

362-915-502

**N3 CARRIER TELEPHONE SYSTEM**  
**SECONDARY CARRIER DISTRIBUTION PANEL J99300E**  
**INITIAL LINEUP AND TROUBLE LOCATION TESTS**

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1. GENERAL	

**1.01** This section describes the initial lineup tests on the J99300E secondary carrier distribution panel which is a part of the N3 terminal bay equipment. These bays may also be used for Type B or C N3-L Junctions. In addition, this section provides for trouble location tests on the secondary carrier distribution panel while in service.

**1.02** This section is revised to clarify certain procedures and to include the Type B and C N3-L Junction. Arrows are used to indicate major changes.

**1.03** The secondary carrier distribution panel supplied with each N3 terminal bay provides a means for coupling the common N3 carrier supply to one or two N3 carrier terminals or Type B or C N3-L Junctions. The 16 carrier frequencies from the primary carrier distribution panel of the common carrier supply are fed to the secondary carrier distribution panel on 19 pairs of an interconnecting 26-pair ABAM cable. Two cable pairs per frequency are used to carry each of three frequencies, the 304-, 232-, and 280-kHz group and channel group carrier frequencies, while one pair per frequency is used to transmit each of the 12 channel carriers and the 256-kHz N3-L junction carrier.

**1.04** An adjustable pad, variable in 0.5-dB steps from 0 to 1.5 dB, is provided at each of the 19 inputs to the secondary distribution panel primarily to provide a means of building out the loss of the interconnecting ABAM cable which may range in length from a few feet to a maximum of 700 feet.

**1.05** The two 304-kHz group carrier inputs to the secondary carrier distribution panel are fed directly from the outputs of the adjustable pads to the bay connectors of the transmitting- and receiving-group units in the N3 terminals. Similarly, the outputs of the two adjustable pads for each of the 232- and 280-kHz channel group frequencies are fed directly to the channel group modem unit connectors in the two N3 terminals.

**1.06** Each of the 148- to 192-kHz channel carrier frequencies and the 256-kHz N3-L translation frequency is fed through its adjustable pad to a distribution network in the secondary carrier distribution panel to provide the necessary isolated outputs for connection to the channel modem unit

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connectors and the frequency-correction unit connectors in the two N3 terminals. The distribution network for each of the 152-, 160-, 168-, 176-, 184-, and 192-kHz transmitted carrier frequencies also includes a regulating amplifier which provides four outputs, stable in amplitude, one output for each channel group in each of the two terminals.

**1.07** The nominal impedance presented by each of the 19 inputs of the secondary carrier distribution panel is 115 ohms for optimum performance of the common carrier supply. This impedance is normally presented when the outputs of the secondary distribution panel are fully loaded; that is, when the secondary distribution panel is connected to two N3 terminals and each terminal is fully equipped with plug-in units. To provide the equivalent of a fully loaded unit, all terminals shipped from the factory are supplied with a system of dummy load resistors and shorting straps which must remain in place until initial installation tests and adjustments have been performed. Tables A and B list the terminal pairs of the secondary distribution panel between which the dummy load resistors or shorting straps are connected. After initial installation tests the dummy load resistors and shorting straps must be removed from the terminal pair, designated in Tables A and B, only after the plug-in units have been inserted into the N3 terminal.

**Example:** After inserting the channel modem unit for channel 1 into its position in channel group 1 of N3 terminal No. 1, the shorting strap between the secondary distribution panel terminal pair 541-561 must be removed.

**Note:** When a message channel is not equipped with a channel modem unit, a channel modem load unit J99300AR is required in its place. The shorting straps must be removed as previously described.

When an even-numbered channel modem unit or a frequency correction unit is inserted in the terminal bay in a position not listed in Table B, no further action is required.

**Example:** When a channel modem unit for channel 4 is inserted into its position in channel group 1 of N3 terminal No. 1, no action is required since there is no shorting strap across the terminal pair 549-569 which feeds this position.

**Note:** If an N3 terminal is taken out of service for an extended period of time and the plug-in units are removed, the corresponding shorting straps and dummy load resistors should be replaced on the secondary distribution panel output terminals in accordance with Tables A and B.

