DIMENSION® 2000 PBX
SMDR TEST
(PROC 525)

CENTER

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1. GENERAL INFORMATION

1.1 Procedure 525 should be used when the NETWORK OTHER - 515 and MINOR alarm indicators on the alarm panel are turned on.

1.2 This procedure is used to:

a) Display failures associated with the I/0 data channel and SMDR equipment.

b) Update or clear failure history recorded by on-line SMDR call processing.

c) Send a loop-around test to the data channel (LC34B* or LC171B) and run an echo test with SMDR equipment.
* LC366 is replacing LC34B.

1.3 This test enables the craftsperson to perform five comprehensive tests on the SMDR feature for the DIMENSION 2000 PBX System.

1.4 The following is a list of the five SMDR tests:

Test 1 - Provides the failure data associated with the SMDR and dual-speed data channel during normal call processing. Data for this test is displayed at the SMDR and does not interrupt normal call recording.

Test results for tests 2-5 are displayed in fields 7 and 8.

1.4 (Cont'd)

TEST 2 - Loop and Echo test - this test is used to confirm that the dual-speed data channel is working and SMDR has power. The test data is displayed at MAAP and does not interrupt normal call recording. Test 2 does not produce a printout for the Direct Output system nor any display at the control panel for the 9-track tape system. Field 2 and 3 show the Op code and data being sent in each word transmission to the SMDR. See not 3.

TEST 3 - Alternating 0's and 1's - This test is a cyclic test that will block normal call recording. This test sends an alternating 0 and 1 pattern continuously to the SMDR equipment. This test would normally be used with a logic probe to check test points in the SMDR equipment cabinet, see Note 1.

NOTE 1 - Use Procedure 275, Word 1 to deactivate the SMDR, for tests 3 and 5. Otherwise, error code 80 will be displayed.

TEST 4 - 31 Consecutive Messages - Test 4 sends 31 consecutive messages to the SMDR equipment testing each digit in each digit's position.

TEST 5 - Word Select - This test allows selection and transmission of a single data word to the SMDR equipment allowing manual entry of operation codes and data words, see Note 1.

1.5 Two types of visual display on the system control panel of 9-track system is provided (Type I, and Type II), see Figure 5. Type I is for use with Feature Package 4, 7, or 10. Type II, which comprises some design improvements and increased data capability, is for use with Feature Package 4, 7, 8, 10, 12, or 15. Type II must always be used for Feature Package 8, 11, or 12. Other differences between Type I and Type II are:

SMDR Type I

If the magnetic tape is not replaced before the tape reaches the end-of-tape mark, (a photoreflective mark placed on the tape for the purpose of indicating the end of the permissible recording area) no end-of-file mark is written; instead, the tape is automatically rewound to load point and the index number is reset to zero. At this point, if the tape is not replaced, new call detail data will be written over the previously recorded call data, which is obviously lost.

1.5 (Cont'd)

SMDR Type II

Whenever the tape reaches the end-of-tape marker, a dry contact closure is provided on the ETALM connector which can be used to trigger an external alarm circuit to indicate "Tape Drive" "Off-Line" or "End of Tape." Once the alarm circuitry is activated, the tape will continue to store data past the marker until the rewind procedure is initiated when unloading the tape. These tapes can store about 1,100 call records after the "End of Tape" marker is detected.

This same dry contact closure is also provided whenever the tape drive is off-line, such as when changing a tape. This will help prevent leaving the tape drive off-line accidentally with the resultant loss of call record data.

The external alarm (visual/audible) may be optionally provided by the Telephone Company or the customer. The rating of the contact provided for the external alarm is 10VA at 0.5 amps max, or 50 volts DC or AC maximum, resistive. For inductive loads, external contact protection is necessary.

2. RECORD

2.1 Form SD-97-1313 is required for recording the results of this test.

3. REFERENCE DOCUMENTS

3.1

COD	Customer Order Document
SD-1E449-01	SMDR
CD-1E449-01	SMDR
BSP 554-191-208	Dimension PBX; Station Message
BSP 554-010-122	Detail Recording

Operation and Maintenance Manual for Kennedy Model 9800
Operation and Maintenance Manual for Kennedy Model 8217/9217 Formatter.

