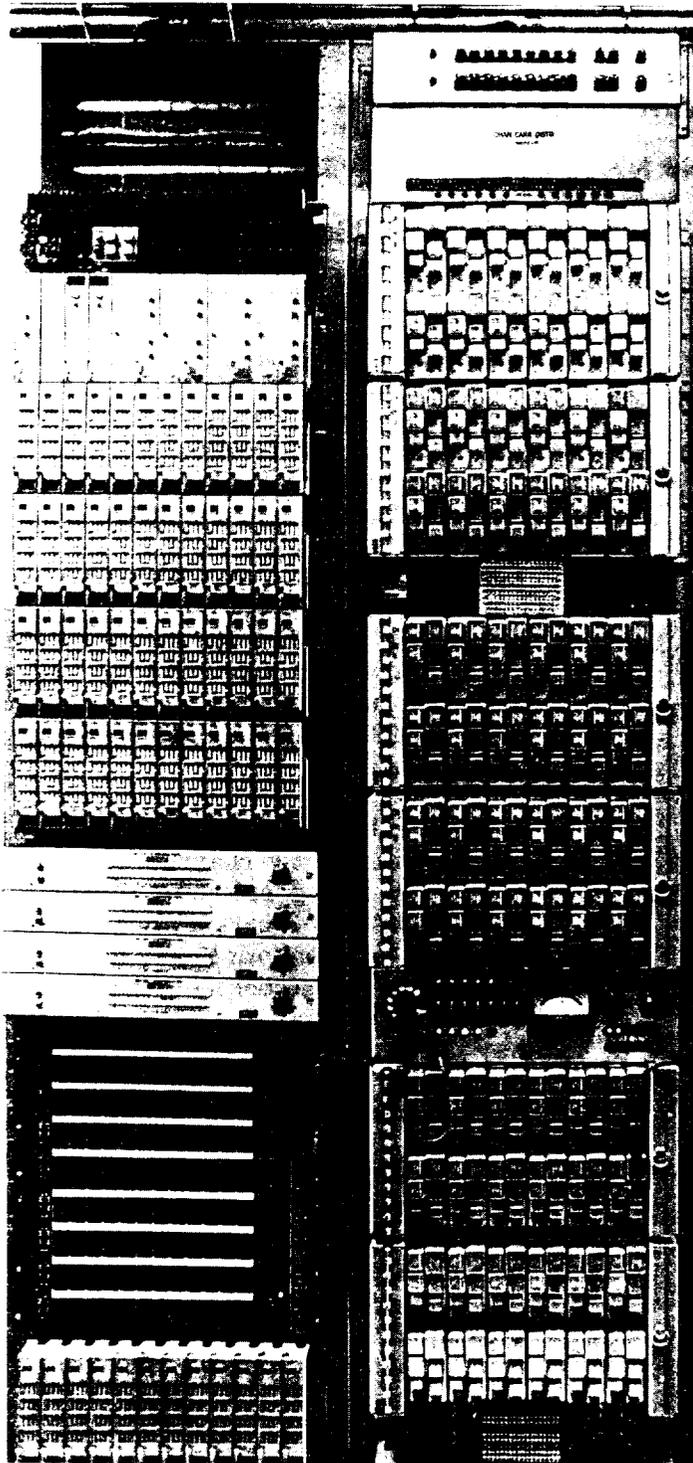


**L MULTIPLEX TERMINALS
COMMON EQUIPMENT
CONSOLIDATED A5 CHANNEL BANK BAY (J68853AA) AND
CONSOLIDATED F-SIGNALING BAYS (J98624A AND B)
OPERATION**

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1. GENERAL	1	1.01 This section provides the basic information required for operating the unitized J68853AA/J98624A and J68853AA/J98624B bays.
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VOICE-FREQUENCY CIRCUITS	7	1.02 One J68853AA consolidated A5 channel bank bay and one J98624A consolidated F-signaling bay (or one J68853AA bay and two J98624B bays) are normally used together to provide all of the equipment units required for transmission of, and making maintenance connections to, 96 voice-frequency (VF) channels.
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D. Transmission and Noise Tests	10	1.03 The J68853AA bay provides for conversion of the 96 VF channels to 8 basic groups and for VF testing, order-wire service, and alarms. The J98624A and B bays provide for signaling, VF patching, VF monitoring, and access for remote maintenance connections for the 96 VF channels. Thus, one J68853AA bay plus either one J98624A bay or two J98624B bays comprise a unitized 96-channel VF system. The J68853AA/J98624A unitized arrangement is illustrated in Fig. 1.
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G. J68853G Fuse, Alarm, and Filter Panel	13	
H. J68853B 4-kHz Harmonic Generator	13	1.04 The J98617AD test, monitor, and talk (TM&T) panel (Fig. 2) is used to perform alignment, routine test, and trouble-locating procedures in the J68853AA and J98624A and B bays. This unit provides access to the office milliwatt distribution system (MDS) and the centralized transmission and noise measuring system (T&NMS) per SD-95900-01, and it provides telephone circuits for 2-wire and 4-wire talk paths.
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ALARM CIRCUITS—J98624A AND B BAYS	15	
J. ED-1C523-30 Fuse and Fuse Alarm Panel	15	1.05 The J98622AD manual access panel, in conjunction with the J98622AA maintenance connectors and the J98624AC jack panel, provides access for VF monitoring, VF transmission tests, and signaling tests in the J68853AA channel bank bay circuits. In addition, the J98624AC jack panel provides for demodulator gain adjustments and
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J98624A CONSOLIDATED
F-SIGNALING BAY

