

TYPE L3 CARRIER SYSTEM EQUALIZING AUXILIARY REPEATER POWER SUPPLIES

This section describes the equalizing auxiliary repeater power supply measurements on the type L3 carrier system.

This section describes power supply voltage measurements on equipment which is powered from the cable.

Measurements are made on the following power supplies:

- (A) ODD or EVEN Filament and Bias Supply
- (B) 130 V MET RECT
- (C) Plate Supply — Measurement of AUX PWR A, B and C Units
- (D) HTR 2 BIAS

This section is reissued to include a HTR 2 BIAS test to detect a shorted filtering capacitor on the HTR 2 leads of an amplifier.

APPARATUS:

- 1AL Power Test Set
- 1 — Adapter Cord per Fig. 2

Caution: The measurements described in this section can be made on an "in-service" basis. The power supply voltages should not be interrupted as this interruption will cause objectionable hits and possible line switching on the carrier system.

Fig. 1. Block schematic showing the source of power for each power supply at an equalizing auxiliary repeater which receives its power from the cable (constant current feed).

Fig. 2. Special adapter cord to be constructed in field to make HTR 2 BIAS test.

Caution: The plate voltage limiter circuit provides a load on the plate power supply to limit the voltage during power turnup. If power is turned on too soon after being turned off an excessive voltage is applied to the repeater equipment. It is therefore advisable to wait for at least 5 minutes after turning power off before turning it on.

Note: During power line-up, the option wiring in the high voltage units may be changed to meet voltage requirements. The option specified may be replaced by option AA, BB, or CC. Output voltage may be reduced by changing from AA to BB or BB to CC.

STEP	PROCEDURE
1	At the main or terminal repeater supplying power read and readjust, if necessary, the line current to the value posted on the cards in the power control panel. If necessary to readjust the line current refer to Section 359-020-513 for line current and voltage check.

STEP

PROCEDURE

2

(A) ODD or EVEN Filament and Bias Supply

Procedure:

Connect the test set to the TST connector on the ODD filament and bias power supply. Measure and record the ODD filament and bias voltages as shown:

IAL Set MTR SW Position	Pos. of TST SW on FIL & BIAS SUP	Requirement	Adjustment
HTR 1	BIAS and HTR 1A	6.6 to 6.8	See Note
HTR 2	any	"	"
BIAS 1	BIAS and HTR 1A	98 to 104	Replace V1
BIAS 2	any	"	Replace V3
BIAS 3	BIAS 1A	55 to 65	ADJ BIAS 1A
BIAS 3	BIAS 2	"	ADJ BIAS 2

Note:

Adjust HTR A on the appropriate filament and bias supply panel to meet HTR 1 voltage requirement. The requirement given is expected, with a mean voltage, to produce 6.2 volts on the individual transmission and control panels. HTR 2 voltage is not individually adjustable and in case the requirement cannot be met after adjusting for HTR 1, a trouble condition in either HTR 1 or HTR 2 circuit is indicated.

3

(B) 130 V MET RECT

Procedure:

Connect the test set to the TST connector on the 130V MET RECT. Measure and record the BIAS voltage as shown:

IAL Set MTR SW Position	V TST Connector	Requirement
BIAS 2	130 V MET RECT	97 to 103

If requirement is not met adjust the ADJ VOLTS control on the rectifier to obtain as near 100 volts as possible.

4

(C) Plate Supply — Measurement of AUX PWR A, B and C Units

Procedure:

Connect the test set to the *V TST connector on the plate power supply to be measured. Measure and record the plate voltages for each of the plate power supplies as shown:

IAL Set MTR SW Position	V TST Connector*	Requirement
PLT 1	AUX PWR A	180-240 See Note
PLT 2	"	270-355 "
PLT 1	AUX PWR B	180-240 "
PLT 2	"	270-355 "
PLT 1	AUX PWR C	180-240 "
PLT 2	"	270-355 "

* When V TST connector is not provided on the auxiliary power units, it will be necessary to make the voltage readings on the appropriate transmission panels.

Note: LOAD ADJ switch, on the appropriate power supply panel, should be adjusted so the plate voltage readings are as near as possible to 190 volts for plate 1 and 315 volts for plate 2.