TABLE A GROUP UNITS				
CARRIER FREQUENCY	INITIAL CONDITIONS		PLUG-IN UNIT DESIGNATION	N3 TERMINAL NO.
	DUMMY LOAD RESISTORS BETWEEN SECONDARY DISTRIBUTION PANEL OUTPUT TERMINALS			
kHz	ohms	terminal pairs*		
304	115	912-932	HI GRP TRMTR or RCVR	1
		913-933		2
280	135	910-930	CH GRP 1 MOD	1
		911-931		2
232	135	908-928	CH GRP 2 MOD	1
		909-929		2

\*Remove the resistor from the terminals after the designated plug-in unit is installed in the terminal bay.

TABLE B				
MODEM AND FREQUENCY-CORRECTION UNITS				
CARRIER FREQUENCY	INITIAL CONDITIONS	PLUG-IN UNIT DESIGNATION	CHANNEL GROUP NO.	N3 TERMINAL NO.
	SHORTING STRAP BETWEEN SECONDARY DISTRIBUTION PANEL OUTPUT TERMINALS			
kHz	terminal pairs*			
148	541-561	MODEM CHAN 1	1	1
	402-302		2	1
	621-641		1	2
	581-601		2	2
<i>152</i> 156	542-562	MODEM CHAN 3  <i>CHAN 4</i>	1	1
	404-304		2	1
	622-642		1	2
<i>160</i>	582-602		2	2
164	543-563	MODEM CHAN 5	1	1
	406-306		2	1
	623-643		1	2
	583-603		2	2
172	544-564 †	MODEM CHAN 7	1	1
	408-308		2	1
	624-644 †		1	2
	584-604		2	2
180	545-565 †	MODEM CHAN 9	1	1
	410-310		2	1
	625-645		1	2
	585-605		2	2
188	546-566 †	MODEM CHAN 11	1	1
	412-312		2	1
	626-646 †		1	2
	586-606		2	2

TABLE B (Cont)

CARRIER FREQUENCY	INITIAL CONDITIONS	PLUG-IN UNIT DESIGNATION	CHANNEL GROUP NO.	N3 TERMINAL NO.
	SHORTING STRAP BETWEEN SECONDARY DISTRIBUTION PANEL OUTPUT TERMINALS			
kHz	terminal pairs*			
256	547-567	GRP RCVG UNIT		
	507-527			
	627-647	GRP TRMTG UNIT		
	587-607			
160	416-316	MODEM CHAN 4	2	1
	589-609		2	2
176	420-320	MODEM CHAN 8	2	1
	591-611		2	2
184	424-324	MODEM CHAN 10	2	1
	593-613		2	2
192	428-328	MODEM CHAN 12	2	1
	595-615		2	2
152	432-332	MODEM CHAN 2	2	1
	637-657		1	2
	717-737	CG2 FREQ CORR	2	2
168	559-579	MODEM CHAN 6	1	1
	599-619		2	2
	719-739	CG1 FREQ CORR	1	2

\* Remove the shorting strap from the terminals after the designated plug-in unit is installed in the terminal bay and also when modem load units are used instead of channel modem units.

† Replace the shorting strap on the terminals when schedule A and B program terminal is used in an N3 terminal.

1.08 Each individual regulator is capable of supplying two N3 terminals, as in J99300A or B or two J99300C or D bays. When the second J99300C or D bay is not in use, the U option, shown in Fig. 1, provides the proper loading of the regulator with load resistors R23 and R24.

1.09 When transmission tests indicate the need to omit one or more carriers because of transmission interference in the cable, the information will be provided by the carrier layout card. This

information may sometimes be required to prevent pilot frequency interference in K carrier systems operating in the same cable with the N3 system or when an N Carrier Schedule A and B Program Terminal (J99333) is used in conjunction with an N3 terminal.

1.10 When the carrier layout card specifies a resistance termination of a particular frequency, the terminals are shown on Tables A and B. Remove and tape the leads connected to the output

terminals before replacing straps or 135-ohm resistors across the output terminals of the secondary carrier regulator.¶

1.11 Figure 2 shows the terminal arrangements and location of the adjustable pads, regulating amplifiers, and distribution cards for the secondary carrier distribution panel. All adjustments and input and output terminals are accessible from the back of the terminal bay.

**2. APPARATUS REQUIRED**

KS-14510 Volt-Ohm-Milliammeter (VOM)

KS-14510, List 8 Test Probes

Hewlett-Packard 400H or L Vacuum-Tube Voltmeter (VTVM)

Hewlett-Packard 11004A or AC-60A Line Matching Transformer

W2DW Cord with alligator clip cord tips

2.01 All carrier-frequency voltage measurements on the secondary carrier distribution panel are bridging measurements made on balanced circuits. Hence, the apparatus setup requires an isolating transformer.