J68853AA CONSOLIDATED
A5 CHANNEL BANK BAY

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Fig. 1—J68853AA Consolidated A5 Channel Bank Bay With J98624A Consolidated F-Signaling Bay

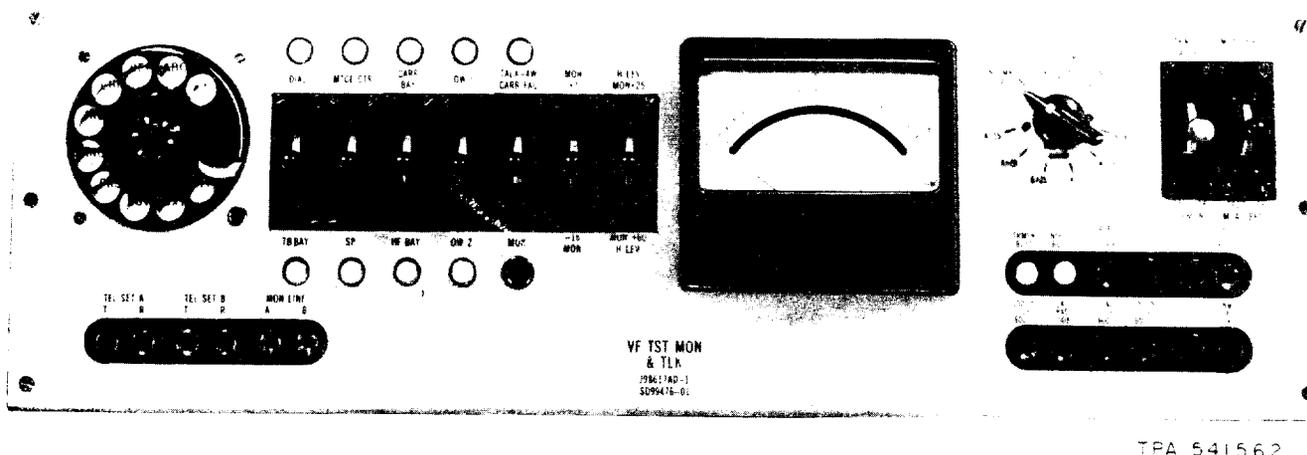


Fig. 2—J98617AD Voice-Frequency Test, Monitor, and Talk Panel

tandem trunk patching; the maintenance connectors also provide for looping and gating-circuit tests in the associated Switched Maintenance Access System-3 (SMAS-3). These three units are illustrated in Fig. 3.

1.06 The FWA and FUA signaling units provide for 2-way inband signaling for the VF channels associated with the A5 channel banks mounted in the J68853AA bay; the FWA units (Fig. 4) are used in the J98624A bay and the FUA units plus corresponding F-auxiliary units are used in the J98624B bays. Two adjustable pads (RCV and TRMT) on the front panel of each signaling unit are used to build out the loss of the lines between the signaling units and the office switching equipment to the same value.

Note: The loss of each pad is equal to the sum of the exposed numerals below the switch slides on that pad. For example, the loss of the RCV pad on the FWA signaling unit shown in Fig. 4 is 16.5 ohms (1.0 + 2.0 + 4.0 + 8.0 + 0.1 + 0.2 + 0.4 + 0.8); whereas, the loss of the TRMT pad is 15.9 ohms (1.0 + 2.0 + 4.0 + 8.0 + 0.1 + 0.8).

1.07 Alarms and associated features are provided in the J68853AA A5 channel bank bay as follows:

- (a) The J68853G fuse, alarm, and filter unit (Fig. 5) contains fuses for protection of the

24-volt supply for this bay in the event of trouble in the A5 channel banks, the harmonic generator, or the filter capacitors in the J68853G panel.

