AIS OUTGOING SENDER SD-27882-01
TESTS USING AUTOMATIC MONITOR, REGISTER, AND SENDER TEST CIRCUIT SD-25680-01
NO. 5 CROSSBAR OFFICES
WITHOUT LINE LINK PULSING

1. GENERAL

1.01 This section applies to tests of AIS senders using the automatic monitor, register, and sender test circuit for No. 5 crossbar offices not arranged for line link pulsing.

1.02 The reasons for reissuing this section are listed as follows. Revision arrows are used to emphasize the more significant changes. This reissue affects Equipment Test Lists.

(a) To add Test H.1 to include provisions for testing when both stuck sender trunk identification and alarm surveillance and control features are provided.

(b) To revise Test J to include provisions for the elimination of stuck sender plant registration on test calls when sender is made busy at MTF.

(c) To make minor changes as required.

1.03 The tests covered are:

1.04 Test M will normally be used to make a comparative frequency test of an oscillator output. When the results of this test are not within limits specified, or when a precise measurement of a frequency is required, Test O should be performed.

1.05 If the oscillator output voltage or frequency is not within the limits specified in the test, corrective measures given in the circuit notes of SD-27882-01 should be consulted.

1.06 Actions and verifications are required at the sender frame for Tests H, J, K, and M through O.

1.07 Test M requires that two AIS senders be made busy.

1.08 Test B requires that all AIS lines be made busy.

1.09 When performing Tests C, G, H, and Q, the traffic register associated with the SS lead will be operated. Local instructions should be followed for recording and reporting traffic register operations during these tests.

1.10 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in Part 4 of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter

within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

1.11 The manner of selecting some circuits and test conditions at the master test frame (MTF) and its associated circuits varies depending on the apparatus options furnished with these circuits. Therefore, where variable means of selection are provided, precise instructions for the selection of circuits and test conditions are not given. Precise instructions for the use of these variable means are given in Section 218-106-301.

1.12 The location statement, At MTF—, is used to refer to all apparatus located on the four basic bays of the MTF.

1.13 The two types of AIS line circuits are:

(a) AIS Line Circuit—Reverse Battery Supervision—SD-27893-01.

(b) AIS Line Circuit—E and M Lead Supervision—SD-27892-01.

1.14 In order to select a particular ***AIS-E and M lead line circuit (SD-27892-01)*** for Test C, set the AIL switch to the correct position and insulate 9 and 11 contacts of the E relay of the line circuit.

1.15 On Issue 76D of SD-25800-01, a group of 18 "class of test" lamps was replaced by a single "start test" lamp designated STT. Since the designation given to the lamp is not specific, the lamp will not be called out in the section, as well as the 18 discontinued lamps, such as DT, ORIG, ITDO, ITNP, OGT, etc.

1.16 The A&M version of AIS tests is made with the automatic monitor circuit in relation with the master test control to check the ability of the sender to outpulse any digit in any position. The numbers to be checked are set up on the switches at the control circuit and passed directly to both the completing marker and automatic monitor. The number will be in the form of an office code and four digits and may be ***either a working or a nonworking number.*** If the number is nonworking, the marker will receive the appropriate intercept information from the number group and pass the number along with the type of intercept code to the AIS sender. If the number setup is an actual working number in the office, the marker must be forced to interpret this particular call as an intercept condition and transfer the number to the AIS sender. This is accomplished by operating the AIRI key to ground the RI lead to the marker, regular intercept. This prevents the equipment location of the number from being registered in the marker and causes the marker to call in the AIS equipment. The intercept information is passed to the sender which pulses into the automatic monitor circuit.

1.17 A Test Chart is provided to show priming information required for each test. Local records should be consulted for information to fill out the chart in accordance with instructions given in Part 5, Preparation of Test Chart.

2. APPARATUS

2.01 The apparatus required for each test is listed in Table A. The details of each item are covered in the paragraph indicated by the number in parentheses.

