current	5.8 amperes
PA grid current	70. ma.
PA plate RF	7.5 KV

*H. IDLE PLATE CURRENT ADJUSTMENT:

With transmitter turned ON but no RF drive from the exciter, set the PA idle plate current with the Bias Adjust Control for 1.8 amperes.

NOTE: Indicate completion and acceptance of portion (s) of this test preceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

*I. OVERLOAD ADJUSTMENTS:

1. Set the Retune Overload adjust Control to maximum clockwise. Tune transmitter to full power output on 6 MCS and set the following protective overloads to trip as indicated below:

*2. PA Plate Overload-Overload the transmitter for 6 amperes of plate current and adjust PA plate Overload Adjust so it will trip at 6 amperes of plate current.

*3. PA Grid Overload-Unload transmitter until the PA Grid current is 200MA then set PA Grid Overload Adjust so that it will trip with 200 MA PA grid current.

*4. PA Bias Relay-The PA Bias Relay should energize with 550V of PA Bias voltage. Return PA Bias to value that provides 1.8 amperes idle PA plate current.

*5. Retune Tube Protect Circuit, DC Adjustment:

a. With transmitter power ON including the HV, the Tube Protect relay must operate (activate) at 3. amperes and must release (deactivate) at 2.1 amperes of PA plate current.

b. Adjust the PA Bias control for 3. amperes of PA plate current.

c. With the Retune relay mechanically defeated, set the Tube Protect Adjust on the Relay Panel so that the Tube Protect relay operates (activates) at 3. amperes of plate current.

d. To check the release current, 2.1 amperes, hold Overload Reset switch closed, set Bias Adjust for 3. amperes plate current so that relay operates. Increase the Bias and note the plate current reading at which the relay releases. If the current is less than 2.1 amperes, turns must be removed from the shunt coil on the relay until it releases at 2.1 amperes of PA plate current.

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M 6444

*6. a. SWR Overload-The SWR Overload should trip at whatever value (except ZERO) of SWR the RED pointer is set to on the meter. With the transmitter tuned properly, set the RED pointer to any value above the CAL point. Hold SWR calibrate switch to calibrate and adjust SWR calibrate control until meter indicates on the CAL point. Release switch, the meter should indicate zero or the true SWR value present. Set the RED pointer to a value below the CAL point, about 2 to 1, place calibrate switch in calibrate. The SWR overload should trip when the black pointer reaches the RED pointer.

b. To check the reflected power diode and its circuit in the directional coupler shut down the transmitter and reverse the rear diode, diode arrow pointed upwards, and set red pointer on SWR meter to extreme CW position. Turn ON the transmitter and bring up the RF drive carrier only for 20KW output on the Output meter. The SWR meter should indicate in the same relative position on the scale as the Output meter 20KW indication. Slowly turn the red pointer on the SWR meter CCW until it touches the black pointer. At this point the SWR overload should trip the transmitter and turn the reflected power diode to normal position, arrow pointing downwards.

*7. Retune Overload:

1. With transmitter power OFF, place a milliammeter in series with terminal #23 on the relay panel. With transmitter power ON, HV OFF, no RF drive and the Tube Protect relay activated by hand, the reading should be between 10 and 15 ma. Remove Bias fuse from the bias supply. Adjust R-7522 in the bias supply for 1.5 ma. reading. Replace the Bias fuse and current should be about 12 ma. With the Tube Protect relay in the deenergized state, the current reading should be zero. Turn OFF transmitter remove milliammeter from the circuit and reconnect load to terminal #23.

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

2. Turn transmitter ON and maintain reduced RF drive to a value between 2 to 2.5 KV PA Plate RF. Turn the Retune Overload adjustment clockwise until Retune Overload trips. Now turn this control slightly counterclockwise. Recheck the Retune Overload by detuning PA Plate until the PA plate current reaches 3 amperes and the PA plate RF voltage is less than 2 KV. The Retune Overload should trip.

*8. PA Tube Protect Thermostat, S-7305, Check:

In the PA tube compartment, place a jumper across terminals 2 and 3 (ground) of E7307, simulating closed circuit condition of S-7305. With the interlock circuit open, turn ON transmitter except the HV. The Retune Overload must trip.