**3. INITIAL INSTALLATION ADJUSTMENTS AND TESTS**

3.01 This information is intended for use after the N3 terminal bay has been installed and its secondary carrier distribution panel has been connected to the common N3 carrier supply and before the installation of plug-in units in the terminal bay.

**A. Preliminary Checks at Common N3 Carrier Supply Bay**

3.02 The following preliminary checks must be made at the common N3 carrier supply bay before proceeding with tests on the secondary carrier distribution panel.

STEP	PROCEDURE
1	The -21 volt power supply in the carrier supply bay shall be set to $-21.0 \pm 0.1$ volts in accordance with Section <u>362-901-505</u> .
2	Check that the 115-ohm dummy load resistors on the primary distribution panel output terminals of the carrier supply bay have been disconnected from all terminal pairs, which are connected to secondary carrier distribution panels (Fig. 3).

**B. Preliminary Checks at Secondary Carrier Distribution Panel**

3.03 The following preliminary checks must be made at the N3 terminal bay before proceeding with tests on the secondary carrier distribution panel.

STEP	PROCEDURE
1	All terminal plug-in units which supply loads to the secondary carrier distribution panel must be removed from the associated N3 terminals. These include a high group transmitter or high group receiver unit, channel group 1 and channel group 2 modem units, frequency correction units, and all channel modem units (or modem load units) for both N3 terminals.

STEP	PROCEDURE																																																							
2	Check the secondary carrier distribution panel under test to ensure that the dummy load resistors and shorting straps described in 1.07 are in place on the terminal pairs listed in Tables A and B (see Fig. 2).																																																							
3	<p>All adjustable pads in the secondary distribution panel should already be set in the 1.5-dB loss position. Table C lists the screw adjustments for the various loss settings of each pad. Check that each pad is initially set for 1.5-dB loss.</p> <table border="1" data-bbox="511 552 1144 972"> <thead> <tr> <th colspan="7" data-bbox="511 552 1144 642">TABLE C</th> </tr> <tr> <th data-bbox="511 642 609 684" rowspan="2">LOSS</th> <th colspan="6" data-bbox="609 642 1144 684">SCREW ADJUSTMENTS</th> </tr> <tr> <th colspan="3" data-bbox="609 684 876 726">OPEN (Up)</th> <th colspan="3" data-bbox="876 684 1144 726">CLOSE (Down)</th> </tr> <tr> <th data-bbox="511 726 609 779">dB</th> <th data-bbox="609 726 695 779">A</th> <th data-bbox="695 726 787 779">B</th> <th data-bbox="787 726 876 779">C</th> <th data-bbox="876 726 969 779">A</th> <th data-bbox="969 726 1062 779">B</th> <th data-bbox="1062 726 1144 779">C</th> </tr> <tr> <td data-bbox="511 779 609 831">0</td> <td data-bbox="609 779 695 831">-</td> <td data-bbox="695 779 787 831">1,2</td> <td data-bbox="787 779 876 831">-</td> <td data-bbox="876 779 969 831">1,2</td> <td data-bbox="969 779 1062 831">-</td> <td data-bbox="1062 779 1144 831">1,2</td> </tr> <tr> <td data-bbox="511 831 609 884">0.5</td> <td data-bbox="609 831 695 884">1</td> <td data-bbox="695 831 787 884">2</td> <td data-bbox="787 831 876 884">1</td> <td data-bbox="876 831 969 884">2</td> <td data-bbox="969 831 1062 884">1</td> <td data-bbox="1062 831 1144 884">2</td> </tr> <tr> <td data-bbox="511 884 609 936">1.0</td> <td data-bbox="609 884 695 936">2</td> <td data-bbox="695 884 787 936">1</td> <td data-bbox="787 884 876 936">2</td> <td data-bbox="876 884 969 936">1</td> <td data-bbox="969 884 1062 936">2</td> <td data-bbox="1062 884 1144 936">1</td> </tr> <tr> <td data-bbox="511 936 609 972">1.5</td> <td data-bbox="609 936 695 972">1,2</td> <td data-bbox="695 936 787 972">-</td> <td data-bbox="787 936 876 972">1,2</td> <td data-bbox="876 936 969 972">-</td> <td data-bbox="969 936 1062 972">1,2</td> <td data-bbox="1062 936 1144 972">-</td> </tr> </thead></table> <p data-bbox="511 989 1144 1079"><i>Note:</i> Adjustment screws A1, A2, B1, B2, C1, and C2 turn clockwise to close contacts and counter-clockwise to open contacts.</p>	TABLE C							LOSS	SCREW ADJUSTMENTS						OPEN (Up)			CLOSE (Down)			dB	A	B	C	A	B	C	0	-	1,2	-	1,2	-	1,2	0.5	1	2	1	2	1	2	1.0	2	1	2	1	2	1	1.5	1,2	-	1,2	-	1,2	-
TABLE C																																																								
LOSS	SCREW ADJUSTMENTS																																																							
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dB	A	B	C	A	B	C																																																		
0	-	1,2	-	1,2	-	1,2																																																		
0.5	1	2	1	2	1	2																																																		
1.0	2	1	2	1	2	1																																																		
1.5	1,2	-	1,2	-	1,2	-																																																		
4	Connect the VOM by means of test probes to the third (+) and fifth (-) terminals on each of the six regulating amplifier board assemblies (see Fig. 2) and check that the -48 volt dc power is being applied to the regulating amplifiers.																																																							

