

Task Oriented Practice
(TOP)

756A PBX

VOLUME 2 OF 2

REPAIR

| | |
|----------------------------------|----------|
| ROUTINE TASK LIST | VOLUME 1 |
| ACCEPTABLE TASK LIST | VOLUME 1 |
| SERVICE ORDER LIST | VOLUME 1 |
| TROUBLE INDICATOR LIST | 095 |

BELL SYSTEM PRACTICES
AT&TCo Standard

551-100-101
Issue 1, May 1975

Task Oriented Practice
(TOP)

756A PBX

VOLUME 2 OF 2

REPAIR

NOTE

**Before using TOP for the first time, complete the
TOP-USER Plant Training Course—PTC No. 278.**

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| TROUBLE INDICATED | PROCEDURE NUMBER | |
|---|------------------|----------|
| Alarm troubles should normally be cleared first. For general trouble clearing information (including marker), refer to General 756A PBX Trouble Clearing—TAD-163. | | |
| ALARM LAMP ON AT SLIDE 1: | | |
| COAL (Camp-on Alarm Lamp) | TAP-100 | |
| EXT (External) | TAP-101 | |
| FA (Fuse Alarm) | TAP-102 | |
| JRAL (Juncture Register Alarm Lamp) | TAP-103 | |
| LAL1 (Link Test Alarm Lamp 1) | TAP-104 | |
| LAL2 (Link Test Alarm Lamp 2) | TAP-105 | |
| MAL (Miscellaneous Alarm Lamp) | TAP-106 | |
| PA (Power Alarm) | TAP-107 | |
| RLAL (Release Alarm Lamp) | TAP-108 | |
| TRAL (Tens Release Alarm Lamp) | TAP-109 | |
| TAL (Tens Alarm Lamp) | TAP-110 | |
| TS (Test) | TAP-111 | |
| TOAL (Time-out Alarm Lamp) | TAP-112 | |
| TAAL (Trouble Advance Alarm Lamp) | TAP-113 | |
| UAL (Units Alarm Lamp) | TAP-114 | |
| UAL1 (Units Alarm Lamp 1) | TAP-115 | |
| UAL2 (Units Alarm Lamp 2) | TAP-116 | |
| XCAL (Cross-check Alarm Lamp) | TAP-117 | |
| <i>(continued on page 2)</i> | | |
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| TROUBLE INDICATED | PROCEDURE NUMBER |
|--|-----------------------|
| ALARM LAMP ON AT CONSOLE: | |
| TR (Trouble) — <i>Check Other Alarm Lamps in Slide 1</i> | |
| ARB (All Registers Busy) | TAP-118 |
| FAILURE REPORTED WITH PROGRESS OF CALL FROM: | |
| Attendant Trunk-to-Station | TAP-119 |
| CO Trunk-to-Station | TAP-120 |
| Incoming Ringdown Tie Trunk-to-Station | TAP-121 |
| Outgoing Manual and Dial Selected Tie Trunk | TAP-122 |
| Station-to-Attendant Trunk | TAP-123 |
| Station-to-CO Trunk | TAP-124 |
| Station-to-Station | TAP-125 |
| FAILURE REPORTED WITH: | |
| Attendant Audible Signal | TAP-126 |
| Attendant Can't be Called on CO Trunk | TAP-127 |
| Attendant-Controlled Dial Conference | TAP-128 |
| Attendant Direct Station Selection | TAP-129 |
| Attendant Dial Back Trouble | TAP-130 |
| Attendant Transfer | TAP-131 |
| Attendant Trunk-to-Station Hold | TAP-132 |
| Busy-Tone Trunk | TAP-133 |
| <i>(continued on page 3)</i> | |
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| TROUBLE INDICATED | PROCEDURE NUMBER |
|--|-----------------------|
| FAILURE REPORTED WITH: (cont'd) | |
| Busy Verification | TAP-134 |
| Call Transfer Individual (Was Station Dial Transfer) | TAP-135 |
| Camp-On | TAP-136 |
| Console CO or Attendant Trunk Lamp | TAP-137 |
| Console Key | TAP-138 |
| CO Trunk Release | TAP-139 |
| Dial 0 | TAP-140 |
| Intercept | TAP-141 |
| Meet-Me-Type Conference | TAP-142 |
| Message Waiting | TAP-143 |
| Night Service | TAP-144 |
| Paging | TAP-145 |
| PBX Dialing | TAP-146 |
| PBX Dial Tone | TAP-147 |
| Power Failure Transfer | TAP-148 |
| Recorded Telephone Dictation | TAP-149 |
| Ringdown Tie Trunk | TAP-150 |
| Station Can't Be Called | TAP-151 |
| Station Can't Call Out on CO Trunk | TAP-152 |
| Station-Controlled Dial Conference | TAP-153 |
| Station False Busy | TAP-154 |
| <i>(continued on page 4)</i> | |
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| TROUBLE INDICATED | PROCEDURE NUMBER | | | | | | |
|---|---|---------|----------|-------------|-----|-------------|-----|
| FAILURE REPORTED WITH: (cont'd) | | | | | | | |
| Station Inward Restriction | TAP-155 | | | | | | |
| Station Message Register | TAP-156 | | | | | | |
| TOUCH-TONE® | TAP-157 | | | | | | |
| Traffic Measurement | TAP-158 | | | | | | |
| Traffic Register | TAP-159 | | | | | | |
| Trunk Answer From Any Station (Was Remote Trunk Answer) | TAP-160 | | | | | | |
| 3A Code Call | TAP-161 | | | | | | |
| 556A Switchboard | TAP-162 | | | | | | |
| | | | | | | | |
| 557 TROUBLE INDICATOR LIST – 756A PBX | <table border="1"> <tr> <td data-bbox="1670 1301 1840 1343">Issue 1</td> <td data-bbox="1840 1301 2002 1343">May 1975</td> </tr> <tr> <td data-bbox="1670 1343 1840 1384">551-100-101</td> <td data-bbox="1840 1343 2002 1384">TIL</td> </tr> <tr> <td data-bbox="1670 1384 1840 1425">PAGE 4 of 4</td> <td data-bbox="1840 1384 2002 1425">095</td> </tr> </table> | Issue 1 | May 1975 | 551-100-101 | TIL | PAGE 4 of 4 | 095 |
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| PAGE 4 of 4 | 095 | | | | | | |

[1] Connect 1014A handset to test line STA 39 operating TALK key, then originate camp-on call from console to STA 39

[2] See FIG. 1. Are any LT-(2-9) relays (slide 6P) operated

[3] Is COAL relay (slide 1AB) operated

[4] See FIG. 2. Check for foreign ground causing COAL lamp (slide 1) to light

No

Yes

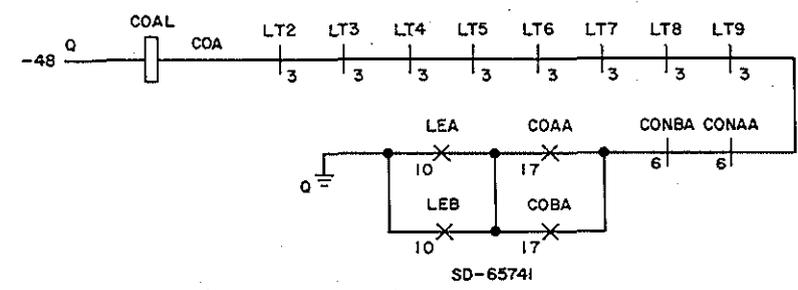
Yes

No

Yes

No

FIG. 1



[6] Are camp-on relays (COAA, COBA, CONBA, and CONAA) in state shown in FIG. 1 during link testing sequence of marker

[8] See FIG. 1. Check LT-(2-9) relay circuit operate paths [FIG. 3] to determine why LT relay of seized link did not operate

[7] Check operate path for camp-on relays (slide 6R, S, T) using SD-65741, sheet B16 to locate and clear trouble

[9] Depress AR key (slide 1)

[10] Depress AR key (slide 1)

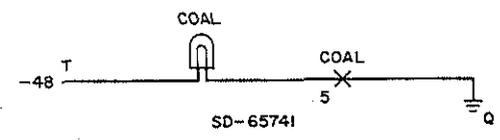
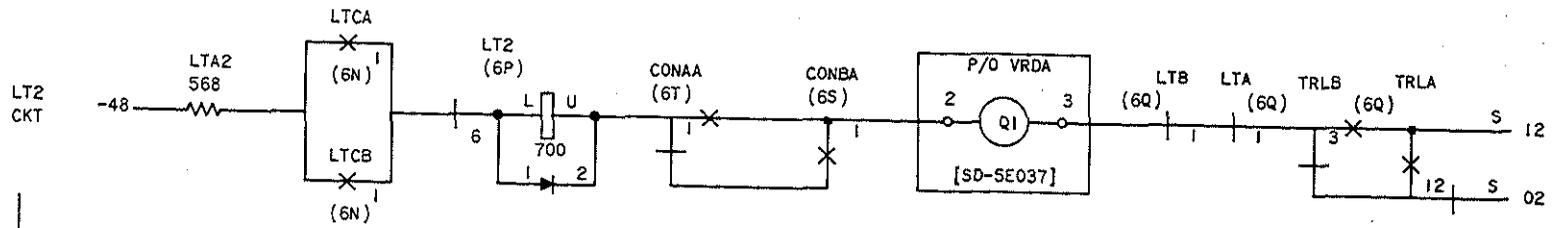


FIG. 2

CLEAR CAMP-ON ALARM (COAL) TROUBLE

| | |
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| LT CKT | RESISTOR DESIG. | LTC(A,B) CONTACTS | LT RELAY | CON (AA, BA) CONTACTS | VRD-CONNECTIONS | LT(A, B) CONTACT | TRL(A, B) CONTACTS |
|--------|-----------------|-------------------|----------|-----------------------|-----------------|------------------|--------------------|
| LT3 | LTA3 | 2 | LT3 | AA 2, BA 2 | 4 VRDA (Q2) 5 | 2 | B 4, A11 |
| LT4 | LTA4 | 3 | LT4 | AA 3, BA 3 | 6 VRDA (Q3) 7 | 3 | B 6, A10 |
| LT5 | LTA5 | 4 | LT5 | AA 4, BA 4 | 8 VRDA (Q4) 9 | 4 | B 7, A9 |
| LT6 | LTA6 | 5 | LT6 | AA 9, BA 9 | 2 VRDB (Q1) 3 | 9 | A 3, B12 |
| LT7 | LTA7 | 6 | LT7 | AA10, BA10 | 4 VRDB (Q2) 5 | 10 | A 4, B11 |
| LT8 | LTA8 | 7 | LT8 | AA11, BA11 | 6 VRDB (Q3) 7 | 11 | A 6, B10 |

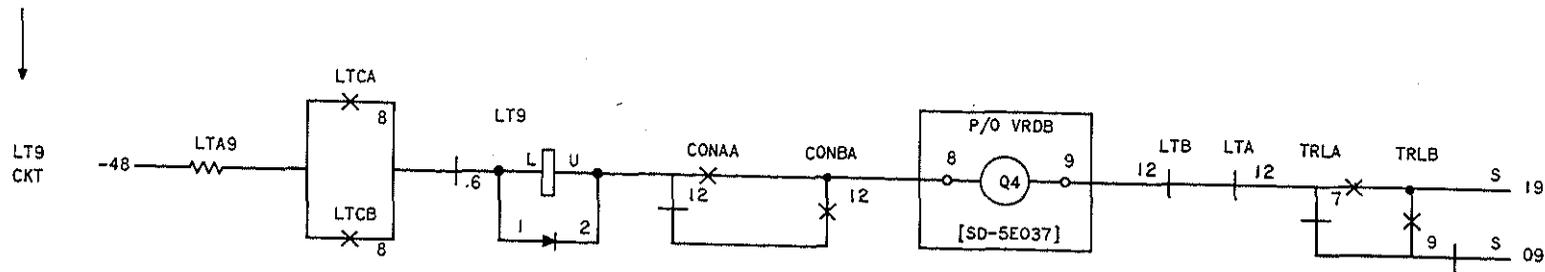


FIG. 3

CLEAR CAMP-ON ALARM (COAL) TROUBLE

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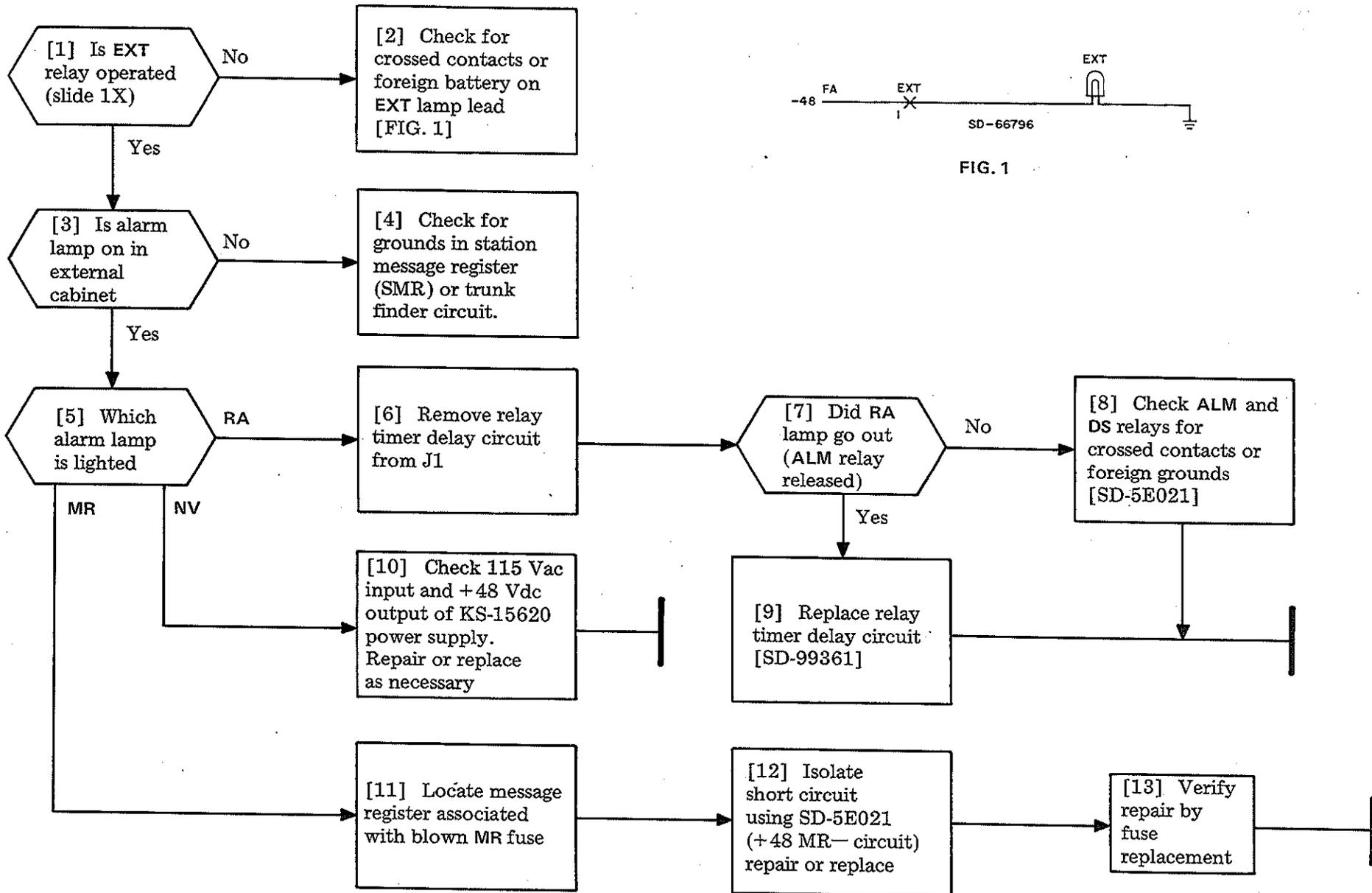


FIG. 1

CLEAR EXTERNAL (EXT) ALARM TROUBLE

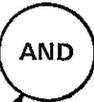
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SUMMARY

For any blown fuse, TABLE A gives the associated circuit and equipment location. Using this information, repair any defects found on inspection and replace blown fuse. If fuse blows again, trouble must be isolated using the associated schematic drawing listed in TABLE A. See EXAMPLE on page 3.

[1] On TABLE A, find designation and circuit associated with blown fuse

[2] Find slide and mounting plate location(s) of equipment associated with blown fuse



Equipment located

[3] See CAUTION. Restore crossed or misaligned wire-spring relay contacts

[4] Repair any wiring found pinched between mounting plates

[5] Inspect for bare wiring touching mounting plate(s) or adjacent components

[6] Inspect wiring side of equipment for any bent terminals touching other terminals or framework

[7] Replace blown fuse with same type fuse



Trouble located by inspection cleared

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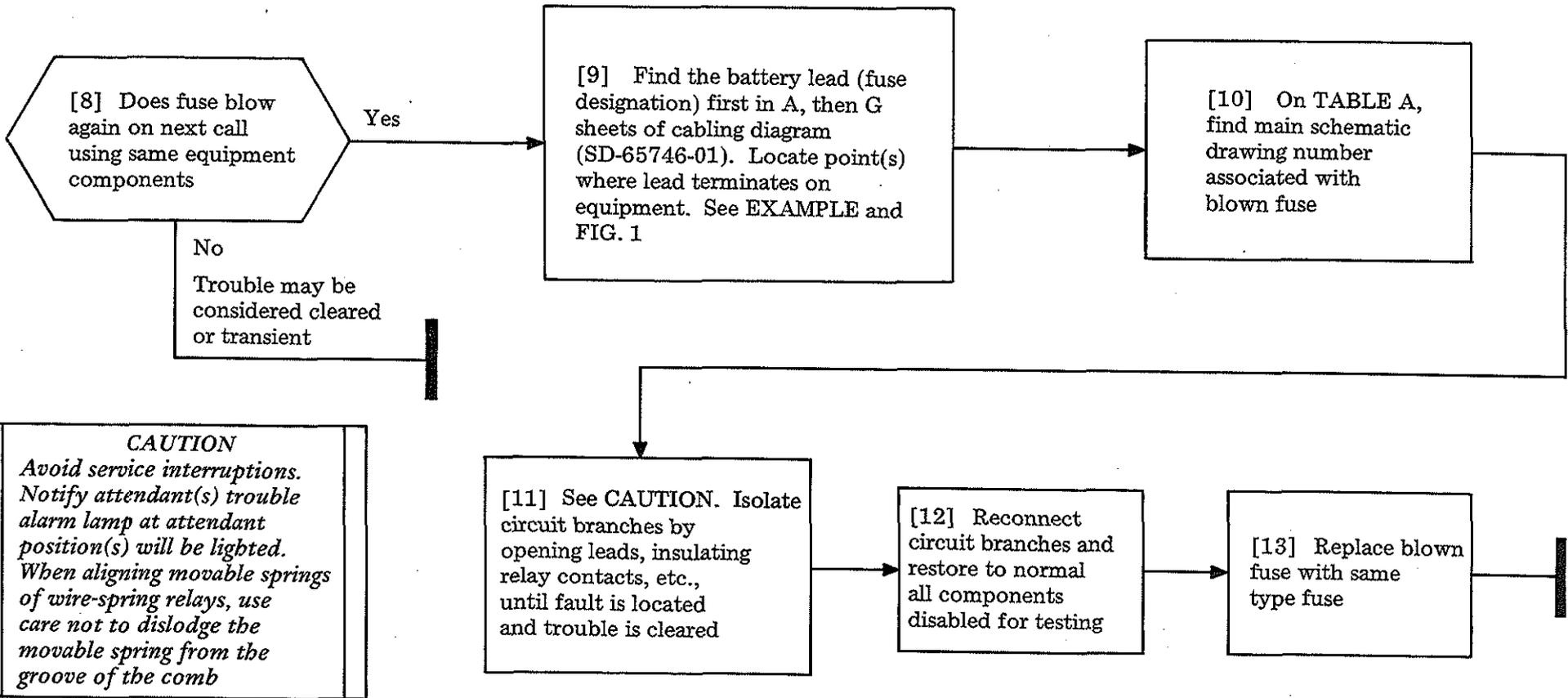
CAUTION
 Avoid service interruptions. Notify attendant(s) trouble alarm lamp at attendant position(s) will be lighted. When aligning movable springs of wire-spring relays, use care not to dislodge the movable spring from the groove of the comb

| | |
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TABLE A
LOCATION OF EQUIPMENT ASSOCIATED WITH BLOWN FUSE AT SLIDE I, MOUNTING PLATE Y OR Z (SD-66796-01*)

| FUSE | | LOC OF ASSOC EQ | | FUSE | | LOC OF ASSOC EQ | | FUSE | | LOC OF ASSOC EQ | | FUSE | | LOC OF ASSOC EQ | |
|-------|--------------------------|-------------------|-------------------|-------|----------------------|-------------------|-------------------|--------|----------------------|-------------------|-------------------|---|----------------|-----------------|-------------------|
| DESIG | CIRCUIT | SLIDE AND MTG PLT | SCHEMATIC DRAWING | DESIG | CIRCUIT | SLIDE AND MTG PLT | SCHEMATIC DRAWING | DESIG | CIRCUIT | SLIDE AND MTG PLT | SCHEMATIC DRAWING | DESIG | CIRCUIT | SLIDE MTG PLT | SCHEMATIC DRAWING |
| A | MARKER | 6AB | 65741-01 | FT | POWER SUPPLY | 1W, 6S | SD-81326-02 | A5 | STA MESS. REG 5-9 | † | 5E021-01 | SD | SWBD † | † | ‡ |
| ATO | ATND TRUNK 0-2 | 4N, 5Y | 65753-01 | G | MARKER | 2L, 6T | 65741-01 | A6 | | | | | | | |
| ATI | | 4T, 5Z | | H | | 2L, 6S | | A7 | | | | | | | |
| AT2 | | 4T, 5AA | | J | | 6R | | A8 | | | | | | | |
| API | ATND POS1, 2 | 5V | 65757-01 | JT0 | JUNCTORS 0-5 | 3T | 65750-01 | A9 | | | | | | | |
| AP2 | | 5J | | JT1 | | 3T | | M | | | | | | | |
| B | MARKER | 6AB | 65741-01 | JT2 | JUNCTORS 0-5 | 3U | 65741-01 | N | MARKER | 1AA, 6AA | 65741-01 | T0 | MARKER | 1AB | 65741-01 |
| BT | BUSY TONE | 4AA | 65754-01 | JT3 | | 4Y | | P | | 6Z | | T1 | | 4AA, 6AB | |
| C | MARKER | 6Z | 65741-01 | JT4 | | 4Y | | Q | 1AA, 6J | T80 | | T1E, DIAL CONF, REC TEL DICT, 3A CODE CALL, MISC, ETC. 80-89 | 2N | | |
| CO0 | CO TRUNKS 0-9 | 4T, 5B | 65752-01 | JT5 | | 3U | | R | 6AB | T81 | | | 2N | | |
| CO1 | | 4T, 5D | | K | 6R | RA0 | 6C | T82 | 2N | | | | | | |
| CO2 | | 4T, 5F | | L | 1AA, 6AA | RB0 | REGISTER 0 | 4T, 6C | T83 | 2N | | | | | |
| CO3 | | 4T, 5J | | L2 | 65741-01 | MARKER | 2P, 6Z | RC0 | 6C | T84 | 2N | | | | |
| CO4 | | 4T, 5J | | L3 | | | 2L, 6Z | RA1 | 6F | T85 | 2P, 3V | | | | |
| CO5 | | 4N, 5N | | L4 | | | 3L, 6Z | RB1 | REGISTER 1 | 3N, 6F | T86 | | 2P, 3V | | |
| CO6 | | 4N, 5Q | | L5 | | | 3L, 6Z | RC1 | 6F | T87 | 2P, 3V | | | | |
| CO7 | | 4N, 5S | | L6 | 4L, 6Z | S | MARKER | 3V, 6Q | 65741-01 | T88 | 2P, 3V | | | | |
| CO8 | | 4N, 5V | | L7 | 4L, 6Z | S0 | | 2F, 4T | | T89 | TRAFFIC REG | | 1W | 5E010-01 | |
| CO9 | | 4N, 5V | | TTA | POWER SUPPLY | 1A | | S1 | | 2F, 4T | UA | MARKER | 6V | 65741-01 | |
| D | MARKER | 6Z | 65741-01 | TTB | 1A | S23 | | 2G, 4U | | UB | 6V | | | | |
| E | | 6Y | | A0 | 65741-01 | MARKER | 2H, 4V | X | 6U | | | | | | |
| F | | 6X | | A1 | | | S45 | 2J, 4W | Y | 6U | | | | | |
| FA | ALARM, TRFR, AND TEST | 2L, 5J | 66796-01* | A2 | STA MESS. REG 0-4 | † | 5E021-01 | S67 | MARKER | 2K, 4X | 65741-01 | 1R | INWARD REST | † | 5E003-01 |
| FC1 | POWER SUPPLY | 1B | SD-81326-02 | A3 | MARKER | † | 5E021-01 | S89 | | SWBD | | † | ‡ | DSS | DIRECT STA SEL |
| FC2 | | 1B | | A4 | | SC | | Z | MARKER | | 6T | 65741-01 | | | |
| | | | | | | | | | | | | MBD | MAKE-BUSY | 2AB | 5E029-01 |

* REPLACED SD-65743-01 WHICH WAS RATED MD IN MARCH 1962
 † EXTERNAL
 ‡ MAY BE 556- OR 608-TYPE SWITCHBOARD DRAWINGS



EXAMPLE

If ATO fuse is blown, TABLE A shows that the circuit is attendant trunk 0 and the associated equipment is located both at slide 4, mounting plate N, and at slide 5, mounting plate Y. Sheet A2 of cabling diagram SD-65746-01 shows ATO battery lead is located on sheets G41 and G46. See FIG. 1. Sheet G41 shows the ATO battery lead terminates on lower winding terminal of trunk hold magnet for vertical 0, crossbar switch 8. Sheet G46 shows ATO battery lead also terminates on 1 lower (winding terminal) of AC relay. TABLE A identifies SD-65753-01 as the attendant trunk schematic drawing.

| | |
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[1] Originate a station-to-station call to test line STA 39 using handset 1014A or equivalent.
[TAD-163 and NOTE 1]

[2] Is any relay JR-(0-5) at slide 6X operated [FIG. 1]

No

[3] Check operate path of JR relays and clear trouble using SD-65741, sheet B13

Yes

[4] Are JREA or JREB relays (slide 6X, Y) operated

No

[5] See FIG. 2. Check for shorted or crossed contacts in JR relays causing JREA and JREB relays not to operate [NOTE 2]

Yes

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[6] Depress AR key (slide 1)

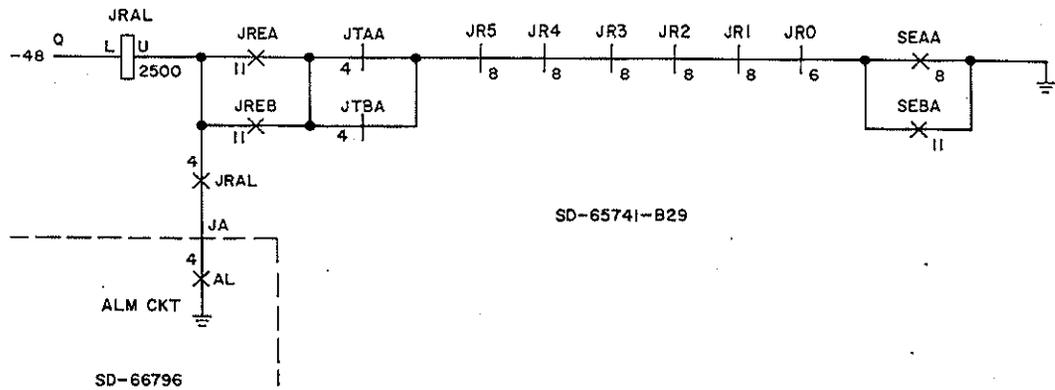


FIG. 1

NOTES

1. This is a junctor class call and will exercise the junctor relays and circuit and indicate the JRAL alarm condition
2. JREA and JREB relays should operate only when one of relays JR-(0-5) operate

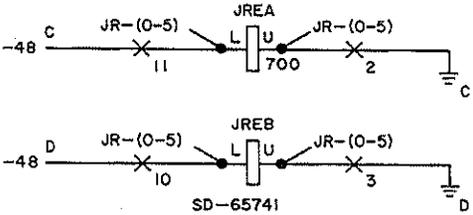
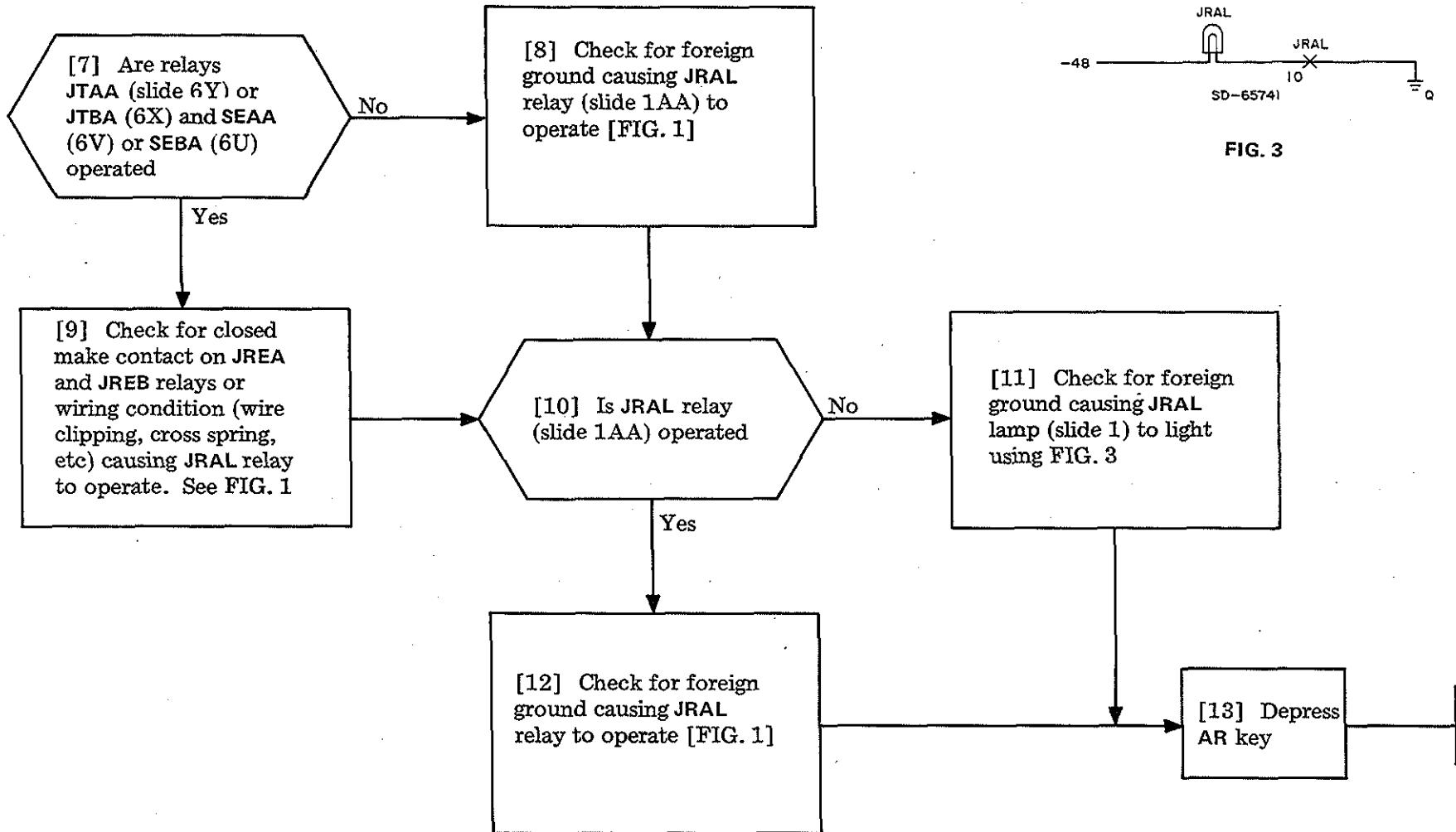


FIG. 2

CLEAR JUNCTOR REGISTER ALARM (JRAL) TROUBLE

| | |
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[1] Connect test handset to test line Station 39 and originate station-to-station, trunk-to-station, or trunk-to-trunk (use camp-on condition)

[2] See TABLE A. Check for operation of relay pairs [NOTE 1]

[3] Did each relay pair operate or release together

No

[4] Determine relay pair out of sequence. Locate and clear trouble [TABLE A]

[5] Depress AR key (slide 1)

Yes

[6] See FIG. 1. Check for operation of LCK1 or LCK2 relay (slide 6P) causing LAL1 relay to operate

Page 2

NOTE 1
If both relays in a pair are not operated or released at the same time, LAL1 relay will operate

| TABLE A | | | |
|------------|----------------------|--------------|-----------------------|
| RELAY PAIR | CONTACTS TO INSULATE | SLIDE NUMBER | SD-65741 SHEET NUMBER |
| LTAA/LTBA | 7M, B/7M, B | 6Q | B40 |
| COA/COB | 4M, B/4M, B | 6T/6S | B16 |
| CONA/CONB | 8M, B/8M, B | 6T/6S | B16 |
| CONA/CONAA | 6M, B/6 & 7M, B | 6T | B16 |
| CONB/CONBA | 6M, B/6 & 7M, B | 6S | B16 |
| COSA/COSB | 1M, B/1M, B | 6P | B40 |
| LEAA/LEBA | 9M, B/9M, B | 6Q | B38 |
| LEA/LEAA | 6M, B/6M, B | 6Q | B38 |
| LEB/LEBA | 6M, B/6M, B | 6Q | B38 |
| TRLA/TRLB | 5M, B/5M, B | 6Q | B40 |
| WIL/WILA | 10M, B/12M, B | 6L/6M | B24/32 |
| WL/WLA | 8M, B/1M, B | 6L/6M | B24/32 |

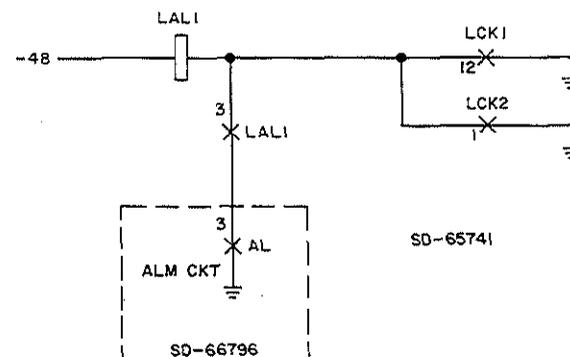
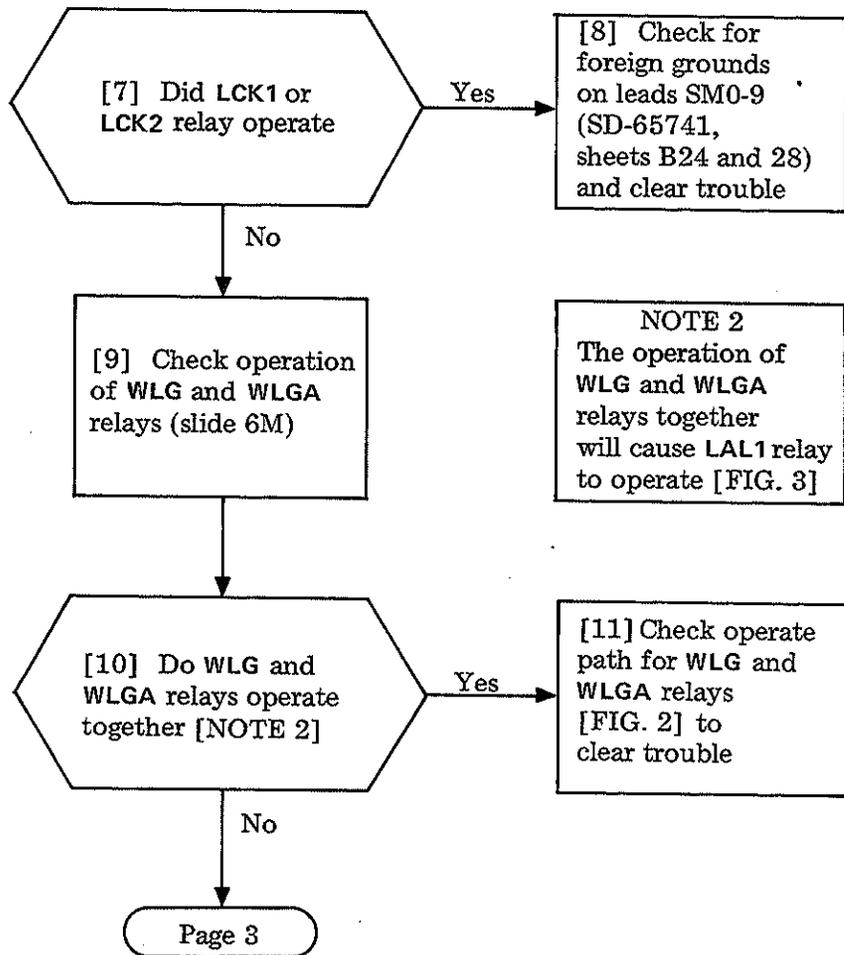


FIG. 1



NOTE 2
 The operation of WLGA and WLGA relays together will cause LAL1 relay to operate [FIG. 3]

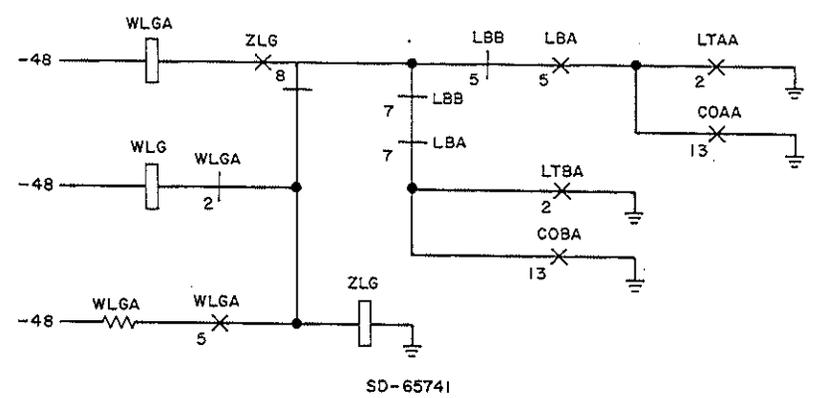


FIG. 2

| | |
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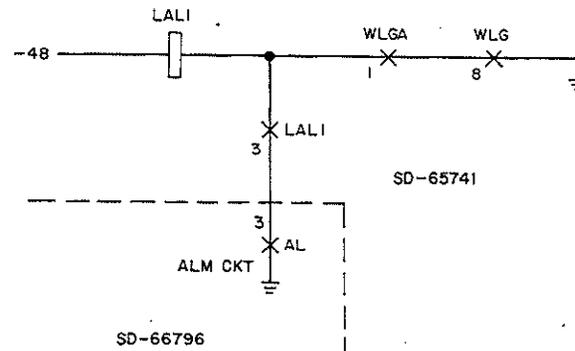
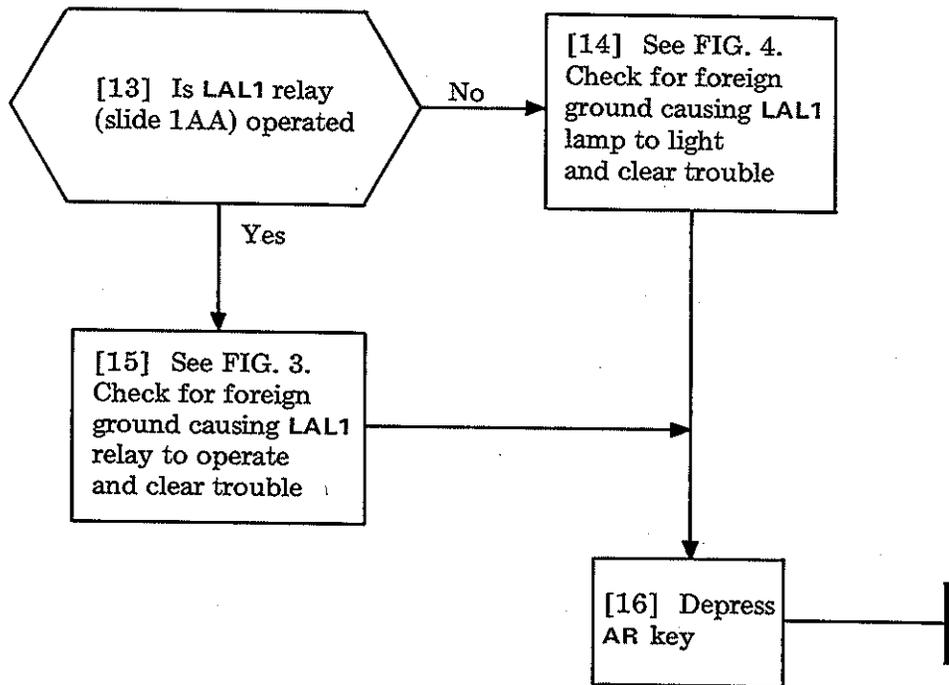


FIG. 3

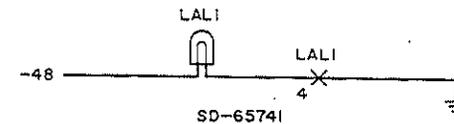


FIG. 4

CLEAR LINK TEST ALARM (LAL1) TROUBLE

| | |
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[1] Connect 1014A handset to test line STA 39 and originate station-to-station calls [TAD-163]

[2] See FIG. 1. Check for operation of relay pairs LBA, B; ALBA, B; and SMTA, B (slides 6P and 6Q)
[NOTE]

NOTE
If both relays in a pair are not operated or released at the same time, LAL2 and LAL2A relays will operate

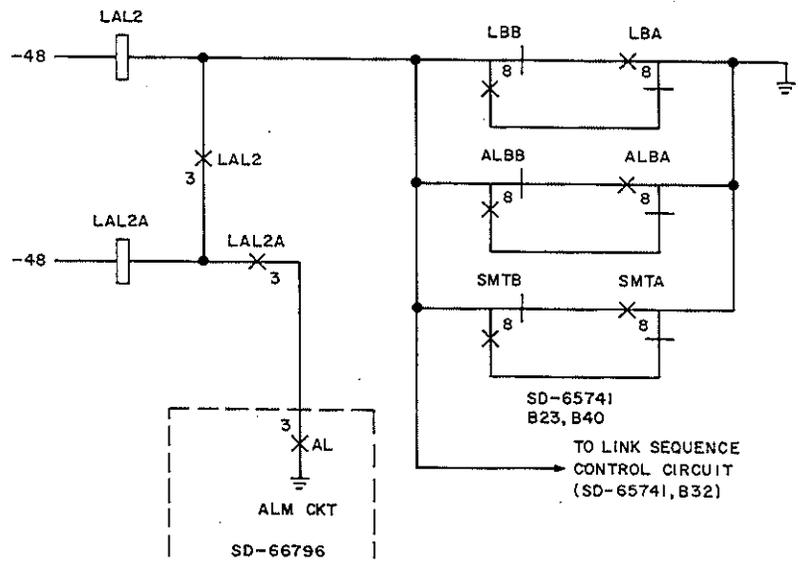
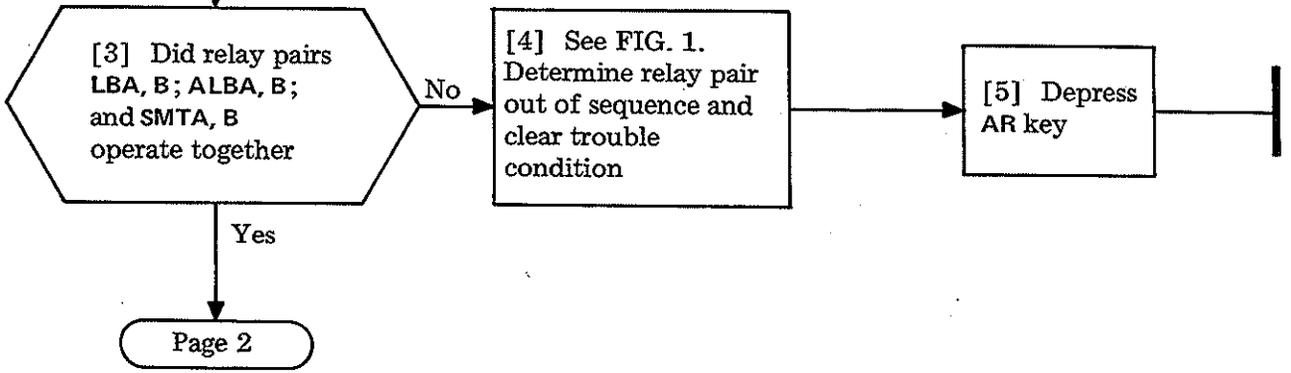


FIG. 1



| | |
|-------------|----------|
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[6] Check operation of relays in link sequence control circuit using SD-65741, sheet B32, by insulating relay contacts until trouble is located [TAD-163]

[7] Did link sequence control circuit operate without trouble

[9] Are LAL2 and LAL2A relays operated

[11] See FIG. 1. Check for foreign ground causing LAL2 and LAL2A relays to operate and clear trouble

[8] Determine trouble condition by exercising marker and link circuits, isolating relays as indicated in step 2, and clear trouble

[10] See FIG. 2. Check for foreign ground causing LAL2 lamp to light and clear trouble

[12] Depress AR key (slide 1)

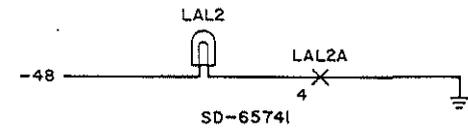


FIG. 2

CLEAR LINK TEST ALARM (LAL2) TROUBLE

| | |
|-------------|----------|
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[1] Using 1014A handset, originate station-to-station calls to test line STA 39 [TAD-163]

[2] See FIG. 1. Check for operation of relay pairs LUCA, B (slide 6V, U); BTCA, B (6T, S); HMKA, B (6V, U); and LTA, B (6Q) [NOTE]

NOTE
If both relays in a pair are not operated or released at the same time, MAL relay will operate

| TABLE A | | |
|---------|--------------------|------------|
| RELAY | SD-65741 SHEET NO. | SLIDE LOC. |
| LUCA | B8A | 6V |
| LUCB | B8A | 6U |
| BTCA | B15 | 6T |
| BTCB | B15 | 6S |
| HMKA | B9 | 6V |
| HMKB | B9 | 6U |
| LTA | B22 | 6Q |
| LTB | B22 | 6Q |

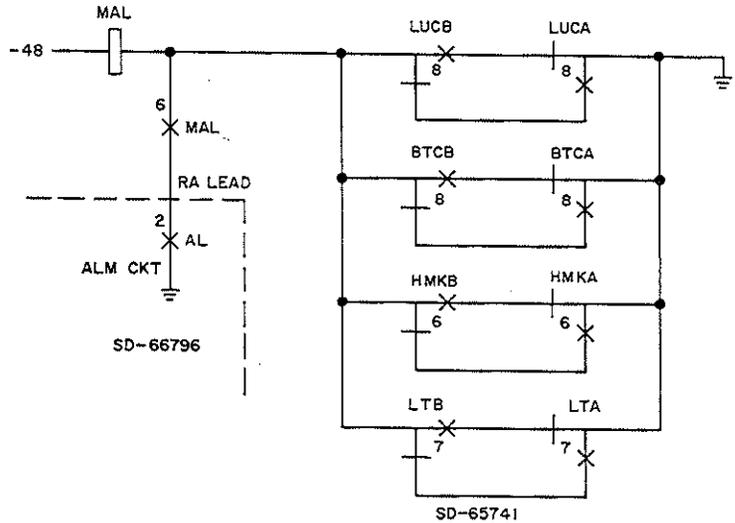


FIG. 1

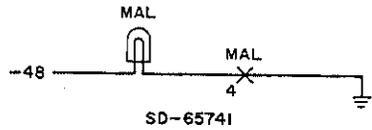
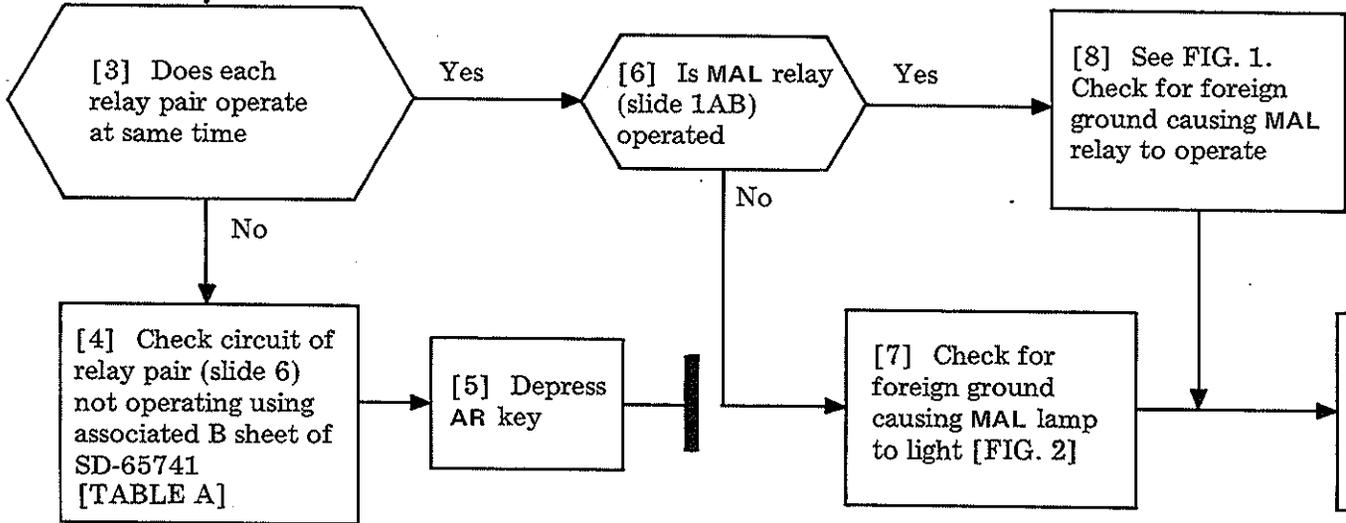


FIG. 2

CLEAR MISCELLANEOUS ALARM (MAL) TROUBLE

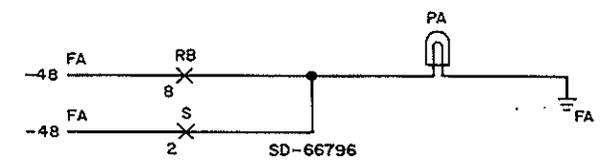
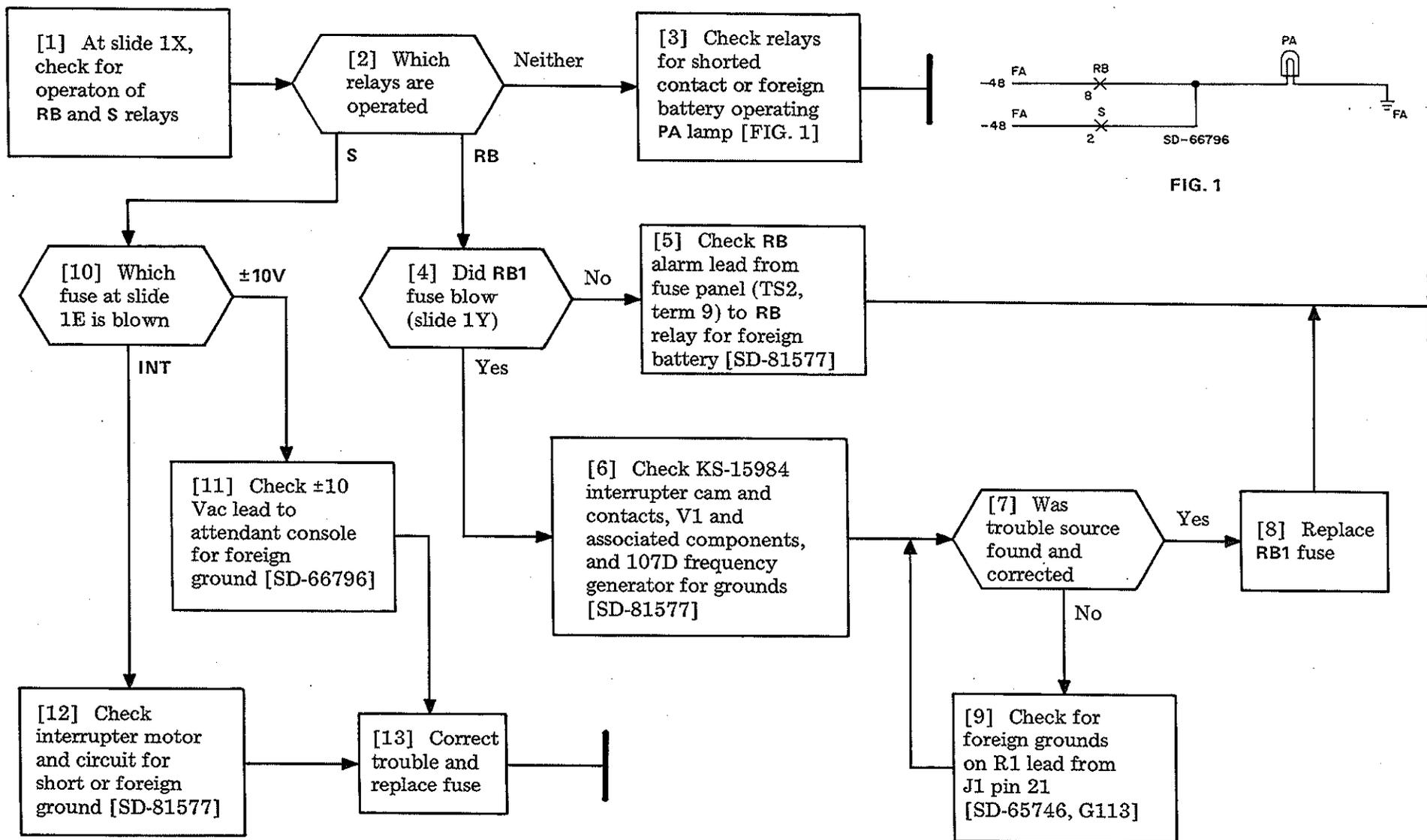


FIG. 1

[1] Originate station-to-station calls using 1014A handset or equivalent

[2] See FIG. 1. Check for operation of relay pairs: RLSA, AA (slide 6K); RLSB, BA (6J); RLA, B (6T, S); RLSA, B (6K, J); and TSDA, B (6R)
[NOTE]

[3] Does each relay pair operate or release together

No

[5] Determine relay pair out of sequence and clear trouble using SD-65741, sheet B15, B18, B25A, F6, F7, or F10

Page 3

Yes

[4] See FIG. 2. Check for operation of relays RLA, RLAA, and RLAB at same time (slide 6T)

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NOTE

If both relays in a pair are not operated or released at the same time, the RLAL relay will operate [TAD-163]

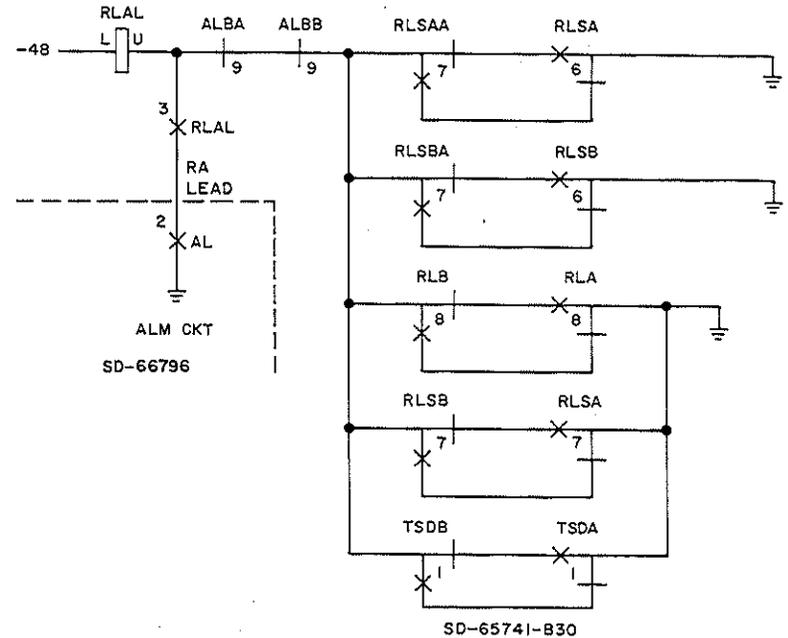


FIG. 1

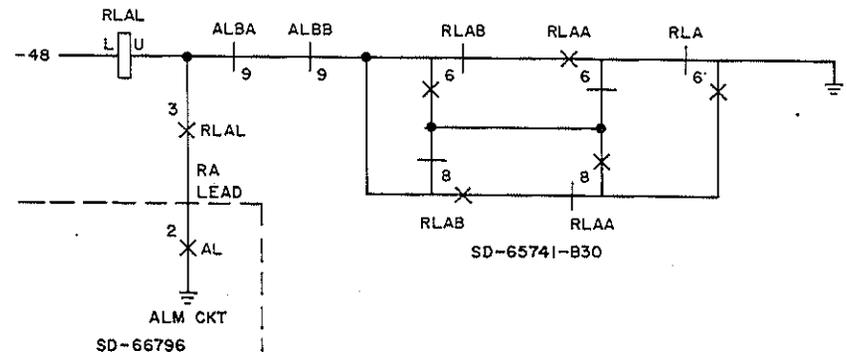


FIG. 2

CLEAR RELEASE ALARM (RLAL) TROUBLE

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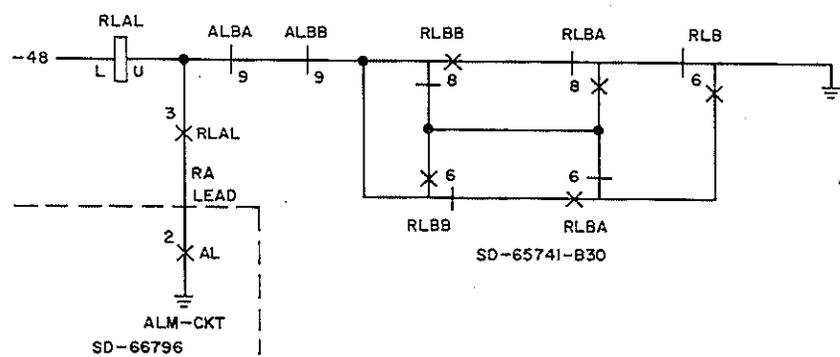
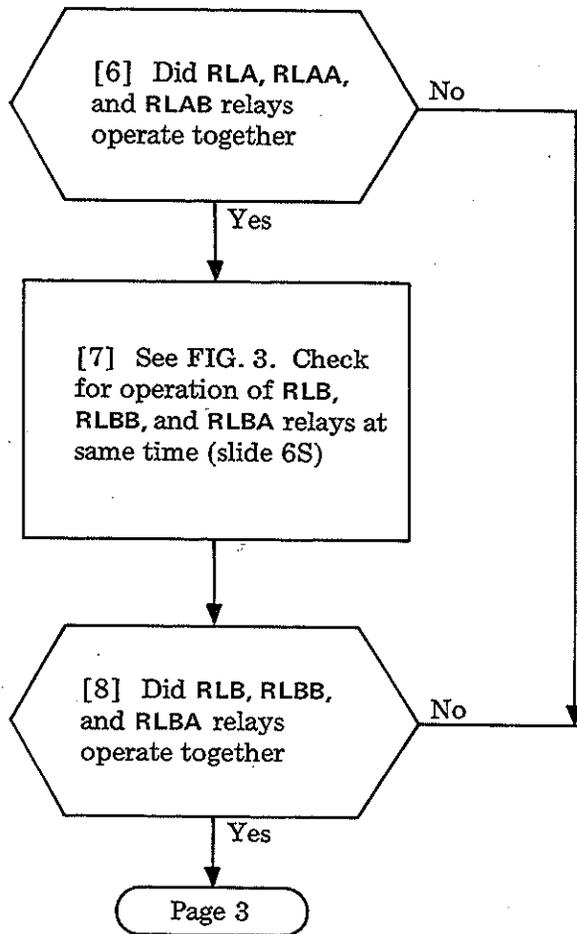
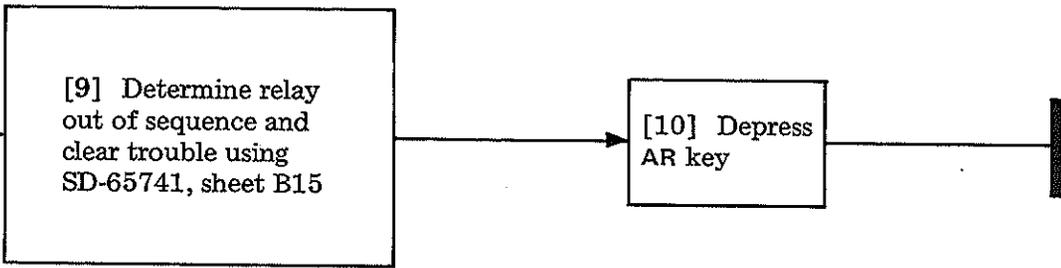
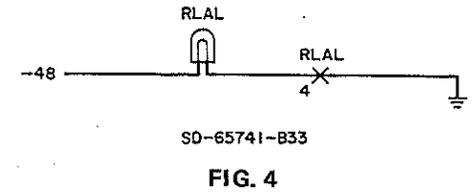
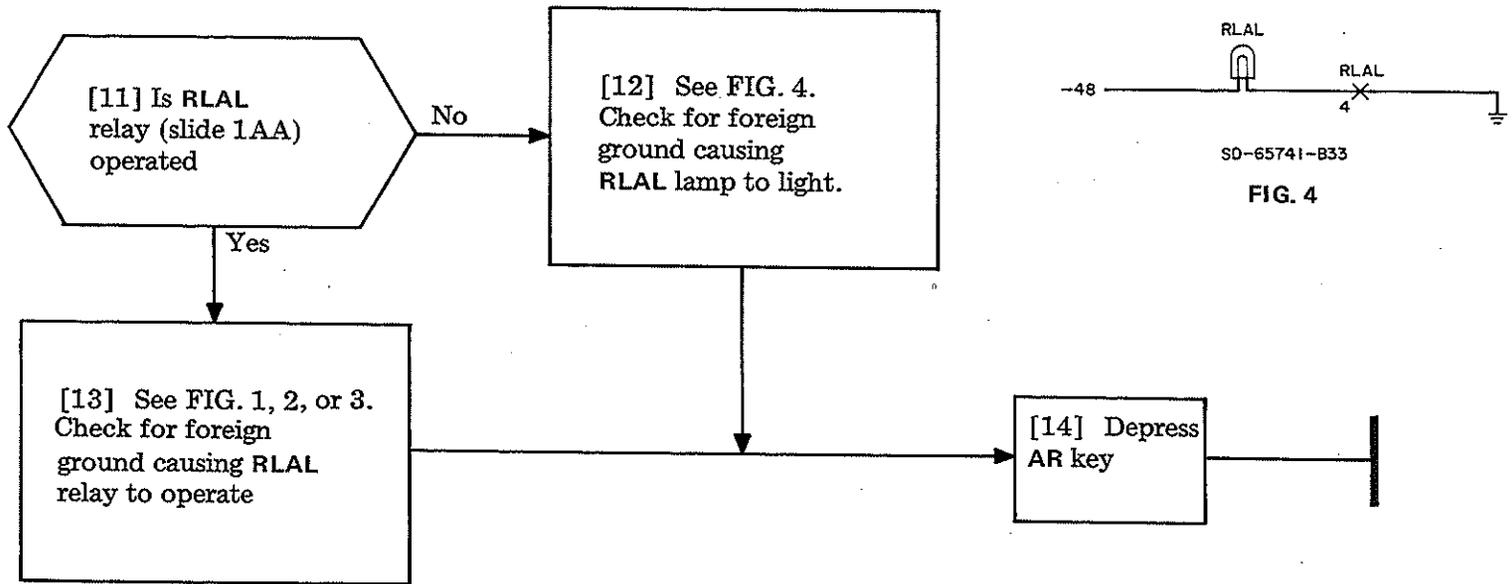


FIG. 3



| | |
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[1] Connect 1014A handset to test line STA 39 and originate station-to-station or station-to-trunk calls [TAD-163]

[2] See TABLE A. Check for operation of relay pairs [NOTE]

[3] Did each relay pair operate or release together

No

Yes

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[4] Determine relay pair out of sequence and clear trouble [TABLE A]

[5] Adjust or replace faulty relay. Depress AR key (slide 1)

NOTE
If both relays in a pair are not operated or released at the same time, TAL relay will operate

| TABLE A | | | |
|-------------|----------------------|----------------|-----------------------|
| RELAY PAIR | CONTACTS TO INSULATE | SLIDE LOCATION | SD-65741 SHEET NUMBER |
| TU2/TCS2 | 8M, B/6M, B | 2M | B4 |
| TU3/TCS3 | 8M, B/6M, B | 2M | ↑ |
| TU4/TCS4 | 8M, B/6M, B | 3M | ↓ |
| TU5/TCS5 | 8M, B/6M, B | 3M | B4 |
| TU6/TCS6 | 8M, B/6M, B | 4M | B5A |
| TU7/TCS7 | 8M, B/6M, B | 4M | B5A |
| RCC1/RCD1 | 8M, B/6M, B | 6H | B5A |
| RCA1/RCB1 | 6M, B/4M, B | 6H | B5A |
| RCA1/RCC1 | 8M, B/6M, B | 6H | B5A |
| TACAA/TACBA | 8M, B/8M, B | 6Y | B4 |
| RCA0/RCB0 | 6M, B/4M, B | 6H | B5A |
| RCA0/RCC0 | 8M, B/6M, B | 6H | ↑ |
| RCD0/RCE0 | 8M, B/6M, B | 6H | ↓ |
| RCC0/RCD0 | 8M, B/6M, B | 6H | B5A |
| RCD1/RCE1 | 8M, B/6M, B | 6H | B2 |
| ARBA/ARBB | 8M, B/6M, B | 6AB/6AA | B5A |
| TK0/TKA0 | 6M, B/6M, B | 4Z | B5A |
| TK9/TKA9 | 6M, B/6M, B | 4Z | B5B |
| TK8/TKA8 | 6M, B/6M, B | 2L | B5B |
| TRC1/TRU1 | 8M, B/8M, B | 4Z | B4 |
| TRC0/TRU0 | 8M, B/8M, B | 4Z | ↑ |
| TU2/THC2 | 6M, B/8M, B | 2M | ↓ |
| TU3/THC3 | 6M, B/8M, B | 2M | ↓ |
| TU4/THC4 | 6M, B/8M, B | 3M | ↓ |
| TU5/THC5 | 6M, B/8M, B | 3M | ↓ |
| TU6/THC6 | 6M, B/8M, B | 4M | ↓ |
| TU7/THC7 | 6M, B/8M, B | 4M | B4 |
| TCK1, 3 | 11M, B/1M, B | 6Z | B3 |
| TCK2, 4 | 1M, B/11M, B | 6Z | B3 |

[6] See FIG. 1. Check for operation of relays RPO, 1 (slide 6Z); TRPO, 1 (6Z); TP_(2-5) (6AA); or TP6, 7 (6AA) at same time relay RLAA (6T) or RLBA (6S) is operated

[7] Did relay RPO or 1; TRPO or 1; TP_(2-5); or TP6, 7 operate while relay RLAA or RLBA was operated

Yes

[8] See FIG. 1. Determine relay circuit causing trouble and clear trouble

[9] Depress AR key

No

[10] See FIG. 2. Check for release of relays TEA0, 1, 2, 3 (slide 6AB) or TEB0, 1, 2, 3 (6AA) at same time one of relays TA2-5; TA6, 7; TRA0, 1; or R0, 1 is operated

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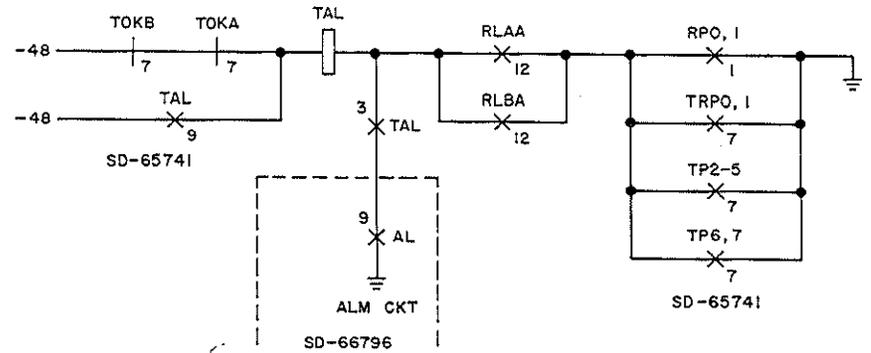


FIG. 1

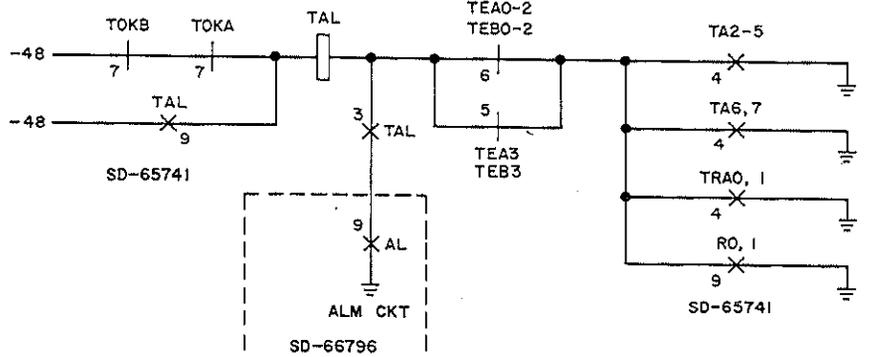
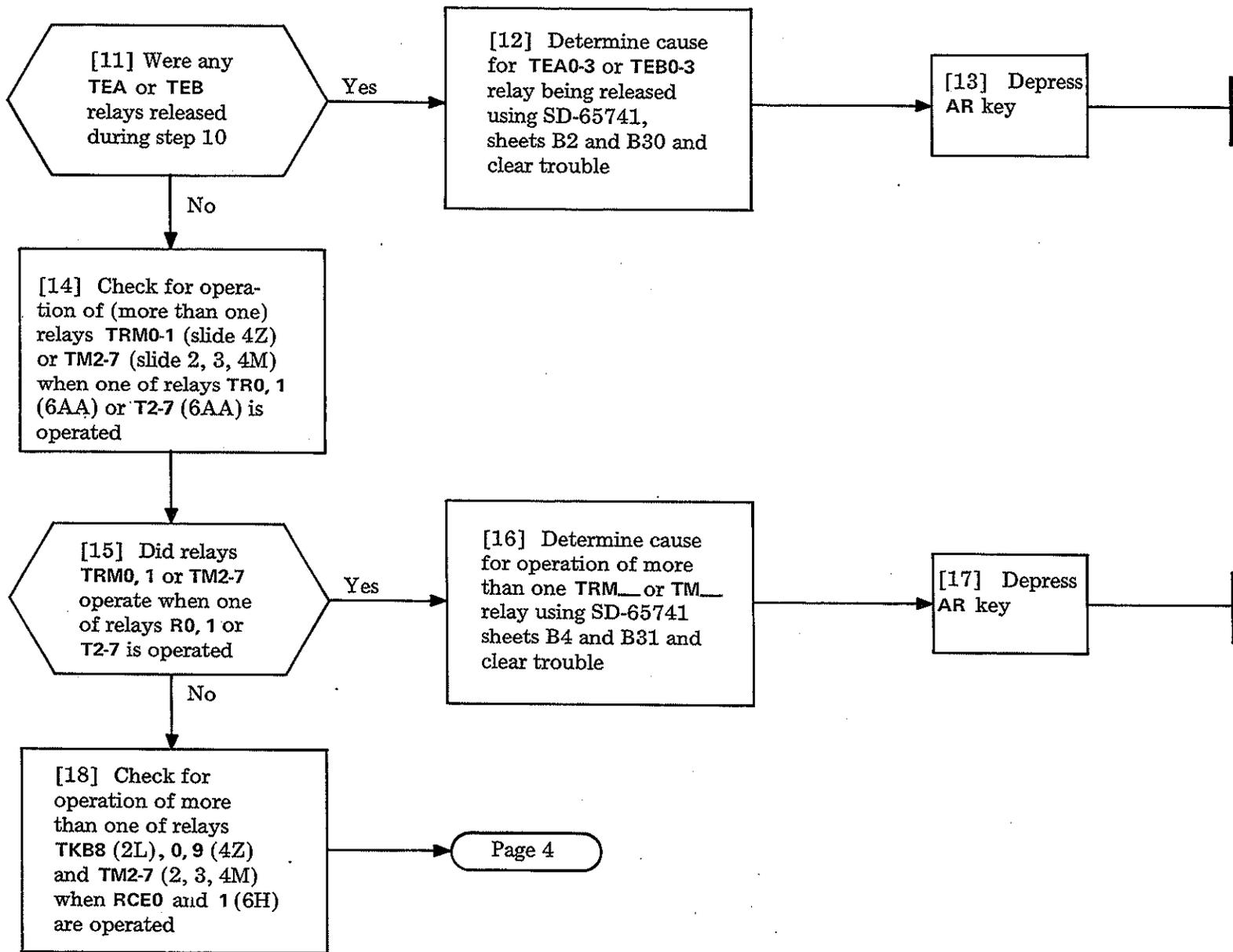


FIG. 2

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CLEAR TENS ALARM (TAL) TROUBLE

| | |
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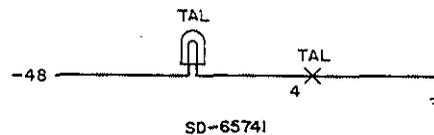
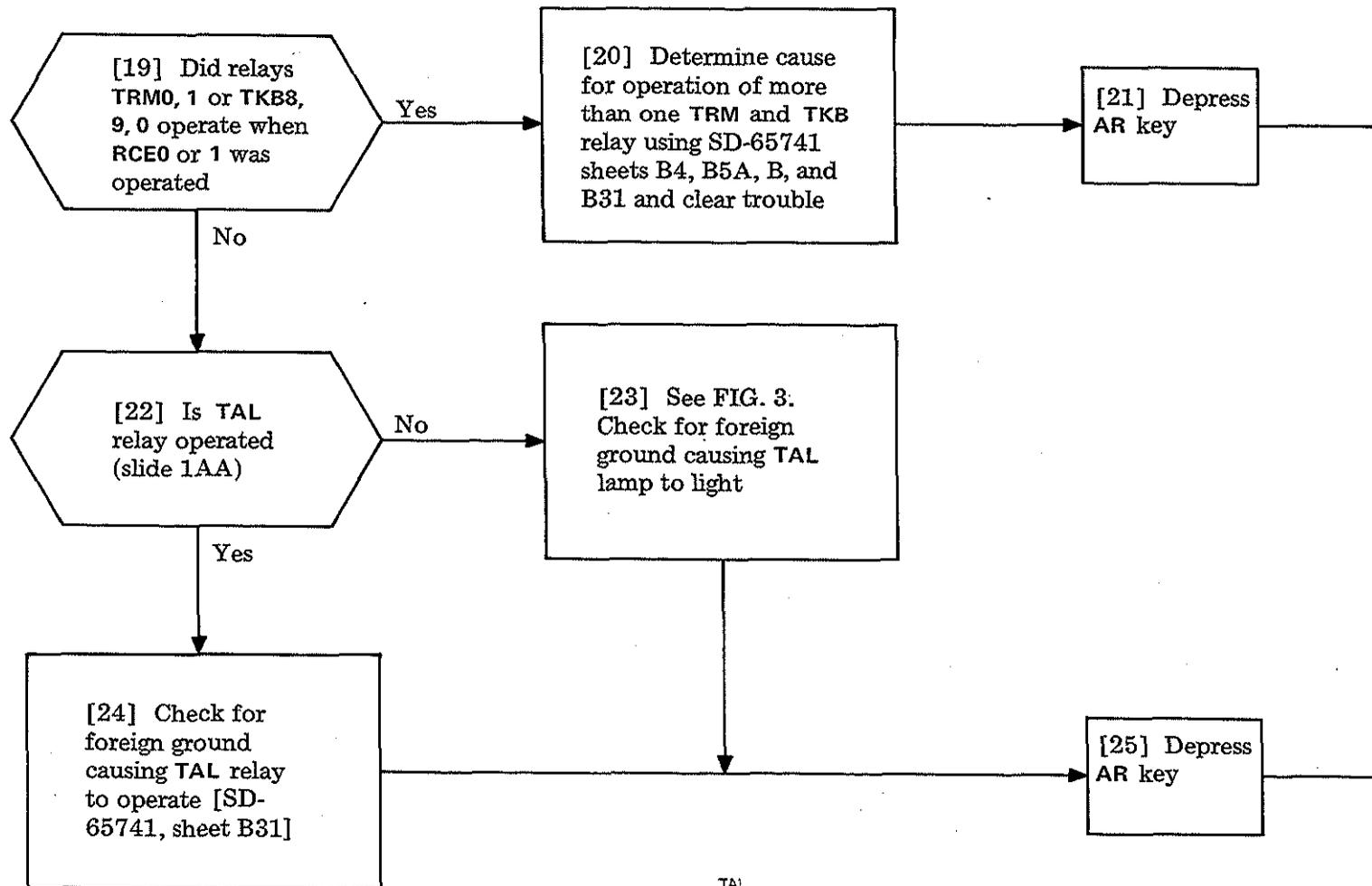


FIG. 3

| | |
|-------------|----------|
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[1] Originate station-to-trunk call using 1014A handset or equivalent.
[NOTE]

NOTE
This is trunk (CO or RD TT) class call and will detect trouble on leads TT, TLA, RS, BY, and FF.