2.02 67C test set or equivalent (for checking the presence of absence of ground), equipped with two 624B (terminal connector) tools (to make test connections to terminals arranged for solderless wrapped connections).

2.03 Electron tube voltmeter, voltohmyst, RCA WV-98A senior, or equivalent (for measuring oscillator output voltage).

2.04 Load resistor, 19LM or equivalent, 275 ohms ±1 percent.

2.05 Load resistor, 19SE or equivalent, 1100 ohms ±1 percent.

2.06 Frequency meter, Berkley EPUT or Hewlett-Packard 521C counter with 10-second gates.

2.07 Blocking and insulating tools as required. Use tools and apply as covered in Section 069-020-801.

▶TABLE A◀

APPARATUS	TEST																	
	A	B	C	D	E	F	G	H	H.1	I	J	K	L	M	N	O	P	Q
322A (make-busy) Plug								✓	✓	✓	✓		✓	✓	✓	✓		✓
KS-3008 Stopwatch or equivalent			1	1			1	1	1									✓
32A Test Set													1					
67C Test Set (2.02)											1	1		1				
Voltmeter (2.03)															1			
Load Resistor (2.04)															1			
Load Resistor (2.05)																1		
Frequency Meter (2.06)																1		
Tools (2.07)			✓					✓	✓		✓			✓	✓	✓	✓	
Cord (2.08)																✓		
Cord (2.09)													1		2	2		
Head Telephone Set (2.10)			1	1		1	1	1	1	1								1

2.08 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one 624B (terminal connector) tool, and one KS-6278 connecting clip.

2.09 Testing cord, P2AA cord, 3 feet long, equipped with one 241A plug (2W3A cord), two 360A tools, and two KS-6278 connecting clips.

2.10 ▶52-type head telephone set or equivalent.◀

3. PREPARATION

STEP	ACTION	VERIFICATION
	Note: Refer to paragraphs 1.04 through 1.17.	
	Tests A Through I, L, P, Q	
1	At MTF— Restore all keys and switches.	
2	Momentarily operate RL key.	All lamps extinguished.
3	Select marker.	
4	Select sender to be tested.	
5	Select SDR class of test.	

STEP	ACTION	VERIFICATION
6	At automatic monitor, register, and sender test circuit— Operate AISD, MAC keys.	
	Note: Allow 1 minute for tubes to warm up.	
7	Operate STT key.	
8	At MTF— Select INC class of call and translator indication.	
9	Select incoming trunk class.	
10a	If line circuit provides CX supervision— Operate CX key.	
11b	▶If office is equipped with stuck sender trunk identifier circuit— Release SSI, ACTR keys.	
Tests A Through G, I, L, P, Q		
12c	If CTR_ key associated with sender under test is operated (pulled-out)— Release (push-in) CTR_ key.◀	
Tests A Through E, G Through L, P, Q		
13	Operate AIRI key.	

4. METHOD

STEP	ACTION	VERIFICATION
A. Regular Call		
14	Operate keys and set switches as indicated in Test 1A of Test Chart.	
15	Operate REC key.	
16	Momentarily operate ST key.	Trouble record taken. SRT, AIS line location, called number, RI designations perforated. OK lamp lighted. At sender under test— M, SB relays operated.
17	Momentarily operate RL key.	OK lamp extinguished. At sender under test— M, SB relays released.

STEP	ACTION	VERIFICATION
18	Repeat Steps 14 through 17, using Tests 1B through 1E of Test Chart.	
19	Restore AIRI key.	
20	Repeat Steps 16 and 17, using Tests 10 and 11 of Test Chart.	Trouble record taken. BN designation perforated.
21	Repeat Steps 16 and 17, using Test 9 of Test Chart.	Trouble record taken. TBI designation perforated.
22	Operate AIRI key.	
23	Repeat Steps 16 and 17, using Tests 2 through 8 and 12 of Test Chart as applicable to office.	Trouble record taken. RI designation perforated.
24	Momentarily operate RL key.	At MTF— All lamps extinguished. At sender under test— M, SB relays released.
25	Restore all keys and switches not required in next test.	
26b	⧫If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
27	Operate (pull-out) CTR_ key associated with sender under test, if required.⧫	