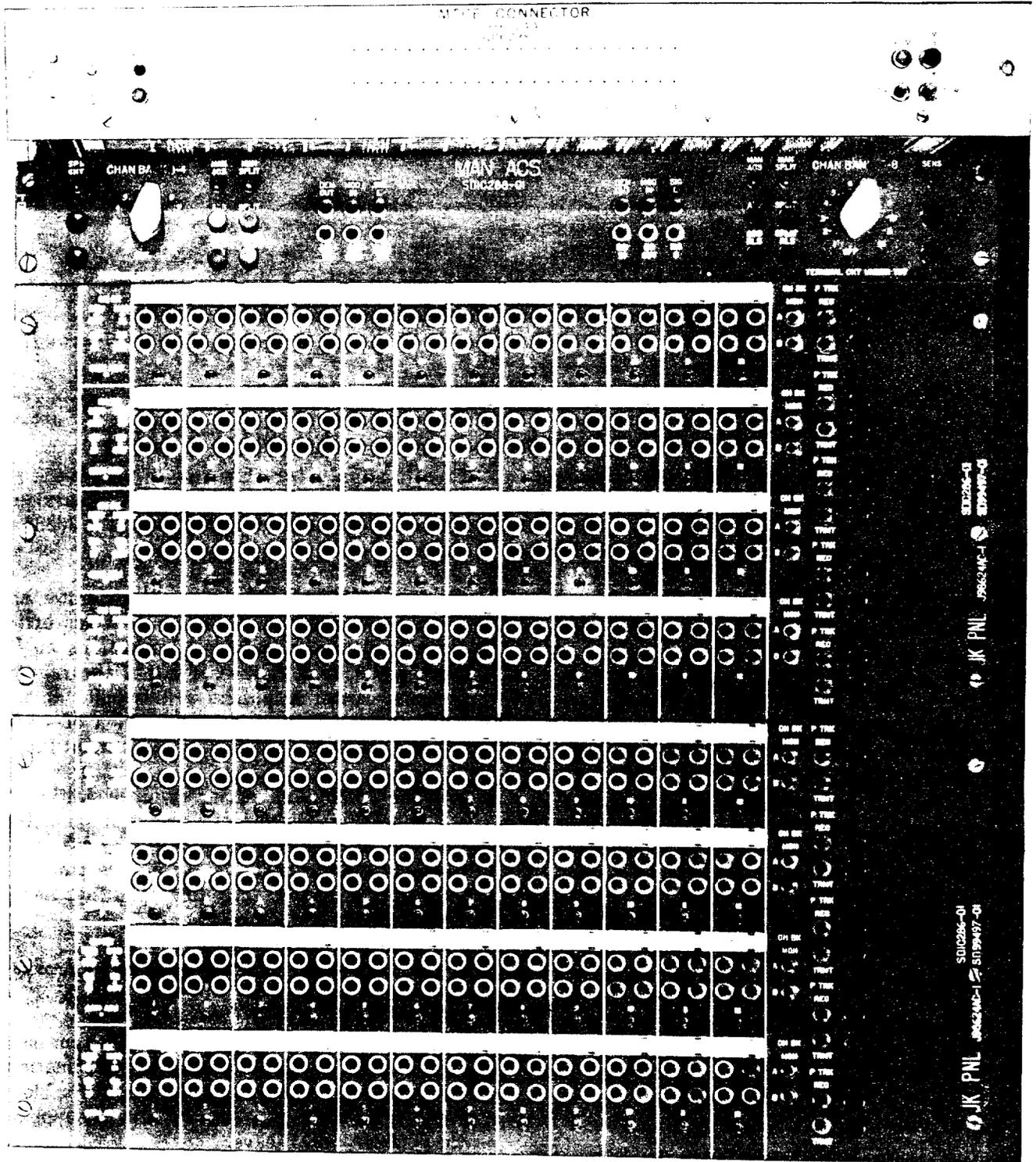
- (b) The J68857B 4-kHz harmonic generator and channel filter unit (Fig. 6) provides office alarm indications and lamp indications on its front panel upon failure of either the regular or spare carrier amplifiers in this unit. It also has provision for manual restoration of 4-kHz input in the event the regular 4-kHz input fails.

- (c) The J98624AA carrier group conditioning panel (Fig. 7) provides a means of simulating a far-end on-hook condition for 1 to 48 associated channels, thus causing the applicable trunks to appear idle during a trouble condition in the carrier facility.

1.08 Alarms and associated features are provided in the J98624A and B bays as follows:

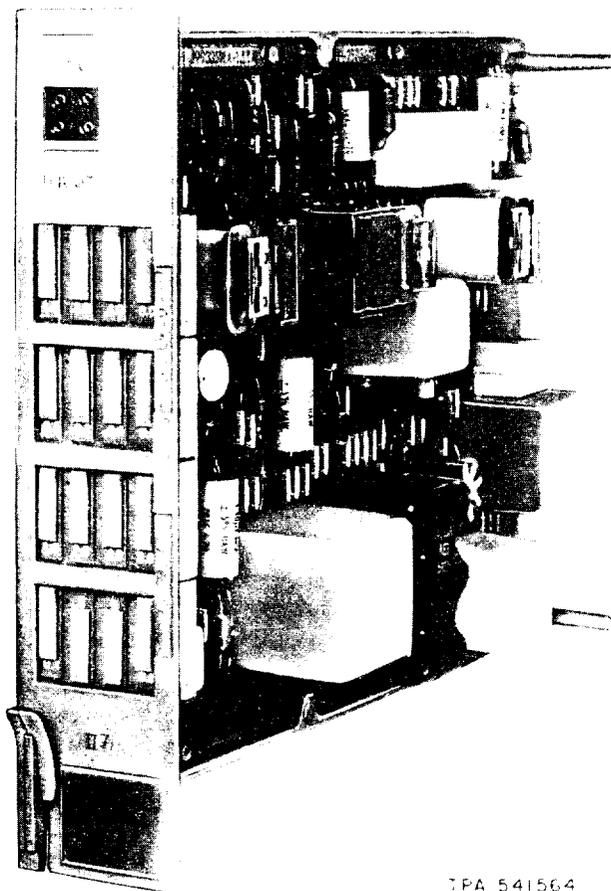
- (a) The ED-1C523-30 fuse and fuse alarm panel (Fig. 8) provides office alarm indications and lamp indications on its front panel for blown fuses in the -24 and -48 volt circuits supplying the J98624A and B bays.