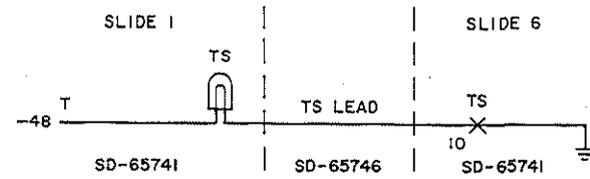
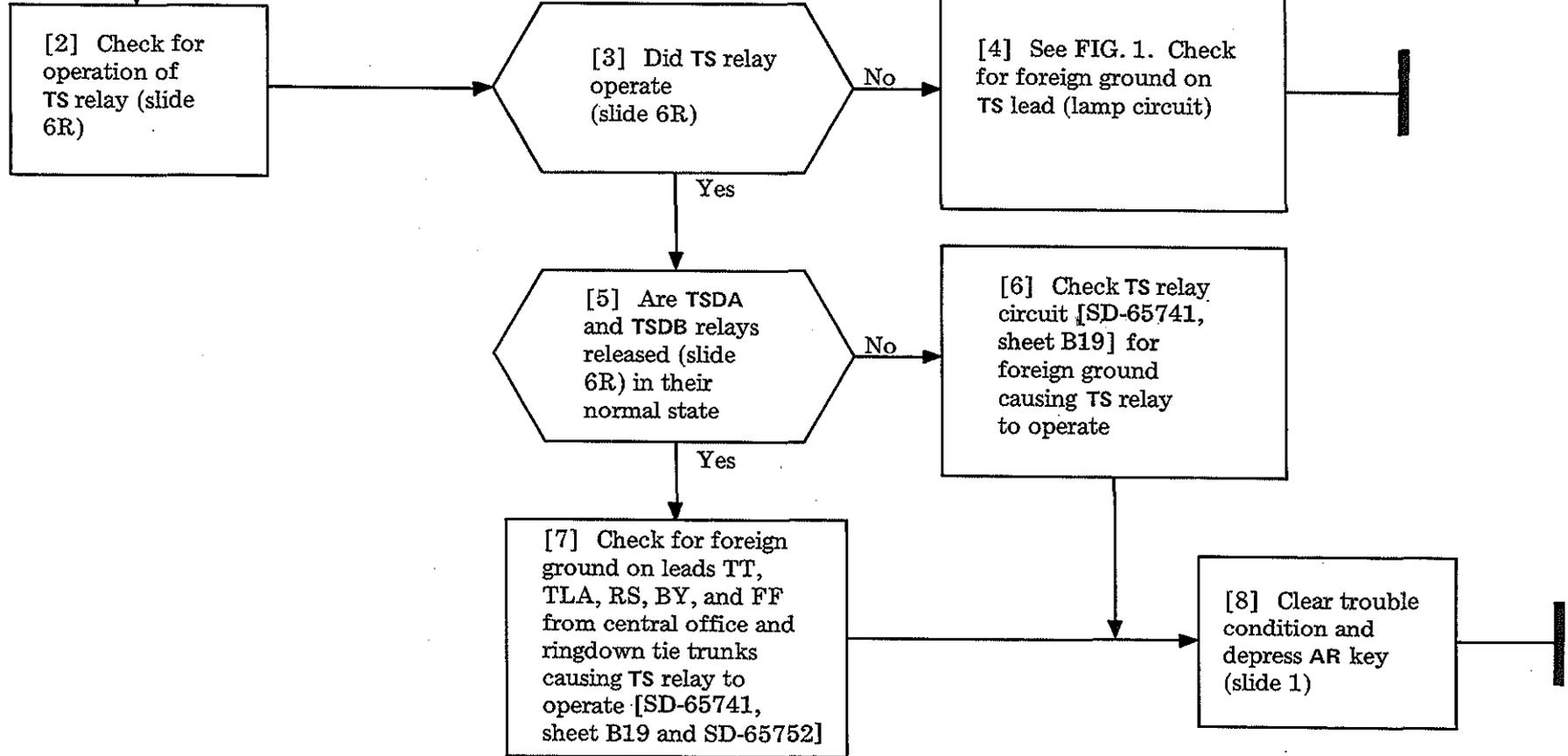


FIG. 1



CLEAR TEST ALARM (TS) TROUBLE

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[1] Connect 1014A handset to test line STA 39 and originate station-to-station calls to check operation of TOAL and TOALA relays (slide 1AA) [TAD-163]

[2] Are both TOAL and TOALA relays operated

Yes

[5] See FIG. 2. Check relay pairs MTA (slide 6K), MTB (6J); NAA (6K), NAB (6J); STA (6K), STB (6J); and TOLA (6K), TOLB (6J) for operation or release together [NOTE]

Page 2

No

[3] See FIG. 1. Check for foreign ground causing TOAL lamp to light (slide 1)

[4] Depress AR key (slide 1) to release alarm

NOTE

If both relays in a pair are not operated or released at the same time, TOAL relay will operate

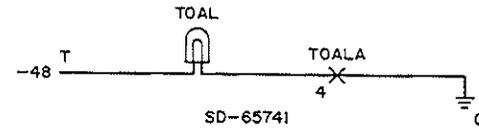


FIG. 1

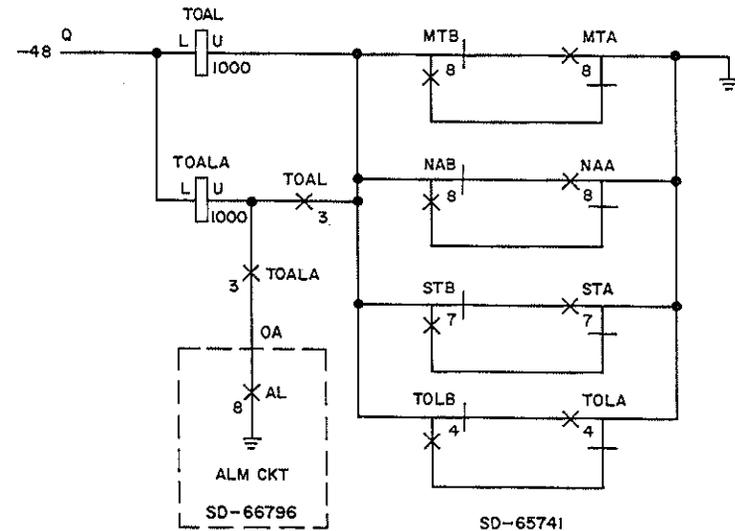
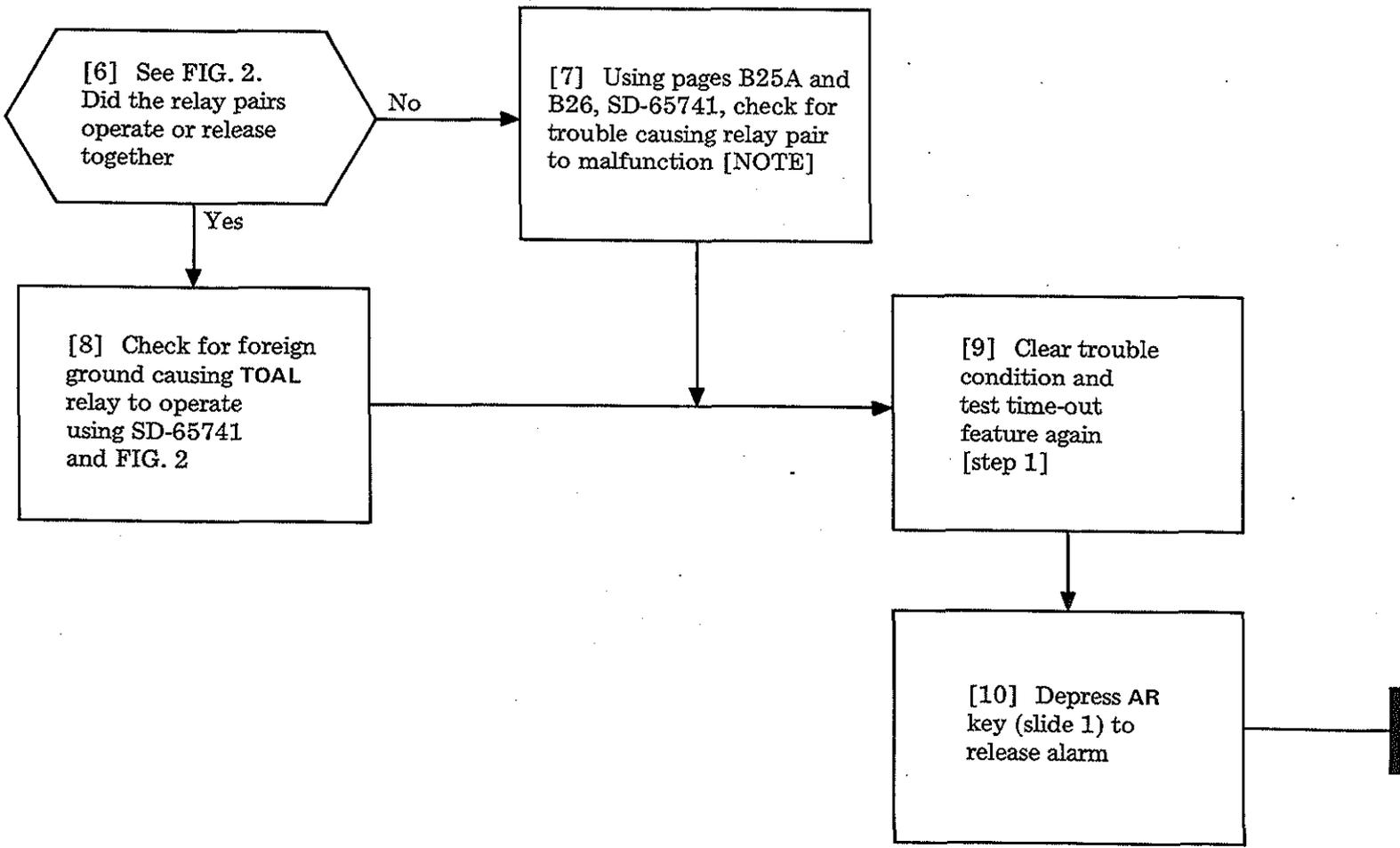


FIG. 2



CLEAR TIME-OUT ALARM (TOAL) TROUBLE

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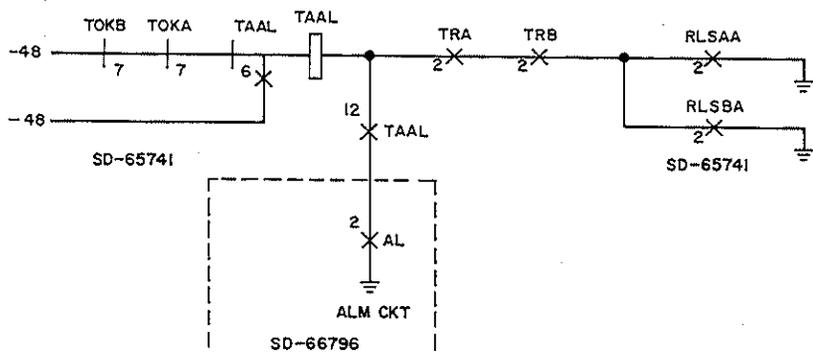
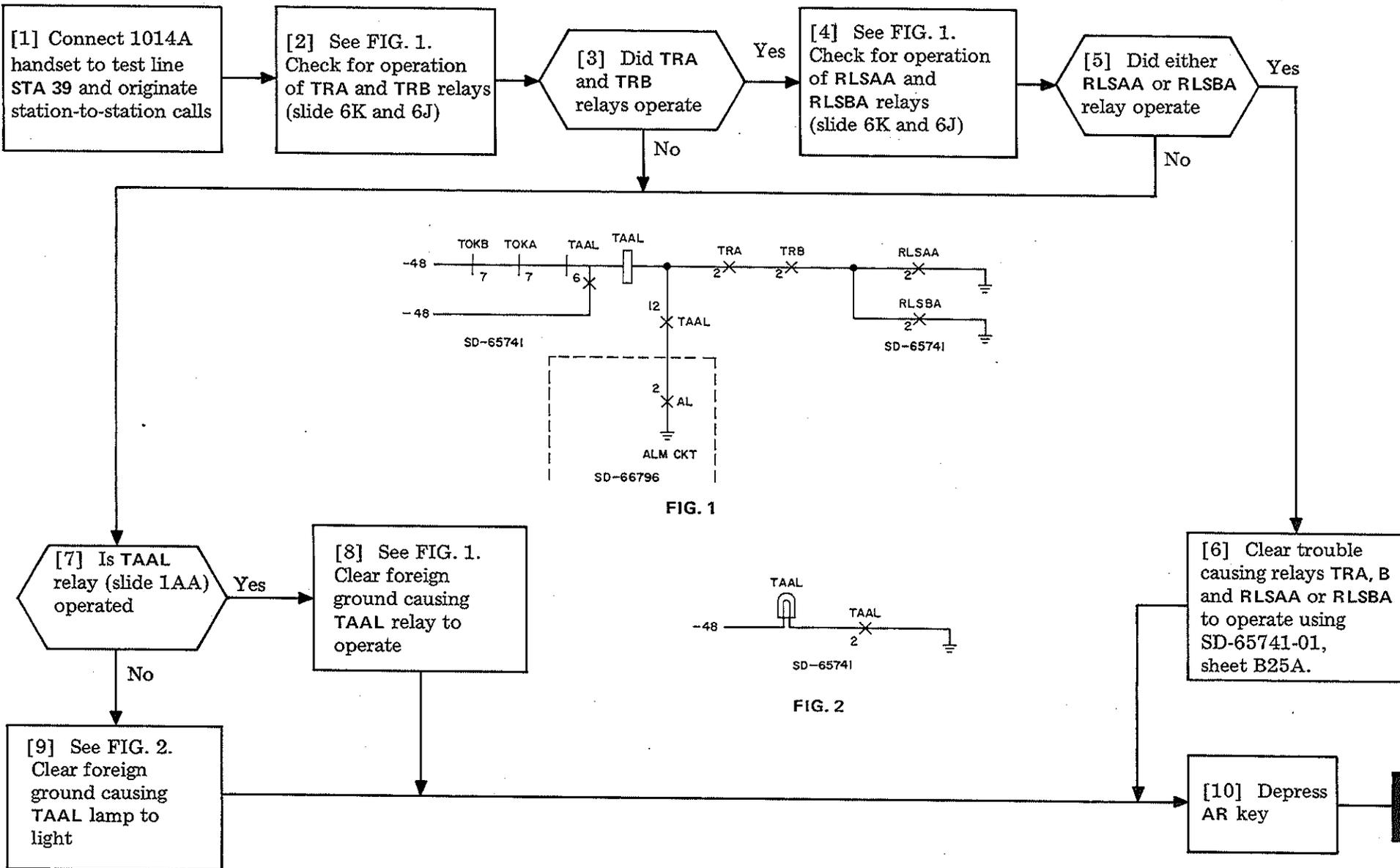


FIG. 1

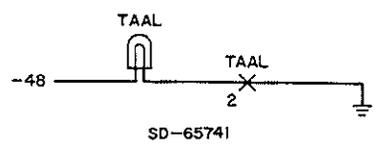


FIG. 2

CLEAR TROUBLE ADVANCE ALARM (TAAL) TROUBLE

| | |
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[1] Connect test handset to test line STA 39 and originate station-to-station calls [NOTE 1]

[2] See TABLE A. Check for operation of relay pairs [NOTE 2]

[3] Did each relay pair operate or release together

No

[4] Determine relay pair out of sequence and locate and clear trouble [TAD-163]

[5] Depress AR key

Yes

Page 2

NOTES

1. Refer to TAD-163 for general procedure of isolating and clearing troubles indicated by marker alarm lamps
2. If both relays in a pair are not operated or released at the same time, UAL relay will operate

| TABLE A | | | |
|------------|----------------------|--------------|-----------------------|
| RELAY PAIR | CONTACTS TO INSULATE | SLIDE NUMBER | SD-65741 SHEET NUMBER |
| UEA/UEB | 4M, B/4M, B | 6V/U | B8 |
| JREA/JREB | 8M, B/8M, B | 6Y/X | B13 |
| ULA/ULB | 8M, B/8M, B | 6V/U | B8 |
| RUCA/RUCB | 8M, B/8M, B | 6V/U | B8 |
| SEAA/SEBA | 9M, B/9M, B | 6V/U | B12 |
| HCA/HCB | 8M, B/8M, B | 6Y | B9 |
| TRKA/TRKAA | 6M, B/6M, B | 6Y | B14 |
| TRKB/TRKBA | 6M, B/6M, B | 6X | B14 |
| TRKA/TRKB | 8M, B/8M, B | 6Y/X | B14 |
| WU/WUA | 4M, B/12M, B | 6L/M | B12, 29 |

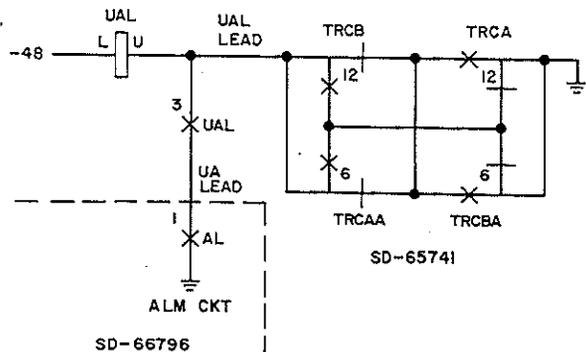
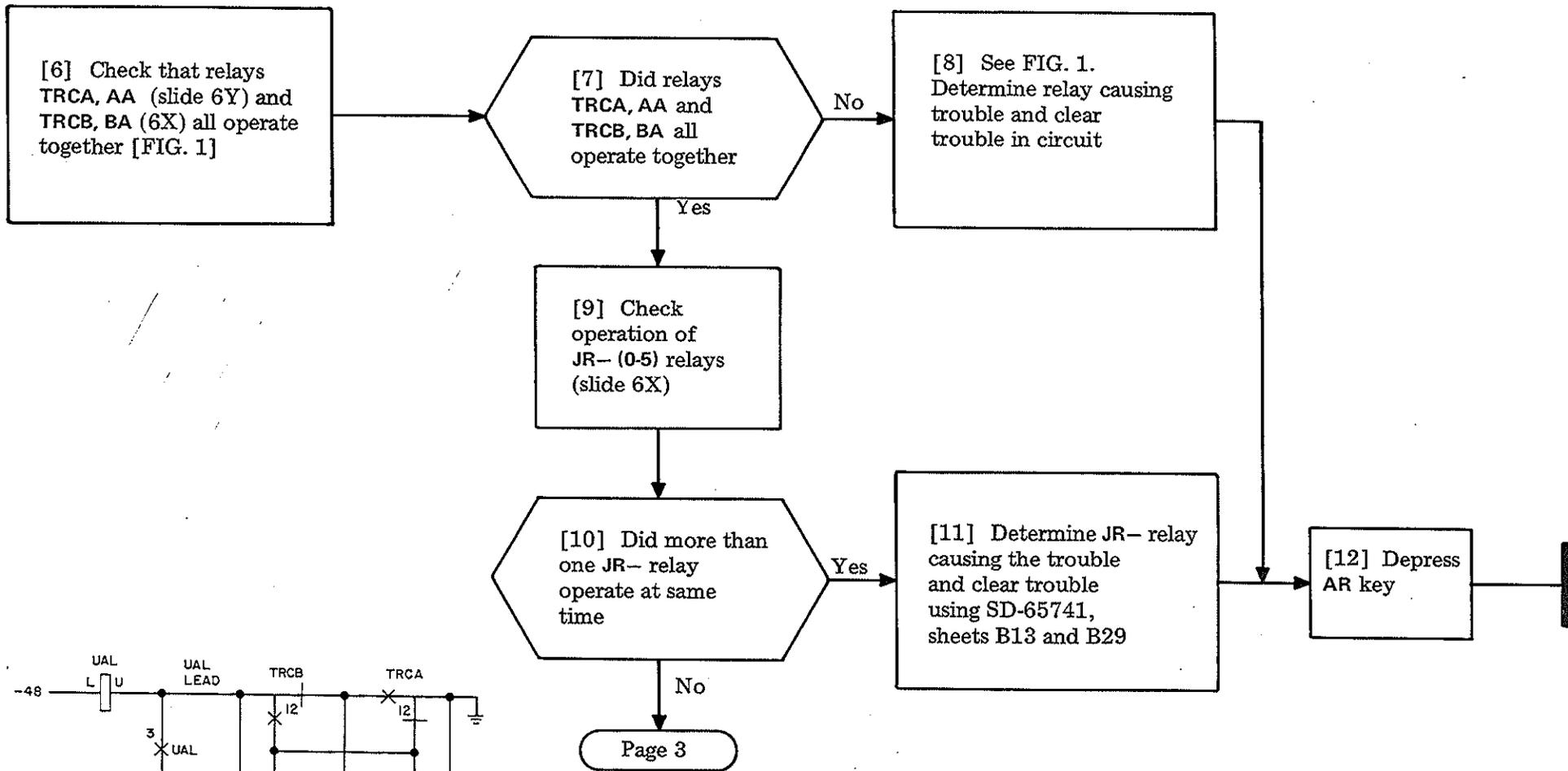


FIG. 1

CLEAR UNITS ALARM (UAL) TROUBLE

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[13] Check unit sequence control WU and WUA relays (slide 6L, M) [NOTE 3]

NOTE 3
WU and WUA relays will be operated or released as a pair if unit sequence control circuit is functioning properly

[14] Did WU and WUA relays both operate and release together

No

[15] See FIG. 2. Determine relay (WU or WUA) causing trouble and locate trouble

Yes

[16] Is UAL relay operated (slide 1AA)

No

[17] See FIG. 3. Check for foreign ground causing UAL lamp to light

Yes

[18] Check for foreign ground causing UAL relay to operate [FIG. 2]

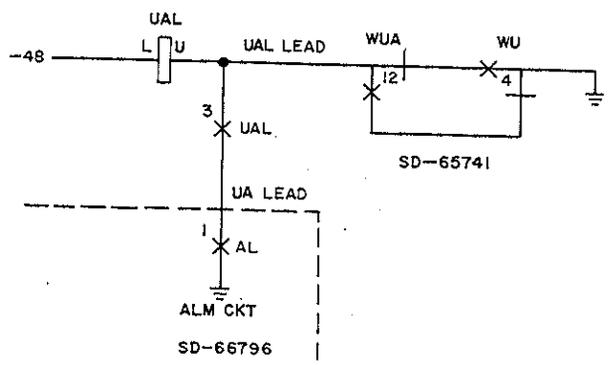


FIG. 2

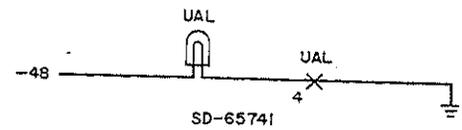


FIG. 3

[19] Depress AR key

CLEAR UNITS ALARM (UAL) TROUBLE

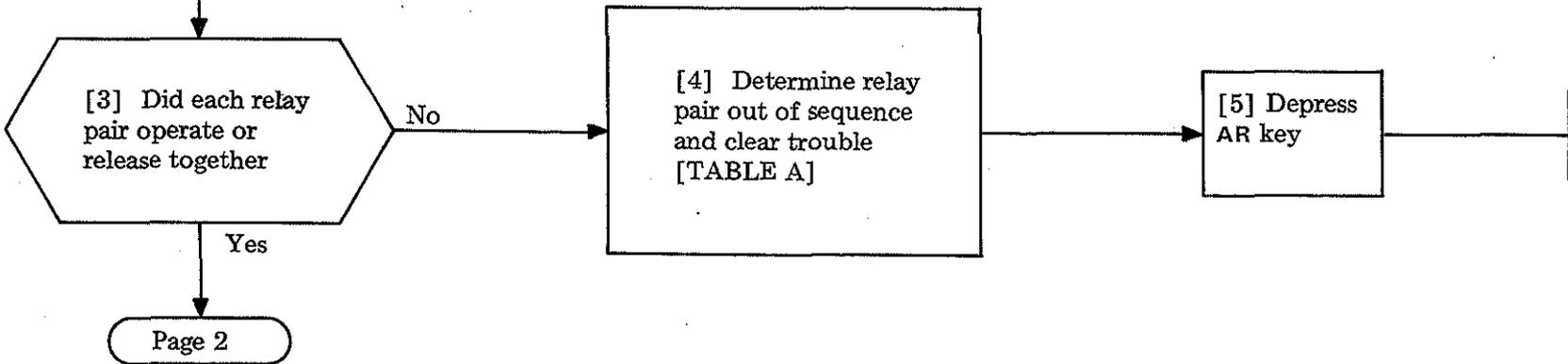
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[1] Connect test handset to test line STA 39 and originate station-to-station calls

[2] See TABLE A. Check for operation of relay pairs [NOTE]

NOTE
If both relays in a pair are not operated or released at the same time, UAL1 and UAL2 relays will operate

| TABLE A | | | |
|-------------|----------------------|--------------|-----------------------|
| RELAY PAIRS | CONTACTS TO INSULATE | SLIDE NUMBER | SD-65741 SHEET NUMBER |
| ACA/ACB | 8M, B/8M,B | 6V/U | B8 |
| BSYA/BSYB | 6M, B/6M,B | 6V/U | B12 |
| BSYAA/BSYBA | 8M, B/8M,B | 6V/U | B12 |
| BYA/BYB | 3M, B/3M,B | 6V/U | B12 |
| HMTA/HMTB | 6M, B/6M,B | 6T/S | B15 |
| HMTAA/HMTBA | 8M, B/8M,B | 6T/S | B15 |



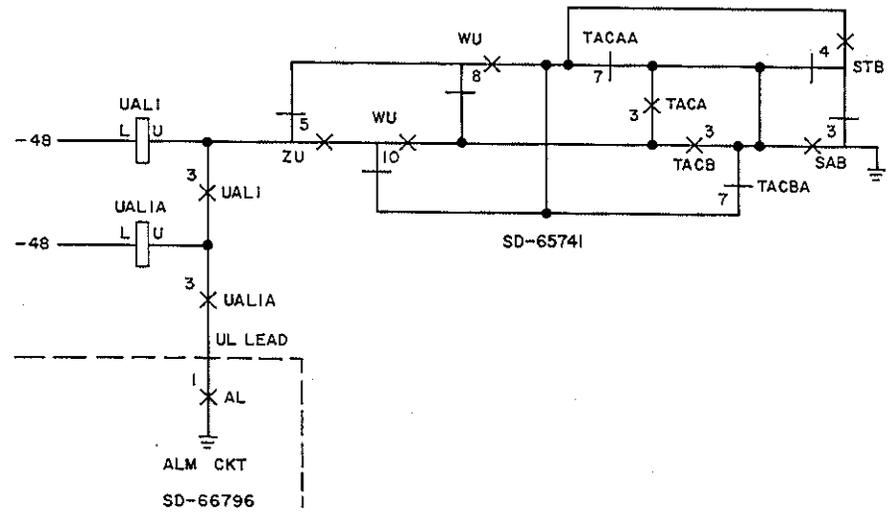
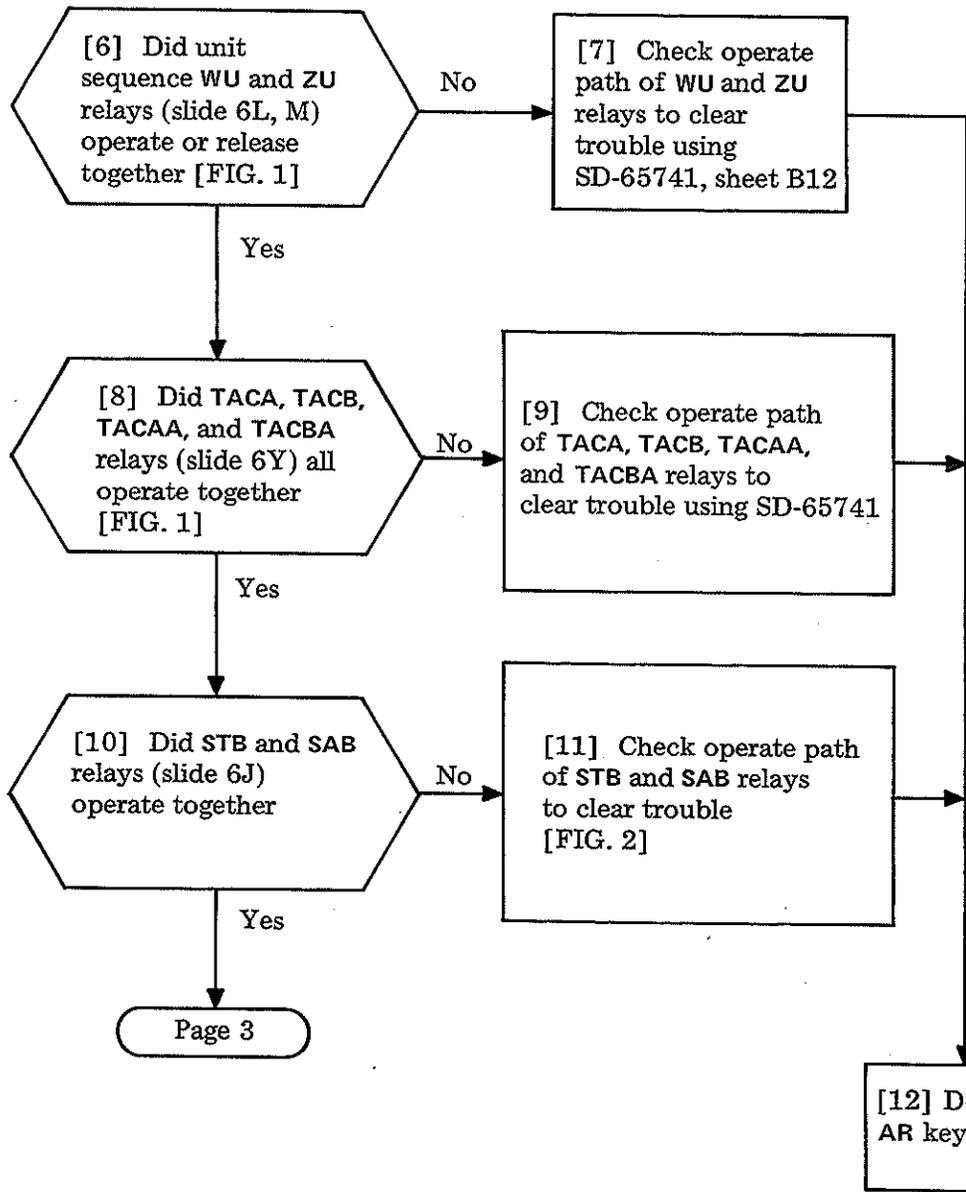


FIG. 1

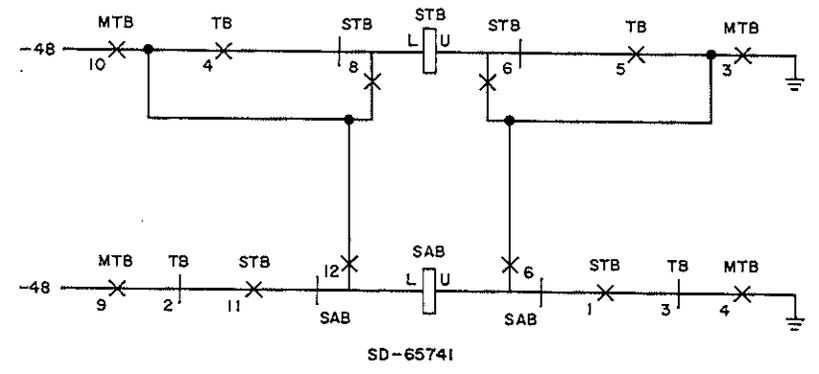


FIG. 2

| | |
|-------------|----------|
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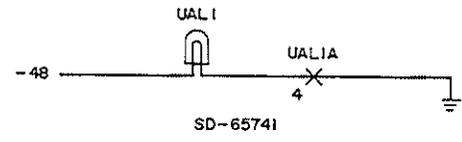
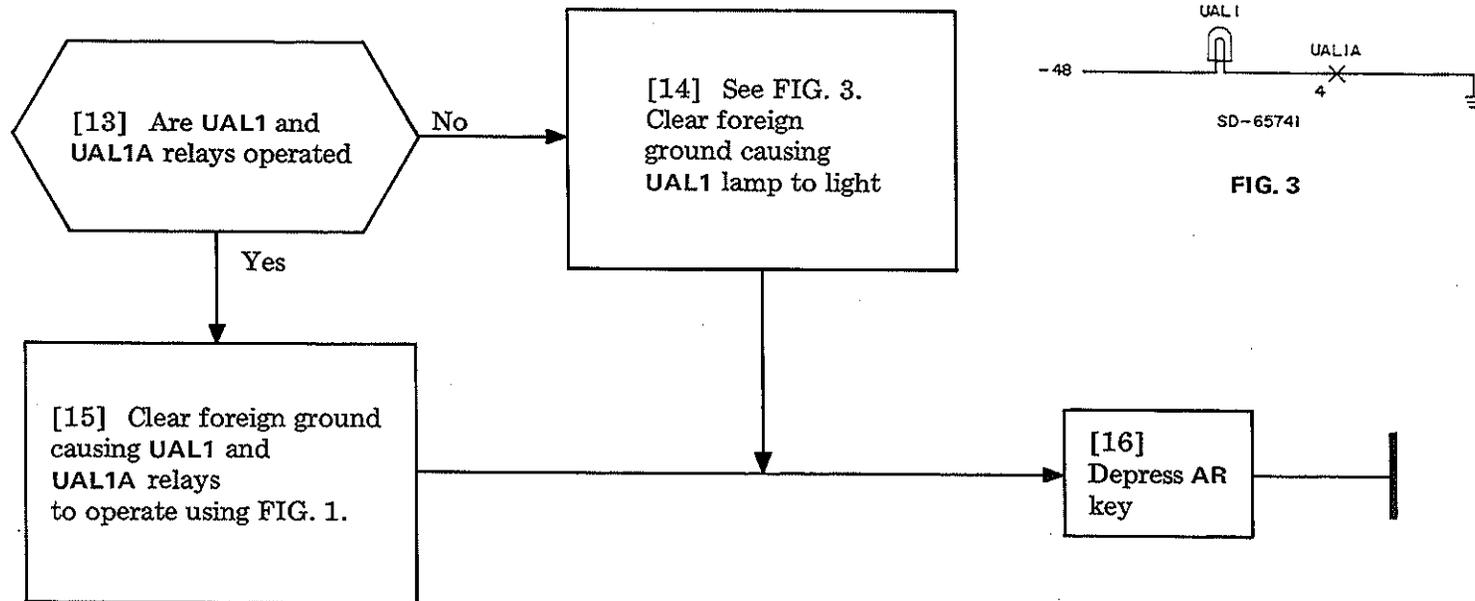


FIG. 3

| | |
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[1] Connect test handset to test line (Station 39) and originate station-to-station and trunk-to-station calls

[2] See TABLE A. Check for operation of relay pairs [NOTE]

[3] Did each relay pair operate or release together

No

Yes

Page 2

NOTE
If both relays in a pair are not operated or released at the same time UAL2 relay will operate and light UAL2 lamp

| TABLE A | | | |
|-------------|----------------------|--------------|-----------------------|
| RELAY PAIR | CONTACTS TO INSULATE | SLIDE NUMBER | SD-65741 SHEET NUMBER |
| RG A/RGB | 8M, B/8M, B | 6G | B17 |
| RG A/RGAA | 6M, B/6M, B | 6G | B17 |
| RGB/RGBA | 6M, B/6M, B | 6G | B17 |
| JTAA/JTBA | 8M, B/8M, B | 6Y/X | B14 |
| RCTAA/RCTBA | 2M, B/2M, B | 6V/U | B14 |
| BTTA/BTTB | 6M, B/6M, B | 6T/S | B16 |
| ICTA/ICTB | 11M, B/11M, B | 6T/S | B16 |
| RA0A/RA0B | 3M, B/2M, 7B | 6G | B17 |
| RA1A/RA1B | 3M, B/2M, 7B | 6G | B17 |
| COTA/COTB | 6M, B/6M, B | 6T/S | B15 |

[4] Determine relay pair out of sequence and clear trouble [TABLE A]

[15] Depress AR key

CLEAR UNITS ALARM (UAL2) TROUBLE

| | |
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[6] Check select magnet register SMRA, B and SMRAA, BA relays (slide 6T, S) to determine if the pairs operate together

[7] Did SMRA, B and SMRAA, BA relays operate together

No

[8] See FIG. 1. Determine select magnet register relay causing trouble and clear trouble

Yes

[9] Is UAL2 relay operated (slide 1AA)

No

[10] See FIG. 2. Clear foreign ground causing UAL2 lamp to light

Yes

[11] Clear foreign ground causing UAL2 relay to operate using FIG. 1

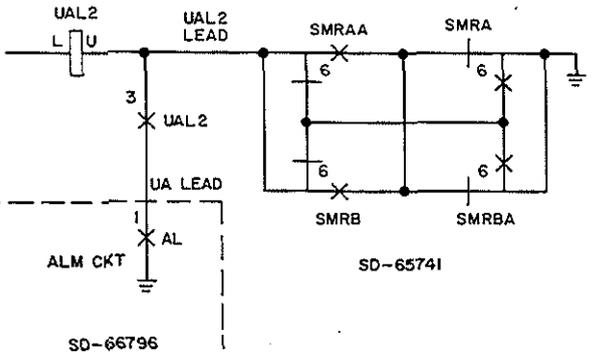


FIG. 1

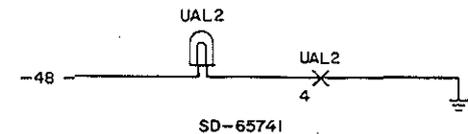


FIG. 2

[12] Depress AR key

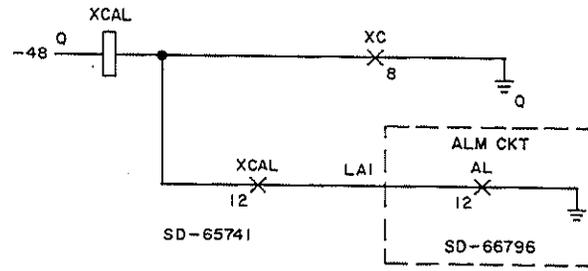


FIG. 1

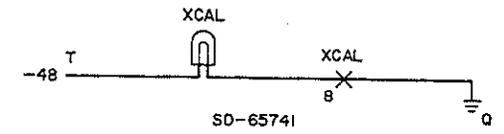
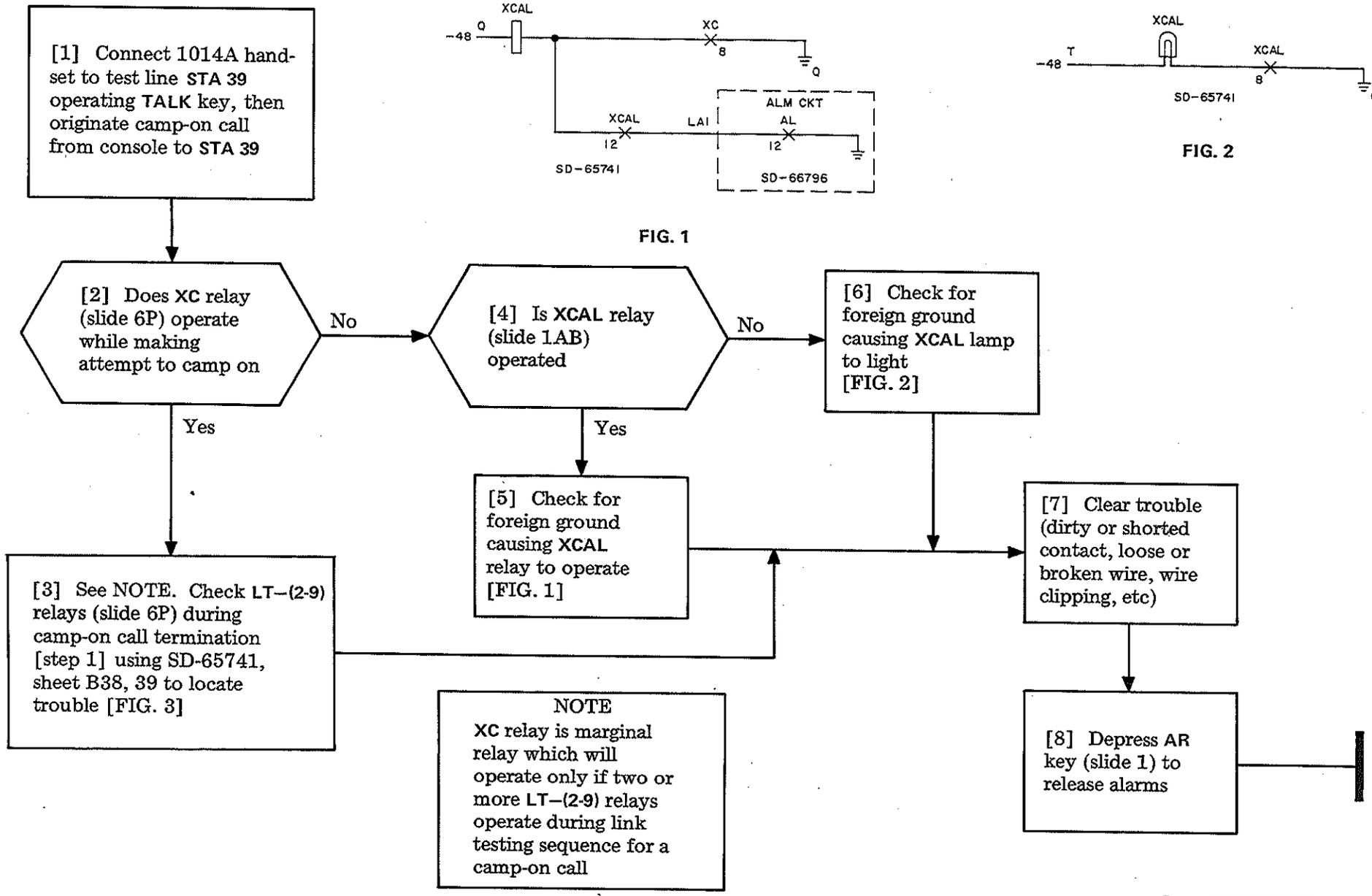


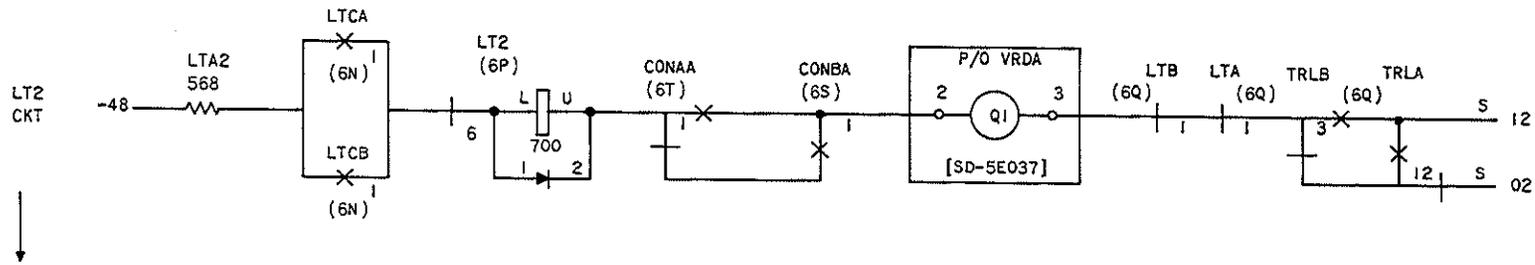
FIG. 2



NOTE
 XC relay is marginal relay which will operate only if two or more LT-(2-9) relays operate during link testing sequence for a camp-on call

CLEAR CROSS CHECK ALARM (XCAL) TROUBLE

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|-------------|----------|
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| LT CKT | RESISTOR DESIG. | LTC(A,B) CONTACTS | LT RELAY | CON (AA, BA) CONTACTS | VRD-CONNECTIONS | LT(A, B) CONTACT | TRL(A, B) CONTACTS |
|--------|-----------------|-------------------|----------|-----------------------|-----------------|------------------|--------------------|
| LT3 | LTA3 | 2 | LT3 | AA 2, BA 2 | 4 VRDA (Q2) 5 | 2 | B 4, A11 |
| LT4 | LTA4 | 3 | LT4 | AA 3, BA 3 | 6 VRDA (Q3) 7 | 3 | B 6, A10 |
| LT5 | LTA5 | 4 | LT5 | AA 4, BA 4 | 8 VRDA (Q4) 9 | 4 | B 7, A9 |
| LT6 | LTA6 | 5 | LT6 | AA 9, BA 9 | 2 VRDB (Q1) 3 | 9 | A 3, B12 |
| LT7 | LTA7 | 6 | LT7 | AA10, BA10 | 4 VRDB (Q2) 5 | 10 | A 4, B11 |
| LT8 | LTA8 | 7 | LT8 | AA11, BA11 | 6 VRDB (Q3) 7 | 11 | A 6, B10 |

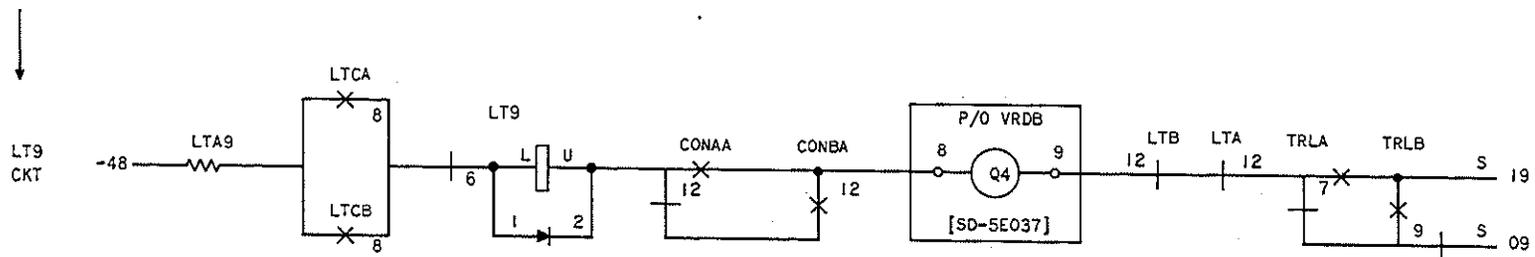
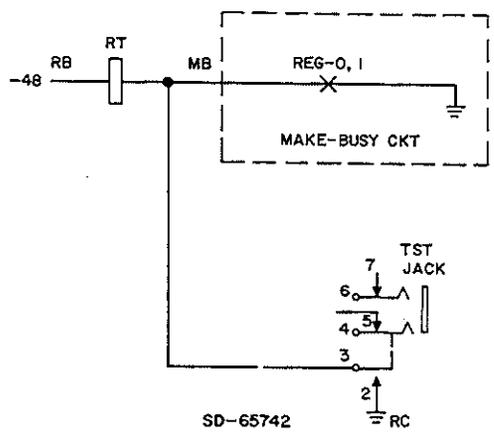
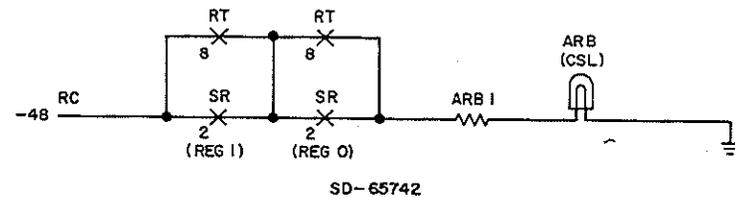
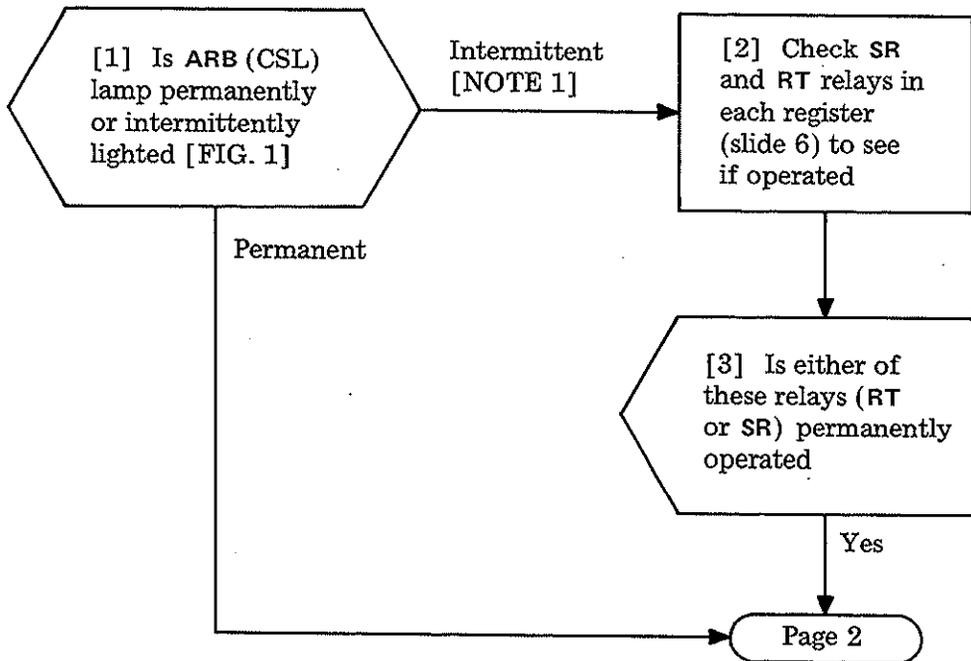
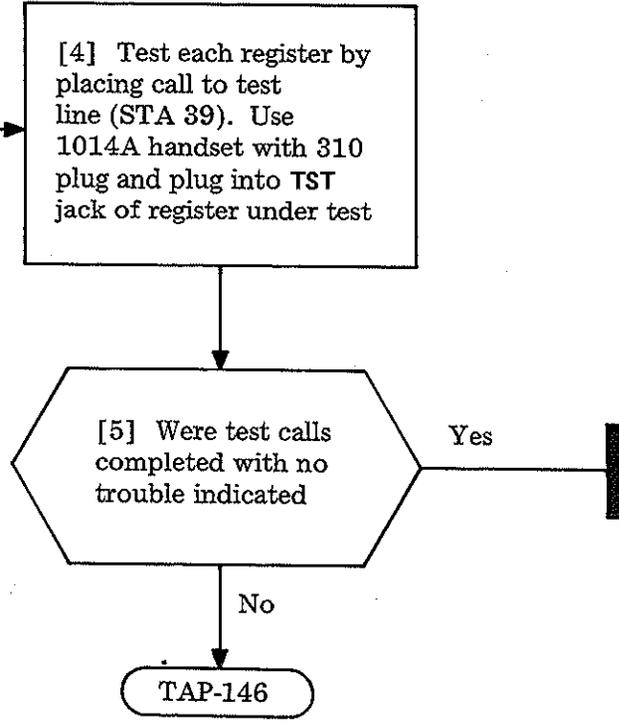


FIG. 3

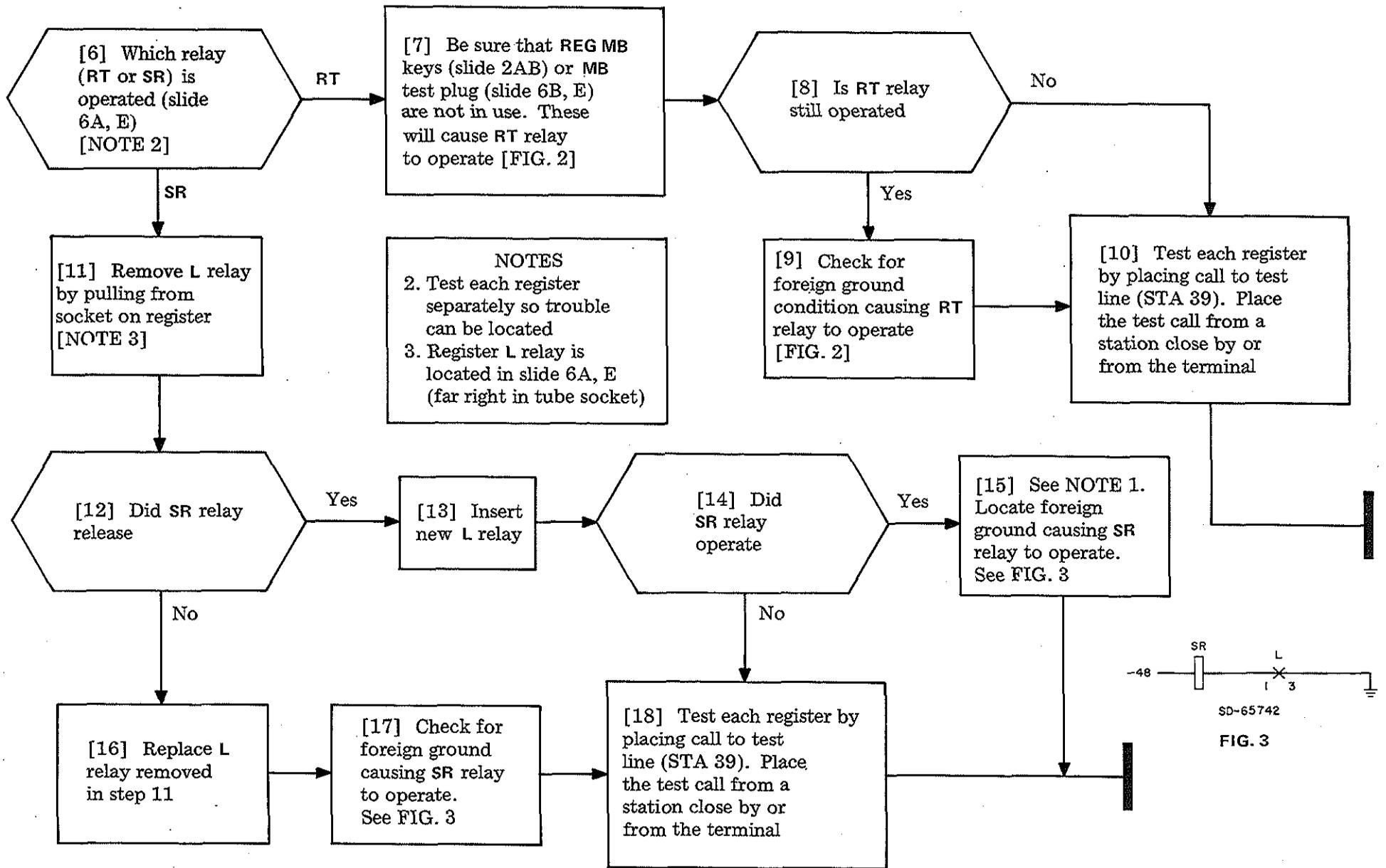


NOTE 1
Heavy traffic in PBX
can cause intermittent
ARB lamp



CLEAR ALL REGISTERS BUSY (ARB) ALARM TROUBLE

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SUMMARY

From the attendant console, make test call(s) using the same attendant trunk and station involved with the trouble. Dial or direct station select (DSS) the station. If a normal result fails to occur during progress of the call, locate the fault using the TAP reference given.

[1] At attendant console operate attendant trunk key associated with attendant-station trouble

[2] Is PBX dial tone heard by attendant

Yes

[3] Is station lamp (SL) associated with attendant-trunk key steadily lighted

Yes

No

TAP-147

No

TAP-137

NOTE
If trouble is isolated to DSS failure, see TAP-129

[4] Dial or DSS idle called station [NOTE]

[5] Does ringer sound at called station

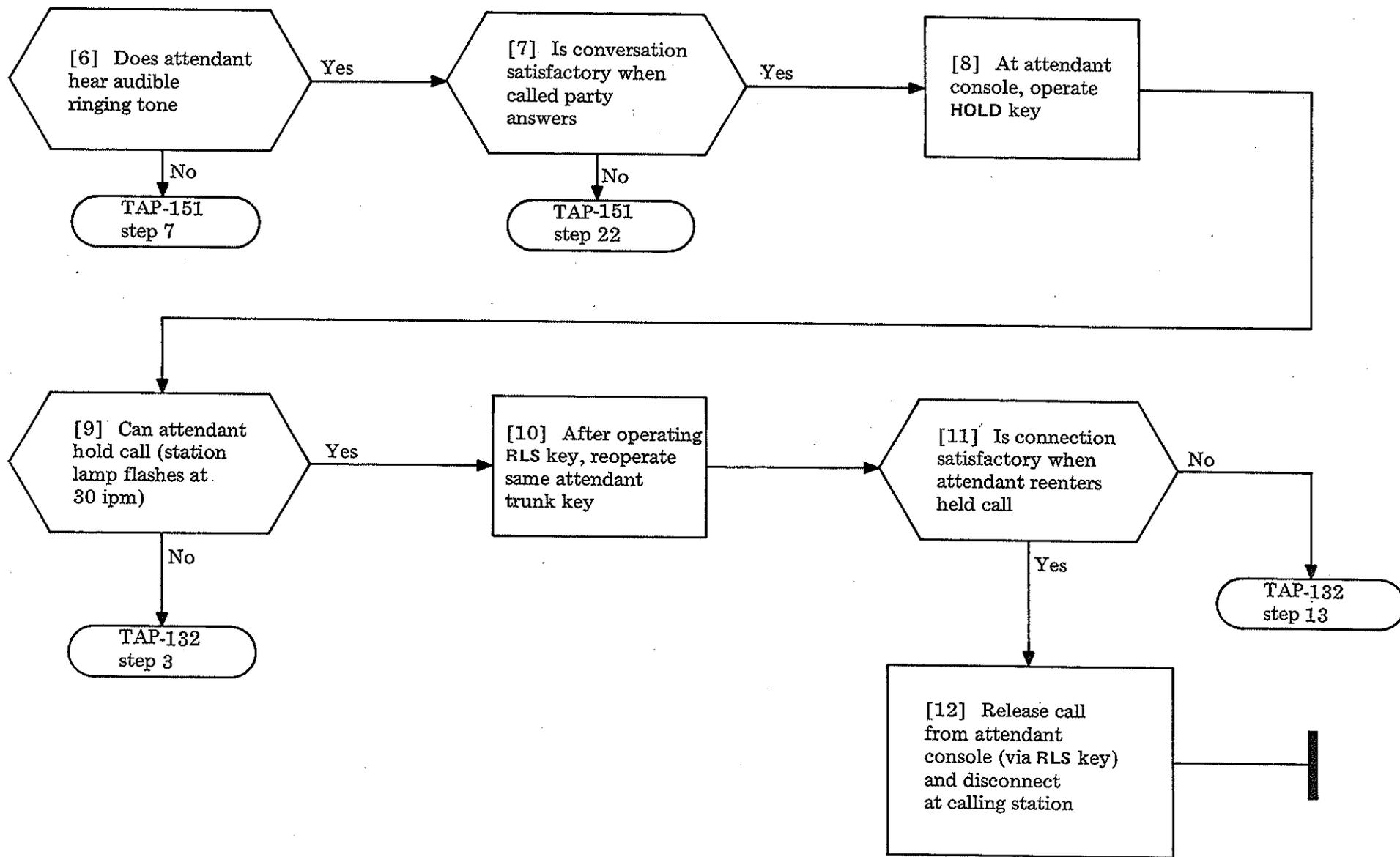
Yes

No

TAP-151
step 5

Page 2

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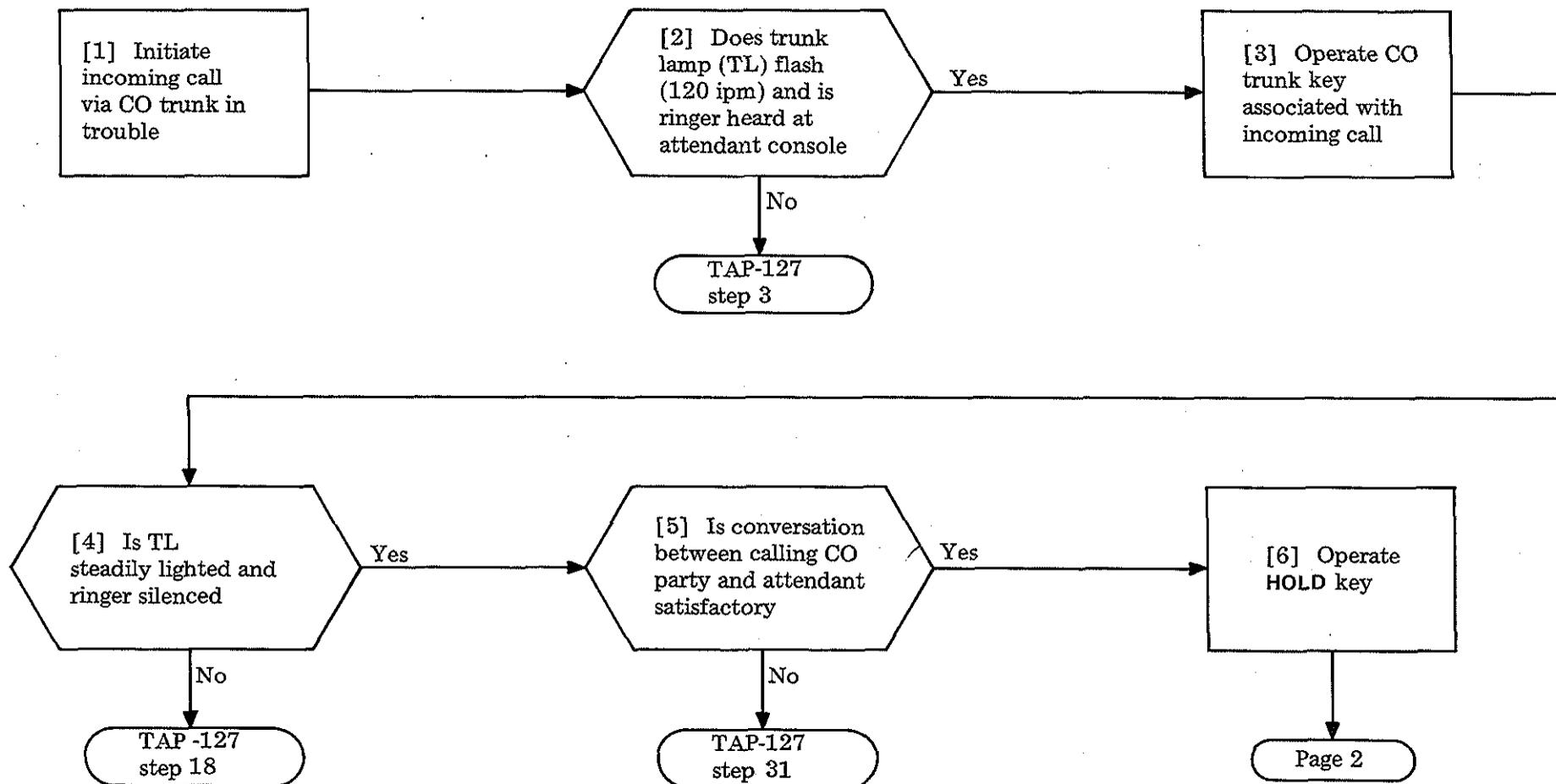


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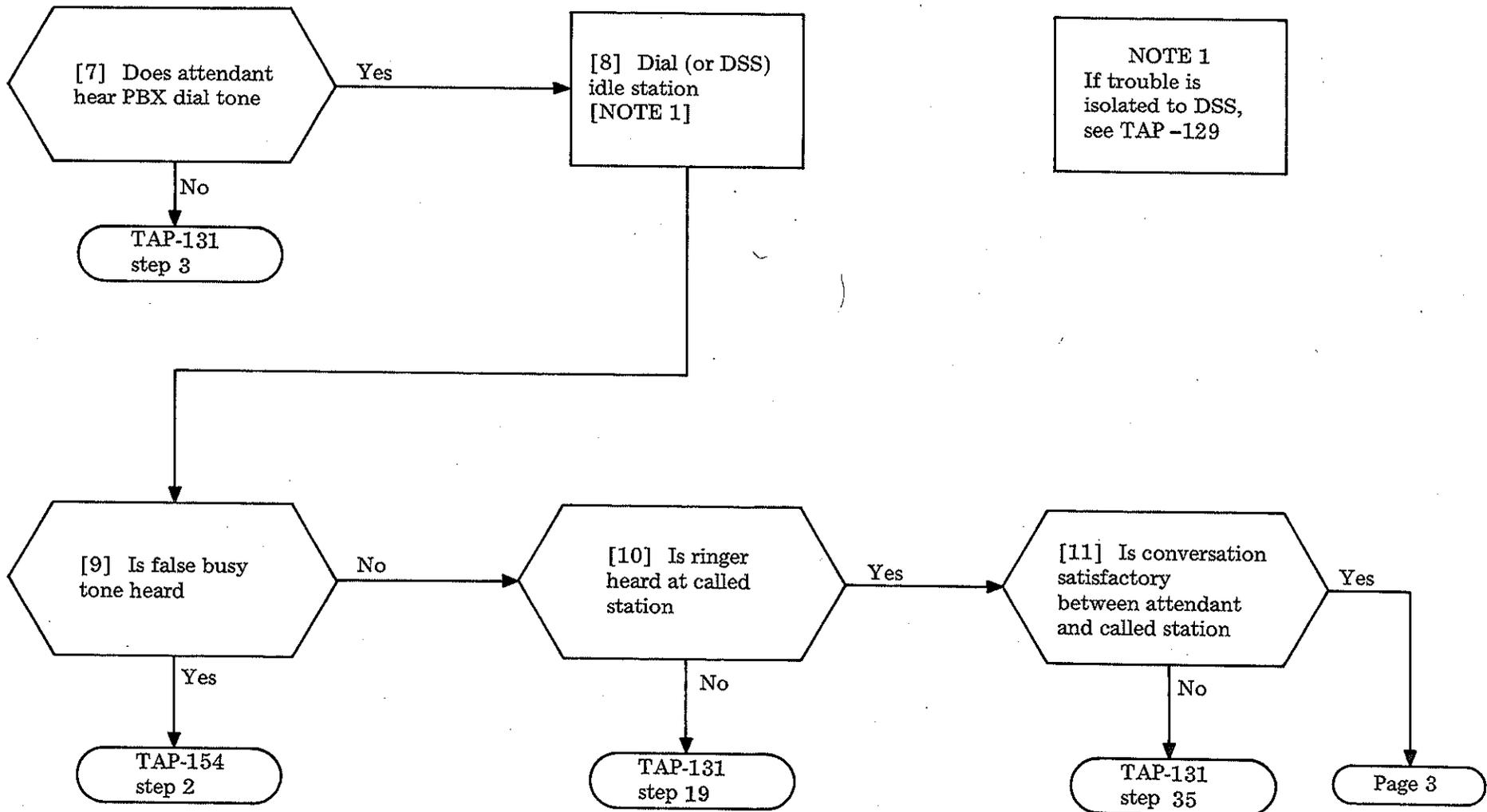
SUMMARY

Arrange for an incoming call to be placed via the central office (CO) trunk in trouble. Answer the call at the attendant console. Extend the call via dialing or direct station selection (DSS) to the idle or busy station involved with the trouble. If a normal

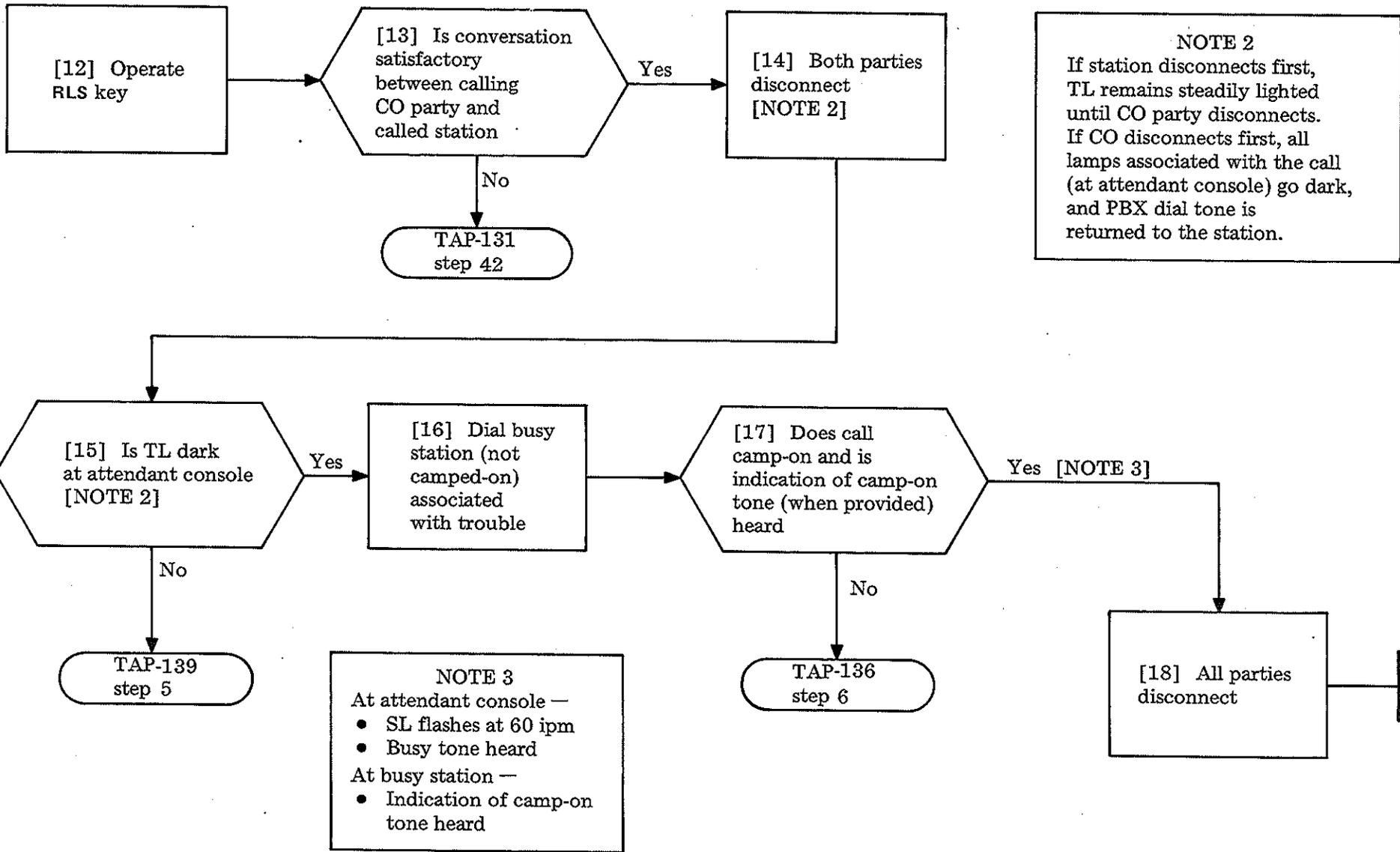
result fails to occur during the progress of the call, locate the fault using the TAP or other reference given. This procedure assumes trouble has been tested (by test desk, etc.) and proved to be at the local PBX.



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NOTE 1
If trouble is isolated to DSS, see TAP-129



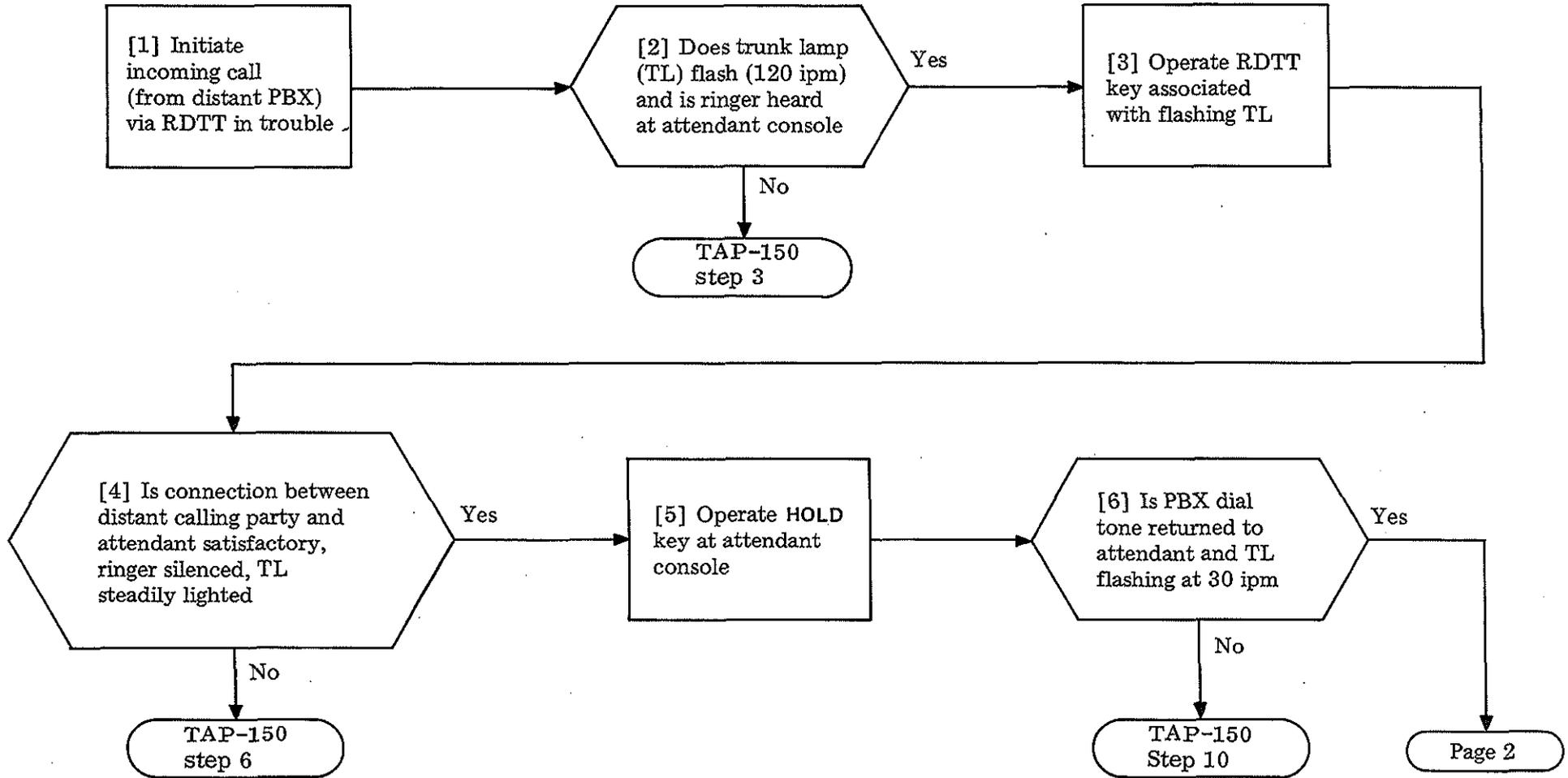
NOTE 2
 If station disconnects first, TL remains steadily lighted until CO party disconnects. If CO disconnects first, all lamps associated with the call (at attendant console) go dark, and PBX dial tone is returned to the station.

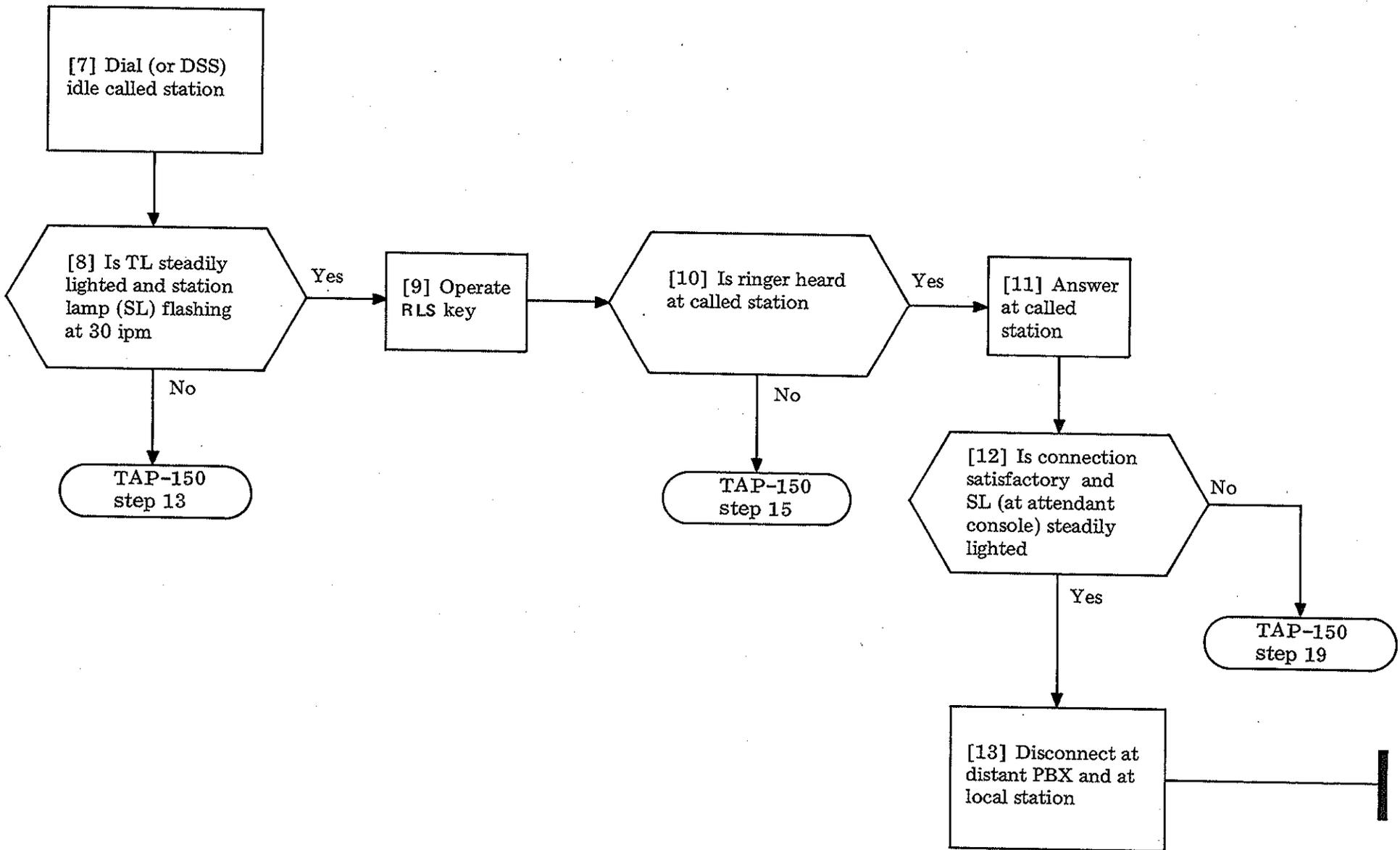
NOTE 3
 At attendant console —
 • SL flashes at 60 ipm
 • Busy tone heard
 At busy station —
 • Indication of camp-on tone heard

SUMMARY

Arrange for an incoming ringdown tie trunk (RD TT) call to be placed via the RD TT in trouble. Answer the call at the attendant console and extend the call via dial or direct station selection (DSS) to an idle station. If a certain station is involved with the trouble, use

that station for the test call(s). If a normal result fails to occur during the progress of the call, locate the fault using the TAP reference given. This procedure assumes trouble has been tested (by test desk, etc) and proved to be at the local PBX.





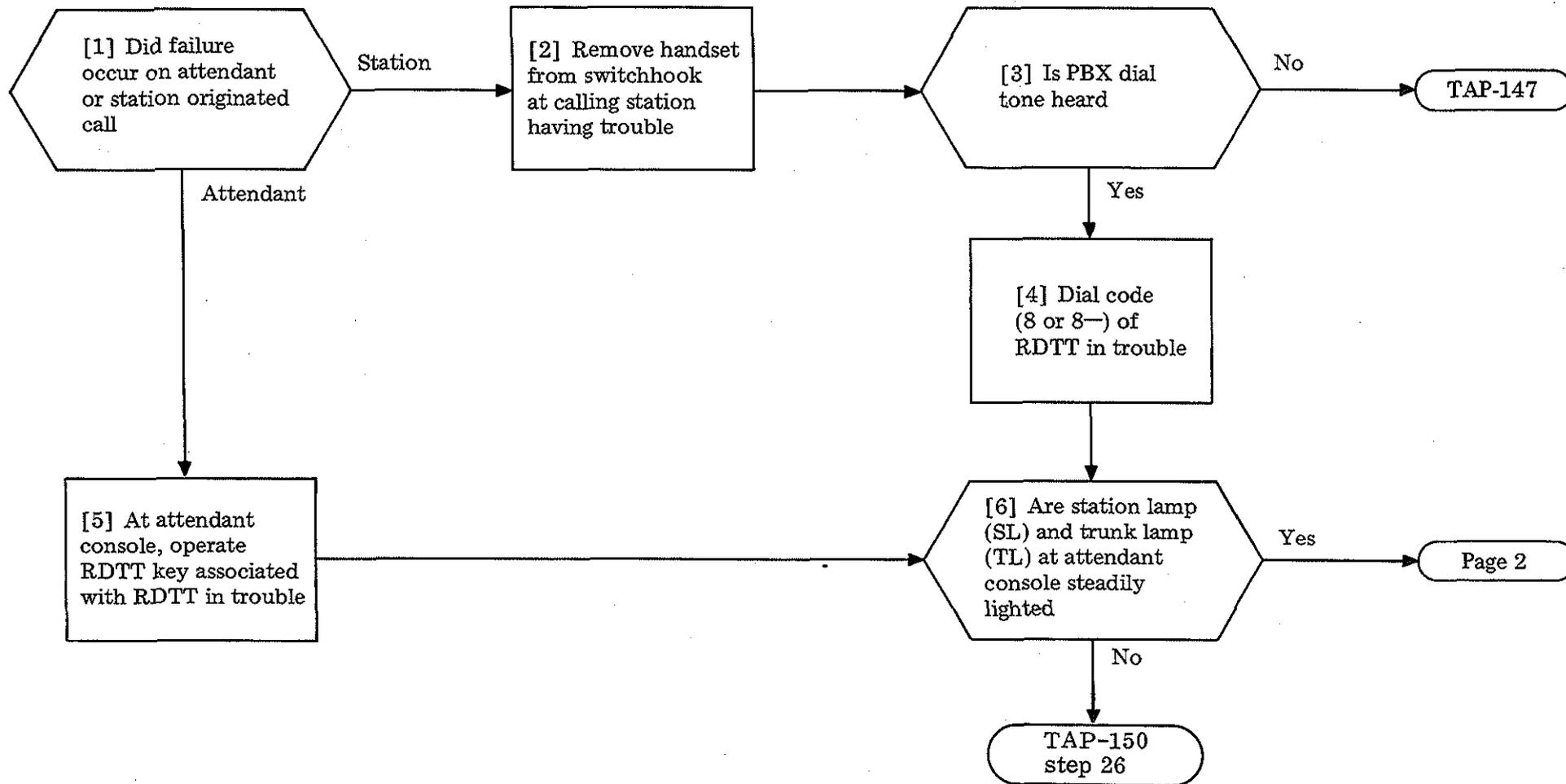
CLEAR INCOMING RINGDOWN TIE TRUNK TO STATION CALL TROUBLE (SD-65756)

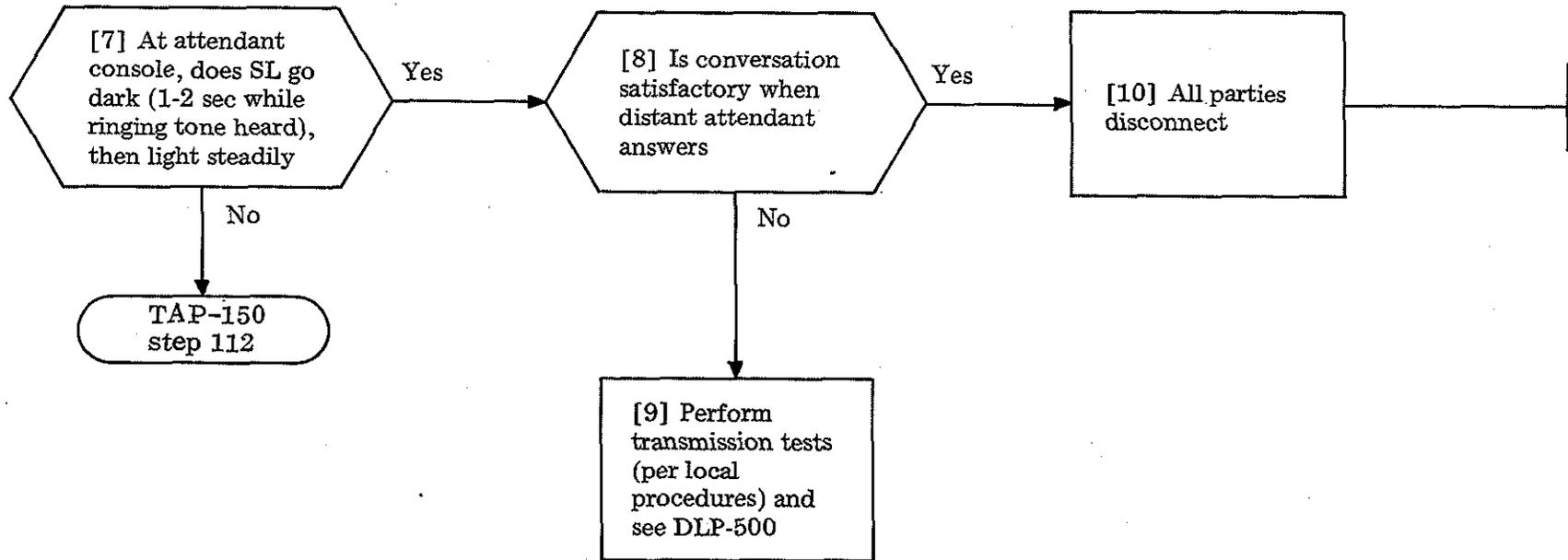
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SUMMARY

Place an outgoing ringdown tie trunk (RDTT) call via the RDTT in trouble. Make the call from either the attendant console or station, whichever reported the trouble. Advance the call until a failure occurs; then use the TAP or other reference given to locate the fault. Although no intermediate switching is involved between the

two PBXs connected via the RDTT, transmission (either voice or signaling) failures usually require coordination via the test desk per local procedures. This procedure assumes there is one RDTT per dial access code (8 or 8-) and trouble has been tested (via test desk, etc) and proved to be at the local PBX.





