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**SCANNER FUNCTION TESTS**  
**SCANNER AND TEST AND ALARM CIRCUITS**  
**COMMON EQUIPMENT**  
**ANALOG MULTIPLEX TERMINAL EQUIPMENT**

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Scanner J68858 (SD-50184-01) provides a means of scanning the pilot levels and the gains of the group and supergroup receiving amplifiers.

This section is reissued to clarify the test procedure and to correct errors. Arrows are used to indicate significant changes. *Equipment Test Lists are not affected.*

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**APPARATUS:**

None.

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**CHART 1**

**LMX-1 TERMINAL SCANNER**

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This chart explains a procedure for checking the mode functions of the LMX-1 terminal scanner. Jack and control panel J68858BC, similar to the J68858AD panel in Fig. 1, and meter display unit J68858AR (Fig. 2) are located in the high-frequency patch bay of the LMX-1 terminal. The meter display unit will contain either a COARSE pilot meter for use with nonregulated groups or a group GAIN meter (Fig. 2) for use with LMX-1 terminals that are expanded with LMX-2 mixed bays containing regulated group amplifiers. The scanner mode of operation and the selection of supergroup and group amplifiers are determined by the operation of pushbutton switches and the setting of rotary selector switches on the control panel. The meter display unit contains digital display lamps to register the bay, supergroup, and group connected to the scanner.

**NOTICE**

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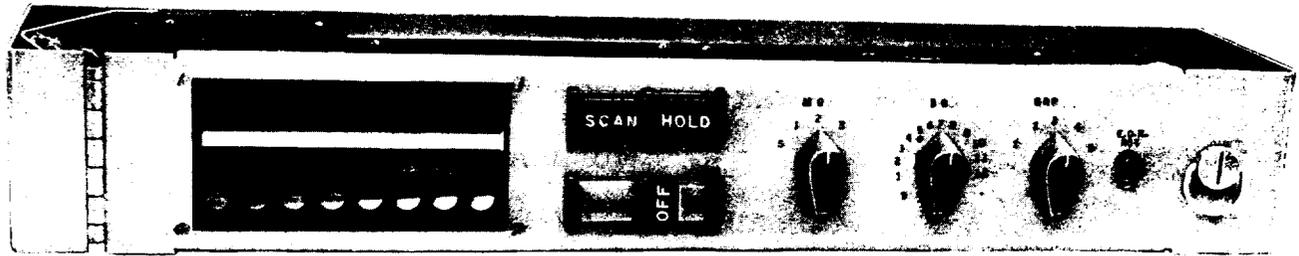


