

TROUBLE DETECTING PROCEDURE  
 FOR THE VSS GENERATOR (SD-27909-01)

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1. GENERAL

- 1.1 This section provides a procedure for detecting troubles in the VSS Generator Circuit (SD-27909-01).
- 1.2 Figures 2 & 3 are flow charts of the steps for making a systematic check of the VSS Generator circuit to determine the cause of trouble in the circuit.
- 1.3 Figure 1 is called a decision block and is used in the flow chart to ask a question. This question is: are the measurements at the indicated locations the results listed in the applicable table? If the answer to the question is yes, the YES branch should be taken to determine the next instruction. If the answer is no, the NO branch should be taken. A decision block can be left on only one branch.

Instruction 2 Perform the DC Adjustment Procedures for CP-2 given in Section 801B.

Instruction 3 Perform the DC Adjustment procedures for CP-1 given in Section 801B.

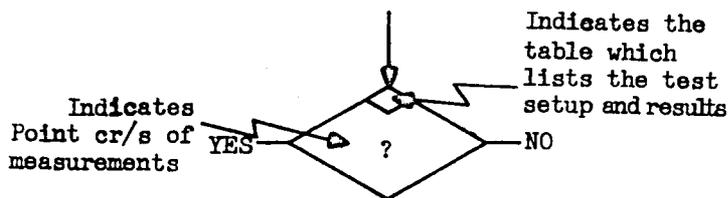
Instruction 4 Perform the AC Adjustment Procedures for CP-1 given in Section 801B.

Instruction 5 Verify that the HI-L0 key and the RL and RH resistors are correctly wired to contacts 3 and 10 of relay A and Contacts 12 and 7 of relay AX.

Instruction 6 Perform the CP-3 Adjustments given in Section 801B.

2. TEST EQUIPMENT

<u>Amt</u>	<u>Code</u>	<u>Description</u>
1	ITE-4662	Tektronix Oscilloscope (Type 545)
1	ITE-4664	Type CA - Dual Trace Plug-in Unit
1	ITE-4509A	Volt-Ohmmeter (VTVM)
1	ITE-4442	Volt-Ohmmeter



DECISION BLOCK  
 FIGURE 1

- 1.4 Tables A through G give the Test equipment, setup, and results for decision blocks.
- 1.5 The Instructions 1 through 6 referred to on the flow charts are:

Instruction 1 Check the wiring on the Connector for the indicated terminal/s and that the circuit pack is inserted into the connector properly and is making contact to the connector.

3. TROUBLE DETECTING PROCEDURE

3.1 Output Signal Verification Failure

- 3.1.1 Make the measurements and perform the operations indicated in Figure 2 until the trouble is found.

3.2 Transfer Control Circuit Failure

3.21 This procedure is written for Source A. To use this procedure for Source B, use corresponding Source B apparatus

in place of the Source A apparatus, which is designated in the Instructions, Flow Chart, and Tables.