**C. Pad Adjustments and Carrier-Frequency Voltage Tests**

3.04 The preliminary checks of Tests A and B must be performed before proceeding with these tests.

STEP	PROCEDURE
1	<p>Using the W2DW cord, line-matching transformer, and VTVM, make the following connections:</p> <p>(a) Set the 600Ω-BRIDGING switch on the line-matching transformer to the BRIDGING position.</p> <p>(b) Plug the line-matching transformer into the input terminals of the VTVM with terminal G on the line-matching transformer connected to the ground terminal of the VTVM.</p>

STEP	PROCEDURE							
	<p>(c) Plug the W2DW cord into the 600-ohm terminals of the line-matching transformer. ◀</p> <p>(d) Connect the alligator clips of the W2WD cord, in turn, to the terminal pairs of the secondary carrier distribution panel listed in Table D.</p>							
2	<b>TABLE D</b> <b>CARRIER-FREQUENCY VOLTAGE REQUIREMENTS</b>							
	<b>CARRIER FREQUENCY</b>  kHz	<b>CONNECT VTVM TO SECONDARY DISTRIBUTION PANEL OUTPUT TERMINALS</b>  terminal pairs	<b>VTVM READINGS</b>					
<b>INITIAL INSTALLATION REQUIREMENTS</b>				<b>MAINTENANCE TEST REQUIREMENTS</b>				
<b>PAD SET AT 1.5 DB</b>			<b>REQUIREMENT AFTER PAD ADJUSTMENT</b>					
minimum			maximum	minimum	maximum	minimum	maximum	
dB		dB						
148	901-921	+0.1	+2.8	+1.5	+2.8	+1.0	+3.0	
156	902-922							
164	903-923							
172	904-924							
180	905-925							
188	906-926							
256	907-927	-0.1	+2.8	+1.3	+2.8	+0.8	+3.0	
232	908-928	-5.9	-3.0	-4.4	-3.0	-4.9	-2.8	
	909-929							
280	910-930	-6.0	-3.0	-4.5	-3.0	-5.0	-2.8	
	911-931							
304	912-932	-3.2	-0.2	-1.7	-0.2	-2.2	0	
	913-933							
160	914-934	+0.1	+2.8	+1.5	+2.8	+1.0	+3.0	
176	915-935							
184	916-936							
192	917-937							
152	918-938							
168	919-939							
	<p>At each terminal pair listed in Table D make the following test and adjustment.</p> <p>(a) Observe the VTVM reading for initial test connection.</p> <p><b>Requirement:</b> The VTVM reading must be within the limits specified in Table D for the pad set at 1.5 dB.</p>							