- (b) Each of the two J99335YA tone generator and transfer units (Fig. 9) provides a lamp indication on its front panel in the event that the generator fails and its load is transferred to the good unit.



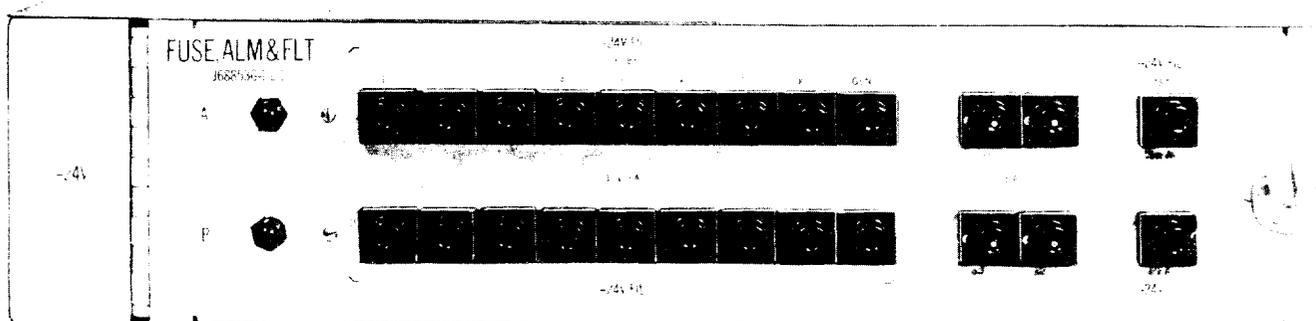
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Fig. 3—J98622AA Maintenance Connector, J98622AD Manual Access Panel, and J98624AC VF Jack Panel



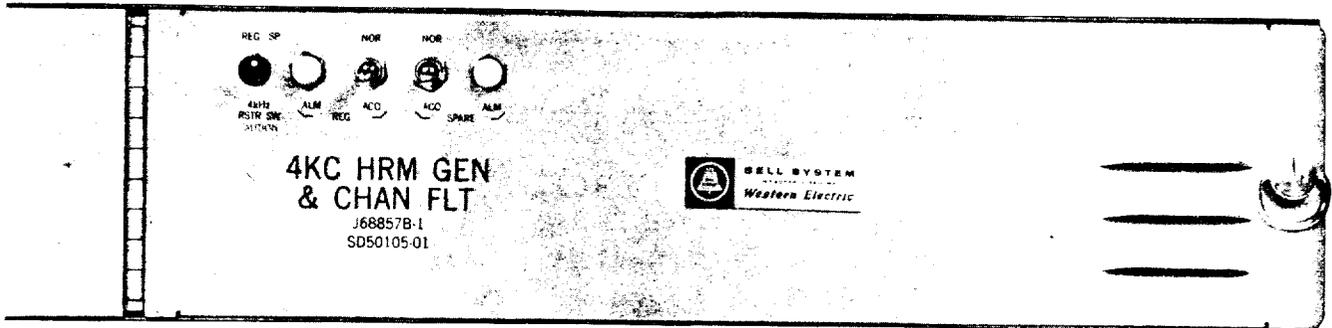
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Fig. 4—FWA Signaling Unit



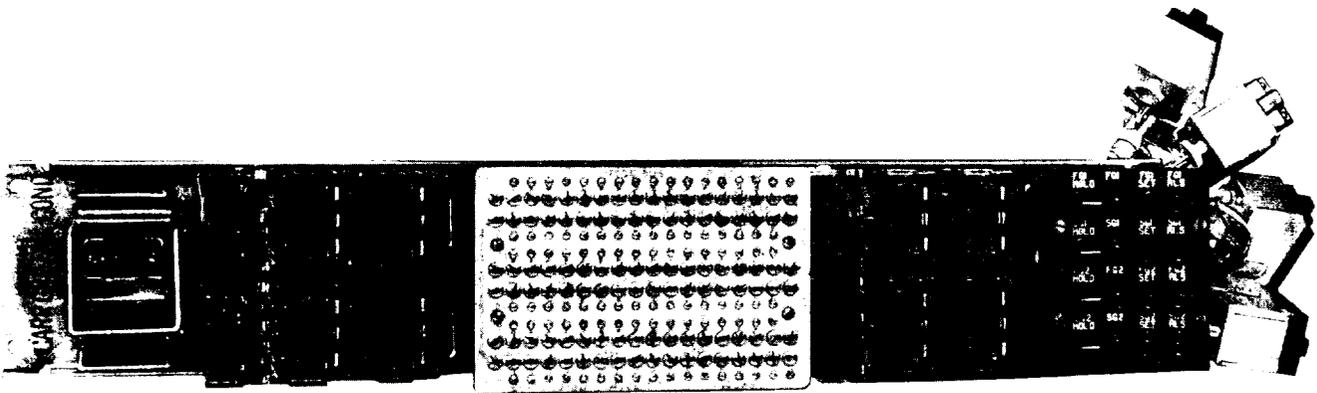
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Fig. 5—J68853G Fuse, Alarm, and Filter Panel