B. Line Preference Test

14	Operate keys and set switches as indicated in Test 1A of Test Chart.	
15	Insert make-busy plug into MB_ jack of sender under test.	
16	Operate REC, ND keys.	
17	Momentarily operate ST key.	At MTF— Trouble record taken. Determine from line location of AIS line perforated and office records if AIS line is cross-connected to terminal LHA or LHB.
18	Momentarily operate RL key.	All lamps extinguished.
19	Momentarily operate ST key.	Trouble record taken. Determine from line location of AIS line

STEP	ACTION	VERIFICATION
		perforated and office records if AIS line is cross-connected to terminal LHA or LHB. ***Note:*** If first AIS line is associated with terminal LHA, the second AIS line must be associated with terminal LHB.
20	Momentarily operate RL key.	
21	Insert make-busy plugs into MB_ jacks of lines indicated in verifications of Steps 15 and 19.	
22	Momentarily operate ST key.	Trouble record taken. Line location perforated indicates line selected.
23	Momentarily operate RL key.	
24	Insert make-busy plug into MB_ jack of line indicated in verification of Step 22.	
25	Repeat Steps 22 through 24 for each remaining line.	
26	Remove make-busy plug from MB_ jack of lines places in Steps 21 and 24.	
27	Remove make-busy plug from MB_ jack of sender under test.	
28	Restore all keys and switches not required in next test.	
29b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
30	Operate (pull-out) CTR_ key associated with sender under test, if required.◀	
C. Line Test—Open Line		
14	Operate TMT, MOTL, SIL keys and set AIL switch to desired line circuit (Refer to paragraphs 1.11 and 1.14).	
15	Operate keys and set switches as indicated in Test 1A of Test Chart.	
16	Insert make-busy plug into MB_ jack of sender under test.	

STEP	ACTION	VERIFICATION
17	▶At sender under test— Block nonoperated TG relay.	
18	At MTF— Momentarily operate ST key.◀	***With marker in light traffic—*** LL_, VG_, HG_, VF_ of AIS line, TI, DCT designations perforated. DCT1, AVK1 designations not perforated. ***For U and Y type marker—*** WT designation perforated. ***For wire-spring type marker—*** LDT designation perforated. DCT1, AVK1 designations not perforated.
19	Momentarily operate RL key.	All lamps extinguished.
20	At sender under test— Remove blocking tool from TG elay.	
21	At MTF— Operate HTR key if provided.	
22d	If HTR key is not provided— At marker used for test— Block operated HTR relay.	
23	At MTF— Momentarily operate ST key; ***start timing.***	In 13 to 24 seconds— TO_ lamp lighted. Overflow tone heard.
24	Momentarily operate RL key.	Overflow tone silenced.
23	Restore HTR key, if provided.	
24d	If HTR key is not provided— At marker used for test— Remove blocking tool from HTR relay.	
25	At MTF— Remove make-busy plug from MB_ jack of sender under test.	
26	Restore all keys and switches not required in next test.	
27b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
28	Operate (pull-out) CTR_ key associated with sender under test, if required.◀	

STEP	ACTION	VERIFICATION
D. Reversed Line Test		
	▶***Note:*** Omit test if line circuit is arranged for E&M signaling.◀	
14	Operate keys and set switches as indicated in Test 1A of Test Chart.	
15	Operate OTR, MOTL keys.	
16	Momentarily operate ST key.	OK lamp lighted. TO_ lamp momentarily lighted.
17	After OK lamp lights, ***start timing.***	Overflow tone heard. In 13 to 24 seconds— TO_ lamp lighted.
18	Momentarily operate RL key.	OK lamp extinguished. Overflow tone silenced.
19	Restore all keys and switches not required in next test.	
20b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
21	Operate (pull-out) CTR_ key associated with sender under test, if required.◀	
E. Abandoned Call		
14	Operate keys and set switches as indicated in Test 1A of Test Chart.	
15	Operate ABN key.	
16	Momentarily operate ST key.	OK lamp lighted immediately after PL lamp momentarily lighted.
17	Momentarily operate RL key.	OK lamp extinguished.
18	Restore all keys and switches not required in next test.	
19b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
20	Operate (pull-out) CTR_ key associated with sender under test, if required.◀	