STEP	PROCEDURE																				
	<p>(b) Set the adjustable pad for the carrier frequency under test by making screw adjustments as indicated in Table C to bring the VTVM reading within the limits specified in Table D for the requirement after pad adjustment.</p> <p>(c) The pad adjustment is primarily intended to build out the loss of the interconnecting ABAM-26 cable to a fixed value. Therefore, the loss setting required for Step 2(b) is related to the length of interconnecting cable as follows:</p> <table border="1" data-bbox="521 562 1154 877"> <thead> <tr> <th rowspan="2">APPROXIMATE CABLE LENGTH</th> <th colspan="2">PAD SETTING</th> </tr> <tr> <th>minimum</th> <th>maximum</th> </tr> </thead> <tbody> <tr> <td>feet</td> <td colspan="2">dB</td> </tr> <tr> <td>less than 100</td> <td>1.0</td> <td>1.5</td> </tr> <tr> <td>100 to 300</td> <td>0.5</td> <td>1.5</td> </tr> <tr> <td>300 to 500</td> <td>0</td> <td>1.0</td> </tr> <tr> <td>500 to 700</td> <td>0</td> <td>0.5</td> </tr> </tbody> </table>	APPROXIMATE CABLE LENGTH	PAD SETTING		minimum	maximum	feet	dB		less than 100	1.0	1.5	100 to 300	0.5	1.5	300 to 500	0	1.0	500 to 700	0	0.5
APPROXIMATE CABLE LENGTH	PAD SETTING																				
	minimum	maximum																			
feet	dB																				
less than 100	1.0	1.5																			
100 to 300	0.5	1.5																			
300 to 500	0	1.0																			
500 to 700	0	0.5																			
3	<p>If the tests in Step 2 fail to meet the requirements, make the following checks at the terminal pair in trouble.</p> <p>(a) With the adjustable pad set in the 1.5-dB position, observe the VTVM reading.</p> <p>(b) Change the pad setting to the 0-dB position per Table C and observe the new VTVM reading.</p> <p><b>Requirement:</b> The difference between the two VTVM readings must be a minimum of 1.4 dB and a maximum of 1.5 dB.</p> <p>If this requirement is met, the trouble is at the carrier supply bay or the interconnecting cable.</p> <p>If this requirement is not met, the trouble is in the secondary carrier distribution panel or in the terminal bay wiring connected to it. Further tests should be made in the following order for the carrier frequency in trouble.</p> <ol style="list-style-type: none"> <li>(1) Repeat Test B for the carrier frequency in trouble.</li> <li>(2) Check for possible shorts, opens, or grounds in wiring from the secondary output terminals to the N3 terminal connections.</li> <li>(3) Check the interconnecting wiring in the secondary distribution panel between adjustable pads and distributing cards and regulators.</li> <li>(4) Replace the adjustable pad assembly. (See Note.)</li> <li>(5) Replace the distributing card assembly. (See Note.)</li> </ol>																				

STEP	PROCEDURE
	<p>(6) Replace the regulating amplifier card assembly when involved. (See Note.)</p> <p><i>Note:</i> The items listed in (4), (5), and (6) are not recommended spares and will require special ordering if replacement is required.</p> <p><i>Caution:</i> <i>When connections and disconnections are made at the secondary carrier distribution panel, care must be exercised in order not to short or ground any ABAM-26 cable pairs from the carrier supply. If disconnections are made, ensure that correct polarity is maintained when reconnecting.</i></p>

#### D. Regulating Amplifier Output Voltage Tests

**3.05** The carrier regulators have been adjusted during manufacture so that each output is  $-19.0 \pm 0.05$  dBm when all are properly terminated in independent 135-ohm loads. The inherent accuracy of the carrier regulators is greater than that of

the test equipment. In order to verify that the output voltages are within acceptable limits, the measurements must be made on a comparison rather than an absolute measurement basis.

STEP	PROCEDURE
1	Connect the VOM by means of test probes to the third (+) and fifth (-) terminals on the regulating amplifier assembly board (see Fig. 2) and check that the -48 volt dc power is being applied to the regulating amplifier.
2	<p>Using the W2DW cord, line-matching transformer, and VTVM, make the following adjustments.</p> <p>(a) Set the 600<math>\Omega</math>-BRIDGING switch on the line-matching transformer to the BRIDGING position.</p> <p>(b) Plug the line-matching transformer into the input terminals of the VTVM with terminal G on the line-matching transformer connected to the ground terminal of the VTVM.</p> <p>(c) Plug the W2DW cord into the 600-ohm terminals of the line-matching transformer.</p> <p>(d) Connect the alligator clips of the W2DW cord in turn to each of the four pairs of output terminals on each of the six regulating amplifier board assemblies (see Fig. 2 for location of regulator output terminals in the secondary carrier supply panel).</p>
3	<p>Observe the VTVM reading for each pair of output terminals.</p> <p><b>Requirement 1:</b> The VTVM reading at each pair of output terminals must be a minimum of -26.0 dB and a maximum of -25.0 dB.</p>

