L MULTIPLEX TERMINALS

LMX-2

CARRIER AND PILOT SUPPLY

INDEPENDENT 64-KHZ LINE PILOT SUPPLY AND DISTRIBUTION CIRCUIT TESTS

An independent 64-kHz pilot supply J68911A (Fig. 1) can supply line pilot signals for as many as 66 wire line entrance links. A block diagram is shown in Fig. 2.

This section is reissued to clarify several charts and figures. Arrows are used to indicate significant changes. ***Equipment Test Lists are not affected.***

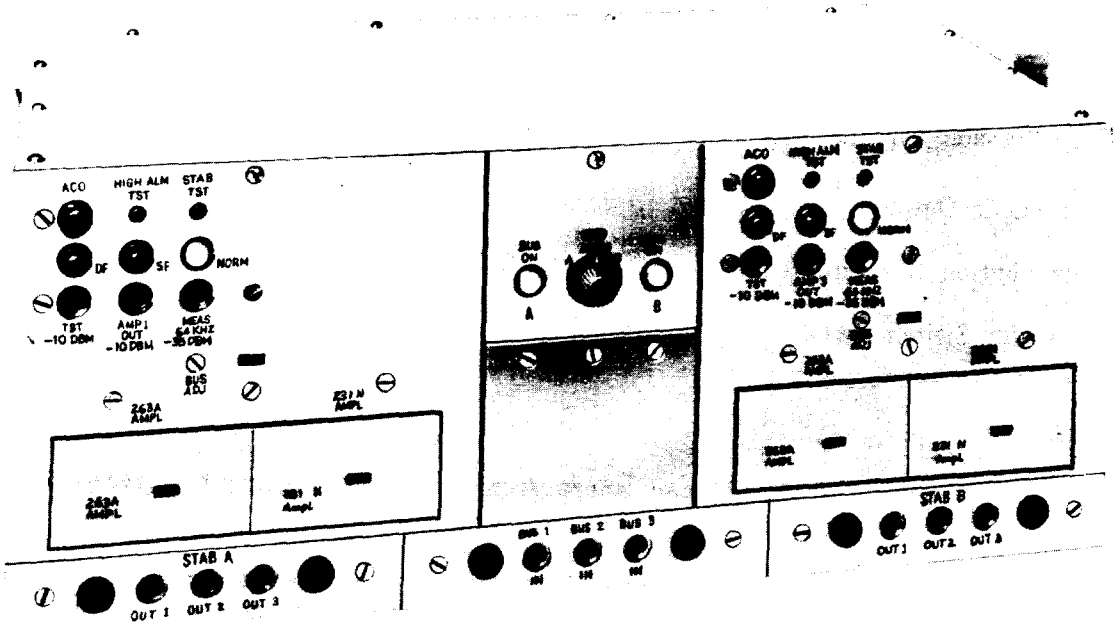

Fig. 1—Independent 64-kHz Pilot Supply J68911A

This section provides procedures to:

(a) Measure the output of the stabilizer and verify the performance of the detector, alarm, and switching circuits

(b) Measure the harmonic signal power

(c) Measure the distribution bus output

(d) Replace or restore a transfer switch.

The pilot supply consists of two identical stablizer, detector, and alarm units. A nonrevertive transfer circuit connects the in-service stablizer to the distribution buses and terminates the idle stabilizer. Each stabilizer provides four filtered and amplitude-stabilized outputs. Three outputs are connected to J68909B distribution buses, and one output is terminated in a test jack. Each distribution bus provides twenty-two 135-ohm balanced taps plus one test jack.

CHART **PAGE**

1—Stabilizer, Detector, and Alarm Tests 3

A. Stabilizer Test 3

B. Detector and Alarm Tests 5

C. Transfer Circuit Tests 6

2—Harmonic Output 7

3—Distribution Bus Output 8

4—Transfer Switch Replacement 8

APPARATUS:

Refer to Section 356-010-500 and select, from available equipment, a receiving unit having the following capabilities:

Receiving test equipment capable of detecting, from 135-ohm circuits, a signal of 64 kHz at powers between -37 and -10 dBm and capable of detecting, from 75-ohm circuits, a signal of 192 kHz at a power as low as -75 dBm.

3P17B cords

ED-50688-30, G2 cords (Fig. 3)

3P6C cords

609C filter

APPARATUS (Cont):

135- to 75-ohm impedance matching transformer.