4. CIRCUIT PACKS THAT MAY BE REQUIRED

4.1 SMDR circuit packs (see Table A)

TABLE A
CIRCUIT PACKS REQUIRED FOR SMDR
(See Note 2)

SLOT	DIRECT OUTPUT	9 - TRACK		DESCRIPTION
		SMDR TYPE I	SMDR TYPE II	
0	LC62	LC62	LC62	DATA RECEIVER
1	LC39			RAM MEMORY
2	LC63*	LC63	LC63	RAM CONTROL
3	LC64			DATA OUTPUT
4	LC65+			OUTPUT FORMATTER
5	LC66	LC66	LC66	REAL-TIME CLOCK
6	LC67B	LC67B	LC67B	DATA CONTROL
7		LC40	LC40	RAM MEMORY
8		LC68	LC68	READ MEMORY CONTROLLER
9		LC69B	LC176	DISPLAY PANEL CONTROL
10		LC70	LC70	INDEX INFORMATION
11		LC71	LC177B	TAPE CONTROLLER
12		LC174	LC178	DATA MULTIPLEXER
13		LC175	LC175	FORMATTER I/0
14	LC38	LC38	LC38	BATTERY RESERVE

*Replacing by LC374. LC374 provides optional BAUD rates for the SMDR output data, These BAUD rates are selected on DIP switch (SWI) as shown in table below. LC374 is shipped with 300 BAUD rate option.

BAUD RATE	SWI SWITCH POSITION
300	1, 4, 7
600	2, 4, 7
1200	3, 4, 7
2400	3, 5, 7
4800	3, 5, 6

+Replacing by LC375B. LC375B will allow the Direct Output version of SMDR to be used for Feature Package 8 Electronic Tandem Network (ETN) application.

NOTE 2: LC34B (LC366) or LC171B may be required in addition to Table A. See Customer Order Document for slot(s) assignment.

5. TEST EQUIPMENT

AMT.	ITE	DESCRIPTION
1	4208A	Telephone Handset
1	9153L	Cord Assembly
1	5654	Logic Probe (or HP10525T-605)

6. FIELD DEFINITIONS AND CODES

6.1 Fields are defined in Table B.

TABLE B
FIELD AND CODE

Field	Code	Definition
1	1-5	Test number.
2+		Operation code (octal):
	0	Normal data word.
	3	No operation.
	4	Retransmit normal data word.
	10	Last word in message.
	14	Retransmit last word in message.
3+	0000-7777	Data word (octal).
4	0-3	Carrier position.
5		Slot Number:
		Basic control carrier.
		Growth control carrier.
		Second growth control carrier.
		I/O growth carrier.
6	0, 1	Circuit number.

TABLE B

FIELD AND CODE DEFINITION

Field	Code	Definition
7#		Failure code-once: accumulative "OR"ing of all failure codes that occurred at least once during a test.
	0	Pass.
	1	Data channel address not acknowledged.
	2	No data reply (echo) from SMDR equipment.
	3	Failures 1 and 2.
	4	Echo mismatch.
	5	Failures 1 and 4.
	6	Failures 2 and 4.
	7	Failures 1, 2, and 4.
	8	Data channel loop test failure.
	9	SMDR equipment failure (reported by SMDR after 31-message buffer filled).
8+	0-9	Failure code-last: failure code indicating one or more failures occurring during the last transmission to the SMDR equipment before the test ended or was stopped.
9		Alarm cause status:
	0	None.
	1	SMDR alarm.
10	0-99	Approximate number of failures per hour for the circuit being displayed.
11	0-17	Number of hours since failures started in the displayed circuit to the nearest hour.

TABLE B (Cont'd)

Field	Code	Definition
Number of hours plus minutes since: Failure summary: most recent failure of any cabinet Failure history: most recent failure of the displayed failure code 1 or 9.		
12 (Test 1 only)	0-136	Hours
13 (Test 1 only)	0-59	Minutes.
14		Failure codes: logged in failure history table-displayed in Test 1 only.
	0	Failure summary display.
	1	No reply or echo mismatch.
	9	SMDR equipment failure.
15		Message length encode: number of data words used in a call record.
	0	12-word message.
	1	15-word message.
+ Fields 2 and 3 are displayed in Tests 3 and 5. # Fields 7 and 8 are displayed in Tests 2 through 5.		

7. TEST PROCEDURE

Note 3: Tests 3, 4, and 5 prevent normal call processing from recording call data using the SMDR equipment as long as these test numbers are displayed in field 1.

7.1 To call in Proc. 525, operate the following MAAP keys:

PROC NO., 525, ENTER

Test 1 is automatically selected. Depressing the NEXT TEST key repeatedly will increment the test number in field 1 to desired test.

Test 1:

Test 1 provides a failure history of the SMDR equipment and the associated I/O data channel. The data channel equipment location is always displayed unless the translation records do not designate the machine being equipped for SMDR operation. If the machine translation does not show an I/O data channel assigned to the SMDR equipment, error code 74 is displayed.

To start the test, select Test 1 and depress the EXECUTE key. The MAAP-WAIT Indicator will light momentarily; EXECUTE takes a "snapshot" of the failure summary during this time and displays it on the MAAP panel. If one or more failures has occurred, the following fields are displayed.