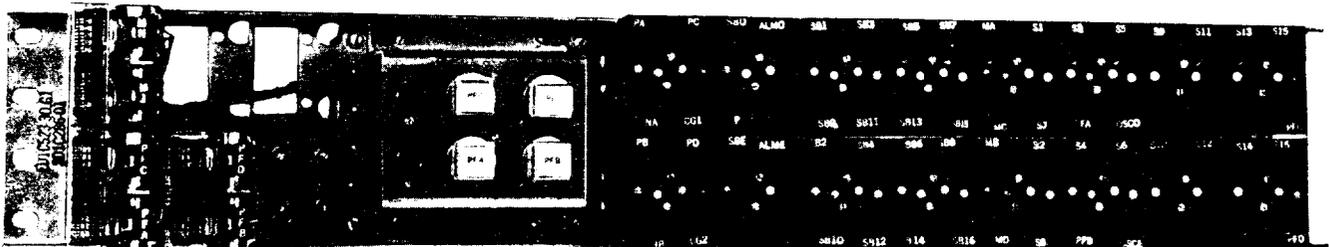
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Fig. 6—J68857B 4-kHz Harmonic Generator and Channel Filter Unit



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Fig. 7—J98624AA Carrier Group Conditioning Panel



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Fig. 8—ED-1C523-30 Fuse and Fuse Alarm Panel

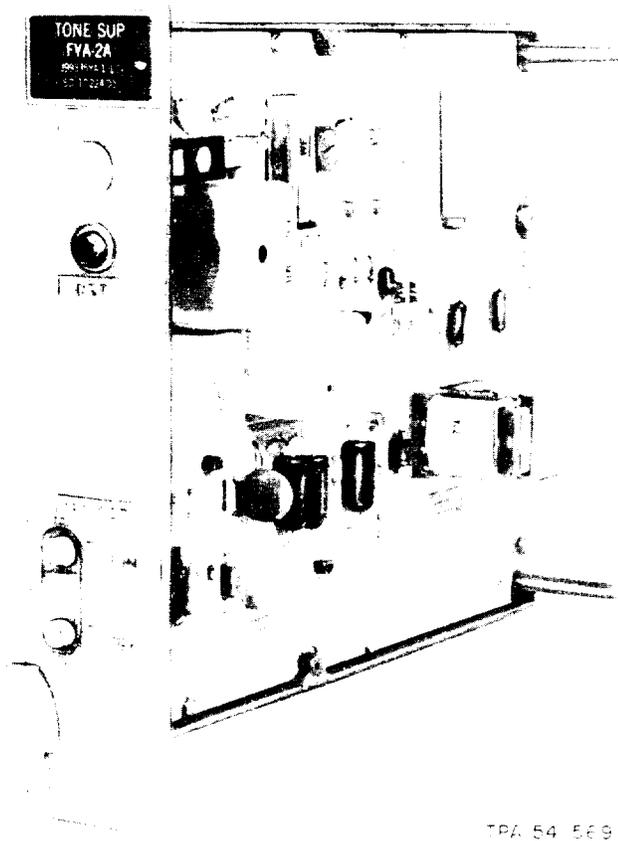
(c) Each J98622AA maintenance connector (Fig. 3) provides a lamp indication on its front panel in the event that the access circuit associated with that maintenance connector fails.

(d) The J99335YG carrier group alarm control unit (Fig.10) provides a means for releasing all associated trunk circuits and for providing

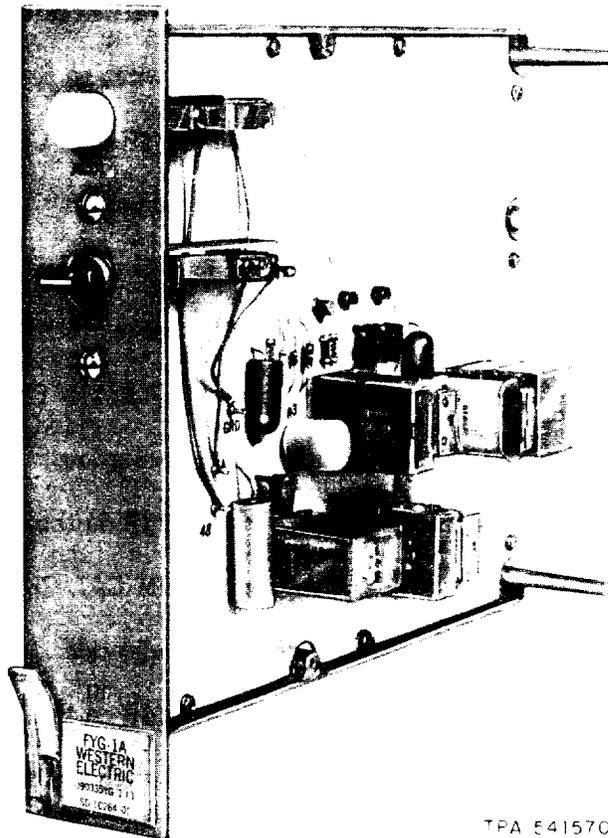
office alarm indications during carrier trouble conditions.