Note: The impedance matching transformer contained in the 34A transmission measuring set is suitable for these tests.

CHART 1

STABILIZER, DETECTOR, AND ALARM TESTS

STEP	PROCEDURE

A. Stabilizer Test

On independent 64-kHz pilot supply J68911A,

1 Observe the BUS ON lamps located on the transfer switch unit to identify the idle stabilizer.

Requirement: The ***idle*** stabilizer is indicated by the ***extinguished*** BUS ON lamp.

2 Calibrate the RTE for a 135-ohm terminated measurement of 64 kHz at -10 dBm.

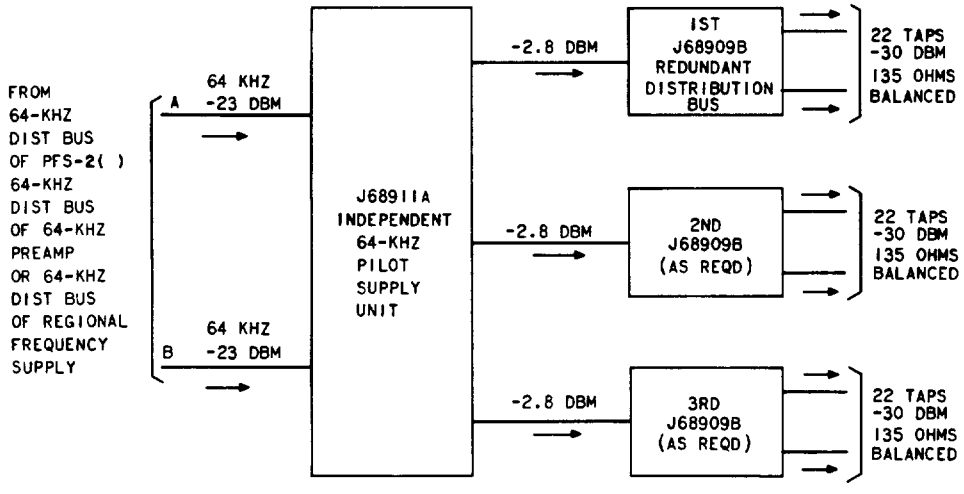

Fig. 2—Independent 64-kHz Supply and Distribution Circuit

CHART 1 (Cont)

STEP	PROCEDURE

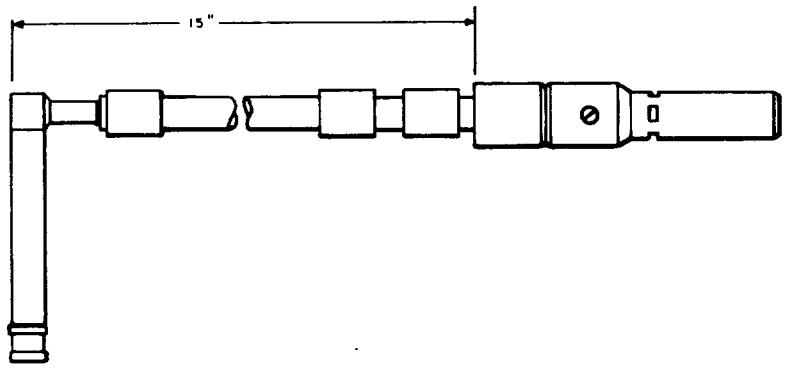

Fig. 3— Cord ED-50688-30

3 Measure the power of the 64-kHz signal at the TST -10 DBM jack on the idle stabilizer [patch (1), Fig. 4].

Requirement: -10.00 dBm ±0.05 dB

4 Adjust the BUS ADJ control on the idle stabilizer, if required, to meet the requirement.

5 Proceed to Step 9 if the requirement is now met. Otherwise, proceed to Step 6.

6 Calibrate the RTE for a 135-ohm terminated measurement of 64 kHz at -35 dBm.

7 Measure the power of the 64-kHz signal at the MEAS 64 KHZ -35 DBM jack on the ***idle stabilizer*** [patch (2), Fig. 4].

Requirement: Power is between -36.5 and -32 dBm.

