

SWITCHING SYSTEM NO. 400
 DIAL PULSE REGISTER CIRCUITS

OPERATION TESTS

1.00 GENERAL

1.01 This section covers the following tests:

A. Make Busy Test: Checks that when a register is made busy, a visual signal is lighted.

B. Pulse Counting Test

C. Time-Out Test: Checks register permanent signal and partial dial time-out

D. Unequipped Tens Digits 4 and 5 (20-line system) Test: Checks a 20-line system to ascertain that a call to the unequipped 40 and 50 group of stations will receive busy tone.

E. Unassigned Tens Digit 6, 7, 8, 9, or 0 Test: Checks that when universal line circuits are unassigned, any call to code 6, 7, 8, 9, or 0 will receive busy tone.

F. Register Return of Busy Tone Test: Checks that the register will return busy tone if the busy-tone trunk is busy,

1.02 Tests C through F are made with register not under test made busy. Register to be tested is seized in competition with regular service calls by means of test line. During the time register under test

is attached to test line, the system will be unable to complete a call.

1.03 During a part of Test F, the system will be unable to complete calls to busy-tone trunk.

1.04 Register 0 is located in slide 2 on mounting plates 7, 8, 9, and part of 10.

1.05 Register 1 is located in slide 2 on mounting plates 11, 12, 13, and part of 10.

2.00 APPARATUS REQUIRED

Test B

Dial hand set, 1011 type or equivalent, equipped with a 2W38A cord assembly consisting of W2CK cord, 471A jack, and 310 plug.

Tests B and F

Blocking and insulating tools, as required. See Section 069-020-801.

Tests A and C through F

258C plug (dummy).

Tests C through F

Dial handset, 1011 type or equivalent.

3.00 METHOD

| STEP | ACTION | VERIFICATION |
|--------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| <u>A. Make Busy Test</u> | | |
| 1 | In slide 2: When register to be tested is idle (<u>ON</u> relay normal), insert dummy plug into <u>TST</u> jack. | In slide 2: In register under test, RT lamp lights. |
| 2 | Remove dummy plug from <u>TST</u> jack. | RT lamp extinguished. |

| STEP | ACTION | VERIFICATION |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <u>B. Pulse Counting Test</u> | | |
| 1 | Operate dial hand test set key to MON. | |
| 2 | In slide 2: When register to be tested is idle (<u>ON</u> relay normal), insert plug of hand test set into <u>TST</u> jack. | In slide 2: In register under test, RT lamp lights. |
| 3 | Block <u>RA</u> relay operated. | |
| 4 | Block <u>PU</u> relay nonoperated. | |
| 5 | Operate hand test set key to TALK. | Dial tone heard. |
| 6 | Dial digit to be counted per Table A. | Dial tone removed on any digit except 1. <u>P</u> relays operate per Table A. |
| 7 | Operate hand test set key to MON. | <u>P</u> relays release. |
| 8 | Repeat Steps 5 through 7 for other digits to be counted. | Same as Steps 5 through 7. |
| 9 | Remove blocking tools from <u>RA</u> , <u>PU</u> relays. | |
| 10 | Remove hand test set plug from TST jack. | RT lamp extinguished. |

TABLE A

P RELAYS ASSOCIATED
WITH UNIT DIGIT DIALED

| Digit Dialed | P Relays Operated |
|--------------|---------------------|
| 1 | P1, P2 |
| 2 | P3, P2A |
| 3 | P1, P2, P3, P4, P2A |
| 4 | P3, P4, P2A |
| 5 | P1, P2, P4, P2A |
| 6 | P4, P5, P2A |
| 7 | P1, P2, P4, P5, P2A |
| 8 | P3, P4, P5, P2A |
| 9 | P1, P2, P3, P5, P2A |
| 0 | P3, P5, P2A |

C. Time-Out Test

- 1 Operate dial hand test set key to MON.
- 2 In slide 2:
Connect hand test set to test line.