Field	Content
9	SMDR alarm cause.
10-13	Failure summary information.
14	Failure code, 0 indicating failure summary.

Depressing NEXT DATA repeatedly, displays all failure codes (field 14) associated with individual failures recorded in the failure history. Depressing NEXT DATA, after all failures (field 14) have been displayed, dashes fields 9 through 14. Depressing NEXT DATA again, re-executes Test 1 and displays an updated failure summary.

To isolate failures using this test, record the failures displayed in the failure history and refer to Step 8. Depressing CLEAR DATA: EXECUTE, after Test 1 has been executed at least once, clears the failure summary and failure history. If CLEAR DATA; EXECUTE is keyed in before Test 1 has been executed, a 00 error code is displayed on the MAAP panel.

Test 2:

Test 2 sends a loop-around test to the data channel associated with the SMDR equipment, and runs an echo test with the SMDR equipment. Test 2 does not interfere with call processing recording of calls. A no operation code is sent with each data transmission to the SMDR equipment. An alternating one-zero pattern is used for the first data word transmission. A complementing one-zero pattern is used for the second data word transmission. Both dat words are sent again for the echo test.

To start the test, select Test 2, and depress the EXECUTE key. The MAAP-WAIT indicator will light momentarily while the test is run. The results of test 2 are displayed in fields 7 and 8. Successful completion of the test is indicated by a 0 displayed in fields 7 and 8. To isolate failures using this test, record the failures in fields 7 and 8 and refer to Step 8.

Test 3

Test 3 sends a continuous alternating one-zero pattern in the format of a call record message to the SMDR equipment. This test is normally used with a logic probe to check test points in failed SMDR equipment. If the SMDR equipment requires a fifteen-word message (call record length), depress the NEXT DATA key before executing the test to change the encode in field 15 to a 1 (see Figure 1, and Table B).

To start the test, select Test 3, and depress the EXECUTE key. The MAAP-WAIT indicator lights momentarily; while the test is run the following fields are displayed.

Field	Contents
2, 3	Operation code and data word currently transmitted to the SMDR equipment.
4, 5, 6	Data channel equipment location.
7, 8	Failure codes - once and last.
15	Message length encode.

The one-zero pattern data word is complemented each time it is sent with 0.5 seconds between words. Between the last word transmitted (normally word 12) and the start of the next message is a two-second delay to allow stopping the test. To stop the test after the end of a message, depress the STOP key.

Successful test completion results in a printout similar to that shown in Figure 2. The printout shown was generated by the printer direct output option. To isolate failures using this test, refer to Step 8.

Test 4:

Test 4 sends 31 messages in either 12 or 15-word message format to the SMDR equipment. This test is used primarily on magnetic tape SMDR equipment to load memory with a 31 message block and write the 31 message block on magnetic tape. Prior to using this test, the customer's tape should be unloaded (with the customer's permission) and a spare tape loaded. Four of the SMDR operation codes are exercised by this test; normal word transmission, last word of message transmission, retransmit normal word, and retransmit last word. If the SMDR equipment requires a fifteen-word message (call record length) depress the NEXT DATA key before executing the test to change the encode in field 15 to a 1. To start the test, select Test 4, and depress the EXECUTE key. The MAAP-WAIT indicator lights for approximately one minute while the test is run; the results of the test are displayed in the following fields.

Field	Contents
4, 5, 6	Data channel equipment location.
7, 8	Failure code-once and last.
10	Message length encode.

When using Direct Output SMDR equipment, successful completion of Test 4 results in a printout similar to that shown in Figure 3 (the real time when the test is run will be displayed). When using the 9-track magnetic tape SMDR equipment (12 or 15-word messages) only the numerical characters of the messages can be displayed as shown in figures 4 and 5.

The first 16 messages of Figure 3 completely fill and test the Direct Output SMDR memory buffer testing each digit in each digit's position. When using the 9-track magnetic tape SMDR equipment, Test 4 should be executed twice to fill the two 9-track SMDR 31-message memory buffers. This will allow displaying an individual call record from each magnetic tape SMDR memory buffer as each 31 message block is written on magnetic tape. By specifying the EXTENSION NUMBER (Figure 5) with the thumbwheel switch on the 9-track magnetic tape control panel a specific call record message from Figure 4 will be displayed on the 9 track control panel. The magnetic tape display for Test 4 will appear similar to that shown in Figure 5.

When running Test 4 using the 9-track magnetic tape SMDR equipment, both the tape drive units' ON-LINE button and the 9-track control panels' ON-LINE button should be depressed. The mode EXTENSION NUMBER/AUTO switch should be set in the EXTENSION NUMBER mode (Figure 5) and the thumbwheel switch selected to the desired station or extension number to display a specific extension number call record.