Fig. 1—Jack and Control Panel J68858AD

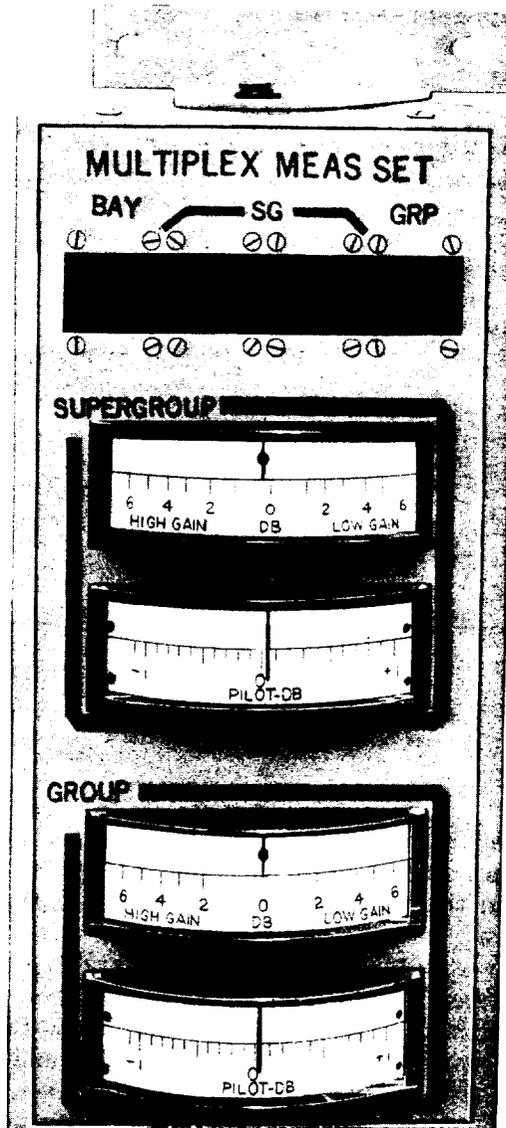


Fig. 2—Meter Display Unit J68858AR

## CHART 1 (Contd)

STEP	PROCEDURE
	<p><b>Note:</b> The requirements in this chart are based on the assumption that the levels of the supergroup and group pilot signals are correct and that the supergroup and group banks are functioning properly. The in-service pilot levels may be tested as prescribed in Sections 356-115-501 and 356-120-501.</p>
1	<p>Operate the OFF/ON indicator pushbutton switch on the jack and control panel to the OFF position.</p> <p><b>Requirement 1:</b> The OFF lamp (red) is lighted.</p> <p><b>Requirement 2:</b> The ON lamp is extinguished.</p>
2	<p>Operate the OFF/ON switch to the ON position.</p> <p><b>Requirement 1:</b> The ON lamp (white) is lighted.</p> <p><b>Requirement 2:</b> The OFF lamp is extinguished.</p>
	<p><b>SELECT Mode</b></p>
3	<p>Set the rotary selector switches on the jack and control panel to the BAY 1, SG 1, and GRP 1 positions (10 supergroup terminal) or BAY 1, SG 11, and GRP 1 positions (12 supergroup terminal).</p>
4	<p>Depress the SELECT pushbutton switch.</p>
5	<p>Verify that the scanner SELECT mode functions.</p> <p><b>Requirement 1:</b> The SELECT lamp (white) is lighted.</p> <p><b>Requirement 2:</b> The HOLD lamp (yellow) is lighted.</p> <p><b>Requirement 3:</b> The SCAN lamp is extinguished.</p> <p><b>Requirement 4:</b> The BAY and SG digital display numbers shall correspond to the selector switch settings.</p> <p><b>Note:</b> The GRP display lamp will not register. There are no GRP ALM lamps on LMX-1 groups.</p> <p><b>Requirement 5:</b> The ALM lamp (red) is lighted on the supergroup amplifier registered by the digital display numbers.</p>
6	<p>Repeat Step 5 at positions 2, 3, 4, and 5 of the GRP selector switch.</p>
7	<p>Repeat Steps 4 through 6, in the order given, at each position for the SG selector switch listed in Table A.</p>

## CHART 1 (Contd)

STEP	PROCEDURE
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**Note 1:** The SG digital display lamp will not register S when the spare group bank is scanned.

**Note 2:** The supergroup ALM lamp is not provided with the spare regulated group bank.

8 Repeat Steps 4 through 7, in the order given, at each position for the BAY selector switch listed in Table A.

**Note:** The BAY digital display lamp will register S and the GRP lamp will not register when the spare supergroups are scanned.

**SCAN Mode**

9 Set the selector switches to BAY 1, SG S, and GRP 1.

10 Depress the SCAN pushbutton switch.

11 Verify that the scanner SCAN mode functions.

**Requirement 1:** The SCAN lamp (green) is lighted.

**Requirement 2:** The SELECT lamp is extinguished.

**Requirement 3:** The HOLD lamp is extinguished.

**Requirement 4:** The BAY and SG digital display numbers shall register the bay and supergroup being scanned.

**Note:** The BAY digital display lamp will register S when the spare supergroups are scanned. The GRP display lamp will not register.

**Requirement 5:** The ALM lamp (red) is lighted on the supergroup amplifier indicated by the digital display lamps.

**Note:** The scanner will fast-scan whenever any group, supergroup, or bay is not assigned to service and has been strapped for fast scanning as prescribed in SD-50184-01. In a fully equipped 10 supergroup terminal, SG 11 and SG 12 will be fast-scanned by applying the fast scan strapping option.

**HOLD Mode**

12 Depress the HOLD pushbutton switch.

13 Verify that the scanner HOLD mode functions.

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 CHART 1 (Contd)
 

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## STEP

## PROCEDURE

**Requirement 1:** The HOLD lamp (yellow) is lighted.

**Requirement 2:** The SCAN lamp on the jack and control panel is extinguished.

**Requirement 3:** The SELECT lamp is extinguished.

**Requirement 4:** The automatic scanning sequence stops and the digital display numbers register the bay and supergroup connected to the scanner when the HOLD pushbutton is depressed.

