

**P1 CARRIER TELEPHONE SYSTEM**  
**ADJUSTMENTS AND MAINTENANCE**  
**REPEATERS**  
**HOW TO LOCATE TROUBLE**

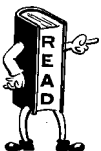
**1.00 GENERAL**

**1.01** Chart I shows the procedure to be used in isolating trouble in the high-group portion of a repeater to a particular network board. Use the abbreviated adjustment procedure (Section 363-102-505) or the detailed adjustment procedure (Section 363-102-502) with this chart.

**1.02** Chart II shows the procedure to be used in isolating trouble in the low-group portion of a repeater to a particular network board. Use the abbreviated adjustment procedure (Section 363-102-505) or the detailed adjustment procedure (Section 363-102-503) with this chart.

**1.03** Chart III shows test set readings at the high- and low-group test points of a non-regulated repeater with specified 72- and 36-kc input test powers. As indicated in Charts I and II, Chart III will be used to isolate trouble to a particular network board if, when Test A or E is performed, replacement of board B or J has not cleared the trouble.

**1.04** These charts are for locating trouble at a convenient bench location, but may be used at the in-service location, except that Chart III cannot be used at repeaters powered over the cable. In this issue red and green lines and arrows have been incorporated in Charts I and II.



*Caution: Tests made with the send or receive cords connected to the HGT LINE or LGT LINE test points do not check the line transformers on the line board (board E). Use Chart III to test the line transformers.*

**1.05** When testing or adjusting a repeater, make the appropriate tests and adjustments in the order in which they are listed. For example, the order of tests and adjustments for a repeater with total power regulation in the high group and pilot regulation in the low group would be Tests A, B, E, and G.

**1.06** The letters shown on the charts refer to the specific test or adjustment in the abbreviated and the detailed adjustment procedures.

**1.07** The letters following the word *board* refer to the position occupied by the network in the 803B connector.

**1.08** Boards replaced during the trouble-locating procedure that are not defective will be reinserted in the 803B connector after the defective network has been located. For example, in Adjustment B—Total Power Regulator—High Group, if board C is replaced and the high group still checks *Not OK* but tests *OK* when board B is replaced, the original board C should be reinserted in the 803B connector.

**1.09** If an incorrect reading is obtained at a test point when making the measurements shown on Chart III, the boards between that test point and the test point at which the last correct reading was obtained should be changed, one at a time, until the correct reading is obtained. In some exceptional cases, it may be necessary to change the network board just beyond the test point. For example, if an incorrect reading is