Depressing the CLEAR DISPLAY button on a Type II SMDR will clear the control panel display prior to displaying a new call record. On a Type I SMDR, pressing the CLEAR DISPLAY button clears the display after the panel ON/OFF button has been operated to the OFF then ON positions. Pressing the DUMP MEMORY button causes the data contained in the ON-LINE memory buffer to be written on tape.

Depressing DUMP MEMORY repeatedly, will cause the data from alternate ON-LINE memory to be written on tape. Depressing the TAPE UNLOAD button causes the contents of the ON-LINE memory to be written on the tape, after which the tape rewinds to the load point.

When Test 4 has run successfully, the SMDR alarm cause is set to 0. The network other - 515 alarm is cleared when all other alarm sources have been cleared. The MAJOR and MINOR alarms can be turned off by Test 4 when all other major/minor alarm sources have been cleared.

Test 5:

Test 5 sends a single data word to the SMDR equipment. This test allows sending most words or messages to the SMDR by manually entering it in Fields 2 and 3. To start the test, select Test 5, and depress the EXECUTE key. The MAAP-WAIT indicator lights momentarily; while the test is run the following fields are displayed.

Field	Contents
2, 3	Operation code and data word.
4, 5, 6	Data channel equipment location.
7, 8	Failure codes - once and last.

Each time the EXECUTE key is pressed the operation code and data word displayed in fields 2 and 3 are transmitted to the SMDR equipment. Depressing the NEXT DATA Key selects the next of ten operation codes and data words that are available (Figure 6). Operation codes and data words can be manually entered into fields 2 and 3 using the CHANGE FIELD sequence; e.g.:

CHANGE FIELD: 2; ENTER: (Operation code); ENTER: (Data word); ENTER

Test 5 is normally used in repair of failed SMDR equipment. An example of a message printed correctly using Test 5 is shown in Figure 7.

Note 4: After all testing has been completed, push the TAPE UNLOAD button. This will rewind the tape to the "LOAD POINT" and allow customer call data to be recorded at the beginning of the tape.

8. TROUBLESHOOTING AIDS

8.1 Following is a list of steps which helps to isolate problems:

Step	Isolation Procedure
1.	Using Test 1, step through the failure history and record the results.
2.	Execute Test 2 to determine if a data channel is failing and record test results.
3.	Dump the memory if a magnetic tape system is being tested so that the 31-message test (Test 4) completely fills one memory buffer and the corresponding tape record.
4.	Execute Test 4, record the failures, and compare several of the messages with Figures 3 and 4. Repeat Test 4 for the alternate memory buffer for 9-track SMDR testing.
5.	Based on the results of Tests 2 and 4, take the corrective action indicated in the order listed in Table C. Figure 8 gives a summary of replaceable equipment for each failure code and SMDR configuration.

TABLE C
FAULT ISOLATION PROCEDURE

Failure Code	Corrective Action
0	A. Time or date is incorrectly displayed: 1. Replace LC66 (time). 2. Replace LC67B (date). 3. Check the wiring before replacing the clock assembly.

TABLE C (Cont'd)

Failure Code	Corrective Action
0 (cont'd)	B. If the time and date are correctly displayed but not recorded properly, go to Steps D and G. Use the following steps to repair a printer or paper tape punch SMDR. Execute Test 3 until the final repair is made. Verify correct operation of the SMDR equipment using Test 4. C. Bad messages or no messages are printed. 1. At LC63 (or LC374), insert a logic probe into test point TP8. 2. Execute Test 3. 3. If the logic probe is not flashing. a. At LC62, insert a logic probe into test point TP1. 1. If the probe is not flashing replace LC62. 2. If the probe is flashing, replace LC63 (or LC374). 4. If the logic probe is flashing and no characters are being sent to printer. a. If the date is not printed replace LC65. b. If the date is printed, replace LC64. 5. If the logic probe is flashing, and bad characters are being sent to the printer. a. Replace LC63 (or LC374). b. Replace LC40 (LC39). c. Replace LC64. Use the following steps to repair magnetic tape SMDR equipment. Execute Test 3 until the final repair is made. Execute Test 4 to verify repair and correct operation of the SMDR equipment.

TABLE C (Cont'd)

Failure Code	Corrective Action
0 (Cont'd)	D. Incorrect data is displayed at the SMDR tape control panel. 1. At LC174 (LC178), insert a logic probe TP1. 2. If the probe is flashing: a. Replace LC175. b. Replace LC69 (LC176). c. Replace LC71 (LC177B). d. Replace LC174 (LC178) (If data is read from the tape). e. Carefully check the wiring before replacing the formatter. f. Carefully check the wiring before replacing the tape drive. 3. If the probe is not flashing: a. Replace LC68. b. Replace LC63. E. The tape does not move. 1. At LC175, the on-line LED is not lit: a. The on-line indicator on the tape drive is not on. 1. Depress the ON-LINE switch. 2. Carefully check the wiring before replacing the tape drive. b. The on-line indicator on the tape drive is on. 1. Replace LC175. 2. Carefully check the wiring before replacing the formatter.