**Requirement 5:** The ALM lamp remains lighted on the supergroup amplifier connected to the scanner.

**Remote Control Operation**

14 Insert the test plug of the scanner remote control unit into the STEP jack on the scanner control panel.

15 Read and record the digital display numbers.

16 Depress and release the nonlocking switch in the remote control unit.

17 Read the digital display numbers.

**Requirement:** The digital display numbers shall indicate that the scanner has advanced one step from the reading recorded in Step 15.

18 Remove all test connections and restore the scanner to normal.

**SELECT Mode (automatic release check)**

19 Repeat Steps 2 through 5 leaving the SELECT (or HOLD) pushbutton switch depressed for 45 minutes.

**Requirement 1:** At the end of the 45-minute time interval, the scanning circuit shall be scanning (stepping) automatically.

**Requirement 2:** The SELECT and HOLD pushbuttons (operator indicator lamps) shall be extinguished.

**Requirement 3:** The SCAN pushbutton (operator indicator lamp) shall be ON (green).

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TABLE A

## SCANNING SEQUENCE AND SELECTOR SWITCH SETTINGS

BAY OR MG	SG				GROUP
	L600A	L1860A	600 CHAN	720 CHAN	
S	1	—	1	11	
	2	12	2	12	
	3	13	3	13	
	4	14	4	14	
	5	15	5	15	
	6	16	6	16	
	7	17	7	17	
	8	18	8	18	
	9	D25	9	25	
	10	D26	10	26	
	11	D27	11	27	
	12	D28	12	28	
1	SPARE	SPARE	SPARE	SPARE	1, 2, 3, 4, 5
	1	—	1	11	
	2	12	2	12	
	3	13	3	13	
	4	14	4	14	
	5	15	5	15	
	6	16	6	16	
	7	17	7	17	
	8	18	8	18	
	9	D25	9	25	
	10	D26	10	26	
	11	D27	11	27	
	12	D28	12	28	
2	Repeat, in turn, scanning sequence of bay of MG 1.				
3	Repeat, in turn, scanning sequence of bay or MG 1.				

## CHART 2

## LMX-2 TERMINAL SCANNER

This chart explains a procedure for checking the mode functions of the LMX-2 terminal scanner. Jack and control panel J68858AD (Fig. 1) and meter display unit J68858AR (Fig. 2) are located in the LMX-2 receiving bay. The scanner mode of operation and the selection of supergroup and group amplifiers are determined by the operation of pushbutton switches and the setting of rotary selector switches on the control panel. The meter display unit contains digital display lamps to register the bay or mastergroup, supergroup, and group connected to the scanner.

STEP	PROCEDURE
1	<p>Operate the OFF/ON indicator pushbutton switch on the jack and control panel to the OFF position.</p> <p><b>Requirement 1:</b> The OFF lamp (red) is lighted.</p> <p><b>Requirement 2:</b> The ON lamp is extinguished.</p>
2	<p>Operate the OFF/ON switch to the ON position.</p> <p><b>Requirement 1:</b> The ON lamp (white) is lighted.</p> <p><b>Requirement 2:</b> The OFF lamp is extinguished.</p> <p><b>SELECT Mode</b></p> <p><b>Note:</b> Group and supergroup shelves wired for normal scanning but not equipped with amplifiers should be tested by temporarily inserting an amplifier.</p>
3	<p>Set the rotary selector switches on the jack and control panel to the BAY 1, SG 1, and GRP 1 positions (L600A) or MG 1, SG 12 or 13, and GRP 1 positions (L1860A).</p>
4	<p>Depress the SELECT pushbutton switch.</p>
5	<p>Verify that the scanner SELECT mode functions.</p> <p><b>Requirement 1:</b> The SELECT lamp (white) is lighted.</p> <p><b>Requirement 2:</b> The HOLD lamp (yellow) is lighted.</p> <p><b>Requirement 3:</b> The SCAN lamp is extinguished.</p>