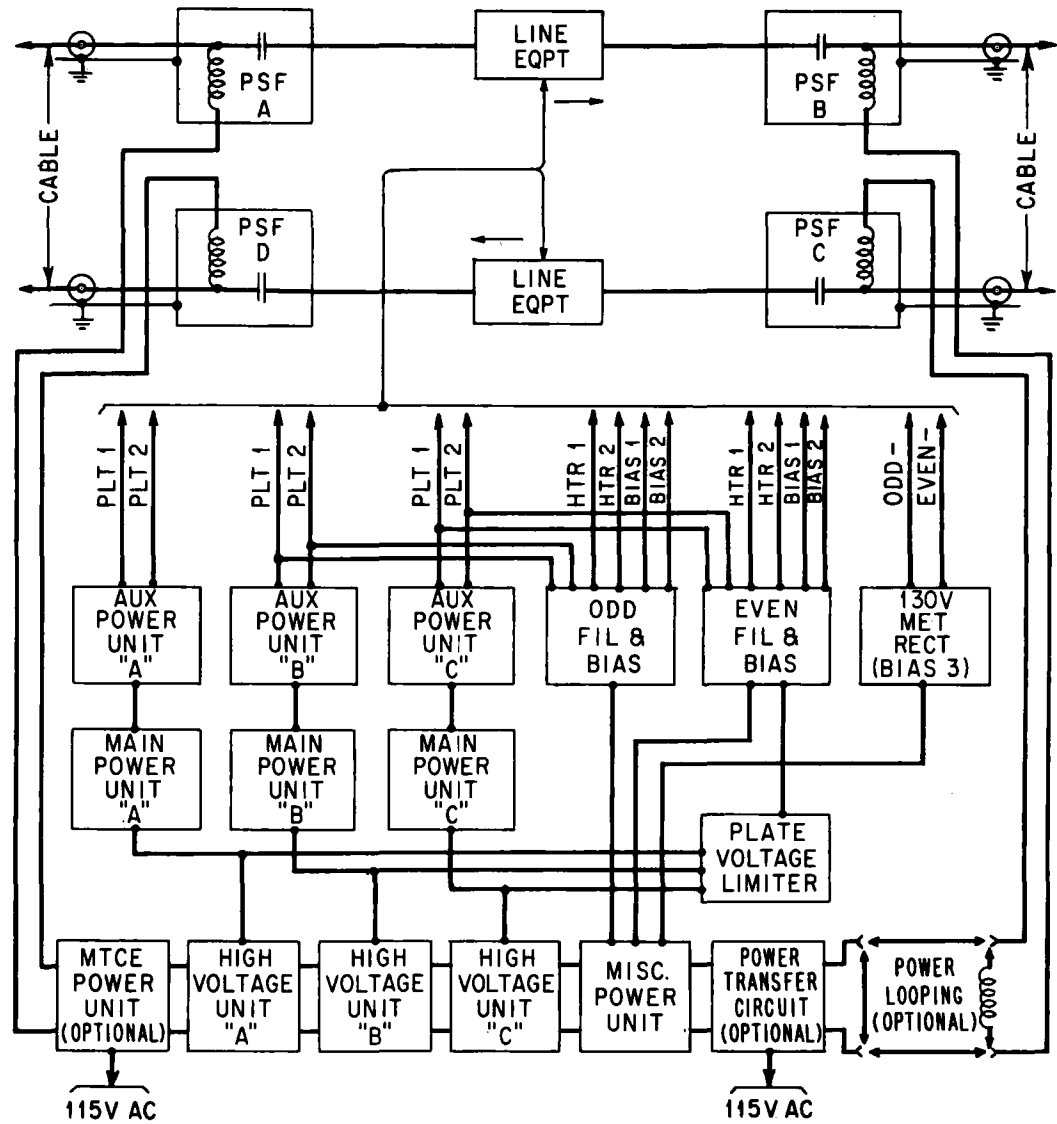


Fig. 1 — TYPICAL POWER SUPPLY ARRANGEMENT
EQUALIZING AUX. REPEATER
(CONSTANT CURRENT FEED)

STEP	PROCEDURE
	(D) HTR 2 BIAS
5	The heater 2 bias test is made to detect a shorted filtering capacitor on the HTR2 leads of an amplifier. To implement this test with the J64001 AL power test set, it will be necessary for the field to construct an adapter cord per Fig. 2. The function of the adapter cord is to transfer one of the HTR 2 supply leads to the PLT 1 test lead in the V TST connector of the test set.
6	Connect the adapter cord per Fig. 2 between the V TST plug on the 1AL test set and V TST jack in any transmission panel.
7	Arrange the 1AL test set controls for making a PLT 1 voltage test. Requirement: The reading on the 1AL test set should not be less than 120 volts. Note: If this requirement is not met, this is an indication that one or more of the amplifiers at the repeater under test has a defective filtering capacitor on the HTR 2 supply leads. The faulty amplifier may be determined by removing the power connector from one amplifier at a time until the requirement is met, thereby indicating that the final amplifier having its power removed is the one that is defective. Caution: <i>It is imperative to make certain, before removing an amplifier power connector, that the line containing that amplifier has been switched out of service. At switching or terminal repeaters where transmitting flat amplifiers are involved their power connector should be removed last to avoid what may be an unnecessary switching operation if the trouble is found to be in one of the other amplifiers.</i> Since the bias on the HTR 2 supply leads is normally a minimum of 180 volts at an auxiliary repeater, the 1AL test set would read 180 volts if the 0.1 Meg. limiting resistor between the PLT 1 power supply and the HTR 2 supply leads were not present. The limiting resistor acts as an additional multiplier resistor in series with the meter in the test set thereby affecting the calibration of the voltmeter scale. A reading of 120 V. on the meter corresponds approximately to a 180 V/bias. In general, when one of the capacitors on the HTR 2 leads on an amplifier breaks down the impedance across it is so low that the bias potential drops to zero.