TABLE C (Cont'd)

Failure Code	Corrective Action
0 (Cont'd)	2. At LC175, the on-line LED is lit: a. At LC71 (LC177B), insert a logic probe at test point, TP10. 1. If the probe is not flashing: a. Replace LC68. b. Replace LC71 (177B). 3. If the probe is flashing: a. Replace LC71 (LC177B). b. Check to see if the tape is properly threaded. c. Carefully check the wiring before replacing the formatter. d. Carefully check the wiring before replacing the tape drive. F. No call record is displayed. 1. At LC71 (LC177B), insert a logic probe test point, TP2. 2. If the probe is not flashing: a. Replace LC175. b. Carefully check the wiring before replacing the formatter. 3. If the probe is flashing: a. Replace LC69 (LC176). b. Replace LC71 (LC177B). G. Data is not recorded on the tape. 1. At LC68, insert a logic probe at test point, TP6. 2. If the probe is not flashing, replace LC68.

TABLE C (Cont'd)

Failure Code	Corrective Action
0 (Cont'd)	3. If the probe is flashing: a. At LC71 (LC177B), insert a logic probe at test point TP10. 1. The probe is not flashing: a. Replace LC71 (LC177B). b. Replace LC68. c. Replace LC175. d. Replace LC174 (LC178). 2. The probe is flashing: a. Check to see if the tape is properly threaded. b. Replace LC68. c. Replace LC175. d. Replace LC174 (LC178). e. Replace LC63. f. Replace LC40. g. Carefully check the wiring before replacing the formatter. h. Carefully check the wiring before replacing the tape drive. H. If the tape fails to rewind. 1. Check to see if the tape is properly threaded. 2. Check the load point sensor adjustment on the tape drive. 3. The tape does not rewind completely on the source reel. a. Carefully check the wiring before replacing the tape drive.

TABLE C (Cont'd)

Failure Code	Corrective Action
0 (Cont'd)	4. If the tape does not rewind to the point: a. If the DS1 LED on LC71 (LC177B) is lighted: 1. Replace LC71 (177B). 2. Replace LC175. 3. Carefully check the wiring beofre replacing the tape drive. 4. Carefully check the wiring before replacing the formatter. b. If the DS1 LED on LC71 (LC177B) is not lighted, check the tape unload switch.
1, 3, 5, 7, 8	1. Replace LC34B (LC366) or LC171B. 2. Replace LC62. 3. Replace LC132.
2, 4, 6	1. Replace LC62. 2. Replace LC34B (LC366) or LC171B. 3. Replace LC132.
9	1. At LC68, insert a logic probe at test point TP8. 2. If the probe is not flashing, replace LC62. 3. If the probe is flashing: a. Replace LC68. b. Replace LC63. c. Replace LC40. d. Replace LC71 (LC177B). e. Replace LC174 (LC178).

TEST 1:
DISPLAYS FAILURE HISTORY. USE 'NEXT DATA' TO SELECT ANOTHER FAILURE CODE(FIELD 14). USE 'CLEAR DATA','EXECUTE' TO CLEAR FAILURE HISTORY.

TEST 2:
LOOP AROUND AND ECHO TESTS (RESULTS IN FIELDS 7 & 8).

TEST 3:
SENDS AN ALTERNATING ONE-ZERO PATTERN CONTINUOUSLY. USE PROC 275 TO DISABLE SMDR SERVICE

TEST 4:
SENDS A 16 MESSAGE PATTERN TO THE SMDR.

USE 'NEXT DATA' TO CHANGE MSG LNGTH ENCODE (0=12 WORDS, 1=15 WORDS, 2=18 WORDS).

TEST 5:
SENDS 1 TEST WORD. USE 'NEXT DATA' TO SELECT FROM LIST OF 10 TEST WORDS OR ENTER A TEST WORD. USE PROC 275 TO DISABLE SMDR SERVICE

FAILURE CODES (FIELDS 7,8):
0=PASS
1=DATA CHAN ADDR
2=BAD REPLY PARITY
3=182
4=ECHO MISMATCH
5=184
6=284
7=1,284
8=DATA CHAN LOOP
9=SMDR EQPT

FAILURE CODES (FIELD 14):
1=NO REPLY OR ECHO MISMATCH
9=SMDR EQPT

ERROR CODES: 80='EXECUTE' OPERATED WITH SMDR SERVICE ENABLED FOR TEST 3 OR TEST 5.