STEP	ACTION	VERIFICATION
F. Test Line Termination Call		
13	Operate ▶AIRI◀ DL4 keys.	
14	Operate keys and set switches as indicated in Test 13 of Test Chart.	
15	Momentarily operate ST key.	OK lamp lighted.
16	Momentarily operate RL key.	OK lamp extinguished.
17	Restore all keys and switches not required in next test.	
18b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
19	Operate (pull-out) CTR_ key associated with sender under test, if required.	
G. Timing Features		
14	Operate keys and set switches as indicated in Test 1A of Test Chart.	
15	Operate TMT, MOTL keys.	
16	Operate HTR key, if provided.	
17d	If HTR key is not provided— At marker used for test— Block operated HTR relay.	
18	At MTF— Momentarily operate ST key; ***start timing.***	TMT lamp lighted. In 13 to 24 seconds— OK lamp lighted. Overflow tone heard.
19	Momentarily operate RL key.	All lamps extinguished. Overflow tone silenced.
20d	If HTR key is not provided— At marker used for test— Remove blocking tool from HTR relay.	
21	At MTF— Restore all keys and switches not required in next test.	

STEP	ACTION	VERIFICATION
21b	▶If office is equipped wth stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
22	Operate (pull-out) CTR_ key associated with sender under test, if required.	
H. Cancel Timed Release and Alarm		
14d	▶If office is equipped with alarm surveillance and control feature and the interface and control circuit is arranged to control the sender timed release feature— Request remote alarm center by telephone to release sender holding feature, if activated.◀	REM lamp extinguished.
15	Operate keys and set switches as indicated in Test 1A of Test Chart.	
16	Operate TMT, MOTL keys.	
17	Operate HTR key, if provided.	
18d	If HTR key is not provided— At marker used for test— Block operated HTR relay.	
19e	At MTF— If CTR_ key associated with sender under test is released (pushed-in)— Operate (pull-out) CTR_ key.	
20	Momentarily operate ST key.	TMT lamp lighted.
21	Momentarily operate RL key; ***start timing.***	▶TO_ lamp lighted.◀ In 13 to 24 seconds— At sender under test— TRL relay operated.
22	Momentarily operate RL key.	Lamps still lighted. At sender under test— TRL relay still operated.
23	At MTF— Restore (push-in) CTR_ key.	TO_, TMT lamps extinguished. At sender under test— TRL relay released. All lamps extinguished.
24	Operate (pull-out) CTR_ key.	
25	Momentarily operate ST key; ***start timing.***	TMT lamp lighted. In 13 to 24 seconds—

STEP	ACTION	VERIFICATION
		TO_ lamp lighted. Overflow tone heard.
26	Momentarily operate RL key.	In 10 to 15 seconds after TO_ lamp lighted— R-S-TOA lamp lighted. Major alarm sounds.
27	Insert make-busy plug into MB_ jack of sender under test.	R-S-TOA lamp extinguished. Major alarm silenced.
28	Restore (push-in) CTR_ key.	TO_, TMT lamps extinguished.
29	Momentarily operate RL key.	All lamps extinguished.
30	Remove make-busy plug from MB_ jack of sender under test.	
31f	If alarm sending circuit is provided— Operate (pull-out) CTR_ key of sender under test.	
32f	Operate transfer key to DB position (if provided) or to TR position. ***Note:*** All alarms will be transferred while key is operated.	
33f	Momentarily operate ST key; ***start timing.***	TMT lamp lighted. In 13 to 24 seconds— Overflow tone heard.
34f	Operate DISC key; ***start timing.***	Overflow tone silenced. In 13 to 24 seconds— OK lamp lighted.
35f	Momentarily operate RL key.	All lamps extinguished.
36f	Operate transfer key to NTR.	
37f	Momentarily operate RS key.	
38f	Restore DISC key.	
39	Restore HTR key, if provided.	
40d	If HTR is not provided— At marker used for test— Remove blocking tool from HTR relay.	
41	At MTF— Restore all keys and switches not required in next test.	