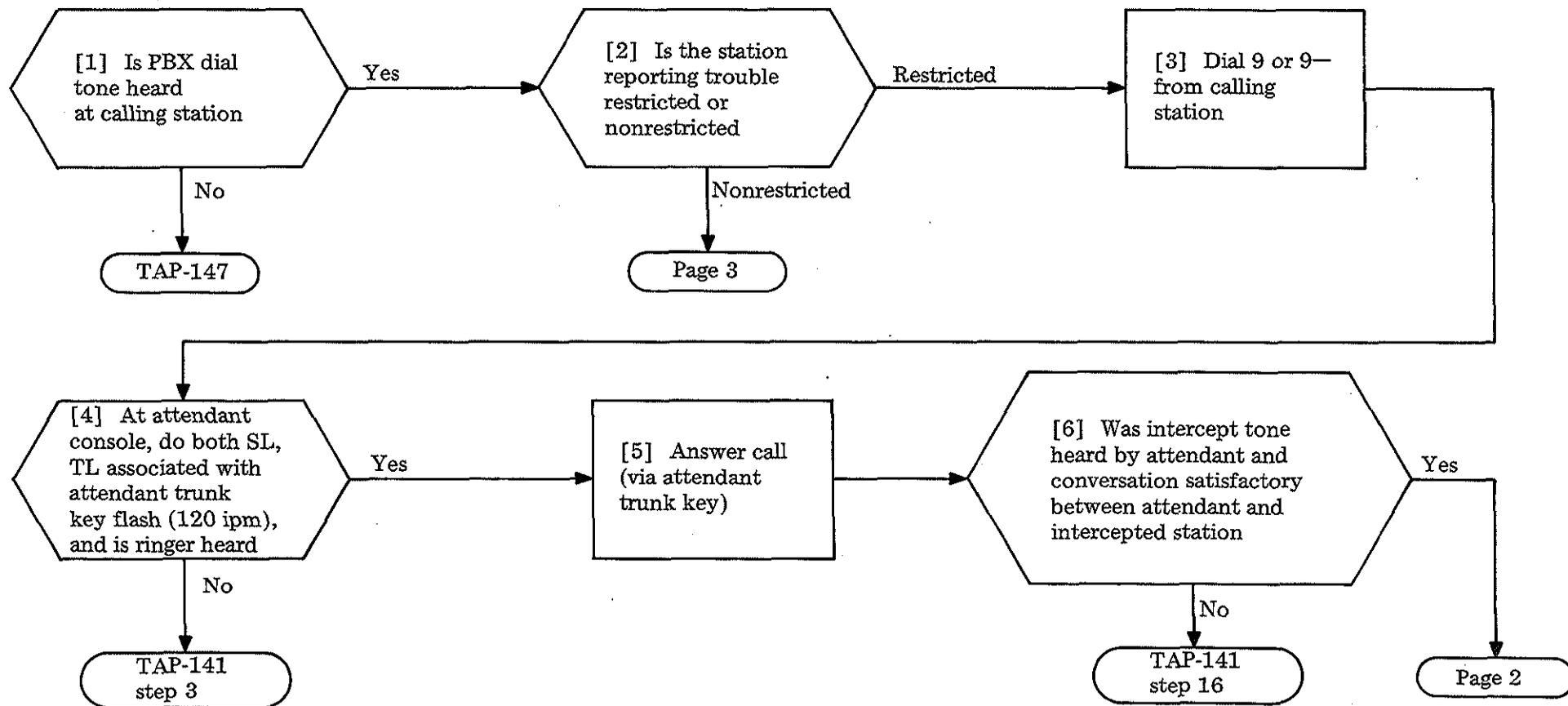
SUMMARY

Make test call(s) to the attendant from the station reported in trouble. If station is unrestricted, dial "0". If station is restricted and failed to reach attendant via intercept, dial same 9 or 9- code. When customer needs permit, busy out each "test ok" attendant trunk using the make-busy and busy display

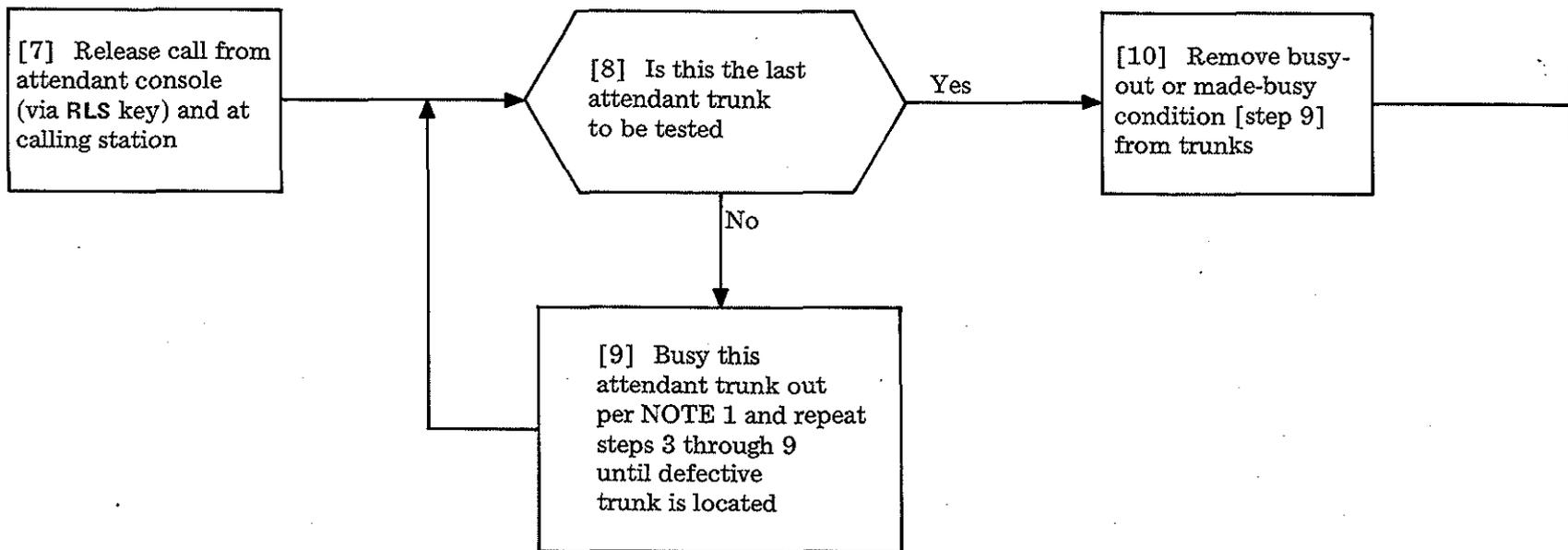
unit (slide 2), if provided. See NOTE 1, page 2.

Verify at the attendant console which trunk was

- Seized — trunk lamp (TL) and/or station lamp (SL) flash at 120 ipm, or
 - Released — TL and/or SL go dark.
- Repeat test calls until fault is isolated.

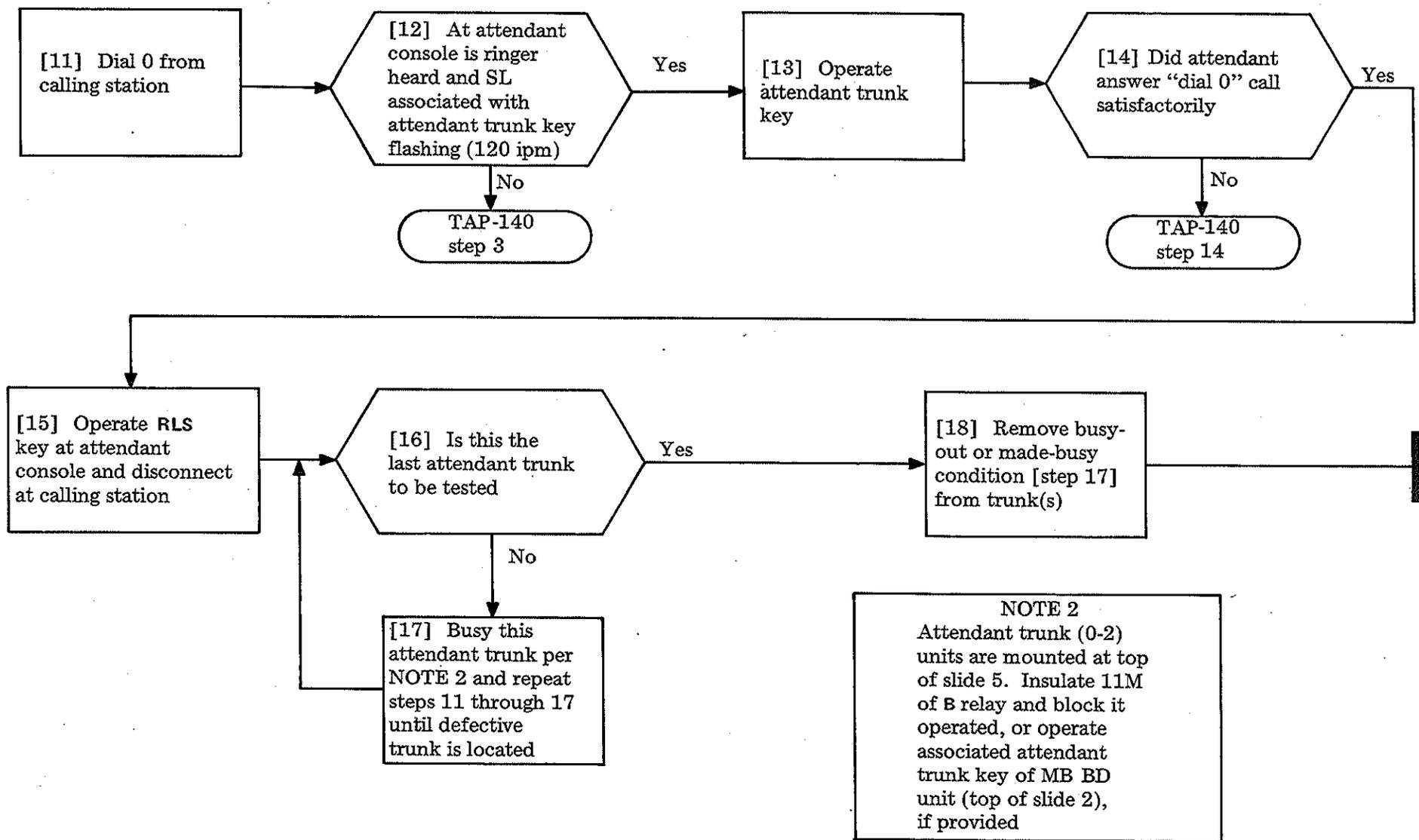


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NOTE 1
 Attendant trunk (0-2) units are mounted at top of slide 5. Insulate 11M of B relay and block it operated, or operate associated attendant trunk key of make-busy and busy display unit (top of slide 2, if provided)

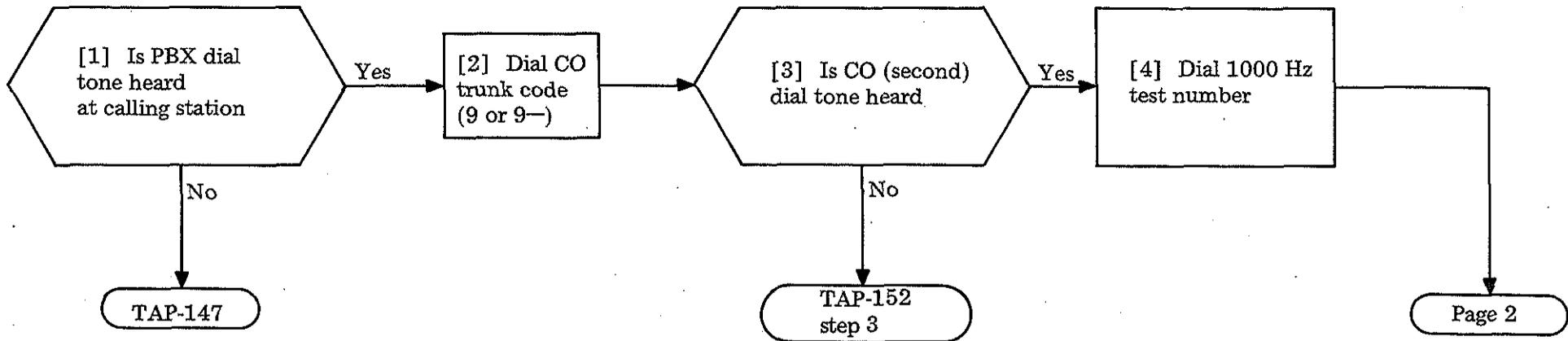
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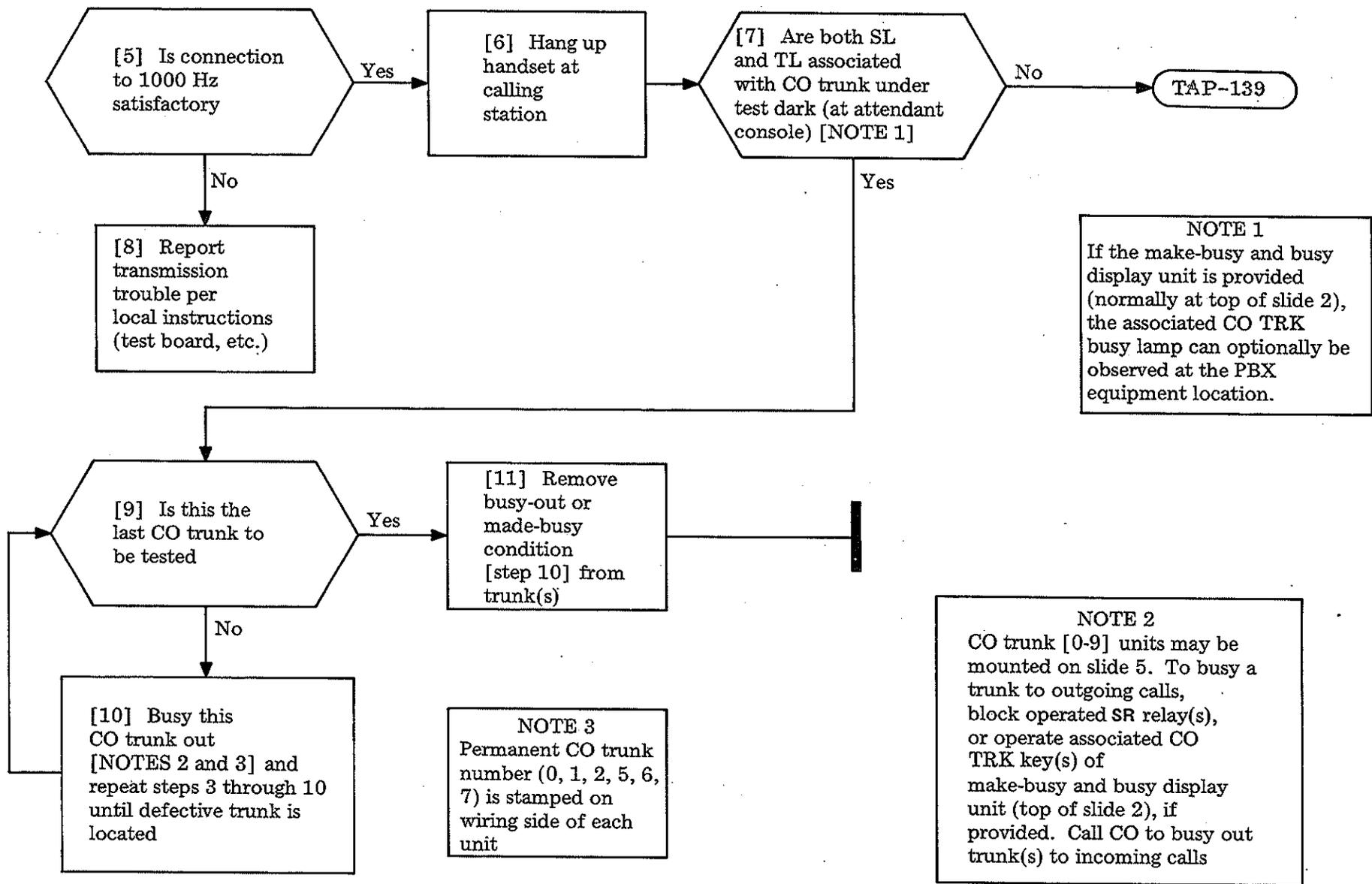
SUMMARY

From an unrestricted station, dial the one- or 2-digit trunk access code (9 or 9-) of the central office (CO) trunk or trunk group reported in trouble. When possible, make call from station reporting the failure. When customer trunk needs permit, busy out each "test ok" trunk. See NOTE 2, page 2. Repeat test calls to the

same trunk or trunk group until the fault is isolated. Verify at the attendant console which trunk was seized (station lamp [SL] and trunk lamp [TL] steadily lighted).



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NOTE 1
 If the make-busy and busy display unit is provided (normally at top of slide 2), the associated CO TRK busy lamp can optionally be observed at the PBX equipment location.

NOTE 2
 CO trunk [0-9] units may be mounted on slide 5. To busy a trunk to outgoing calls, block operated SR relay(s), or operate associated CO TRK key(s) of make-busy and busy display unit (top of slide 2), if provided. Call CO to busy out trunk(s) to incoming calls

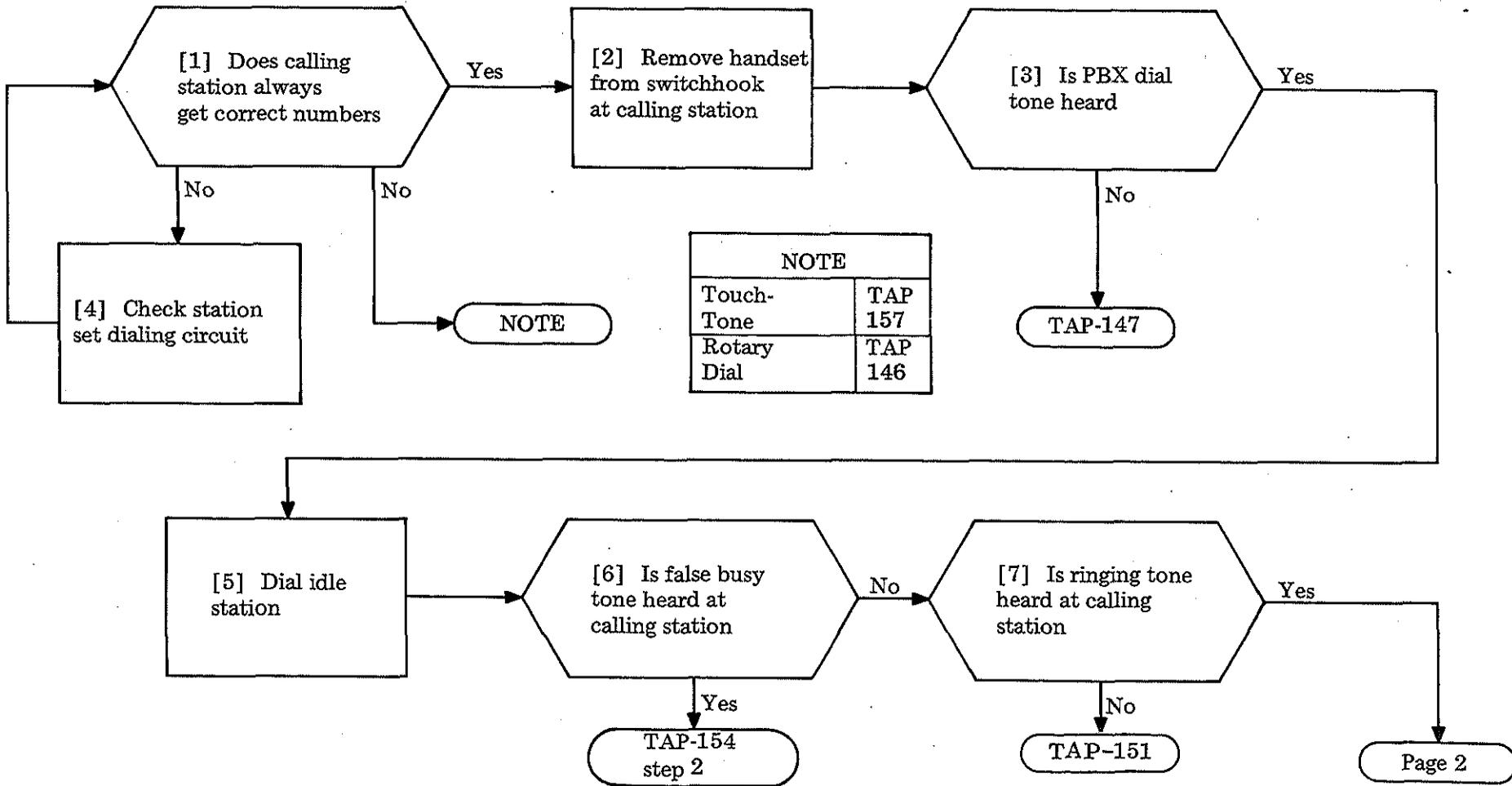
NOTE 3
 Permanent CO trunk number (0, 1, 2, 5, 6, 7) is stamped on wiring side of each unit

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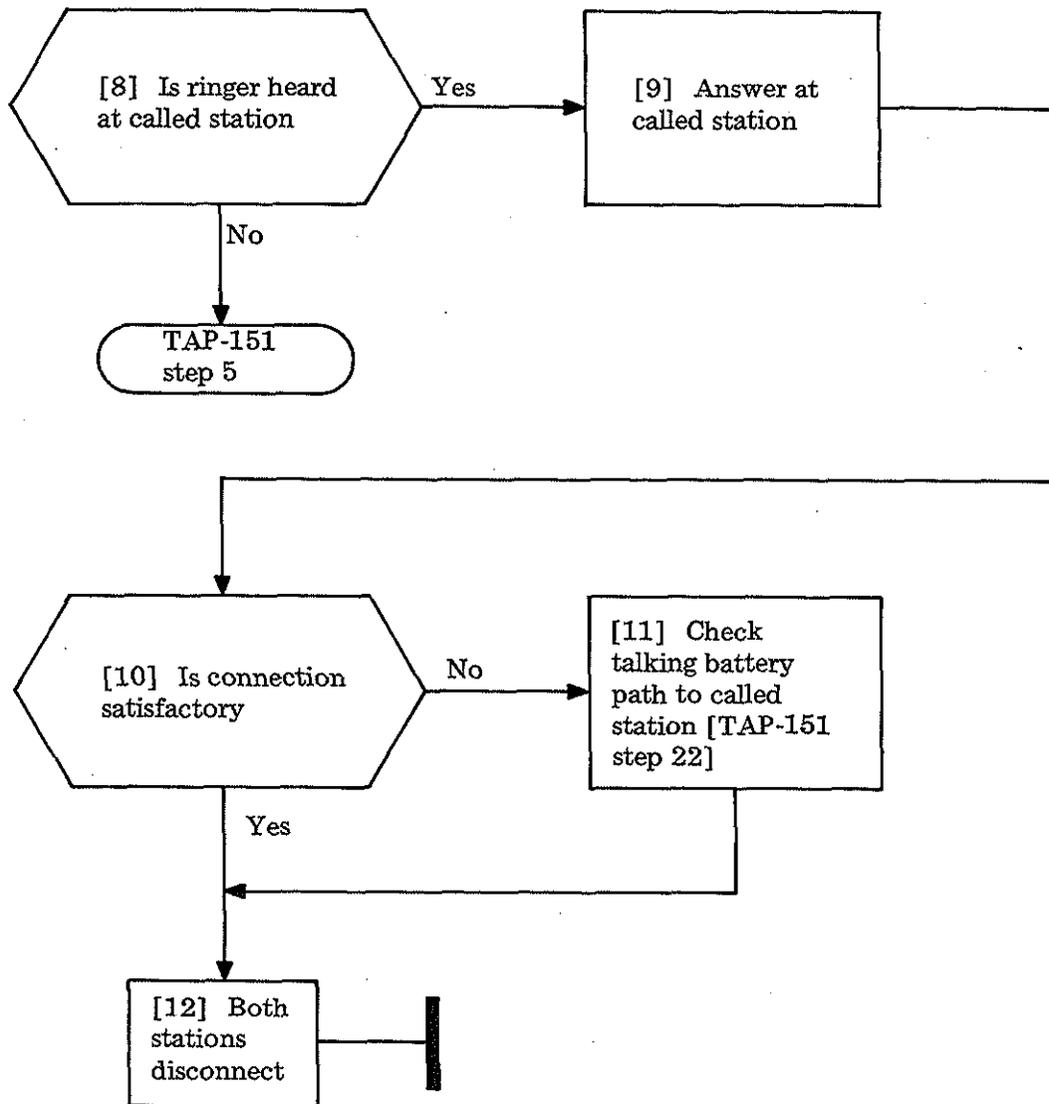
SUMMARY

Using idle stations, originate a station-to-station call. If a normal result does not occur, locate the fault using the TAP reference given. If reported trouble occurred to a calling

station, make the test call(s) *from* the station reported in trouble. Otherwise, make the call *to* the station reported in trouble. Repeat test calls (if necessary) until failure occurs; then start procedure at step indicated by failure.



| NOTE | |
|-------------|---------|
| Touch-Tone | TAP 157 |
| Rotary Dial | TAP 146 |



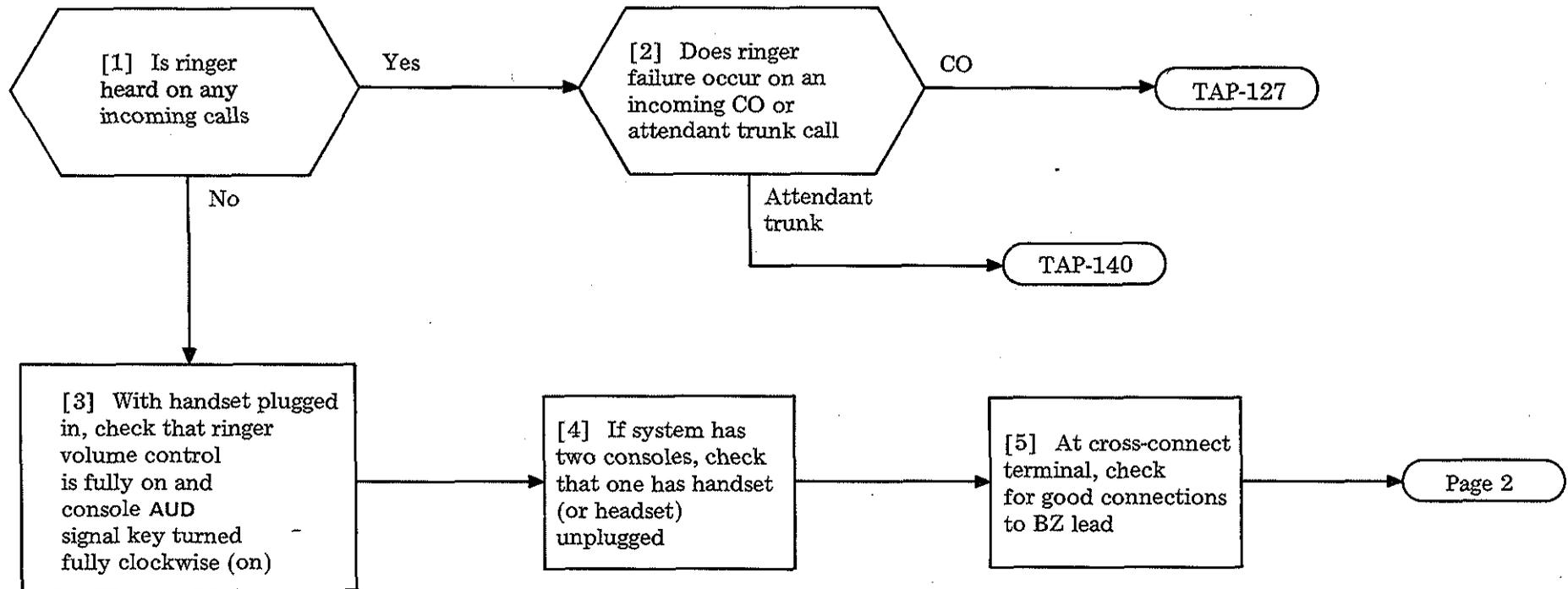
CLEAR STATION-TO-STATION CALL TROUBLE

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SUMMARY

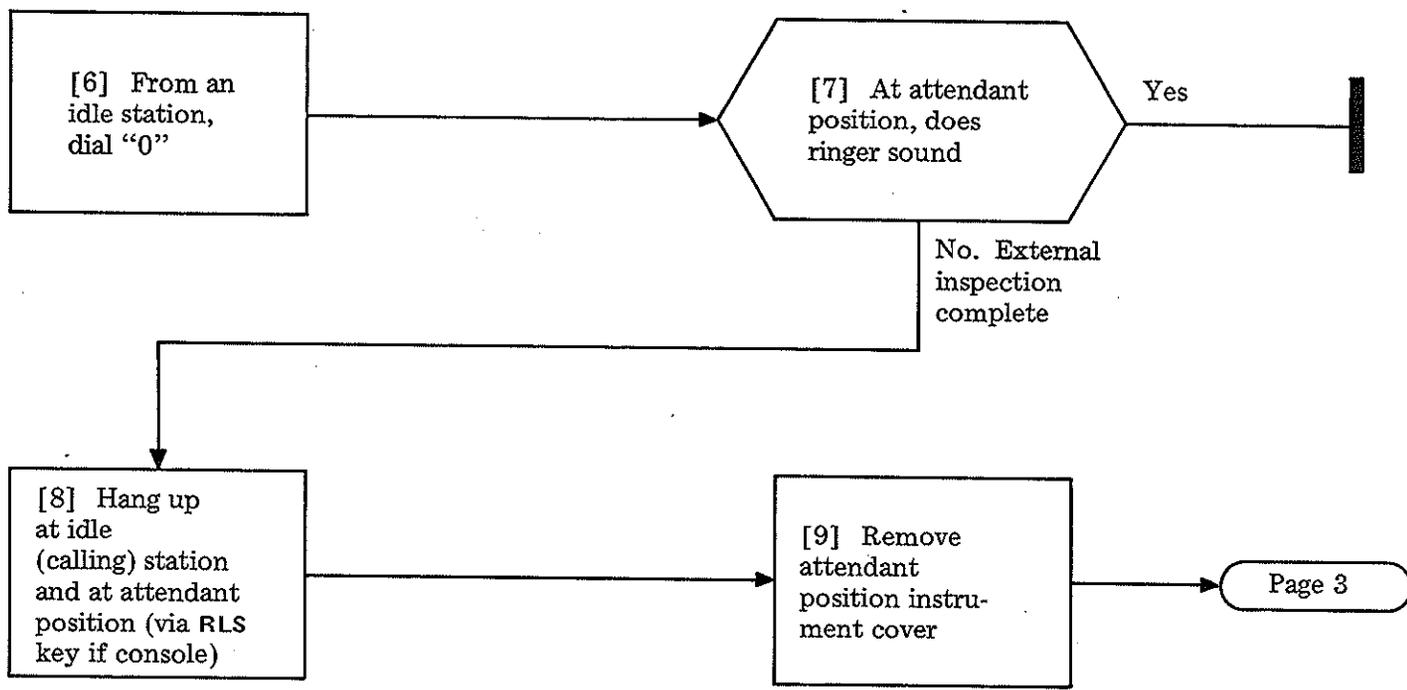
Determine whether audible signal fails on all incoming calls or fails at times on a certain incoming CO or attendant trunk. Use this procedure to help locate the trouble via

- Visual inspection
- Test call(s)



CLEAR ATTENDANT AUDIBLE SIGNAL TROUBLE

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CLEAR ATTENDANT AUDIBLE SIGNAL TROUBLE

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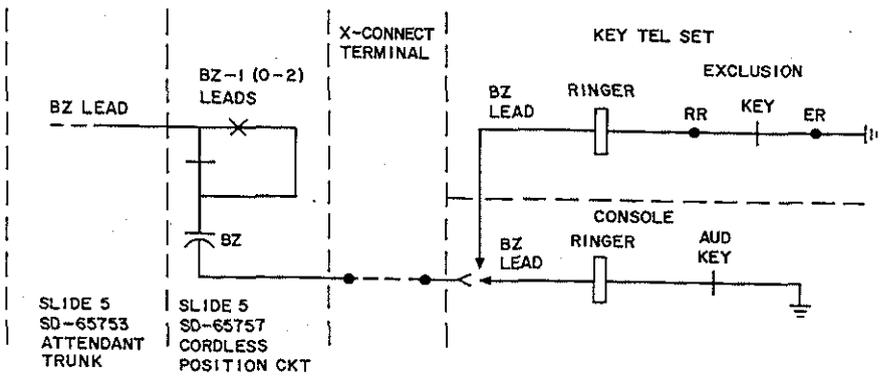
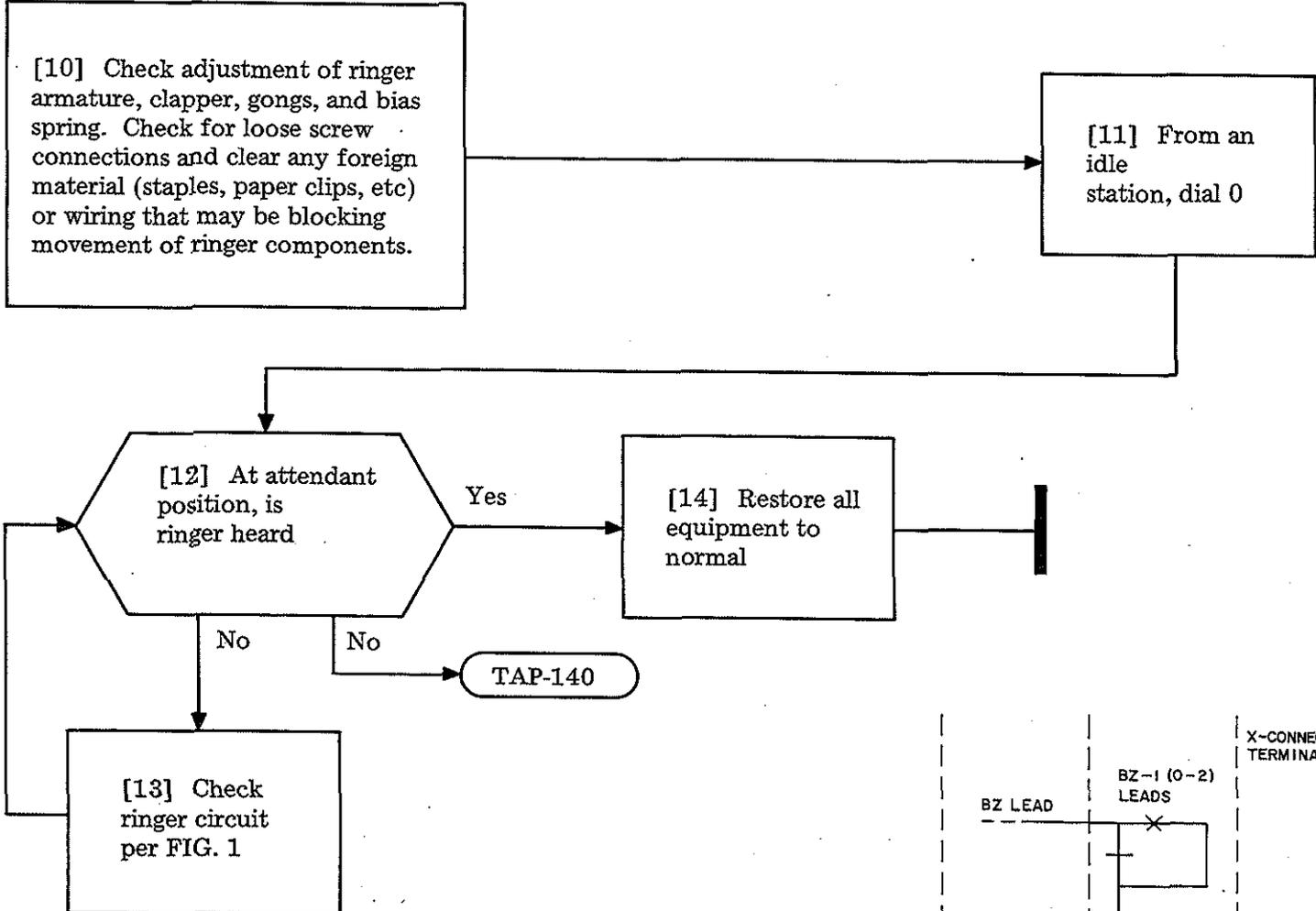


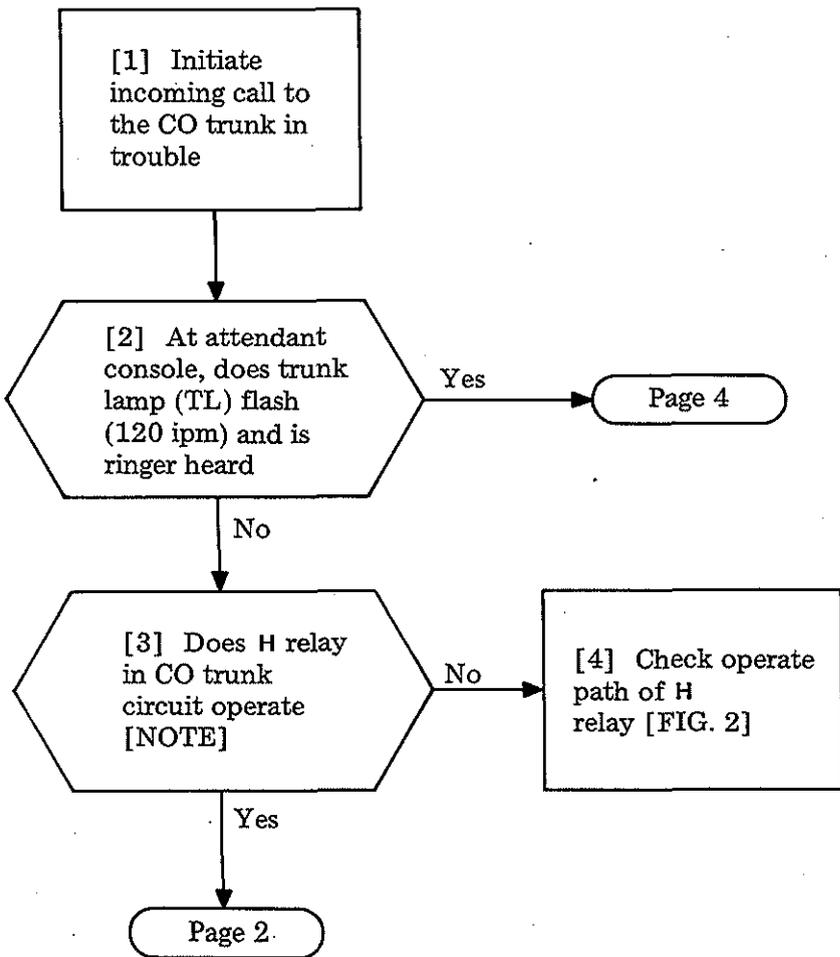
FIG. 1

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SUMMARY

Using local procedures (test desk, etc.), initiate an incoming CO trunk call to the trunk equipment unit associated with the reported trouble. Observe the operation of relays in slide 5 [FIG. 1] as indicated by this procedure until a failure occurs. Ask the

attendant to operate the associated CO trunk key, again observing the operation of the relays indicated. If a failure occurs, locate the fault using the figure or other reference given. Seized trunk unit can normally be identified by observing operation of R relay during ringing cycle.



| INDICATION OF CAMP-ON UNIT | |
|------------------------------|---|
| ATND TRUNK 2 | |
| ATND TRUNK 1 | |
| ATND TRUNK 0 | |
| CO TRUNK OR RINGDOWN TIE TRK | 9 |
| POS CKT AND TRK PTCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 8 |
| CO TRUNK | 7 |
| CO TRUNK | 6 |
| CO TRUNK | 5 |
| CO TRUNK OR RINGDOWN TIE TRK | 4 |
| POS CKT AND TRK PATCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 3 |
| CO TRUNK | 2 |
| CO TRUNK | 1 |
| CO TRUNK | 0 |

SLIDE 5

FIG. 1

NOTE
Remove cover to observe pulsing of armature during ringing

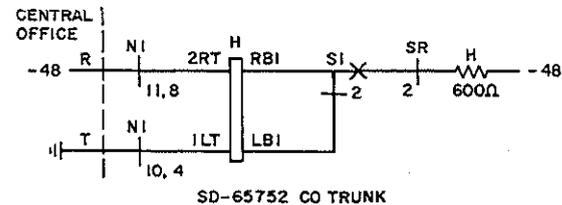


FIG. 2

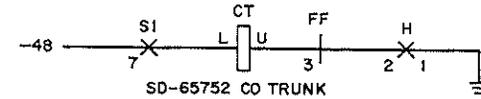
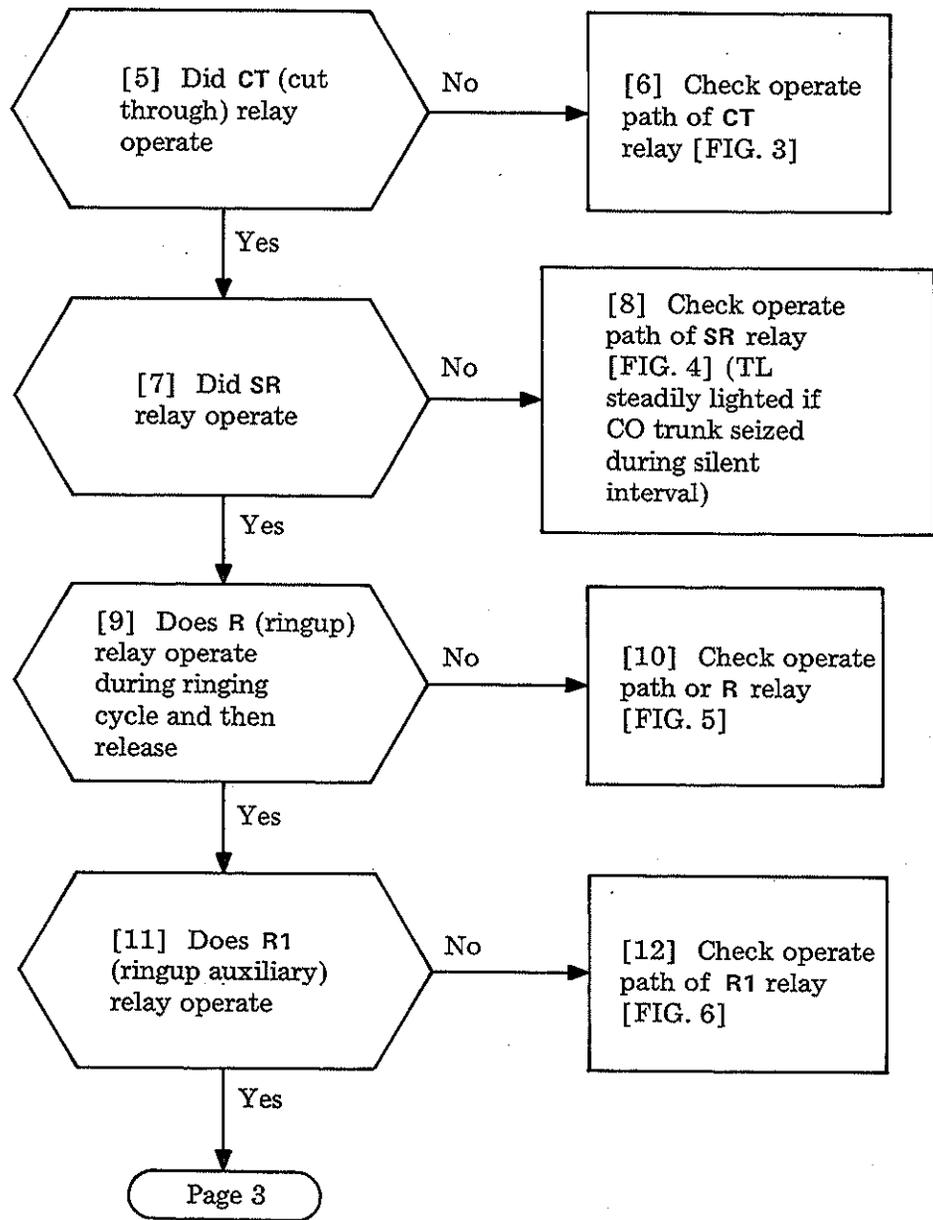


FIG. 3

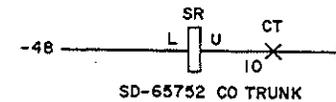


FIG. 4

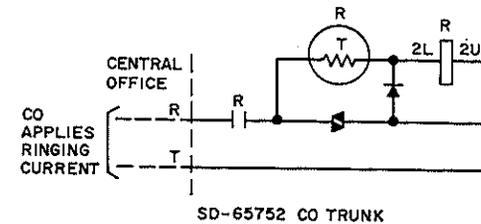


FIG. 5

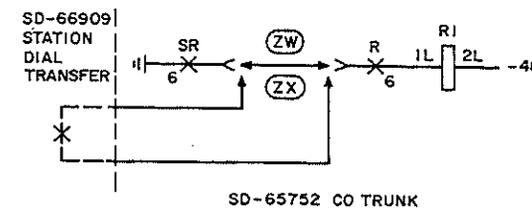


FIG. 6

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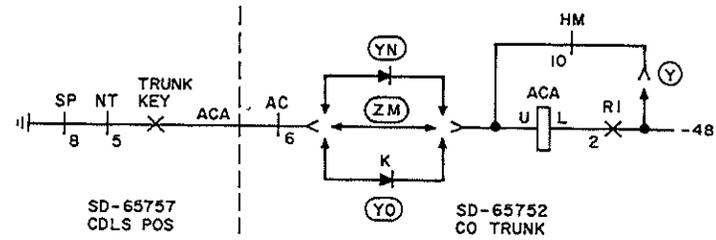
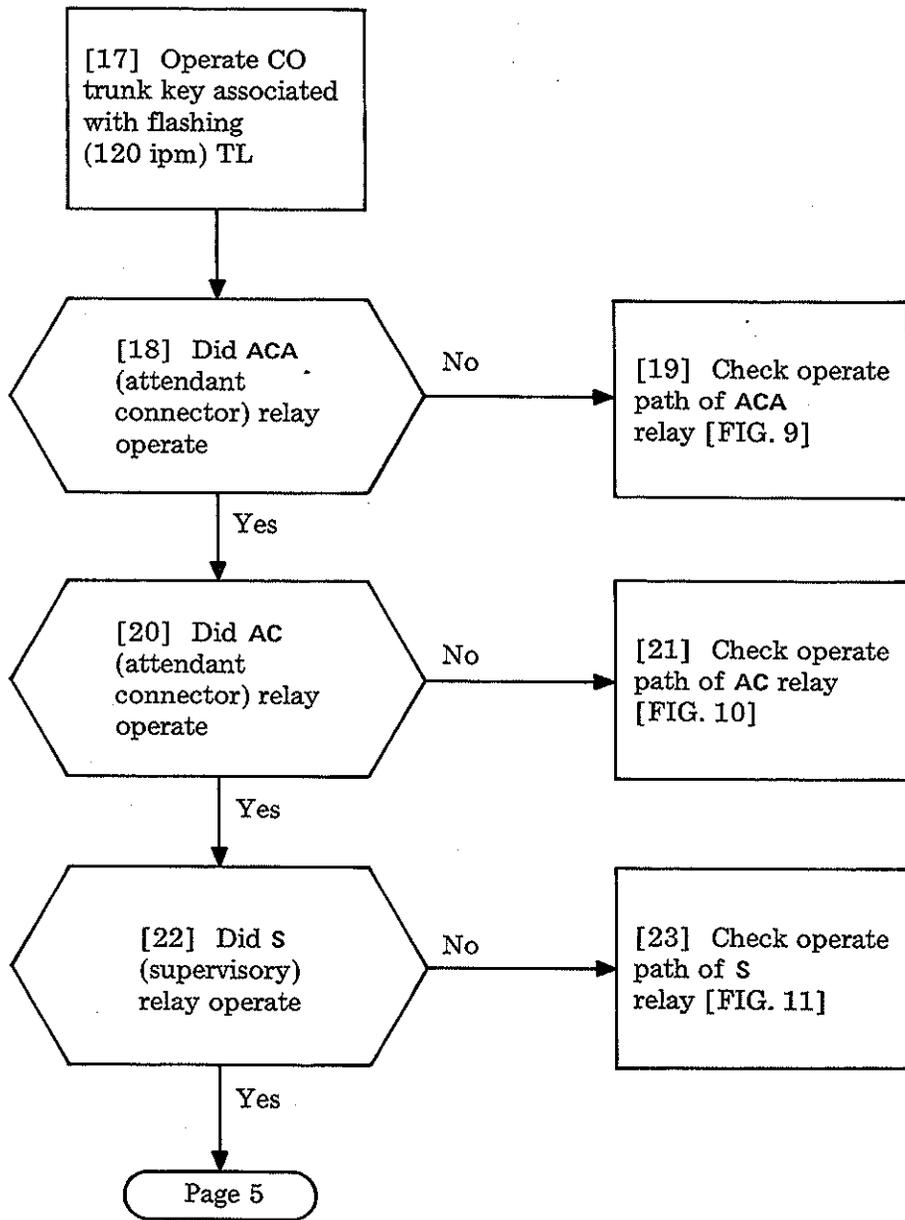


FIG. 9

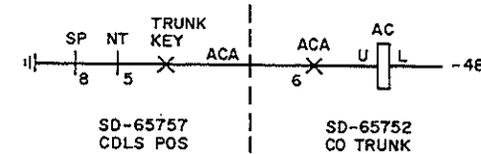


FIG. 10

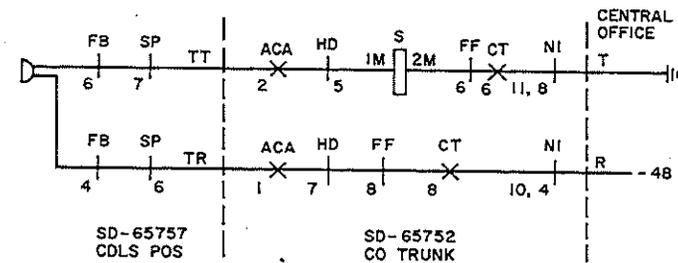


FIG. 11

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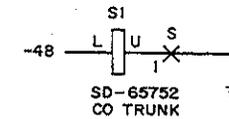
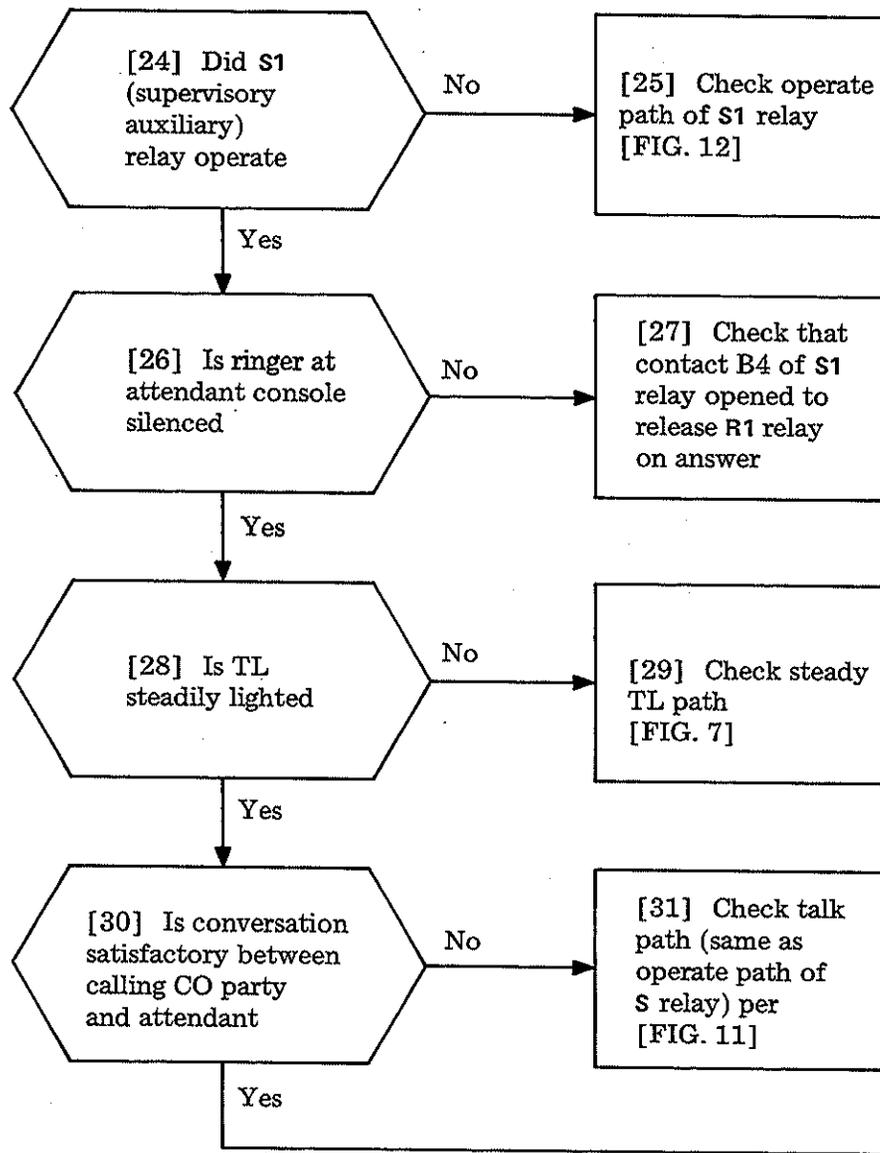
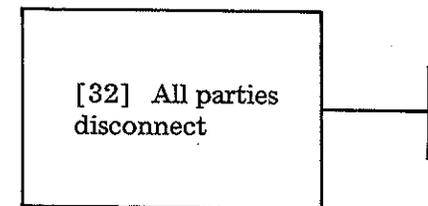


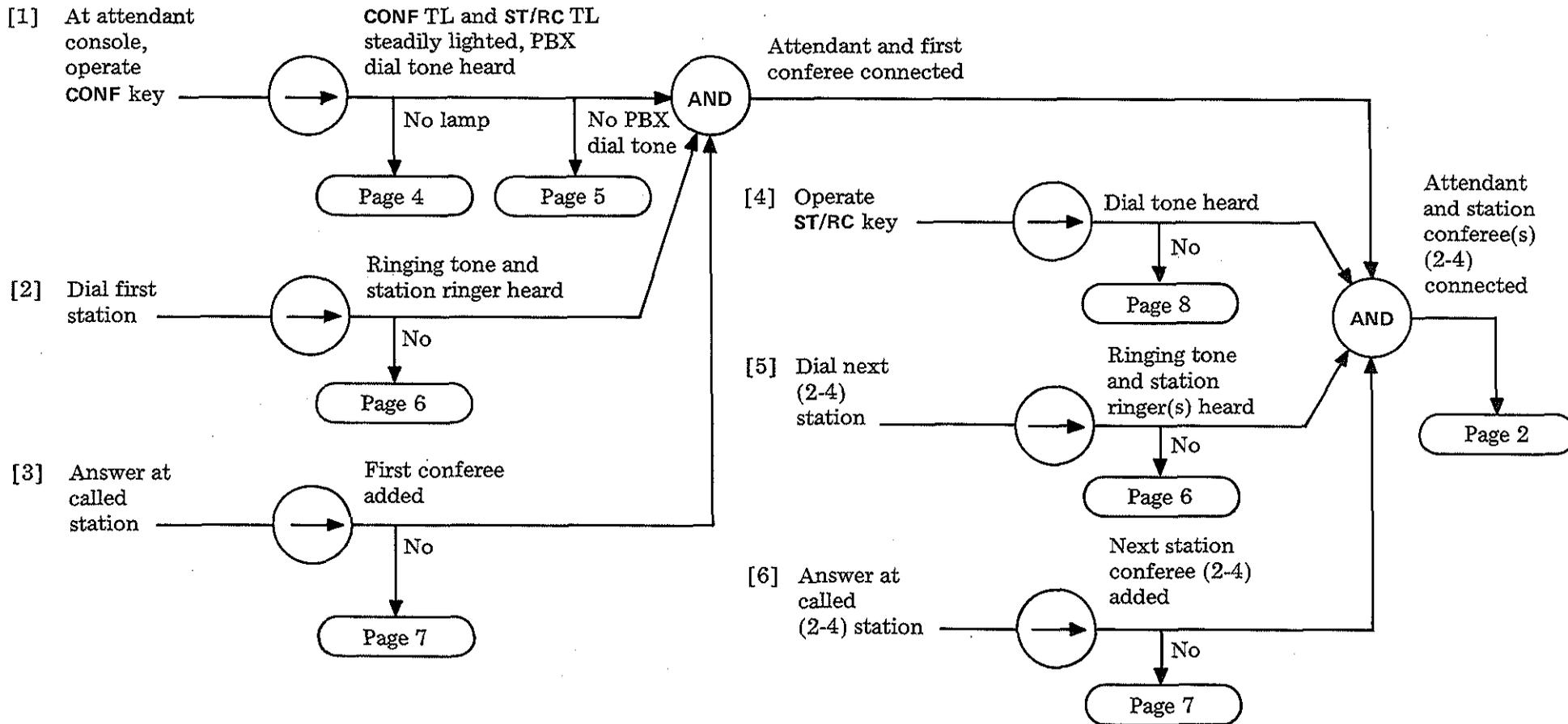
FIG. 12



SUMMARY

From attendant console, originate and advance a conference (CONF) call until a failure occurs. Observe the operation of each associated line hold magnet and the connection of each vertical to the switching network at slide 2, crossbar switch 2 [FIG. 5]. The five conference ports may be associated with any five numbers from 80 to 89, which

are connected to five of verticals 0 through 9. A central office (CO) conferee may connect to port 5 only. This procedure assumes ports 1 through 5 are connected to verticals 5 through 9. The plug-in conference equipment (SD-66908) is located in slide 2 on four adjacent mounting plates (above plate Q, location is optional).



[7] Repeat steps 4 through 6 for remaining two *station* conferees — then operate RLS (release) key [NOTE 1]

[8] Via test board (for example), initiate and answer incoming CO trunk call to be used as *trunk* (fifth) conferee

[9] Operate HOLD key → PBX dial tone heard

[10] Dial CO conference code (89) → CONF SL 120 ipm
 No
 Page 9

[11] Operate CONF key → ST/RC SL 60 ipm, CONF SL dark [NOTE 3]
 No
 Page 9

[12] Operate RLS key [NOTE 2] → ST/RC SL dark



CO conferee added

Page 3

NOTE 1

- Without lockout — attendant can reenter conference by reoperating CONF key
- With lockout — attendant can only reenter conference (via CONF key) if recalled

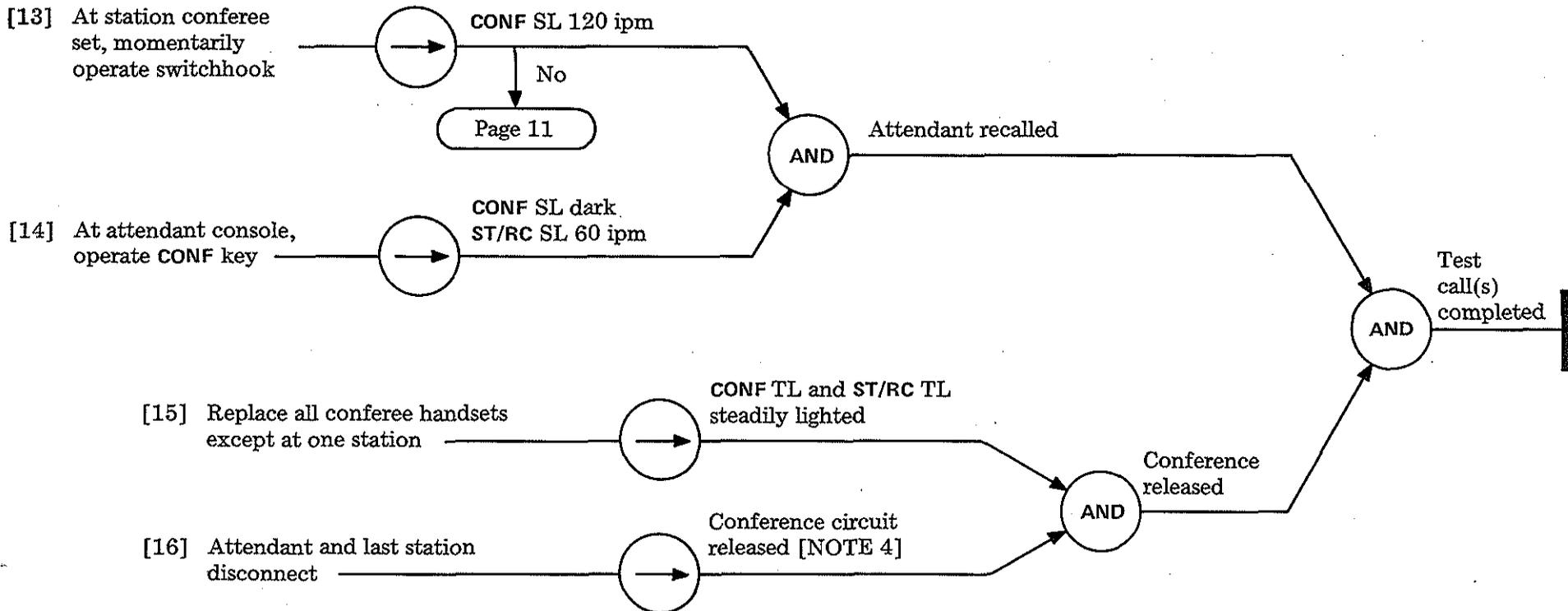
NOTE 2

RLS key mechanically releases CONF key, which releases the L, ON, ONA, and CRDK relays. See Fig. 1-3 (page 4) and Fig. 12 (page 7)

NOTE 3

ST/RC SL flashes at 60 ipm to indicate a full conference

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NOTE 4
 With the release conference (option Z) feature, attendant can force release of all conferees by holding the ST/RC key operated for five seconds.

CLEAR ATTENDANT-CONTROLLED CONFERENCE TROUBLE (SD-66908)

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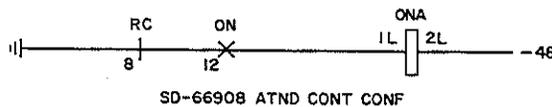
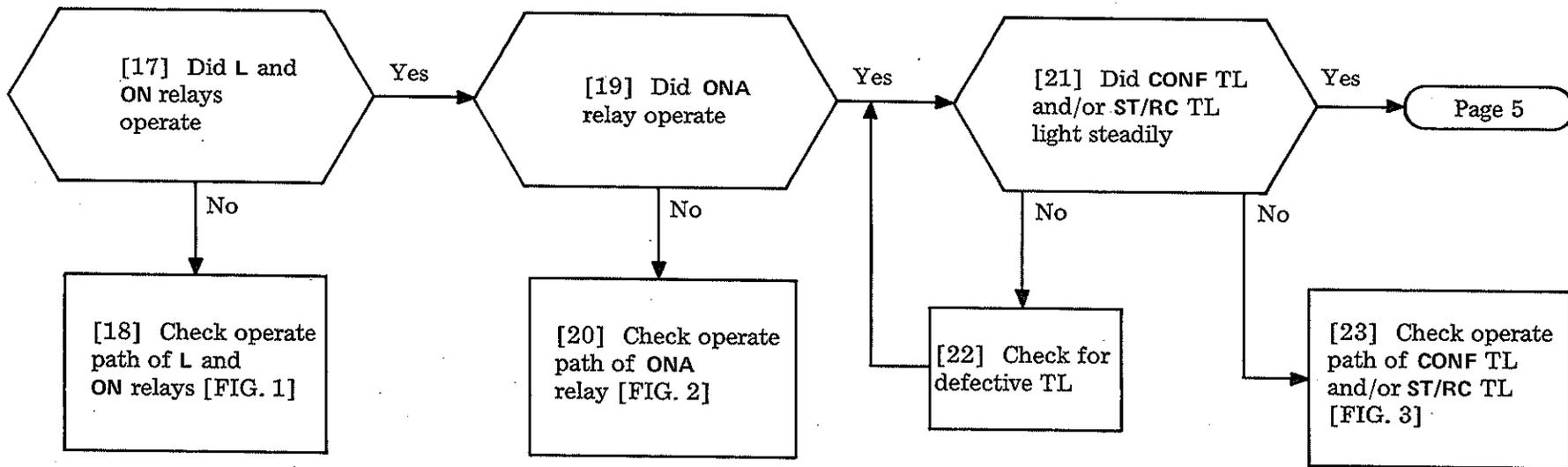


FIG. 2

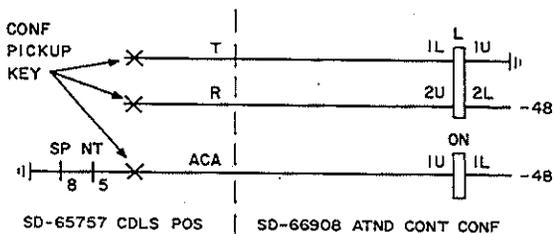


FIG. 1

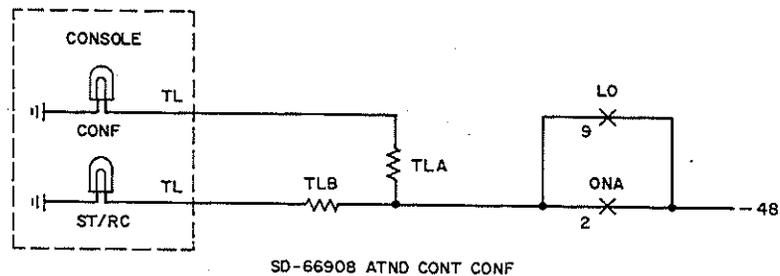
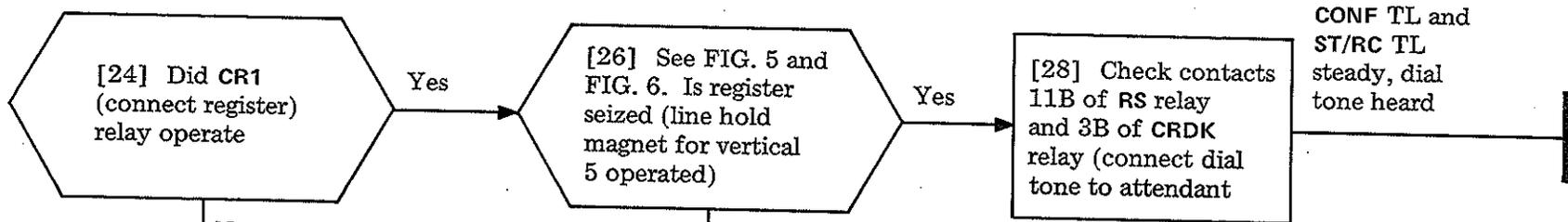


FIG. 3



NOTE 5
P (polarized) relay operates *after* attendant dials conferee

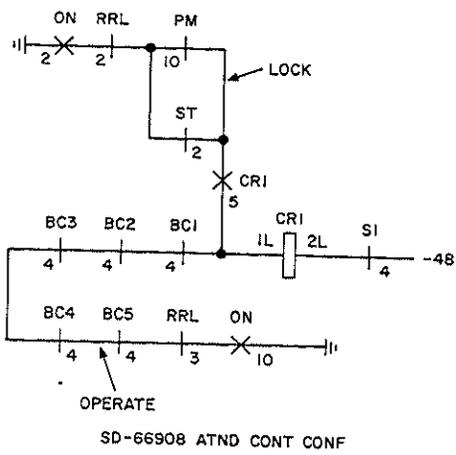


FIG. 4

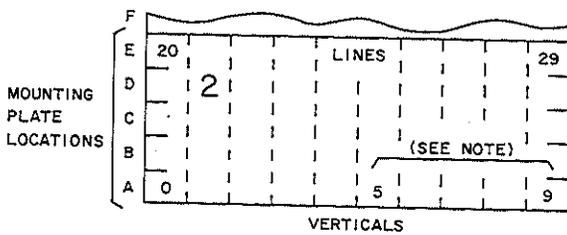


FIG. 5

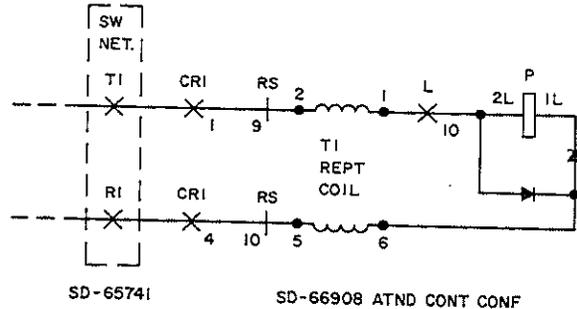


FIG. 6

CLEAR ATTENDANT-CONTROLLED CONFERENCE TROUBLE (SD-66908)

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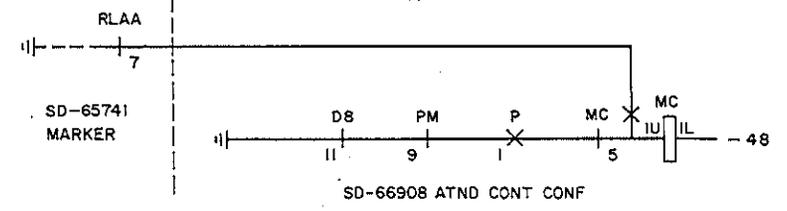
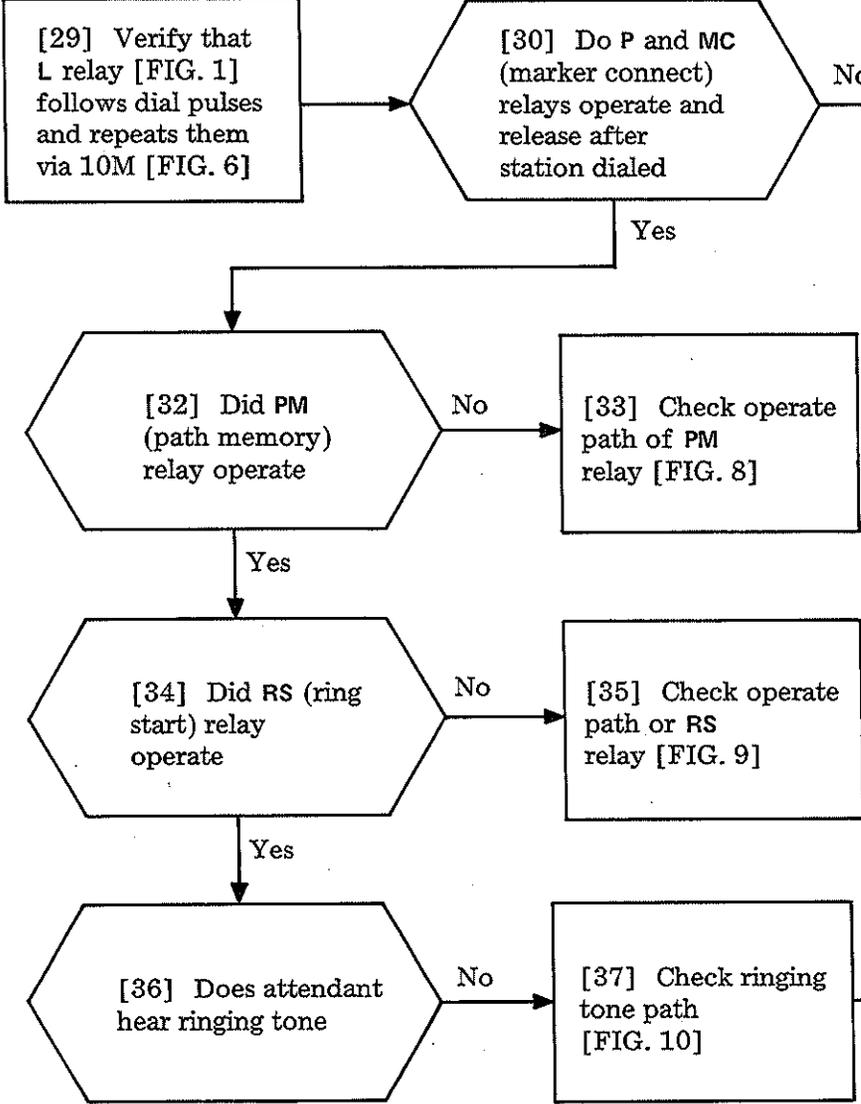


FIG. 7

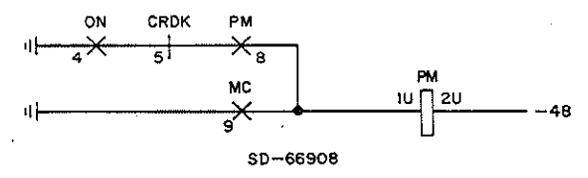


FIG. 8

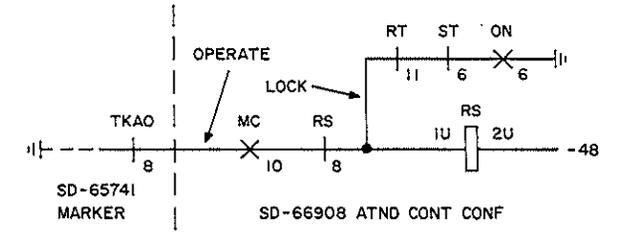


FIG. 9

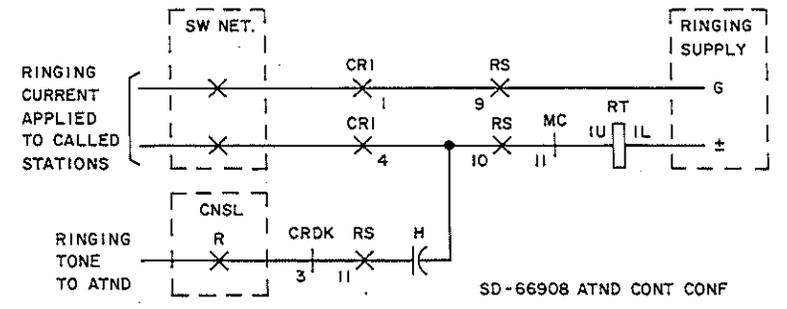
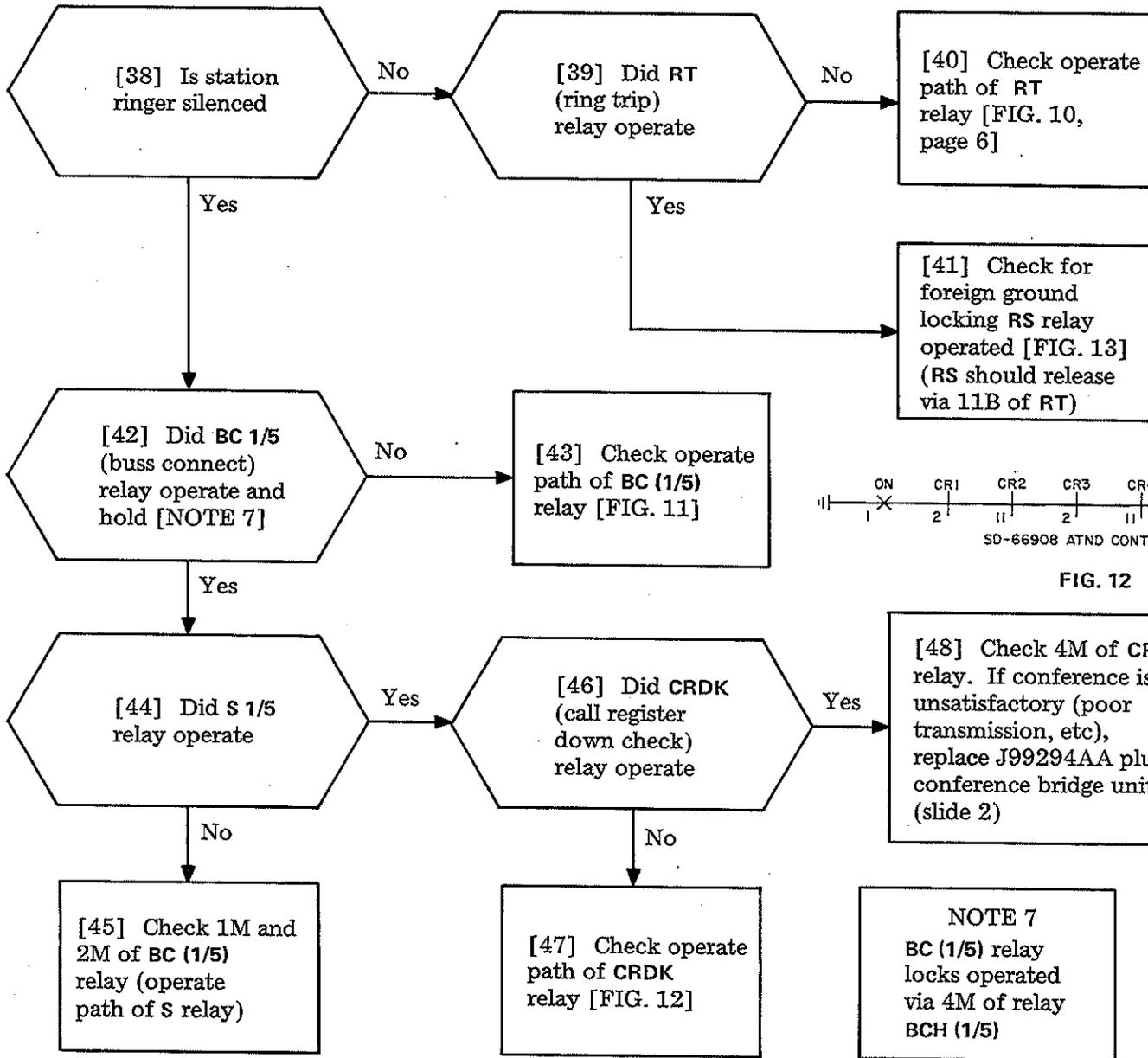


FIG. 10

| | |
|--------------|----------|
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NOTE 6
Relay number corresponds to conferee dialed:

| Conferee | Relay No. |
|----------|-----------|
| First | 1 |
| Second | 2 |
| Third | 3 |
| Fourth | 4 |
| Fifth | 5 |

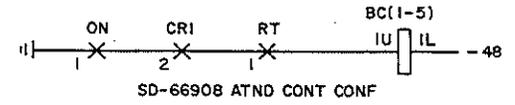


FIG. 11

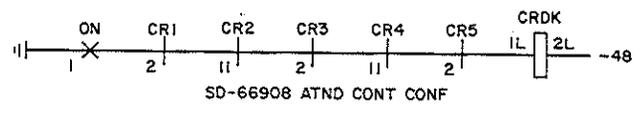


FIG. 12

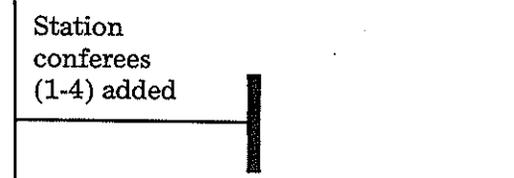


FIG. 13

NOTE 7
BC (1/5) relay locks operated via 4M of relay BCH (1/5)

| | |
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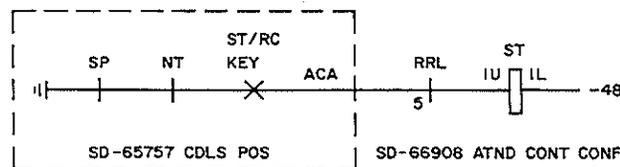
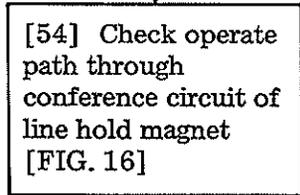
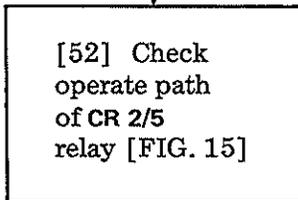
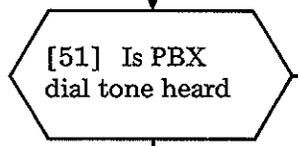
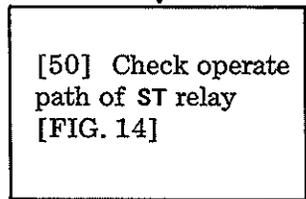
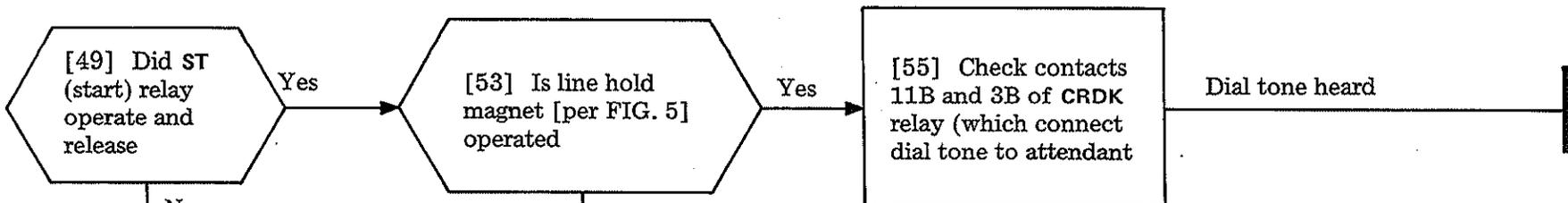


FIG. 14

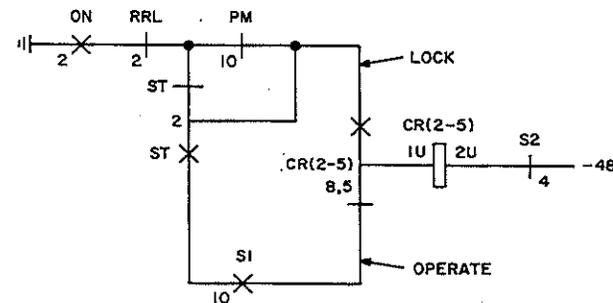
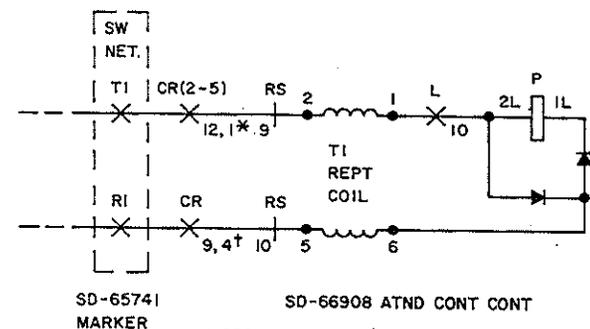