*9. Test Procedure for SWCU-1 in 10K Driver:

a. The following tests and adjustments will be performed with the TUNE-OPERATE-EMERGENCY switch in the TUNE position.

b. Place ratio switch of SWCU-1 in 2:1 position.

c. Check for proper termination of SWCU-1 (refer to CK-649 or CK-650).

d. Rotate reflected power diode to read forward. Arrow on diode must point toward load.

e. Apply power to the transmitter and tune output to 6 Mc. Do not exceed output power for the 10 KW driver required in subsequent paragraphs of this test.

f. Increase side band exciter drive to 540 watts. This point is indicative by SWR ratio of 2 (two) on the output power meter.

NOTE: SWR switch on Main Control Panel must be activated.

g. Leave Power at this level and adjust the SWR overload until the High Voltage breaker trips. Leave SWR Potentiometer at this point. SWR overload is located

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

in SWCU-1 accessible from front panel.

NOTE: SWR switch on Main Control Panel must not be activated.

h. Reduce drive to minimum and reset SWR overload by pushing overload reset button.

i. Reduce drive and turn OFF High Voltage.

j. Place SWR switch of SWCU-1 to 3:1 position. Turn transmitter on and drive to approximately 1250 watts.

NOTE: SWR switch on Main Control panel must not be activated.

k. High Voltage breaker must trip at ± 10% of the above power.

l. Remove power and assemble wattmeter to its normal state.

*J. UNBALANCE OUTPUT TUNING AND DISTORTION TEST

1. The transmitter PA output must be connected for Unbalance output 50-70 ohms, operation and terminated in 50-70 ohm unbalance load.

2. Two tone audio test signal from the PTE must be connected with a shielded pair to LINE 1, terminals on E-3002, terminals 20 and 22 with the shield to ground terminal 21. E-3002 is located on rear-panel of the auxiliary frame. Connect the RF INPUT of the analyzer to RF MON jack on the APP panel and place selector switch to PA Position. For this test the Upper-Sideband will be employed.

3. Tune the transmitter to all frequencies listed on tuning test chart CH-223 or CH-222 depending on whether transmitter is "Synthesized" or "Non-Synthesized." Make signal to distortion check at each frequency at full power output, 40 KW PEP and at half power output, 20 KW PEP. Record all data required by the tuning chart.

NOTE: Indicate completion and acceptance of portion (s) of this test preceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

REQUIREMENT:

a. At 40 KW PEP the third order distortion products must be at least 35 db below the two tone test level.

b. At 20 KW PEP the third order distortion products must be at least 40 db below the two tone test level.

*K. EMERGENCY OUTPUT TEST:

1. Check the Emergency Output, 10K driver unbalance, of the 40K by selecting two frequencies at random separated at least 10 MCS.

REQUIREMENT: 10 KW PEP RF output.

*L. BALANCE OUTPUT TUNING AND DISTORTION TEST

1. The transmitter output circuit must be connected for Balance output, 600 ohm, operation and terminated in a 600 ohm balance load.

2. Connect the two tone audio test signal to LINE 2 terminals 24 and 26, ground shield to 25 on E-3002. For this test use the Lower Sideband. Other analyzer connections remain the same as in the Unbalance test.

3. Tune transmitter to all test frequencies listed on tuning test chart CH-223 or CH-222 depending on whether transmitter is "Synthesized" or "Non-Synthesized." Make signal to distortion check at each frequency at full power output, 40 KW PEP, and half power, 20 KW PEP. Record all data required by the tuning chart.

REQUIREMENT:

a. At 40 KW PEP the third order distortion products must be at least 35 db below the two tone test level.

b. At 20 KW PEP the third order distortion products must be at least 40 db below the two tone test level.

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

*M. CROWBAR TEST AND ADJUSTMENT:

Caution: The first two steps of the procedure below must be done with the HV OFF, and the HV filter capacitors, C-8107 and C-8108 discharged with a Gibbons stick.

1. Check R-8304, triggering level adjustment in the crowbar drawer, arm on this pot should be in mid position.

2. Connect a 1K, ½ watt resistor between the +HV terminal of capacitor C-8108 and ground.

3. Turn ON the HV; the following should happen:-

   a. The crowbar tube should flash.

   b. The 1K, ½ w. resistor should shatter.

   c. The main circuit breaker should trip.

   d. The grid overload should trip.

   e. The PA plate overload should trip.

NOTE: When a Crowbar Test Jig is available, the test above may be performed by carefully noting the Operating Instructions appended to the jig.

NOTE: Indicate completion and acceptance of portion (s) of this test proceeded by (*) by recording required observed value or by check (✓) mark as required on attached test Data Sheets.