STEP	ACTION	VERIFICATION
42b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
43d	If office is equipped with alarm surveillance and control feature and the interface and control circuit is arranged to control the sender timed release feature— Request remote alarm center by telephone to reactivate stuck sender holding feature, if required.	REM lamp lighted.
44	Operate (pull-out) CTR_ key associated with sender under test, if required.◀	
H.1	**▶Stuck Sender Trunk Identification**	
14d	If office is equipped with alarm surveillance and control feature and the interface and control circuit is arranged to control the sender timed release feature— Request remote alarm center by telephone to release stuck sender holding feature, if activated.	REM lamp extinguished.
15	Operate keys and set switches as indicated in Test 1A of Test Chart.	
16	Operate TMT, MOTL, DISC keys.	
17	Operate HTR key, if provided.	
18e	If HTR key is not provided— At marker used for test— Block operated HTR relay.	
19f	At MTF— If CTR_ key associated with sender under test is released (pushed-in)— Operate (pull-out) CTR_ key.	
20	Momentarily operate ST key; ***start timing.***	TMT lamp lighted. In 13 to 24 seconds after TMT lamp lighted— TO_ lamp lighted. In 10 to 15 seconds— R-S-TOA lamp lighted. Major alarm sounds.
21	Insert make-busy plug into MB_jack associated with sender under test.	R-S-TOA lamp extinguished. Major alarm silenced.
22	Operate SSI key.	SSTI lamp lighted. In 20 to 25 seconds—

STEP	ACTION	VERIFICATION
		LH/RH, FT_, FU_, SWT_, SW_, VU_ lamps lighted indicating OSL switch and vertical associated with stuck sender. ***Note:*** If no sender is stuck, the END lamp will light at the end of the scan cycle and remain lighted until the SSI key is restored.
23	Restore SSI key.	SSTI, LH/RH, FT_, FU_, SWT_, SW_ VU_ lamps extinguished.
24	Restore (push-in) CTR_ key associated with sender under test.	OK lamp lighted.
25	Momentarily operate RL key.	All lamps extinguished.
26	Remove make-busy plug from MB_ jack of sender under test.	
27g	If automatic tracing feature is provided— Operate ACTR key.	
28g	Momentarily operate ST key; ***start timing.***	TMT lamp lighted. In 20 to 25 seconds— MN-SSTI lamp lighted. Minor alarm sounded. Trouble record taken. SSTI, OSG_, SSA/SSB, OS_ designations perforated indicating sender group assignment. LH/RH, FT_, FU_, SWT_, SW_, VU_ designations perforated indicating OSL switch and vertical associated with stuck sender.
29g	Restore ACTR key.	
30g	Momentarily operate SSTI-AR key.	MN-SSTI lamp extinguished. Minor alarm silenced.
31g	Momentarily operate RL key.	All lamps extinguished.
32	Restore HTR key, if provided.	
33e	If HTR key is not provided— At marker used for test— Remove blocking tool from HTR relay.	
34	At MTF— Restore all keys and switches.	
35	Operate SSI or ACTR key, as required for manual or automatic stuck sender trunk identification.	