FIG. 15



* CR2, 4 CONTACT 12; CR3, 5 CONTACT 1
CR2, 4 CONTACT 9; CR3, 5 CONTACT 4

FIG. 16

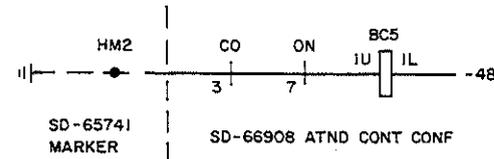
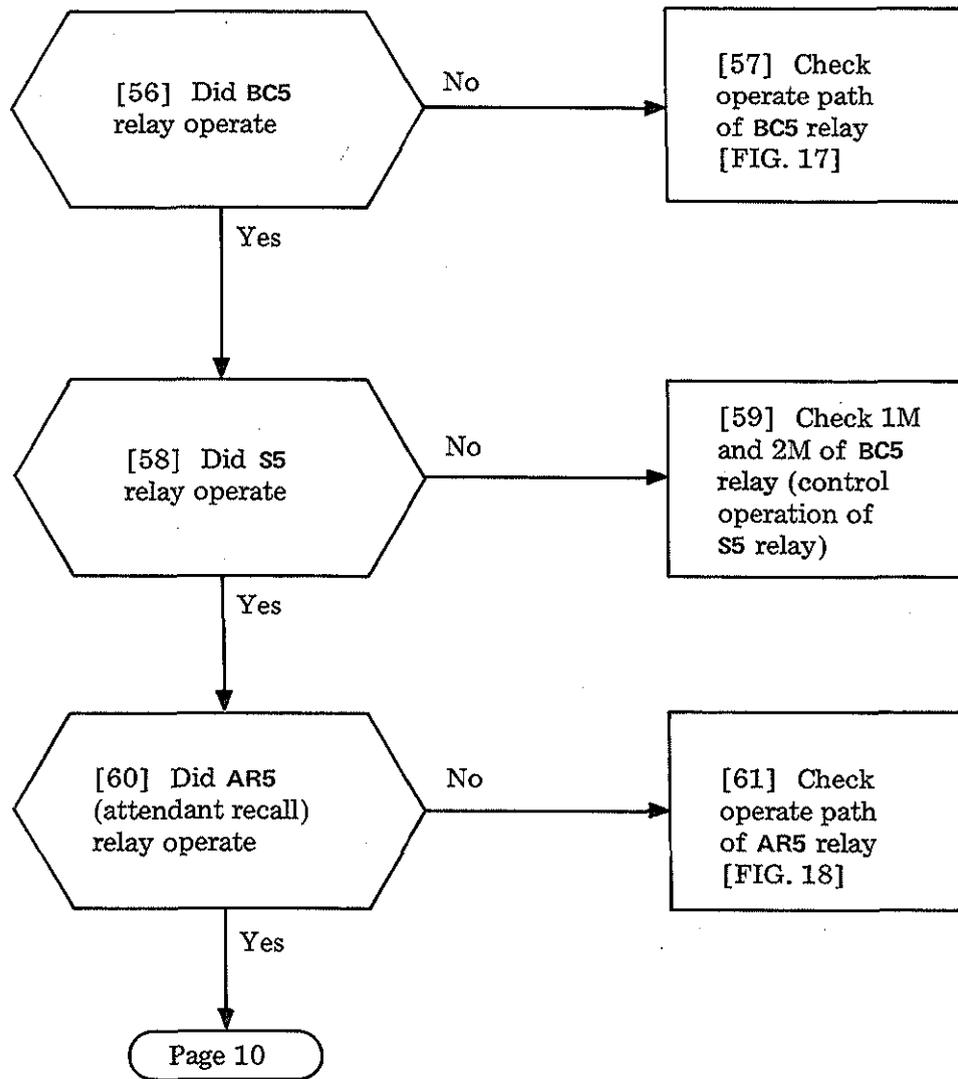


FIG. 17

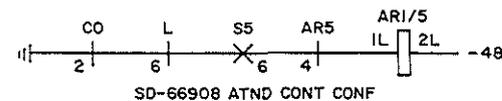


FIG. 18

| | |
|--------------|----------|
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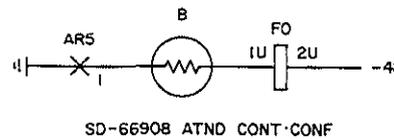
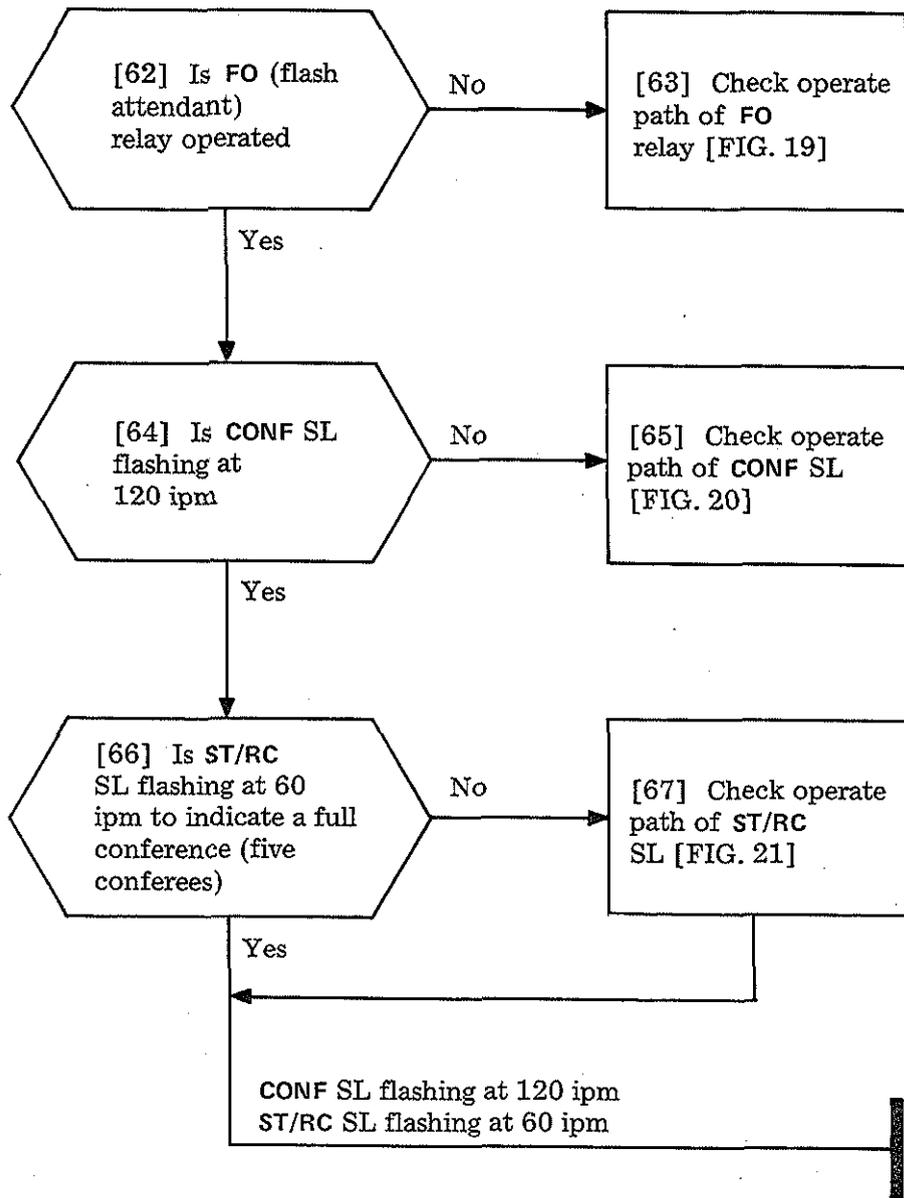


FIG. 19

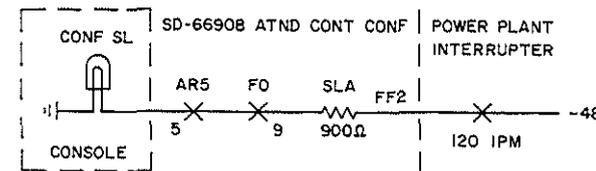


FIG. 20

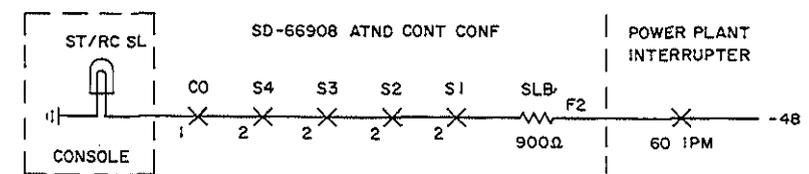
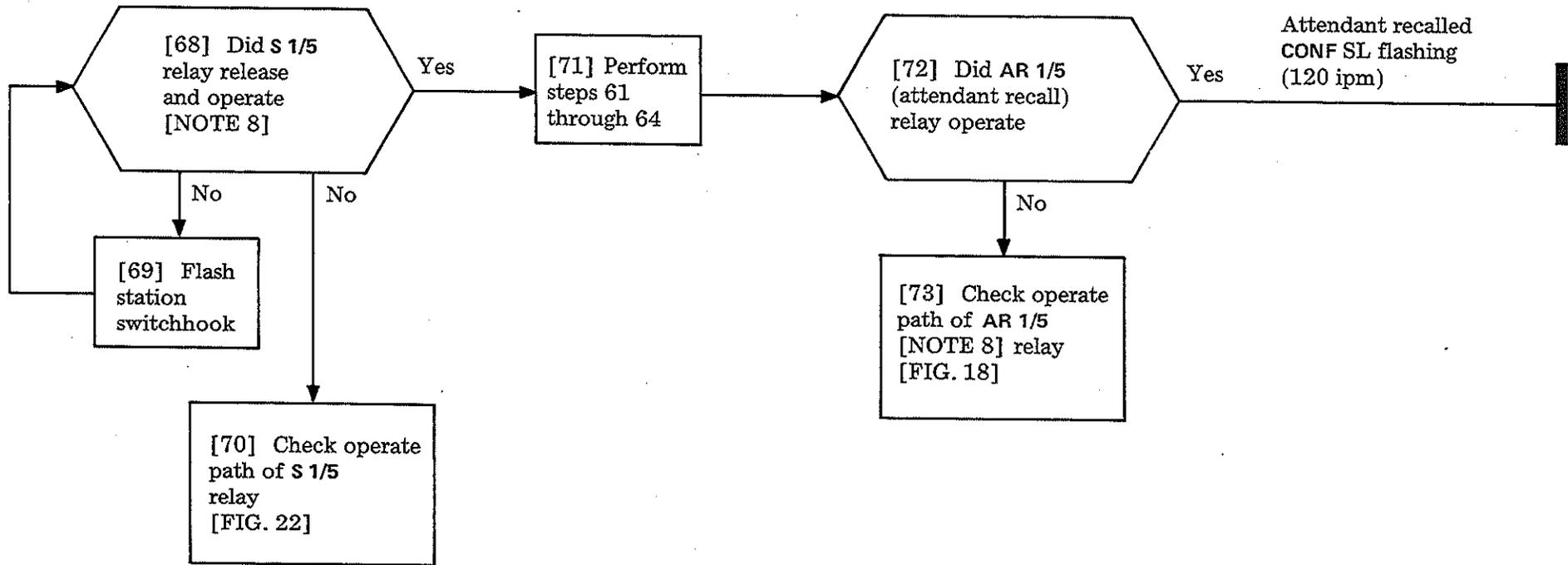


FIG. 21



NOTE 8
Relay number corresponds to conferee dialed:

| Conferee | Relay No. |
|----------|-----------|
| First | 1 |
| Second | 2 |
| Third | 3 |
| Fourth | 4 |
| Fifth | 5 |

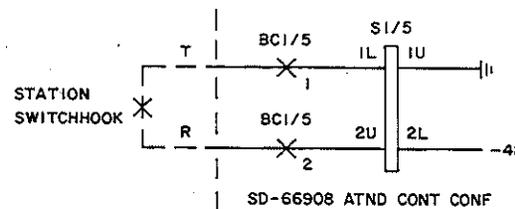
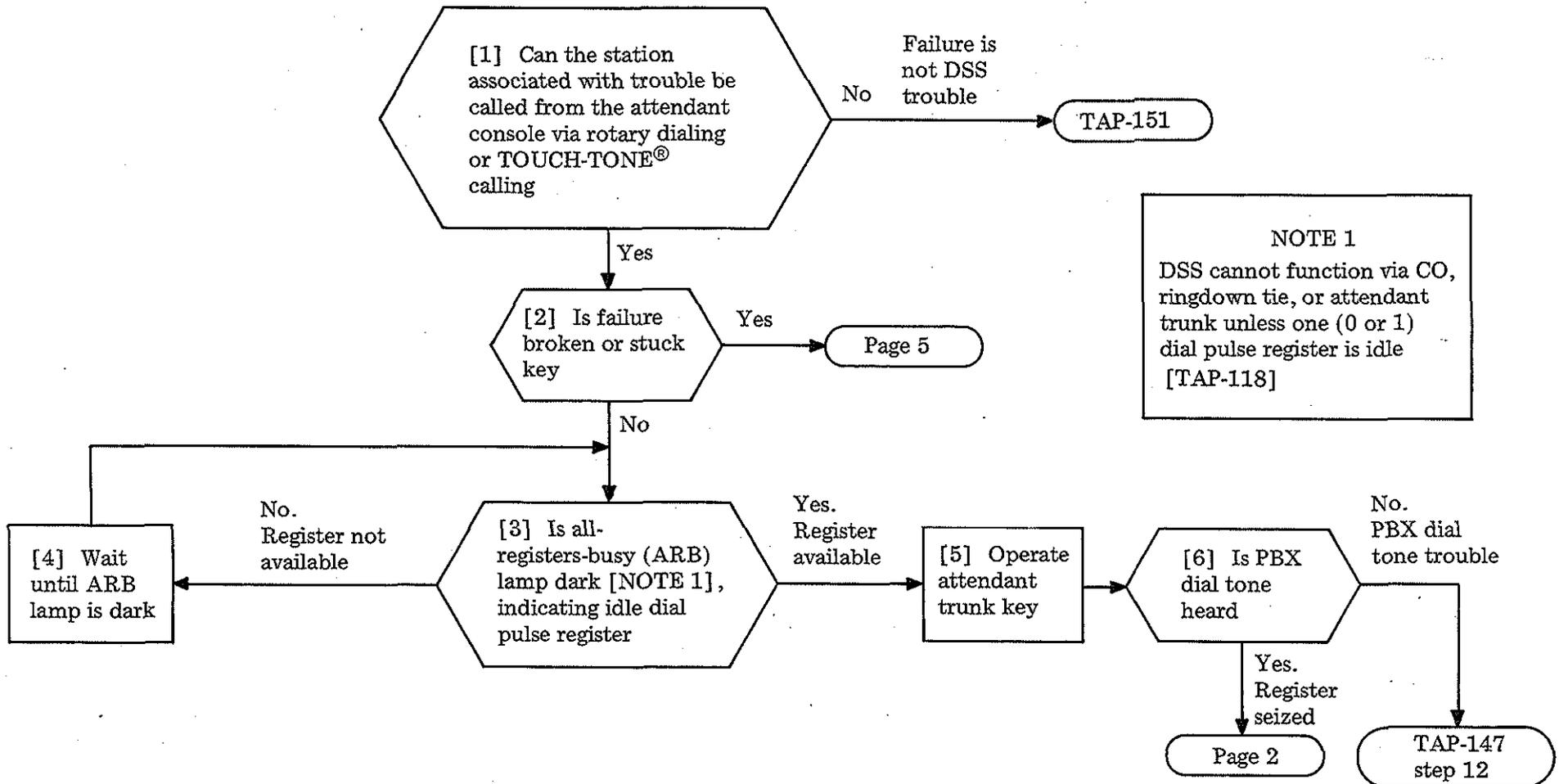


FIG. 22

SUMMARY

Using the attendant console, operate an idle attendant trunk key. When PBX dial tone is heard, hold operated (about two seconds) the direct station selection (DSS) key of idle station (DSS key lamp dark) associated with the trouble. If the ringer sounds at the called station and the DSS key lamp lights steadily, the DSS feature

functioned correctly. Repeat test call(s) until failure occurs. Isolate fault using the figure or other reference given in this procedure. Equipment and relay locations are given by slide and mounting plate position. For example, ACO (6G) is in slide 6 on plate G.



NOTE 1
DSS cannot function via CO, ringdown tie, or attendant trunk unless one (0 or 1) dial pulse register is idle [TAP-118]

| | |
|-------------|----------|
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[7] Hold attendant DSS key (associated with idle station in trouble) operated for about two seconds
See NOTE 2 (example)

[8] Did associated DSS key lamp light steadily

DSS circuitry functioned correctly

NOTE 2
If DSS key 42 is operated, ground is mechanically connected to operate relays TD (tens digit) 4 and UD (units digit) 2 of the marker-selected dial pulse register. On crossbar switch 4, the marker then operates line hold magnet 2, connecting the called station directly (without dialing) to the switching network

[9] Did ringer sound at called station

[10] Check operate path of DSS key (busy) lamp [FIG. 1]

Page 3

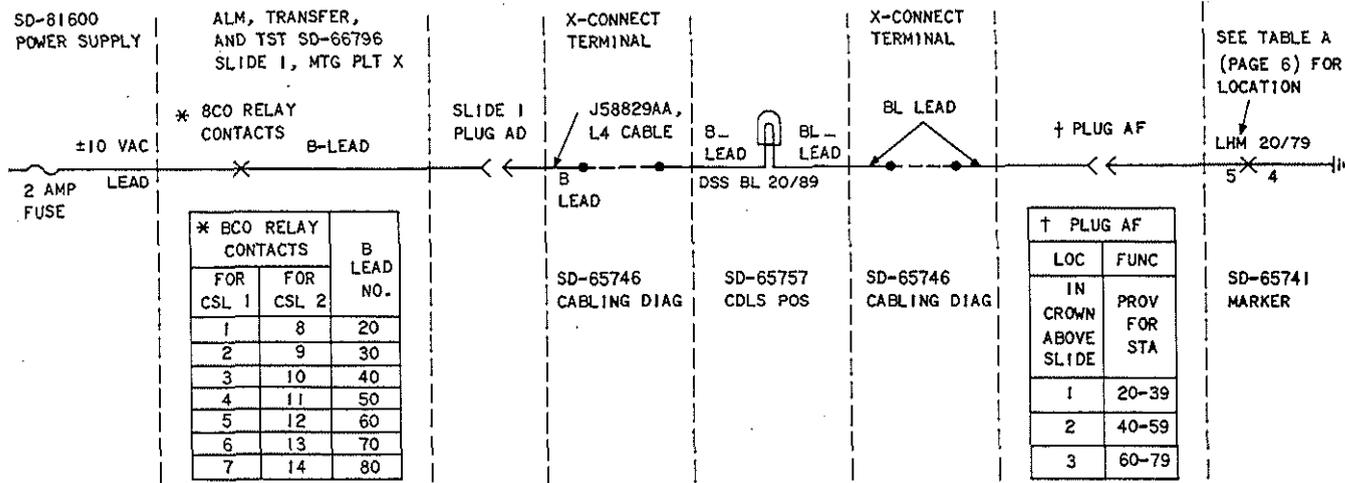


FIG. 1

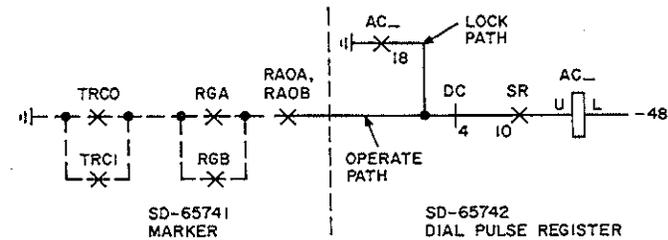
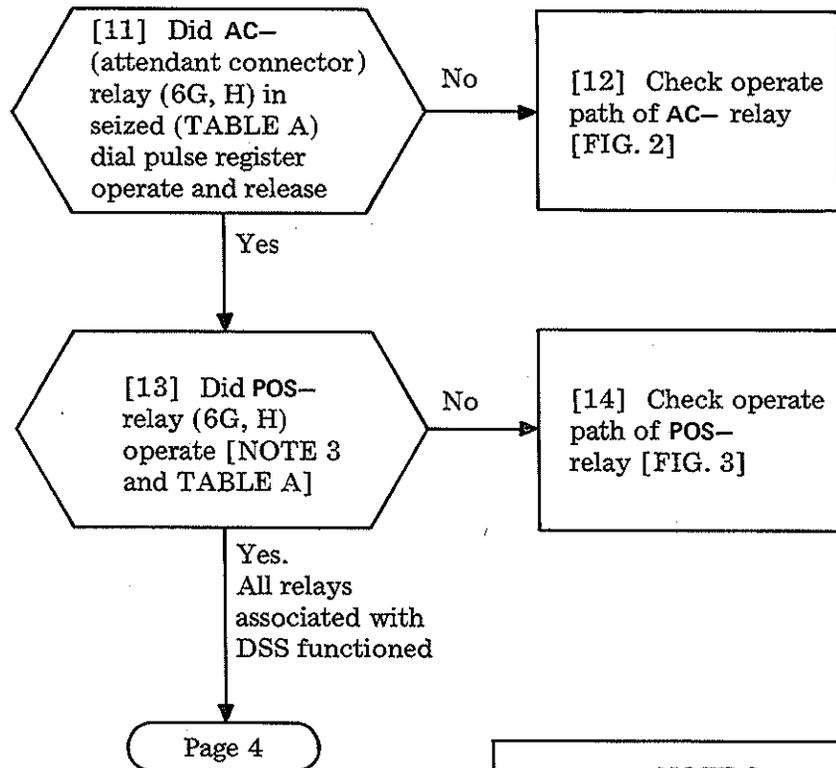


FIG. 2

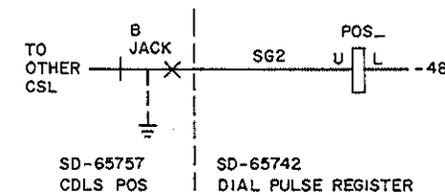


FIG. 3

NOTE 3
Ground from the console in use operates one POS- relay only, which prevents interference via DSS keys at unattended console

| TABLE A | | | |
|---|-----|---------|------|
| EQ ASSOCIATED WITH AC- AND POS- RELAYS (6G, 6H) | | | |
| REG | | CONSOLE | |
| 0 | 1 | 1 | 2 |
| AC0 | AC1 | POS1 | POS2 |

| TABLE A | | | |
|----------|-------------------|--------|----------|
| STATIONS | LINE HOLD MAG LOC | | |
| | SLIDE | SWITCH | VERTICAL |
| 20-29 | 2 | 2 | 0-9 |
| 30-39 | | 3 | |
| 40-49 | 3 | 4 | |
| 50-59 | | 5 | |
| 60-69 | 4 | 6 | |
| 70-79 | | 7 | |

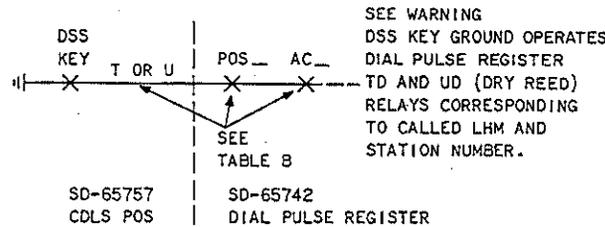
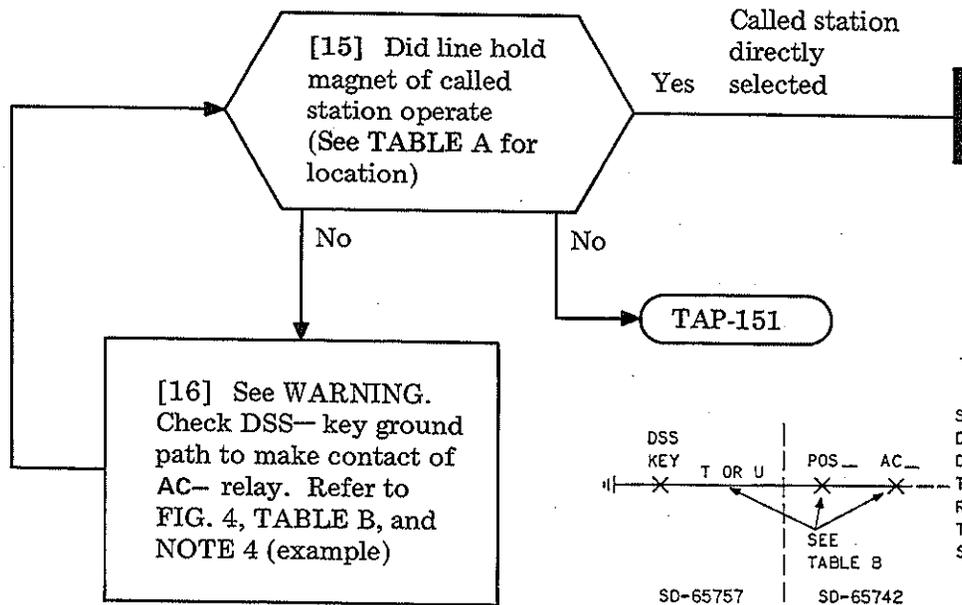


FIG. 4

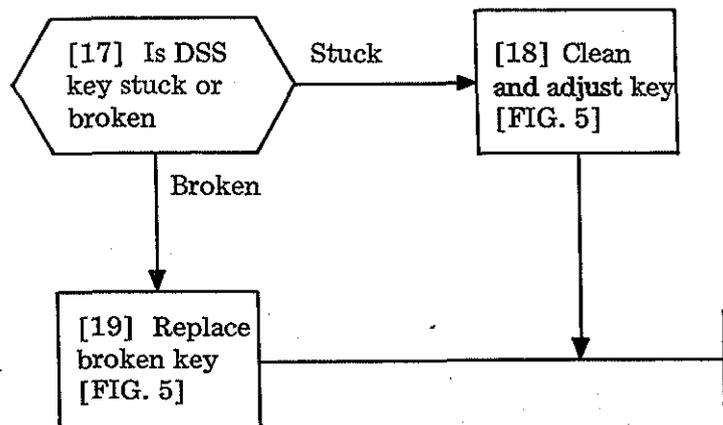
| TABLE B | | |
|----------|-----------|-----------------|
| LEAD | | POS-, AC- RELAY |
| T (TENS) | U (UNITS) | MAKE CONTACT |
| 2 | | 1 |
| 3 | | 2 |
| 4 | | 3 |
| 5 | | 4 |
| 6 | | 5 |
| 7 | | 6 |
| | 0 | 7 |
| | 1 | 8 |
| | 2 | 9 |
| | 3 | 10 |
| | 4 | 11 |
| | 5 | 12 |
| | 6 | 13 |
| | 7 | 14 |
| | 8 | 15 |
| | 9 | 16 |

WARNING

When checking for DSS key ground to make contact(s) of AC- relay, avoid shorts, grounds, or crosses which might cause excess current to damage reeds of UD, TD relays, via fixed contacts of AC- relay. Use 716C receiver (or equivalent) to make test

NOTE 4

If called station is 42, FIG. 4 and TABLE B show ground should extend from operated attendant console DSS key 42 (tens digit 4, units digit 2) to contacts 3M and 9M of both POS- and AC- relays of the seized dial pulse register.



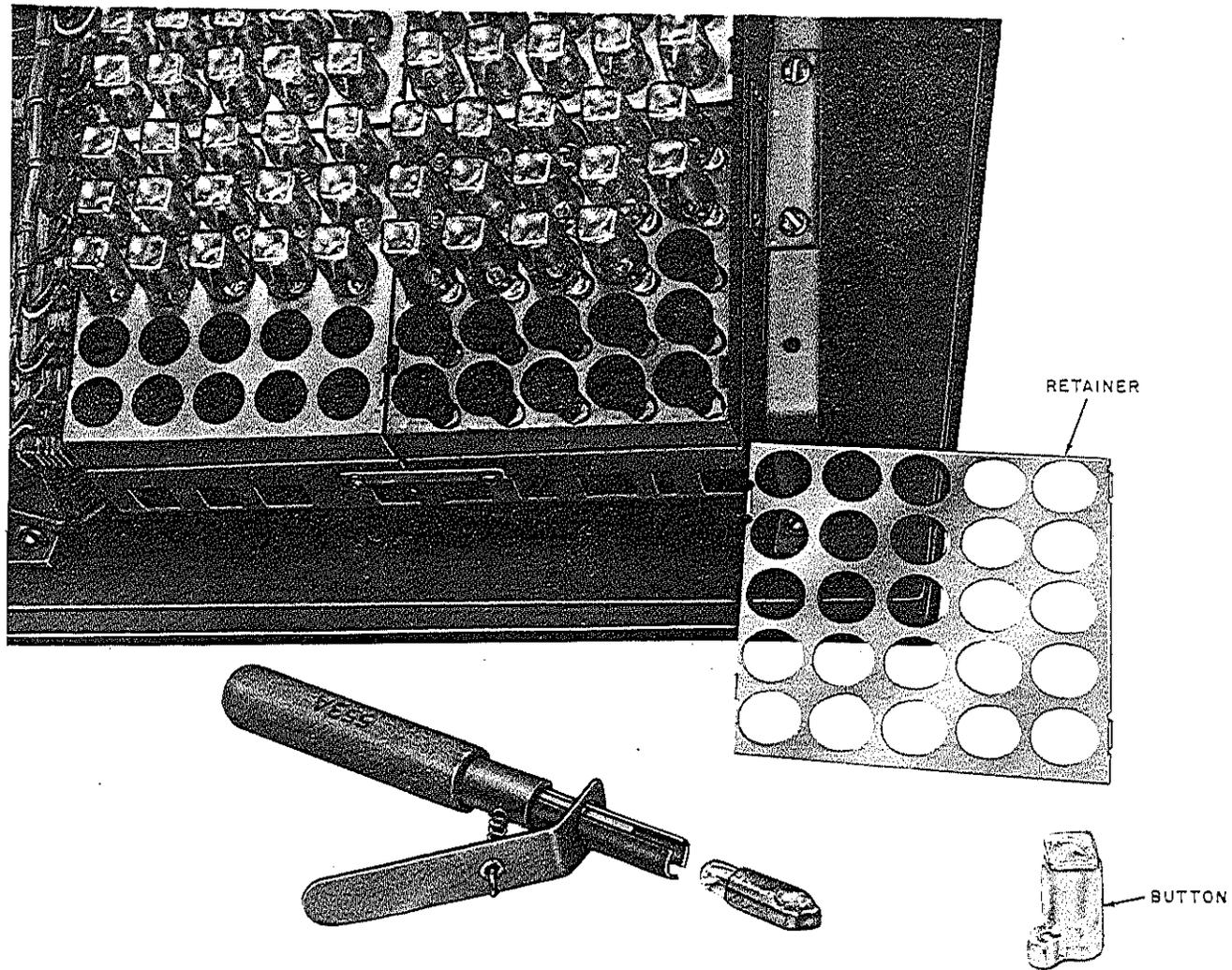


FIG. 5 – Typical DSS Key Block Assembly

CLEAR ATTENDANT DIRECT STATION SELECTION TROUBLE (SD-65742)

| | |
|-------------|----------|
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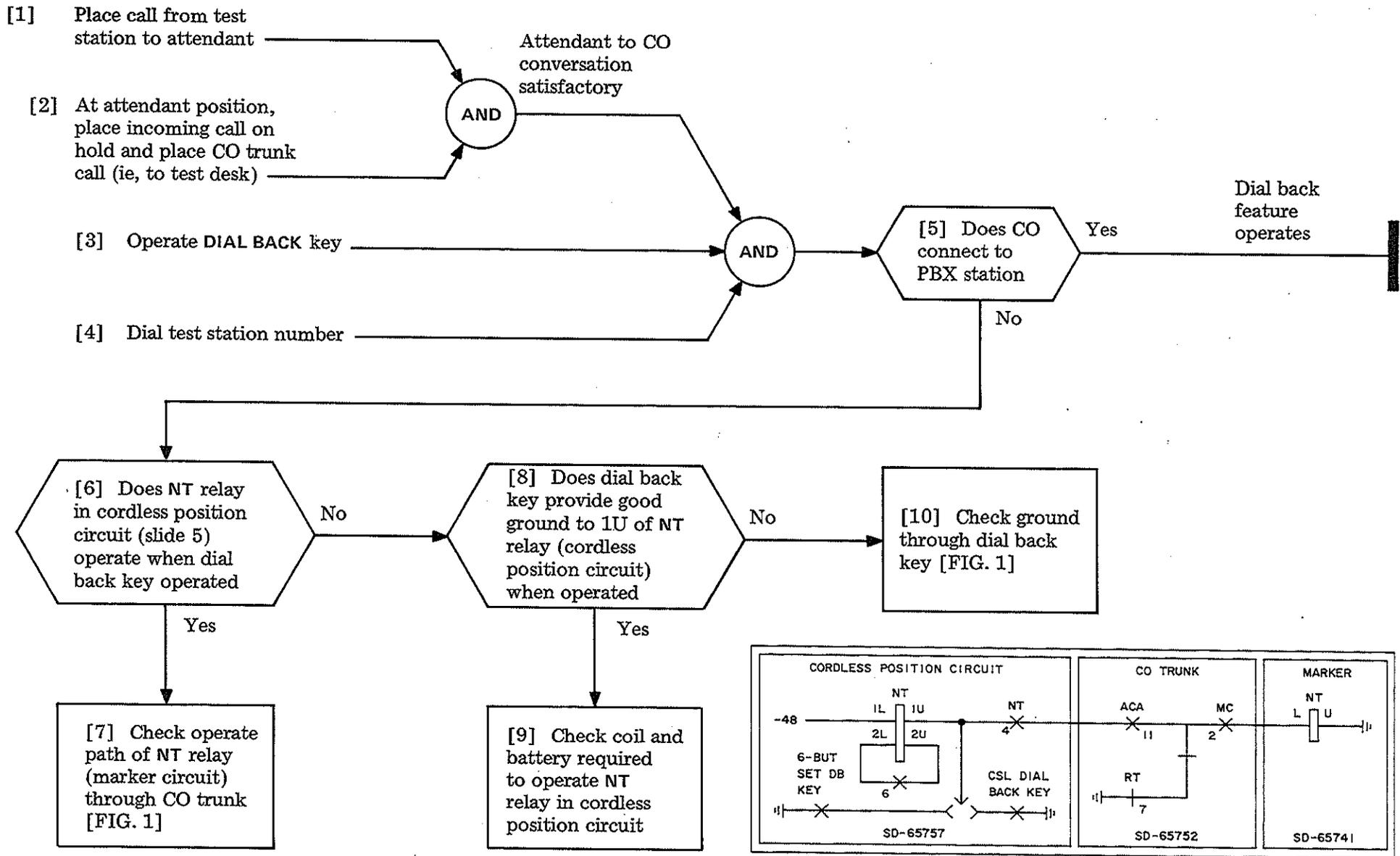


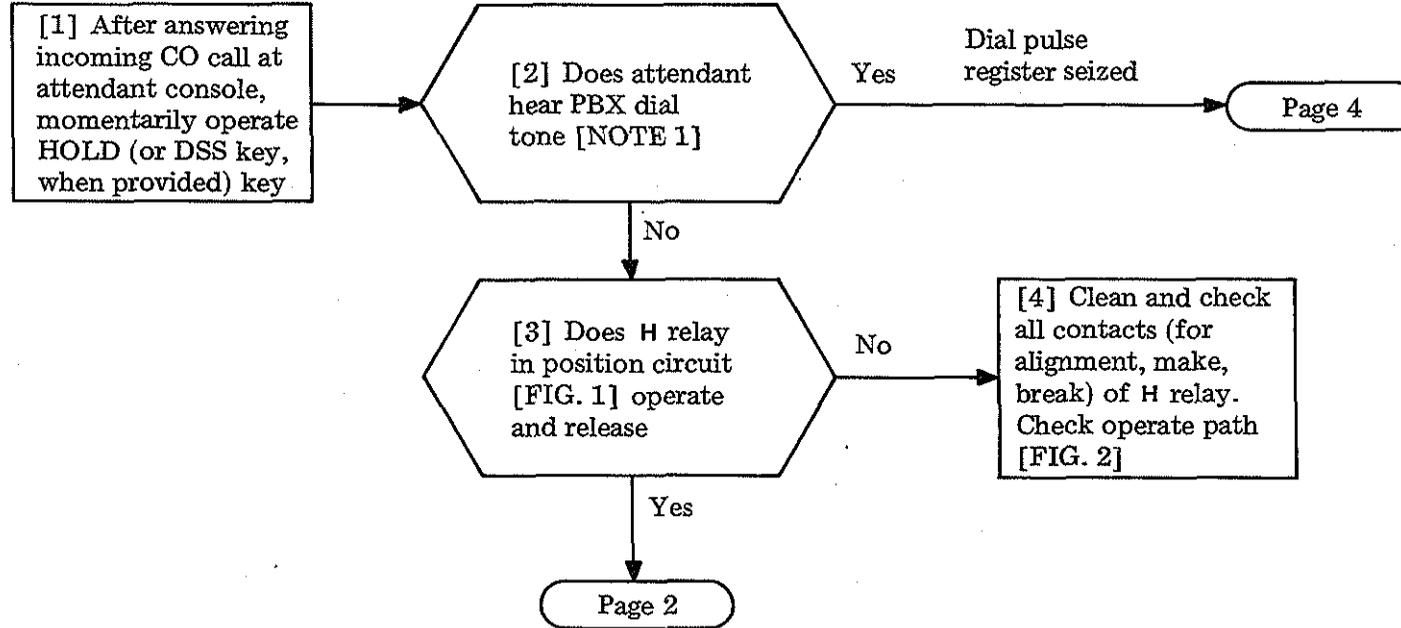
FIG. 1

SUMMARY

Initiate and advance an incoming CO trunk call(s) to the point of failure. From the attendant console, attempt to transfer the call as follows:

- Operate HOLD key, to hold calling party and get PBX dial tone.
- Call (dial or direct station select) idle station.
- Release attendant console from connection (via RLS key).

Verify CO trunk-to-station connection is established. Identify the CO trunk equipment unit seized by observing operation and release of R1 relay (slide 5), which follows ringing cycle, or by observing the flashing CO TRK (0/9) lamp of the make-busy and busy display unit (top of slide 2), if provided. Refer to FIG. 1 to locate both cordless position and CO trunk circuit relays.



NOTE 1
If attendant console is arranged for DSS, PBX dial tone is heard momentarily (during transfer)

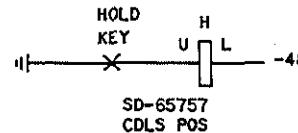


FIG. 2

| INDICATION OF CAMP-ON UNIT | |
|------------------------------|---|
| ATND TRUNK 2 | |
| ATND TRUNK 1 | |
| ATND TRUNK 0 | |
| CO TRUNK OR RINGDOWN TIE TRK | 9 |
| POS CKT AND TRK PTCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 8 |
| CO TRUNK | 7 |
| CO TRUNK | 6 |
| CO TRUNK | 5 |
| CO TRUNK OR RINGDOWN TIE TRK | 4 |
| POS CKT AND TRK PATCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 3 |
| CO TRUNK | 2 |
| CO TRUNK | 1 |
| CO TRUNK | 0 |

SLIDE 5

FIG. 1

| | |
|-------------|----------|
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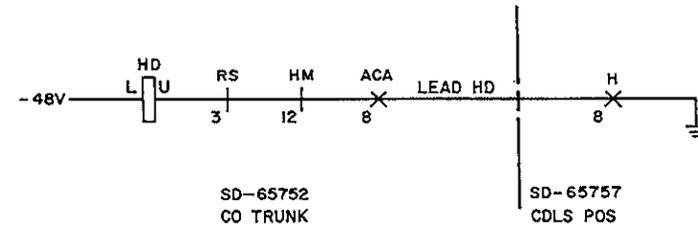
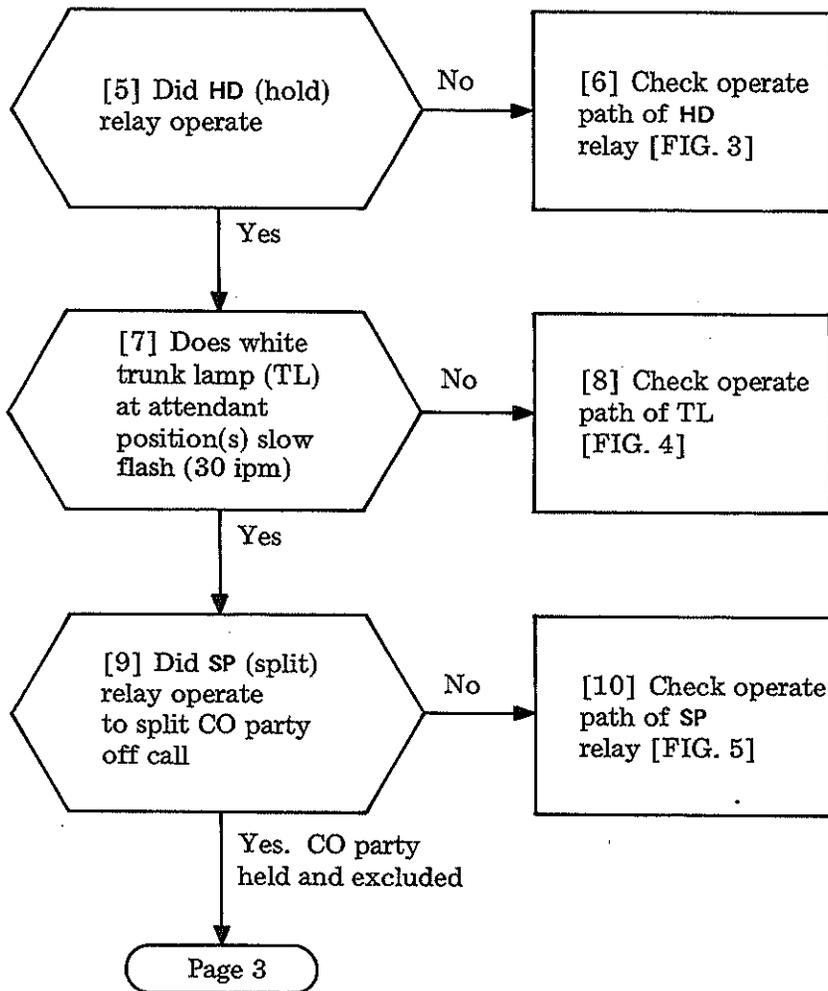


FIG. 3

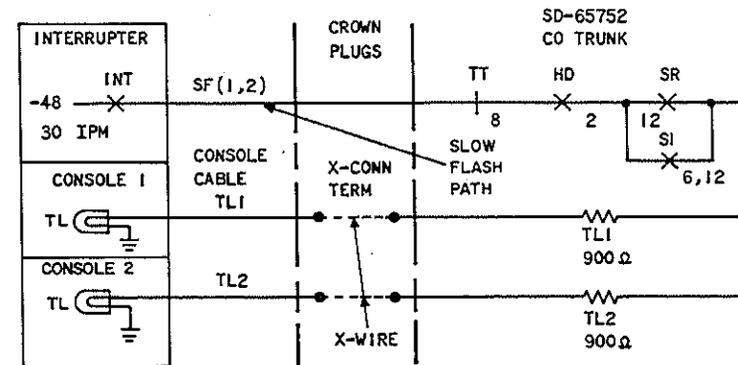


FIG. 4

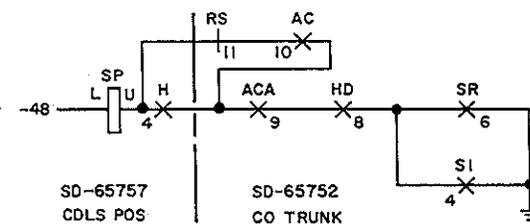
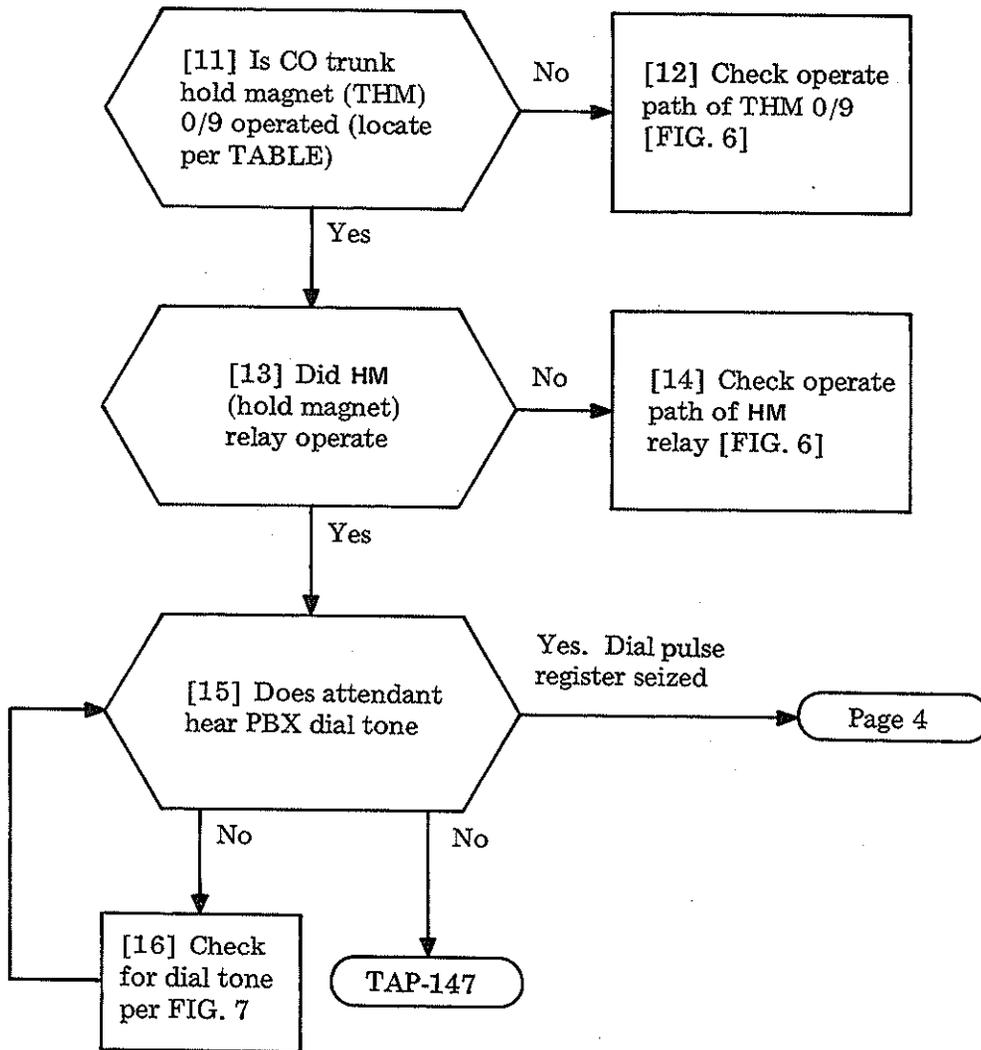


FIG. 5



CLEAR ATTENDANT TRANSFER TROUBLE (SD-65752)

| TABLE | | | |
|--------|---------|----|------|
| CO TRK | THM LOC | | |
| | SLIDE | SW | VERT |
| 0 | 4 | 0 | 0 |
| 1 | | | 1 |
| 2 | | | 2 |
| 3 | | | 3 |
| 4 | | | 4 |
| 5 | 8 | 8 | 5 |
| 6 | | | 6 |
| 7 | | | 7 |
| 8 | | | 8 |
| 9 | | | 9 |

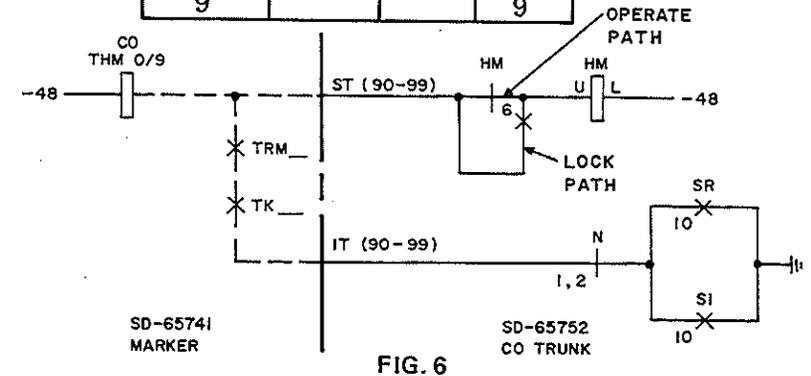


FIG. 6

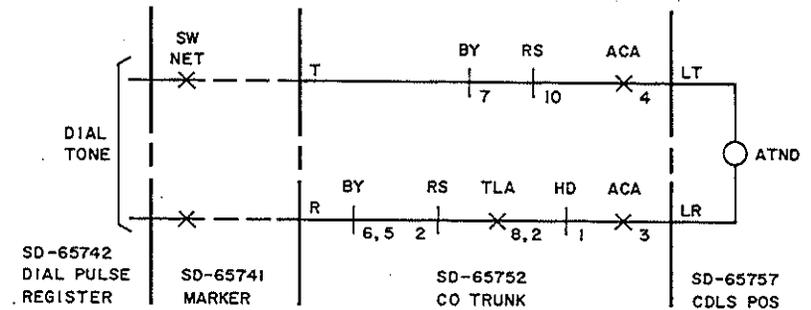
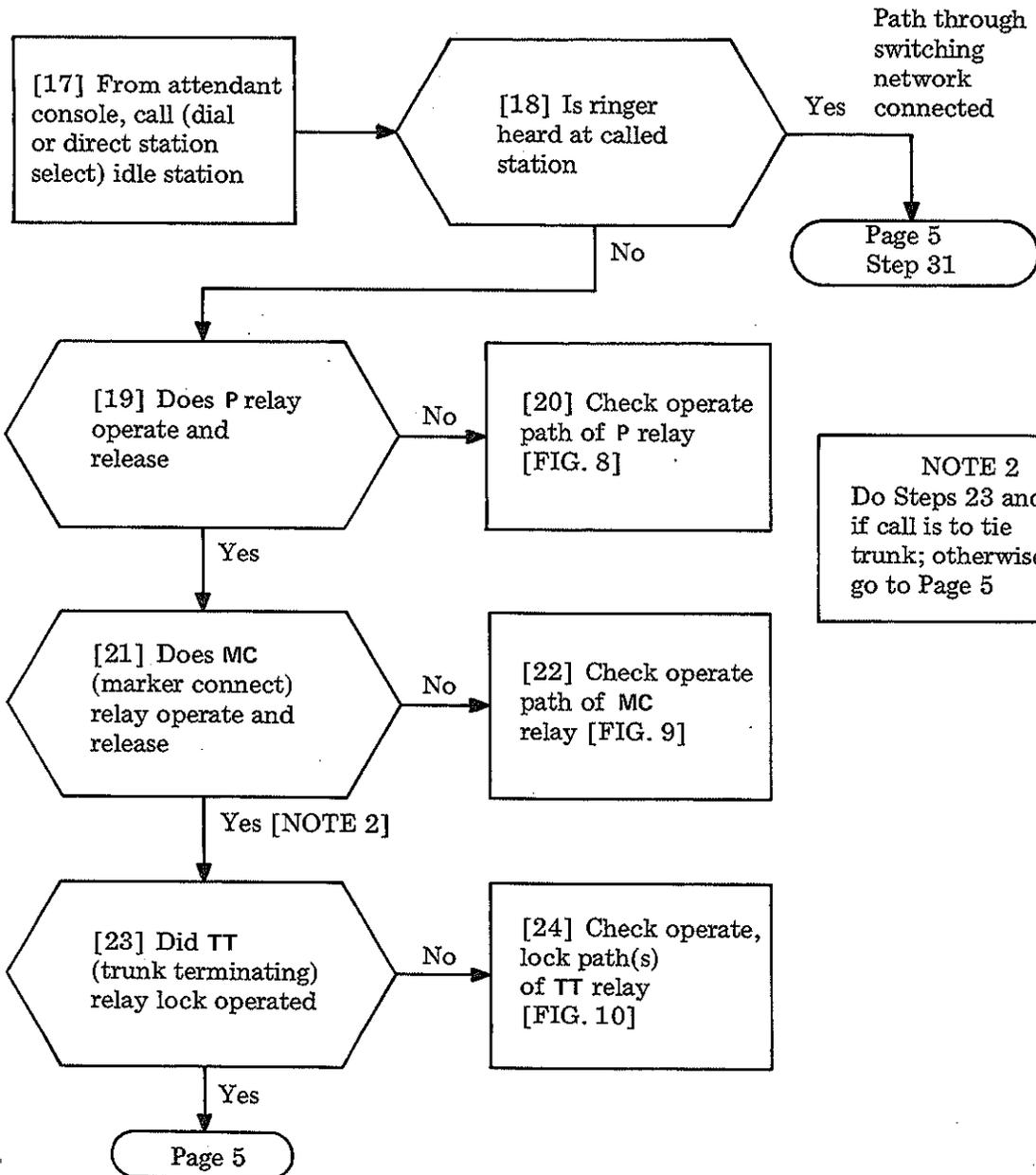


FIG. 7

| | |
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Path through switching network connected

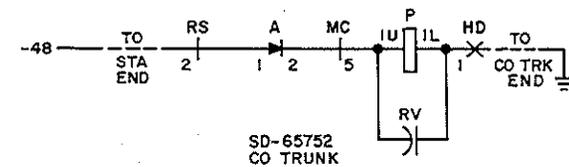


FIG. 8

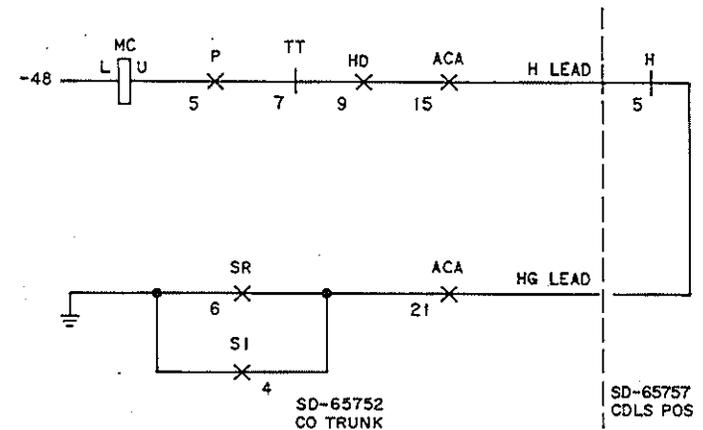


FIG. 9

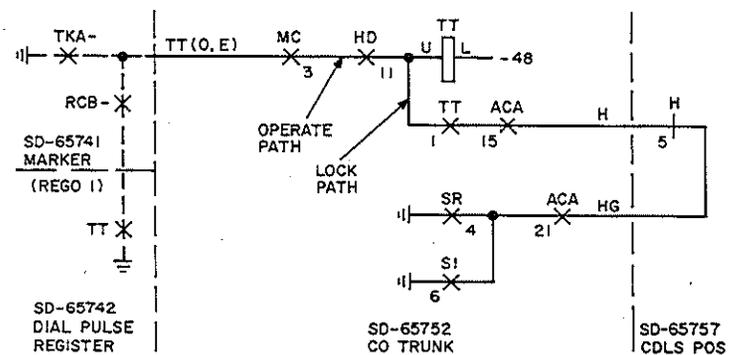


FIG. 10

| | |
|-------------|----------|
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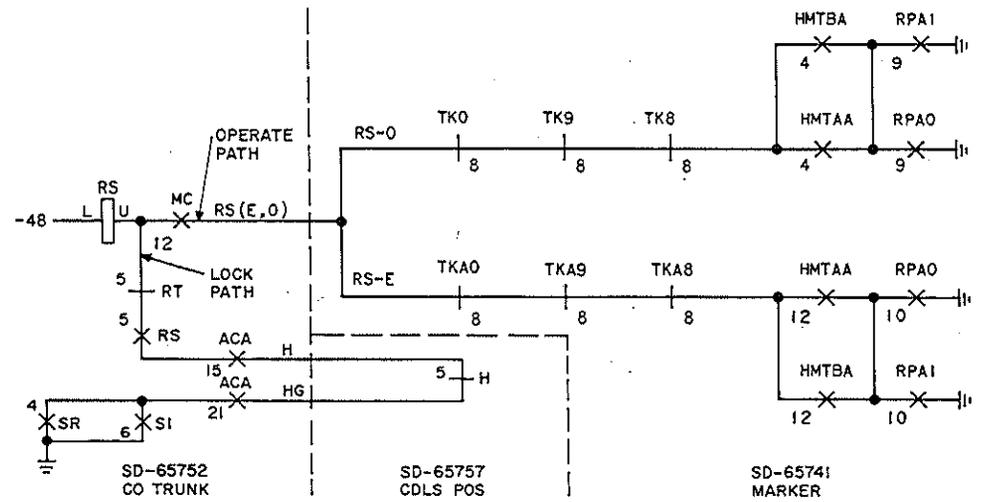
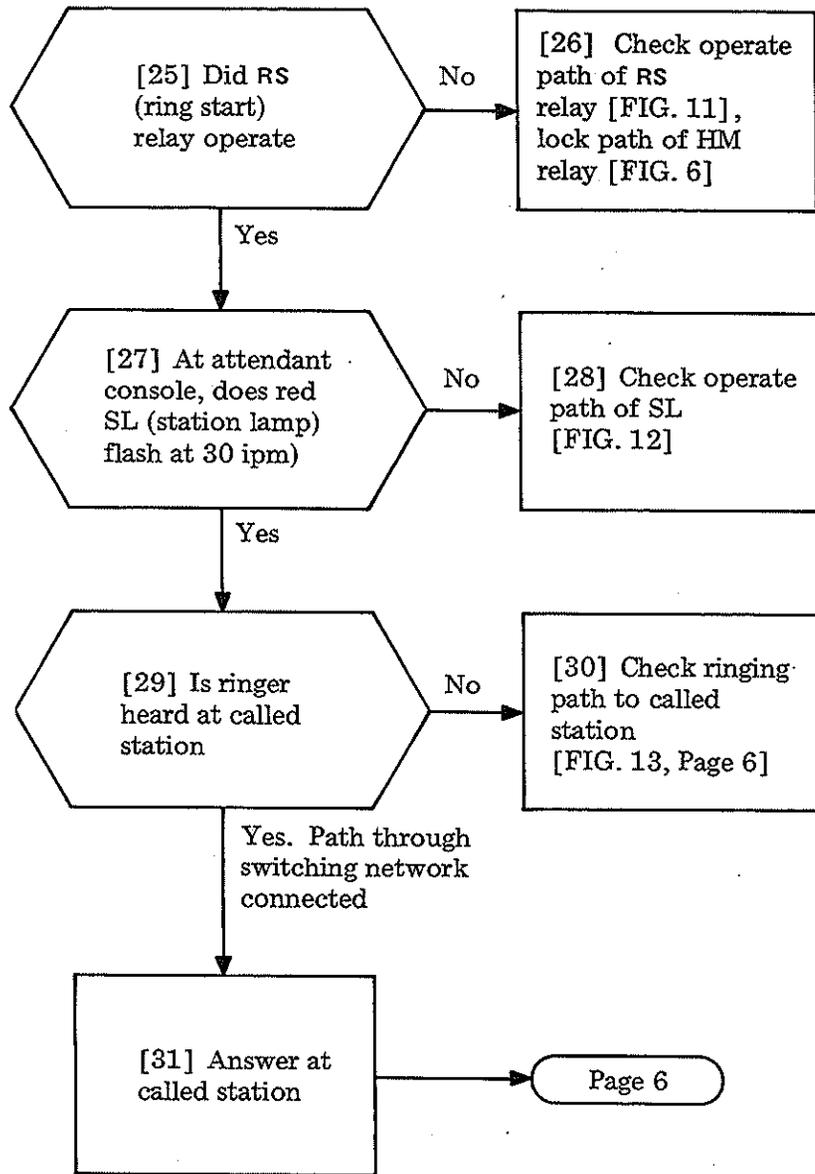


FIG. 11

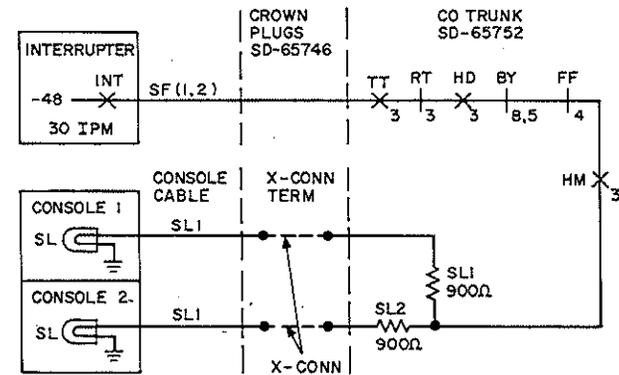


FIG. 12

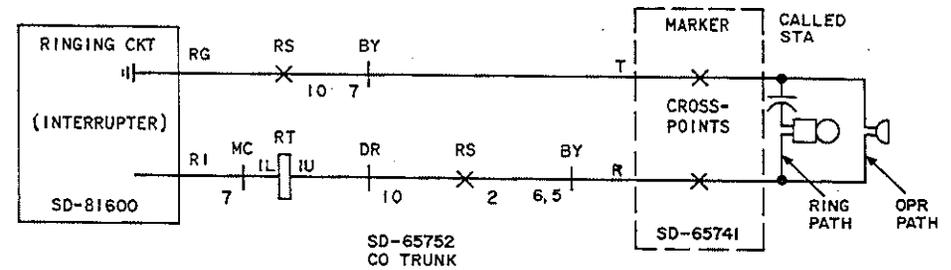
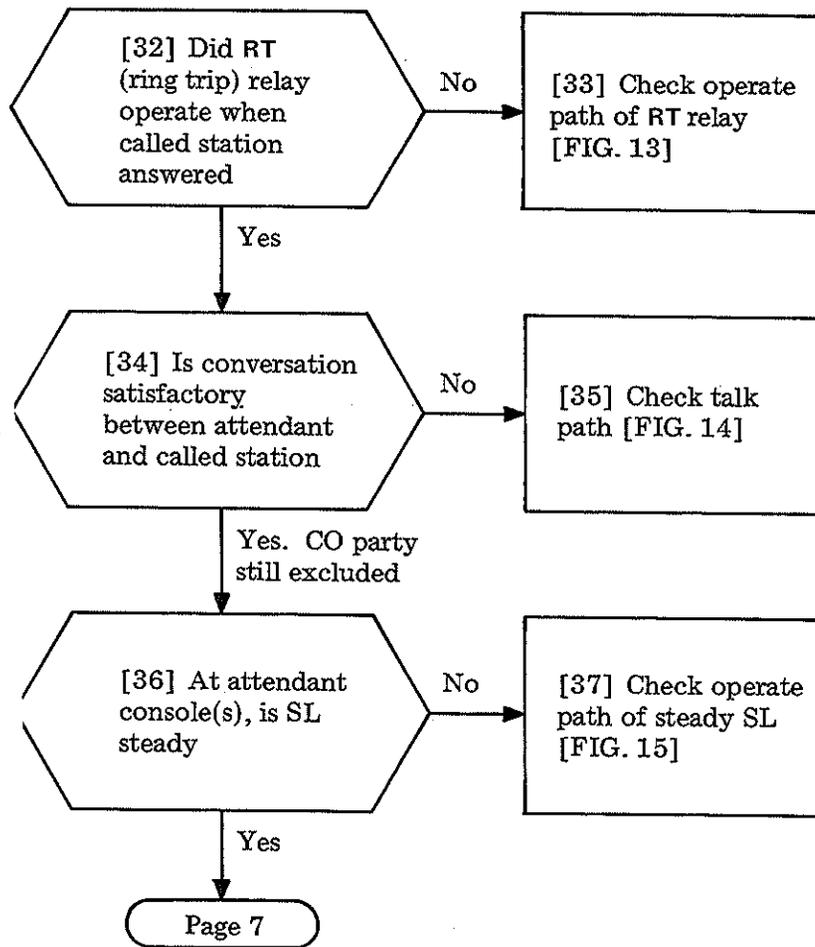


FIG. 13

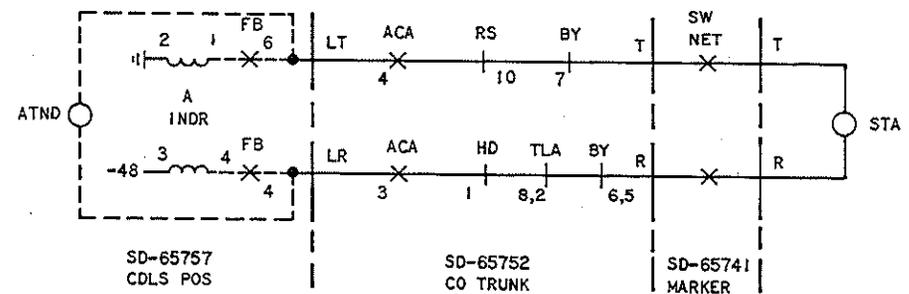


FIG. 14

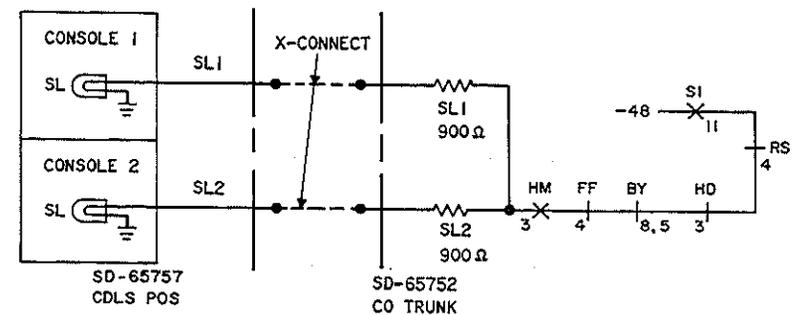


FIG. 15

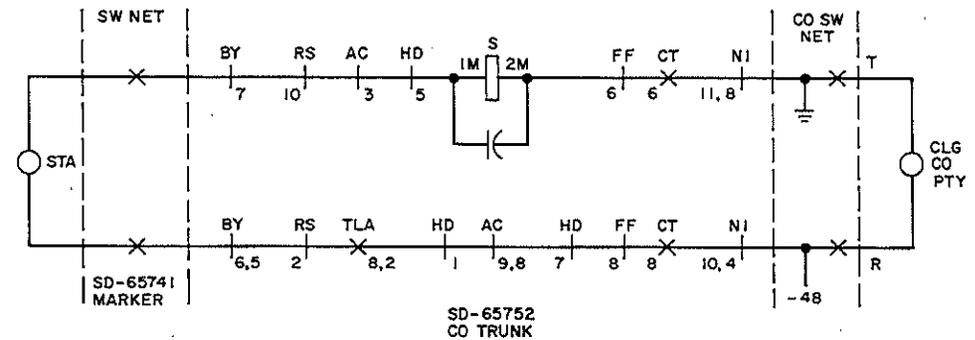
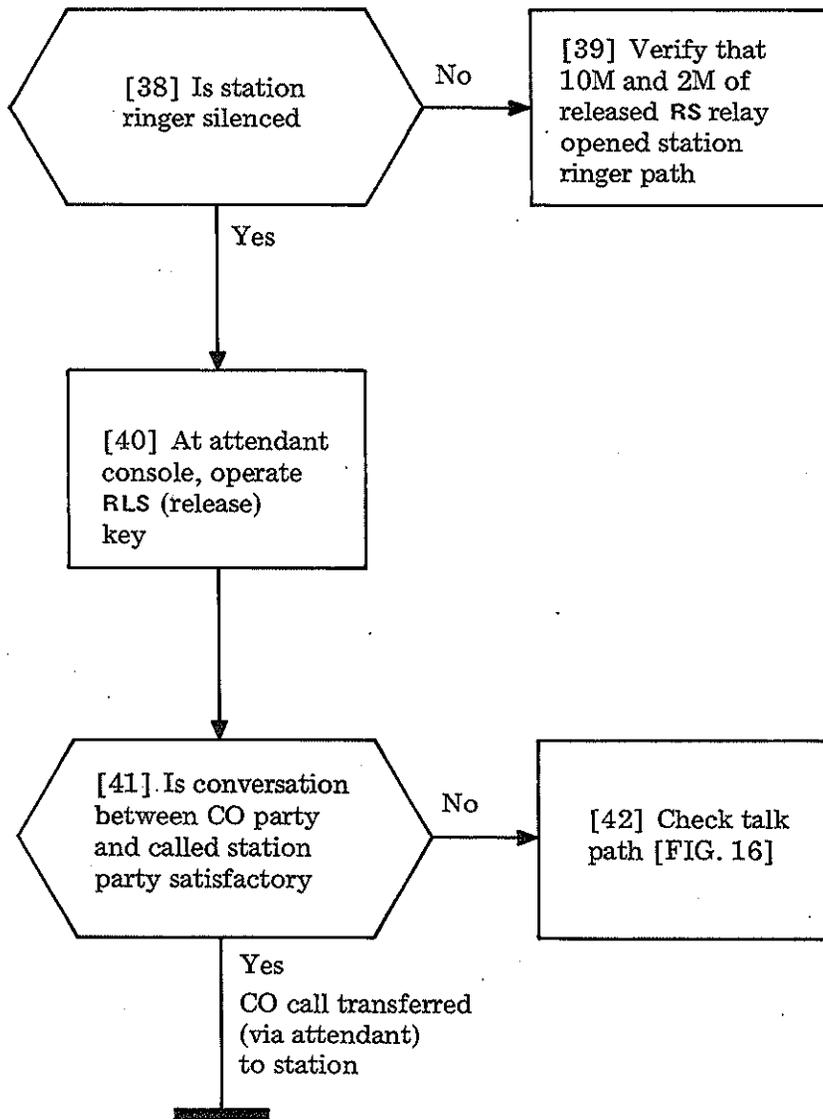


FIG. 16

SUMMARY

Initiate an attendant-to-station call via the attendant trunk in trouble. When the call is answered, hold the call at the attendant console, then reenter the held call. If a failure occurs, locate the fault using the figure or other reference given in this procedure. Operation

of relays may be observed at the attendant trunk units (0-2) located at the top of slide 5, mounting plate Y, Z, or AA. Cordless position circuit relays are on slide 5, mounting plate V. Dial pulse registers (0, 1) are on slide 6, mounting plates A-F.

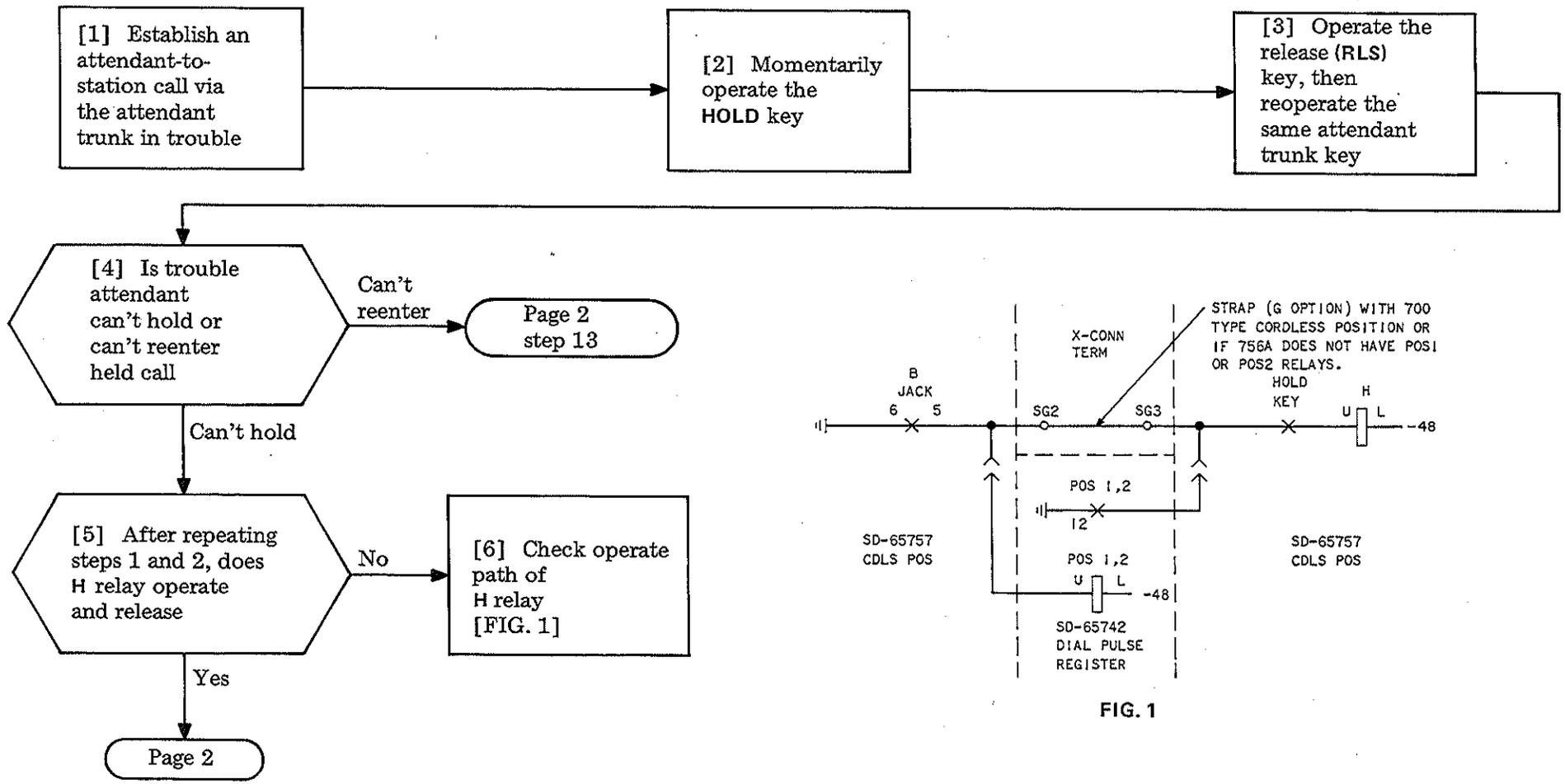


FIG. 1

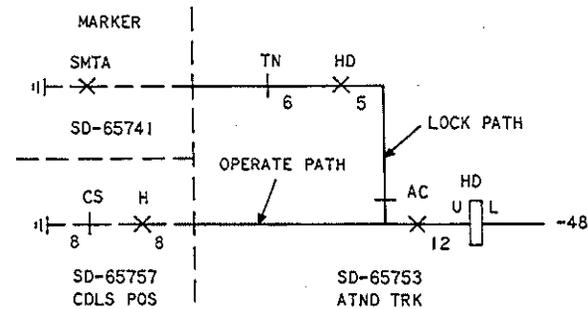
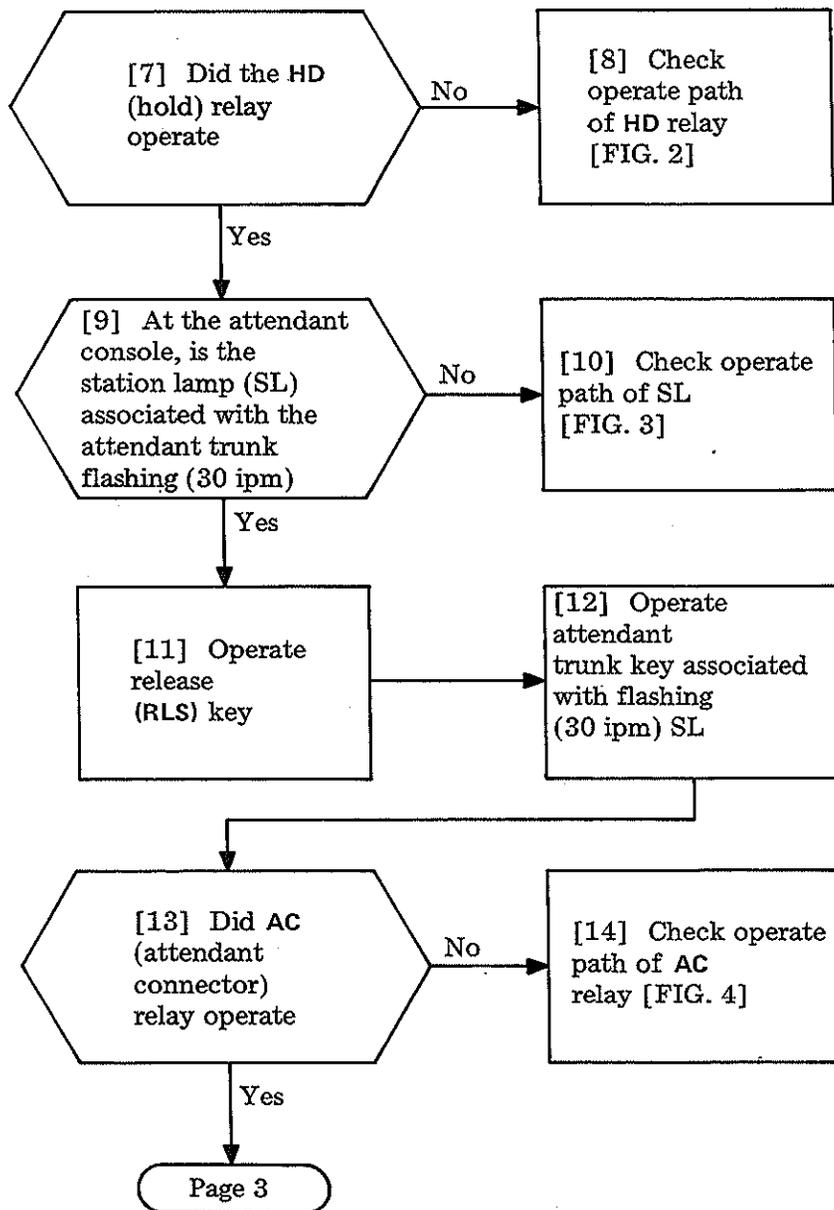


FIG. 2

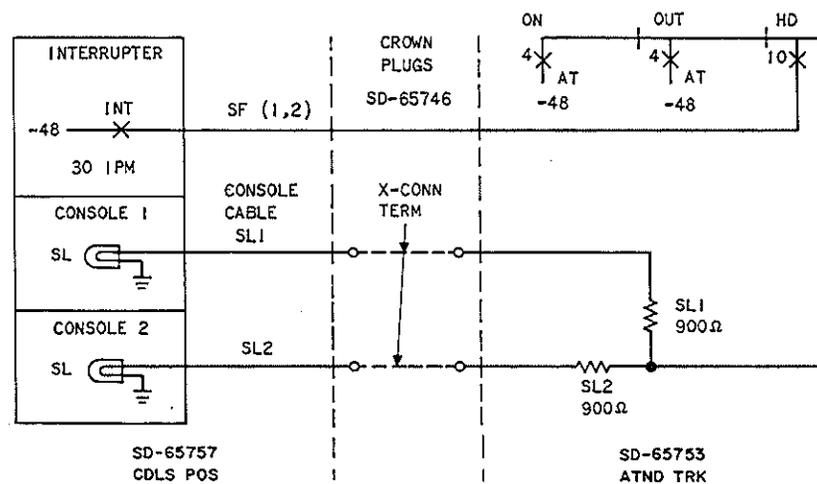


FIG. 3

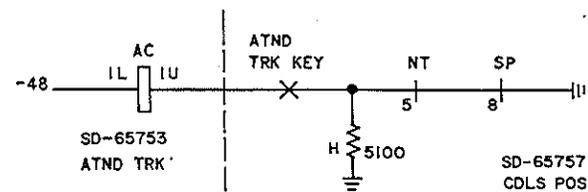
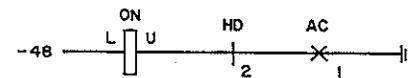
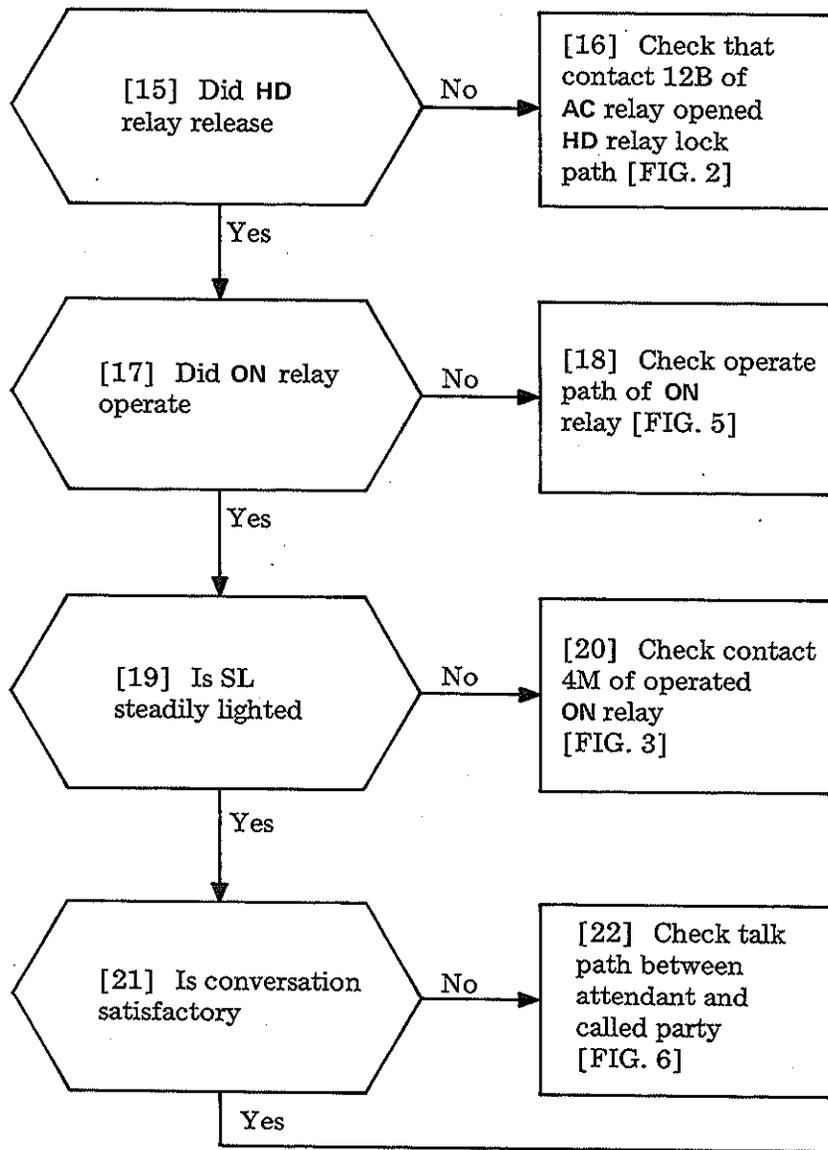


FIG. 4



SD-65753
ATND TRK
FIG. 5

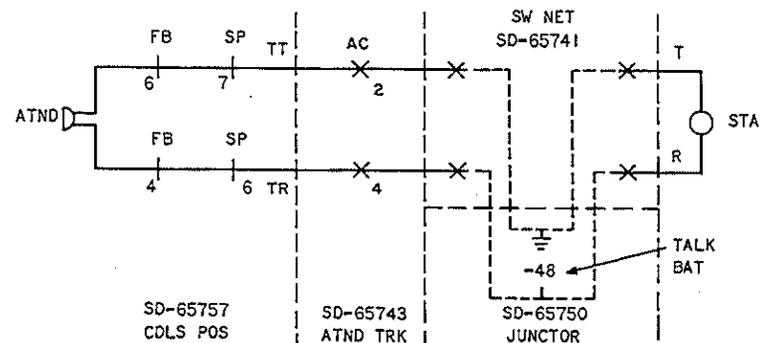
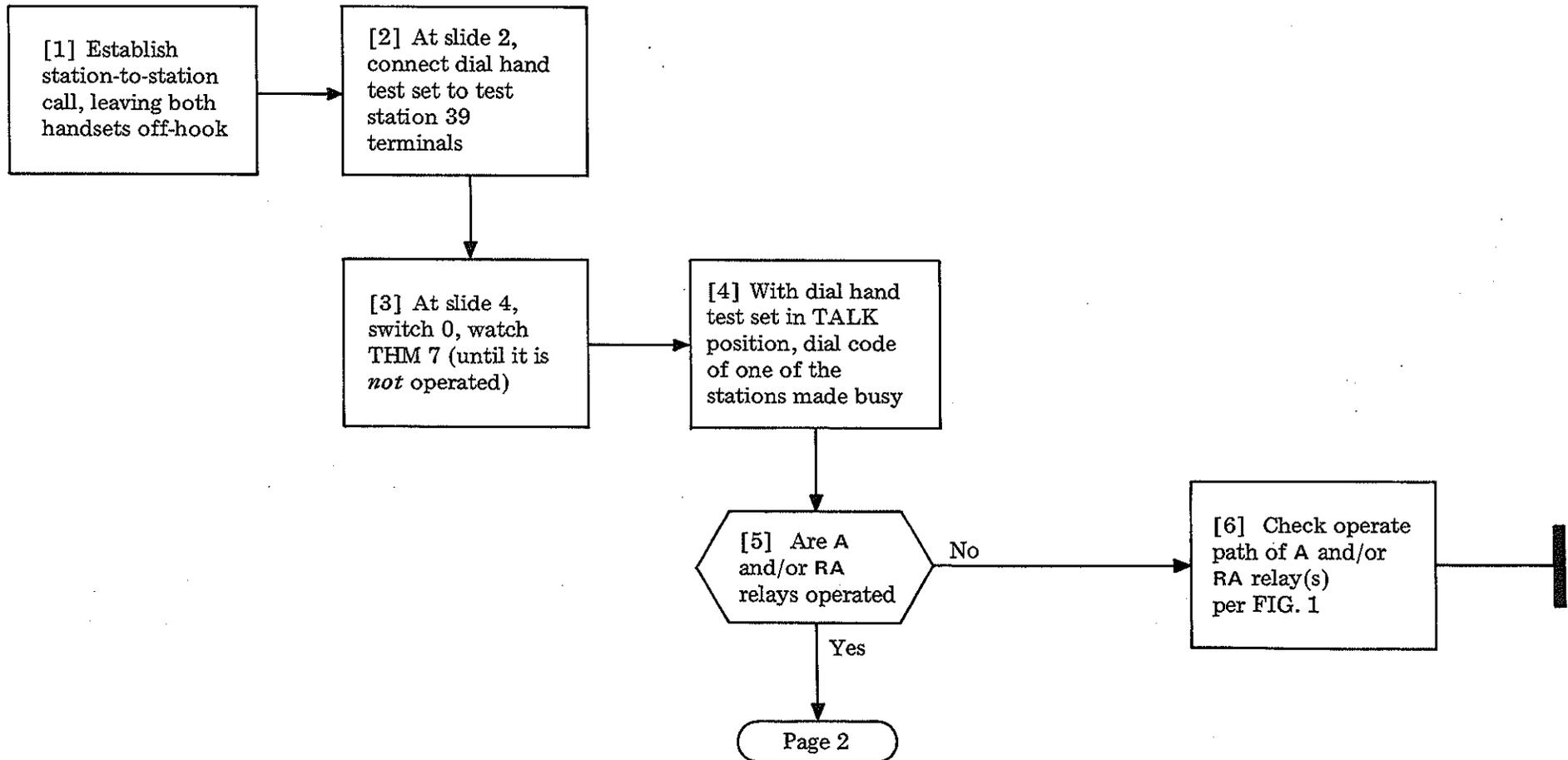


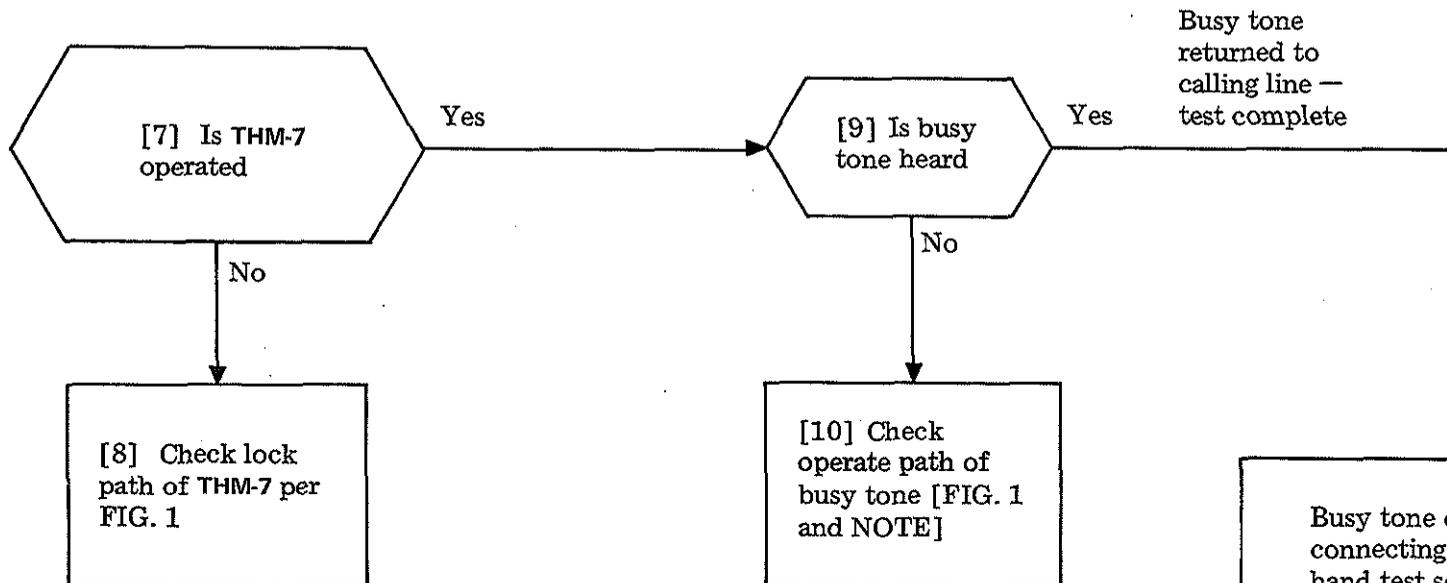
FIG. 6

SUMMARY

Establish a station-to-station call, leaving both handsets off-hook. At slide 2, connect test clips of dial hand test set to terminals of test station 39. At slide 4, crossbar switch 0, prepare to observe operation of trunk hold magnet (THM) 7. With dial hand test set switch in TALK position, dial code of one of the busy stations. Listen for

busy tone and check to see if THM 7 operated to close the cross-points of the vertical. If busy tone is not heard, or if THM 7 does not operate, use this procedure to locate the trouble. This procedure assumes no alarms, and when a station placed a call to a busy station, the busy tone trunk failed to return busy tone.