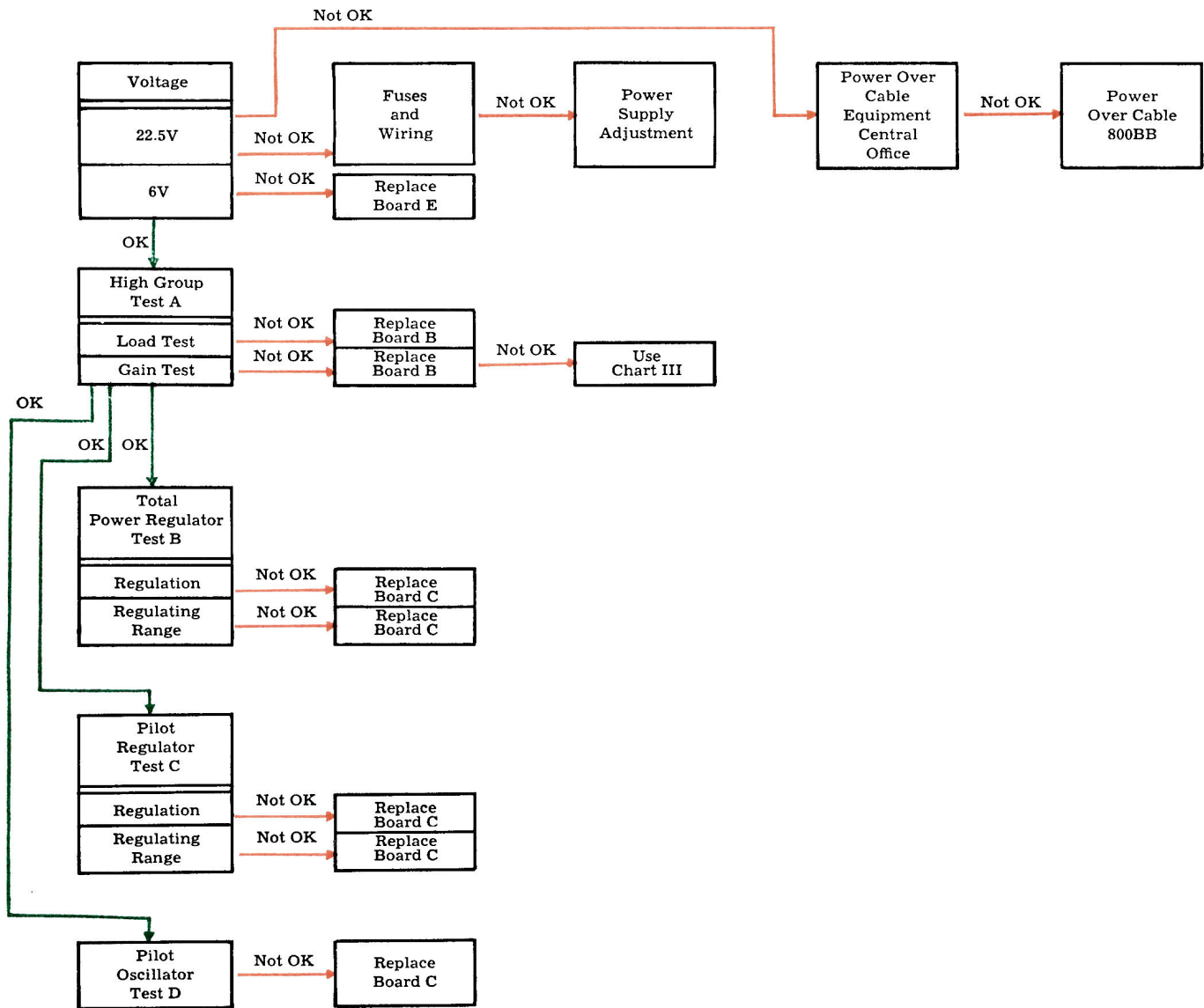
obtained at the H REG IN test point, replace the IN pad on board B and check reading. If reading is still incorrect, replace the 337-type equalizer on board B. If this does not clear the trouble, replace the phase equalizer, board F. If reading is still incorrect, replace the directional filter, board D.