STEP	ACTION	VERIFICATION
36d	If office is equipped with alarm surveillance and control feature and the interface and control circuit is arranged to control the sender timed release feature— Request remote alarm center by telephone to reactivate stuck sender holding feature, if required.	REM lamp lighted.
38	Operate (pull-out) CTR_ key associated with sender under test, if required.◀	
I. Marker Reorder		
14	Operate keys and set switches as indicated in Test 1A of Test Chart.	
15	Operate ROT, MOTL keys.	
16	Momentarily operate ST key.	OK lamp lighted. Reorder tone heard.
17	Momentarily operate RL key.	Tone silenced. All lamps extinguished.
18	Restore all keys and switches not required in next test.	
19b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
20	Operate (pull-out) CTR_ key associated with sender under test, if required.◀	
J. Sender Busy		
	▶***Caution: Ensure that all make-busy plugs are removed at end of test as specified in Step 11.***◀	
1	At AIS sender frame— When sender to be tested is idle— Block operated SB relay.	
2	At MTF— Insert make-busy plugs into MB_ jacks of all other senders in group associated with sender under test.	At sender under test— Ground present on terminals 17, 44, 54 of terminal strip B on sender and pulse control unit.
3	At MTF— Insert make-busy plug into MB_ jack of sender under test.	

STEP	ACTION	VERIFICATION
4	At sender under test— Remove blocking tool from SB relay.	Ground present on terminals 17, 44, 54 of terminal strip B on sender and pulse control unit.
5	At MTF— Remove make-busy plug from MB_ jack of sender under test.	At sender under test— Ground absent on terminals 17, 44, 54 of terminal strip B on sender and pulse control unit.
6a	▶If option is provided for the elimination of stuck sender plant registration on test calls when sender is made busy at MTF— At MTF— Insert make-busy plug into MB_ jack of sender under test.	
7a	At sender under test— Block operated TRL, CT relays.	Ground absent on terminal 54 of terminal strip A on sender and pulse control unit. TO_ lamp lighted R-S-TOA lamp lighted. Major alarm sounded. At sender under test— Ground present on terminal 54 of terminal strip A on sender and pulse control unit. At MTF— TO_, R-S-TOA lamps extinguished. Major alarm silenced.
9a	At MTF— Remove make-busy plug from MB_ jack of sender under test—	
10b	Remove blocking tool from TRL, CT relays.	
11	Remove all make-busy plugs placed in Step 2.	

K. Stuck Sender Guard Test

1	At sender frame— Momentarily operate MB relay on each sender other than first sender in group.	At first sender— Ground absent at terminal 51 of terminal strip B on sender and pulse control unit during operation of each MB relay.
2	At sender frame— Momentarily operate CTR relay on each sender other than first sender in group.	At first sender— Ground absent at terminal 51 of terminal strip B on sender and pulse control unit during operation of each CTR relay.
3	At sender frame— Momentarily operate MB relay on each sender other than last sender in group.	At last sender— Battery absent at terminal 18 of terminal strip A on sender and pulse control unit during operation of each MB relay.

STEP	ACTION	VERIFICATION
4	At sender frame— Momentarily operate CTR relay on each sender other than last sender in group.	At last sender— Battery absent from terminal 18 of terminal strip A on sender and pulse control unit during operation of each CTR relay.
L. Multifrequency Current Supply Trouble Release		
14	Insert make-busy plug into MB_ jack of sender under test.	
15	Operate keys and set switches as indicated in Test 1A of Test Chart.	
16	Operate MOTL key.	
17	At sender frame— Insert plug of 32A test set into RC jack.	
18	Connect ground to terminal 52 of terminal strip A on sender and pulse control unit of any AIS sender.	
19	Momentarily operate white (ST) button of 32A test set.	Overflow tone heard.
20	Momentarily operate red (RL) button of 32A test set.	Overflow tone silenced.
21	Remove ground from terminal 52 of terminal strip A on sender and pulse control unit.	
22	Restore all keys and switches not required in next test.	
23b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
24	Operate (pull-out) CTR_ key associated with sender under test, if required.◀	
M. Comparative Frequency Test		
	Note: Refer to paragraph 1.06.	
1	At MTF— Insert make-busy plugs into MB_ jacks of two AIS senders.	
2	At each sender made busy— Block operated ON relay.	