NOTE

Busy tone can be checked by connecting one clip of dial hand test set to ground, (switch in TALK position), and touching the other clip to each component in the busy tone path, until the fault is isolated (by listening) [FIG. 1]

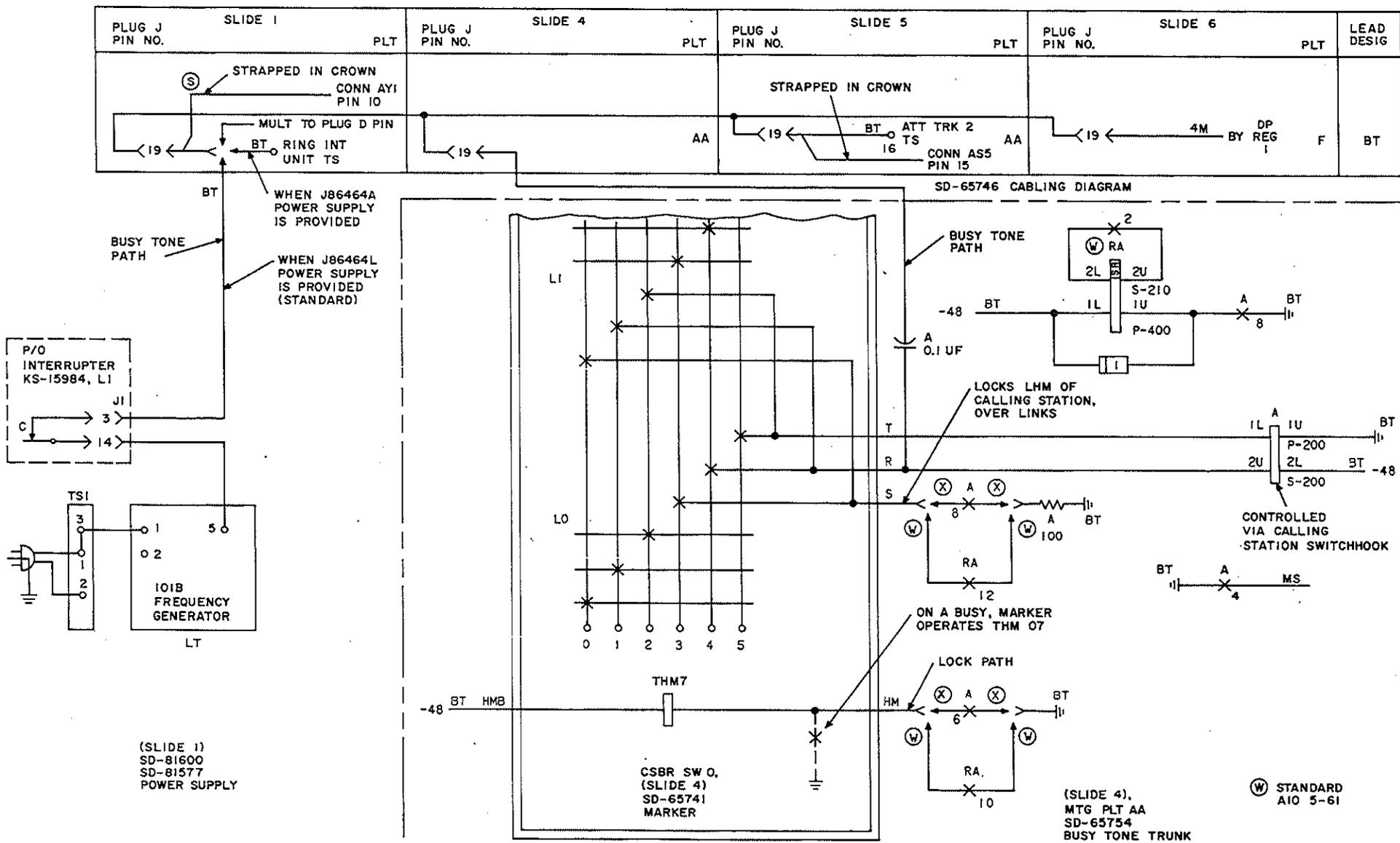


FIG. 1

[1] See NOTE. Connect test handset to test station (STA 39, slide 2) with switch set to MON

[2] Place call from console to test station using ATND TRK 0 or 1

[3] Set handset switch to TALK

[4] At console, depress HOLD key

[5] Operate ATND TRK 2 pickup key

[6] Operate DIAL BACK key

Conversation normal

AND

AND

[7] Second dial tone heard

[8] Is relay BV operated at slide 4AB

[10] See FIG. 1. Check operate path of relays ST and BV at slide 4AB. Check operation of relays ON and AC at 5AA. Make necessary repairs.

[9] See FIG. 1. Check MKBV relay and HM-3 make contacts to clear trouble

[11] Verify repair by repeating test

NOTE
This procedure requires two persons or a test console located at the equipment cabinet

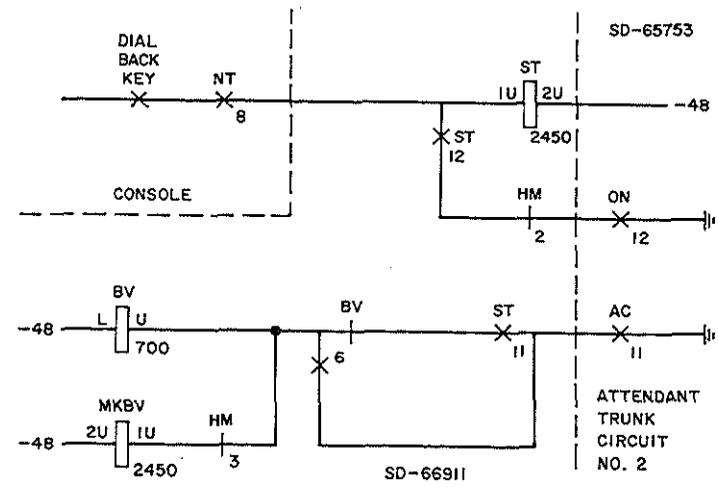


FIG. 1

Page 2

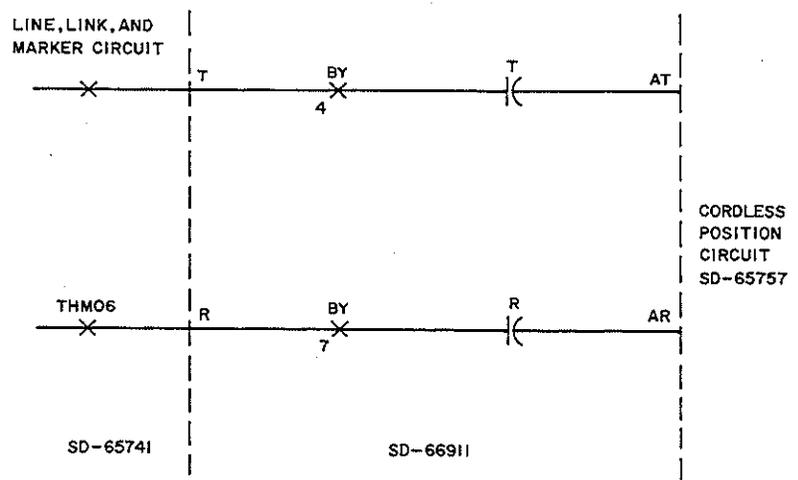
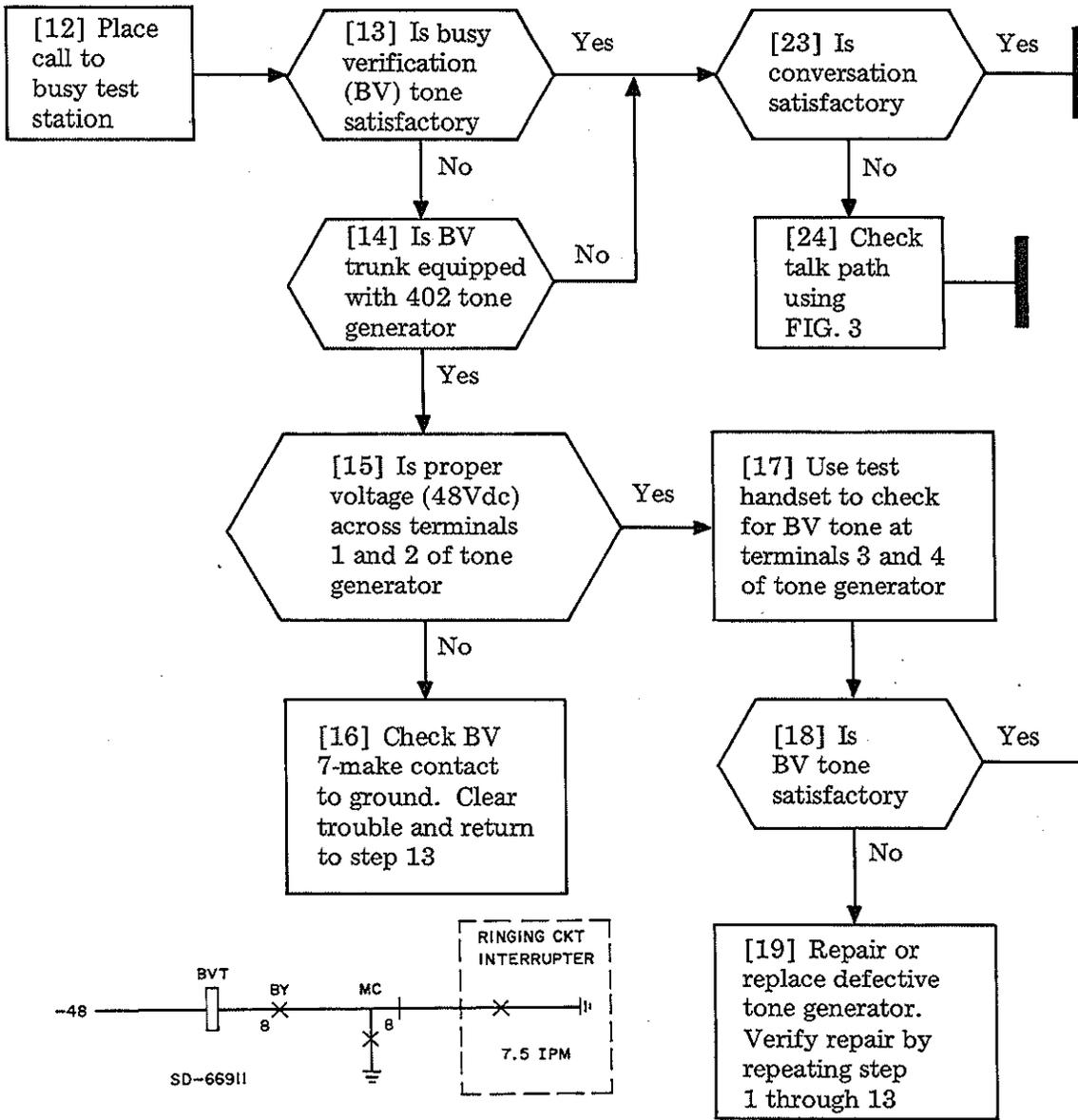


FIG. 3

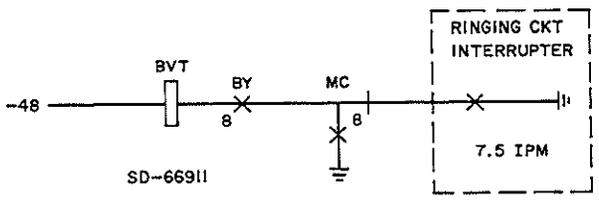


FIG. 2

CLEAR BUSY VERIFICATION TRUNK TROUBLE

| | |
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SUMMARY

Locate the external cabinet housing the J58829AG-1 station dial transfer (SDT) equipment. Initiate a call from the local test desk (party A). Use CO trunk associated with trouble, if one can be identified. After connecting the call to test station 39 (station B — NOTE 2), the attendant must release from the connection. Observe relay operation during call progress.

At station B:

- Flash switchhook to get transfer (steady) PBX dial tone
- Dial station C
- Talk privately (on answer) with C (consultation hold)
- Flash switchhook again to connect party A (add-on)
- Hang up (completing call transfer — individual).

This procedure assumes: trunk call is made via CO trunk 0, no fuse is blown [NOTE 1], and no marker or register trouble.

[1] Locate equipment cabinet housing J58829AG-1 SDT equipment and prepare to observe relay operation (remove cover, open slide, etc)
See NOTE 1

[2] Locate and/or arrange two stations (B and C) to use for test.
See NOTE 2

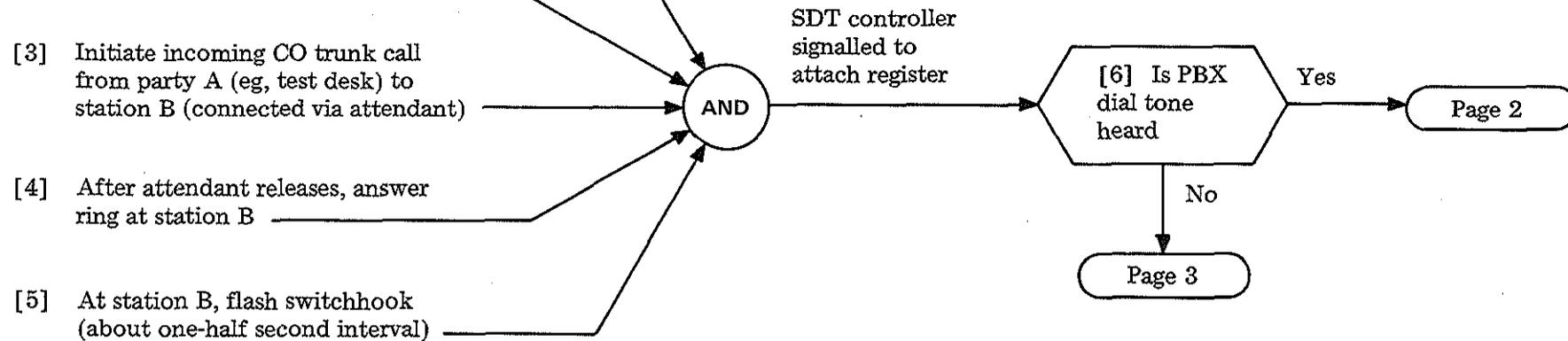
[3] Initiate incoming CO trunk call from party A (eg, test desk) to station B (connected via attendant)

[4] After attendant releases, answer ring at station B

[5] At station B, flash switchhook (about one-half second interval)

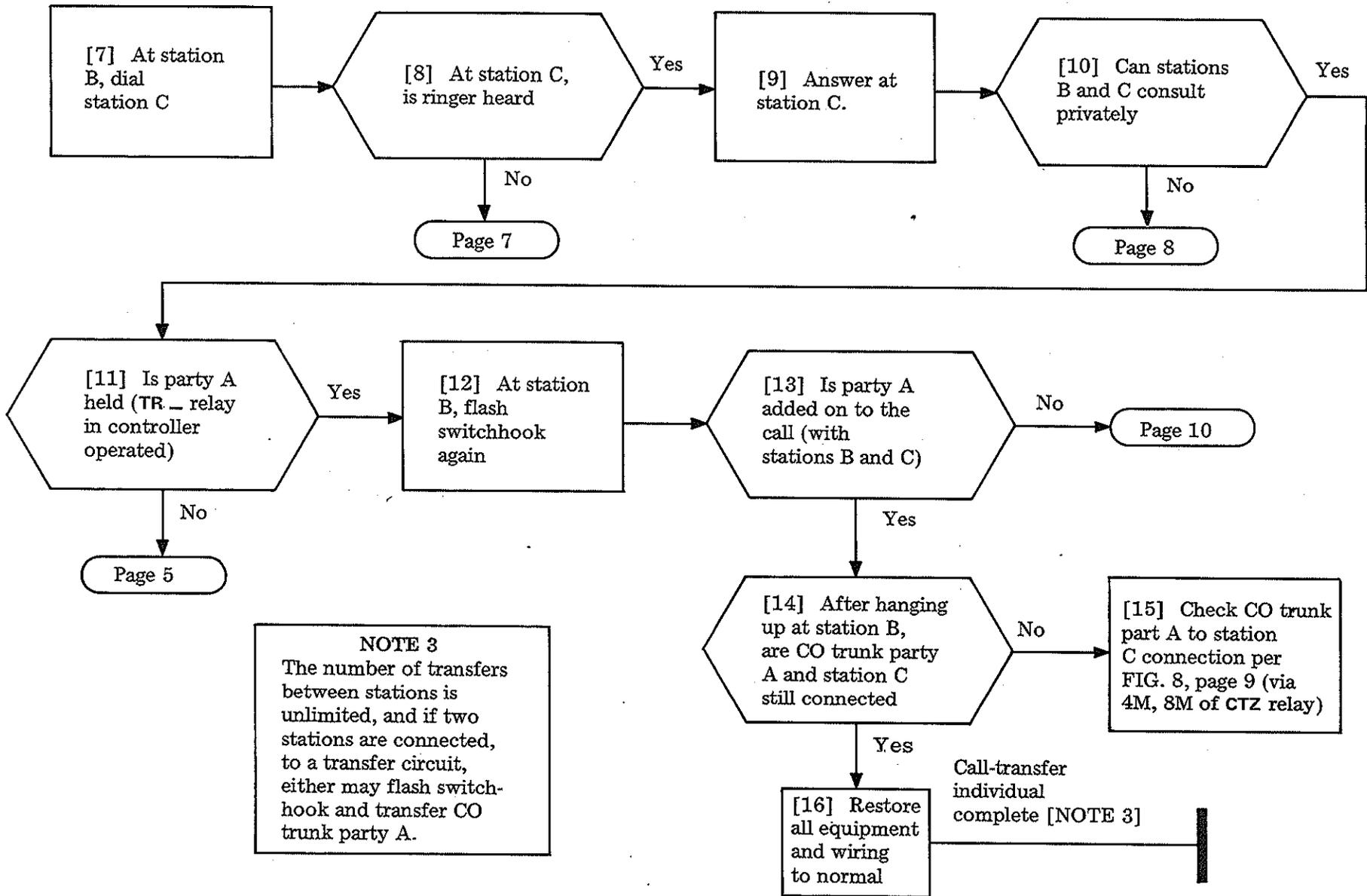
NOTE 1
SDT controller circuits stamped SD-66909-01, issue 6D or later are arranged with a 1 1/3 amp SDT fuse (earlier issues of the circuit shared a marker fuse) located at slide 1, mounting plate Y, next to the IR fuse. SDT trunk and SDT controller circuits (including crossbar switch 9) are externally mounted

NOTE 2
Two 500D telephone sets may be temporarily installed near SDT equipment cabinet. Connect one (station B) to test line 39. Connect the other (station C) to an unused line. Both lines must be assigned, unrestricted, and not in hunt group(s).



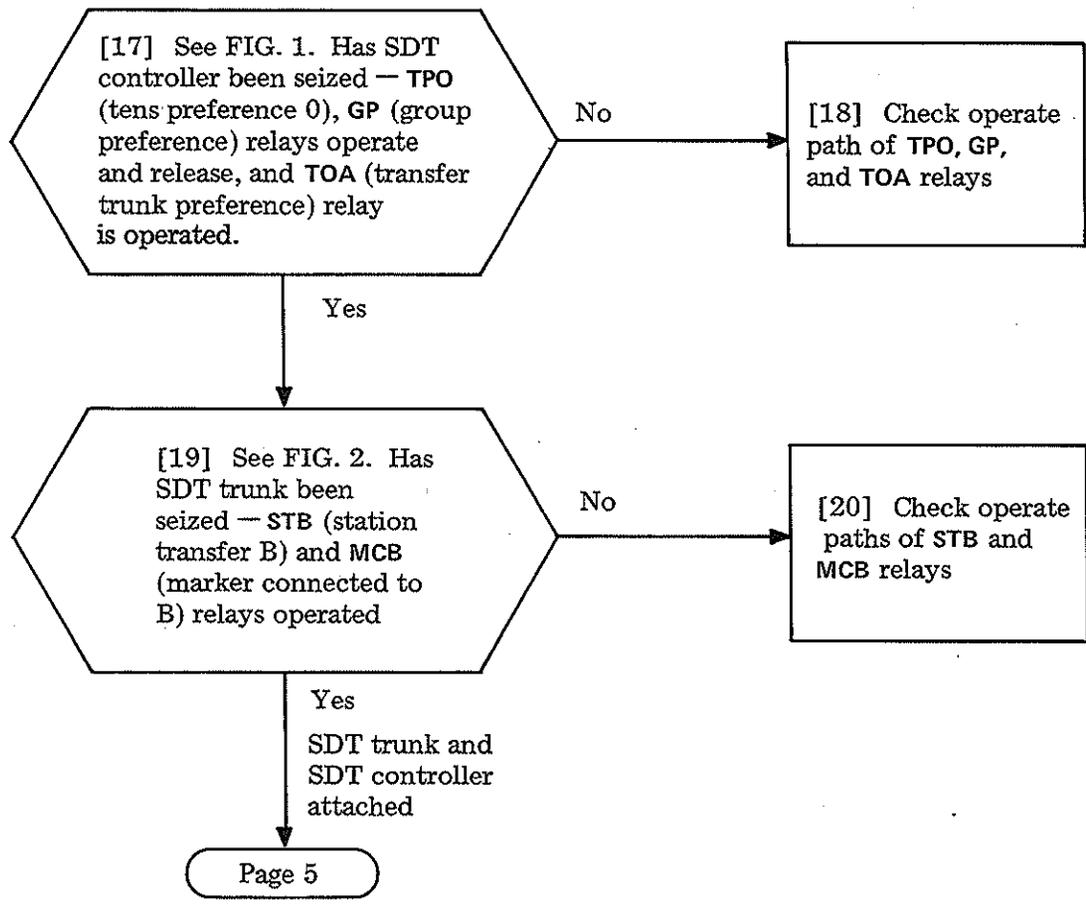
**CLEAR CALL TRANSFER-INDIVIDUAL TROUBLE (WAS STATION DIAL TRANSFER)
(SD-66909, SD-66921)**

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CLEAR CALL TRANSFER-INDIVIDUAL TROUBLE (WAS STATION DIAL TRANSFER)
(SD-66909, SD-66921)

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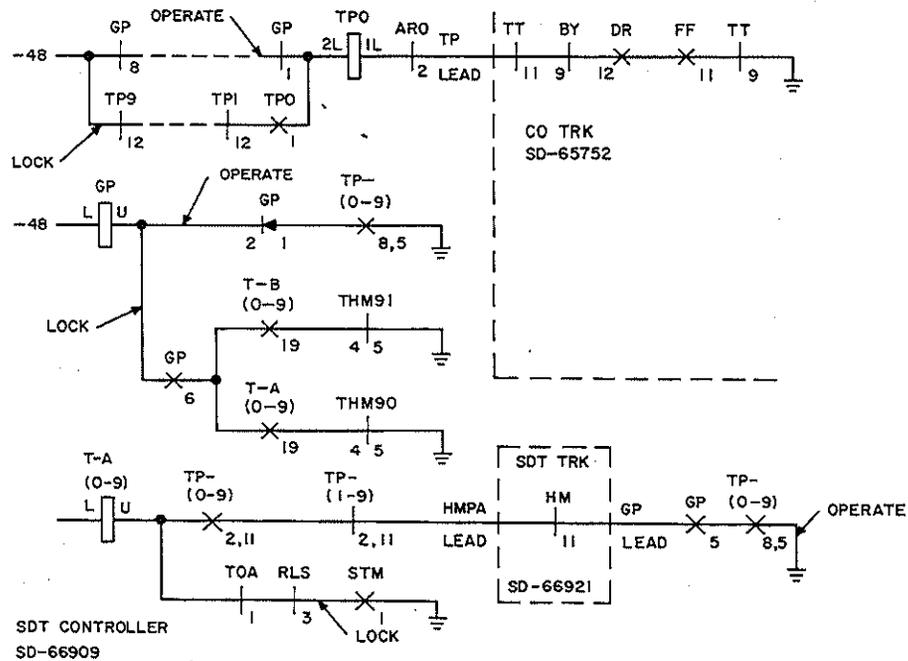


FIG. 1

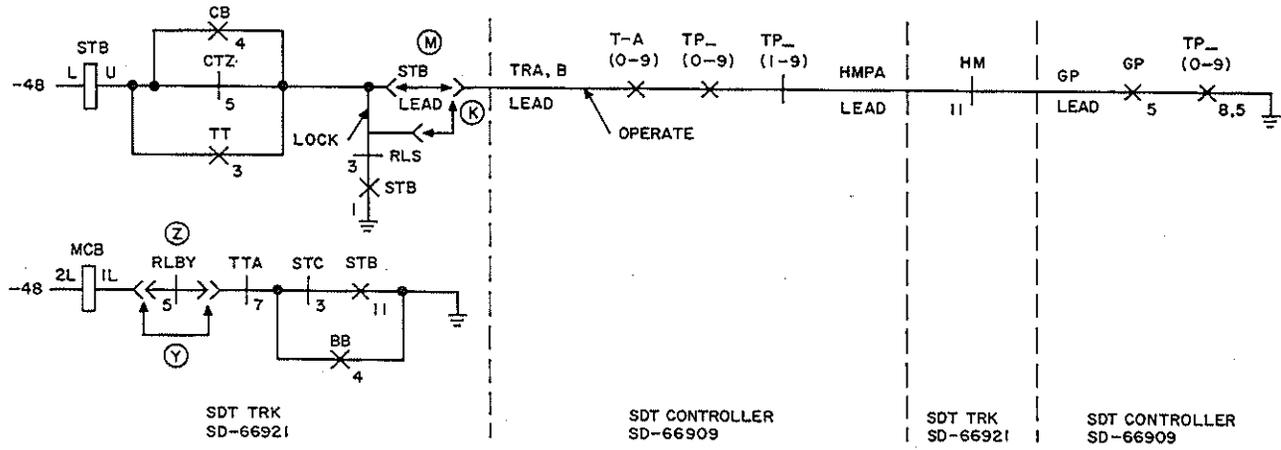
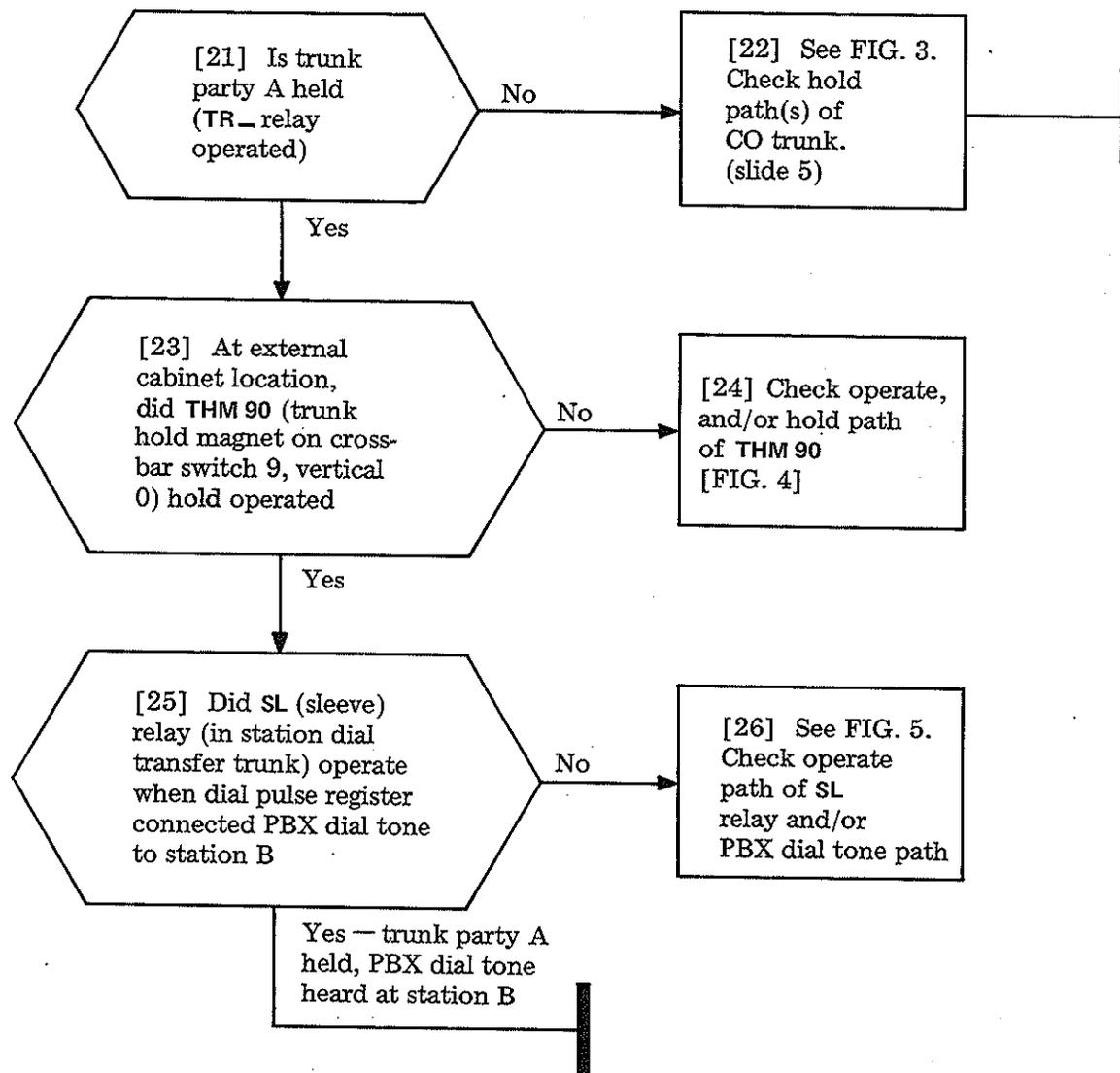


FIG. 2

CLEAR CALL TRANSFER-INDIVIDUAL TROUBLE (WAS STATION DIAL TRANSFER)
 (SD-66909, SD-66921)

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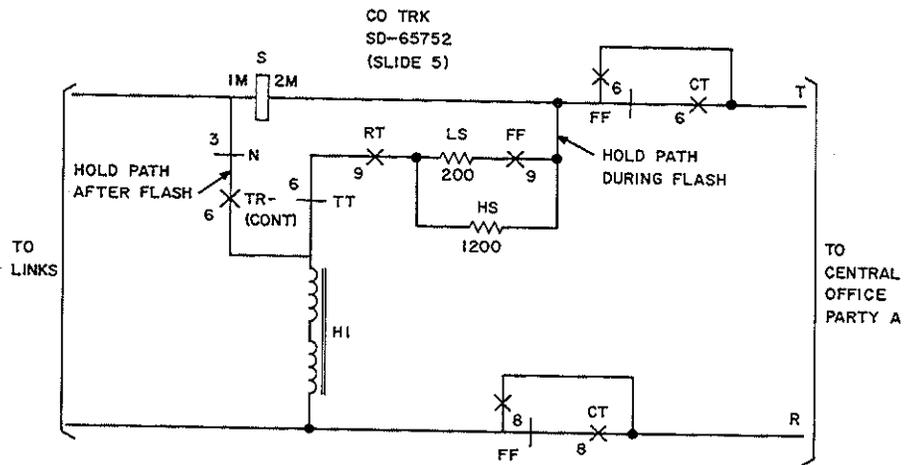


FIG. 3

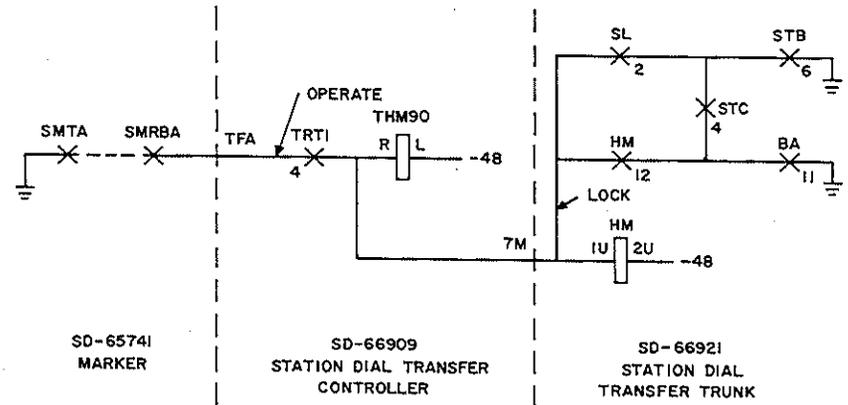


FIG. 4

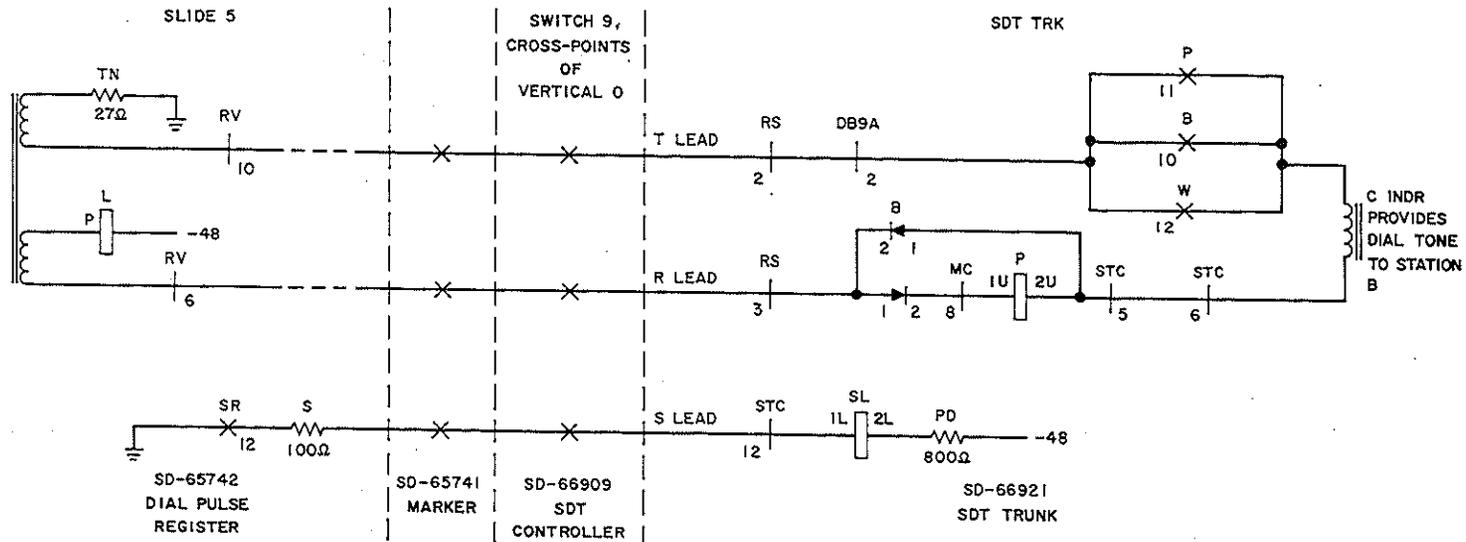


FIG. 5

CLEAR CALL TRANSFER-INDIVIDUAL TROUBLE (WAS STATION DIAL TRANSFER)
(SD-66909, SD-66921)

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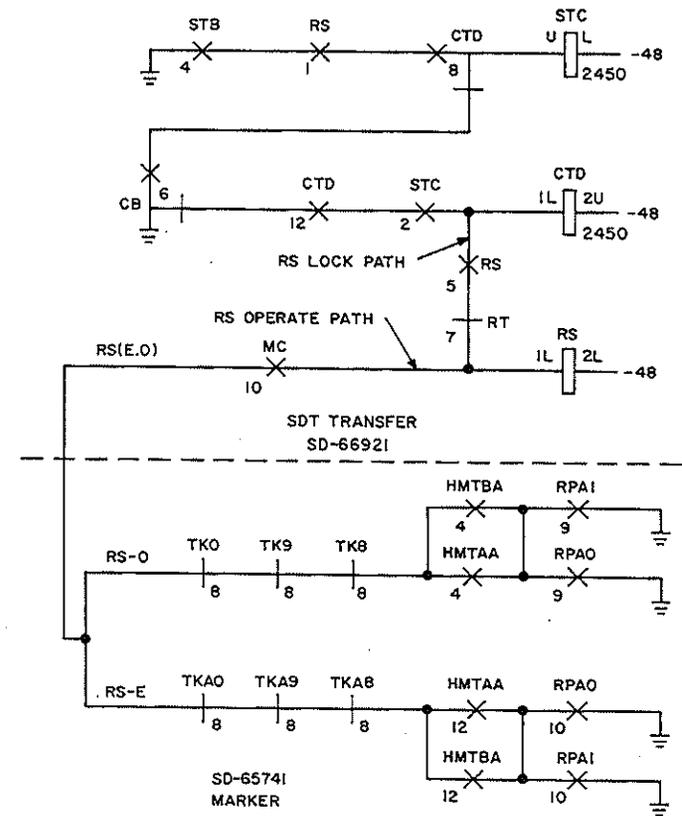
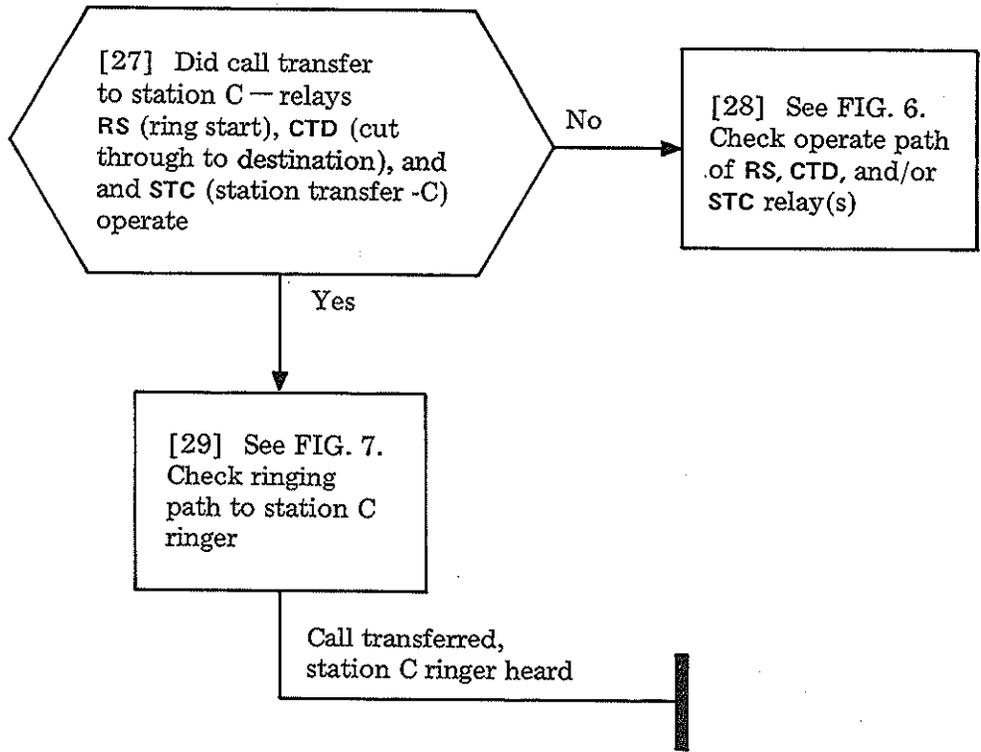


FIG. 6

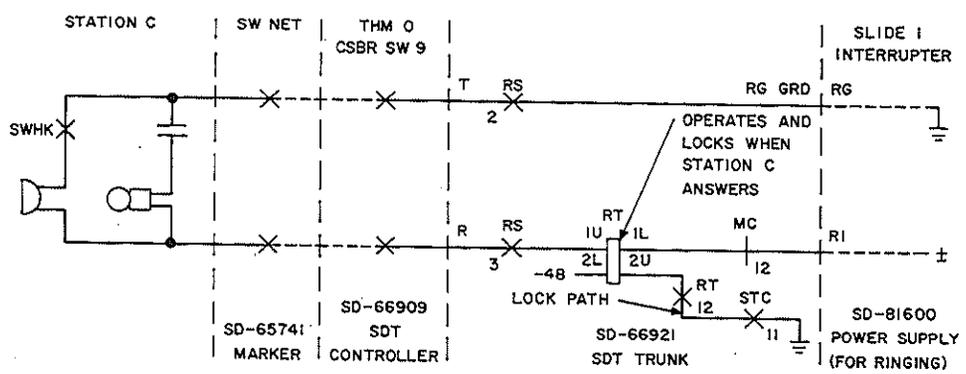
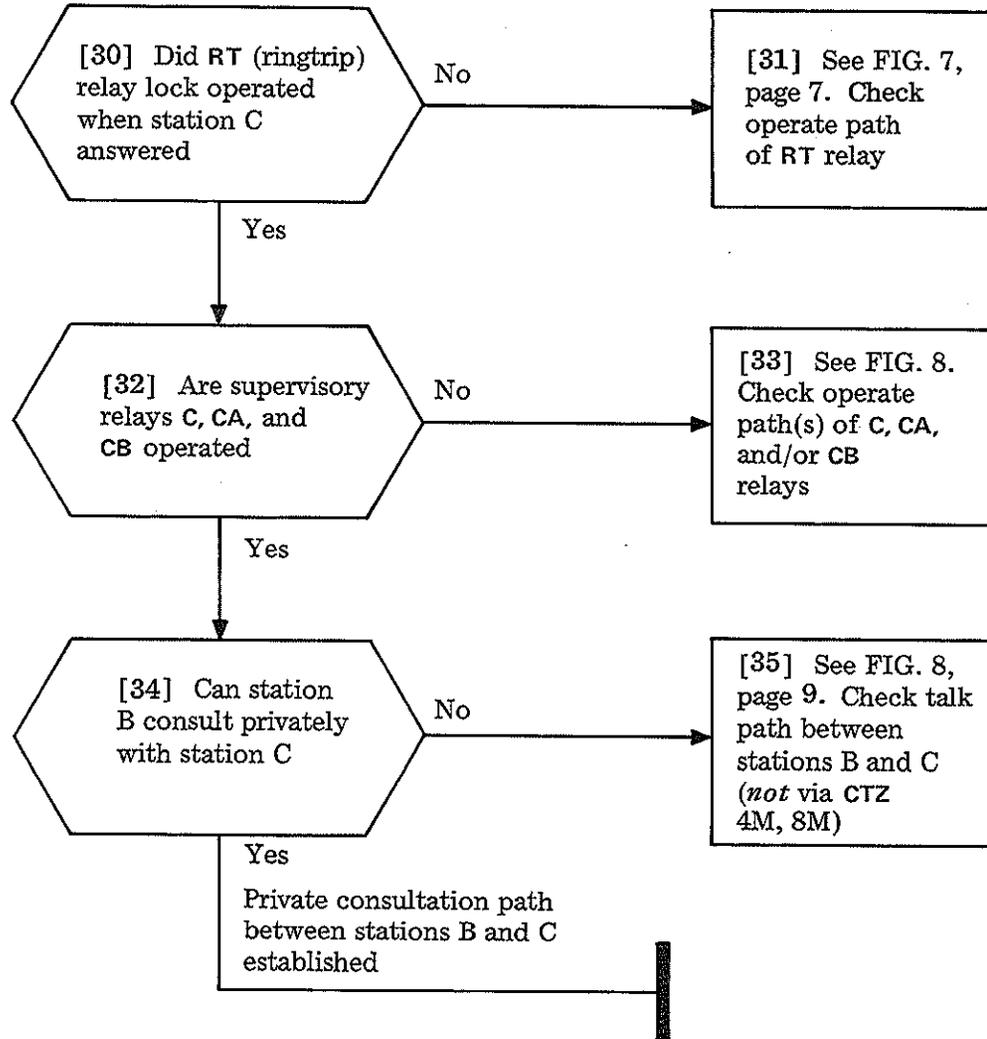


FIG. 7

CLEAR CALL TRANSFER-INDIVIDUAL TROUBLE (WAS STATION DIAL TRANSFER)
(SD-66909, SD-66921)

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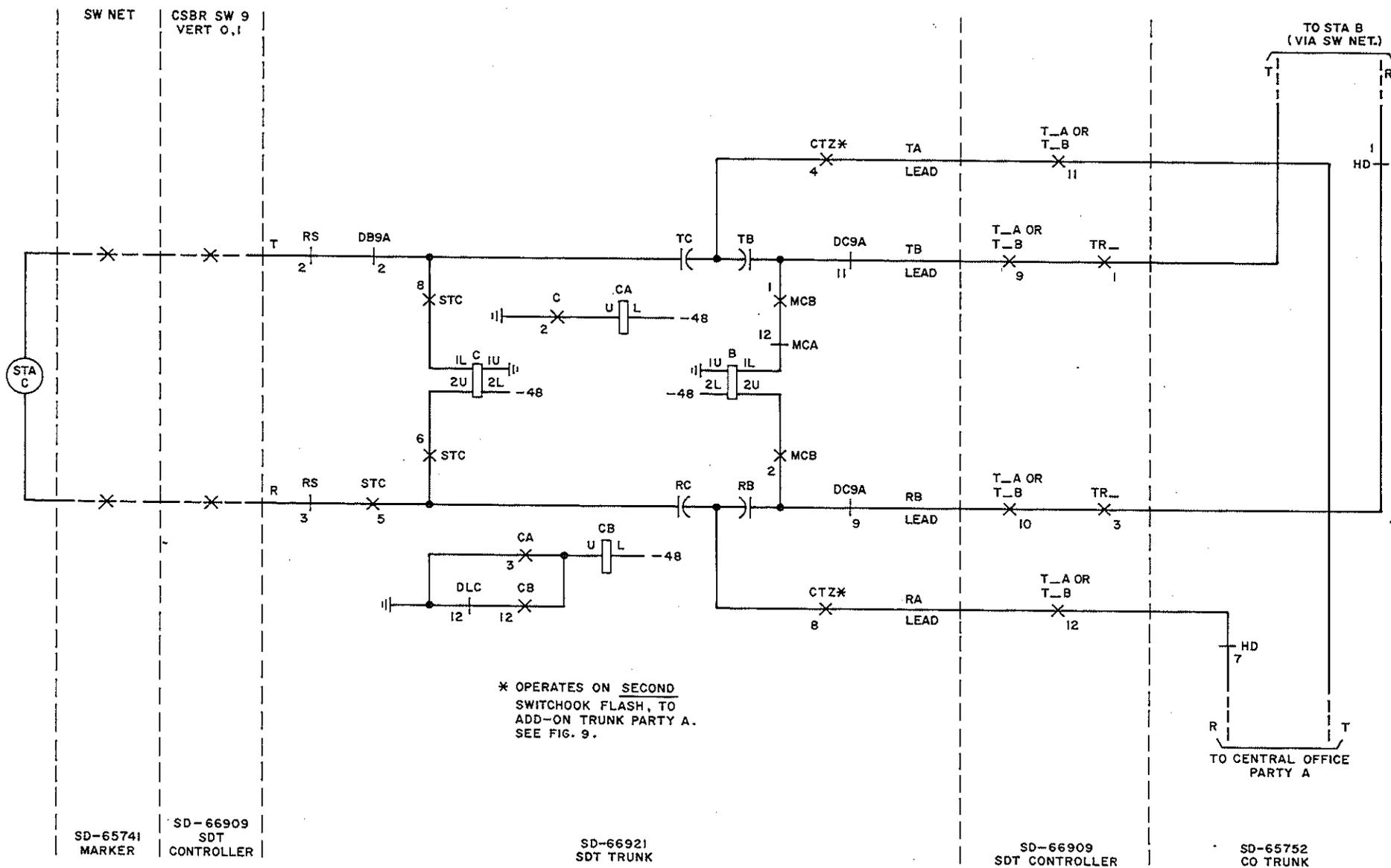
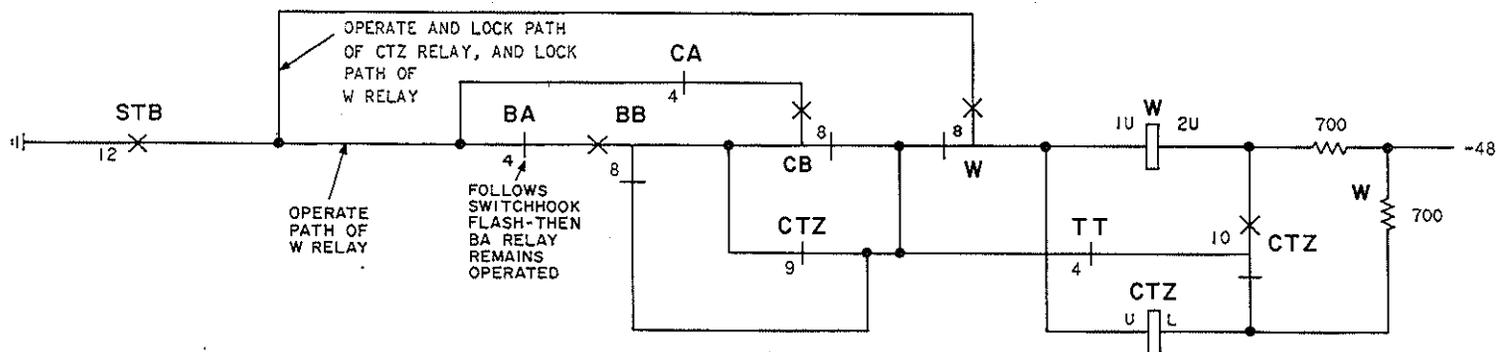
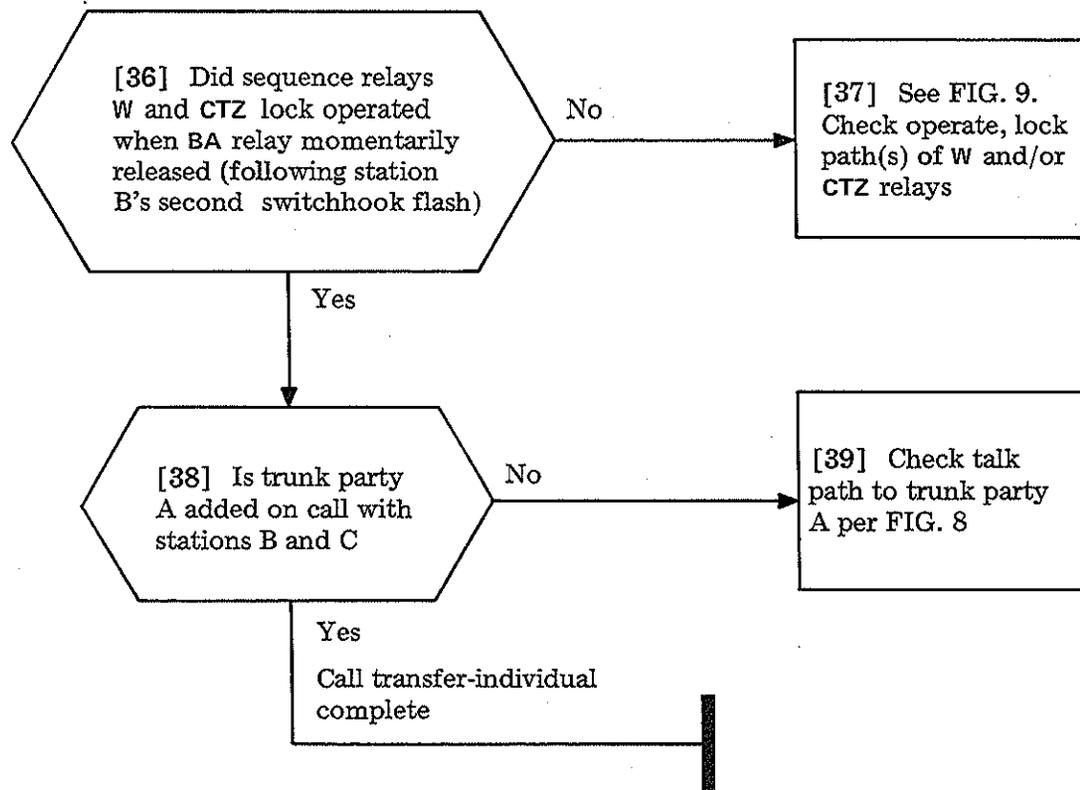


FIG. 8

CLEAR CALL TRANSFER-INDIVIDUAL TROUBLE (WAS STATION DIAL TRANSFER)
(SD-66909, SD-66921)

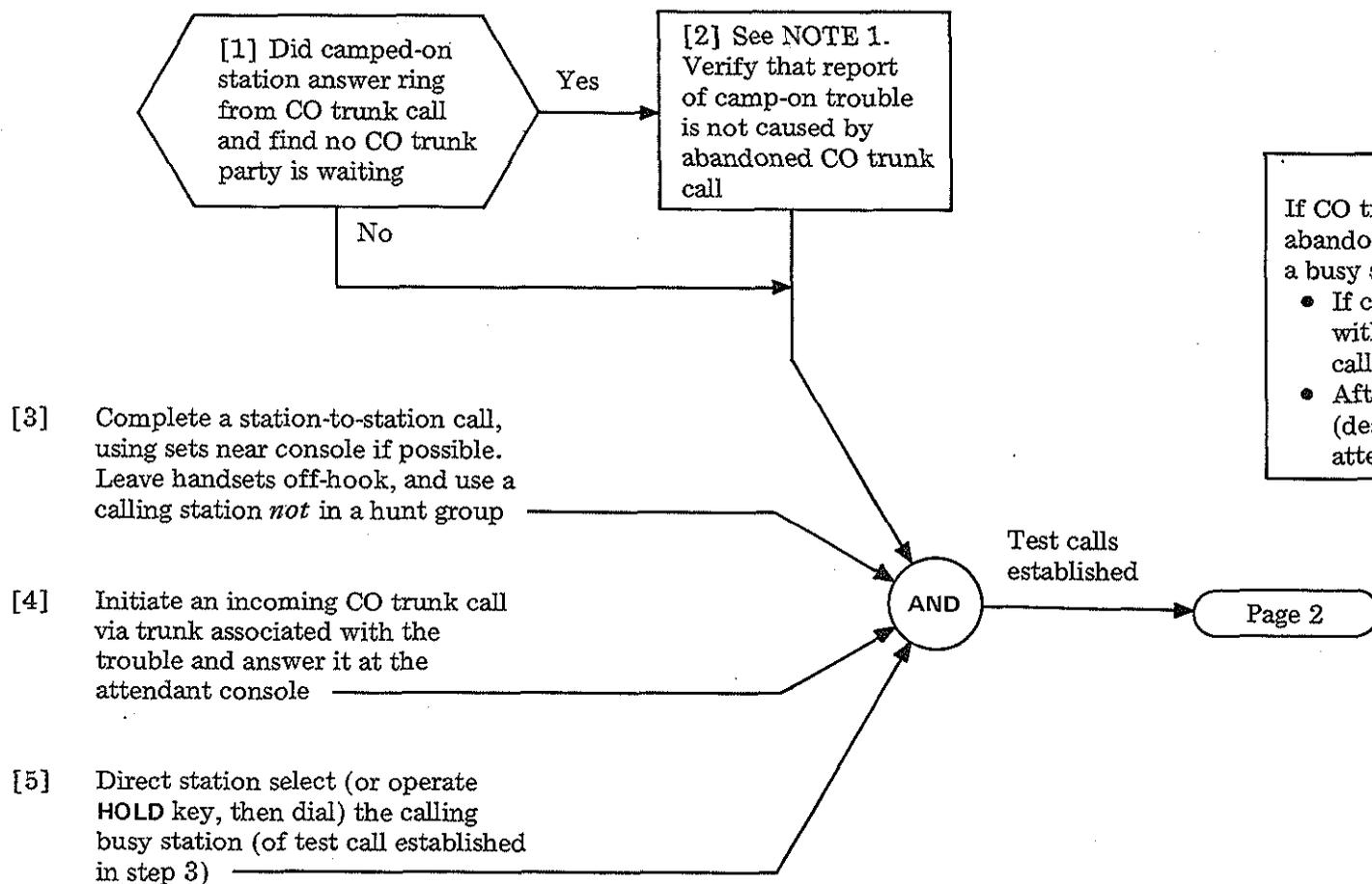
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SUMMARY

Establish a busy station-to-station connection. Initiate an incoming CO trunk call (eg, from test board) via trunk(s) associated with camp-on trouble. Answer at the attendant console, and try to camp the call on the calling station of the busy (test) station-to-station

connection. Advance the call until failure occurs. Use FIG. 3 page 4, to locate CO trunk or cordless position circuit relays. This procedure assumes the marker and dial pulse registers operated properly to dial or direct station select (DSS) the called busy station, but there is a camp-on feature failure.

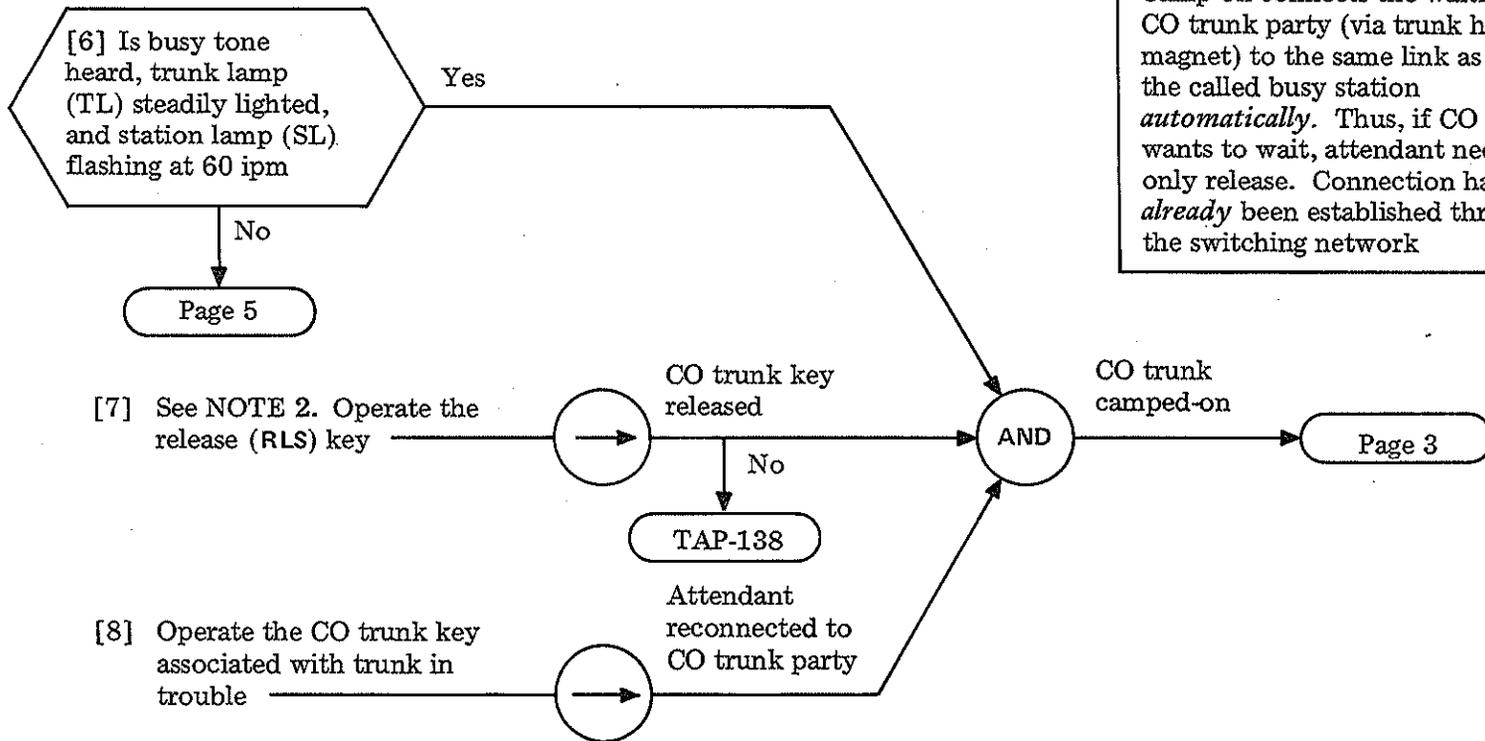


NOTE 1
 If CO trunk party hangs up and abandons call after being camped-on a busy station:

- If called busy station hangs up within 15-20 seconds, "dead" call will ring through
- After 15-20 seconds, abandoned (dead) call may time out to attendant trunk

CLEAR CAMP-ON TROUBLE

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NOTE 2

Camp-on connects the waiting CO trunk party (via trunk hold magnet) to the same link as the called busy station *automatically*. Thus, if CO party wants to wait, attendant need only release. Connection has *already* been established through the switching network

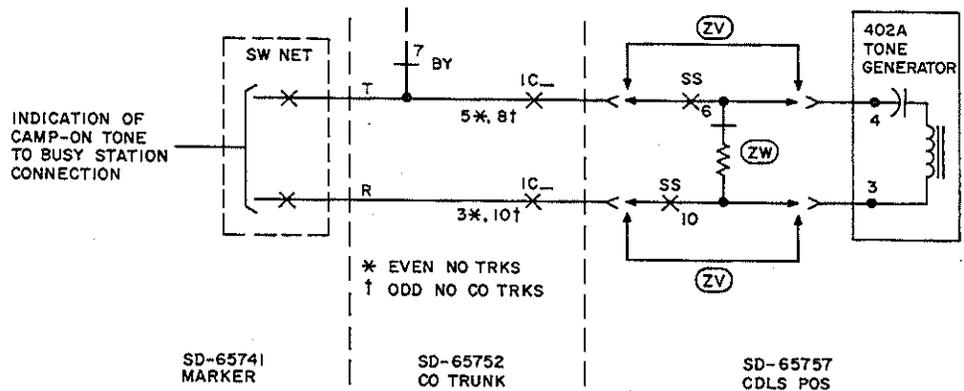
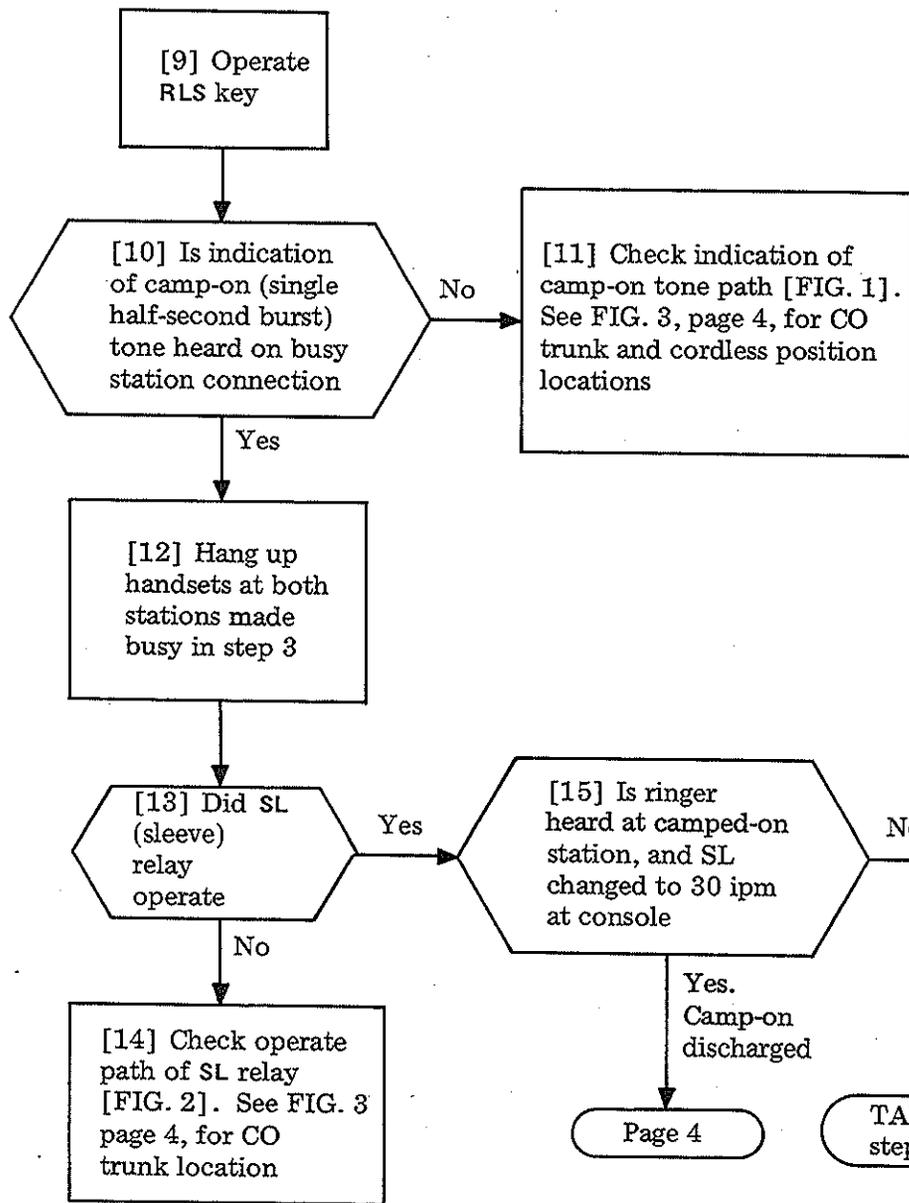


FIG. 1

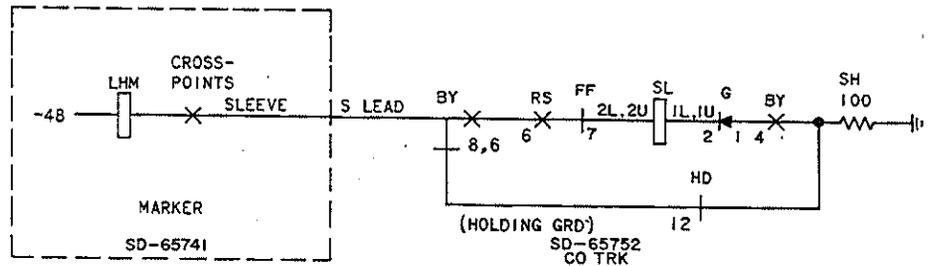
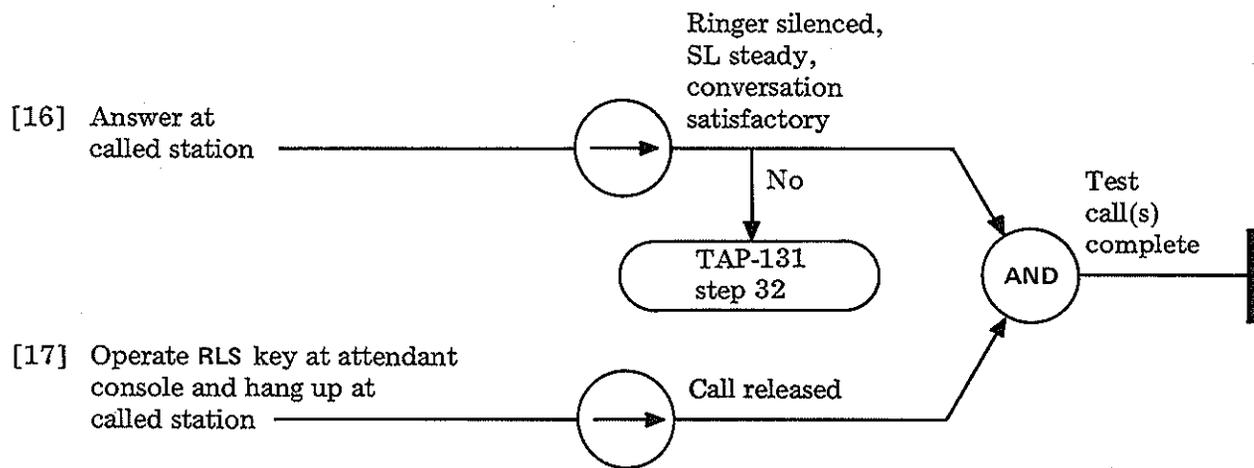


FIG. 2

CLEAR CAMP-ON TROUBLE

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| INDICATION OF CAMP-ON UNIT | |
|------------------------------|---|
| ATND TRUNK 2 | |
| ATND TRUNK 1 | |
| ATND TRUNK 0 | |
| CO TRUNK OR RINGDOWN TIE TRK | 9 |
| POS CKT AND TRK PTCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 8 |
| CO TRUNK | 7 |
| CO TRUNK | 6 |
| CO TRUNK | 5 |
| CO TRUNK OR RINGDOWN TIE TRK | 4 |
| POS CKT AND TRK PATCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 3 |
| CO TRUNK | 2 |
| CO TRUNK | 1 |
| CO TRUNK | 0 |

SLIDE 5

FIG. 3

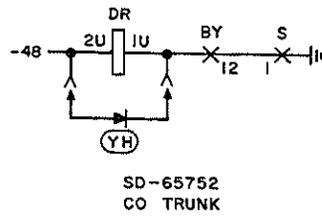
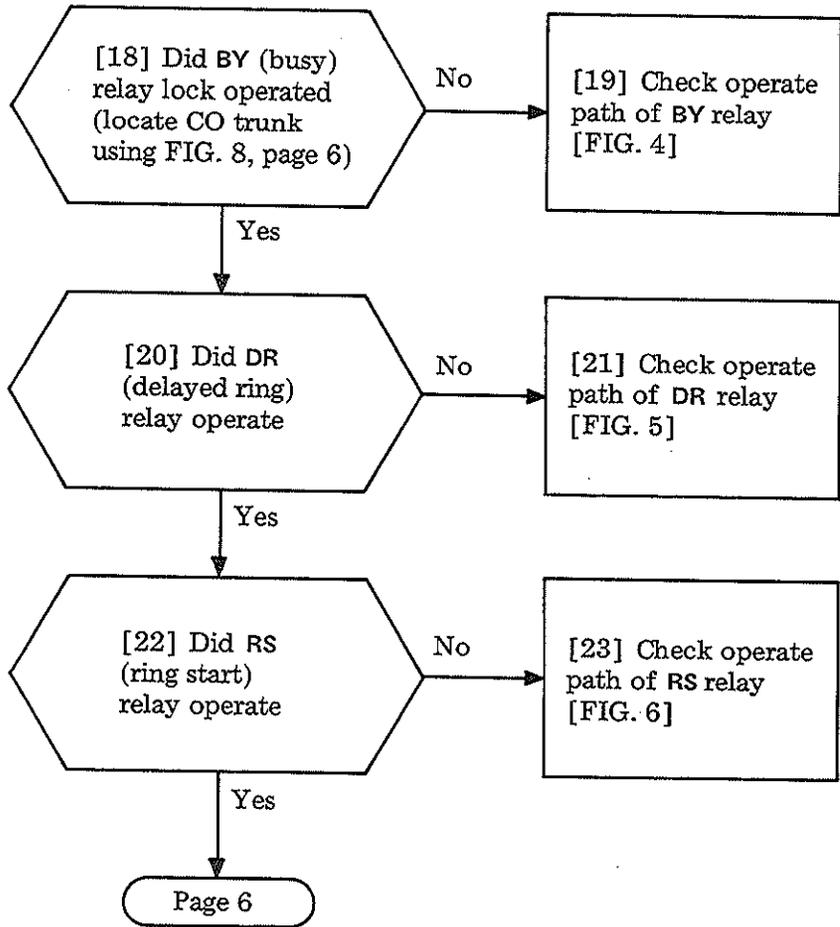


FIG. 5

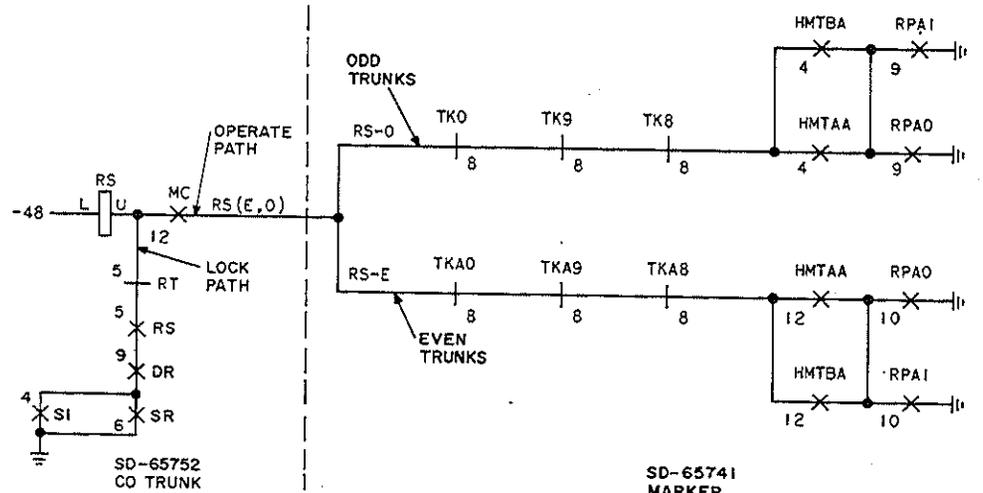


FIG. 6

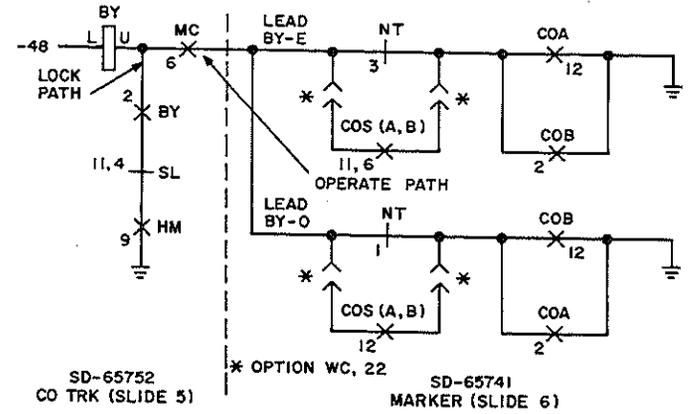
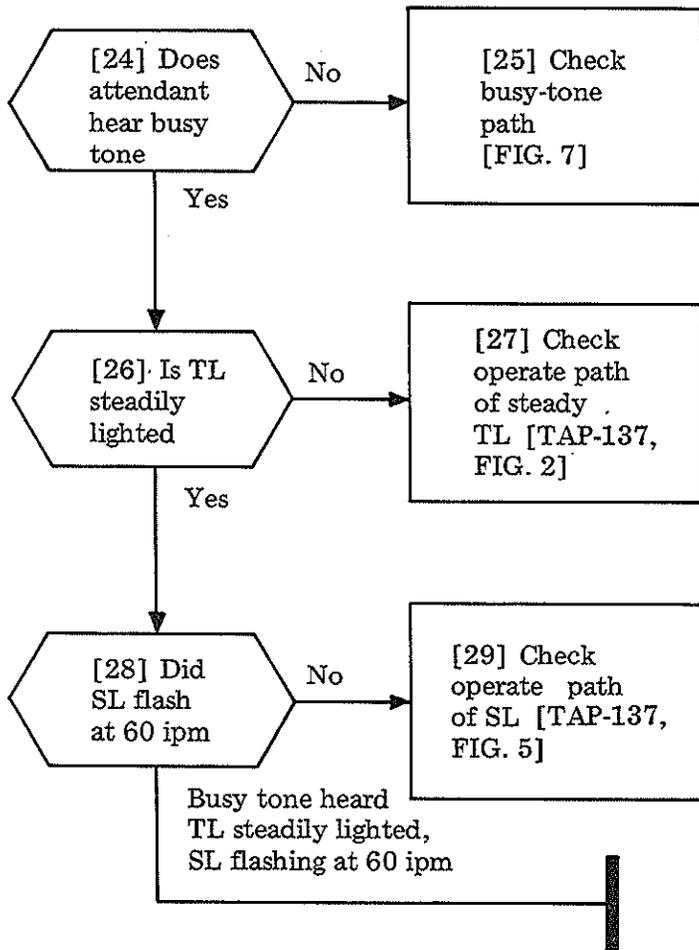


FIG. 4



CLEAR CAMP-ON TROUBLE

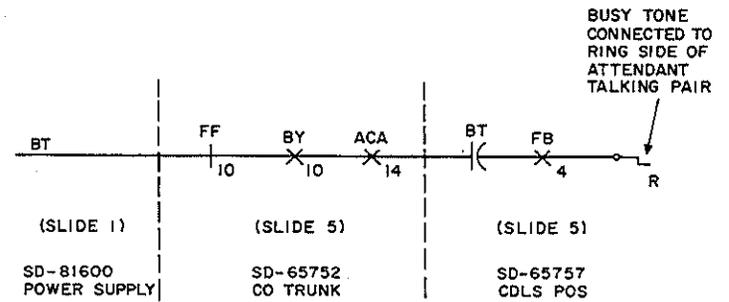


FIG. 7

| INDICATION OF CAMP-ON UNIT | |
|------------------------------|---|
| ATND TRUNK 2 | |
| ATND TRUNK 1 | |
| ATND TRUNK 0 | |
| CO TRUNK OR RINGDOWN TIE TRK | 9 |
| POS CKT AND TRK PTCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 8 |
| CO TRUNK | 7 |
| CO TRUNK | 6 |
| CO TRUNK | 5 |
| CO TRUNK OR RINGDOWN TIE TRK | 4 |
| POS CKT AND TRK PATCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 3 |
| CO TRUNK | 2 |
| CO TRUNK | 1 |
| CO TRUNK | 0 |