Note: ◗If the requirement is not met, refer to the appropriate one of the following sections, according to the source of the 64-kHz input signals to the pilot supply: Section 356-153-501 for PFS-1, Section 354-102-500 for PFS-2A, Section 354-104-500 for PFS-2B, or Section 354-140-503 for regional frequency supply.◖

8 Clear trouble in the connecting apparatus or wiring, and repeat Steps 2 through 5.

9 Depress and hold depressed the STAB TST pushbutton on the idle stabilizer.

10 Note any change in the power of the 64-kHz signal.

Requirement: Power decreases less than 0.3 dB from the power measured in Step 3.

CHART 1 (Cont)

STEP	PROCEDURE

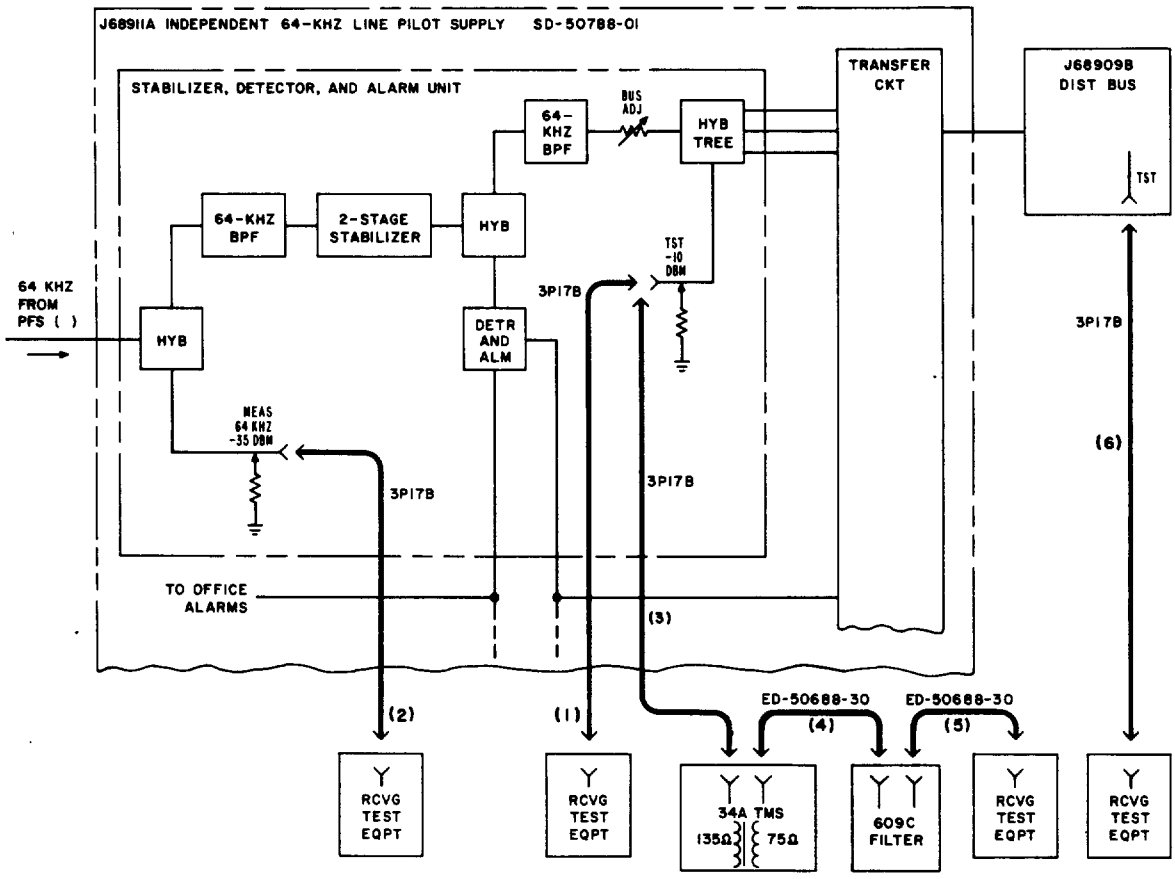

Fig. 4—Independent 64-kHz Pilot Supply and Distribution Bus Test Connections

11 Release the STAB TST pushbutton.

12 Remove all test connections.

B. Detector and Alarm Tests

13 Depress and hold depressed the HIGH ALM TST pushbutton.

Requirement 1: NORM lamp is extinguished.

Requirement 2: SF lamp is lighted.

Requirement 3: Audible alarm is operated.