STEP	ACTION	VERIFICATION
3	Connect one lead of 67C test set to terminal 12 of terminal strip M on MF supply unit of one sender.	
4	Connect other lead of 67C test set to terminal 12 of terminal strip M on MF supply unit of other sender.	
5	Listen for beat frequency.	Beats should be about five per second or less. ***Note:*** If beats are more rapid than about five per second, refer to paragraph 1.03.
6	Remove 67C test set.	
7	Repeat Steps 3 through 6 connecting 67C test set leads to terminals 15, 21, 22, 25, and 35 of terminal strip M on MF supply unit for the remaining frequency outputs.	
8	Remove blocking tools from ON relays.	
9	At MTF— Remove make-busy plugs from MB_ jacks of senders made busy in Step 1.	

N. Oscillator Output Voltage

1	At MTF— Insert make-busy plug into MB_ jack of sender under test.	
2	At sender under test— Connect 275-ohm resistor between terminal 12 and terminal 11 (ground) of terminal strip M on MF supply unit.	
3	Set voltmeter to read ac volts.	
4	Block operated ON relay.	
5	Connect voltmeter GND lead to terminal 11 (ground) of terminal strip M on MF supply unit.	
6	Touch voltmeter probe to terminal 12 of terminal strip M on MF supply unit.	Record voltmeter reading. Reading should be 1.5 ±0.15 volts. Refer to paragraph 1.04 if reading is not as specified.
7	Disconnect voltmeter and resistor from terminal strip M.	

STEP	ACTION	VERIFICATION
8	Repeat Steps 2 through 6 for each oscillator output voltage by connecting resistors and voltmeter as required to terminals 15, 21, 22, 25, and 35 of terminal strip M on MF supply unit.	
9	Remove blocking tool from ON relay.	
10	At MTF— Remove make-busy plug from MB_ jack of sender under test.	
O. Frequency Test Using Frequency Meter		
1	At MTF— Insert make-busy plug into MB_ jack of sender under test.	
2	At sender under test— Connect 1100-ohm resistor between terminal 11 (ground) on terminal strip M on MF supply unit and first terminal listed in Table B.	
3	Connect one KS-6278 connecting clip of 2W3A cord to each side of 1100-ohm resistor.	
4	Block operated ON relay.	
5	Take reading on frequency meter. ***Note:*** If output frequency is not within limits specified in Table B, proceed as outlined in notes indicated on schematic drawings.	Frequency should be within limits indicated in Table B. (Refer to paragraph 1.04)
6	Repeat Steps 1 through 5 for remaining frequencies indicated in Table B.	
7	Remove all test connections.	
8	Remove blocking tool from ON relay.	
9	At MTF— Remove make-busy plug from MB_ jack of sender under test.	
P. All-Lines-Busy Test		
14	Operate SIL key.	
15	Select AIL switch to select AIS line circuit (refer to paragraphs 1.13 and 1.14.)	

STEP	ACTION	VERIFICATION

TABLE B

M-TERMINAL	OSCILLATOR OUTPUT FREQUENCY	MAXIMUM PERMISSIBLE VARIATION (HZ ±1 PERCENT)
M12	700	698 to 705
M15	900	897 to 906
M21	1100	1097 to 1108
M22	1300	1296 to 1309
M25	1500	1495 to 1510
M35	1700	1695 to 1712

16	Operate keys and set switches as indicated in Test 1A of Test Chart.	
17	Insert make-busy plug into MB_ jack associated with AIS line circuit under test.	
18	Momentarily operate ST key.	For U and Y type marker— OFL TK1 lamps lighted. For wire-spring type marker— OFL lamp lighted.
19	Within 5 seconds— Momentarily operate RL key.	All lamps extinguished.
20	At MTF— Remove make-busy plug from MB_ jack of AIS line circuit under test.	
21	Repeat Steps 15 through 20 for all remaining lines.	
22	Restore all keys and switches not required in next test.	
23b	⧫If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
24	Operate (pull-out) CTR_ key associated with sender under test, if required.⧫	

Q. No-Digit Call

14	Operate keys and switches as indicated in Test 1A of Test Chart.	

STEP	ACTION	VERIFICATION
15	Operate ND, MOTL keys.	
16	Momentarily operate ST key.	OK lamp lighted.
17	After OK lamp lights, ***start timing.***	Overflow tone not heard.
18	Momentarily operate RL key.	All lamps extinguished.
19	Restore all keys and switches.	
20b	▶If office is equipped with stuck sender trunk identifier circuit— Operate SSI or ACTR key, as required.	
21	Operate (pull-out) CTR_ key associated with sender under test, if required.	