SLIDE 5

FIG. 8

| | |
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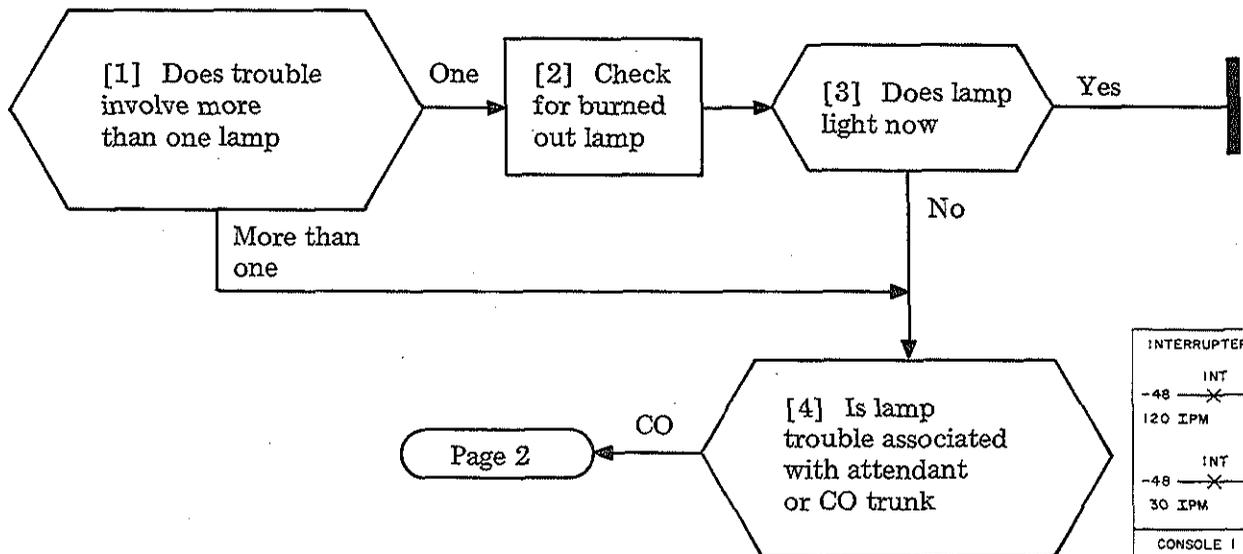
SUMMARY

Initiate and advance a CO or attendant trunk call to the point of lamp failure. From the attendant console, determine if the failure involves:

- One, or more than one lamp
- CO or attendant (ATND) trunk(s)

If the lamp(s) works at times, see if the failure occurs when the lamp(s) should be:

- Steadily lighted,
- On slow flash (SF—30 ipm),
- On fast flash (FF—120 ipm),
- Flashing (F—60 ipm)



| TABLE A | | | | |
|---|-----|---------|-----|-------------|
| LEADS FROM INTERRUPTER (FIG. 1) TO ATND TRK | | SLIDE 5 | | LAMP SIGNAL |
| | | PLUG | PIN | |
| 0, 2 | 1 | | | |
| | SF1 | C | 0 | 30 ipm |
| SF2 | | F | 1 | |
| | FF1 | A | 1 | 120 ipm |
| FF2 | | F | 3 | |

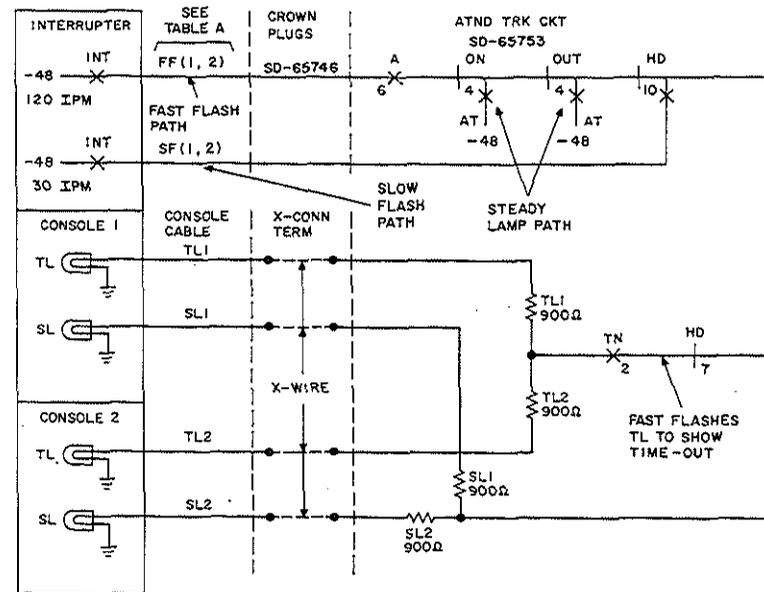
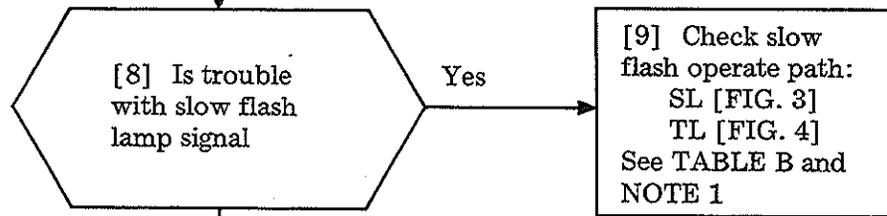
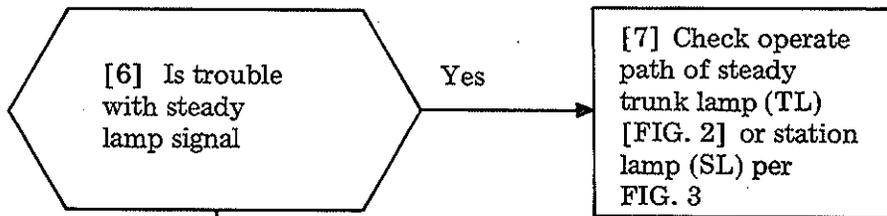


FIG. 1

| | |
|-------------|----------|
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| TABLE B | | | | |
|------------------------------------|---------------|---------|-----|-------------|
| LEADS FROM INTERRUPTER TO CO TRUNK | | SLIDE 5 | | LAMP SIGNAL |
| 0, 2, 4, 6, 8 | 1, 3, 5, 7, 9 | PLUG | PIN | |
| | SF1 | C | 0 | 80 ipm |
| SF2 | | F | 1 | |

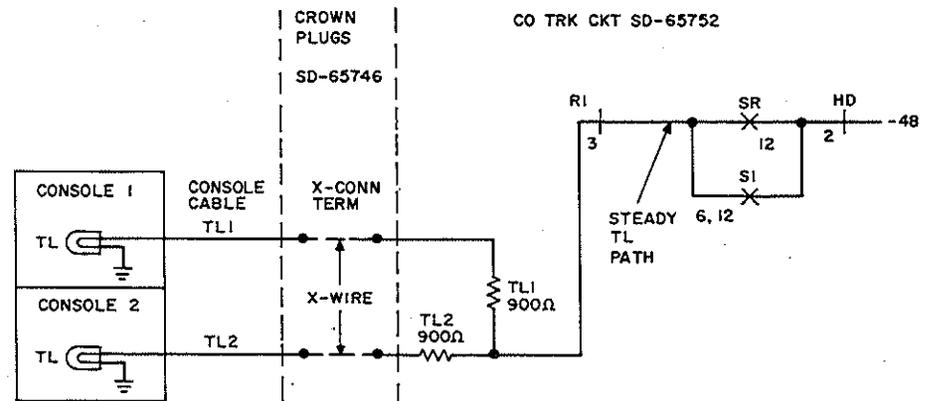


FIG. 2

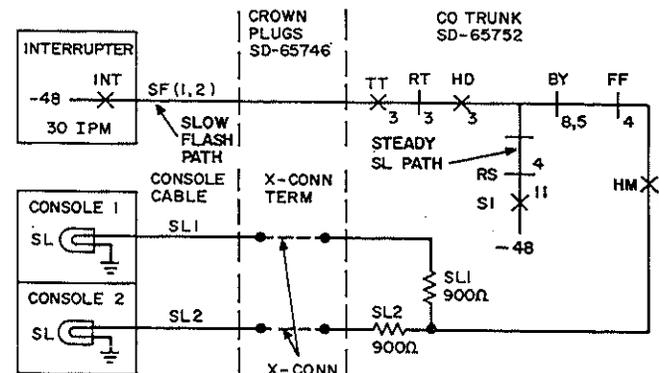


FIG. 3

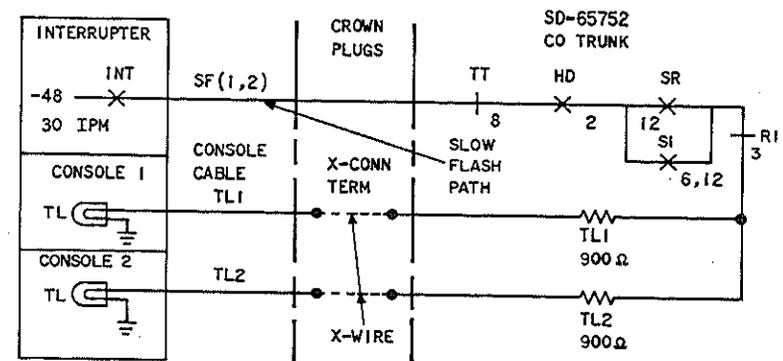
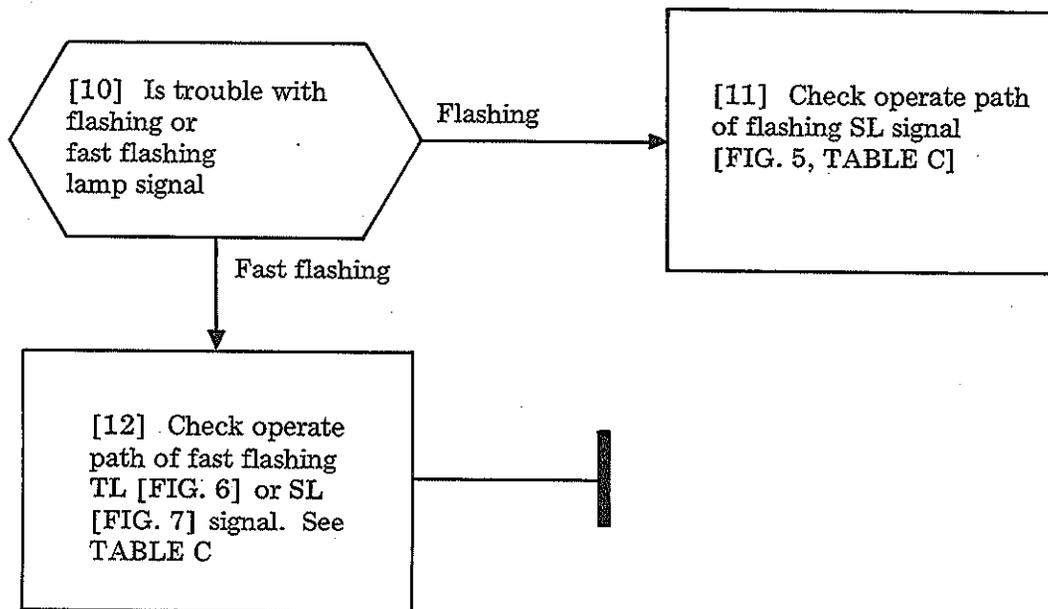


FIG. 4

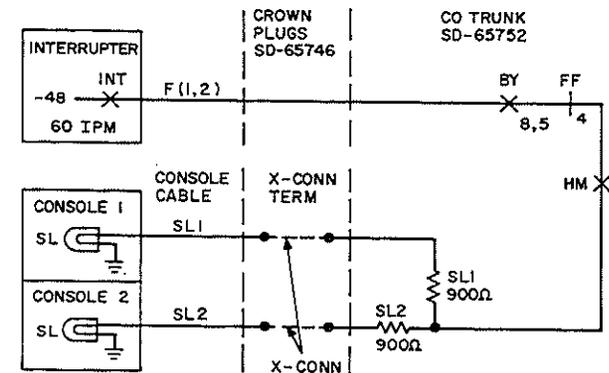


FIG. 5

| TABLE C | | | | |
|------------------------------------|---------------|---------|-----|-------------|
| LEADS FROM INTERRUPTER TO CO TRUNK | | SLIDE 5 | | LAMP SIGNAL |
| 0, 2, 4, 6, 8 | 1, 3, 5, 7, 9 | PLUG | PIN | |
| | F1 | | | 60 ipm |
| F2 | | | | |
| | FF1 | | | 120 ipm |
| FF2 | | | | |

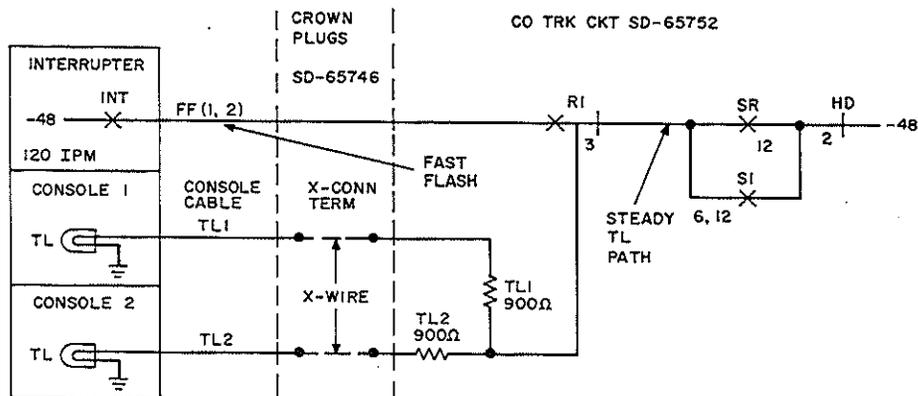


FIG. 6

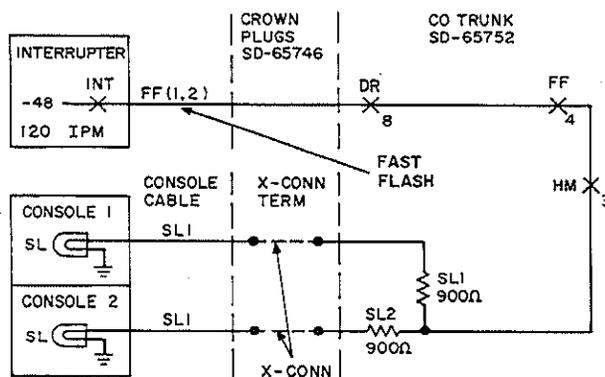


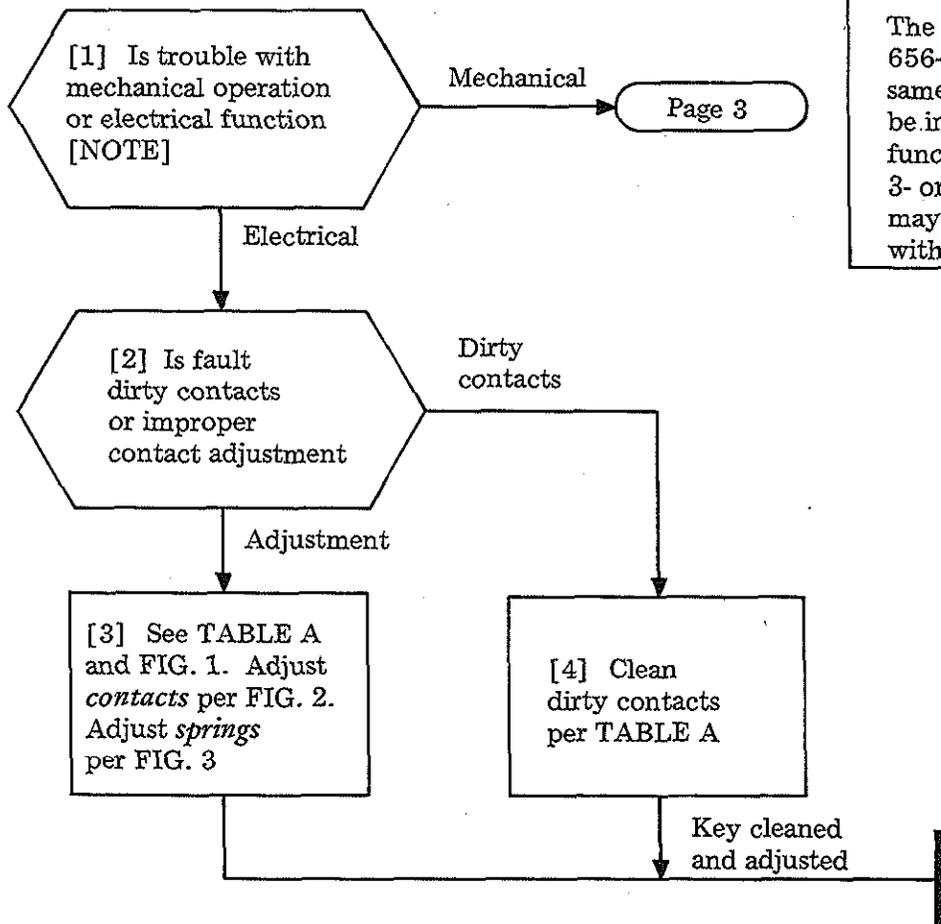
FIG. 7

SUMMARY

Check to see whether trouble is

- Mechanical (key stuck, broken, dimly lit, etc) or
- Electrical (eg, can't pick up call, noisy, weak dial tone, etc)

Use this procedure to determine whether to clean, adjust, or replace key.



NOTE
The 598-type and newer 656-type keys have the same basic design and can be intermixed. Operating functions are identical. The 3- or 4-type consoles may be equipped with either.

| TABLE A | |
|---------------|---|
| CONTACT FAULT | TROUBLE CLEARING PROCEDURE |
| Adjustment | Gauge open <i>contacts</i> to: .006 (min) for 598-type key .010 (min) for 656-type key. |
| | Check <i>spring</i> separation (minimum 1/64 inch) |
| Dirty | Burnish contacts using 265C tool equipped with 266E tool (blade) and/or draw strip of KS 7188 relay cleaning paper through held-closed contacts |

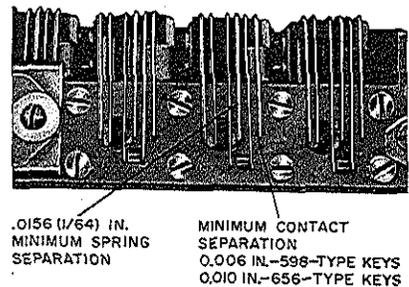


FIG. 1

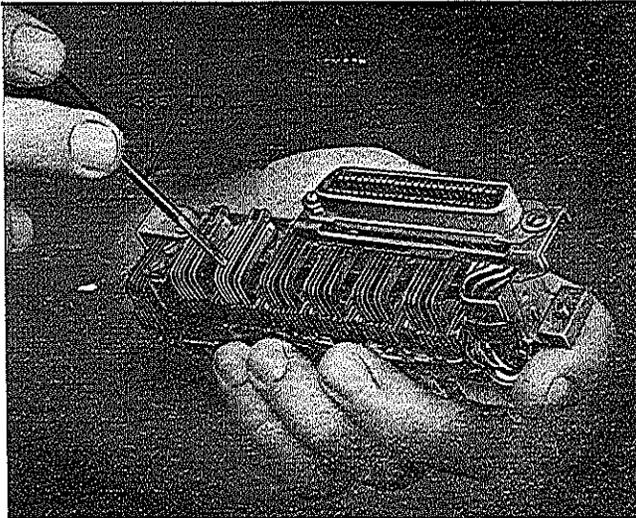


FIG. 2

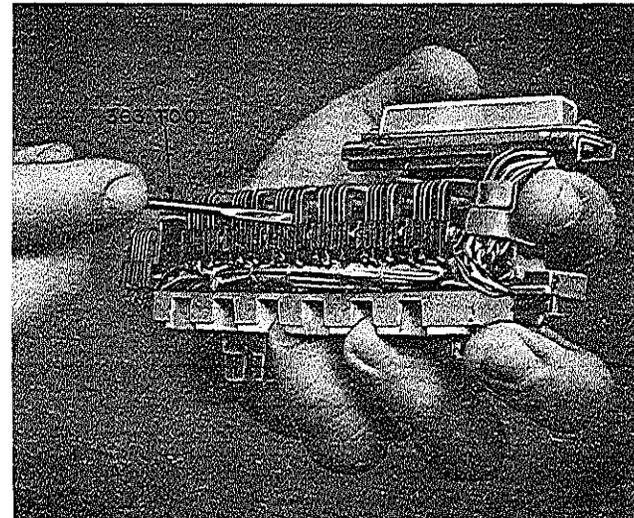
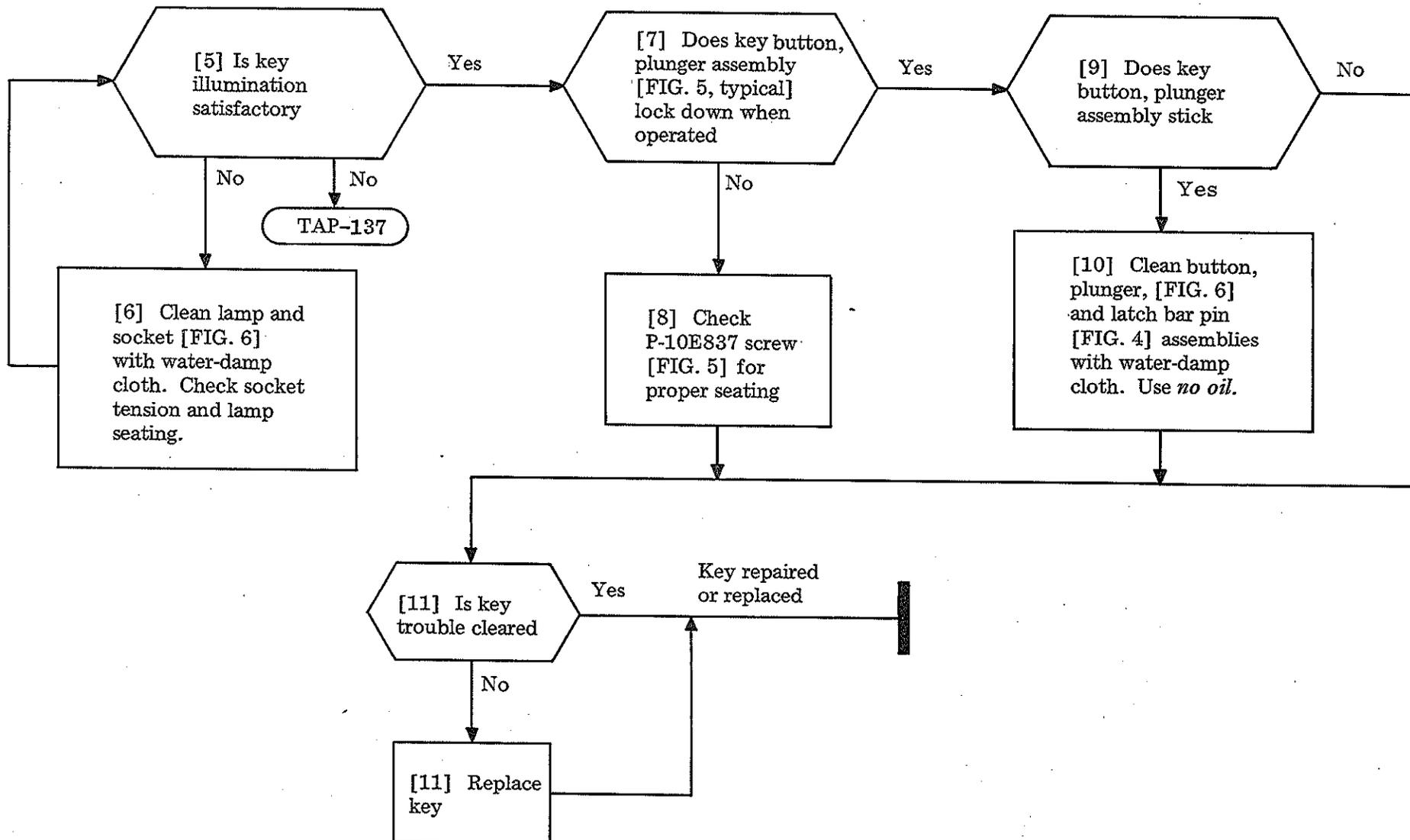
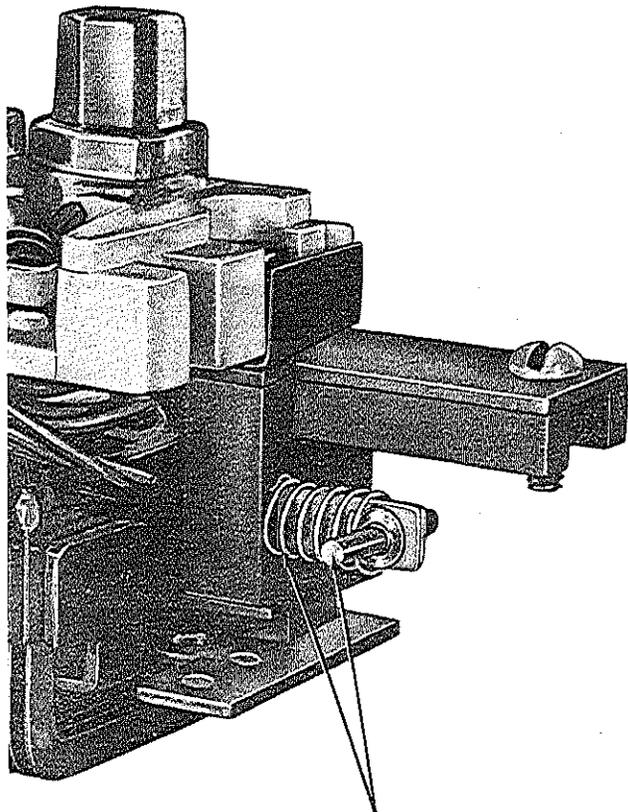


FIG. 3



CLEAR CONSOLE KEY TROUBLE

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REMOVE PIN AND SPRING
(CHAINING SWITCH OMITTED FOR CLARITY)

FIG. 4 — Location of Latch Bar Return Spring and Pin

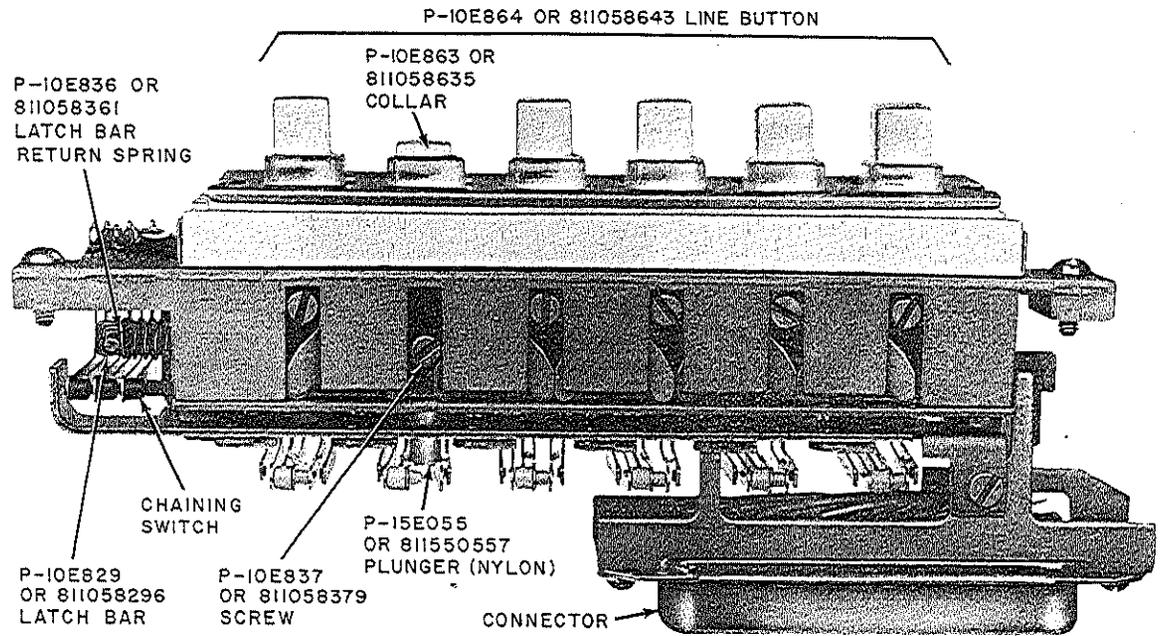


FIG. 5 — Typical (598-Type) Key

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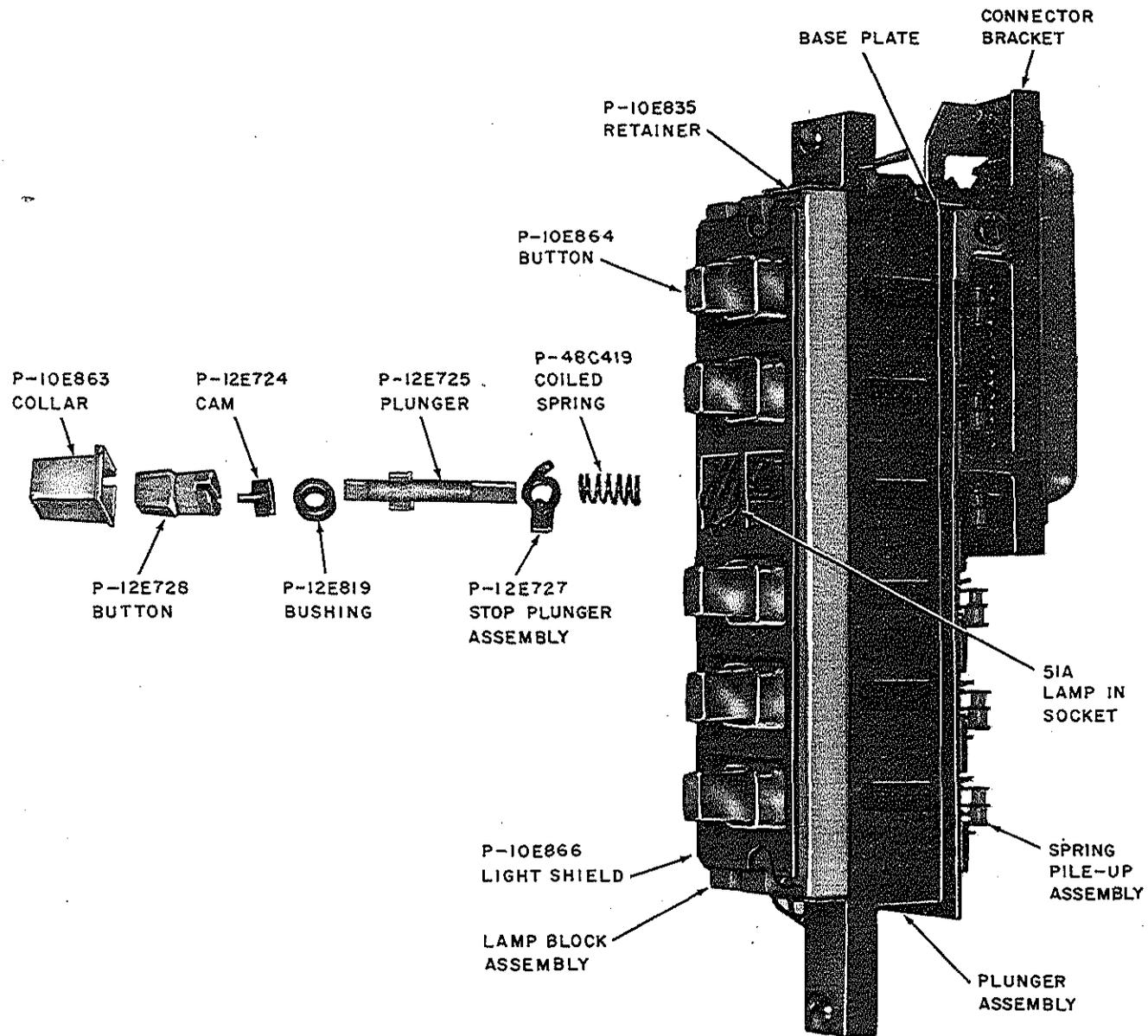


FIG. 6 - Typical (598-Type) Assembly

| | |
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SUMMARY

From the trouble report and/or a steady trunk lamp (TL) at the attendant console, determine:

- Which CO trunk can't be released
- Whether attendant or station can't release CO trunk.

If a station is involved, check to see if CO trunk hold magnet released when station hung up. Locate the fault using the figure or other reference given. This procedure assumes the CO trunk has operated properly to connect to the attendant position and/or station, but cannot be released.

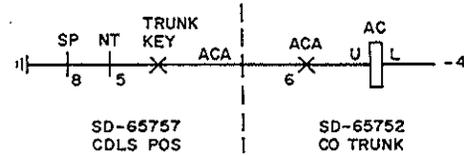
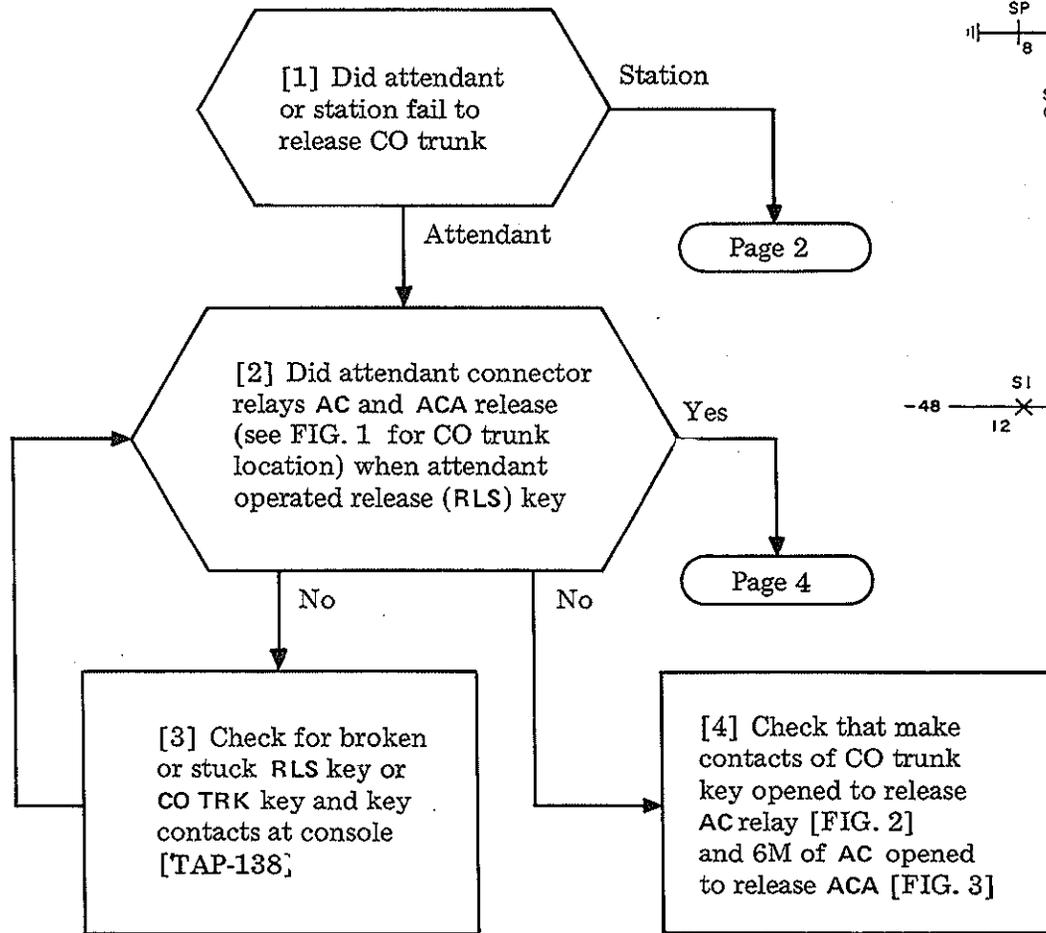


FIG. 2

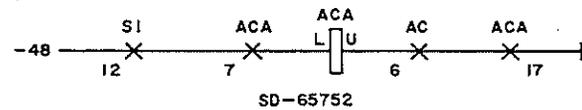
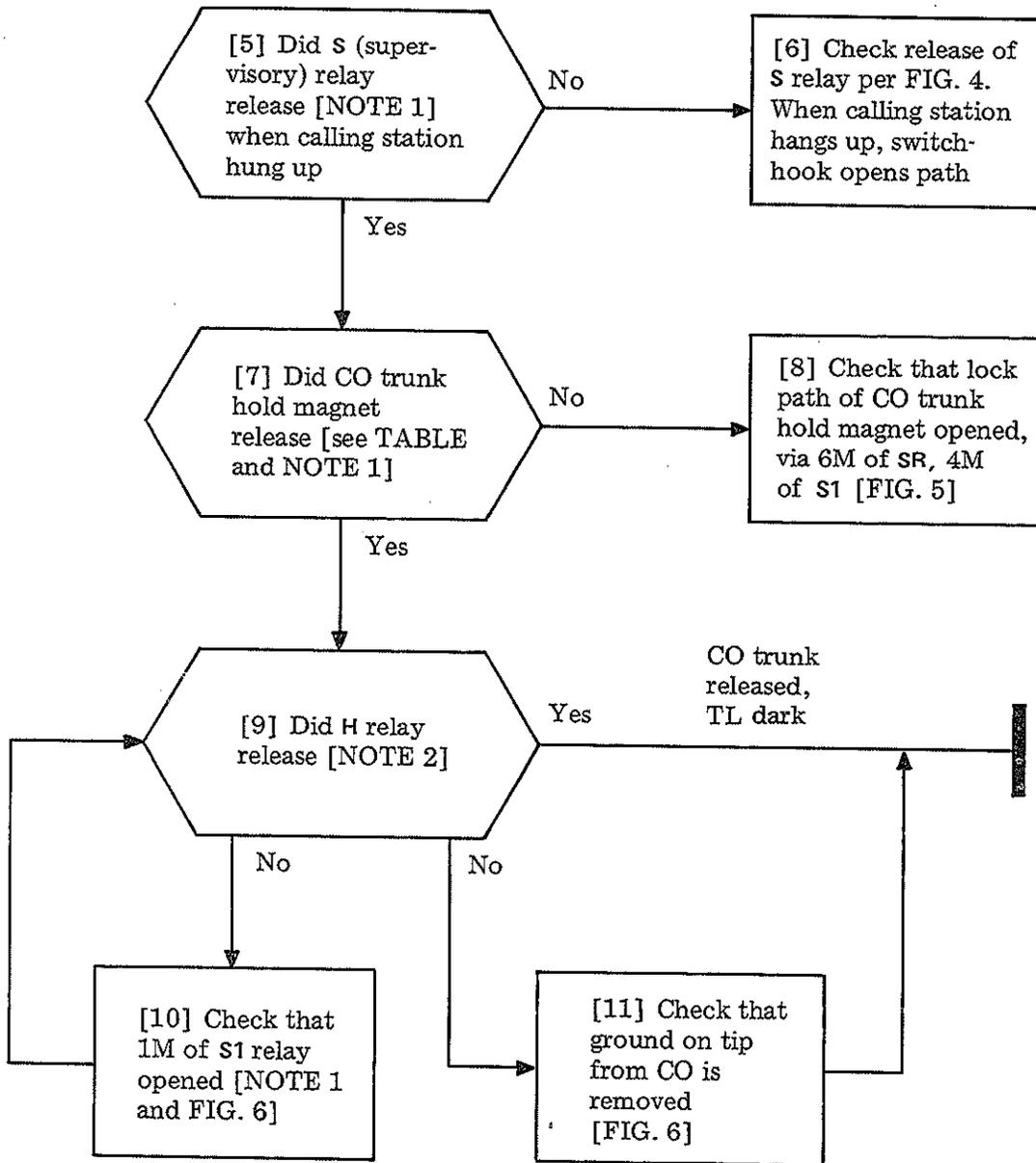


FIG. 3

| INDICATION OF CAMP-ON UNIT | |
|------------------------------|---|
| ATND TRUNK 2 | |
| ATND TRUNK 1 | |
| ATND TRUNK 0 | |
| CO TRUNK OR RINGDOWN TIE TRK | 9 |
| POS CKT AND TRK PTCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 8 |
| CO TRUNK | 7 |
| CO TRUNK | 6 |
| CO TRUNK | 5 |
| CO TRUNK OR RINGDOWN TIE TRK | 4 |
| POS CKT AND TRK PATCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 3 |
| CO TRUNK | 2 |
| CO TRUNK | 1 |
| CO TRUNK | 0 |

SLIDE 5

FIG. 1



| TABLE | | | |
|--------|---------|----|------|
| CO TRK | THM LOC | | |
| | SL | SW | VERT |
| 0 | 4 | 0 | 0 |
| 1 | | | 1 |
| 2 | | | 2 |
| 3 | | | 3 |
| 4 | 8 | 8 | 4 |
| 5 | | | 5 |
| 6 | | | 6 |
| 7 | | | 7 |
| 8 | | | 8 |
| 9 | | | 9 |

- NOTES**
1. Release of S relay releases trunk hold magnet, S1, CT, SR, and H relays.
 2. Armature travel of H relay is difficult to see. If associated CO trunk lamp is dark at console, H relay released.

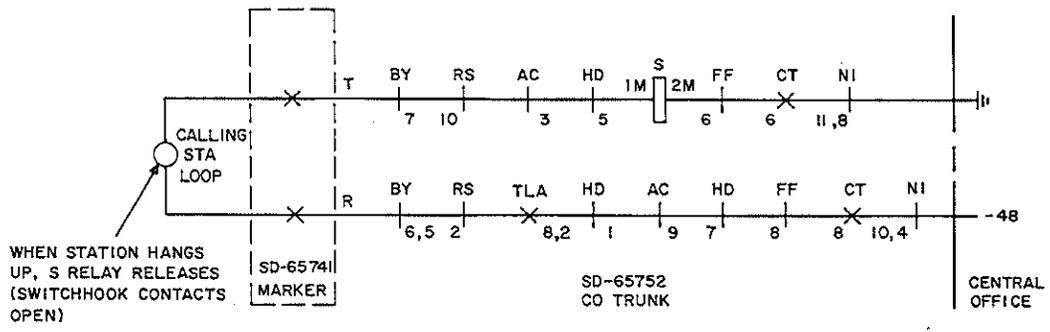


FIG. 4

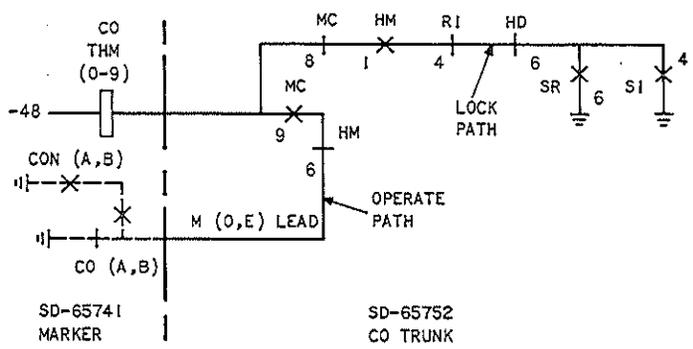


FIG. 5

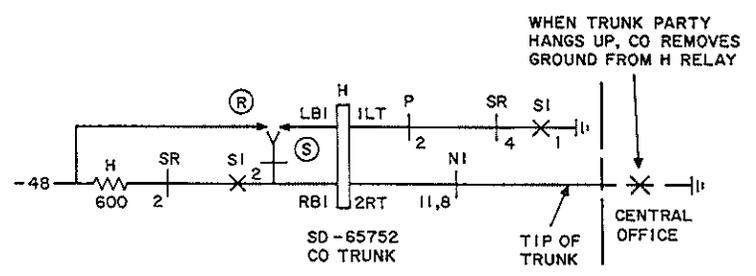


FIG. 6

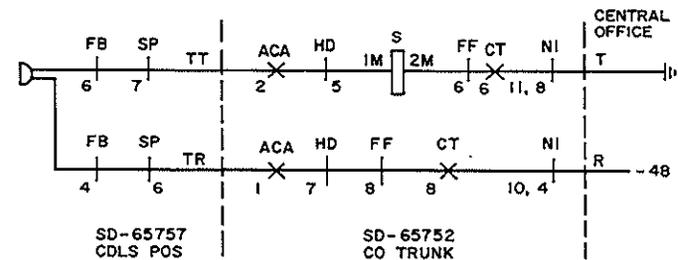
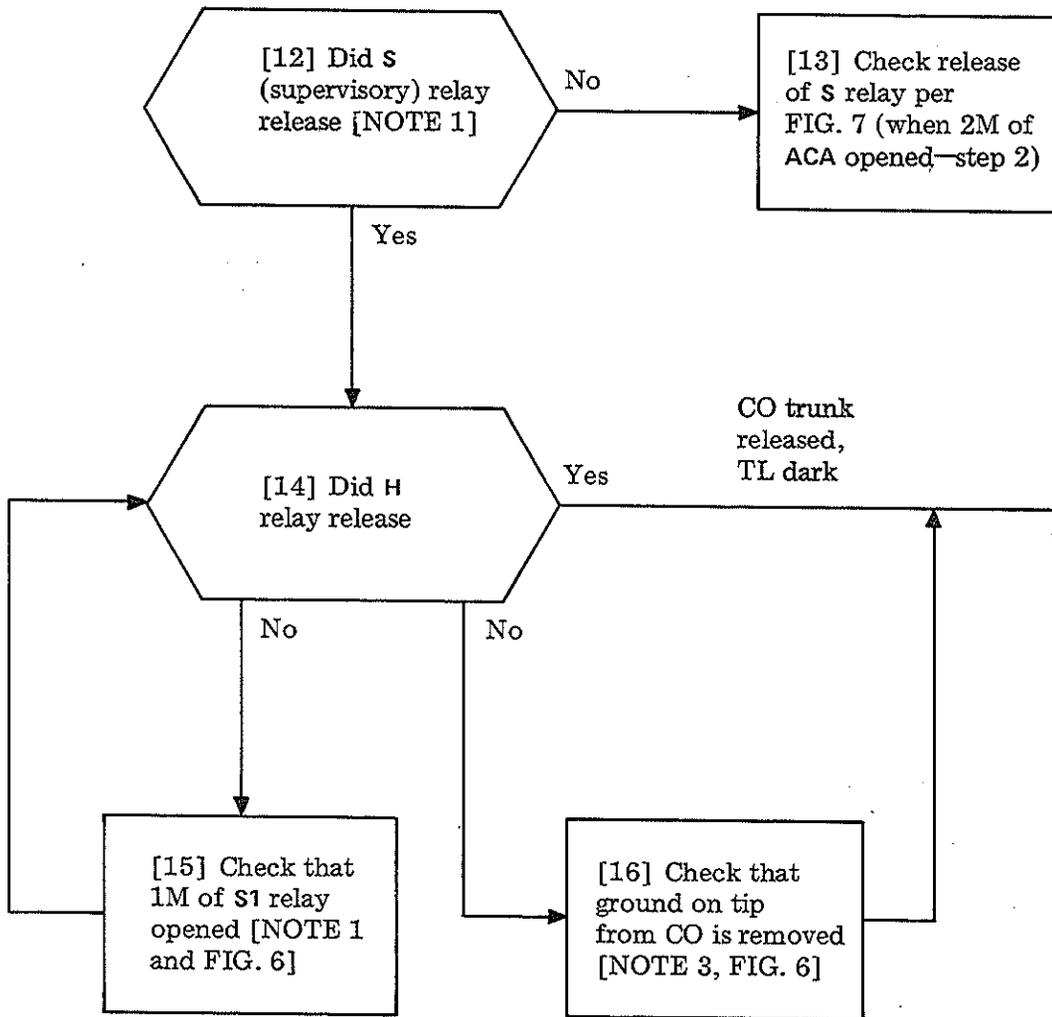
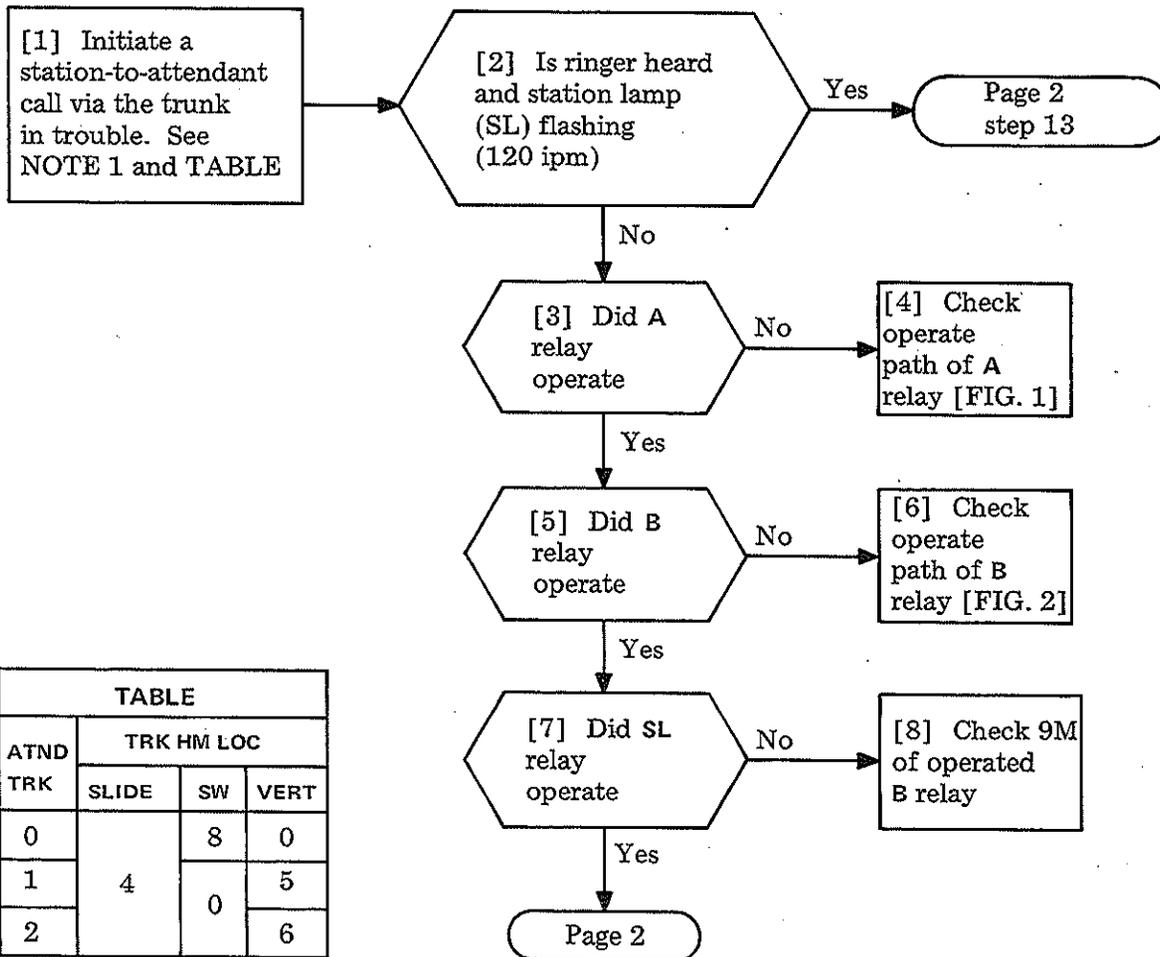


FIG. 7

SUMMARY

Initiate a dial "0" call from an unrestricted station to the attendant trunk associated with the trouble [NOTE 1]
 Operation of the trunk hold magnet connecting a certain attendant trunk (0-2) to the switching

network can be observed at slide 4. See TABLE.
 Repeat test calls until the defective component is isolated. When a failure is observed at the equipment location or attendant console, find the fault using the figure or other reference given.



NOTE 1
 To busy out an attendant trunk (0-2) unit (located at top of slide 5, mounting plates Y, Z, AA), insulate 11M of B relay and block it operated, or operate attendant trunk key of make-busy and busy display unit (slide 2), if provided. Remove busy when test is complete

| TABLE | | | |
|----------|------------|----|------|
| ATND TRK | TRK HM LOC | | |
| | SLIDE | SW | VERT |
| 0 | | 8 | 0 |
| 1 | 4 | 0 | 5 |
| 2 | | 0 | 6 |

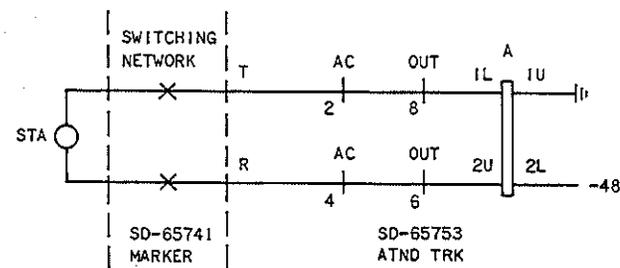


FIG. 1

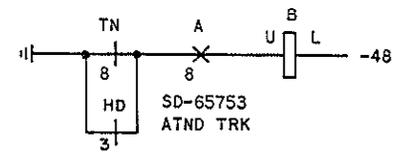


FIG. 2

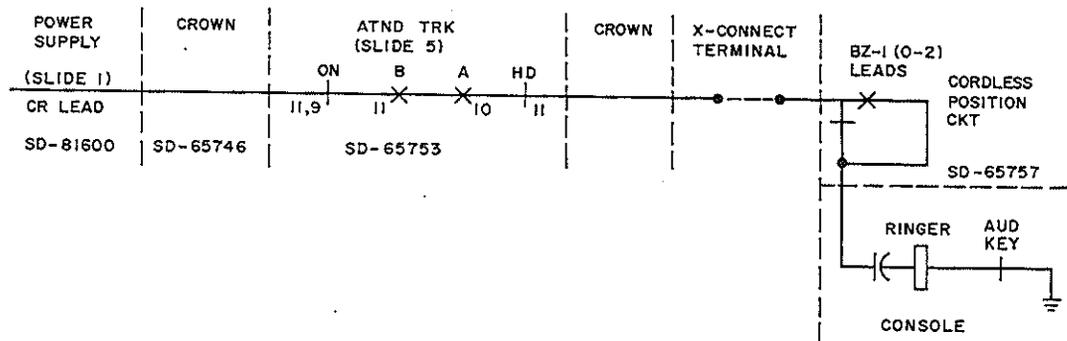
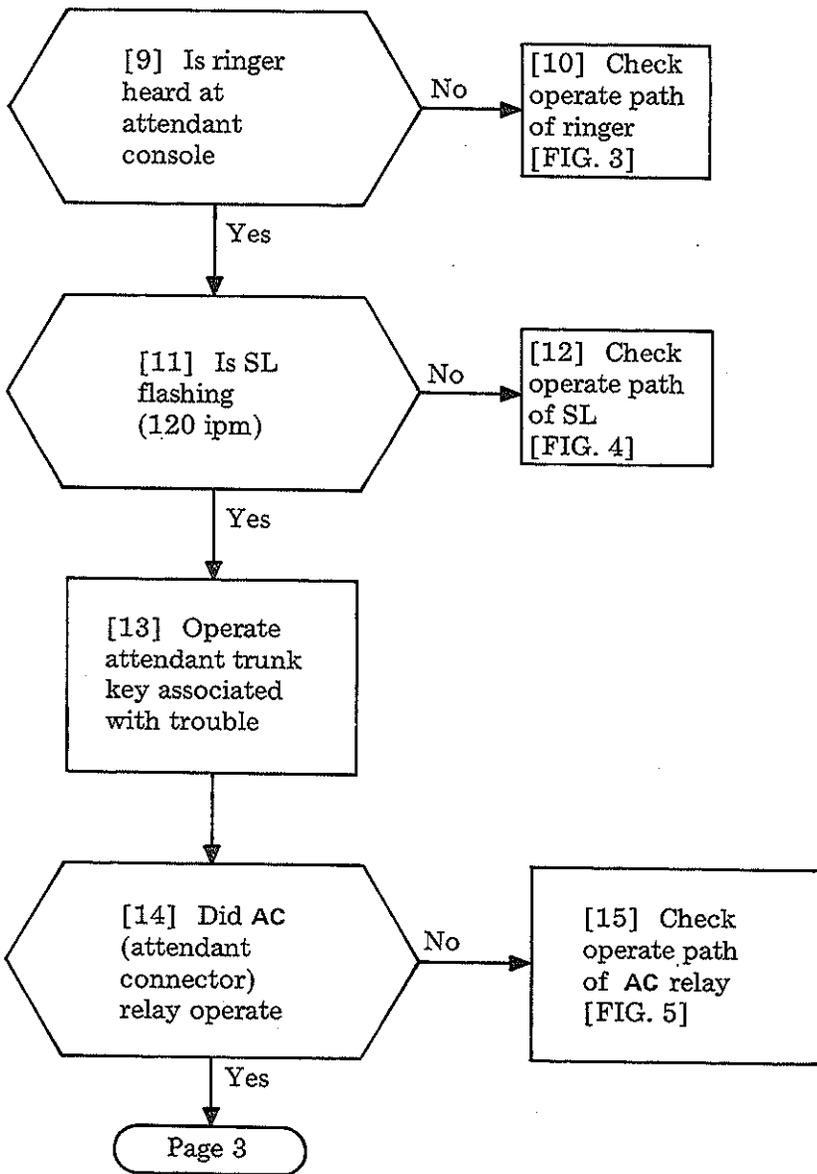


FIG. 3

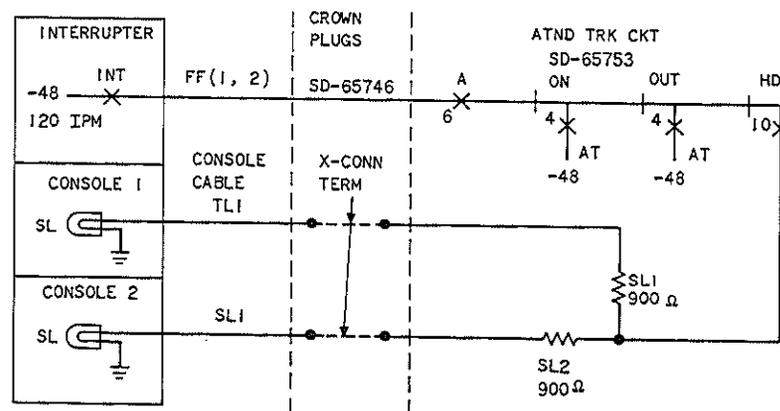


FIG. 4

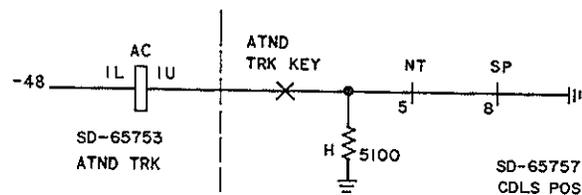
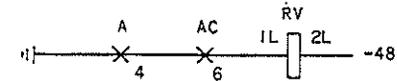
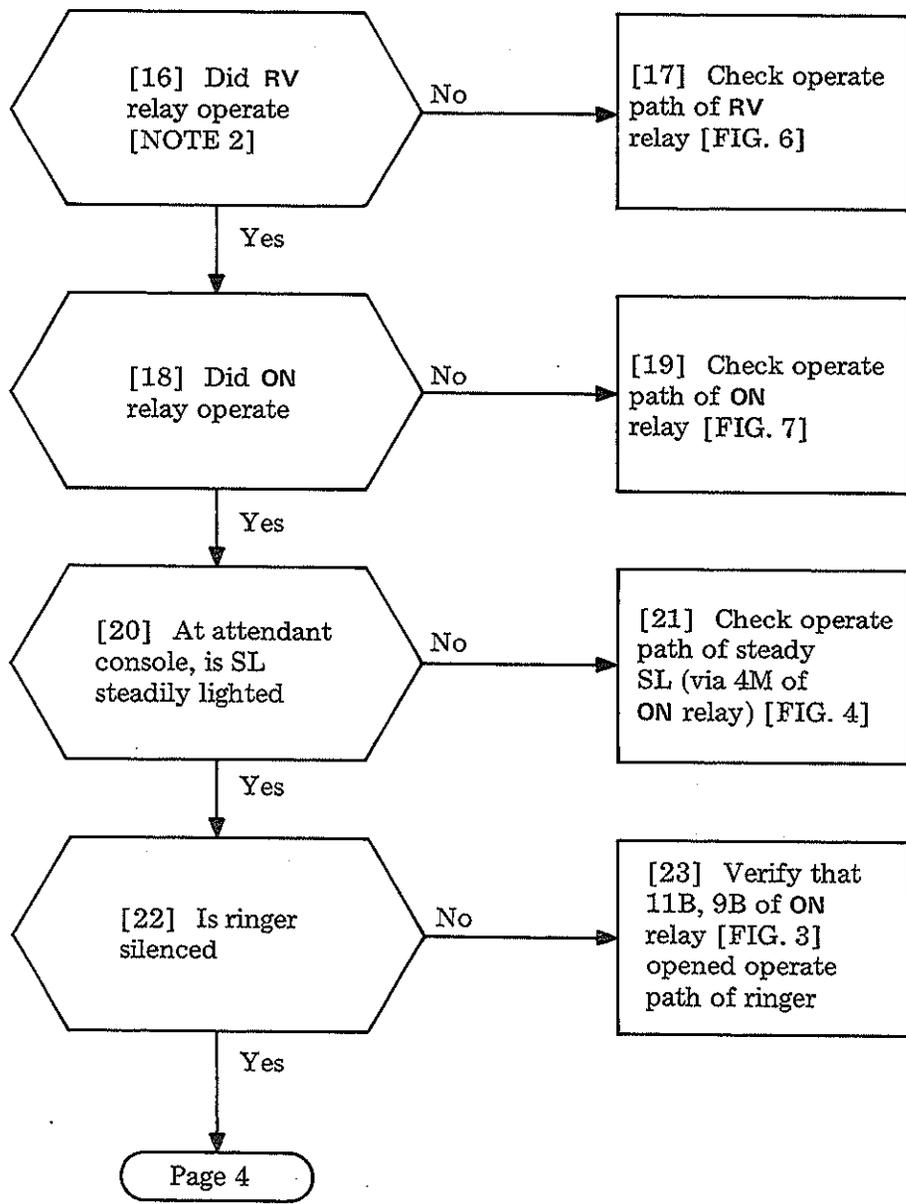


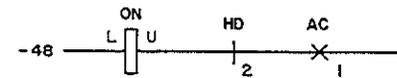
FIG. 5

| | |
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SD-65753
ATND TRK

FIG. 6



SD-65753
ATND TRK

FIG. 7

NOTE 2
RV (reversing) relay provides reverse-battery supervision for calls from dial repeating tie trunks

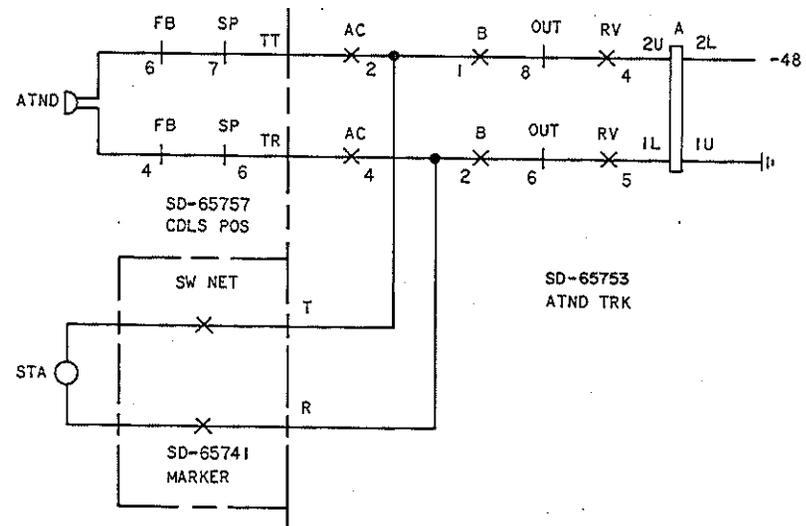
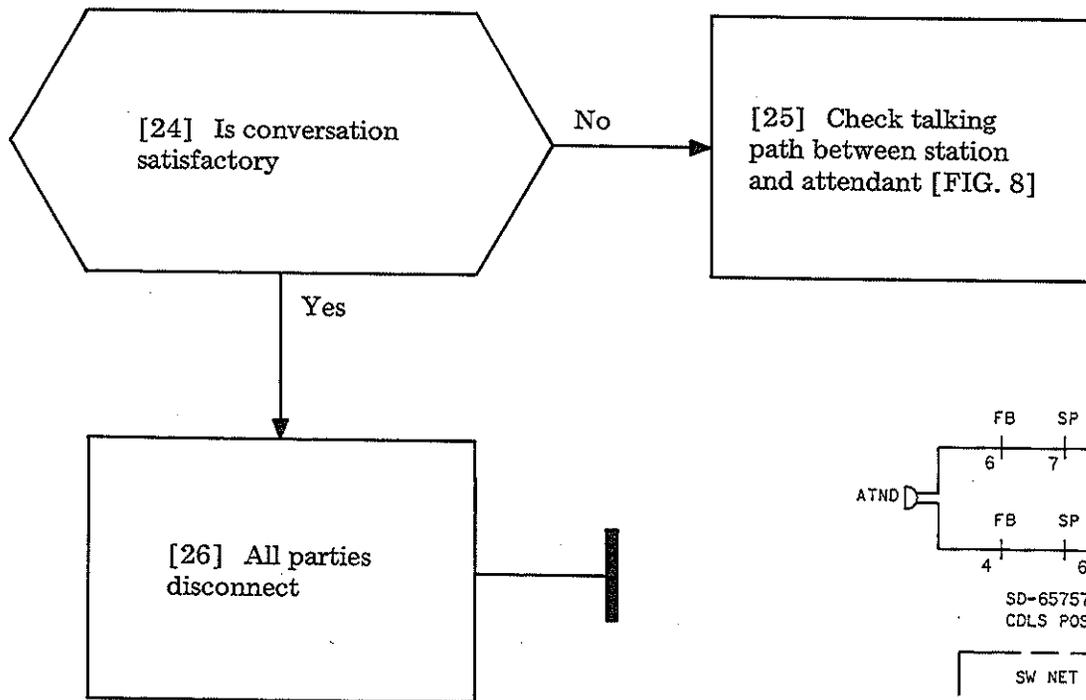
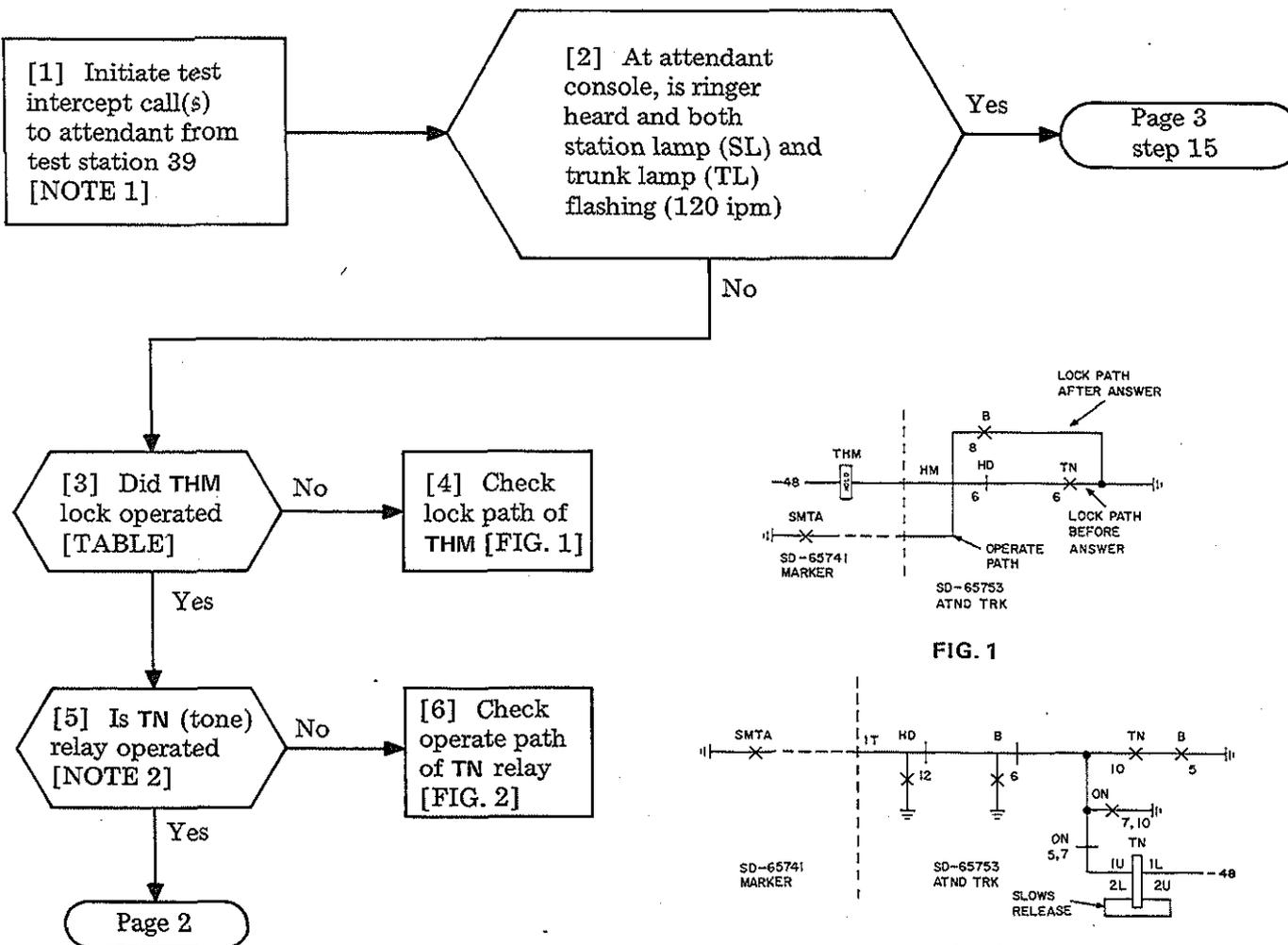


FIG. 8

SUMMARY

Connect dial hand test set to connecting block for station 39, located at slide 2, mounting plate L [NOTE 1]. Make a test intercept call (by dialing a CO trunk code 9 or 9-) to the attendant trunk associated with the trouble [NOTE 2]. Operation of the trunk

hold magnet (THM) connecting a specific attendant trunk (0-2) to the switching network can be observed at slide 4. See TABLE. Repeat test calls until the defective component is isolated. When a failure is observed at the equipment location or attendant console, find the fault using the figure or other reference given.



NOTE 1
Station 39 is normally restricted and used *only* as a test station. Verify that S to S1 strap only is in place on LINE terminal strip (for station 39) located at slide 3, mounting plate L

NOTE 2
To busy out an attendant trunk (0-2) unit (located at top of slide 5, mounting plates Y, Z, AA), insulate 11M of B relay and block it operated, or operate attendant trunk key of make-busy and busy display unit (slide 2), if provided. Remove busy when test is complete.

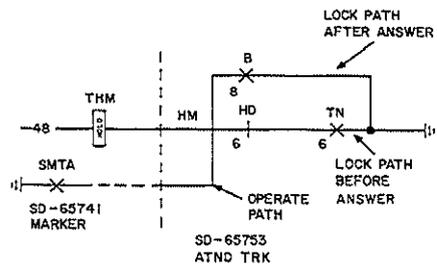


FIG. 1

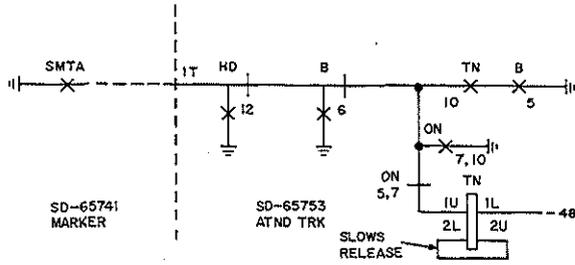


FIG. 2

| TABLE | | | |
|----------|------------|----|------|
| ATND TRK | TRK HM LOC | | |
| | SLIDE | SW | VERT |
| 0 | 4 | 8 | 0 |
| 1 | | 0 | 5 |
| 2 | | | 6 |

| | |
|-------------|----------|
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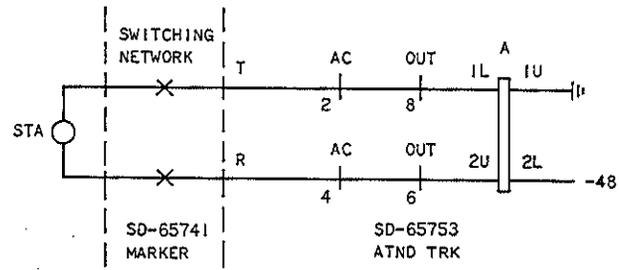
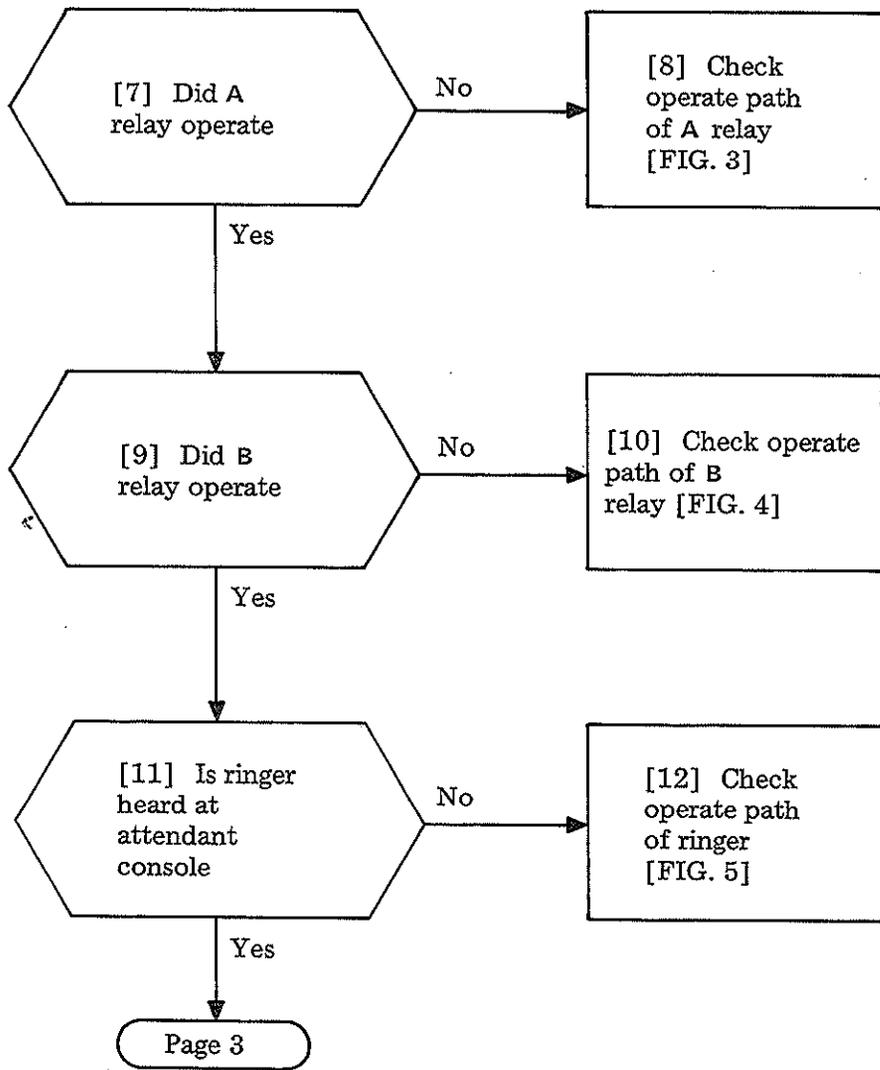


FIG. 3

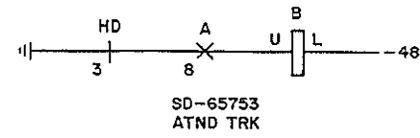


FIG. 4

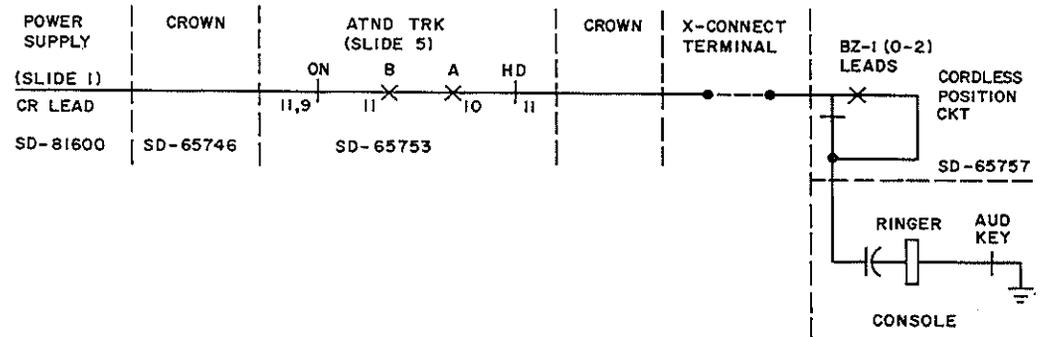


FIG. 5

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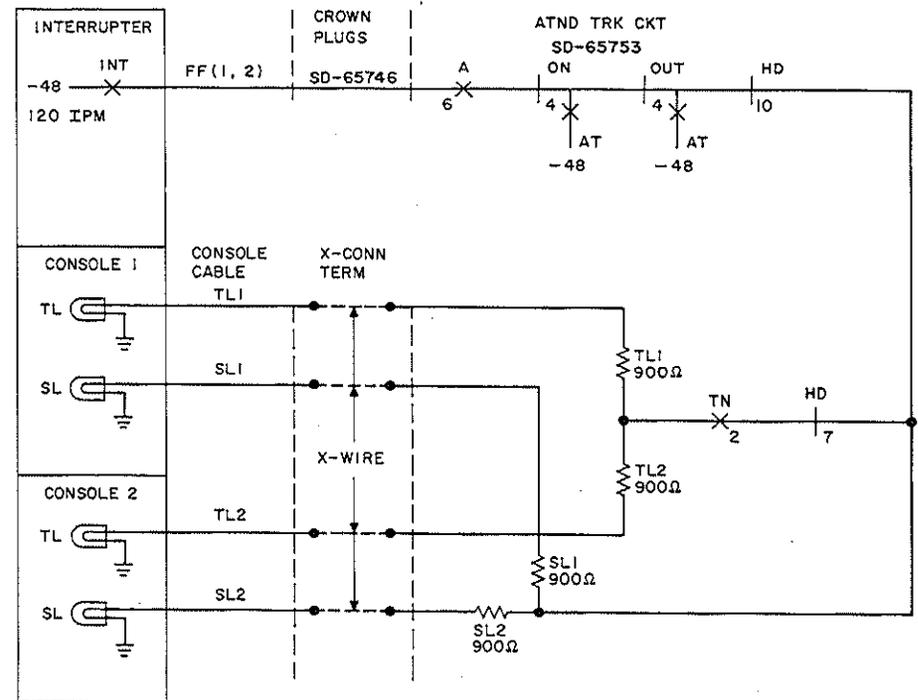
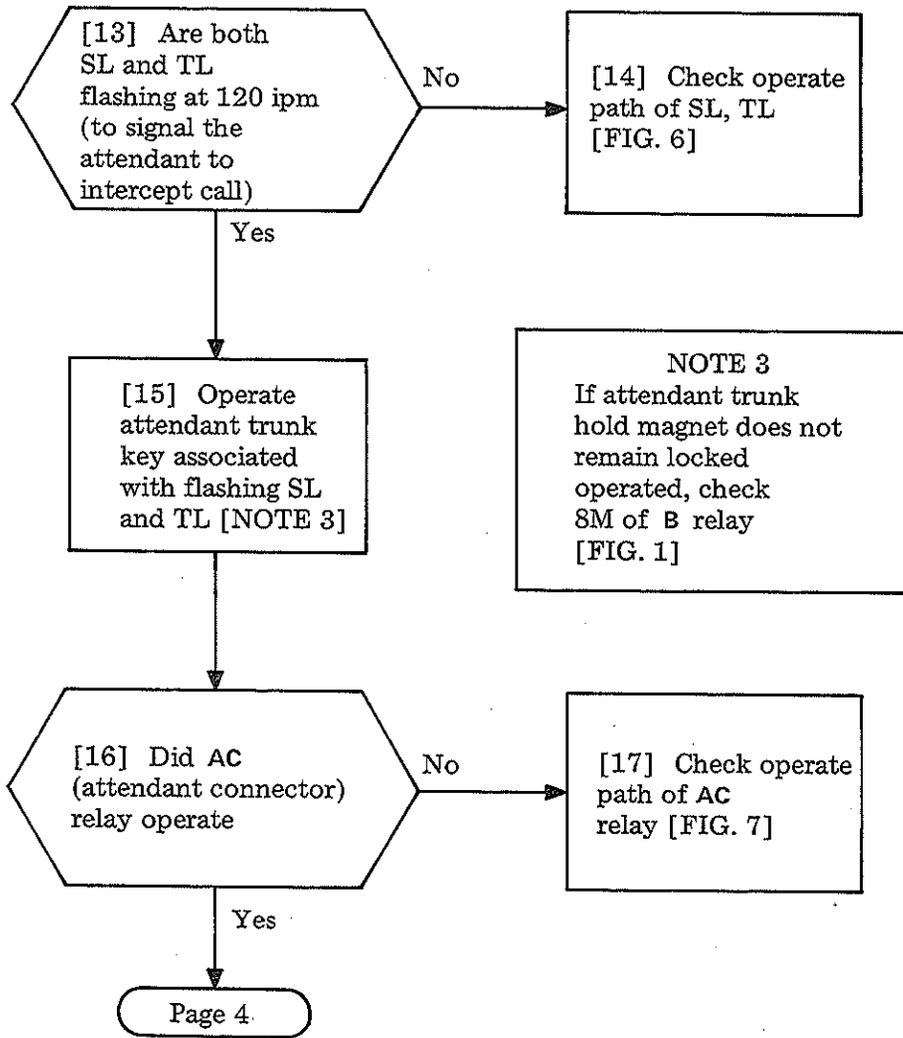


FIG. 6

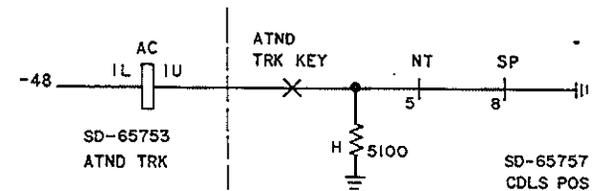
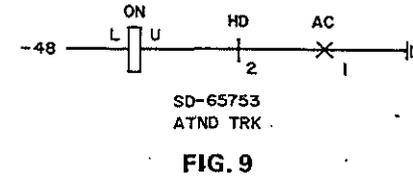
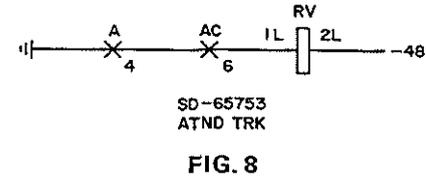
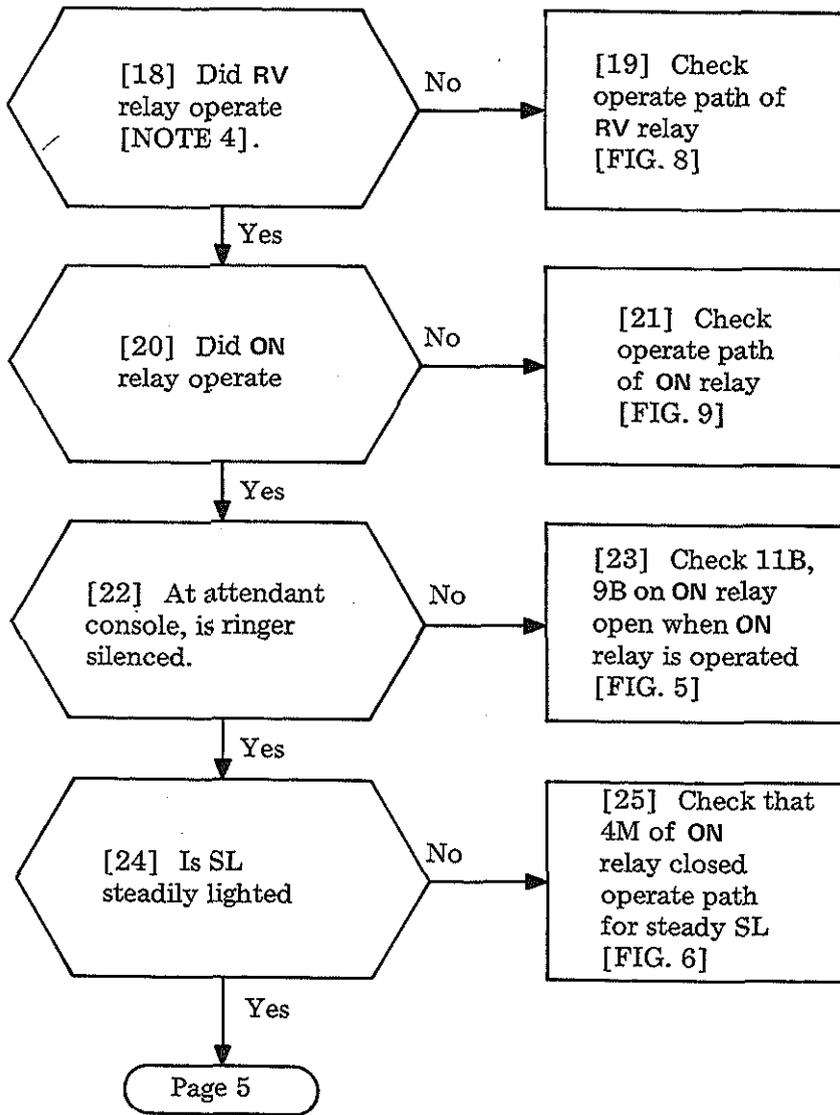


FIG. 7



NOTE 4
RV (reversing) relay provides reverse-battery supervision on calls from dial repeating tie trunks

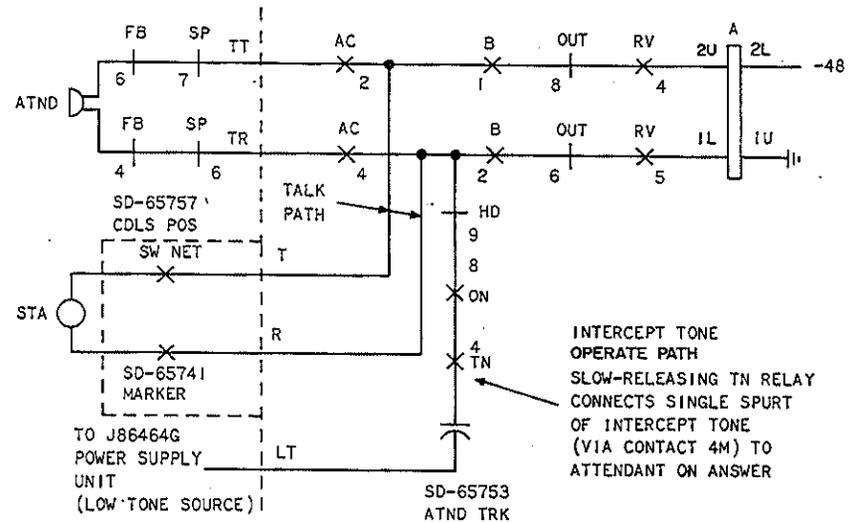
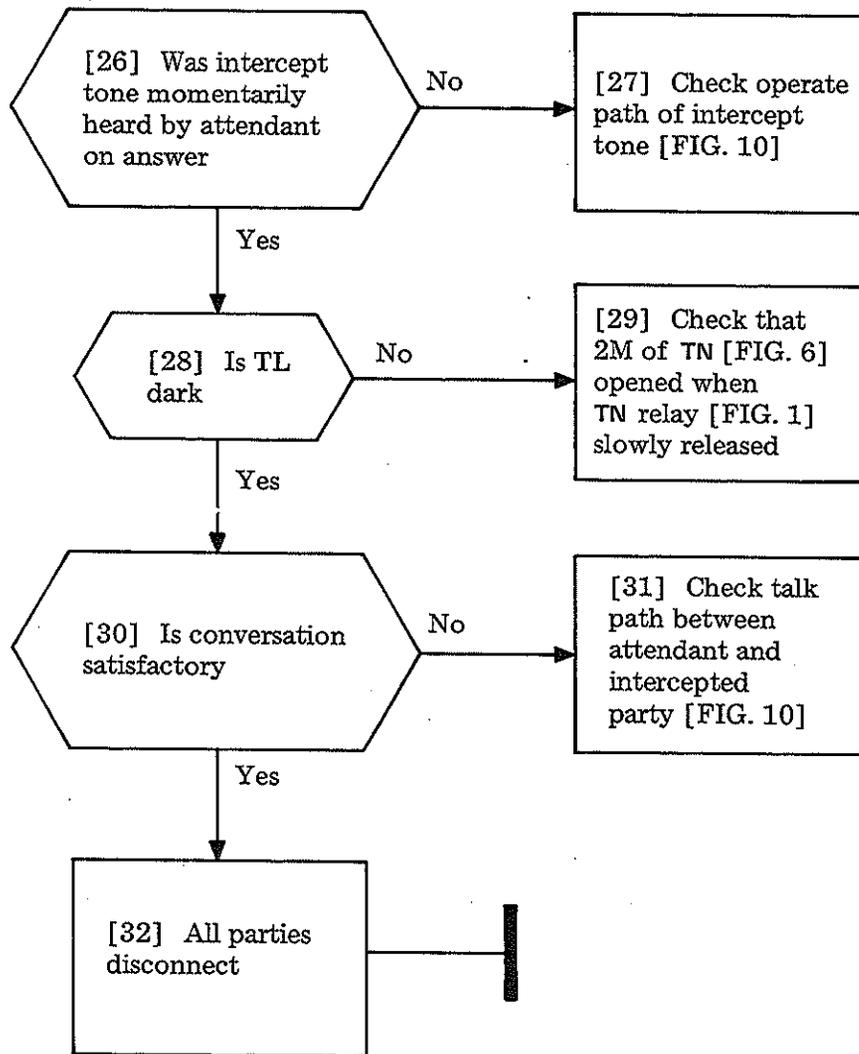


FIG. 10

SUMMARY

Locate the J58829S conference equipment unit (top of slide 2 or 3) so operation of relays A-E may be observed.