1.10 Notice that throughout the adjustment and maintenance procedure, troubles are cleared

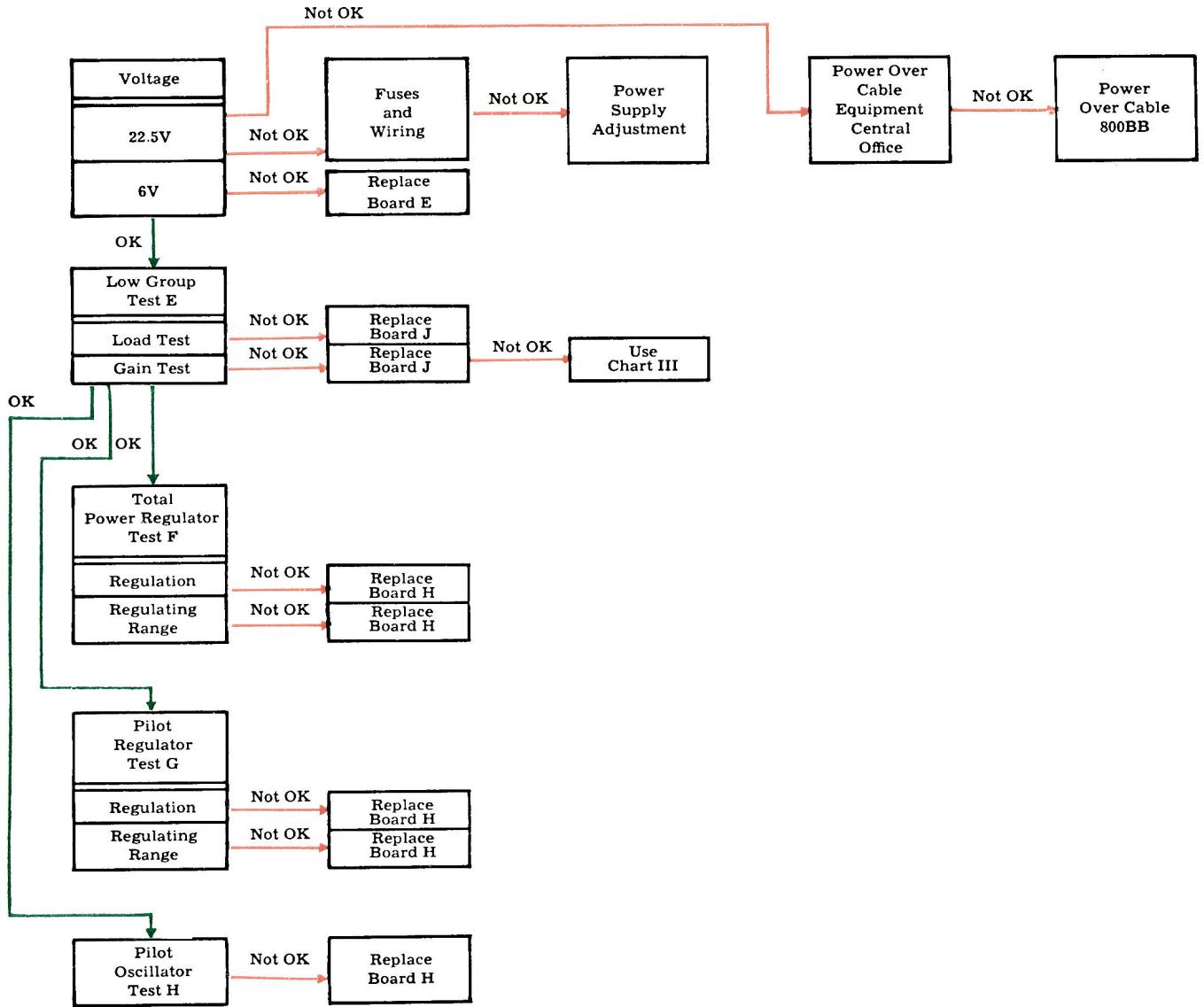
by replacing network boards. Keep in mind that such troubles as bent or broken grid wires or terminal connectors, defective pads, etc, may be the cause of the trouble. In all cases, make a visual inspection of the equipment.

1.11 Before making any tests indicated on Chart III, read the notes on the left-hand side of the chart.

**CHART I**  
**TROUBLE LOCATING — HIGH GROUP**  
**(72 KC AND PILOT)**



**CHART II**  
**TROUBLE LOCATING – LOW GROUP**  
**(36 KC AND PILOT)**





**Note 1:** For convenience in making connections to screw terminals on the line board, connect 6-inch pieces of insulated wire, skinned 1/2 inch, to screw terminals indicated in Notes 3 and 4.

**Note 2:** Remove straps if present from the following line board screw terminals:

Line Board	Screw Terminals
800AU	1 and 16, 27 and 28
800AA	16 and 18, 10 and 11

**Note 3:**

(a) For high group tests make the following connections:

Line Board	Send Cord to
800AU	3 and 4
800AA	20 and 22

If the local cable is already connected to above points, the send cord may be connected to binding posts 9 and 10 on the 386A apparatus case terminal block.

(b) Connect a 600-ohm resistor for:

Line Board	Between Screw Terminals
800AU	14 and 15
800AA	13 and 15

If the local cable is already connected to above points, the resistor may be connected between binding posts 7 and 8 on the 386A apparatus case terminal block.

**Note 4:**

(a) For low group tests make the following connections:

Line Board	Send Cord to
800AU	14 and 15
800AA	13 and 15

If the local cable is already connected to above points, the send cord may be connected to binding posts 7 and 8 on the 386A apparatus case terminal block.

(b) Connect a 600-ohm resistor for:

Line Board	Between Screw Terminals
800AU	3 and 4
800AA	20 and 22

If local cable is already connected to above points, the resistor may be connected between binding posts 9 and 10 on the 386A apparatus case terminal block.

**Note 5:** Make all measurements with the REC switch in the DET HI-IMP position.

**Note 6:** After completion of tests, replace all straps that were removed under Note 2 and remove all terminations and test connections.

**CHART III  
MEASUREMENTS  
SEE NOTES 1, 2, 3, 4, 5, AND 6**