STEP	PROCEDURE
	<p><b>Requirement 2:</b> The difference between the maximum and minimum VTVM readings for the 24 regulating amplifier outputs in a secondary carrier distribution panel must not exceed 0.40 dB.</p> <p><b>Note 1:</b> A VTVM reading of -25.5 dB corresponds to a power output of -19.0 dBm providing the output terminal pair is properly terminated in its 135-ohm load and the VTVM calibration is accurate.</p> <p><b>Note 2:</b> If the output voltage measurements on a particular regulating amplifier board fail to meet the requirements and if the voltage measurements of Test C for the carrier frequency involved are within the requirements specified in Table D, check that each regulator output is being terminated in a 135-ohm load. If the termination is correct, the regulating amplifier is at fault and must be replaced.</p>

**4. MAINTENANCE-TROUBLE LOCATION TESTS**

**4.01** ♦The following tests may be used when trouble is suspected in the secondary carrier distribution panel.♦

**Caution:** *When making measurements on in-service systems, care should be taken to avoid causing hits on data or special services.*

STEP	PROCEDURE
<p>1</p> <p>2</p>	<p><b>A. Check of Carrier-Frequency Voltages</b></p> <p>♦Adjust the -21V supply in the carrier-frequency supply bay to <math>-21.0 \pm 0.1</math> volts. Check that the 115-ohm dummy load resistor on the primary distribution panel output terminals for the frequency in trouble has been disconnected and that the leads to the secondary distribution panel are connected.</p> <p>Using the W2DW cord, line-matching transformer, and VTVM, make the following adjustments.</p> <p>(a) ♦Set the 600Ω-BRIDGING switch on the line-matching transformer to the BRIDGING position.</p> <p>(b) Plug the line-matching transformer into the input terminals of the VTVM with terminal G on the line-matching transformer connected to the ground terminal of the VTVM.</p> <p>(c) Plug the W2DW cord into the 600-ohm terminals of the line-matching transformer.♦</p> <p>(d) Connect the VTVM in turn to the terminal pairs of the secondary carrier distribution panel listed in Table D.</p>

STEP	PROCEDURE
3	<p>Read the VTVM to measure the carrier-frequency voltage at each output terminal pair.</p> <p><b>Requirement:</b> The VTVM reading must be within the maintenance requirement limits as listed in Table D.</p> <p>If the measurement at a particular output terminal pair fails to meet this requirement, proceed to Steps 4 and 5.</p> <p><b>Caution:</b> <i>On a working system before any plug-in units are removed, the associated circuits must be turned down.</i></p>
4	<p>Remove the N3 terminal plug-in units associated with the carrier frequency under test and restore the shorting straps or dummy load resistors to the output terminals of the secondary distribution panel as required in Table A or B.</p> <p><b>Example 1:</b> If the terminal pair under test is 901-921, the carrier frequency is 148 kHz. Remove all channel 1 modem units from both N3 terminals and restore the shorting straps to the terminal pairs listed in Table B for 148 kHz.</p> <p><b>Example 2:</b> If the terminal pair under test is 918-938, the carrier frequency is 152 kHz. Remove all channel 2 modem units and both channel group 2 frequency correction units from the N3 terminals and restore the shorting straps to the terminal pairs listed in Table B for 152 kHz.</p>
5	<p>Connect the VTVM as in Step 2 to the terminal pair under test and read the VTVM.</p> <p><b>Requirement:</b> The VTVM reading must be within the maintenance requirement limits as listed in Table D.</p> <p>If the measurement fails to meet this requirement, proceed with further tests as outlined in Step 3 of Test C in Part 3.</p>

**B. Check of Regulating Amplifier Output Voltages**

**4.02** For trouble location involving the output voltages of the regulating amplifiers in the secondary carrier distribution panel, perform Test D in Part 3 for the frequency in question.