2. OPERATING METHODS

2.01 The following procedures illustrate the operational features of the J68853AA and the J98624A and B bays. Included are procedures for the alarms and associated circuits in these bays.



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Fig. 9—J99335YA Tone Generator and Transfer Unit

Fig. 10—J99335YG Carrier Group Alarm Control Unit

VOICE-FREQUENCY CIRCUITS

A. TM&T Calibration

STEP	PROCEDURE
1	<p>Observe the TRMSN BUSY and NOISE BUSY lamps on the TM&T panel.</p> <p>Requirement: The applicable lamp is extinguished.</p> <p>Note: Do not attempt to use the T&NMS when either the TRMSN BUSY or NOISE BUSY lamp is already lighted.</p>

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STEP	PROCEDURE
2	Connect a 22A Milliwatt Reference Meter to the CAL -16 600Ω jack.
3	Measure the power at the CAL -16 600Ω jack. <i>Requirement:</i> -16 dBm
4	Disconnect the 22A Milliwatt Reference Meter from the CAL -16 600Ω jack.
5	Set the TR N & XTLK switch to B+10.
6	Momentarily operate the TRMSN CAL key to -16.
7	Observe the DB meter indication. <i>Requirement:</i> 6 ±0.05 dB on the B scale
8	Set the TR N & XTLK switch to NORMAL A.
9	Momentarily operate the TRMSN CAL key to +7.
10	Observe the DB meter indication. <i>Requirement:</i> 7 ±0.05 dB on the A scale
11	Momentarily press the NM CAL CK switch.
12	Observe the DB meter indication. <i>Requirement:</i> 15 ±0.2 dB on the A scale
13	Set the TR N & XTLK switch to OFF.

B. Talking

STEP	PROCEDURE
1	Connect a telephone headset to the TEL SET A or TEL SET B jacks on the TM&T panel.
2	If a dial line is provided, (a) Set the DIAL/TB BAY key to DIAL. (b) Dial the code for the dial line.

STEP	PROCEDURE
3	If a dial line is not provided, set the applicable talk circuit key to the required position.
4	After use, return all keys to the center position.
5	Disconnect the headset from the TEL SET A or TEL SET B jack.

C. Monitoring

STEP	PROCEDURE
1	Connect a telephone headset to the TEL SET A or TEL SET B jacks on the TM&T panel.
2	<p>Observe the TPB lamp on the applicable maintenance connector.</p> <p>Requirement: The TPB lamp is extinguished.</p>
3	Connect the MON LINE A & B jacks on the TM&T panel to the CH BK MON A & B jacks on the VF jack panel.
4	Set the applicable TERMINAL CKT UNDER TST switch to the channel under test.
5	<p>Observe the SPL CKT lamp on the manual access panel.</p> <p>Requirement: The SPL CKT lamp is extinguished unless the circuit under test is a special circuit that has been released for testing.</p> <p>Caution: <i>Before any special circuit can be tested, a release must be obtained according to local requirements.</i></p>
6	Set the TALK-4W CARR FAC/MON key to the MON (center) position.
7	<p>To monitor in both directions simultaneously,</p> <p>(a) Set the MON +7/MON -16 key to the center position.</p> <p>(b) Press the applicable ACS switch on the manual access panel.</p> <p>Requirement: The MAN ACS lamp lights.</p>
8	<p>To monitor in one direction,</p> <p>(a) Set the MON +7/MON -16 key to MON +7 or MON -16, as required.</p> <p>(b) Press the applicable ACS switch on the manual access panel.</p>

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STEP	PROCEDURE
9	<p>Requirement: The MAN ACS lamp lights.</p> <p>(c) Press the applicable SPLIT switch on the manual access panel.</p> <p>Requirement: The MAN SPLIT lamp lights.</p> <p>If additional gain is required, set the H LEV key to either MON +25 or MON +60.</p>
10	<p>Monitor the circuit under test as required.</p>
11	<p>After monitoring is completed,</p> <p>(a) Press the ACS RLS switch and, if applicable, the SPLIT RLS switch.</p> <p>Requirement: The MAN ACS and MAN SPLIT lamps are extinguished.</p> <p>(b) Set the TERMINAL CKT UNDER TST switch to OFF.</p> <p>(c) Return all keys to the center position.</p> <p>(d) Remove all patch cords.</p>