ISSUE FLIPCHART

PROC 525

FLIPCHART ISSUE

STATION MESSAGE DETAIL RECORDING TEST

PROC 525

TEST NO 1	TEST WORD (TEST 5) OP CODE 2	DATA 3	DATA CHANNEL EQPT LOCATION CARR 4	SLOT 5	CIRCUIT 6	FAILURE CODE ONCE 7	LAST 8	FAILURE HISTORY ALARM CAUSE 9	FAILURES PER HOUR 10	FAILURES BEGAN (HOURS AGO) 11	MOST RECENT FAILURE HOURS AGO 12	MINUTES AGO 13	FAILURE CODE 14	TESTS 3 & 4 MSG LNGTH ENCODE 15

Figure 1 - PROC 525 FLIPCHART

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00:23  :  .5 E 5   55 5   5-55   5-55   555   55
00:23  :  .5 E 5   55 5   5-55   5-55   555   55
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Figure 2 - Sample printout generated from test 3.

NOTE:

Figure 3 should appear as shown: when call records are displayed on either the Type I or Type II displays, non-numeric characters, colons, and dashes are omitted and numeric digits are displayed in the "condition code" field.

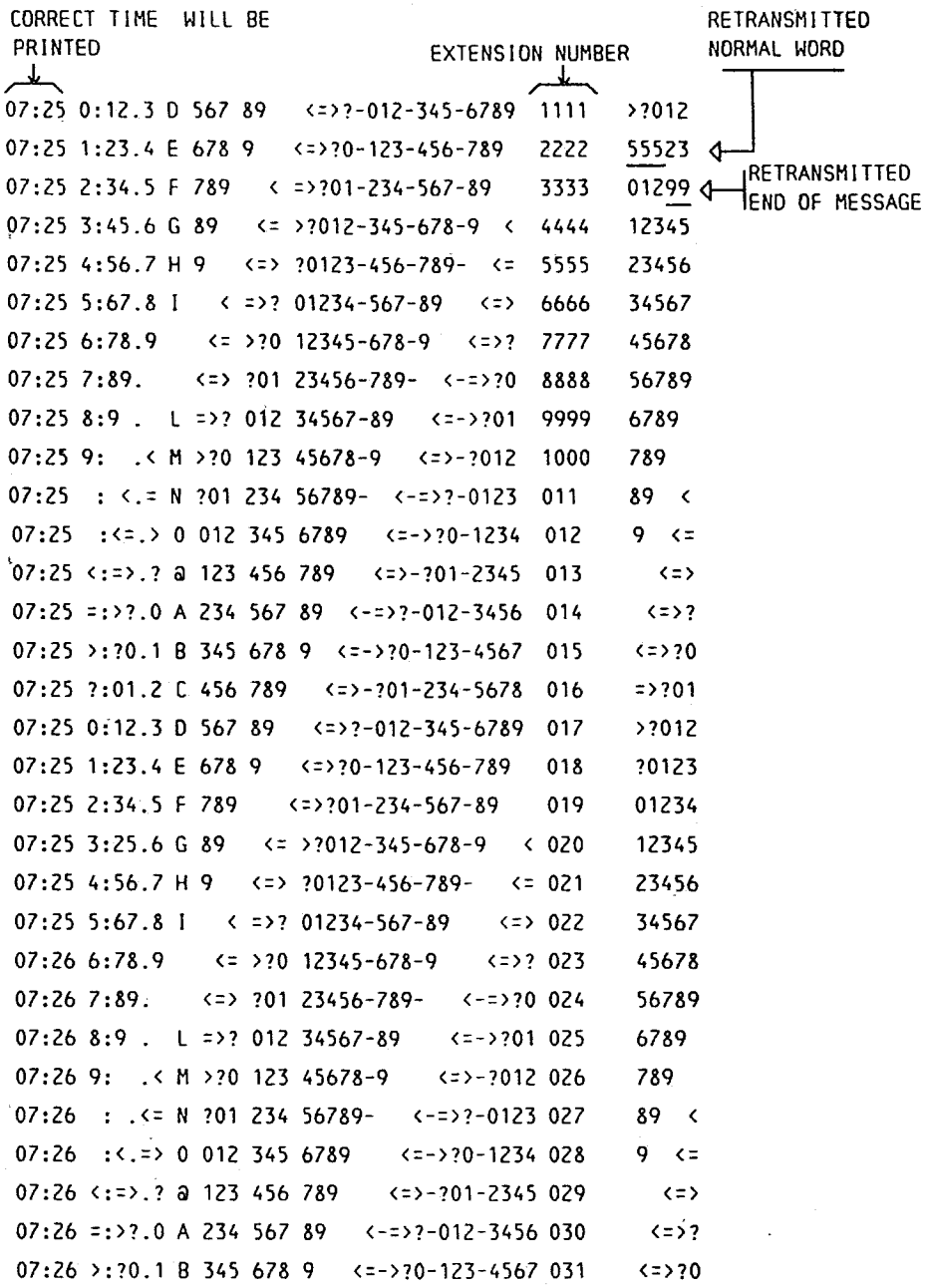


Figure 3 - Thirty-One Message Test-Sample printout from Test 4.

