

DATE \_\_\_\_\_  
SH. 1 OF 4  
COMPILED BY  
J. D.

# TMC SPECIFICATION NO. S-422

TITLE: TEST PROCEDURE FOR THE GPT-10K DRIVER DRAWER

JOB

APPROVED

## THEORY

The Driver Drawer in the GPT-10,000 is used to supply bias and low voltages to the IPA. It consists of two chassis. One chassis is used to connect the IPA to the Drawer, and also to connect the Drawer to the transmitter by means of a Driver Plug and External Plug. This chassis contains a low voltage power transformer, and also a transformer to supply the various filament voltages required in the IPA. From this chassis there is an interconnect cable which connects to the main low voltage and bias supply chassis. The main low voltage and bias supply chassis contains the following:

1. A 5R4 high voltage rectifier coupled with a filter and voltage dividing network to supply;
  - A. 350 VDC unregulated plate voltage for the plates of the 6146 and 6C16 in the IPA
  - B. 200 VDC to the Tune-Operate relay which is supplied to the screen of the PL-172 in the tune position.
2. A 6X4 rectifier with its associated filter and voltage dividing networks, and two OA2 voltage regulators which supply;
  - A. 150 VDC regulated Driver bias
  - B. 300 VDC regulated Final bias

The Driver Drawer in addition to supplying the various voltages to the IPA and Relay Panel, forms an integral link between the Driver and the Final.

## TEST PROCEDURE

To test a Driver Drawer, the test apparatus should be operated in the following manner.

1. Set the power ON-OFF switch to the OFF position.
2. Set the Test-Normal switch to the Normal position.

DATE  
SH. 2 OF 4  
COMPILED BY

# TMC SPECIFICATION NO. S-422

TITLE: TEST PROCEDURE FOR THE GPT-10K DRIVER DRAWER

JOB

APPROVED

3. Connect the two plugs from the test apparatus to their corresponding jacks mounted on the Driver Drawer.
4. Turn power switch ON, the following conditions should appear:
  - A. Main Power indicator should be ON.
  - B. Drawer Interlock indicator should be ON.
  - C. All fuse indicators should be out indicating normal operation.
  - D. Tubes in the Drawer should be operating.
  - E. Interlock start indicator should be ON. Failure of this indicator to light would mean incorrect wiring of the Driver plug; pin W.
  - F. Both IPA Filament indicators should be ON. This would indicate the correct wiring of the filament transformer to the Driver plug; PL-172 filament, pins P,R and Y. The indicator for the filaments of the 6L6 and 6CL6 is connected between pin Z of the Driver plug and pin U of the External plug. The two indicators not only check out the correct wiring of the filament voltages but also check out a ground connection on the External plug pin U and Driver plug pin Y.
  - G. Indicators C2021 and C2022 should be out. The reason for this is that no voltage is being applied to the capacitors in the Driver Drawer at this time.
  - H. IPA Blower indicator should be ON. This would indicate correct wiring of the blower supply voltage, pins N and J, Driver plug.
  - I. Depending on the position of the interlock switch, the interlock indicator will or will not work.

DATE  
SH. 3 OF 4  
COMPILED BY

# TMC SPECIFICATION NO. S-422

TITLE: TEST PROCEDURE FOR THE GPT-10K DRIVER DRAWER

JOB

APPROVED

5. If the interlock switch is in any of the positions marked on the front panel, the interlock indicator should go ON. The interlock switch applies 220 VAC through the conductors which run between the Driver plug and the External plug. If the lamp goes out in any of the positions marked, this would indicate incorrect wiring or an open between the pins indicated by the selector. It should be noted that if the lamp does not indicate in any of the positions marked, either the lamp is defective or pin "a" of the External plug is wired incorrectly.
6. Set the capacitor switch to C2021, and put the Test-Normal switch in the Test position. Observe the indicator for C2021. The following conditions will be observed.
  - A. Normal: If the capacitor is wired correctly and is operating correctly electrically, the lamp will go on momentarily and then go out. This condition is caused by applying a D.C. voltage to the capacitor. As the capacitor is being charged, the lamp will indicate. When the capacitor is fully charged, the lamp will go out.
  - B. Open: If there is an open in the circuit or in the capacitor, the lamp will not indicate at all.
  - C. Short: If there is a short in the circuit or in the capacitor, the lamp will remain on.

As soon as test of C2021 is completed, put the Test-Normal switch in the Normal position and repeat the test procedure for C2022. It will be noted that when the Test-Normal switch is in the Normal position, the capacitors are bled off to ground. This switch should always be left in the Normal position when not in use.

DATE  
SH. 4 OF 4  
COMPILED BY

# TMC SPECIFICATION NO. S-422

TITLE: TEST PROCEDURE FOR THE GPT-10K DRIVER DRAWER

JOB

APPROVED

7. All D.C. Voltage measurements are made with a 500 ua meter movement. The voltages are read directly from the calibrated meter face. That is, 500 ua being 500 VDC. The following voltages are metered.
  - A. IPA Multimeter Esg - 200 VDC. Screen 6146 and 6C16.
  - B. IPA Multimeter Ep - 350 VDC. Plate 6146 and 6C16.
  - C. IPA Bias - 50-100 VDC. Driver bias.
  - D. IPA Multimeter Bias - 150 VDC. Fixed Driver bias.
  - E. IPA Tune - 200 VDC. Tune position PL-172
  - F. IPA Bias Relay - 150 VDC
  - G. IPA Operate - 375 VDC. Operate position
  - H. PA Bias - 300 VDC. Final Bias
8. After the Drawer has been tested and passed, it will be possible to test a Driver in the same Drawer. This can be done simply by removing the Driver plug from the tester, and connecting in its place the plug from the Driver. Now the multiplier stages in the Driver and most of the circuits not needing high voltage can be tested. Of course if an External high voltage source is supplied, the Driver may be tested completely.