D. Transmission and Noise Tests

STEP	PROCEDURE
1	<p>Perform Steps 1 through 10 of the monitoring procedure (Chart C).</p>
2	<p>Observe the TRMSN BUSY or NOISE BUSY lamp, as applicable, on the TM&T panel.</p> <p>Requirement: The applicable lamp is extinguished.</p>
3	<p>For bridging tests, set the MEAS BRDG key to TEST +7 or TEST -16 as required.</p>
4	<p>For terminated tests,</p> <p>(a) Remove the patch between the MON LINE A & B jacks and the CH BK MON A & B jacks.</p> <p>(b) Connect the EQ OUT or DEM OUT jack, as required, on the manual access panel to the MEAS 600Ω TERM jack.</p>
5	<p>Set the TR N & XTLK switch as required according to Table A.</p> <p>Requirement: The applicable TRMSN BUSY or NOISE BUSY lamp lights.</p>

TABLE A
MEASUREMENT RANGES USING THE TM&T PANEL

TYPE OF MEASUREMENT	TR N & XTLK SWITCH SETTING	DB METER (OR PROJECTION METER)	
		SCALE	RANGE
TRANSMISSION	NORMAL A	A	0 to +15 dBm
TRANSMISSION	B	B	0 to -15 dBm
TRANSMISSION	B+10	B	-10 to -25 dBm
TRANSMISSION	B+20	B	-20 to -35 dBm
NOISE OR XTLK	A+15	A	15 to 30 dBrc
NOISE OR XTLK	A+20	A	20 to 35 dBrc
NOISE OR XTLK	A+25	A	25 to 40 dBrc
NOISE OR XTLK	A+30	A	30 to 45 dBrc
NOISE OR XTLK	A+35	A	35 to 50 dBrc
NOISE OR XTLK	A+40	A	40 to 55 dBrc

STEP	PROCEDURE
6	Press the applicable ACS switch on the manual access panel. Requirement: The MAN ACS lamp lights.
7	Perform transmission and/or noise tests as prescribed in Section 356-015-500
8	Set the TERMINAL CKT UNDER TST switch to OFF.
9	Return all keys to the center position.
10	Remove all patch cords.
11	Connect (a) the EQ IN jack to the 1000 ~ +7 600 Ω jack or (b) the MOD IN jack to the 1000 ~ -16 (or -26) 600 Ω jack, as required.
12	Perform transmission tests as prescribed in Section 356-015-500
13	Press the ACS RLS switch. Requirement: The MAN ACS lamp is extinguished.
14	Remove all patch cords.

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STEP	PROCEDURE
	<p><i>Note:</i> For testing at the LOOP TST jacks, in conjunction with the SMAS-3 testboard, measure -16 dBm at the T,R jack (Steps 1 through 10) or apply +7 dBm at the T1, R1 jack (Steps 11 through 14).</p>

E. Signaling Tests

STEP	PROCEDURE
1	Perform Steps 1 through 10 of the monitoring procedure (Chart C).
2	Connect a suitable signaling test set (e.g., the 2B or 4A set) to the SIG D or SIG L jacks on the manual access panel.
3	Press the applicable ACS switch on the manual access panel. <i>Requirement:</i> The MAN ACS lamp lights.
4	Press the applicable SPLIT switch on the manual access panel. <i>Requirement:</i> The MAN SPLIT lamp lights.
5	Perform applicable procedures according to Section 179-302-501.
6	Press the ACS RLS switch. <i>Requirement:</i> The MAN ACS lamp is extinguished.
7	Press the SPLIT RLS switch. <i>Requirement:</i> The MAN SPLIT lamp is extinguished.
8	Set the TERMINAL CKT UNDER TST switch to OFF.
9	Return all keys to the center position.
10	Remove all patch cords.

F. Tandem Patching

STEP	PROCEDURE
1	Connect the applicable 4-wire VF transmit circuit to an unused P TRK TRMT jack.
2	Connect the corresponding 4-wire VF receive circuit to the corresponding P TRK REC jack.
3	Remove patches connected in Steps 1 and 2 when no longer required.

ALARM CIRCUITS—J68853AA BAY**G. J68853G Fuse, Alarm, and Filter Panel**

STEP	PROCEDURE
1	<p>Symptoms: (1) The office major alarm operates. (2) The A or B alarm lamp lights. (3) The colored tip on the () fuse protrudes through the fuse holder cap.</p> <p>Correct the trouble in the () fuse circuit.</p>
2	<p>Replace the () fuse.</p> <p>Requirement: (1) The office alarm is silenced. (2) The A or B lamp is extinguished.</p>