| STEP | ACTION | VERIFICATION |
|------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | When register not under test is idle (ON relay normal), insert dummy plug into TST jack. | In slide 2: In register not under test, RT lamp lights. |
| 4 | Operate hand test set key to TALK. | When register under test is seized, dial tone is heard. After an interval of 8 to 16 seconds, register times out, releases. Dial tone removed. When register is reseized, dial tone is heard. |
| 5 | Operate hand test set key to MON. | Dial tone removed. |
| 6 | Operate hand test set key to TALK. | Dial tone heard. |
| 7 | Dial digit 3. | Dial tone removed. After an interval of 8 to 16 seconds, register times out, releases. When register is reseized, dial tone is heard. |
| 8 | Operate hand test set key to MON. | Dial tone removed. |
| 9 | Removed dummy plug from <u>TST</u> jack in register not under test. | In register not under test, RT lamp extinguished. |
| 10 | Disconnect hand test set from test line. | |

D. Unequipped Tens Digits 4 and 5 (20-line system) Test

| | | |
|----|-------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| 1 | Operate dial hand test set key to MON. | |
| 2 | In slide 2: Connect hand test set to test line. | |
| 3 | When register not under test is idle (ON relay normal), insert dummy plug into <u>TST</u> jack. | In slide 2: In register not under test, RT lamp lights. |
| 4 | Operate hand test set key to TALK. | When register under test is seized, dial tone is heard. |
| 5 | Dial digit 4. | Busy tone heard. |
| 6 | Operate hand test set key to MON. | Busy tone removed. |
| 7 | Operate hand test set key to TALK. | Dial tone heard. |
| 8 | Dial digit 5. | Busy tone heard. |
| 9 | Operate hand test set key to MON. | Busy tone removed. |
| 10 | Remove dummy plug from TST jack in register not under test. | In register not under test, RT lamp extinguished. |
| 11 | Disconnect hand test set from test line. | |

| STEP | ACTION | VERIFICATION |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <u>E. Unassigned Tens Digit 6, 7, 8, 9, or 0 Test</u> | | |
| 1 | Operate dial hand test set key to MON. | |
| 2 | In slide 2: Connect hand test set to test line. | |
| 3 | When register not under test is idle (<u>ON</u> relay normal), insert dummy plug into <u>TST</u> jack. | In slide 2: In register not under test, RT lamp lights. |
| 4 | Operate hand test set key to TALK. | When register under test is seized, dial tone is heard. |
| 5 | Dial lowest unassigned tens digit 6, 7, 8, 9, or 0. | Busy tone heard. |
| 6 | Operate hand test set key to MON. | Busy tone removed. |
| 7 | Repeat Steps 4 through 6 for each unassigned digit to be tested. | Same as Steps 4, 5, 6. |
| 8 | Remove dummy plug from TST jack in register not under test. | In register not under test, RT lamp extinguished. |
| 9 | Disconnect hand test set from test line. | |
| <u>F. Register Return of Busy Tone Test</u> | | |
| 1 | In slide 3, mounting plate 9: Make busy-tone trunk busy by blocking <u>RA</u> relay operated in busy-tone trunk. | |
| 2 | Operate dial hand test set key to MON. | |
| 3 | In slide 2: Connect hand test set to test line. | |
| 4 | When register not under test is idle (<u>ON</u> relay normal), insert dummy plug into <u>TST</u> jack. | In slide 2: In register not under test, RT lamp lights. |
| 5 | Operate hand test set key to TALK. | When register under test is seized, dial tone is heard. |
| 6 | Dial 39. | Busy tone heard. In register under test, <u>BY</u> relay operated. |
| 7 | Operate hand test set key to MON. | Busy tone removed. In register under test, <u>BY</u> relay released. |
| 8 | Remove dummy plug from <u>TST</u> jack. | In register not under test, RT lamp extinguished. |
| 9 | Disconnect hand test set from test line. | |
| 10 | In slide 3, mounting plate 9: Remove blocking tool from <u>RA</u> relay in busy-tone trunk. | |