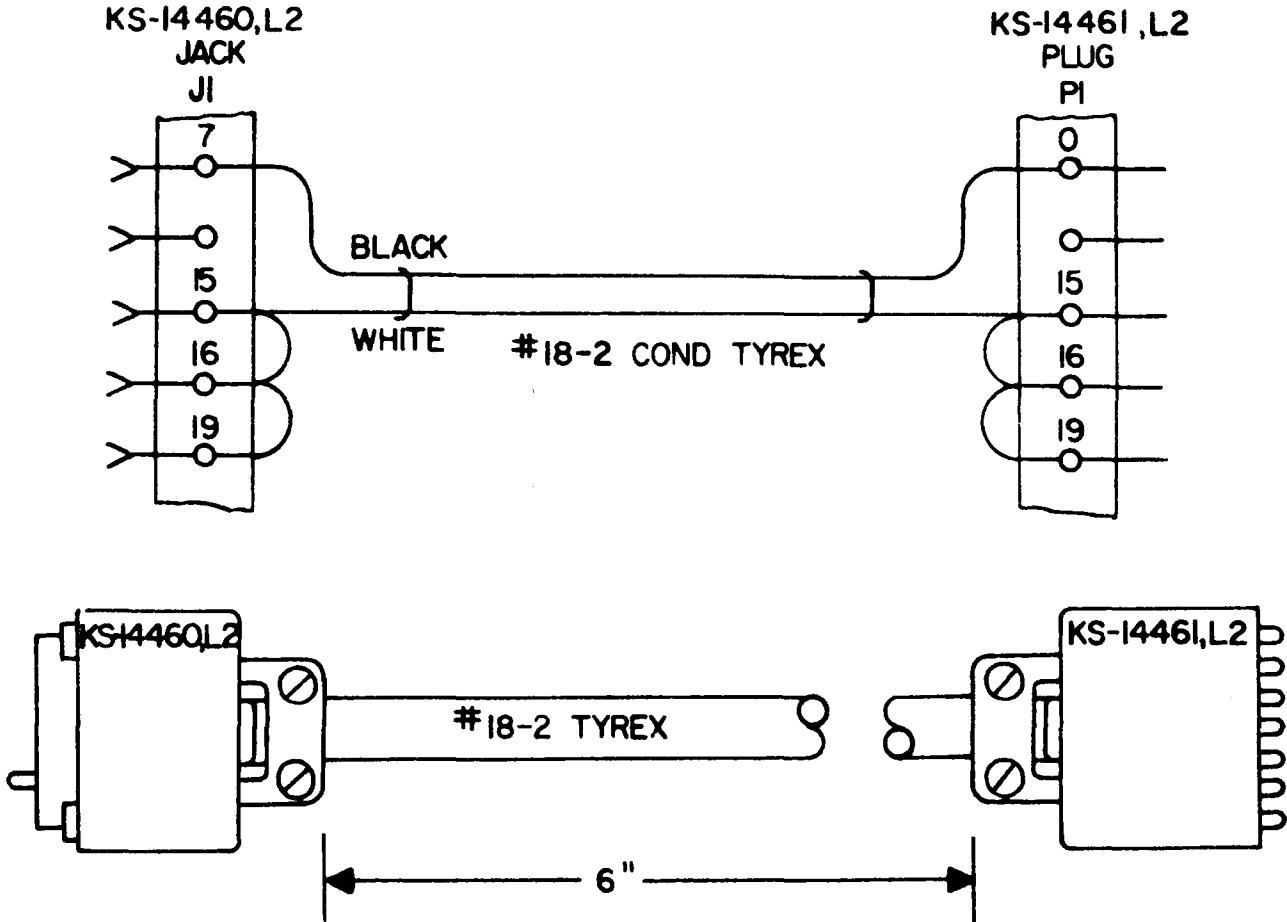


Fig. 2 – ADAPTER CORD FOR 1AL POWER TEST SET