

PLANT REGISTERS—PART 16

TESTS

NO. 5 CROSSBAR OFFICES

1. GENERAL

1.01 This section is Part 16 in a series of sections that describe methods for testing plant registers.

1.02 The reasons for reissuing this section are listed below. Revision arrows are used to emphasize the more significant changes. Equipment Test Lists are not affected.

- (a) To add steps 15, 21, 27, 32 to Test BQ.
- (b) To add paragraphs 1.05 through 1.07, 2.04, 2.07.
- (c) To make minor changes as required.

1.03 The tests covered are:

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BP. AMA Magnitic Tape Recorder—Usage Count (MRUA, MRUB Registers): This test checks that a plant register scores on each usage of a recorder. **3**

BQ. AMA Magnetic Tape Recorder—Trouble Recorder Entries (MRTA, MRIB Registers): This test checks that a plant register scores each time a trouble recorder entry is started by a recorder. **5**

BR. AMA Magnetic Tape Recorder—Recorder Transfer Count (MRXR Register): This test checks that a plant register scores on each transfer or emergency transfer attempt by a recorder. **6**

1.04 If DRK lamp is lighted in the standby recorder, the tape must be changed before attempting a test in the standby recorder.

1.05 Plant registers are located either in a self-contained register cabinet and referred to as the plant register circuit or just above the trouble recorder perforator on the master test frame (MTF) trouble recorder bay.

1.06 **Lettered Steps:** A letter a, b, c, etc, added to step number in Parts 3 and 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.

1.07 Local instructions should be followed for recording and reporting any register operations caused by performing these tests.

2. APPARATUS

All Tests

2.01 Two head telephone sets are required when a portable lamp is not used.

2.02 Two W2W cords, 10 feet long, each equipped with a 310 plug, two 360-type tools (2W17C cords), two KS-6278 connecting clips, and two 108 cord tips (required when a portable test lamp is used).

2.03 38B lamp socket, equipped with a 2Y lamp (required when a portable test lamp is used).

NOTICE

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Test BQ

2.04 ♦Testing cord, 893 cord, 3 feet long, equipped with two 360A tools (1W13A cord), two 639A (contact connector) tools, and two 651-type (contact connector holder) tools (for making connections to fixed contacts of wire-spring-type relays).♦

Test BR

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

2.06 Testing cord, 893 cord, 6 feet long, equipped with two 360A tools (1W13B cord), one KS-6278 connecting clip, one 639A tool and one 651-type tool (for connecting battery or ground to contacts of wire-spring-type relays).

2.07 ♦When making connections to relays using testing cords listed in this section, use as covered in Section 069-131-811.♦

3. PREPARATION

STEP	ACTION	VERIFICATION
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All Tests

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|----|---|--|
| 1a | If tests are to be performed without portable test lamp—
Establish talking circuit between frames where test is to be performed and where observations are to be made. | |
| 2b | If tests are to be performed with portable test lamp—
At frame where action is to be taken—
Insert plug of 2W17C cord, equipped with two KS-6278 connecting clips, into SP jack of miscellaneous circuit. | |
| 3b | Determine from circuit drawing of circuit associated with register to be tested, location of terminal on terminal strip at which plant register circuit is connected. | |
| 4b | Connect one lead of 2W17C cord to terminal on terminal strip associated with plant register being tested. | |
| 5b | Connect other lead of 2W17C cord to battery. | |
| 6b | Connect leads of 38B lamp socket to leads of another 2W17C cord, equipped with two KS-6278 connecting clips. | |
| 7b | Insert plug of this 2W17C cord into any appearance of selected SP jack of miscellaneous circuit close to position where test is to be performed. | |

STEP	ACTION	VERIFICATION
8b	Place portable test lamp so that it can be easily observed.	
9b	To observe scoring of register when using portable test lamp proceed as follows: (a) For first observation of scoring of register, observe that portable test lamp indicates proper condition on lead and that register scores as required. (b) For subsequent observations of scoring of same register, observe portable test lamp indications only.	

4. METHOD

STEP	ACTION	VERIFICATION
BP. AMA Magnetic Tape Recorder—Recorder Usage Count (MRUA, MRUB Registers)		

Active Unit Test

10	At recorder and recorder control frame— Operate TAU key.	TAU lamp lighted.
11	Set CH SEL switch to CH0.	
12	Set LAMP DISPLAY switch to OFF.	
13	Set TMO SEL and TST SEL switches to NORM.	
14	Set AL4,7 through DL4,7 and AR0,1 through DR0,1 switches to ON. Set all other data input switches to OFF.	
15	Momentarily operate ST key. <i>Note:</i> RU2 and RU4 relays operated in recorder indicate 10 recorder usages.	At plant register circuit— If recorder usage counter relays are at 10 position— MRU_ plant register scored once.
16	At recorder and recorder control frame— Momentarily operate RL key.	
17c	If recorder usage counter relays are not at 10 position— Repeat Steps 15 and 16 as many times as necessary to reach 10 position.	At plant register circuit— MRU_ plant register scored once.
18	Repeat Steps 15 and 16 ten more times.	At plant register circuit— MRU_ plant register scored once.