If trouble reported is failure to connect to a conference:

Via dial hand test set, call from terminals of test line 39 (slide 2).

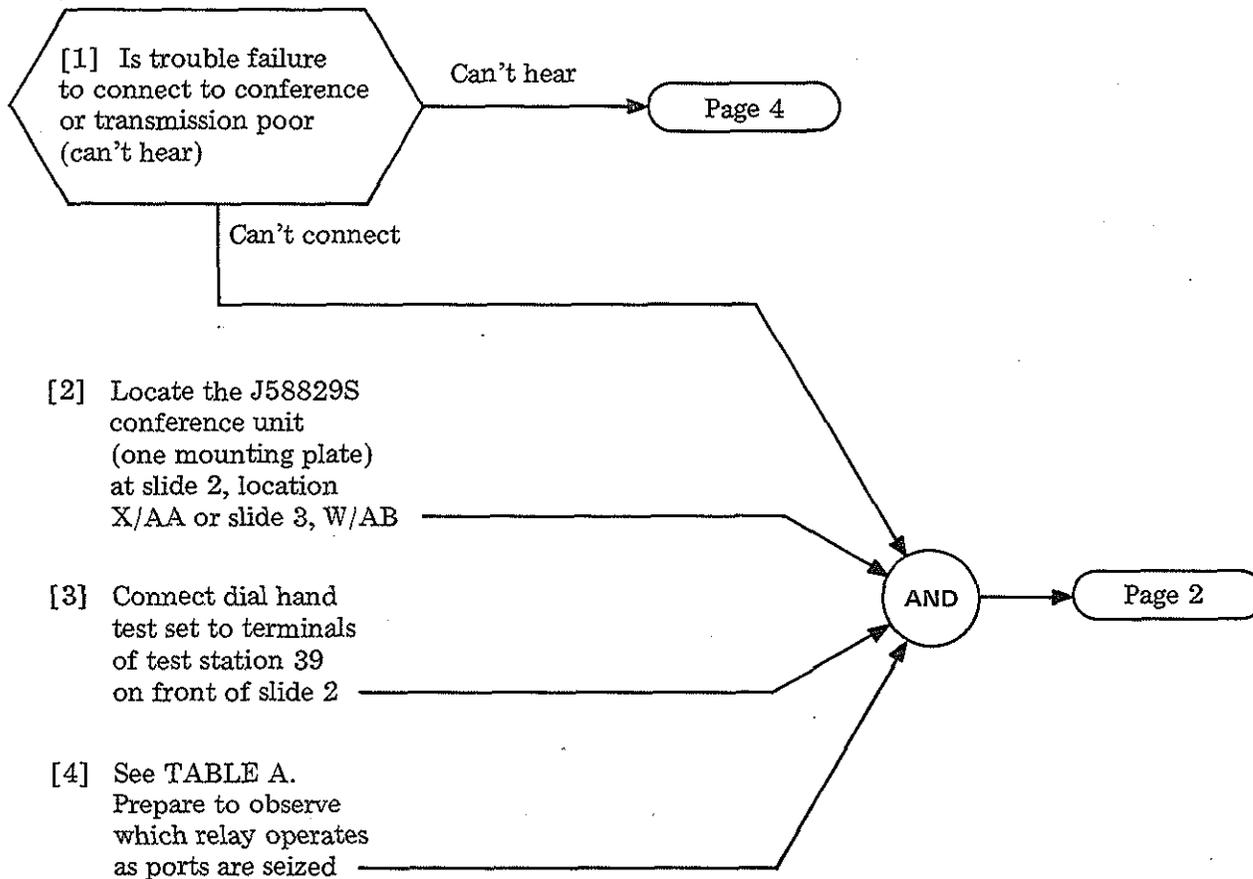
- Dial the conference code (80 or 85)
- If relay A/E operates, block it operated.

Repeat test calls until all relays (A-E) have operated, or a failure-to-operate is observed.

If the trouble reported is "can't hear" (transmission):

- Dial the conference code from five idle stations
- Listen to conversation level, with full conference

If unsatisfactory, check both apparatus and wiring sides of unit for shorts, grounds, crosses, terminals touching, contacts dirty, etc.



| PORT | REL | SLIDE 2, CSBR SW 2, LINE HOLD MAG NO. |
|------|-----|---------------------------------------|
| *80 | A | 0 |
| 81 | B | 1 |
| 82 | C | 2 |
| †83 | D | 3 |
| 84 | E | 4 |
| *85 | A | 5 |
| 86 | B | 6 |
| 87 | C | 7 |
| †88 | D | 8 |
| 89 | E | 9 |

* Stations dial to conference

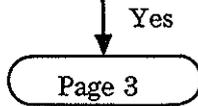
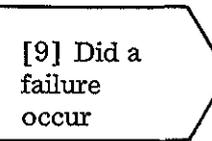
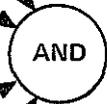
† Trunk code. Prior to Issue 37B of SD-65741, fourth and fifth stations dialed trunk code to connect to conference.

[5] Determine from conference code dialed by subscriber (80 or 85) which group of ports (80-84 or 85-89) is used for conferencing

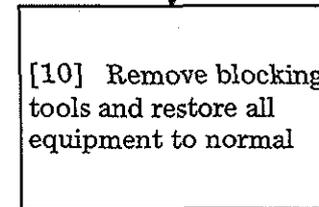
[6] Dial the conference code (80 or 85)

[7] If relay (A/E) operates, block it operated, using 768A tool, or equivalent

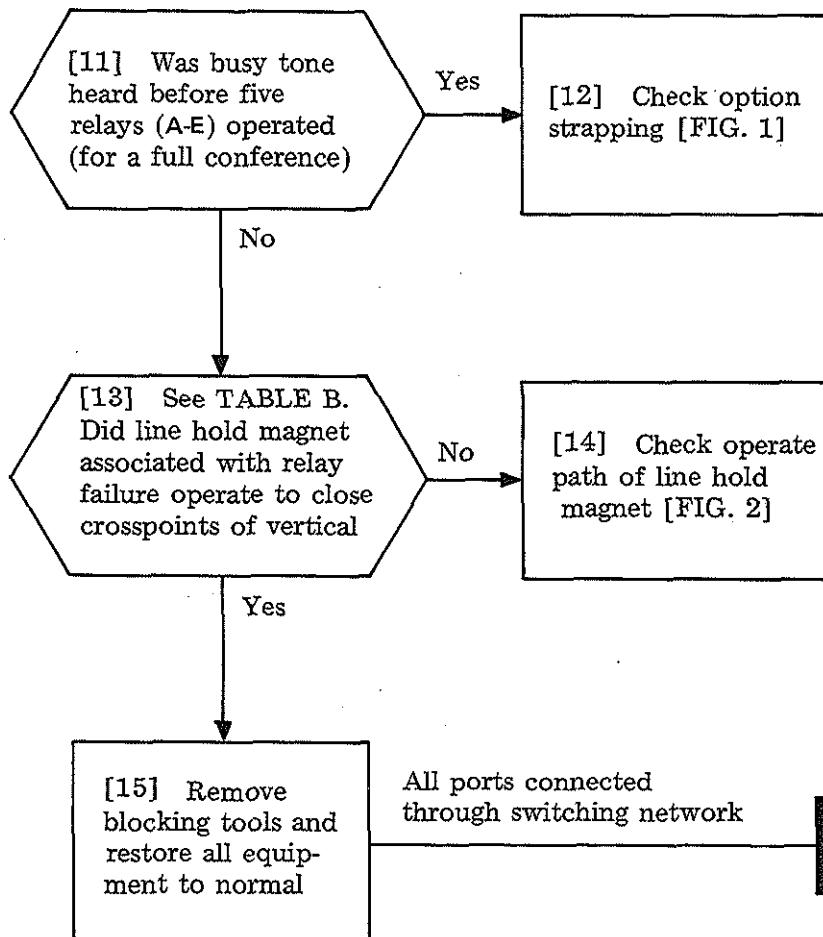
[8] Release call and repeat steps 4, 6, and 7 until all relays (A-E) have operated, or a failure occurs



No



All ports connected through switching network



| TABLE B | | |
|---------|-----|---------------------------------------|
| PORT | REL | SLIDE 2, CSBR SW 2, LINE HOLD MAG NO. |
| *80 | A | 0 |
| 81 | B | 1 |
| 82 | C | 2 |
| 83 | D | 3 |
| 84 | E | 4 |
| *85 | A | 5 |
| 86 | B | 6 |
| 87 | C | 7 |
| †88 | D | 8 |
| 89 | E | 9 |

* Stations dial to conference
 † Trunk code. Prior to Issue 37B of SD-65741, fourth and fifth stations dialed trunk code to connect to conference

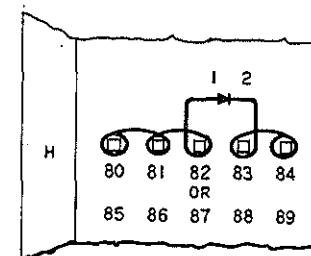


FIG. 1 — Part of TS A
 Located on Slide 2, Position N or P

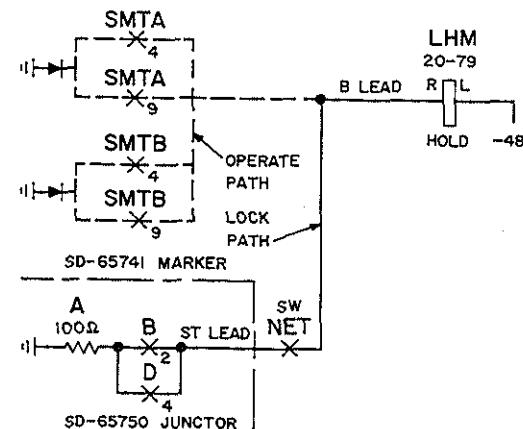
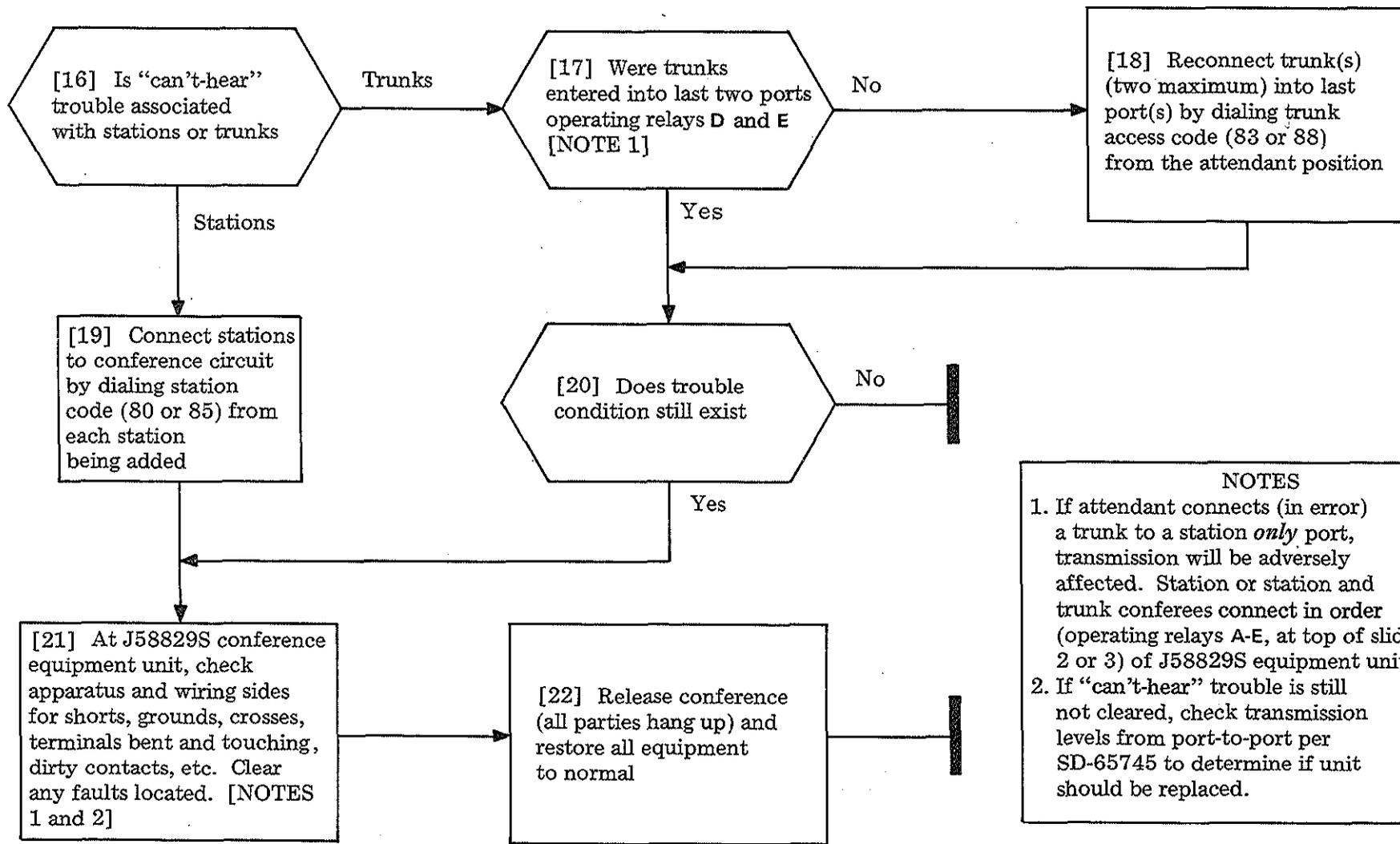


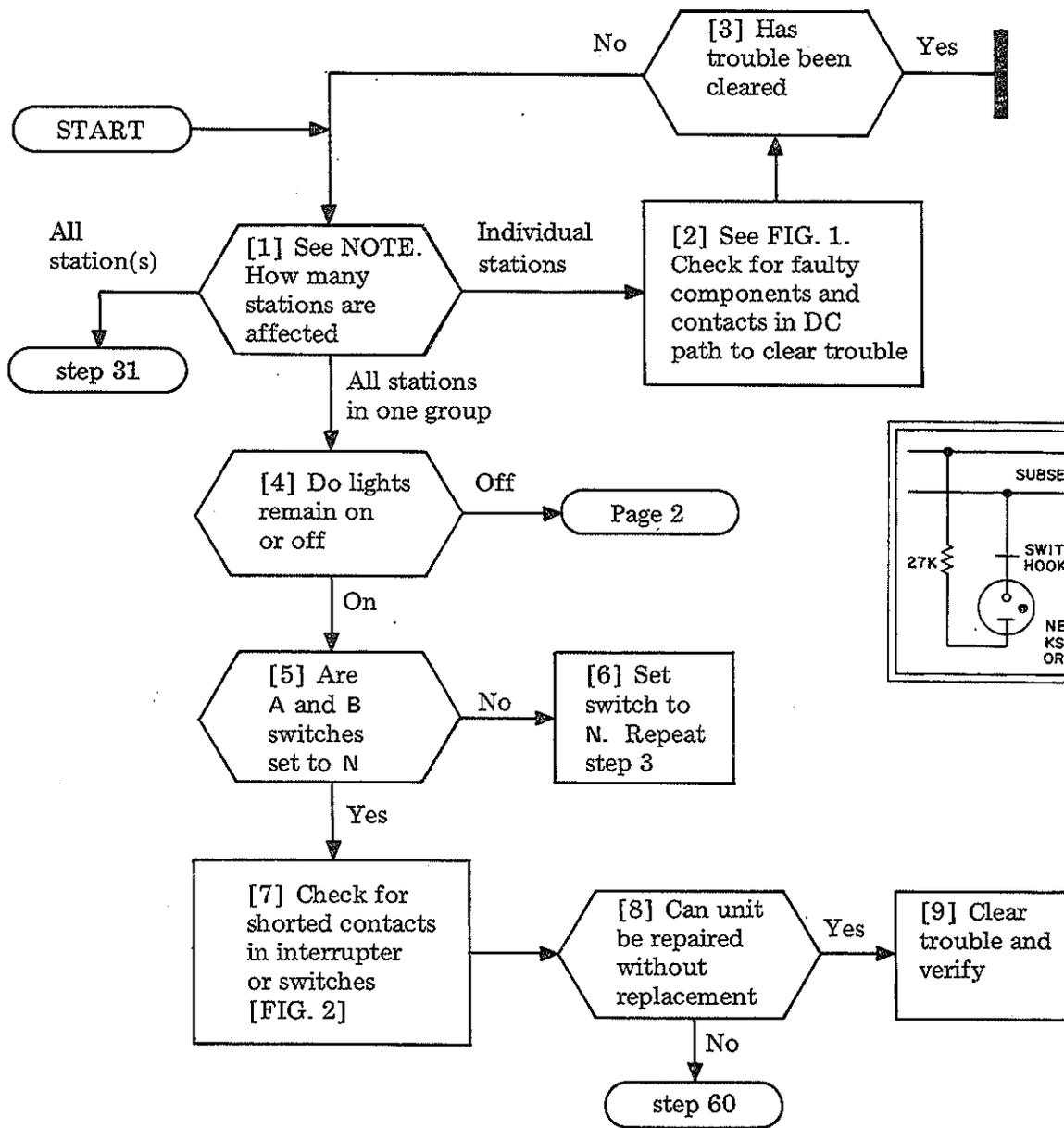
FIG. 2

| | |
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NOTES

1. If attendant connects (in error) a trunk to a station *only* port, transmission will be adversely affected. Station or station and trunk conferees connect in order (operating relays A-E, at top of slide 2 or 3) of J58829S equipment unit
2. If "can't-hear" trouble is still not cleared, check transmission levels from port-to-port per SD-65745 to determine if unit should be replaced.



NOTE
 Group A includes stations 20 through 39 and stations 60 through 79. Group B includes stations 40 through 59

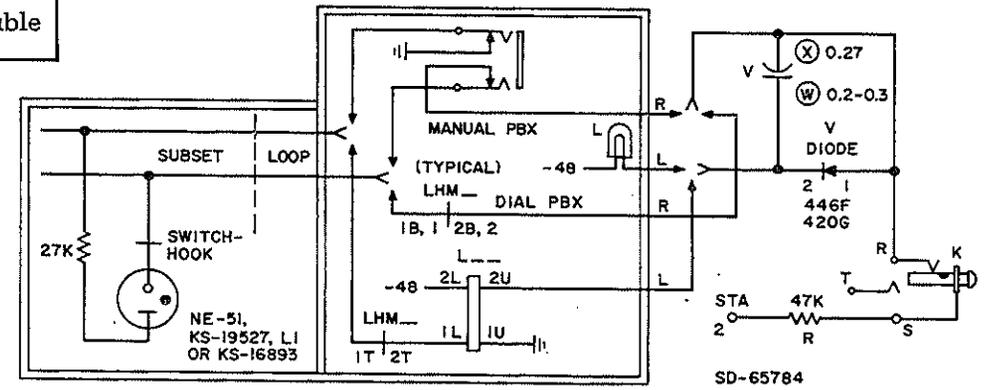


FIG. 1

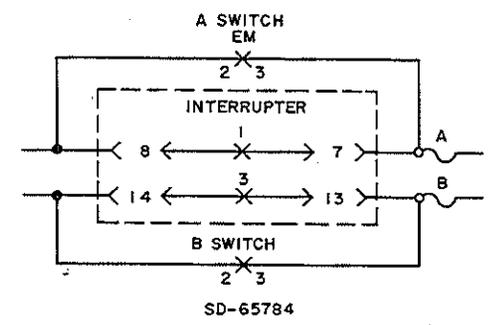
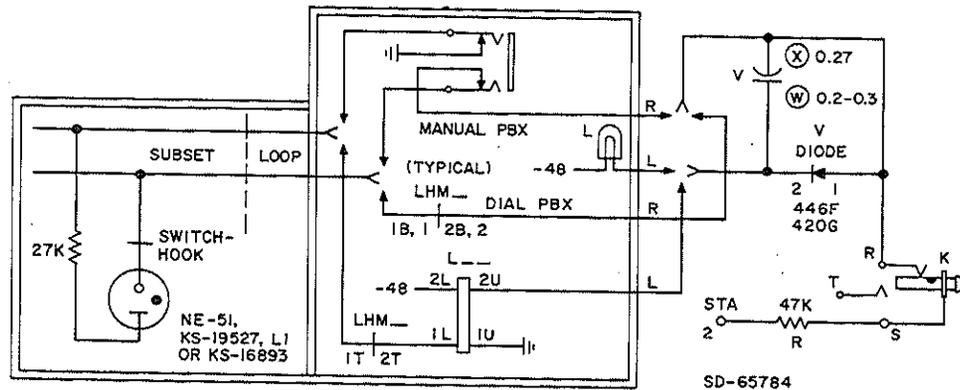
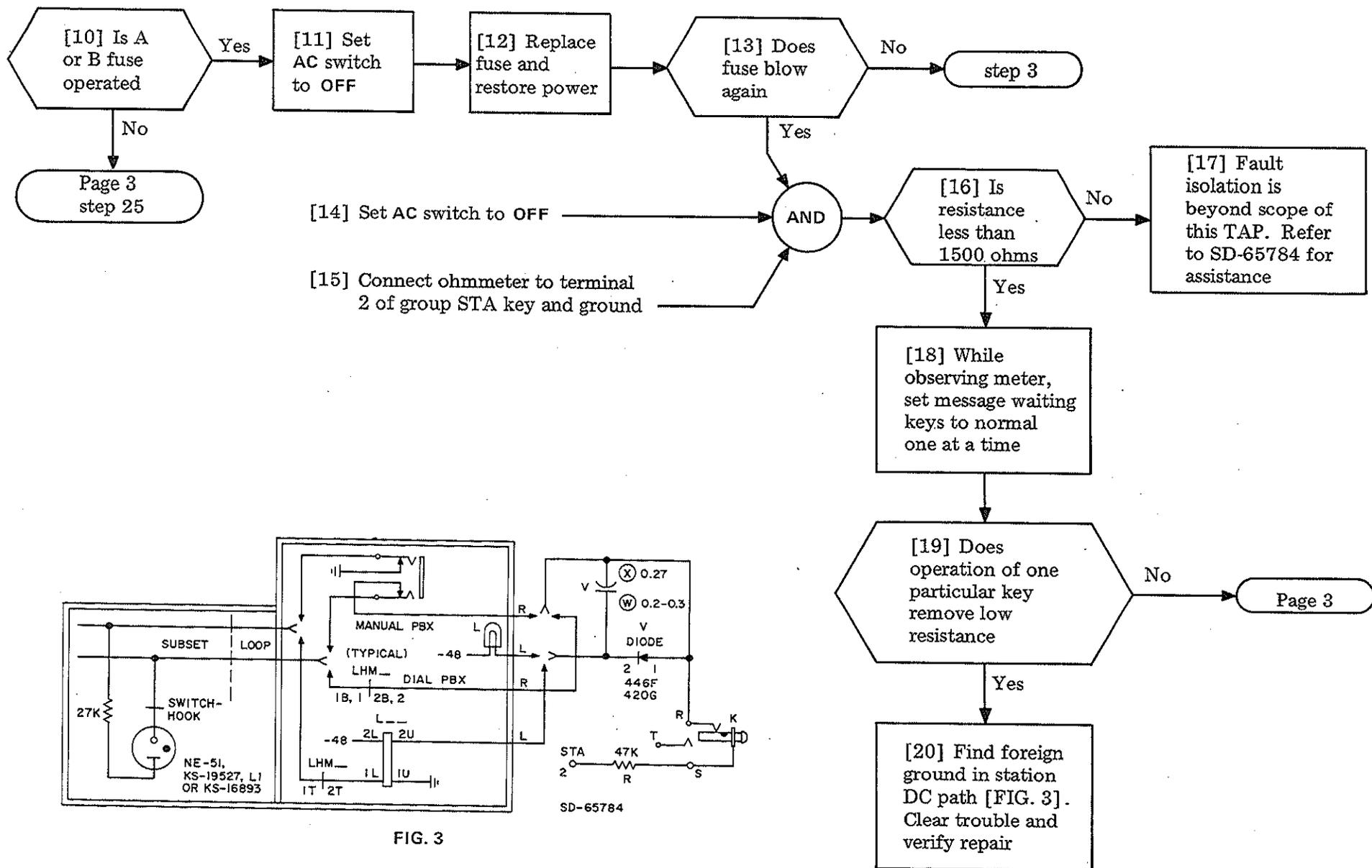


FIG. 2

| | |
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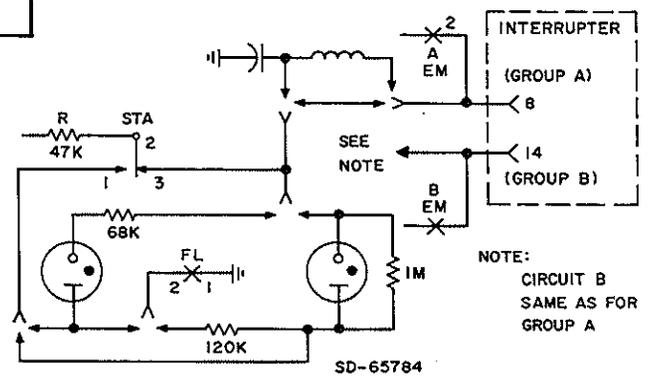
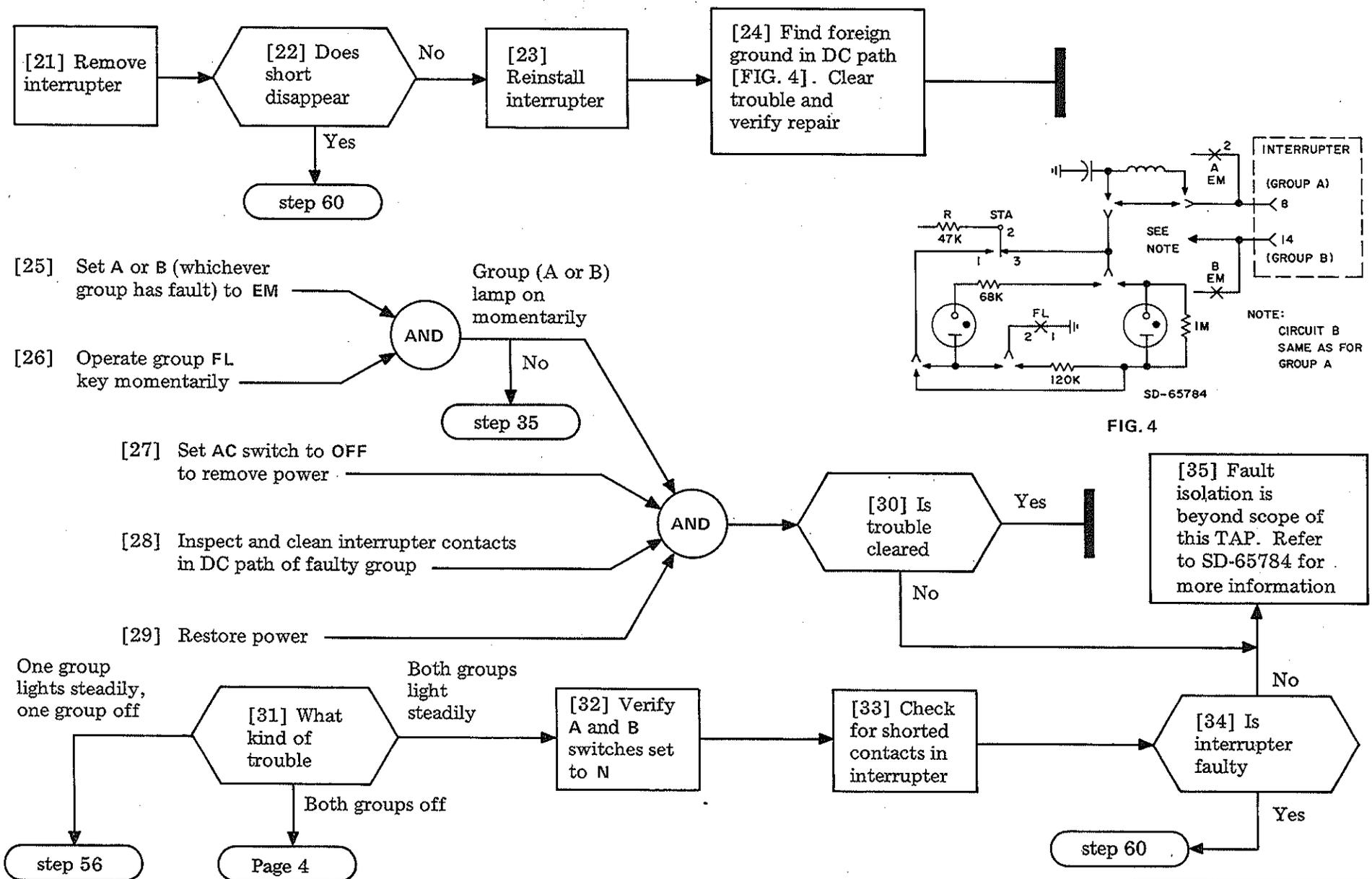
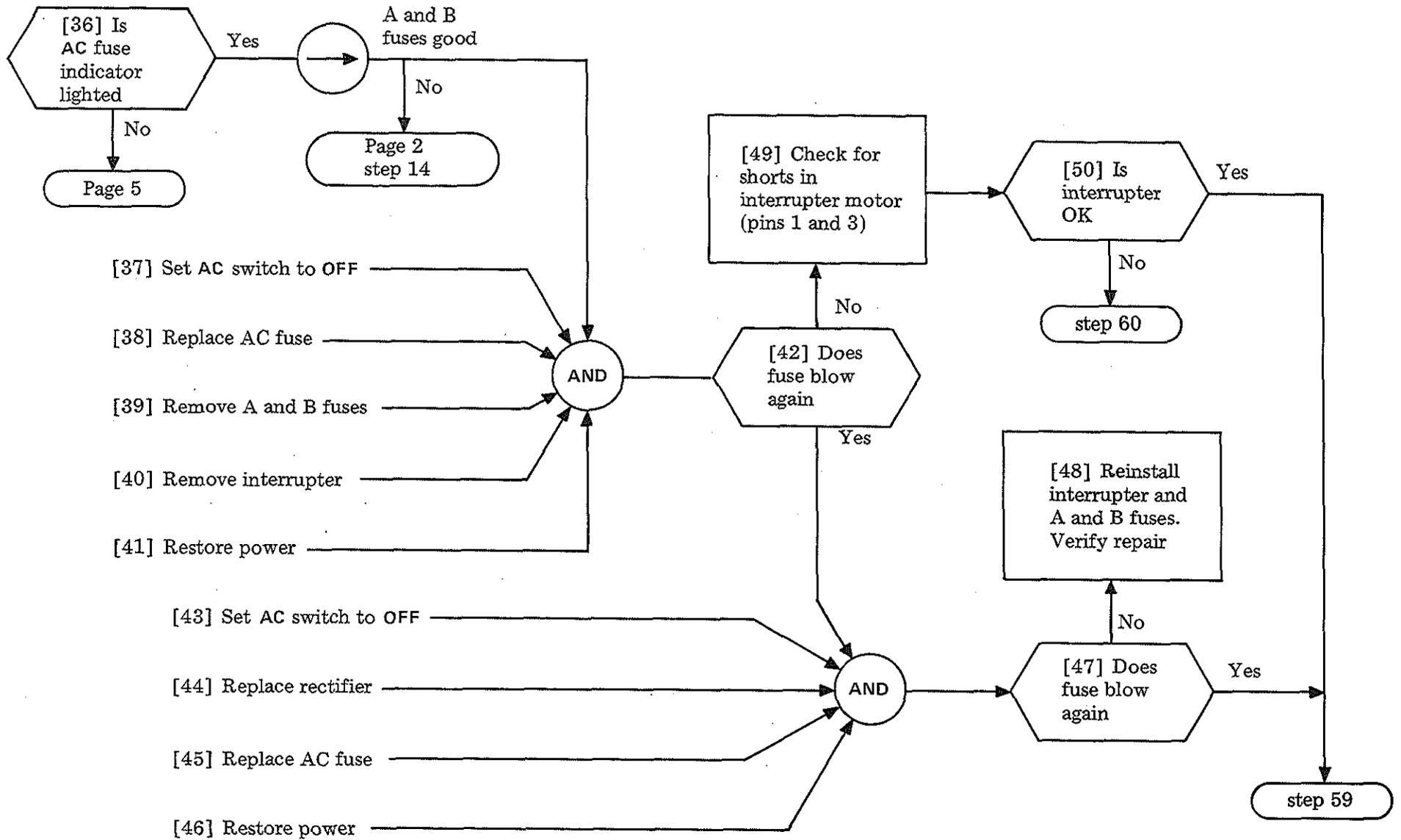
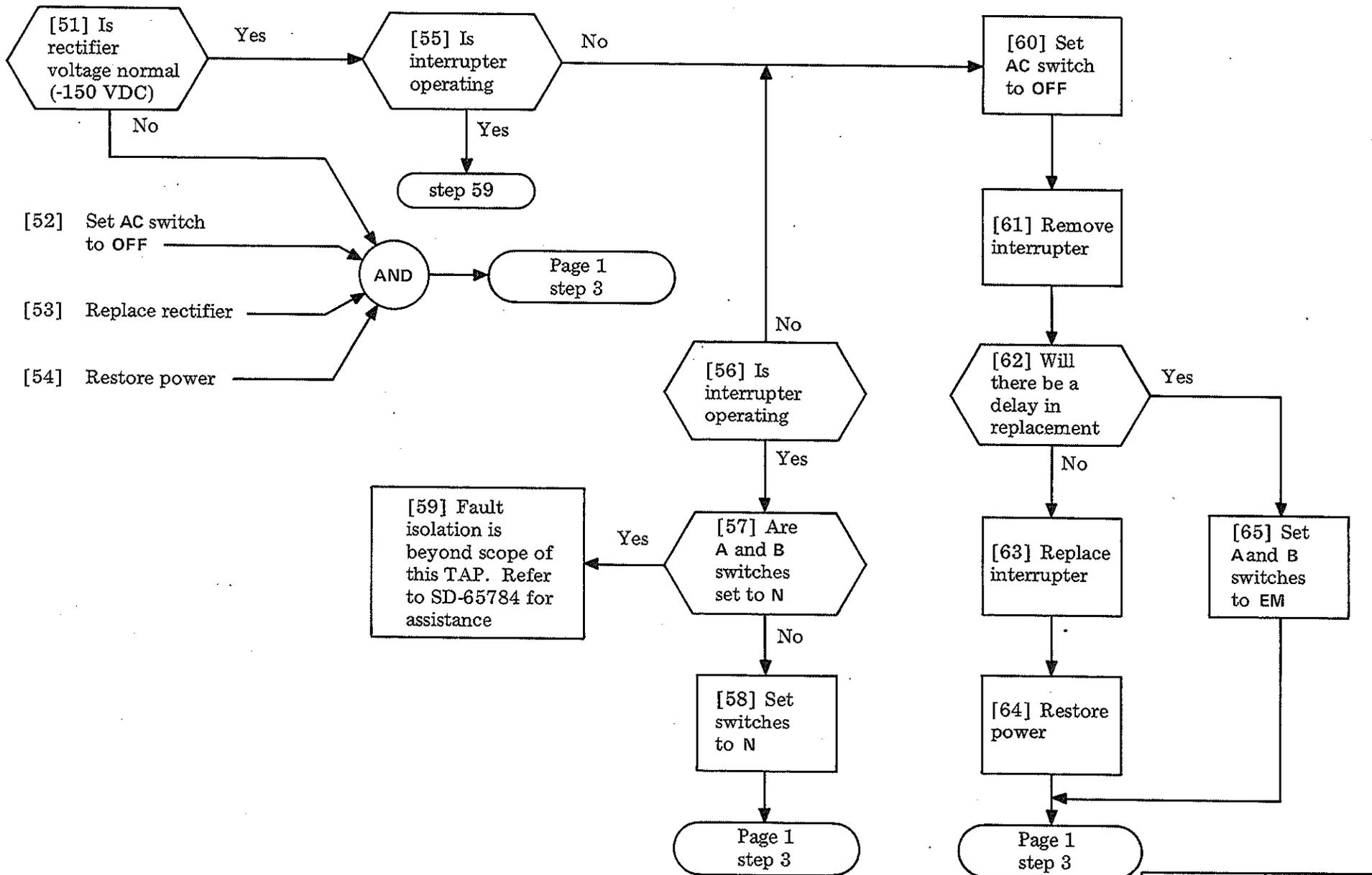


FIG. 4



CLEAR MESSAGE WAITING TROUBLE (SD-65784)

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SUMMARY

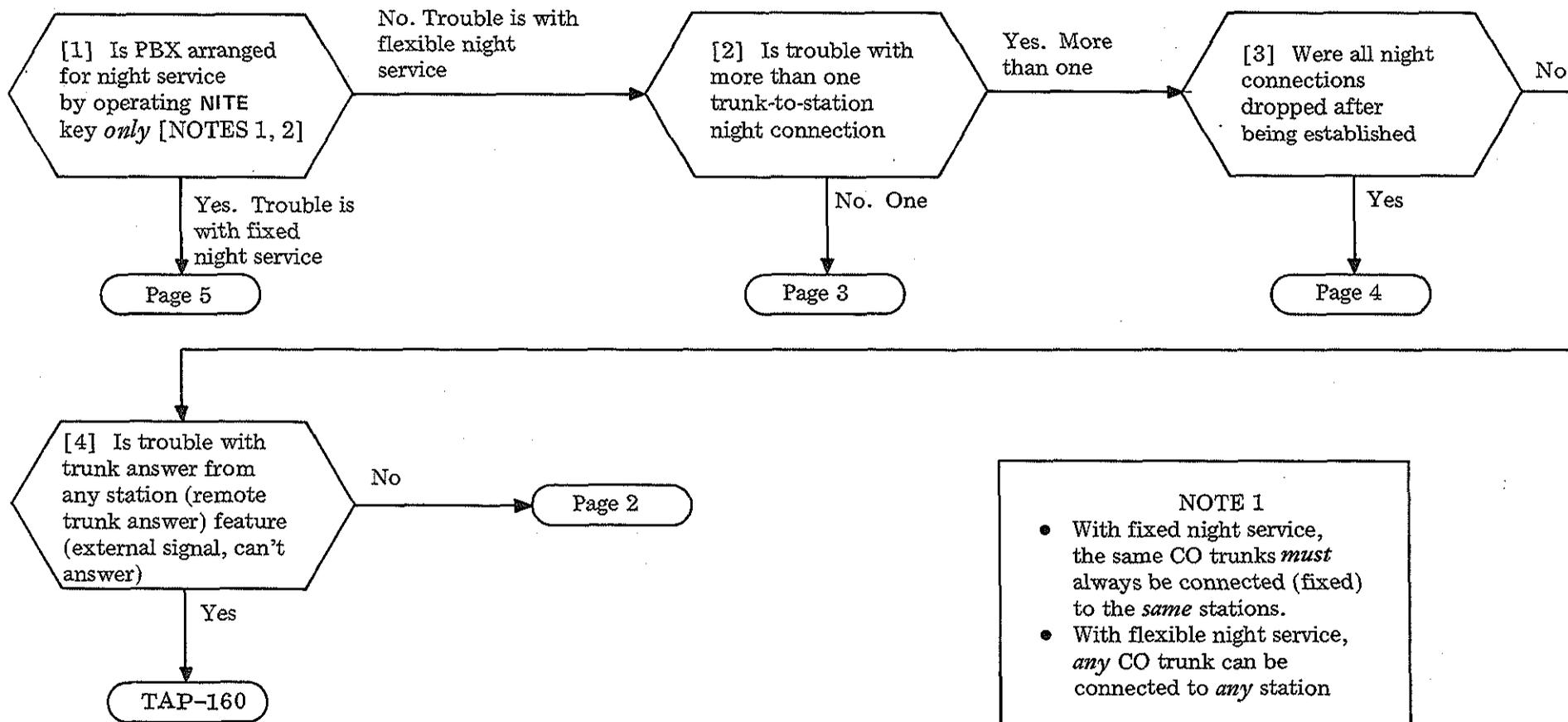
Determine whether fixed or flexible night service is provided [NOTE 1]. Analyze trouble report and customer-furnished information to see if trouble occurred:

- When attendant attempted to establish night service, or
- After night connections were set up.

Find if trouble involves:

- One trunk-to-station night connection, or
- All trunk-to-station night connections.

Set up same trunk-to-station connection(s) and find the fault via this procedure, or reference given. Equipment and relay locations are given by slide and mounting plate position. For example, BCO (1X) means BCO relay is in slide 1 on plate X.



NOTE 1

- With fixed night service, the same CO trunks *must* always be connected (fixed) to the *same* stations.
- With flexible night service, *any* CO trunk can be connected to *any* station

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CLEAR NIGHT SERVICE TROUBLE

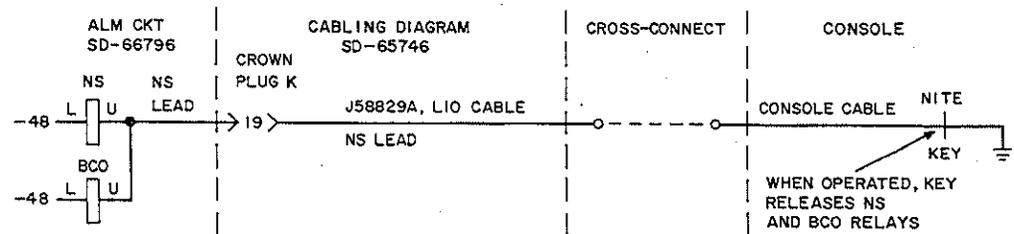


FIG. 1

NOTE 2

Flexible night service is set up by the following method:

1. Operate NITE key
2. Operate CO trunk key
3. With direct station selection (DSS) — operate DSS key
Without DSS — operate HOLD key and dial or TOUCH-TONE® call station
4. Operate RLS (release) key
5. Unplug handset or headset

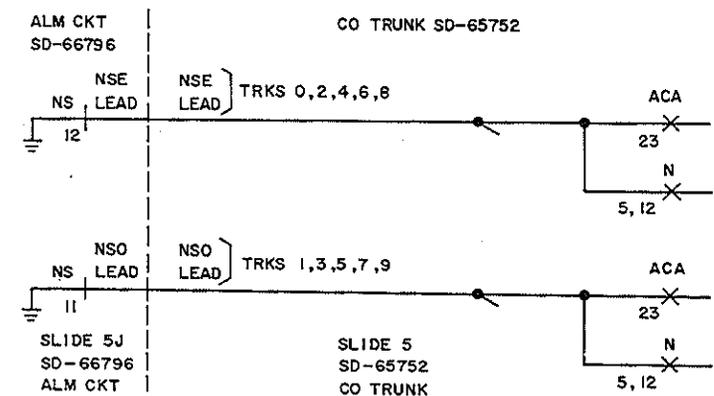
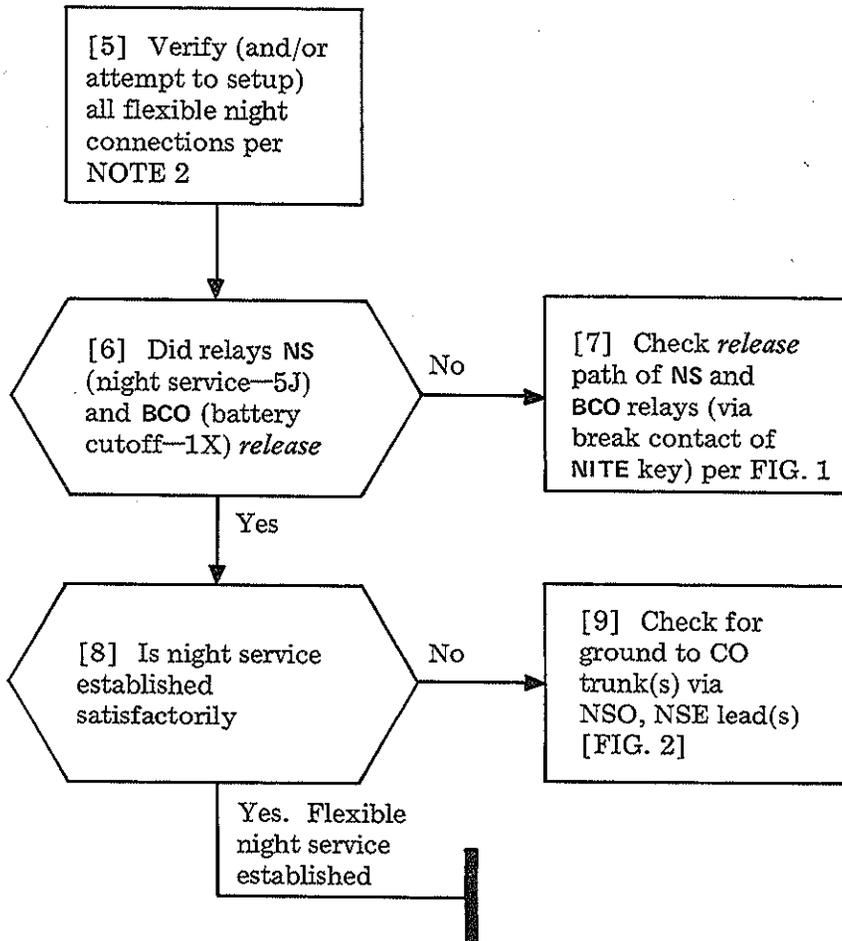


FIG. 2

CLEAR NIGHT SERVICE TROUBLE

| | |
|-------------|----------|
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[10] Verify (and/or attempt to set up flexible night connection using CO trunk associated with trouble [NOTE 3]

[11] Did N1 (auxiliary night service) relay associated with CO trunk in trouble operate and release

No

[12] Check operate path of N1 relay [FIG. 3 and TABLE A] (station ringer heard)

Yes

[13] Is N (night service) relay associated with CO trunk in trouble operated

No

[14] Check operate, lock path(s) of N relay [FIG. 4]

Yes

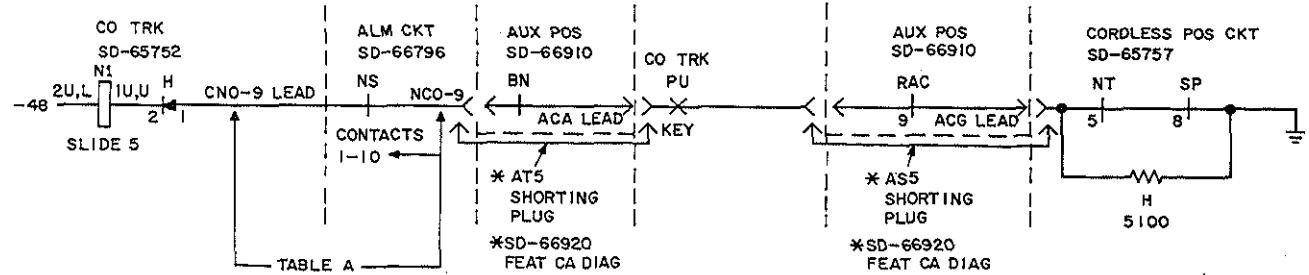


FIG. 3

NOTE 3
Flexible night service is set up by the following method:
1. Operate NITE key
2. Operate CO trunk key
3. With direct station selection (DSS) — operate DSS key
Without DSS — operate HOLD key and dial or TOUCH-TONE® call station

| TABLE A | | |
|-------------|--------------|--------------|
| NS REL CONT | NC 0-9 LEADS | CN 0-9 LEADS |
| 1 | 0 | 0 |
| 2 | 1 | 1 |
| 3 | 2 | 2 |
| 4 | 3 | 3 |
| 5 | 4 | 4 |
| 6 | 5 | 5 |
| 7 | 6 | 6 |
| 8 | 7 | 7 |
| 9 | 8 | 8 |
| 10 | 9 | 9 |

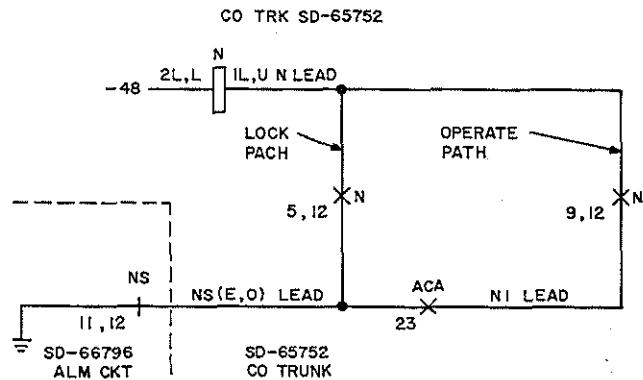


FIG. 4

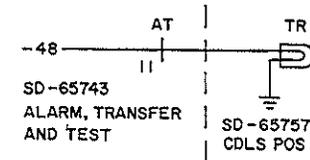
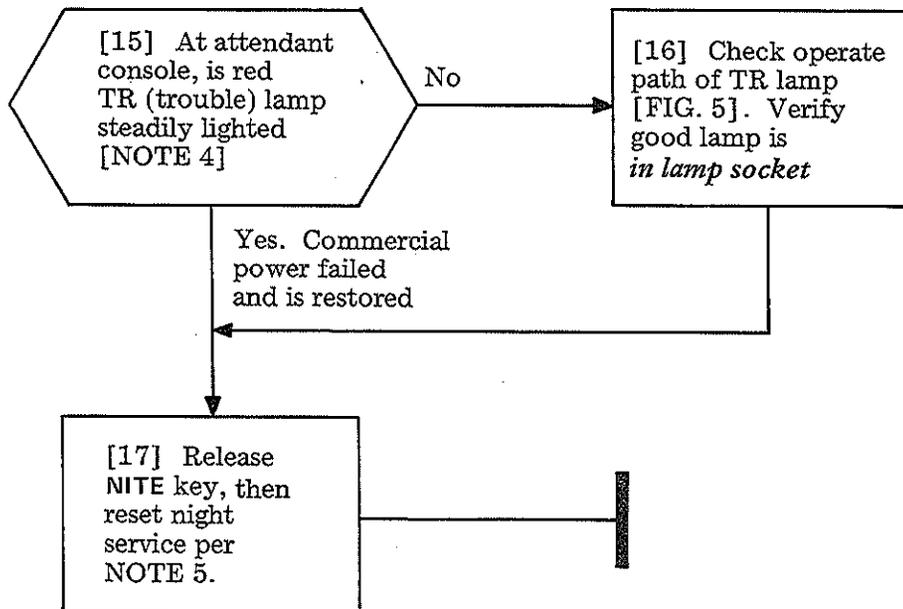


FIG. 5

NOTE 5
Flexible night service is set up by the following method:

1. Operate NITE key
2. Operate CO trunk key
3. With direct station selection (DSS) — operate DSS key
Without DSS — operate HOLD key and dial or TOUCH-TONE® call station
4. Operate RLS (release) key
5. Unplug handset or headset

NOTE 4
Flexible CO trunk-to-station night connections drop when commercial power (117V ac) fails for more than a few seconds. They are *not* reconnected when commercial power is restored. Lighted TR lamp notifies attendant (*not* equipment trouble)

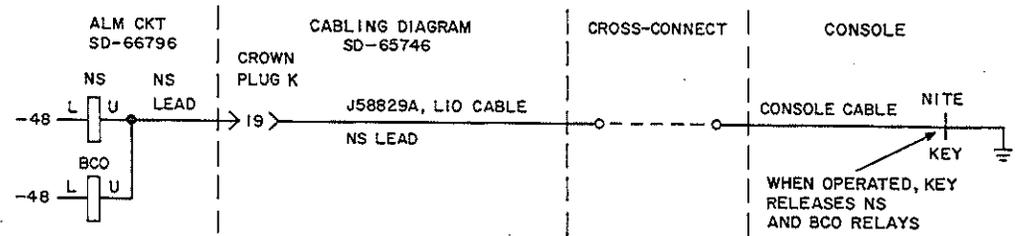
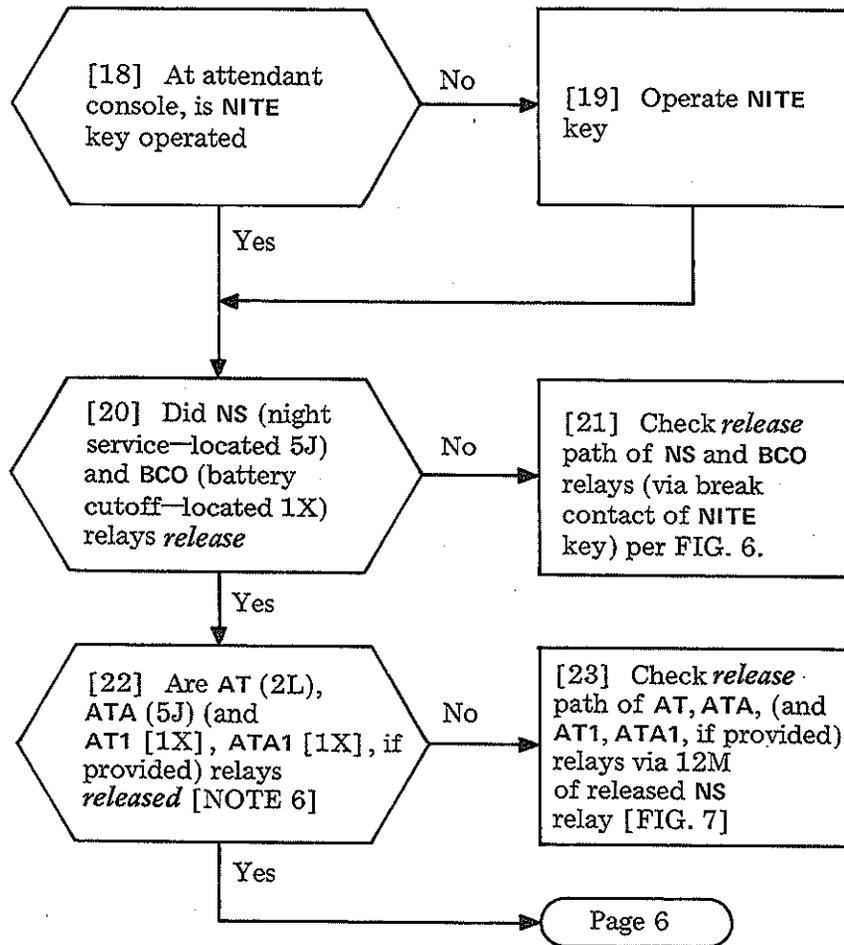


FIG. 6

NOTE 6
 AT_ (automatic transfer) relays normally release only on power failure, or when NITE key is used to set up fixed night connections

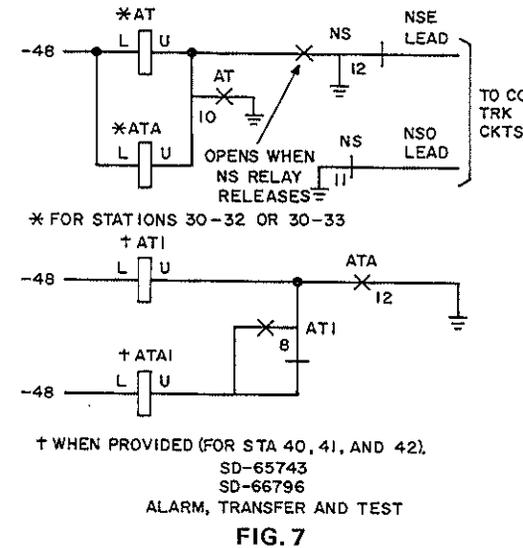


FIG. 7

CLEAR NIGHT SERVICE TROUBLE

| | |
|-------------|----------|
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[24] Clean contacts, check alignment of all wire springs associated with failure [NOTE 6, FIG. 8, and TABLE B]

NOTE 7
Break contacts of AT_ or AT__ relays connect CO trunks 0-3 to stations 30-33. Optionally, CO trunks 0-2, 5-7 may connect to stations 30-32, 40-42. A night station must momentarily operate a nonlocking key (551A, typical) to get CO dial tone

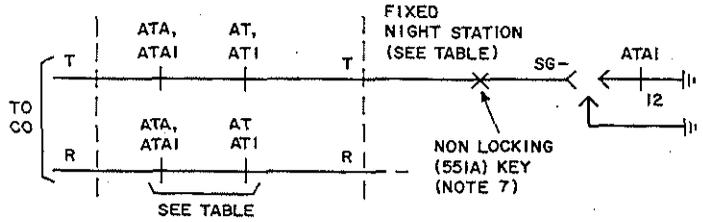
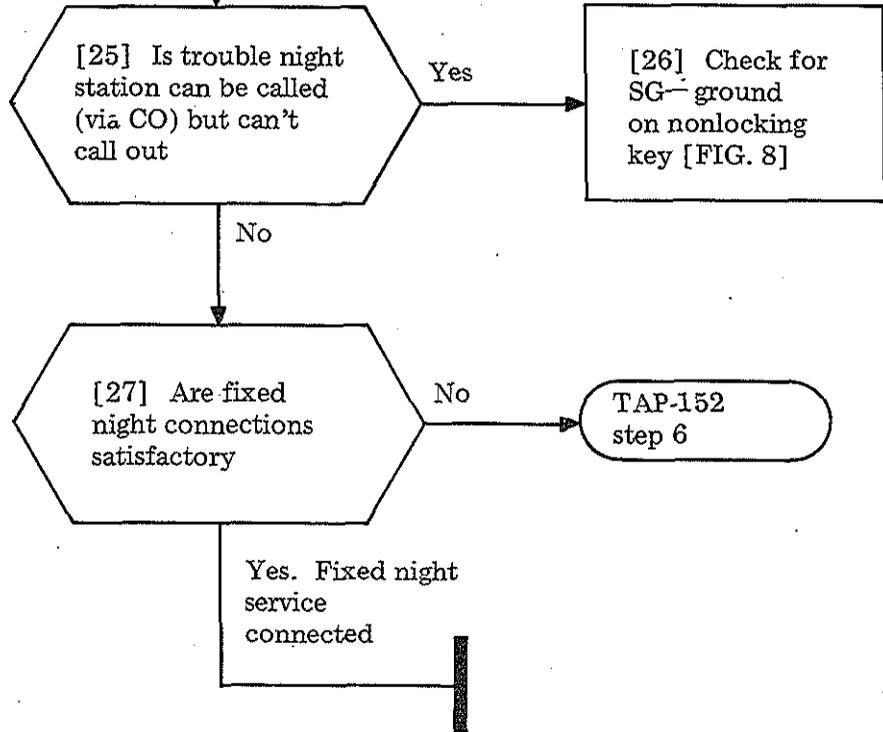


FIG. 8

TABLE B

| FIXED NIGHT CONN | | VIA REL, LD, & CONT | | | | | | | |
|------------------|-----------|---------------------|------|-----|-----|-----|----|------|----|
| FROM STA | TO CO TRK | AT | | ATA | | AT1 | | ATA1 | |
| | | T | R | T | R | T | R | T | R |
| 30 | 0 | 1B | 2B | 1B | 2B | | | | |
| 31 | 1 | 4B | 5B | 3B | 4B | | | | |
| 32 | 2 | 7B | 8B | 5B | 6B | | | | |
| 33* | 5* | 10B* | 11B* | 7B* | 8B* | | | | |
| 40† | 5† | | | | | 5B | 6B | 5B | 6B |
| 41† | 6† | | | | | 3B | 4B | 3B | 4B |
| 42† | 7† | | | | | 1B | 2B | 1B | 2B |

* Early versions only
† When provided

SUMMARY

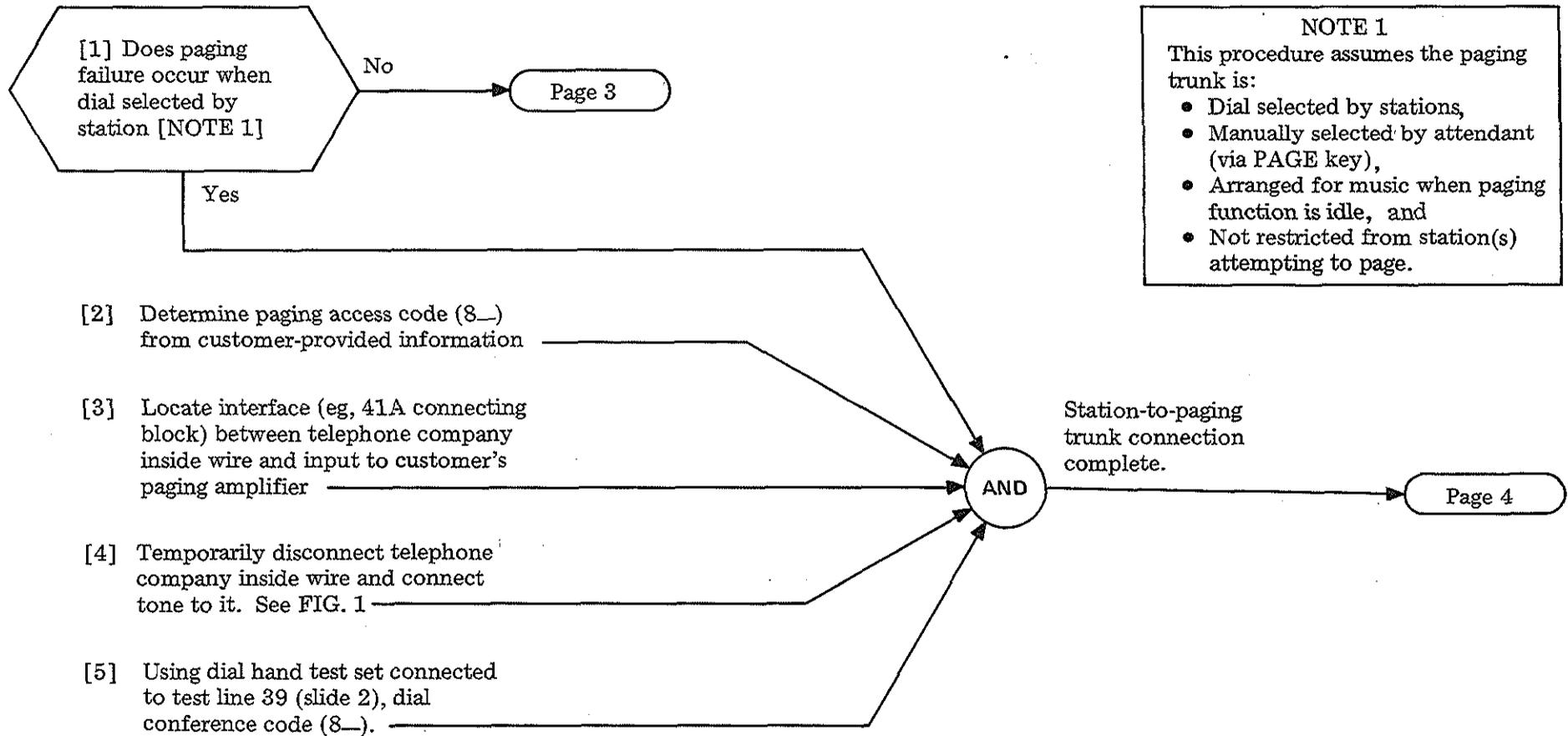
Temporarily disconnect telephone company wiring at interface (eg, 42-type connecting block) to input of customer's amplifier.

- Connect tone to tip and ring of wire disconnected.
- Locate J58829W loudspeaker paging unit (single mounting plate, near top of slide 2 or 3)

Via dial hand test set connected to terminals of test line 39 at slide 2;

- Dial paging code, and/or
- Ask attendant to listen for tone after operating PAGE key.

If A relay operates and tone is heard clearly, fault is in customer-provided wiring or equipment; otherwise, find the fault using this procedure.



NOTE 1

This procedure assumes the paging trunk is:

- Dial selected by stations,
- Manually selected by attendant (via PAGE key),
- Arranged for music when paging function is idle, and
- Not restricted from station(s) attempting to page.

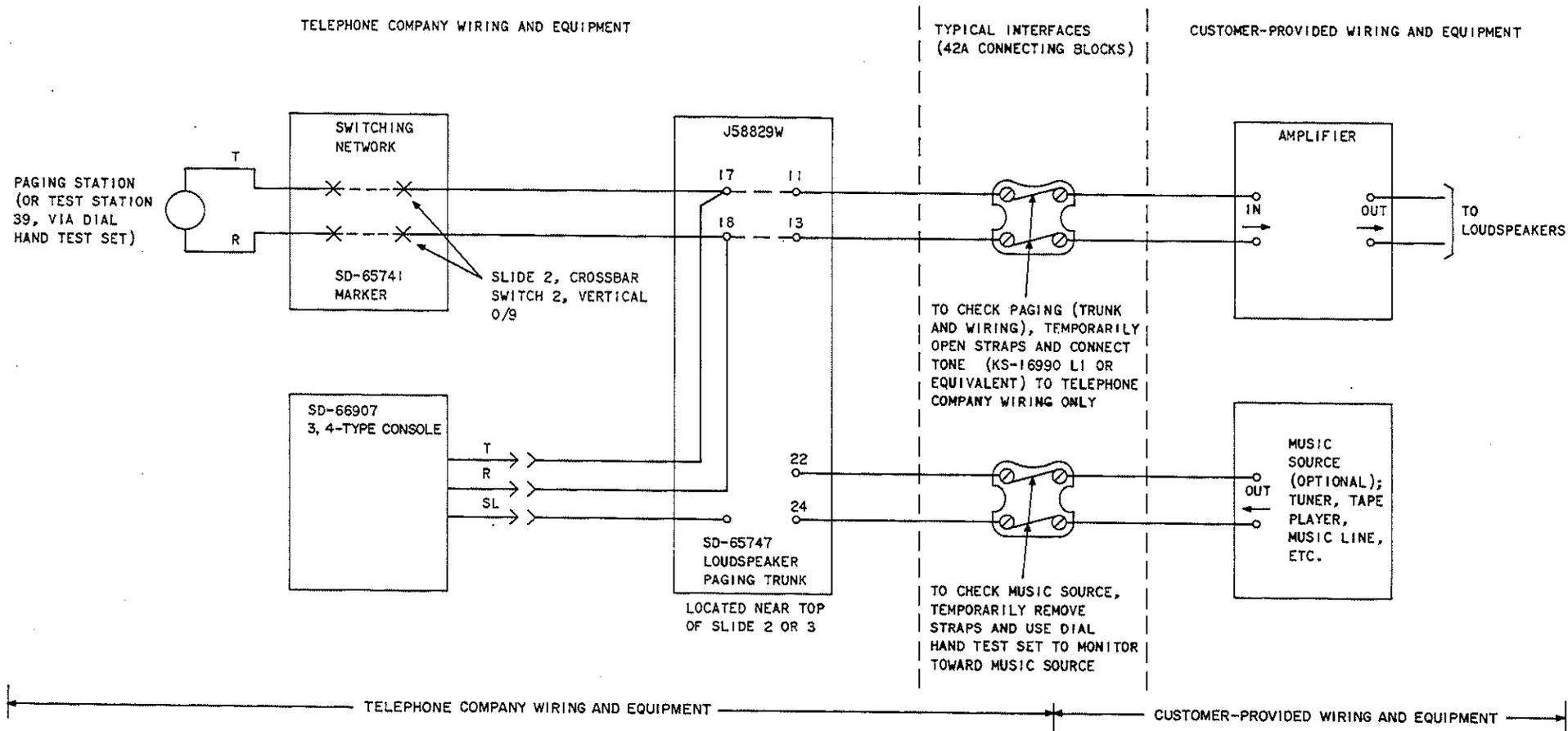


FIG. 1

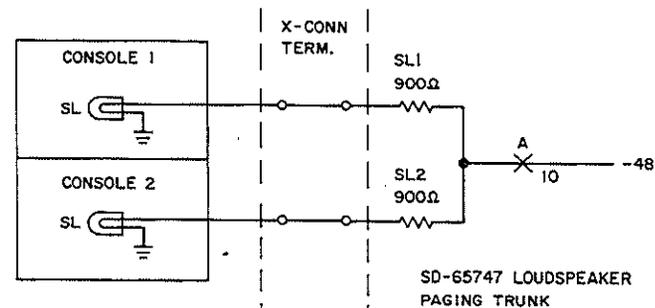
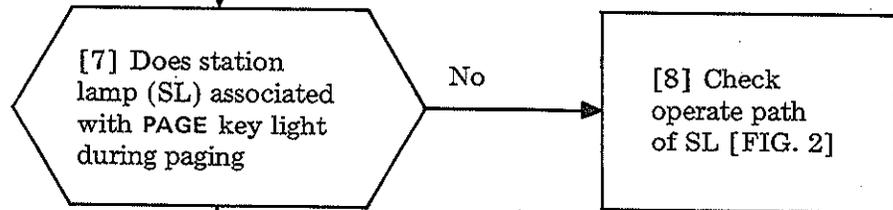
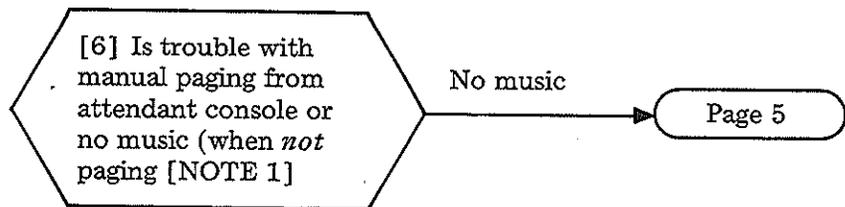


FIG. 2

[9] Locate interface (eg, 42A connecting block) between telephone company inside wire and input to customer's paging amplifier.

[10] See FIG. 1. Temporarily lift straps to amplifier input and connect tone to telephone side of connecting block.

[11] At attendant console, operate PAGE key and listen for tone.