TIME	DURATION	COND CODE	CODE DIALED	CODE USED	DIALED NUMBER	STATION OR ORIG TRUNK	ACCOUNT NUMBER
07:23	0:12.3	4	567	89	-012-345-6789	1111	012
07:23	1:23.4	5	678	9	0-123-456-789	2222	55523
07:23	2:34.5	6	789		01-234-567-89	3333	01299
07:23	2:34.5	6	789		012-345-678-9	4444	12345
07:23	4:56.7	8	9		?0123-456-789-	5555	23456
07:23	5:67.8	9			01234-567-89	6666	34567
07:23	6:78.9			0	12345-678-9	7777	45678
07:23	7:89.			01	23456-789- 0	8888	56789
07:23	8:9			012	34567-89 01	9999	6789

12-WORD MESSAGE FORMAT - TYPE I CONTROL PANEL DISPLAY

TIME	DURATION	COND CODE	CODE DIALED	CODE USED	DIALED NUMBER	STATION OR ORIG TRUNK	ACCOUNT NUMBER	AUTH CODE	TQ	FAC RSTCN LEV
00:26	0:12.3	4	567	89	-012-345-6789	1111	012	3456789		
00:26	1:23.4	5	678	9	0-123-456-789	2222	0123	4567555		
00:26	2:34.5	6	789		01-234-567-89	3333	01234	56789	99	9
00:26	3:45.6	7	89		012-345-678-9	4444	12345	6789		
00:26	4:56.7	8	9		0123-456-789-	5555	23456	789		0
00:26	5:67:8	9			01234-567-89	6666	34567	89	0	1
00:26	6:78.9			0	12345-678-9	7777	45678	9	01	2
00:26	7:89			01	23456-789- 0	8888	56789	0	12	3
00:26	8:9.			012	34567-89. 01	9999	6789	01	23	4

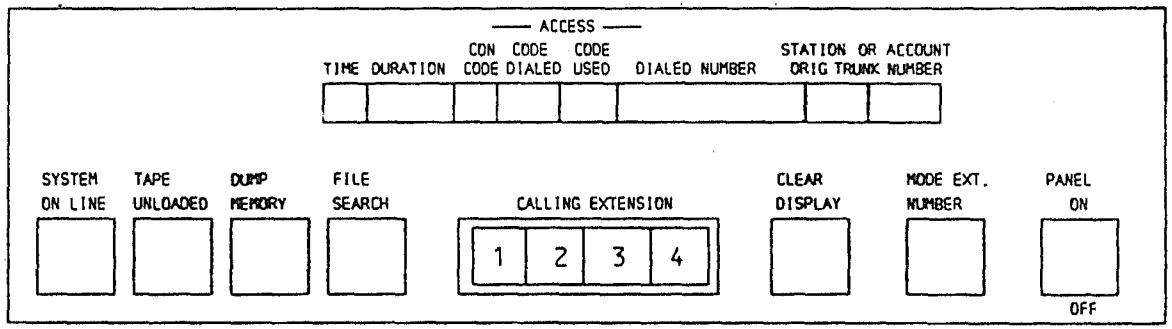
15-WORD MESSAGE FORMAT - TYPE II CONTROL PANEL DISPLAY

Figure 4 - Displayable characters on 9-track SMDR equipment (Note: Correct time will be displayed) from Test 4.

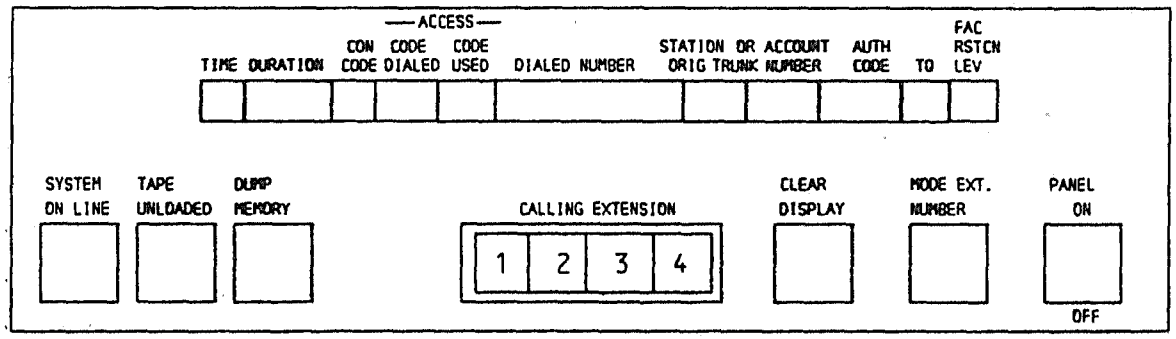
NOTE 5 - See Figure 5 for corrected TYPE I Control Panel Display.