CHART 1 (Cont)

STEP	PROCEDURE
14	Depress the ACO pushbutton to silence the audible alarm.
15	Release the HIGH ALM TST pushbutton.
	Requirement 1: NORM lamp is lighted.
	Requirement 2: SF lamp is extinguished.
16	Remove the 263A amplifier.
	Requirement 1: NORM lamp is extinguished.
	Requirement 2: SF lamp is lighted.
	Requirement 3: Audible alarm is operated.
17	Reinsert the 263A amplifier.
	Requirement 1: NORM lamp is lighted.
	Requirement 2: SF lamp is extinguished.
	Requirement 3: Audible alarm is silenced.
	C. Transfer Circuit Tests
	Caution: Do not remove the A stabilizer when the transfer switch is in the AUTO position. If the A stabilizer is to be removed, first place the transfer switch in the B position.
18	Position the transfer switch control from the AUTO position to the in-service stabilizer position indicated by the lighted BUS ON lamp.
	Requirement: No change in status of BUS ON lamps.
19	Position the transfer switch control to the idle stabilizer position indicated by the extinguished BUS ON lamp.
	Requirement 1: BUS ON lamp previously lighted is extinguished.
	Requirement 2: BUS ON lamp previously extinguished is lighted.
20	Repeat Parts A and B for the stabilizer now in the idle condition.
21	Restore the transfer switch manual control to the AUTO position.

CHART 2

HARMONIC OUTPUT

STEP	PROCEDURE
	Caution: Do not remove the A stabilizer when the transfer switch is in the AUTO position. If the A stabilizer is to be removed, first place the transfer switch in the B position.
	On independent 64-kHz pilot supply J68911A,
1	Observe the BUS ON lamps located on the transfer switch unit to identify the idle stabilizer.
	Requirement: The ***idle*** stabilizer is indicated by the ***extinguished*** BUS ON lamp.
2	⧫Remove patch (2) in Fig. 4.
3	Calibrate the RTE to make a 75-ohm terminated measurement of 192 kHz at -75 dBm.
4	Make patches (3), (4), and (5) in Fig. 4.
5	Measure the 192-kHz power present at the RTE.
	Note: The third harmonic of 64 kHz (192 kHz) is being measured in this step.
	Requirement: Power is less than -75 dBm (-76 dBm is less than -75 dBm).
6	Replace the stabilizer unit and repeat Step 5 if the requirement is not met.
7	Transfer service to the idle stabilizer and repeat Steps 1 through 6 for the new idle stabilizer.
8	Remove all test connections.⧫

CHART 3

DISTRIBUTION BUS OUTPUT

STEP	PROCEDURE
	On independent 64-kHz pilot supply J68911A,
1	Observe the BUS ON lamps located on the transfer switch unit to identify the in-service stabilizer.
	Requirement: The ***in-service*** stabilizer is indicated by the ***lighted*** BUS ON lamp.
2	Calibrate the RTE for a 135-ohm terminated measurement of 64 kHz at -30 dBm.
3	Measure the power of the 64-kHz signal at the TST jack on the first J68909B distribution bus [patch (6), Fig. 4].
	Requirement: -30.0 dBm ±0.1 dB
4	Adjust the BUS ADJ control on the in-service stabilizer, if required, to meet the requirement.
5	Perform the tests in Part A of Chart 1 if the requirement cannot be met by adjustment.
6	Transfer service to the idle stabilizer and repeat Steps 1 through 5 for the new in-service stabilizer.
7	Repeat Step 3 for the second and third J68909B distribution buses when provided.
	Note: If the requirement of Step 3 cannot be met for the second and third buses, investigate the cause of trouble. Do ***not*** readjust the BUS ADJ controls on the stabilizers.
8	Remove all test connections.

CHART 4

TRANSFER SWITCH REPLACEMENT

STEP	PROCEDURE
	On independent 64-kHz pilot supply J68911A,
1	Observe the BUS ON lamps located on the transfer switch unit to identify the in-service stabilizer.
	Requirement: The ***in-service*** stabilizer is indicated by the ***lighted*** BUS ON lamp.

