

NO. 3 ESS  
SYSTEM VERIFICATION  
RINGING AND TONE PLANT

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<u>1. GENERAL INFORMATION</u>	<u>Code (Cont.)</u>	<u>Title</u>
1.1 <u>Description</u>	→ IM/OM-3H300	Input/Output Message Manual
1.11 The No. 3 ESS generic Ringing and Tone Plant (RTPT) diagnostic function is used to verify the Ringing and Tone Plant hardware and the associated hardware/software interface.	→ TLM-3H104	Trouble Locating Manual, Ringing and Tone Plant
1.2 <u>Sequence</u>		
1.21 The Diagnostic Testing of the Ringing and Tone Plant (Section 525) should follow the completion of Handbook 269, Section 520.12.		
1.3 <u>Test Prerequisites</u>		
1.31 All power wiring must have been applied and verified.		
1.32 All wiring between the Miscellaneous Power frame and the other associated frames must have been applied and verified.		
1.4 <u>References</u>		
<u>Code</u>		<u>Title</u>
CD/SD-3H905		Miscellaneous Circuit for Miscellaneous Power Frame
CD/SD-82255		Miscellaneous Power Frame
CD/SD-82340		+24 Volt DC/DC Converter
CD/SD-82341		+48 Volt DC/DC Converter
CD/SD-82342 (RTPT)		±130 Volt DC/DC Converter Ringing and Tone Plant Diagnostic
		<u>2. RECORDS AND REQUIREMENTS</u>
		2.1 <u>Records</u> - This section's test results should be recorded on forms SD-97-1313 and SD-97-1315. Handbook 3, Section 6B may be referenced for detailed information on test record completion.
		2.2 <u>Requirements</u> - This section's testing is intended to satisfy BSP 820-650-180; Performance Requirements, No. 3 ESS, General Equipment Requirements, Electronic Switching Systems.
		<u>3. TEST EQUIPMENT</u>
		3.1 <u>Required:</u> (None)
		3.2 <u>Troubleshooting:</u> As required. Refer to ITE-5653, Specification for Test Accessory Set, No. 3 ESS; and Handbook 250, Section 2.26, Test Set Planning and Scheduling Information, No. 3 ESS.
		<u>4. TEST PROCEDURE</u>
		4.1 <u>General</u>
		4.11 The testing of each side (0 and 1) of the Ringing and Tone Plant on the Miscellaneous Power Frame is initiated by separate requests.

4.12 Ringing and Tone Plant diagnostics are conducted under control of the active CU on the off-line Ringing and Tone Plant side (0 or 1).

4.13 Manual power control of the Ringing and Tone Plant must be in the NORMAL state. (Neither side of the Ringing and Tone Plant should be manually forced 'off-normal'.)

#### 4.2 Test Procedure

4.21 Perform the steps presented in Table A in the order found. All detected troubles should be cleared before proceeding with the tests in this section. Table A procedure should be conducted at least one time completely with no detected faults or deviations in the procedure.

4.22 "SN" indicates procedure number in Table A.

4.23 Each CU has access to both sides of the Ringing and Tone Plant. One side of the plant is active while the other side is normally system-off-line. The active/off-line RT states are system switched several times during the conduction of diagnostics on some designated side.

4.24 Diagnostics are requested on side 0 and then side 1 from that processor which happens to be on line at the time Ringing and Tone Plant diagnostics are initiated. The processors are then switched and diagnostics are run on RT side 1 and then on RT side 0. A TTY input message may have to be originated to obtain the required side (0 or 1) off-line on which to conduct diagnostics.

#### 4.3 Test Requirements

4.31 All input requests for Ringing and Tone Plant tests must receive an associated "All Tests Pass" (ATP) output message before the associated equipment can be considered as having passed verification requirements. Refer to the IM/OM for the Ringing and Tone Plant message descriptions and formats.

## 5. TROUBLESHOOTING PROCEDURE

### 5.1 General

5.11 If a diagnostic failure occurs, refer to the latest issue of TLM-3H004 to determine the meaning of all variables. Then, using the information in SD-82255 and CD-82255, trace the indicated fault.