NOTE:

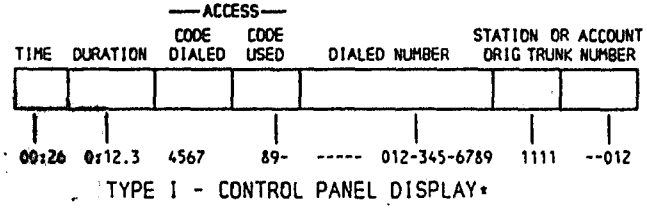
The TYPE I display does not have a "CONDITION CODE" field as shown in Figure 5. The digits associated with the "CONDITION CODE" are displayed in the TYPE I display field labeled "CODE DIALED". The TYPE I display should appear as indicated here.



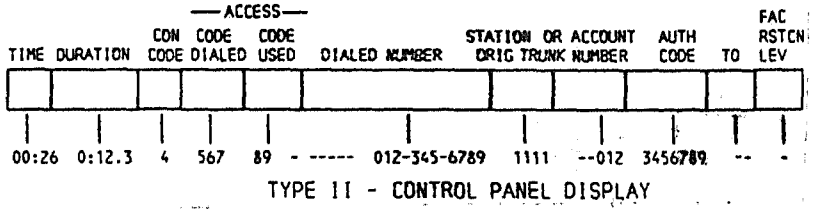
Type I (12-Word message format)



Type II (15-Word message format)

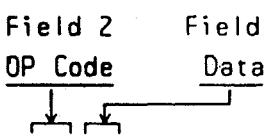


TYPE I - CONTROL PANEL DISPLAY



TYPE II - CONTROL PANEL DISPLAY

Figure 5 - Visual display of a specified call record (EXTENSION NUMBER 1111) on the 9-track magnetic tape control panel, (Real time at which test is run will be displayed).



03.2525 - No operation op code with 01 pattern
03.5252 - No operation op code with 10 pattern
14.2525 - Retransmission, end of message with 01 pattern
04.5252 - Retransmission, end of message with 10 pattern
04.2525 - Retransmission with 01 pattern
04.5252 - Retransmission with 10 pattern
10.2525 - End of message op code with 01 pattern
10.5252 - end of mession op code with 10 pattern
00.2525 - Normal data word op code with 01 pattern
00.5252 - Normal data word op code with 10 pattern

Figure 6 List of op codes and data words available using the NEXT DATA key in Test 5.

```
00:23  :  .5 E 5  55 5  5-55  5-55  555  55
00:23  :  .5 E 5  55 5  5-55  5-55  555  55
```

Figure 7 Sample printout from Test 5, using 11 normal data word operation codes followed by an end of message operation code. The data word is an alternating ones-zeros pattern.

SMDR Configuration		All			Printer, Paper tape	Magnetic Tape					
Failure Code or Condition							Failure Code = 0				
		Fail = 1,3,5,7,8	Fail = 2,4,6	Time; Date	Fail = 0 Bad Output	Fail = 9	Bad Data Display	Tape does not move	No call record displayed	Data not on tape	Tape fails to rewind
Location	Circuit Pack or Assembly										
201 L Interface	LC34B or LC171	X	X								
	LC132	X	X								
SMDR Cabinet	LC62 Data Receiver	X	X		X	X				X	
	LC53 RAM Control				X	X	X			X	
	LC64 Data Output				X						
	LC65 Print Formatter				X						
	LC66 Clock			X							
	LC67 Date			X							
	LC68 Memory Read					X	X	X		X	
	LC69 Display Control						X		X		
	LC70 Index Information						X				
	LC71 Tape Control					X		X	X	X	X
	LC174 Data Multiplex					X	X			X	
	LC175 Tape Formatter						X	X	X	X	X
	LC38 RAM Battery										
	LC40 or LC39 RAM				X	X				X	
	Tape Drive						X	X			X
	Formatter						X	X	X		X
	Clock Assembly			X							
	Printer or Paper Tape Punch				X						
x = replacement unit											

Figure 8 - Table of SMDR related replaceable equipment.

Reason for Issue:
New Section

Manager, Denver PBX PECC