**5. DRAWINGS (NOT ATTACHED)**

SD-97188-01	N3 Terminal Application Schematic
SD-99735-01	Carrier Supply Application Schematic
SD-99736-01	Secondary Carrier Distribution Circuit

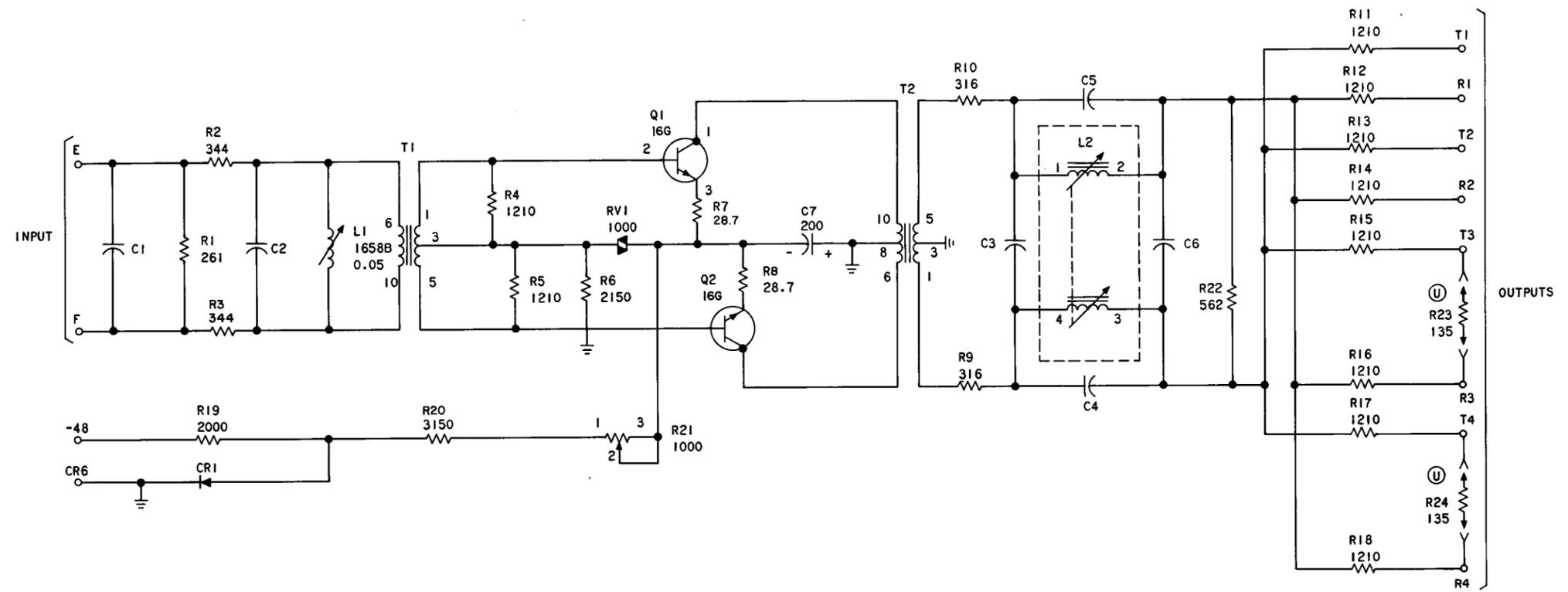