3.22 Make the measurements and perform the operations indicated in Figure 3 until the trouble is found.

ATTACHMENTS

Figures 2 & 3, Pages 3 & 4  
Tables A thru G, Pages 5, 6 & 7

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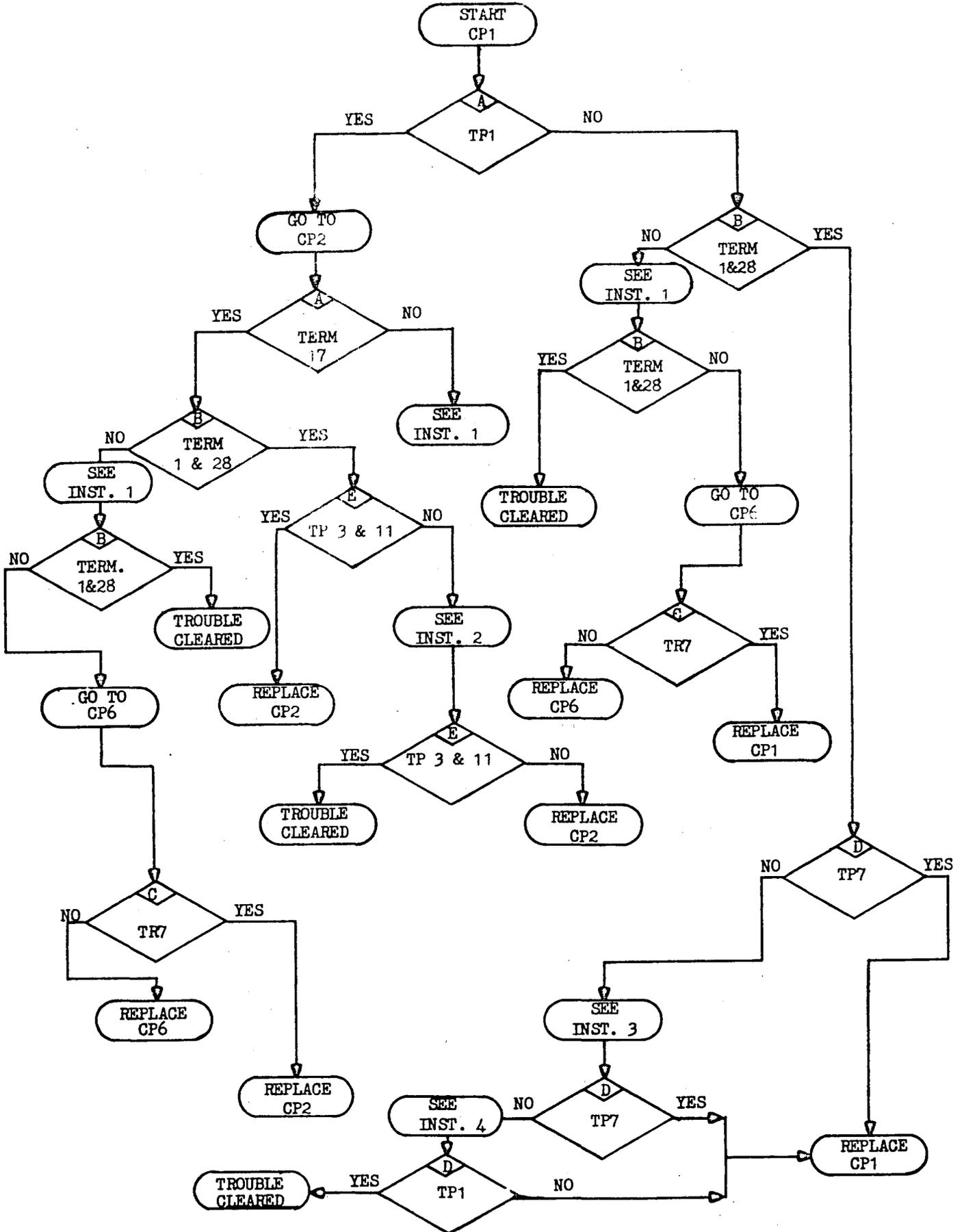
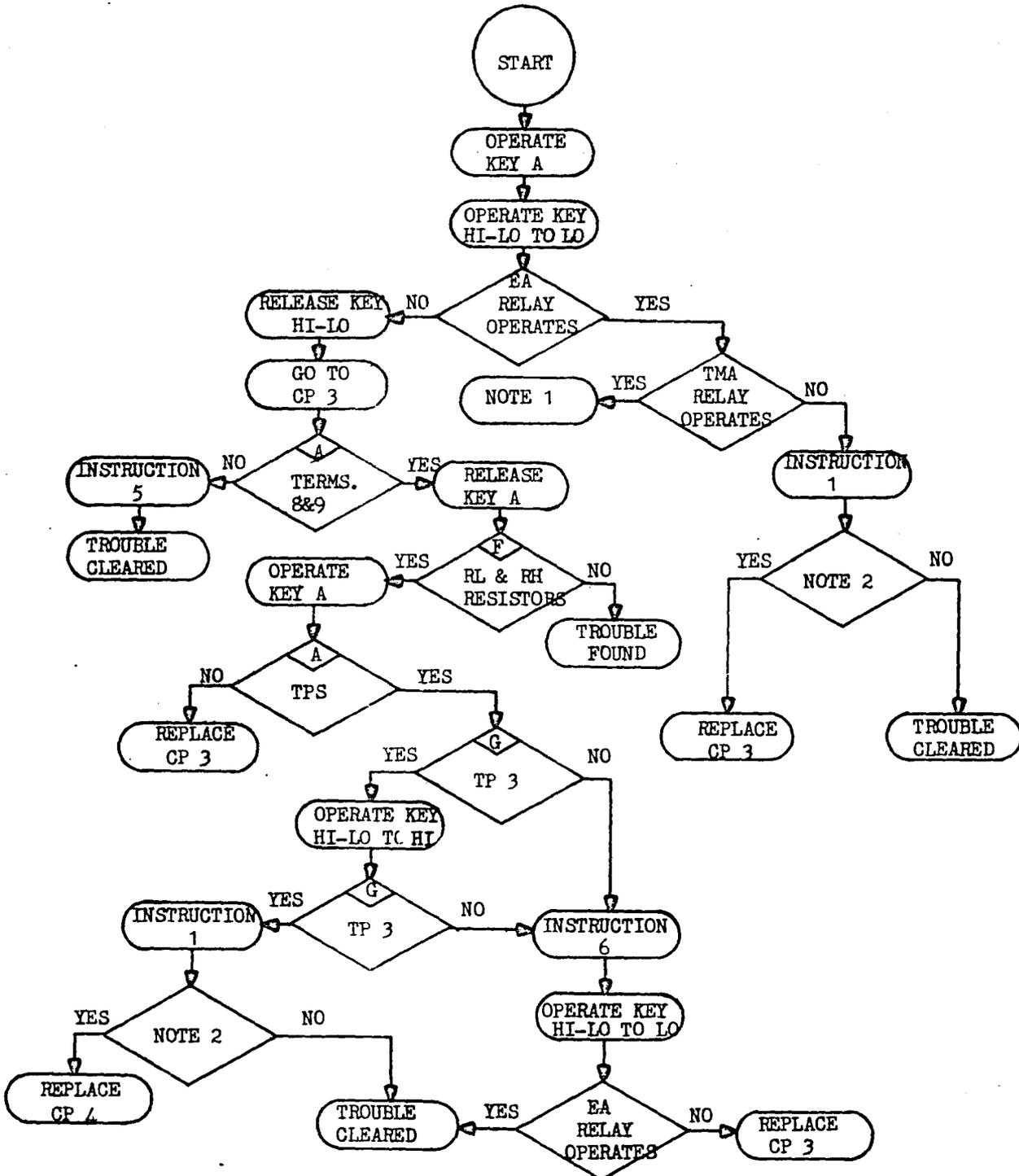