CHART 4 (Cont)

STEP	PROCEDURE
2	Calibrate the RTE for a 135-ohm terminated measurement of 64 kHz at -30 dBm.
3	Connect the RTE to the TST jack on the first J68909B distribution bus [patch (1), Fig. 5].
4	◗Make patches (2), (3), and (4) in Fig. 5 on independent 64-kHz pilot supply—J68911A. ***Note:*** Depending upon equipment requirements, the BUS 2 and BUS 3 positions may not be equipped. Patches (3) and (4) are required for all equipment arrangements to ensure proper termination of the stabilizer when the transfer switch is removed.◖
5	Remove the transfer switch plug-in unit.
6	Verify that the RTE measures a 64-kHz signal at each distribution bus TST jack [patch (1), Fig. 5]. ***Requirement:*** -30.0 dBm ±0.5 dB
7	Insert the replacement transfer switch plug-in unit.
8	Remove the patches placed in Step 4 while monitoring the 64-kHz signal output at the distribution bus TST jack associated with the patch cord being removed.
9	Remove all test connections.
10	Perform the tests in Charts 1 and 3.

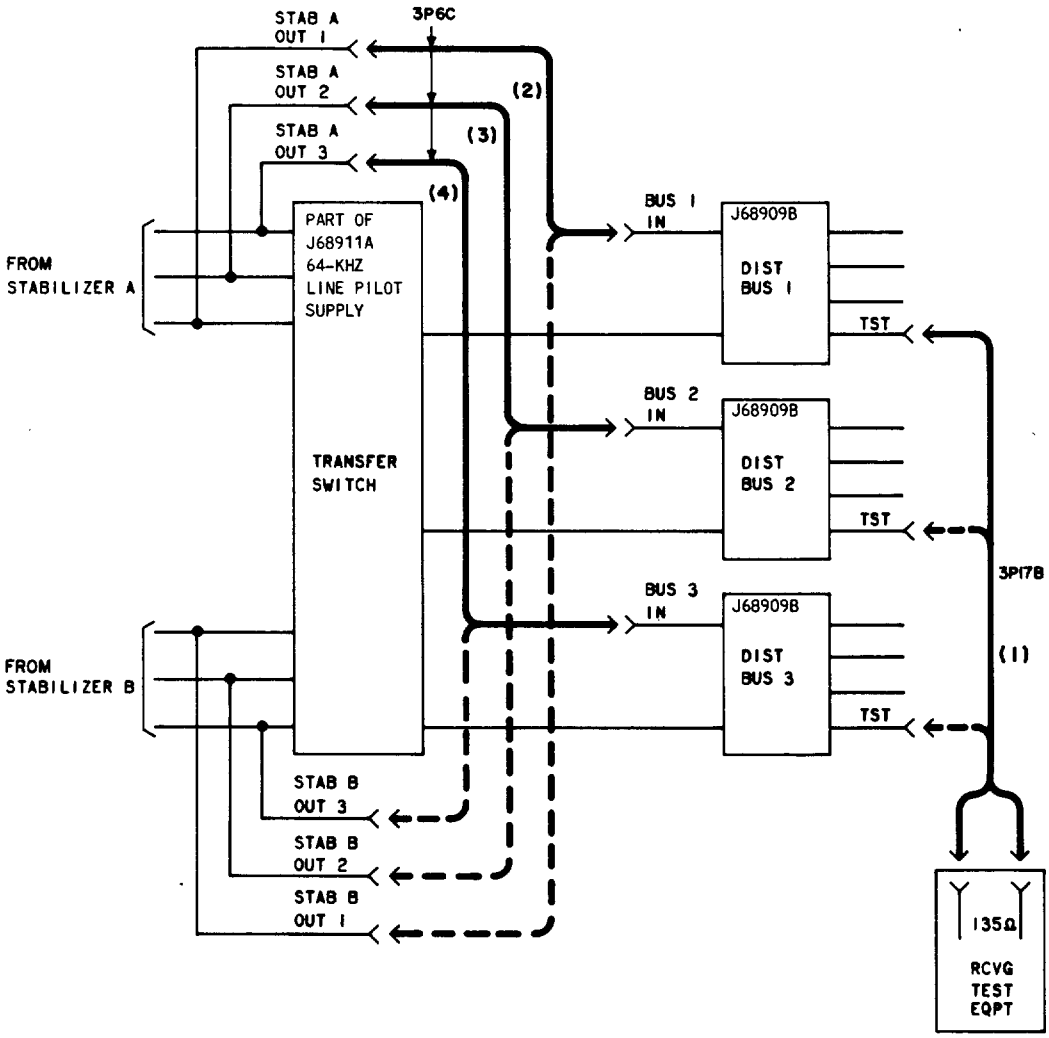

Fig. 5—Transfer Switch Replacement or Failure—Patching Procedures