5. PREPARATION OF TEST CHART

5.01 The Test Chart is used to provide marker priming informaton for each test and to indicate the information which the sender should outpulse to the automatic intercept center. Information obtained from local office records should be used to fill in the Test Chart as follows.

(a) Fill in the ITC column as follows, using an incoming trunk class that is in use in the office.

(1) ***Tests 1 and 2:*** Select 1SE, 2SA, or 3NA when all numbers are physical.

(2) ***Tests 3 and 4:*** Select 7RN, 8SP, or 9NP when some of the numbers are physical.

(3) ***Tests 5 and 6:*** Select 4NE, 5ST, or 6NT when some of the numbers are theoretical.

(4) ***Tests 7 and 8:*** Select 1SE or ANE when some of the numbers are extra-theoretical.

(5) ***Test 9:*** Select one of the classes listed in Tests 1A through 8, as appropriate, for use with a local directory number.

(6) ***Test 10:*** Select one of the classes listed in Tests 1A through 8 having access to blank numbers identified by the hundreds digit.

(7) ***Test 11:*** Select one of the classes listed in Tests 1A through 8 having access to blank numbers identified by the thousands digit.

(8) ***Test 12:*** Fill in only if there are numbers in the office that are reached on a nondiscriminating basis in accordance with UOA or UOB to OCA_ cross-connections in the sender.

(9) ***Test 13:*** Select one of the classes listed in Tests 1A through 8, as appropriate, for use with a local directory number.

(b) Fill in the TH, H, T, and U columns as follows.

(1) ***Tests 2 Through 8 and 12:*** Use any combination of digits listed in Tests 1A through 1E.

(2) ***Test 9:*** Use digits corresponding to directory number arranged for trouble intercept. If there are no local numbers on trouble intercept, establish one by removing the G and F jumpers from a test number in the number group.

(3) ***Test 10:*** Use digits corresponding to a number group which is partially equipped.

(4) ***Test 11:*** Use digits corresponding to a number group which is not equipped.

(5) ***Test 13:*** ◗Use a digit corresponding to an intercepted number.◖

(c) ***Sender Outpulsing:*** The A through C digits to be filled in must be the office code associated with the ITC and the directory number entered in the TH, H, T, and U columns. The D through G digits would be the same as the digits entered in the TH, H, T, and U columns.

TEST CHART

TEST NO.	OFFICE FEATURES	TYPE OF INCPT	MARKER PRIMING						SENDER OUTPULSING							
			TRANSLATOR INDICATION	ITC	TH	H	T	U	CR	A	B	C	D	E	F	G
1A	Office A	RI	OA		1	3	6	0	3				1	3	6	0
1B	Office A	R	OA		3	6	0	7	3				3	6	0	7
1C	Office A	RI	OA		6	0	7	1	3				6	0	7	1
1D	Office A	RI	OA		0	7	1	3	3				0	7	1	3
1E	Office A	RI	OA		7	1	3	6	3				7	1	3	6
2	Office B	RI	OB						3							
3	Office A	RI	OA						3							
4	Office B	RI	OB						3							
5	Office A	RI	OA						3							
6	Office B	RI	OB						3							
7	Office A	RI	OA						3							
8	Office B	RI	OB						3							
9	Office A	TBI	OA						1							
10	Office A	BN	OA						0							
11	Office A	BN	OA						0							
12	Unidentified Office (PTN)	R	OA						3							
13	Office A	RI	OA			1	0	2	3					1	0	2