FIGURE 2



NOTE 1 - CHECK THE WIRING SHOWN IN FS2 OF THE SD.

NOTE 2 - WAS THE WIRING CORRECT?

FIGURE 3

TABLE A

TEST EQUIPMENT - ITE-4662 Oscilloscope  
 ITE-4664 Dual Trace Plug-in Unit

SETUP

- 1) Connect the ground clip for the Channel A test probe to terminal 1 of the Connector for CP1.
- 2) Set the control switches for the scope as follows:

SWITCH	SETTING
MODE	A ONLY
Time/CM (Channel A)	50 MS/CM *
Volt/CM (Channel A)	.5 V/CM **
Variable (Channel A)	Calibrated *
Polarity	Normal (+)

\* Vary the trigger level control in order to achieve a steady trace. If trouble is encountered, set the magnifier switch to X5 and time/CM to .2M Sec and vary the Trigger Level Control. Once a steady trace is obtained return time/CM to 50M sec and magnifier to X1.

\*\* This setting is dependent on the test probe. If it is a 1 to 1 probe, the setting is .5V/CM, but test probes exist which multiply the voltage by a factor. For this type of probe, divide .5 by the multiplying factor of the probe to determine the volt/CM setting.

EXAM: 10 X Probe (indicate on probe)  
 Volt/CM setting =  $.5V/10 = .05V/CM$

Place the test probe for Channel A at the indicated location (Test Point or Terminal).

RESULT

Verify that a series of horizontal sync pulses as illustrated in Fig. 1A appears on the scope.

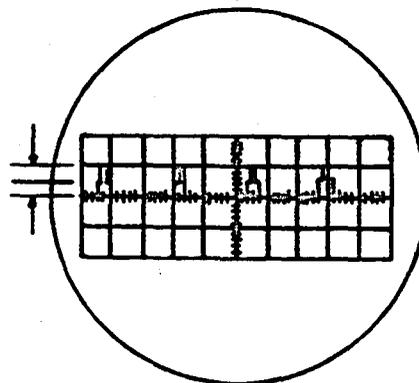


FIGURE 1A

TABLE B

TEST EQUIPMENT - ITE-4509A VTVM
<u>SETUP</u> 1) Insert the plug engraved with a G on the VTVM Cord into Jack COM. 2) Set the slide switch to VTVM and the range switch to 30V DC scale. 3) Zero the meter by shorting the probes and adjusting the ZERO ADJ Control. 4) Connect the black probe to terminal 28 and the red probe to terminal 1.
<u>RESULT</u> - Voltmeter reads 20 to 23 volts.

TABLE C

TEST EQUIPMENT - ITE-4509A VTVM
<u>SETUP</u> - Use the same setup as TABLE B with the black probe inserted into TP-7 of CP6.
<u>RESULT</u> - Voltmeter reads 20 to 23 volts.

TABLE D

TEST EQUIPMENT - ITE-4509A VTVM
<u>SETUP</u> - Use the same setup as TABLE B with the Range switch set to 30V DC and the black probe inserted into TP-7 of CP-1.
<u>RESULT</u> - Voltmeter reads 12 volts.

TABLE E

TEST EQUIPMENT - ITE-4509A VTVM
<u>SETUP</u> - Use the same setup as TABLE B with the range switch set to 6V DC and the black probe inserted into the indicated TP-'s.
<u>RESULT</u> - Both Test Point voltage readings should be within $\pm .01$ volts of each other. The readings should be -1.2V to -1.40 V.

TABLE F

TEST EQUIPMENT - ITE-4442 Volt Ohmmeter	
<u>SETUP</u>	
1)	Set Ohmmeter on R x 1 scale
2)	Zero adjust the Ohmmeter
3)	Connect Ohmmeter from 3 make to 10 make to Relay A
4)	Operate key HI-LO to position LO (Checking resistor RL).
5)	Operate key HI-LO to position HI (Checking resistor RH).
<u>RESULTS</u>	
Step 4 - (Resistor RL)	Ohmmeter reads 21.5
Step 5 - (Resistor RH)	Ohmmeter reads 7.77

TABLE G

TEST EQUIPMENT - ITE-4662 Oscilloscope	
<u>SETUP</u>	
1)	Connect the Channel A probe to TP3 of CP3
2)	Connect the ground clip to terminal 1 of CP3
3)	Set the control switches for the oscilloscope
<u>SWITCH</u>	<u>SETTING</u>
MODE	A Only
Time/CM (Channel A)	50 MS/CM*
Volt/CM (Channel A)	2 V/CM**
Variable (Channel A)	Calibrated*
Polarity	Normal (+)
* Vary the trigger level control in order to achieve a steady trace. If trouble is encountered, set the magnifier switch to X5 and time/CM to .2M Sec and vary the Trigger Level Control. Once a steady trace is obtained return time/CM to 50M sec and magnifier to X1.	
** This setting is dependent on the test probe. If it is a 1 to 1 probe, the setting is 2V/CM, but test probes exist which multiply the voltage by a factor. For this type of probe, divide 2 by the multiplying factor of the probe to determine the volt/CM setting.	
EXAM: 10 X Probe (Indicated on probe) volt/CM setting = $.2V/10 = .2V/CM$	
<u>RESULT</u>	A train of square wave pulses of 4 to 5 V amplitude will appear on the oscilloscope.