Fig. 1—Carrier Regulator

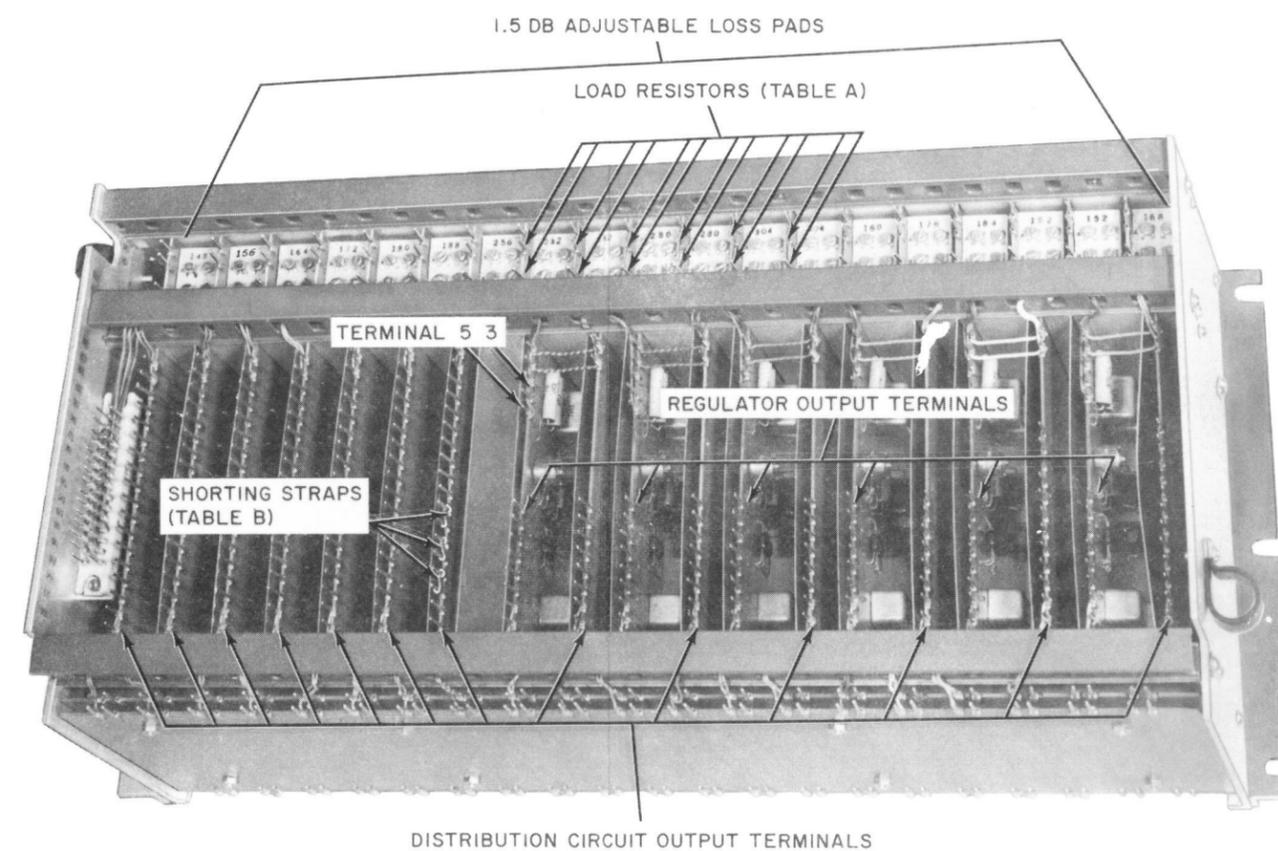


Fig. 2—J99300E Carrier Supply Secondary Distribution Panel—Rear View

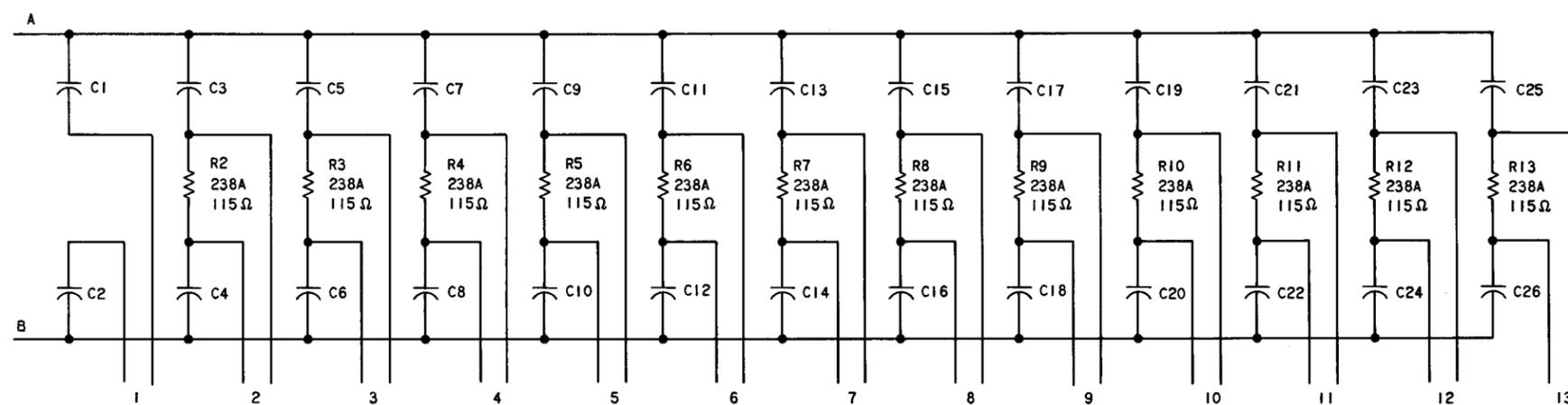


Fig. 3—Primary Distribution Panel in Carrier Supply Bay