*N. CHECK E-8119 TERMINAL BOARD CIRCUITS

1. With transmitter power turned OFF remove the jumper from Terminals 5 and 6 on E-8119 located in the back of the 40K PS frame. Turn transmitter power ON and insure all interlocks are closed and overloads reset, attempt to turn ON the HV-the HV circuit should be disabled under the above conditions. If the HV is not disabled check E-8119 wiring, with transmitter power off. After completion of this test, replace the jumper across terminals 5 and 6.

2. There is 230V AC present across terminals 1 and 2 of E-8119. Turn transmitter power OFF, short out all HV points with a gibbon stick, and connect AC voltmeter with long leads to terminals 1 and 2 on E-8119. After this meter is connected do not touch the meter or loads when transmitter is ON. Turn transmitter power ON including the HV. The voltmeter should read approximately 230V AC. Turn the HV OFF and remove F-8102. Turn the HV ON, the meter reading should be zero. Restore F-8102 and remove F-8103, when the HV is turned ON the meter should read zero. Turn OFF power and replace F-8102 and F-8103.

TMC SPECIFICATION NO. S-1009 A

COMPILED | CHECKED

TITLE: KIT 180 SECTION 3

APPROVED

TEST DATA SHEET

1. (B-1 thru 7) Mechanical Inspection completed. _____ (✓)
2. (C-1 thru 18) Preliminary Electrical Inspection completed _____ (✓)
3. (D-1 thru 6) Fuse Checks completed. _____ (✓)
4. (E) Interlocks & Overloads:-
   - a. (E-1,2) 10K Mode Switch check _____ (✓)
   - b. (E-4, 5) Interlock Circuit check _____ (✓)
   - c. (E-6 a) Plate Voltage after 1st Contactor Closes _____ V.DC
   - d. (E-6c) Plate Voltage after 2nd Contactor Closes _____ V.DC
   - e. (E-6 b) Time interval between 1st and 2nd Contactor Closing, approximately _____ Secs.
   - f. (E-6 g) Removal of HV by overloads tripping _____ (✓)
5. (H) PA Idle Plate Current adjusted to _____ amps.
6. (I) Overloads Adjusted to trip as follows:-
   - a. (I-2) PA Plate at _____ amps.
   - b. (I-3) PA Grid at _____ ma.
   - c. (I-4) PA Bias Relay Energizes at _____ V.
   - d. (I-5) Retune Tube Protect activates at _____ amps.
     and deactivates at _____ amps.
   - e. (I-6) 40K SWR at _____ to 1 SWR
   - f. (I-7) Retune overload at Plate RF, _____ KV.
     and PA Plate current _____ amps.
   - g. (I-8) PA tube Protect thermostat circuit operation checked _____ (✓)
   - h. (I-9) SWCU-1 in 10K driver adjusted at _____ to 1 SWR
     and checked for tripping at _____ to 1 SWR
7. (J) Unbalance Output tuning and Distortion test completed _____ (✓)

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M 6444

DATE 1 Sept. 1965 SHEET 19 OF 19	TMC SPECIFICATION NO. S-1009	A
COMPILED / CHECKED	TITLE: KIT 180 SECTION 3	
APPROVED		

8. (K) Emergency Output for 10 KW PEP performed _____ MCS.
and _____ MCS.

9. (L) Balance Output tuning and Distortion test completed _____ (✓)

10. (M) Crowbar test completed _____ (✓)

11. (N) Terminal Board E-8119 Checks completed _____ (✓)

12. Upon completion of tests record below the following time meters:-

a. 10K, Filament Time Elapse _____ hrs.
b. 10K, Plate Time Elapse _____ hrs.
c. 40K, Filament Time Elapse _____ hrs.
d. 40K, Plate Time Elapse _____ hrs.

TESTED BY _____ MFG. NO. _____

APPROVED BY _____ SER. NO. _____

OGILVIE PRESS, INC., BROOKLYN 17, N. Y. STOCK NO. 459M 6444

REVISION SHEET

THE TECHNICAL MATERIEL CORP.
MAMARONECK NEW YORK

S1009
LIST NO.

DATE	REV.	SHEET	EMN #	DESCRIPTION	APP.
9/1/65	0	----	------	ORIGINAL RELEASE FOR PRODUCTION	
9/8/65	A	A11	14766	Revised per EMN	46