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STEP	ACTION	VERIFICATION
19	At recorder and recorder control frame— Set all test data input switches and keys to OFF.	
Standby Unit Test		
◆ Note: Refer to paragraph 1.04◆		
20	At recorder and recorder control frame— Operate MB key for standby unit.	MB, OUT-OF-SERVICE lamps lighted. STANDBY lamp extinguished.
21	Operate TIU key.	
22	Set TMO SEL and TST SEL switches to NORM.	
23	Set CH SEL switch to select channel 0.	
24	Set AL4,7 through DL4,7 and AR0,1, through DR0,1 switches to ON. Restore all other test data input switches to OFF.	
25	Momentarily operate ST key. Note: RU2 and RU4 relays operated in recorder indicate 10 recorder usages.	At plant register circuit— If recorder usage counter relays are at 10 position— MRU_ plant register scored once.
26	At recorder and recorder control frame— Momentarily operate RL key.	
27c	If recorder usage counter relays are not at 10 position— Repeat Steps 15 and 16 as many times as necessary to reach 10 position.	At plant register circuit— MRU_ plant register scored once.
28	At recorder and recorder control frame— Repeat Steps 15 and 16 ten more times.	At plant register circuit— MRU_ plant register scored once.
29	At recorder and recorder control frame— Set all test data input switches to OFF.	
30	Release TIU key.	TIU lamp extinguished.
31	Momentarily operate MB key for out-of-service unit.	MB, OUT-OF-SERVICE lamps extinguished. STANDBY lamp lighted.

STEP	ACTION	VERIFICATION
BQ. AMA Magnetic Tape Recorder—Trouble Recorder Entries (MRTA, MRTB Registers)		
Active Unit Test		
10	At recorder and recorder control frame— Operate TAU key.	TAU lamp lighted.
11	Set CH SEL switch to CH0.	
12	Set LAMP DISPLAY switch to OFF.	
13	Set TMO SEL and TST SEL switches to NORM.	
14	Set AL4,7, BL4,7, AR0,1, BR0,1, CR0,1, and DR0,1 switches to ON. Set all other data input switches to OFF.	
15	◆Connect 3F of TCI relay to 6F of RLT relay.◆	
16	Momentarily operate ST key.	At plant register circuit— MRT_ plant register scored once.
17	At recorder and recorder control frame— Momentarily operate RL key.	
18	Release TAU key.	TAU lamp extinguished.
19	Set CH SEL switch to OFF.	
20	Set all test data input switches to OFF.	
21	◆Remove connection from TCI and RLT relays.◆	
Standby Unit Test		
	◆ Note: Refer to paragraph 1.04.◆	
22	At recorder and recorder control frame— Operate MB key for standby unit.	MB, OUT-OF-SERVICE lamps lighted. STANDBY lamp extinguished.
23	Operate TIU key.	TIU lamp lighted.
24	Set TMO SEL and TST SEL switches to NORM.	
25	Set CH SEL switch to select any channel for test.	
26	Set AL4,7, BL4,7, ARO,1, BRO,1, and DR0,1 switches to ON. Set all other data input switches to OFF.	

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STEP	ACTION	VERIFICATION
27	◆Connect 3F of TCI relay to 6F of RLT relay.◆	
28	Momentarily operate ST key.	At plant register circuit— MRT_ plant register scored once.
29	At recorder and recorder control frame— Momentarily operate RL key.	
30	Set all test data input switches to OFF.	
31	Release TIU key.	TIU lamp extinguished.
32	◆Remove connection from TCI and RLT relays.◆	
33	Momentarily operate MB key for out-of-service unit.	MB, OUT-OF-SERVICE lamps extinguished. STANDBY lamp lighted.

BR. AMA Magnetic Tape Recorder—Recorder Transfer Count (MRXR Register)

Active Unit Transfer

10	At recorder and recorder control frame— Insulate 1M of TRS relay in active unit.	
11	Insulate 8B of TRF relay in standby unit.	
12	Connect ground to 9F of CF relay in standby unit.	
13	Momentarily operate TRS key.	At plant register circuit— MRXR register scored once.
14	At recorder and recorder control frame— Remove insulators from TRS and TRF relays.	
15	Remove ground from CF relay.	

Standby Unit Transfer

◆**Note:** Refer to paragraph 1.04.◆

16	At recorder and recorder control frame— Insulate 1M of TRS relay in standby unit.	
17	Insulate 8B of TRF relay in standby unit.	
18	Momentarily operate TRS key.	At plant register circuit— MRXR register scored once.

STEP	ACTION	VERIFICATION
19	At recorder and recorder control frame— Remove insulators from TRS and TRF relays.	
Active Unit Emergency Transfer		
20	At recorder and recorder control frame— Block nonoperated ET and ET2 relays in active unit.	
21	Momentarily operate simultaneously EM TRAN key in active unit and ETGD key.	At plant register circuit— MRXR register scored once.
22	At recorder and recorder control frame— Remove blocking tools from ET and ET2 relays.	
Standby Unit Emergency Transfer		
♦ Note: Refer to paragraph 1.04.♦		
23	At recorder and recorder control frame— Block nonoperated ET, ET2 relays in standby unit.	
24	Momentarily operate simultaneously EM TRAN key in standby unit and ETGD key.	At plant register circuit— MRXR register scored once.
25	At recorder and recorder control frame— Remove blocking tools from ET and ET2 relays.	