H. J68857B 4-kHz Harmonic Generator**Major Alarm**

STEP	PROCEDURE
1	<p>Symptoms: (1) The office major alarm operates. (2) The REG ALM lamp lights. (3) The SPARE ALM lamp remains extinguished.</p> <p>Operate the REG NOR/ACO switch to ACO.</p> <p>Requirement 1: The office alarm is silenced.</p> <p>Requirement 2: The REG ALM lamp remains lighted.</p> <p>Requirement 3: The SPARE ALM lamp remains extinguished.</p>
2	<p>Set the 4-KHZ RSTR SW to SP.</p>
3	<p>If the REG ALM lamp remains lighted and the SPARE ALM lamp remains extinguished, replace the REG 4KC AMPL with a good unit.</p> <p>Requirement: The REG ALM and SPARE ALM lamps are extinguished.</p>
4	<p>If the SPARE ALM lamp lights and the REG ALM lamp extinguishes, determine and correct the cause of trouble in the No. 1 primary frequency supply.</p> <p>Requirement: The REG ALM and SPARE ALM lamps are extinguished.</p>

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STEP	PROCEDURE
5	<p>Set the 4-KHZ RSTR SW to REG.</p> <p>Requirement: The REG ALM and SPARE ALM lamps remain extinguished.</p>

Minor Alarm

STEP	PROCEDURE
1	<p>Symptoms: (1) The office minor alarm operates. (2) The SPARE ALM lamp lights. (3) The REG ALM lamp remains extinguished.</p> <p>Operate the SPARE NOR/ACO switch to ACO.</p> <p>Requirement 1: The office alarm is silenced.</p> <p>Requirement 2: The SPARE ALM lamp remains lighted.</p> <p>Requirement 3: The REG ALM lamp remains extinguished.</p>
2	<p>Replace the SPARE 4KC AMPL with a good unit.</p> <p>Requirement 1: The SPARE ALM lamp is extinguished.</p> <p>Requirement 2: The REG ALM lamp remains extinguished.</p>
3	<p>If the requirement of Step 2 is not met,</p> <p>(a) Return the 4KC AMPL removed in Step 2 to the SPARE position.</p> <p>(b) Determine and correct the cause of trouble in the No. 2 primary frequency supply.</p> <p>Requirement: The SPARE ALM and REG ALM lamps are extinguished.</p>

I. J98624AA Carrier Group Conditioning Unit

STEP	PROCEDURE
1	<p>Symptoms: With the FG1, SG1, FG2, and SG2 HOLD keys in the vertical position, one or more of the corresponding lamps are lighted.</p> <p>Press the RLS switch corresponding to the lighted lamp.</p> <p>Requirement: The lamp extinguishes and remains extinguished.</p>

STEP	PROCEDURE
2	<p>If the requirement of Step 1 is not met,</p> <p>(a) Operate the HOLD key to the horizontal position.</p> <p>(b) Press the SET switch.</p> <p>(c) If the lamp lights frequently, or continuously, correct the trouble in the applicable maintenance group.</p>
3	Set the HOLD key to the vertical position.

ALARM CIRCUITS—J98624A AND B BAYS**J. ED-1C523-30 Fuse and Fuse Alarm Panel**

STEP	PROCEDURE
	<p>Symptoms: (1) The office major alarm operates. (2) One or more of the following lamps light:</p> <p style="padding-left: 40px;">(a) The MN ALM lamp</p> <p style="padding-left: 40px;">(b) The PC ALM lamp</p> <p style="padding-left: 40px;">(c) One or more of the PF() lamps.</p> <p>(3) The colored tip on the () fuse protudes through the fuse holder cap.</p>
1	Correct the trouble in the () fuse circuit.
2	Replace the () fuse.
3	If the MN ALM or PC ALM lamp was lighted, observe the alarm conditions.
	Requirement 1: The office alarm is silenced.
	Requirement 2: The MN ALM or PC ALM lamp, as applicable, is extinguished.
4	If a PF() lamp is lighted, press the corresponding PF() switch. Then observe the alarm conditions.
	Requirement 1: The office alarm is silenced.
	Requirement 2: The PF() lamp is extinguished.

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K. J99335YA Tone Generator

STEP	PROCEDURE
1	<p><i>Symptoms:</i> (1) The office minor alarm operates. (2) The ALM lamp lights.</p> <p>Replace the defective tone generator.</p>
2	<p>Press the RST switch.</p>
<p><i>Requirement 1:</i> The office alarm is silenced.</p>	
<p><i>Requirement 2:</i> The ALM lamp is extinguished.</p>	

L. J98622AA Maintenance Connector

STEP	PROCEDURE
1	<p><i>Symptoms:</i> (1) The office minor alarm operates. (2) The ALM lamp lights.</p> <p>Correct the indicated trouble.</p>
2	<p>Operate the ALM RLS switch.</p>
<p><i>Requirement 1:</i> The office alarm is silenced.</p>	
<p><i>Requirement 2:</i> The ALM lamp is extinguished.</p>	

M. J99335YG Carrier Group Alarm Control Unit

STEP	PROCEDURE
1	<p><i>Symptom:</i> The office major alarm operates.</p> <p>Operate the ACO key.</p> <p><i>Requirement 1:</i> The office alarm is silenced.</p> <p><i>Requirement 2:</i> The ACO lamp lights.</p>
2	<p>Correct the indicated trouble.</p> <p><i>Requirement:</i> The ACO lamp is extinguished.</p>