### 5.2 Error Messages

5.21 Error messages will be of the following format:

```
tt REPT RT TRBL ab cccc dd e eeee eeee eeee eeee
```

where: a = 0  
 b = 1 - RT side 0  
       = 2 - RT side 1  
 cccc = Test Number  
 dd = Test Segment  
 e eeee... = Test Data

### 5.3 Trouble Isolation

5.31 The No. 3 ESS Ringing and Tone Plant has two sides, 0 and 1. Either side may be active (and on-line) with either control complex side (0 and 1). Input messages are available which permit the operator to switch the control complex or the Ringing and Tone Plant to the opposite side. There are some restrictions on this however, such as equipment state and availability. Any combination of control complex and Ringing and Tone Plant may then be obtained as the operator requires. (Note: This is in fact what happens when normal verification is conducted on the Ringing and Tone Plant.)

5.32 If a problem or trouble is indicated, it may be advantageous to run all tests for an indication of the degree of commonality.

TABLE A

NO. 3 ESS RINGING AND TONE PLANT SYSTEM VERIFICATION TEST PROCEDURE				
SN	OPERATOR ACTION	SYSTEM RESPONSE	OPERATOR RESPONSE	NOTE
1	RMV:RT 0!	M tt RMV RT 0 0000 Any other	Go to SN 2 Go to par. 5	1,5 7
2	DGN:RT 0!	tt DGN RT 0 ATP Any other	Go to SN 3 Go to par. 5	7
3	RST:RT 0;UCL!	M tt RST RT 0 COMPL Any other	Go to SN 4 Go to par. 5	3,6 7
4	SW:RT!	OK.....RST RT COMPL Any other	Go to SN 5 Go to par. 5	7
5	RMV:RT 1!	M tt RMV RT 1 0000 Any other	Go to SN 6 Go to par. 5	1,5 7
6	DGN:RT 1!	tt DGN RT 1 ATP Any other	Go to SN 7 Go to par. 5	7
7	RST:RT 1;UCL!	M tt RST RT 1 COMPL Any other	Go to SN 8 Go to par. 5	3,6 7
8	SW:SYC;UCL!	OK Any other	Go to SN 9 Go to par. 5	8 7
9	RMV:RT 1!	M tt RMV RT 1 0000 Any other	Go to SN 10 Go to par. 5	1,5 7
10	DGN:RT 1!	tt DGN RT 1 ATP Any other	Go to SN 11 Go to par. 5	7
11	RST:RT 1;UCL!	M tt RST RT 1 COMPL Any other	Go to SN 12 Go to par. 5	3,6 7
12	SW:RT !	OK.....RST RT COMPL Any other	Go to SN 13 Go to par. 5	7
13	RMV:RT 0!	M tt RMV RT 0 0000 Any other	Go to SN 14 Go to par. 5	1,5 7
14	DGN:RT 0!	tt DGN RT 0 ATP Any other	Go to SN 15 Go to par. 5	7
15	RST:RT 0;UCL!	M tt RST RT 0 COMPL Any other	(Refer to notes.) Go to par. 5	2,4,6 7

- NOTES:
1. A RT plant side must be removed from service before it can be diagnosed.
  2. RT plant system verification has been successfully completed.
  3. A RT plant side must be restored to service before a "switch" can be performed.
  4. All equipment should normally be left "in-service" when not required otherwise.
  5. RMV:RT s!      where: s = RT plant side
  6. On "UCL" restoral puts the unit "in-service" without running the diagnostics. In this case it would be the second time or a repeat of the diagnostics on the same RT plant side, which is not required, if "UCL" were not designated.
  7. Go to paragraph 5 of this section or Troubleshooting Procedure.
  - 8. The off-line SYC must be in stand-by, otherwise a "SW:SYC;UCL!" must be requested and an update of the off-line store is initiated. The switch should occur upon store update completion. An alternative would be to place an off-line and out-of-service SYC in the standby state with a "RST:SYC;UCL!" before switching but is not recommended.

→ Arrows indicate new or changed information.

Manager, ESS Installation & Field Engineering

Reason for Reissue:  
Update.