## CHART 2 (Contd)

STEP	PROCEDURE
	<p><b>Requirement 4:</b> The BAY or MG, SG, and GRP digital display numbers shall correspond to the selector switch settings.</p> <p><b>Requirement 5:</b> The ALM lamp (red) is lighted on the supergroup amplifier and group amplifier registered by the digital display numbers.</p> <p>◆<b>Note:</b> For an L multiplex terminal modified for SCOTS (surveillance and control of transmission systems) alarm remoting, the ALM lamp is lighted <i>only</i> on the group amplifier registered by the digital display numbers.◆</p>
6	Repeat Step 5 at positions 2, 3, 4, and 5 of the GRP selector switch.
7	Repeat Steps 4 through 6, in the order given, at each position for the SG selector switch listed in Table A.
	<p><b>Note 1:</b> The SG digital lamp will register S when the spare group bank shelf is scanned.</p> <p><b>Note 2:</b> The supergroup ALM lamp is not provided with the spare group bank.</p>
8	Repeat Steps 4 through 7, in the order given, at each position for the BAY or MG selector switch listed in Table A.
	<p><b>Note:</b> The BAY or MG digital display lamp will register S and the GRP lamp will not register when the spare supergroups are scanned.</p> <p><b>SCAN Mode</b></p>
9	Set the selector switches to BAY or MG 1, SG S, and GRP 1.
10	Depress the SCAN pushbutton switch.
11	Verify that the scanner SCAN mode functions.
	<p><b>Requirement 1:</b> The SCAN lamp (green) is lighted.</p> <p><b>Requirement 2:</b> The SELECT lamp is extinguished.</p> <p><b>Requirement 3:</b> The HOLD lamp is extinguished.</p> <p><b>Requirement 4:</b> The BAY or MG, SG, and GRP digital display numbers shall register the bay or mastergroup, supergroup, and group being scanned.</p> <p><b>Note:</b> The BAY or MG digital display lamp will register S and the GRP lamp will not register when the spare supergroups are scanned.</p> <p><b>Requirement 5:</b> The ALM lamp is lighted on the supergroup and group amplifiers registered by the digital lamps.</p>

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 CHART 2 (Contd)
 

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STEP	PROCEDURE
	<p><b>Note:</b> The supergroup ALM lamp is not provided with the spare group bank.</p> <p><b>Requirement 6:</b> The scanner automatically monitors the bays or mastergroups, supergroups, and groups in the sequence shown in Table A.</p> <p><b>Note:</b> On earlier installations of LMX-2, the scanner may have been strapped for fast scanning when a group or supergroup was not assigned to service. The fast scan option (SD-50184-01) has been rated manufacture discontinued, and later installations will not be provided with this option.</p> <p><b>HOLD Mode</b></p> <p>12 Depress the HOLD pushbutton switch.</p> <p>13 Verify that the scanner HOLD mode functions.</p> <p><b>Requirement 1:</b> The HOLD lamp (yellow) is lighted.</p> <p><b>Requirement 2:</b> The SCAN lamp is extinguished.</p> <p><b>Requirement 3:</b> The SELECT lamp is extinguished.</p> <p><b>Requirement 4:</b> The automatic scanning sequence stops and the digital display numbers register the bay or mastergroup, supergroup, and group connected to the scanner when the HOLD pushbutton is depressed.</p> <p><b>Note:</b> The BAY or MG digital display lamp will register S and the GRP lamp will not register when the spare supergroups are scanned. The SG digital lamp will register S when the spare group bank shelf is scanned.</p> <p><b>Requirement 5:</b> The ALM lamp remains lighted on the supergroup and group amplifiers connected to the scanner when the HOLD pushbutton is depressed.</p> <p><b>Note:</b> The supergroup ALM lamp is not provided with the spare group bank.</p> <p><b>Remote Control Operation</b></p> <p>14 Insert the test plug of the scanner remote control unit into the STEP jack on the control panel.</p> <p>15 Read and record the digital display numbers.</p> <p>16 Depress and release the nonlocking switch in the remote control unit.</p> <p>17 Read the digital display numbers.</p>

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**CHART 2 (Contd)**

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**STEP****PROCEDURE**

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**Requirement:** The digital display numbers shall indicate that the scanner has advanced one step from the reading recorded in Step 15.

18 Remove all test connections and restore the scanner to normal.

**SELECT Mode (automatic release check)**

19 Repeat Steps 2 through 5 leaving the SELECT (or HOLD) pushbutton switch depressed for 45 minutes.

**Requirement 1:** At the end of the 45-minute time interval, the scanning circuit shall be scanning (stepping) automatically.

**Requirement 2:** The SELECT and HOLD pushbuttons (operator indicator lamps) shall be extinguished.

**Requirement 3:** The SCAN pushbutton (operator indicator lamp) shall be ON (green).

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