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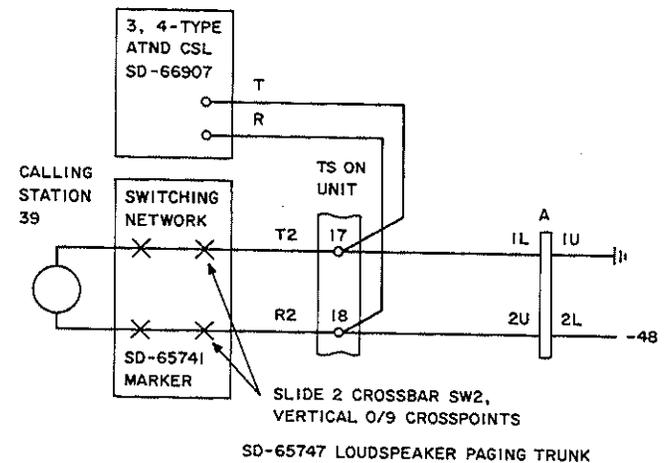
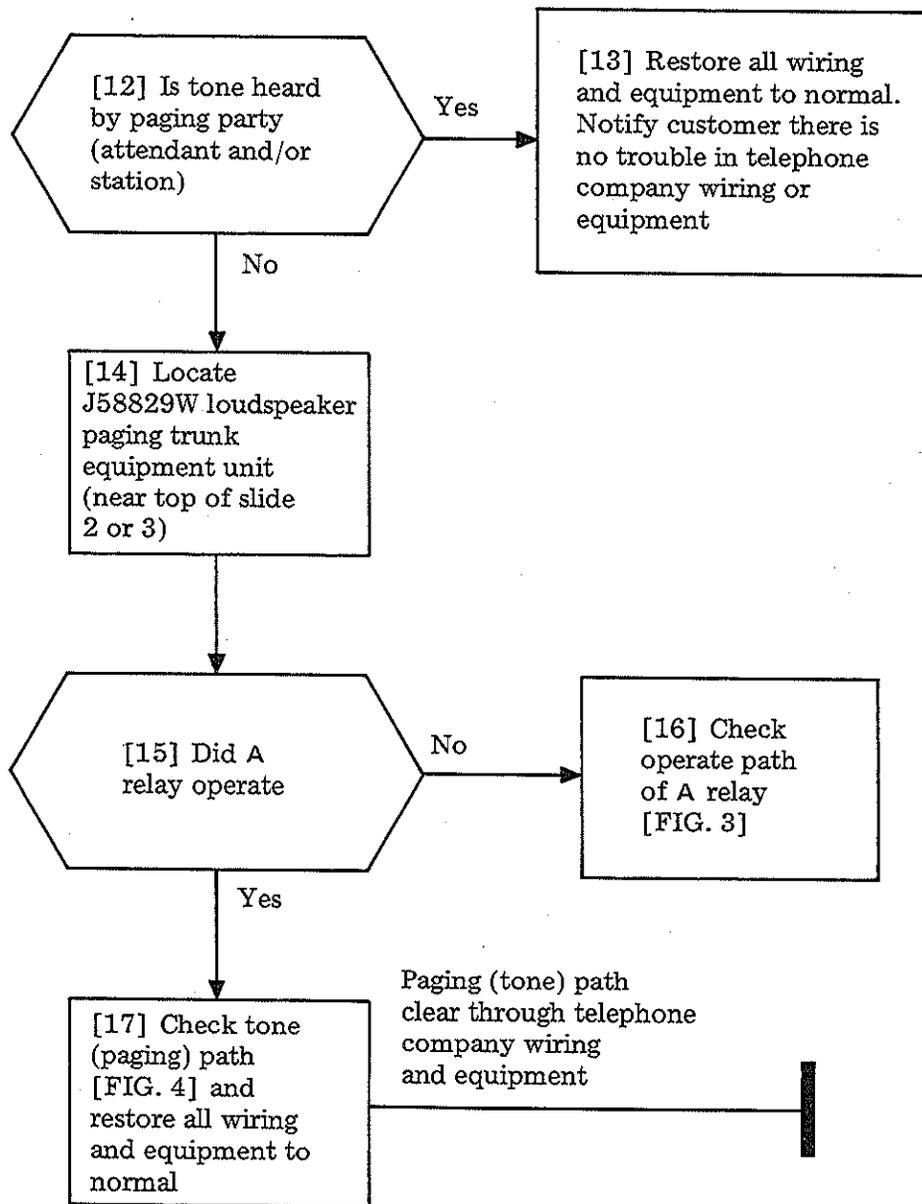


FIG. 3

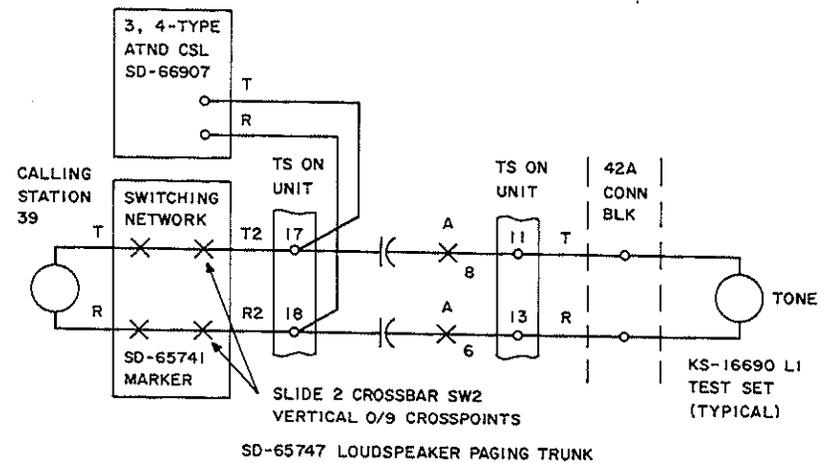


FIG. 4

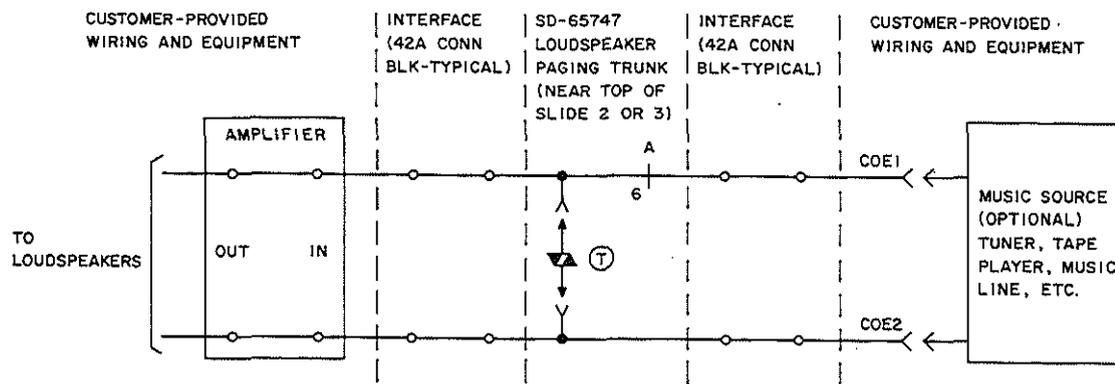
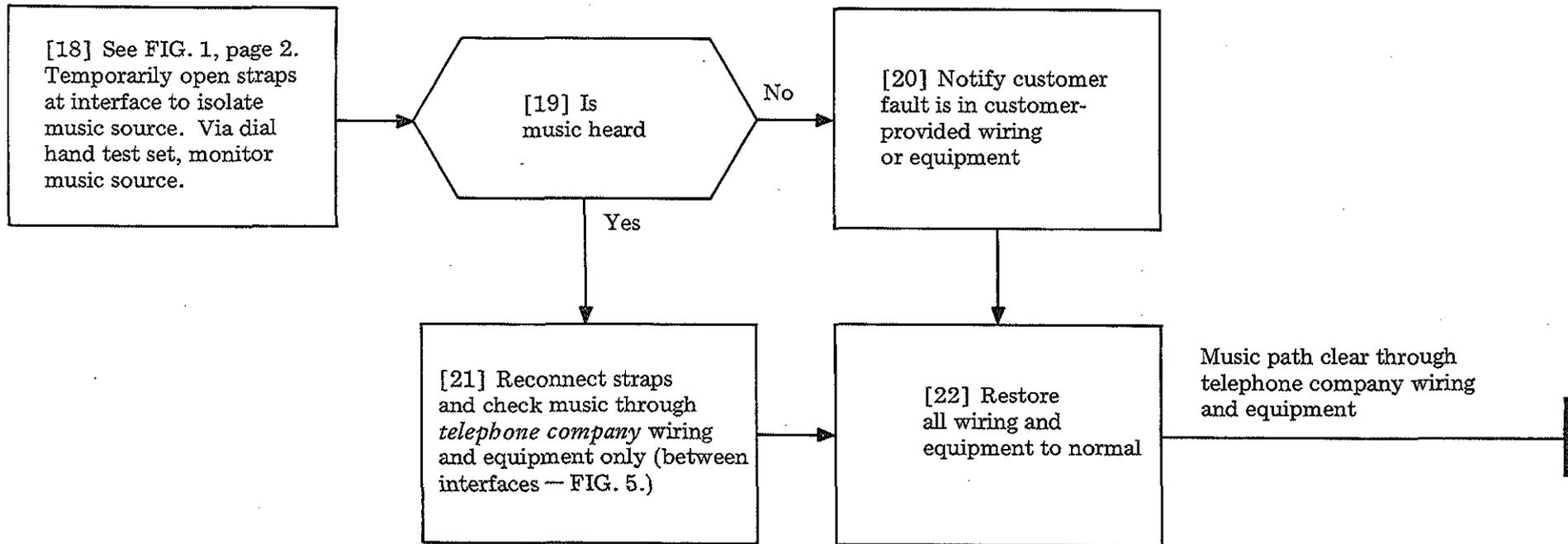
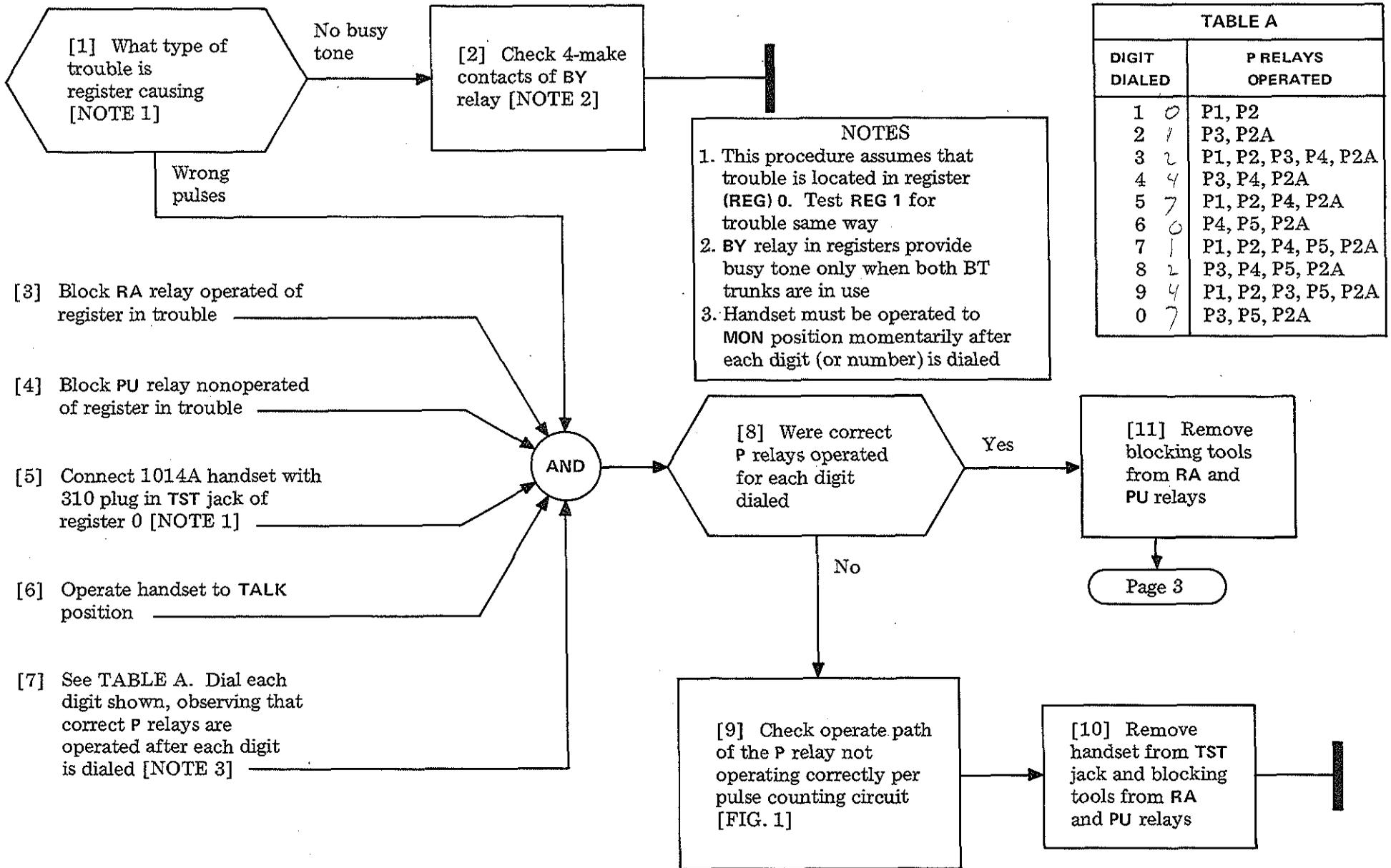


FIG. 5



| DIGIT DIALED | P RELAYS OPERATED |
|--------------|---------------------|
| 1 0 | P1, P2 |
| 2 1 | P3, P2A |
| 3 2 | P1, P2, P3, P4, P2A |
| 4 4 | P3, P4, P2A |
| 5 7 | P1, P2, P4, P2A |
| 6 0 | P4, P5, P2A |
| 7 1 | P1, P2, P4, P5, P2A |
| 8 2 | P3, P4, P5, P2A |
| 9 4 | P1, P2, P3, P5, P2A |
| 0 7 | P3, P5, P2A |

NOTES

1. This procedure assumes that trouble is located in register (REG) 0. Test REG 1 for trouble same way
2. BY relay in registers provide busy tone only when both BT trunks are in use
3. Handset must be operated to MON position momentarily after each digit (or number) is dialed

PULSE COUNTING

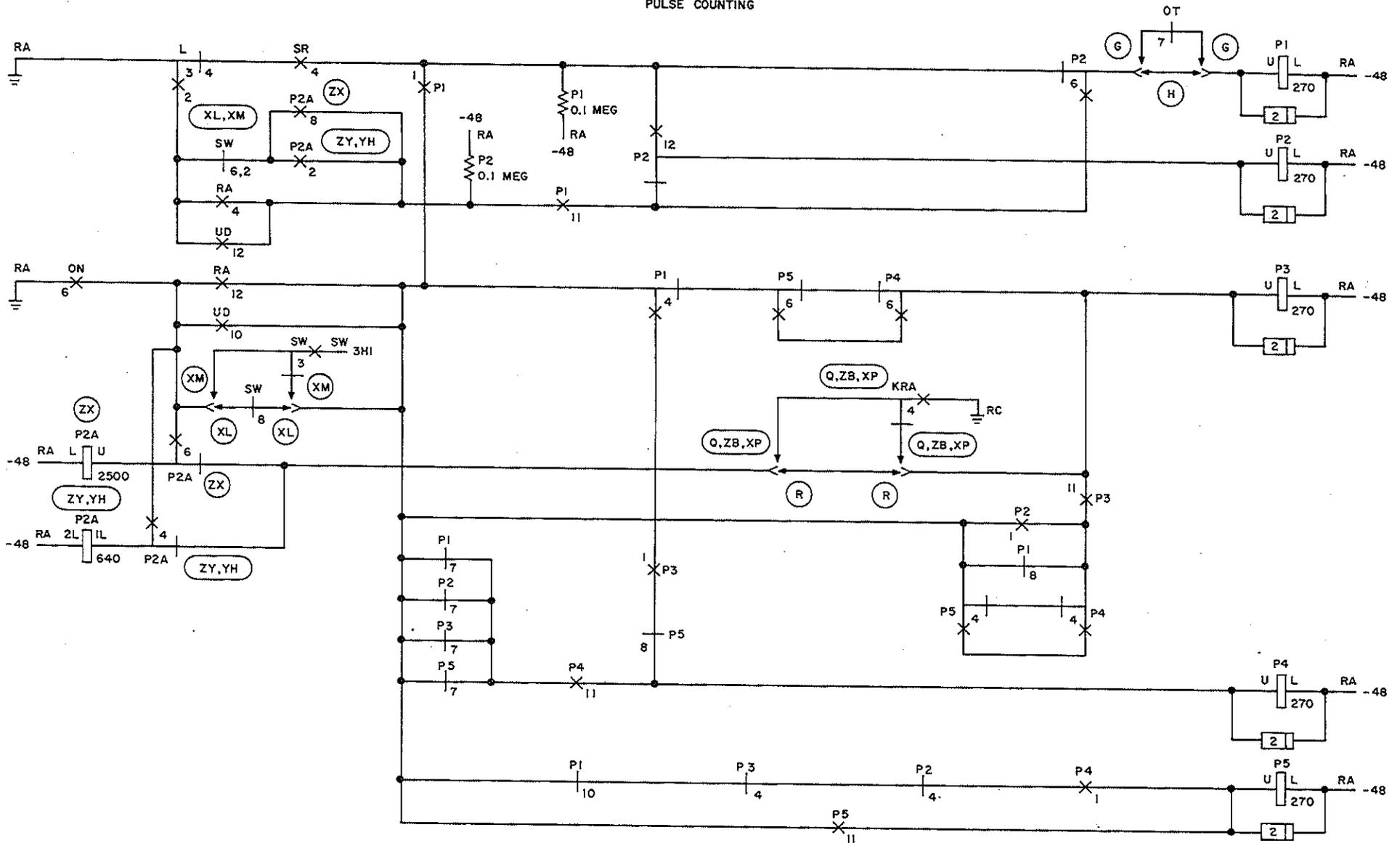


FIG. 1

CLEAR DIAL PULSE REGISTER TROUBLE (SD-65742)

| | |
|-------------|----------|
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[12] See CAUTION
Connect one KS-16751, L1 indicator [FIG. 2] on TD (1-5) relay and one KS-16751, L1 indicator on UD (1-5) relay

[13] Insert KS-6278 connector clip [FIG. 3] into 360A plug of indicator power (893) cord and connect to -48V test battery terminal (slide 6)

[14] Check tens and units digits registration by dialing numbers 21-25 and observing lamps per TABLE B [NOTE 3]

[15] Move KS-16751 indicator on UD (1-5) relay to UD (6-0) relay

[16] Repeat step 12, dialing numbers 26-20 and observing lamps per TABLE B

CAUTION
Connect KS-16751 indicator to center row only of relay contacts

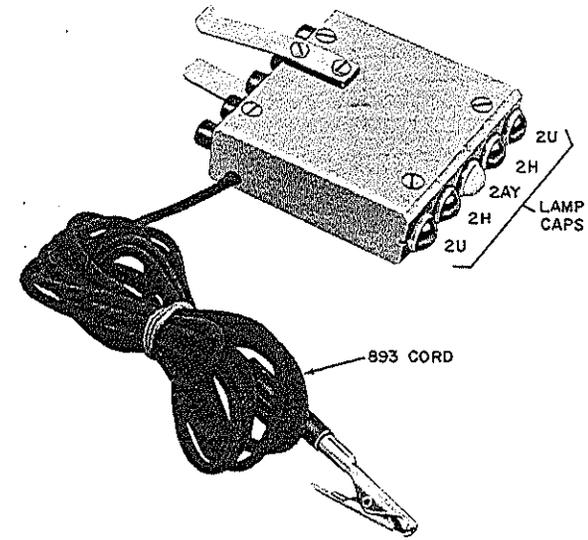
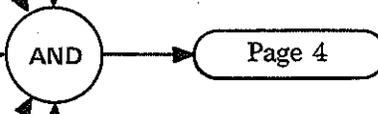
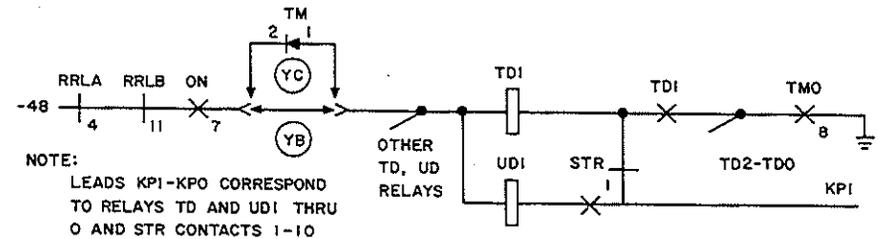


FIG. 2



FIG. 3

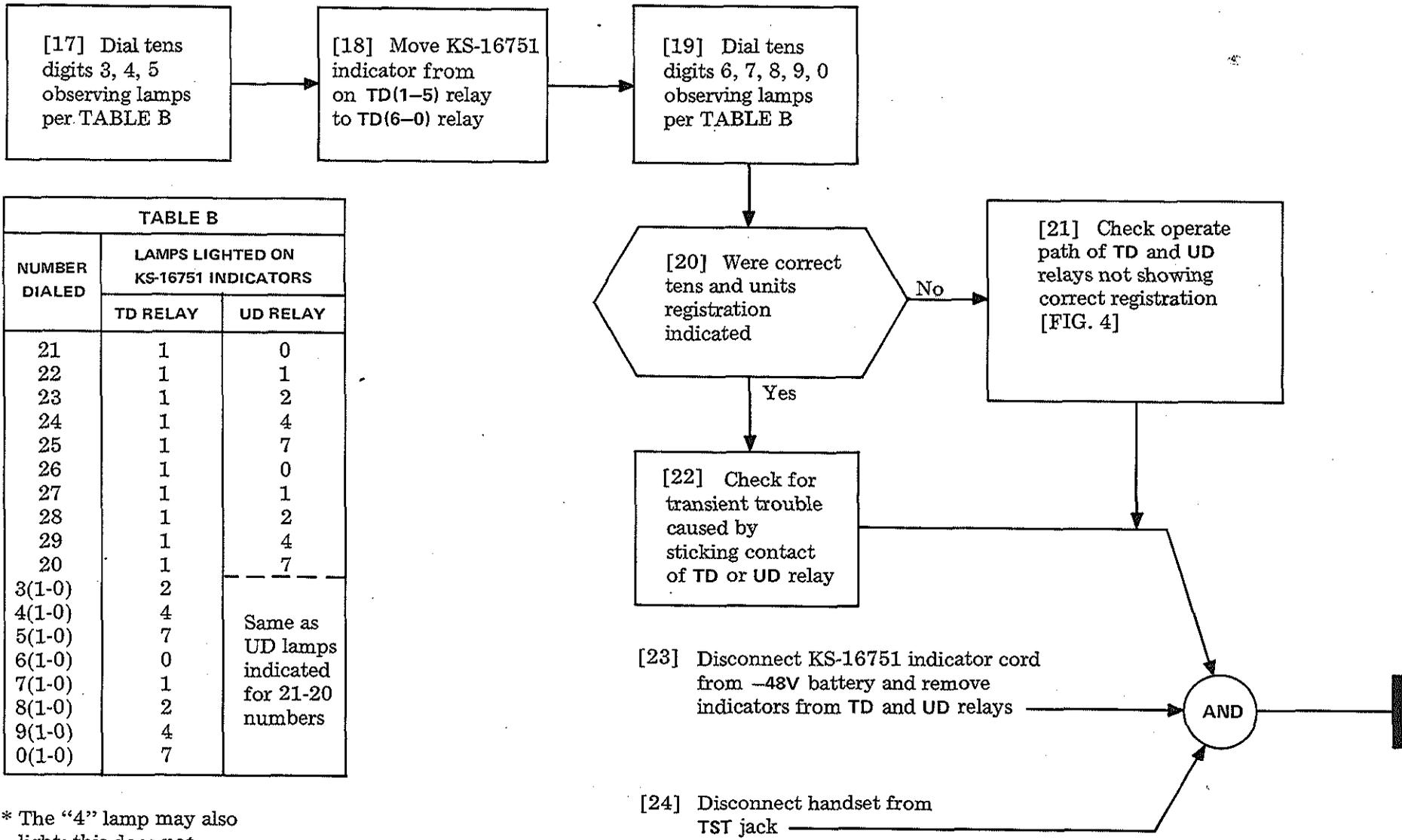


NOTE:
LEADS KPI-KPO CORRESPOND TO RELAYS TD AND UDI THRU O AND STR CONTACTS 1-10

SD-65742

FIG. 4

| | |
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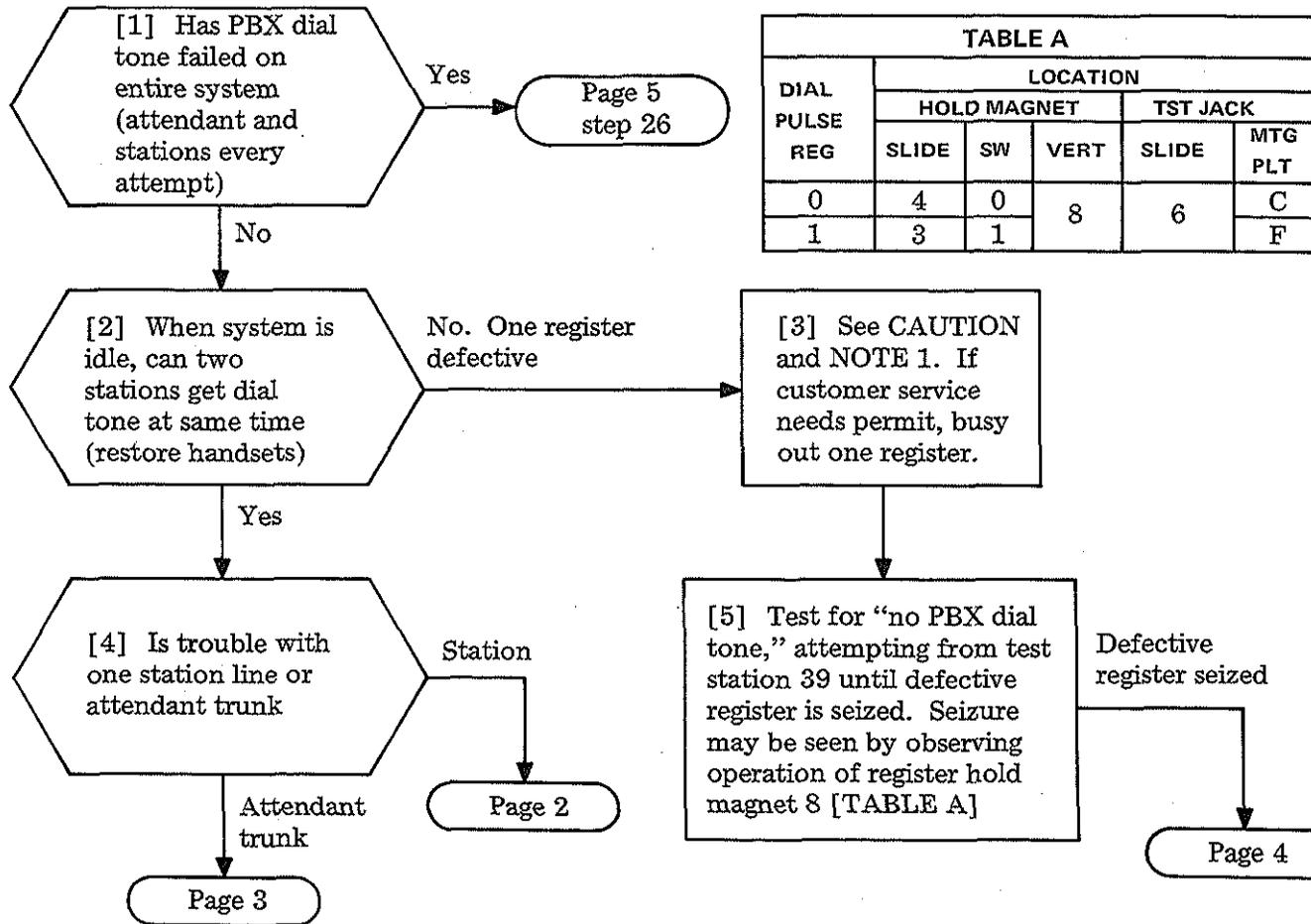
| TABLE B | | |
|---------------|--------------------------------------|--|
| NUMBER DIALED | LAMPS LIGHTED ON KS-16751 INDICATORS | |
| | TD RELAY | UD RELAY |
| 21 | 1 | 0 |
| 22 | 1 | 1 |
| 23 | 1 | 2 |
| 24 | 1 | 4 |
| 25 | 1 | 7 |
| 26 | 1 | 0 |
| 27 | 1 | 1 |
| 28 | 1 | 2 |
| 29 | 1 | 4 |
| 20 | 1 | 7 |
| 3(1-0) | 2 | Same as UD lamps indicated for 21-20 numbers |
| 4(1-0) | 4 | |
| 5(1-0) | 7 | |
| 6(1-0) | 0 | |
| 7(1-0) | 1 | |
| 8(1-0) | 2 | |
| 9(1-0) | 4 | |
| 0(1-0) | 7 | |

* The "4" lamp may also light; this does *not* indicate trouble.

SUMMARY

Initiate test call(s) from single station or trunk in trouble, or from test station 39 when PBX dial tone fails on entire system, or fails intermittently on more than one station or trunk. Connection of either dial pulse register to the switching network may be seen by observing the operation of the work hold magnet (vertical 8), which connects an idle register to the same link as the circuit

requesting PBX dial tone. See CAUTION. If customer requirements permit, a register may be busy out either to isolate the defective register or to prevent seizure while a fault is being repaired. Repeat test calls until both registers have been checked for PBX dial tone. If a failure occurs, locate the fault using the figure or other reference given.



| DIAL PULSE REG | TABLE A | | | | |
|----------------|-------------|----|------|----------|---------|
| | LOCATION | | | | |
| | HOLD MAGNET | | | TST JACK | |
| | SLIDE | SW | VERT | SLIDE | MTG PLT |
| 0 | 4 | 0 | 8 | 6 | C |
| 1 | 3 | 1 | | | F |

CAUTION
 Keep busy-out time brief. Registers 0 and 1 can provide dial tone to a maximum of two calling parties simultaneously. If no dialing (or DSS, etc.) follows, the register times out and diverts the call to intercept after 8 to 16 seconds.

NOTE 1
 To busy out idle register 0 or 1, operate REG- key or make-busy and busy display (slide 3, mounting plate AB) or insert dummy 258 plug in TST jack of register. To disable register time-out, block nonoperated the TMO relay(s) via 768A tool(s) (plastic wedge) while testing

[6] At PBX cross-connecting terminal, operate dial hand test set switch to MON position and connect clips to T and R leads of station line associated with trouble

[7] At the PBX, does the L relay [TABLE B] operate and release when test set switch is operated to TALK

No

[8] Check operate path of L relay (FIG. 1)

Yes

[9] At crossbar switch vertical, does station line hold magnet (LHM) [TABLE B] lock operated

No

[10] Check operate, or lock path of LHM [FIG. 2]

Yes

[11] Verify that contacts of vertical connected station line to link

| TABLE B | | | | | |
|---------|----------|---------|---------------|----|------|
| STA NO | LOCATION | | | | |
| | L RELAY | | LINE HOLD MAG | | |
| | SLIDE | MTG PLT | SLIDE | SW | VERT |
| 20-29 | 2 | N, P | 2 | 2 | 0-9* |
| 30-39 | | | | 3 | |
| 40-49 | 3 | L | 3 | 4 | |
| 50-59 | | | | 5 | |
| 60-69 | 4 | | 4 | 6 | |
| 70-79 | | | | 7 | |

* Station 20 associated with vertical 0, station 29 associated with vertical 9, etc.

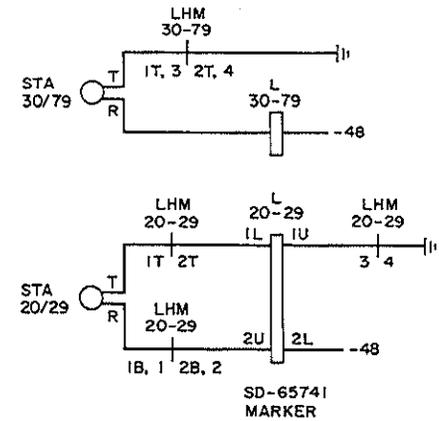


FIG. 1

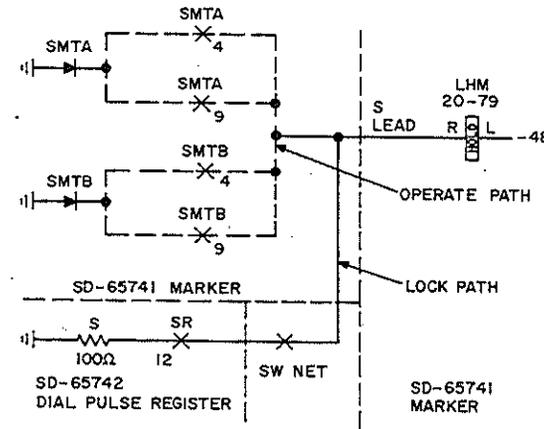


FIG. 2

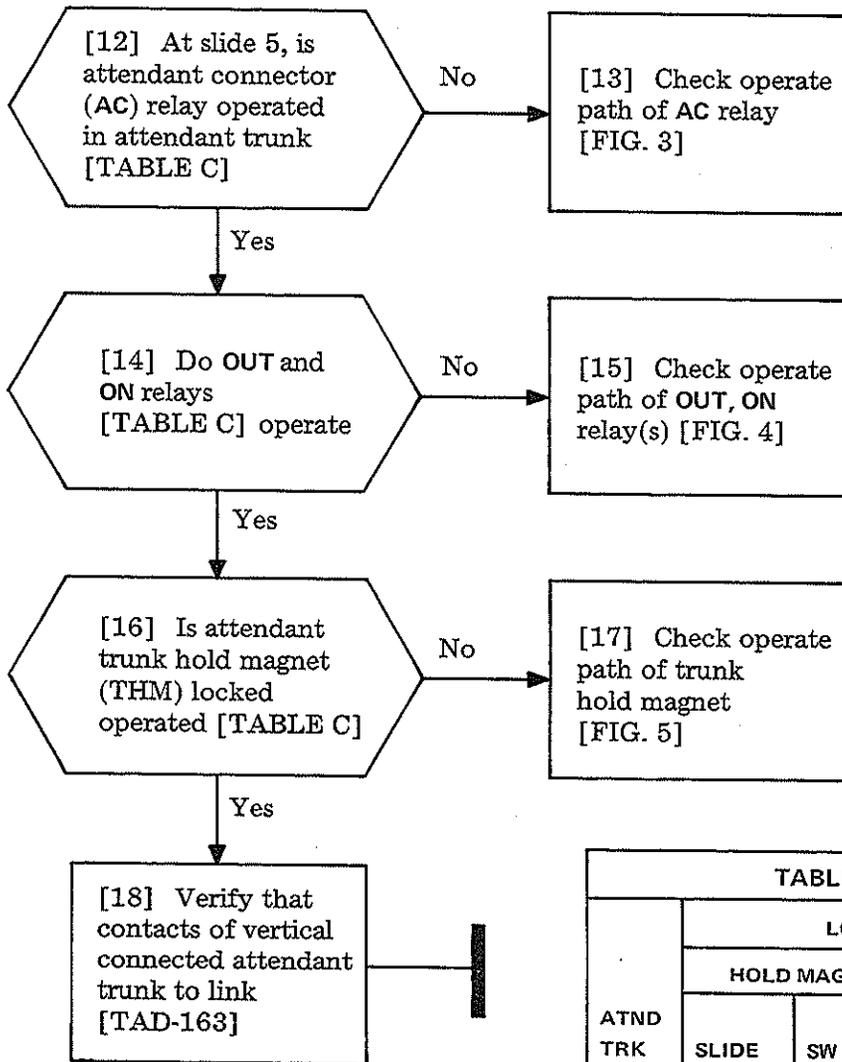


TABLE C

| ATND TRK | LOCATION | | | | |
|----------|-------------|----|------|--------|---------|
| | HOLD MAGNET | | | RELAYS | |
| | SLIDE | SW | VERT | SL | MTG PLT |
| 0 | | 8 | 0 | | Y |
| 1 | 4 | | 5 | 5 | Z |
| 2 | | 0 | 6 | | AA |

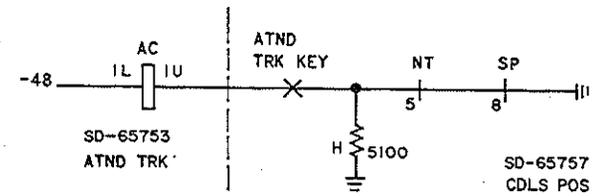


FIG. 3

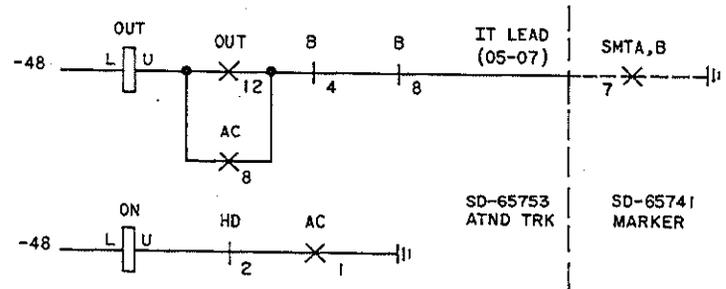


FIG. 4

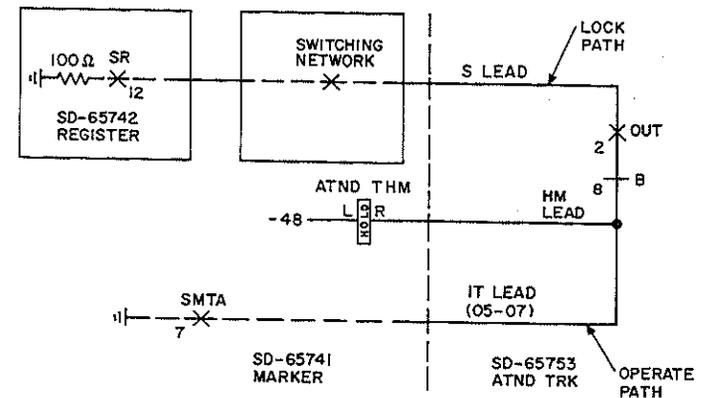


FIG. 5

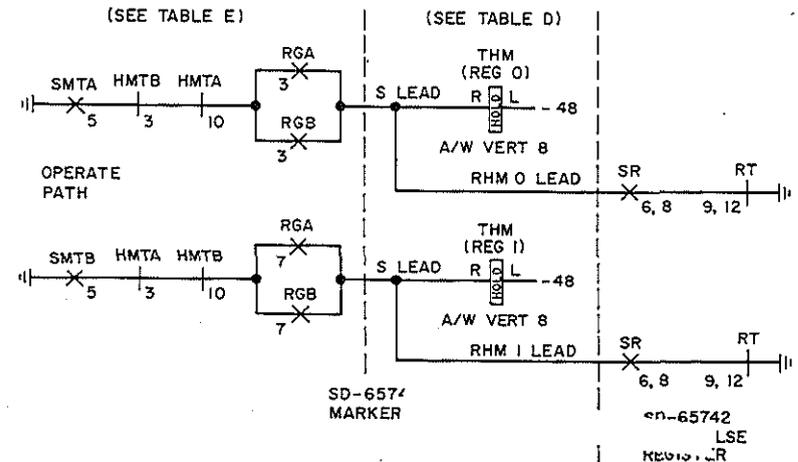
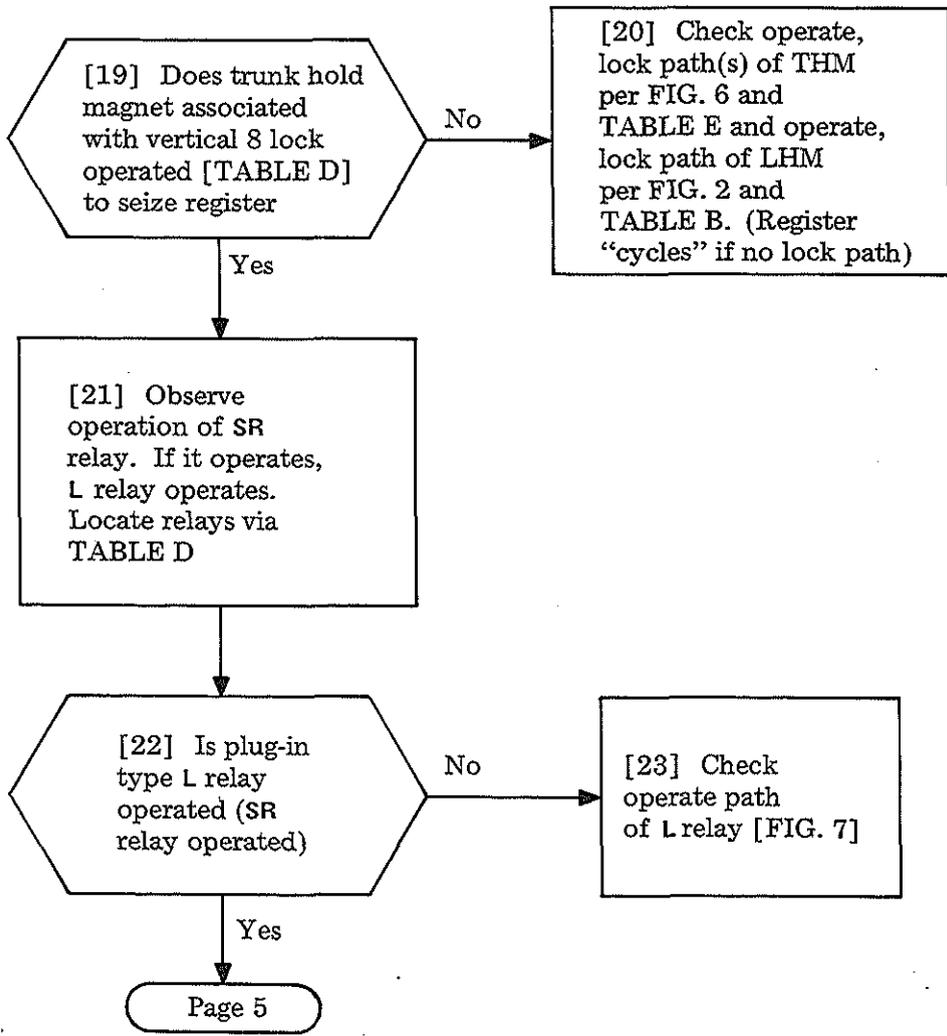


FIG. 6

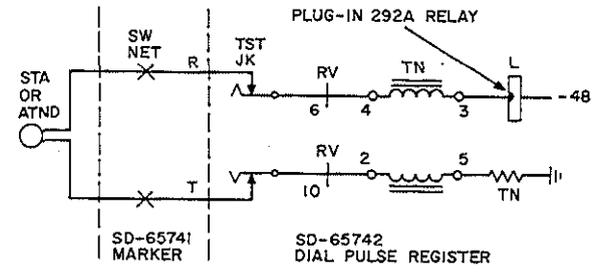


FIG. 7

| TABLE D | | | | | |
|----------------|---------------|----|------|-------|---------|
| DIAL PULSE REG | DP REG EQ LOC | | | | |
| | TRK HLD MAG | | | RELAY | |
| | SLIDE | SW | VERT | SLIDE | MTG PLT |
| 0 | 4 | 0 | 8 | 6 | A-C |
| 1 | 3 | 1 | | | D-F |

| TABLE E | | |
|---------------|-------|---------|
| MARKER EQ LOC | | |
| RELAY | SLIDE | MTG PLT |
| RGA RGB | 6 | G |
| SMTA SMTB | | T |
| HMTA HMTB | | Q |

| | |
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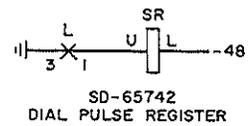
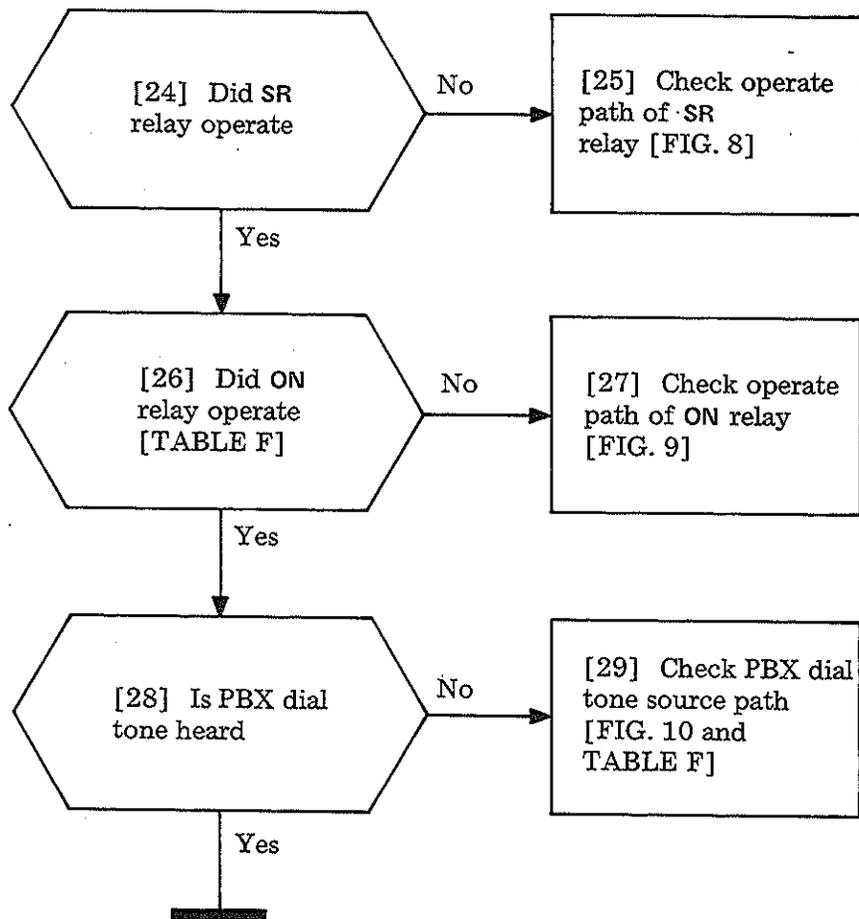


FIG. 8

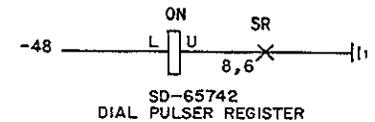


FIG. 9

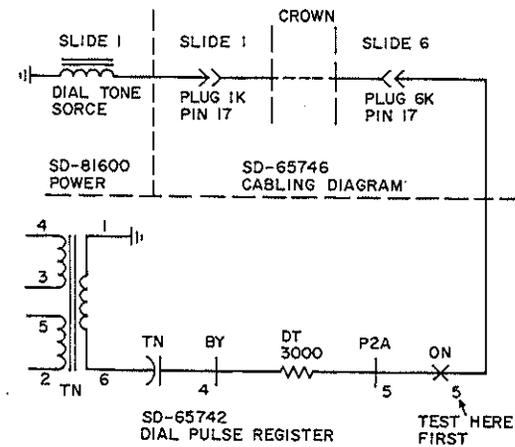


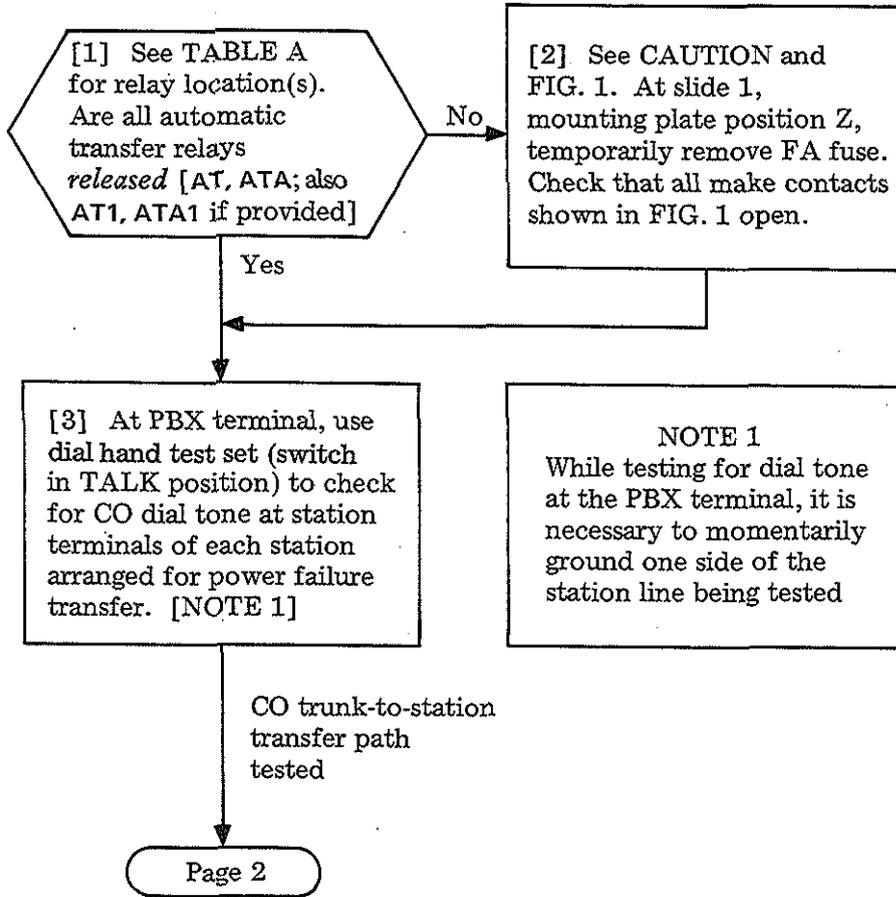
FIG. 10

| TABLE F | | |
|----------------|----------------|---------|
| DIAL PULSE REG | RELAY LOCATION | |
| | SLIDE | MTG PLT |
| 0 | 6 | A-C |
| 1 | | D-F |

SUMMARY

This procedure shows the method of locating trouble if a power failure transfer station(s) cannot call out on CO trunk(s) after commercial power has failed. If red trouble (TR) lamp is steadily lighted at attendant console, it may indicate commercial power has been restored

after trouble was reported. At the PBX terminal, make test(s) to see if CO trunk(s) transferred to station(s). Try to call out on CO trunk from power failure transfer station(s) reporting trouble. Reestablish any released flexible night service if power is restored when trouble is cleared.



CAUTION
Notify customer all power failure transfer stations will transfer to CO trunks during test.

| RELAY | LOCATION | |
|-------|----------|---------|
| | SLIDE | MTG PLT |
| AT | 2 | L |
| ATA | 5 | J |
| *AT1 | 1 | X |
| *ATA1 | 1 | X |
| NS | 5 | J |

* When provided (for CO trunks 5-7)

NOTE 1
 While testing for dial tone at the PBX terminal, it is necessary to momentarily ground one side of the station line being tested

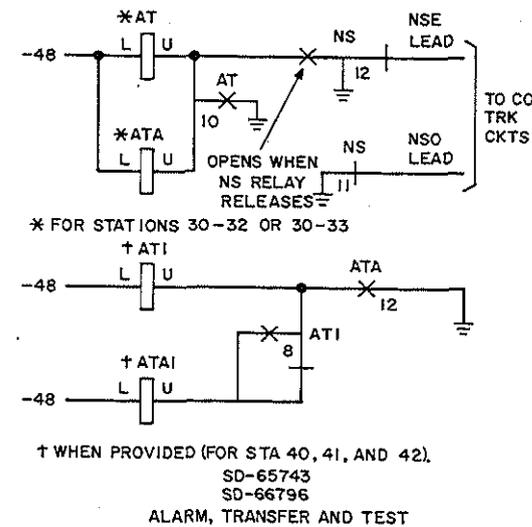


FIG. 1

| | |
|-------------|----------|
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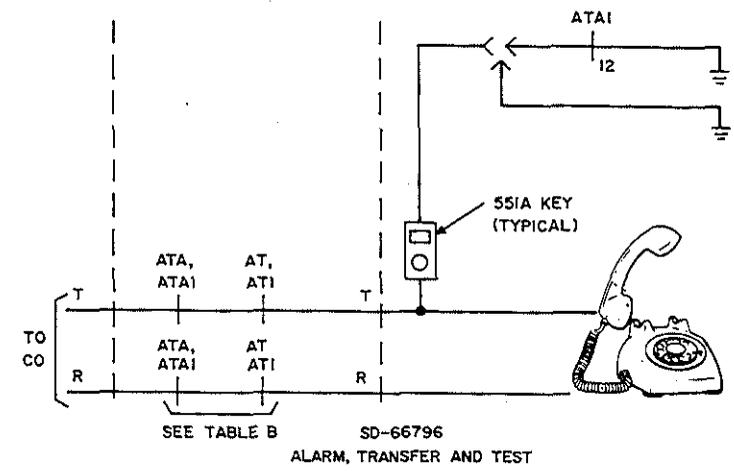
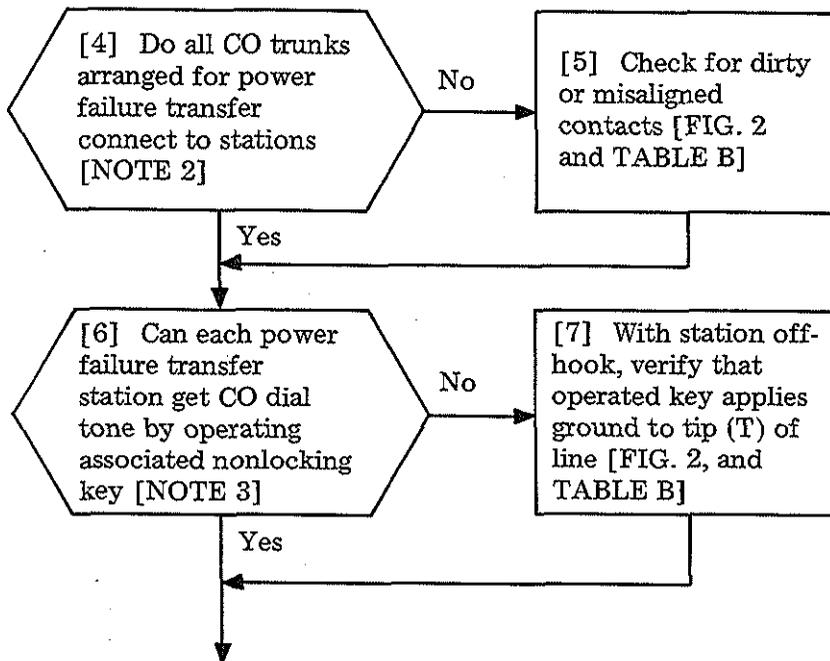


FIG. 2

[8] Restore all equipment to normal. If removed (Step 2), replace FA fuse. Reestablish flexible night connections, if required.

NOTES

2. Break contacts of automatic transfer relays connect CO trunks to stations (3, 4, or 6 may be hardwired depending on vintage of system)

3. A power failure transfer station must momentarily operate a nonlocking key (551A, typical) to start CO dial tone

TABLE B

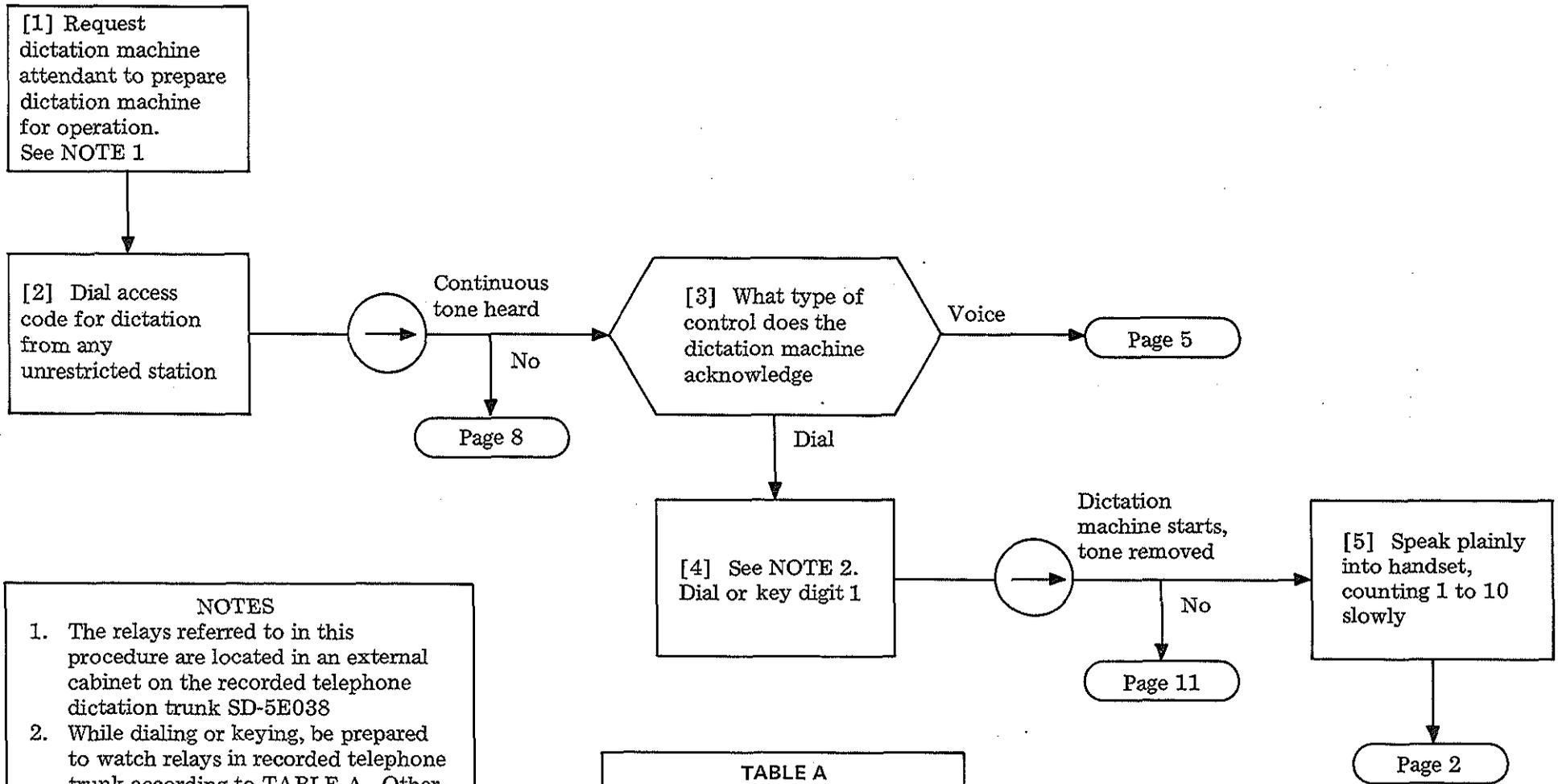
POWER FAILURE TRANSFER – VIA REL, LD, & CONT

| FROM CO TRK | TO STA | AT | | ATA | | AT1† | | ATA1† | |
|-------------|--------|------|------|-----|-----|------|----|-------|----|
| | | T | R | T | R | T | R | T | R |
| 0 | 30 | 1B | 2B | 1B | 1B | | | | |
| 1 | 31 | 4B | 5B | 3B | 4B | | | | |
| 2 | 32 | 7B | 8B | 5B | 6B | | | | |
| 5* | 33* | 10B* | 11B* | 7B* | 8B* | | | | |
| 5† | 40† | | | | | 5B | 6B | 5B | 6B |
| 6† | 41† | | | | | 3B | 4B | 3B | 4B |
| 7† | 42† | | | | | 1B | 2B | 1B | 2B |

* Early versions only

† When AT1, ATA1 relays provided to transfer CO trunks 5-7

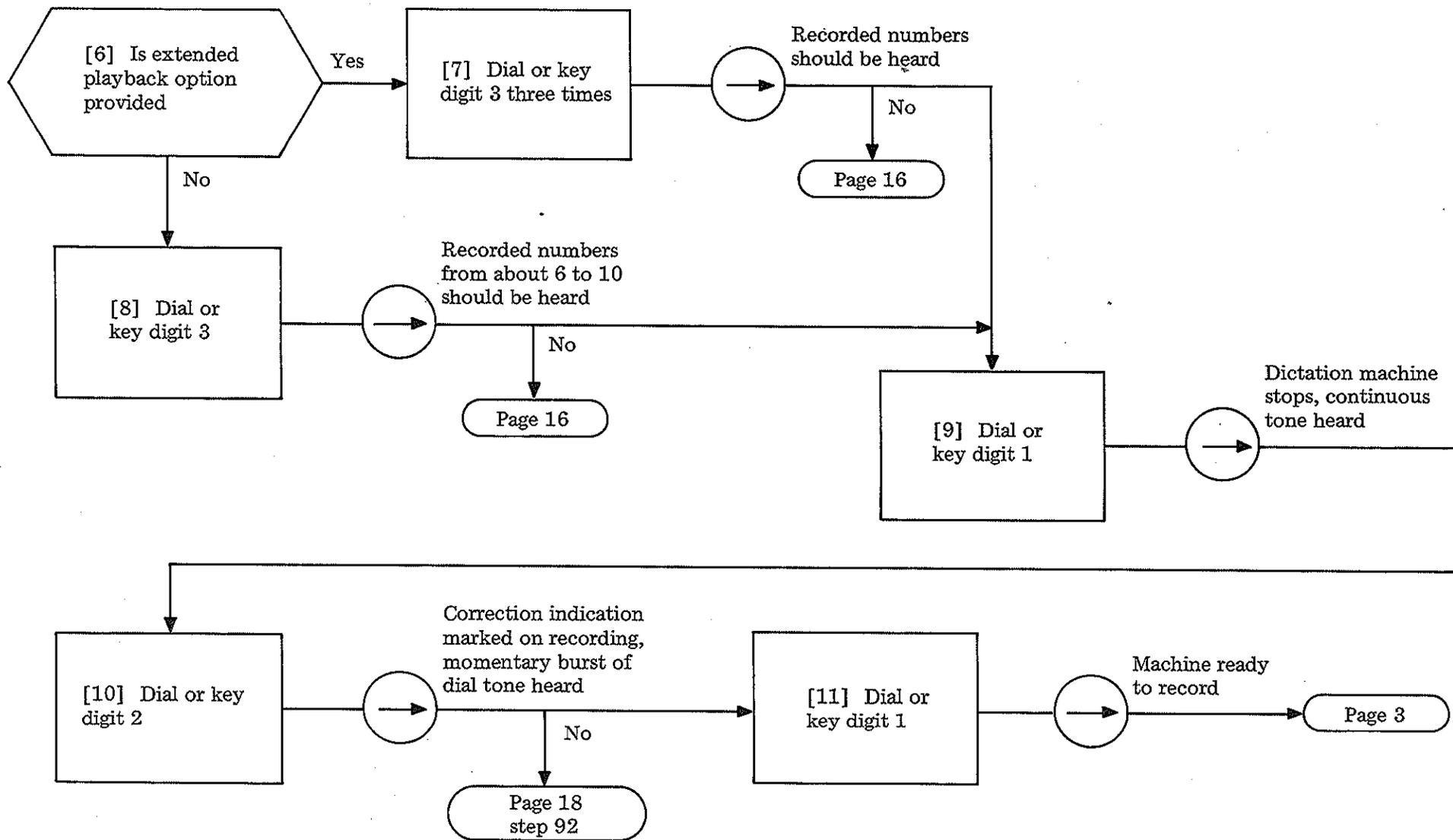
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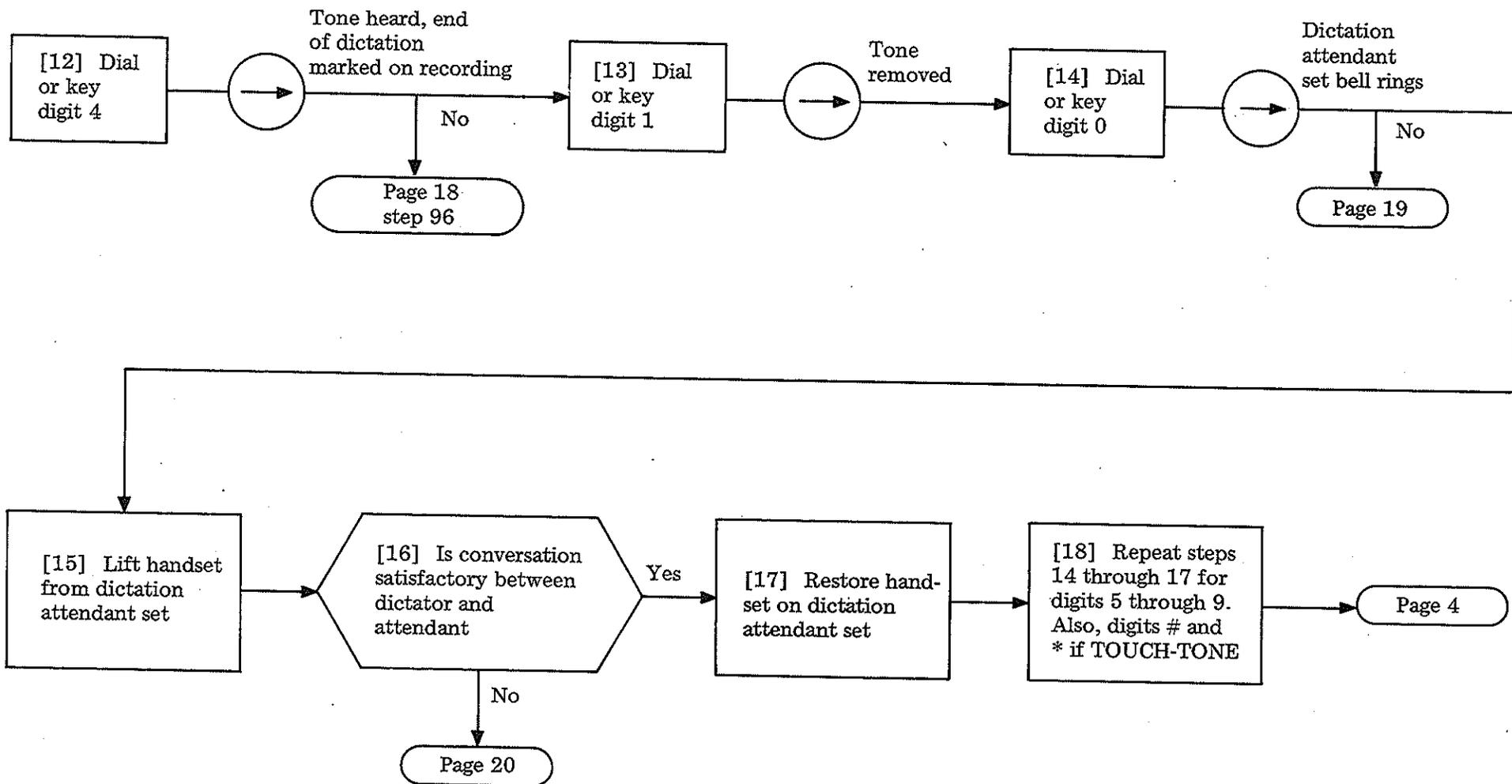


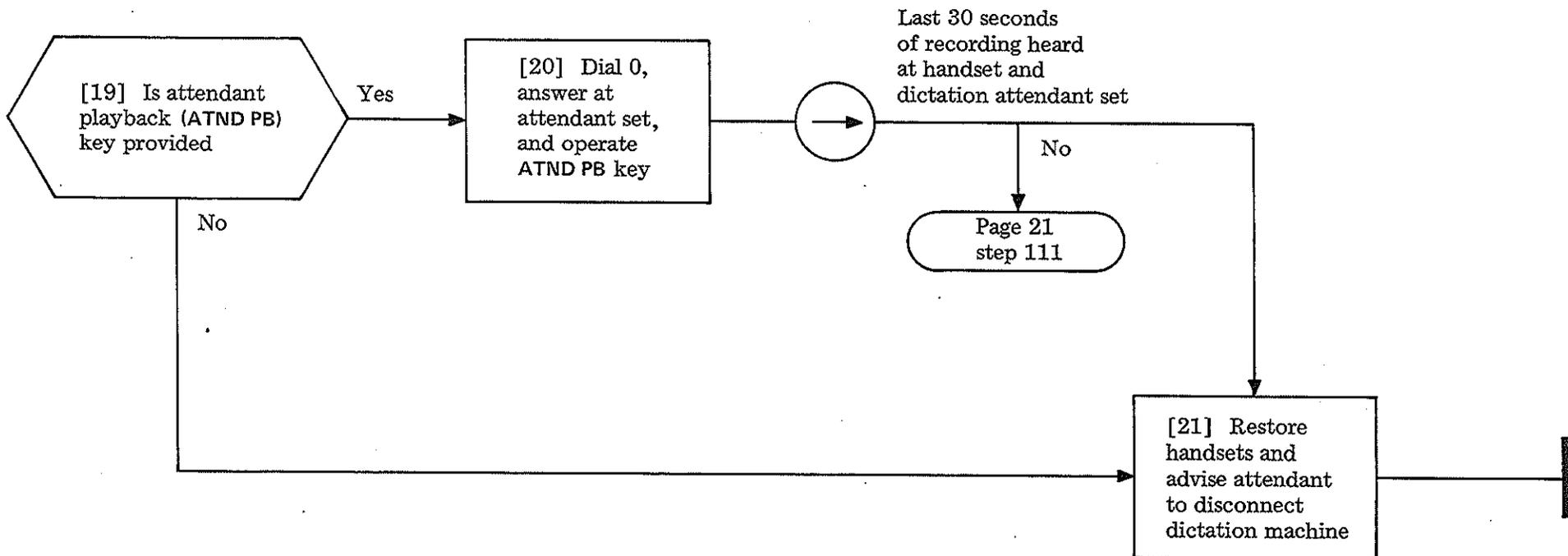
NOTES

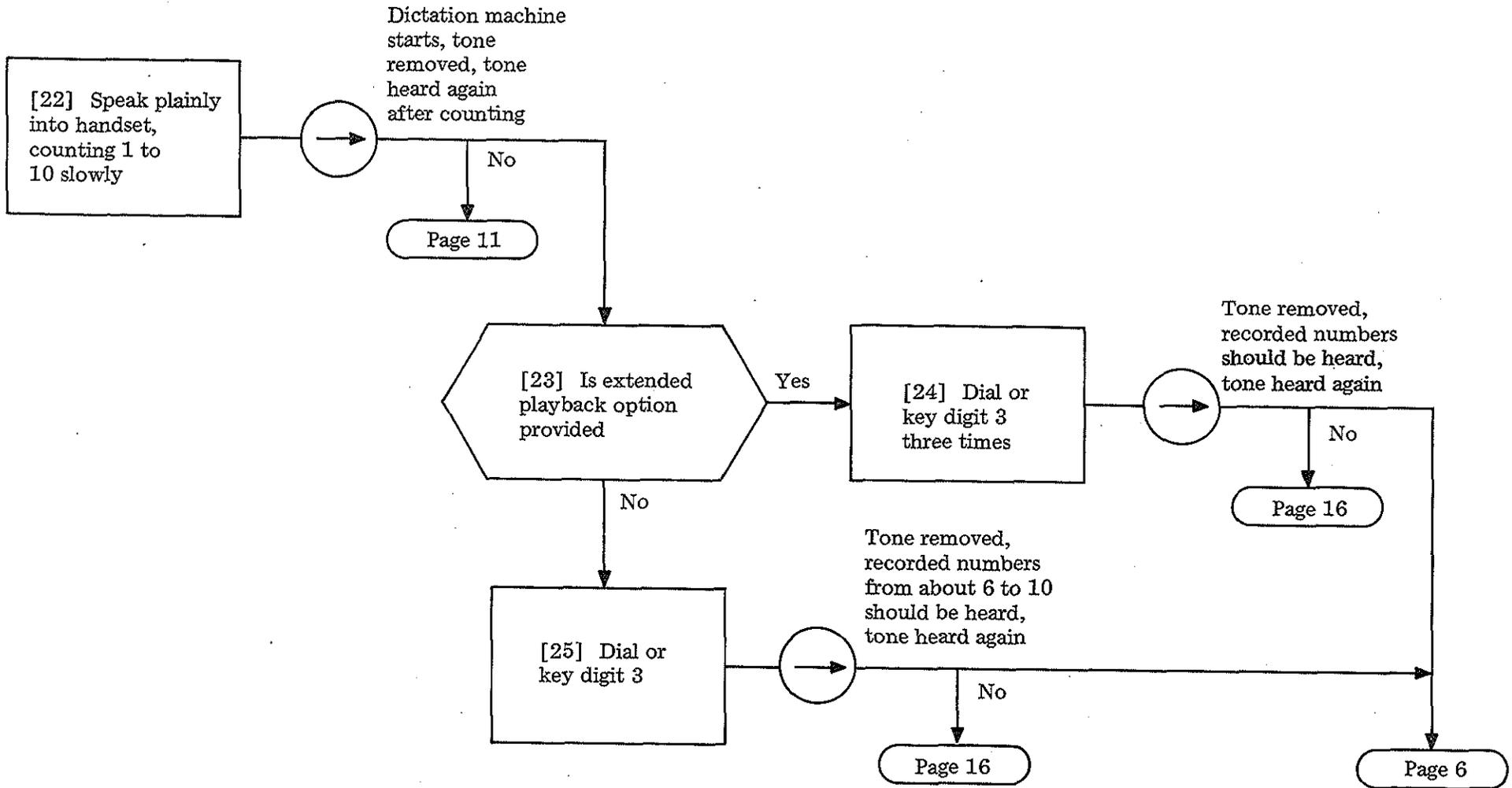
1. The relays referred to in this procedure are located in an external cabinet on the recorded telephone dictation trunk SD-5E038
2. While dialing or keying, be prepared to watch relays in recorded telephone trunk according to TABLE A. Otherwise, if results are not obtained, sequence will require repeating while observing relays

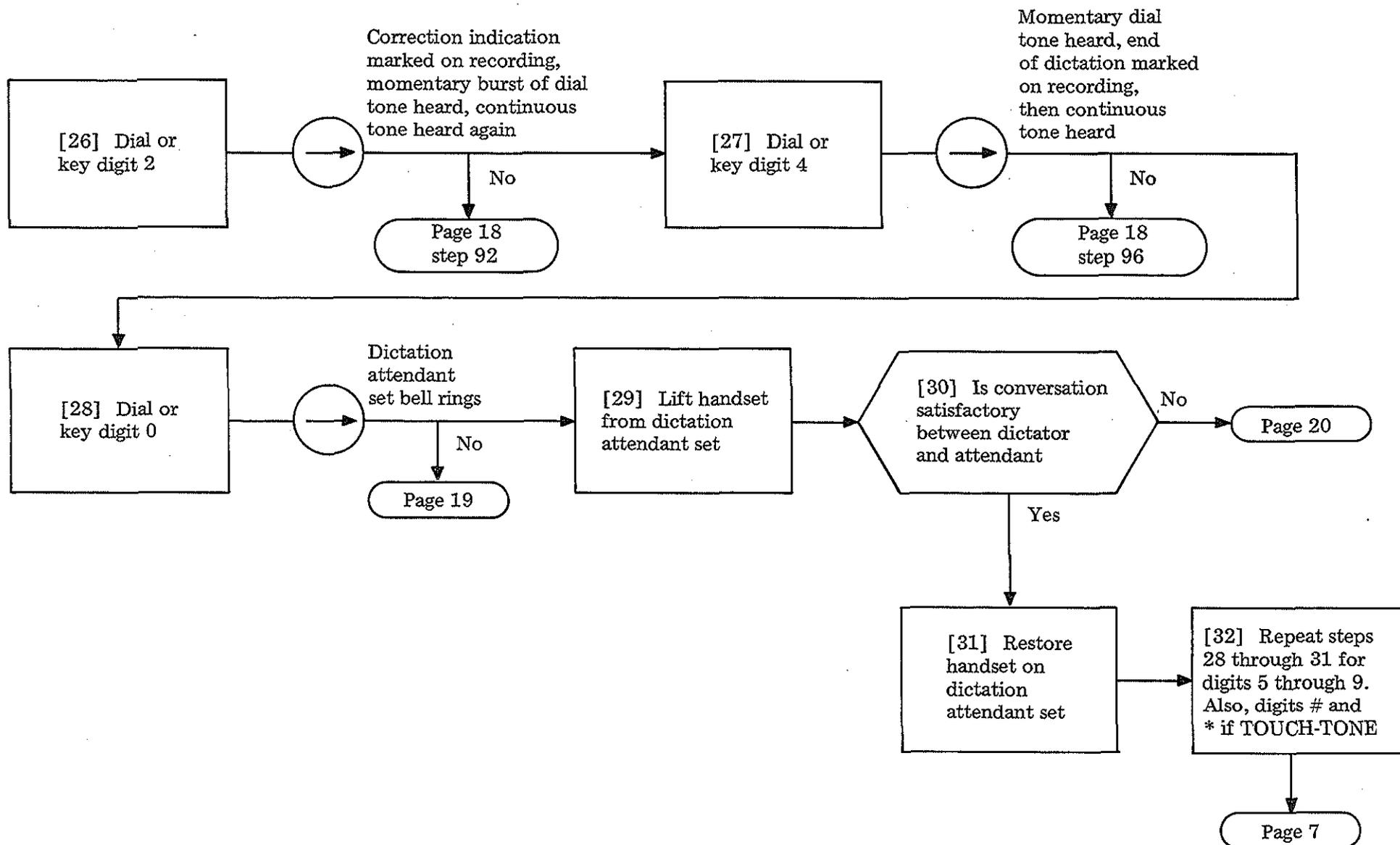
| TABLE A | |
|----------------------------------|-------------------|
| RELAYS | |
| TOUCH-TONE | ROTARY DIAL |
| C1, C2, C0 0-4, P1, and TM | C1, C2, and P1 |

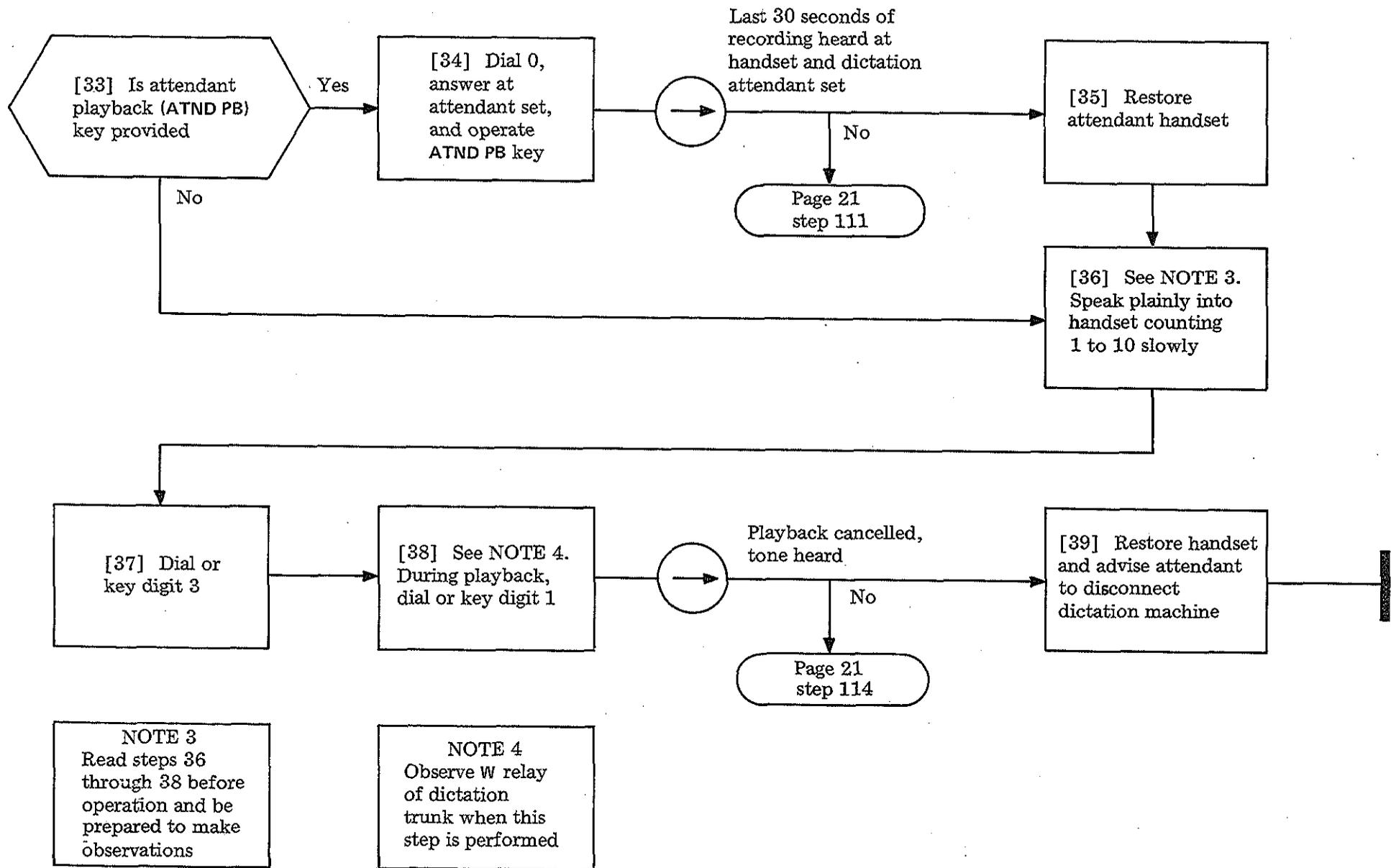












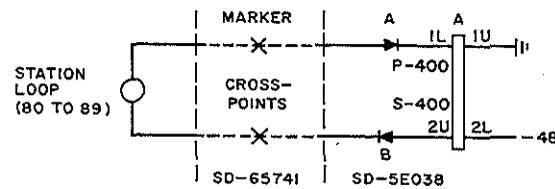
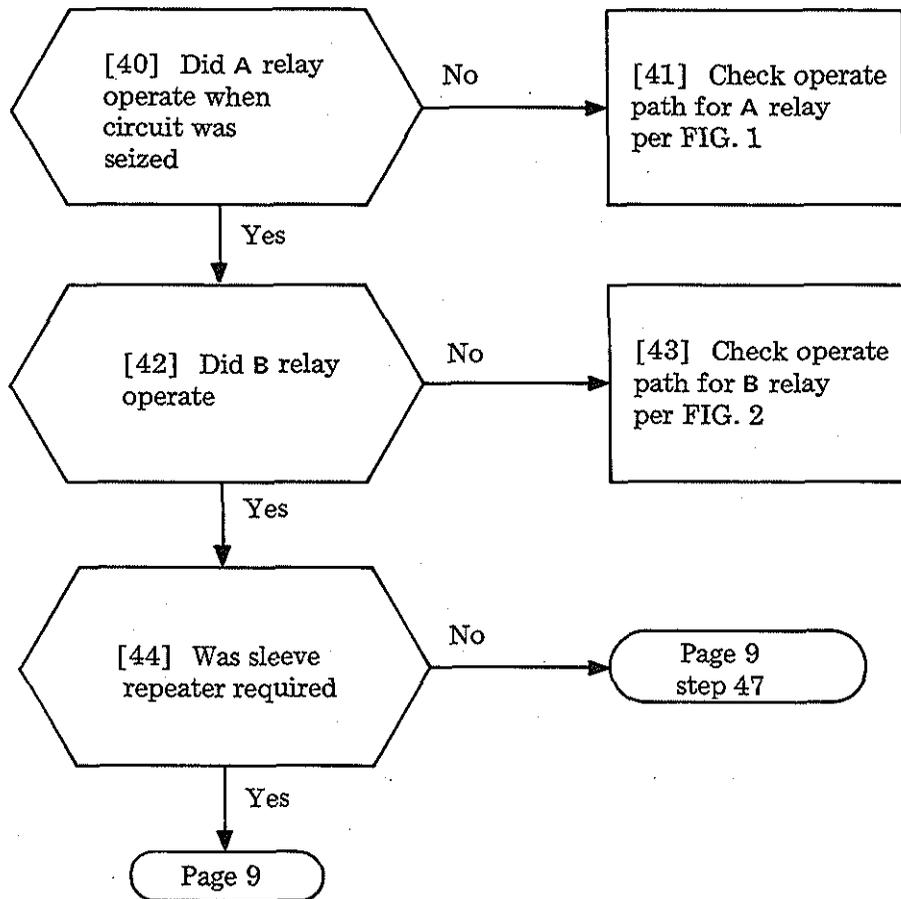


FIG. 1

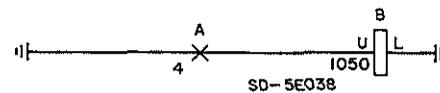


FIG. 2

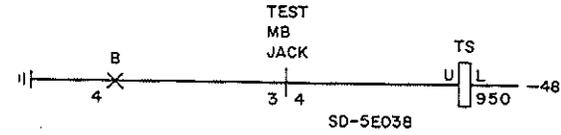
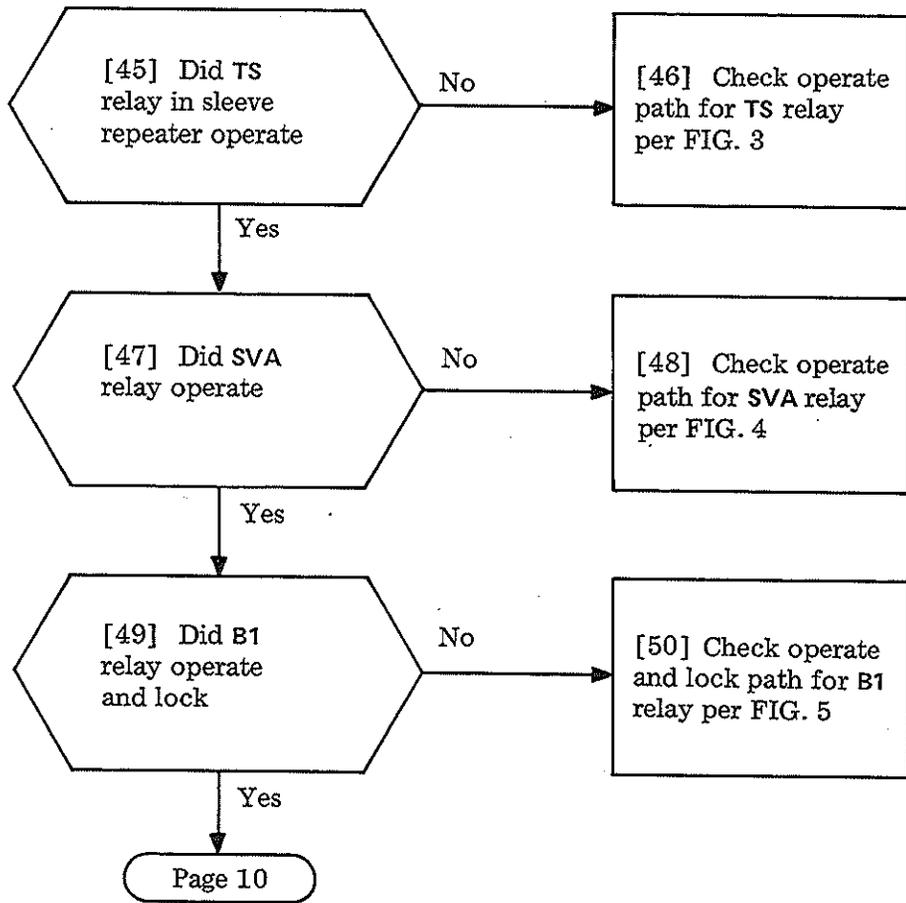


FIG. 3

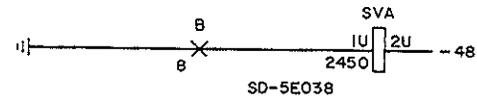


FIG. 4

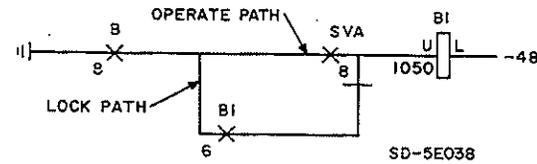


FIG. 5

| | |
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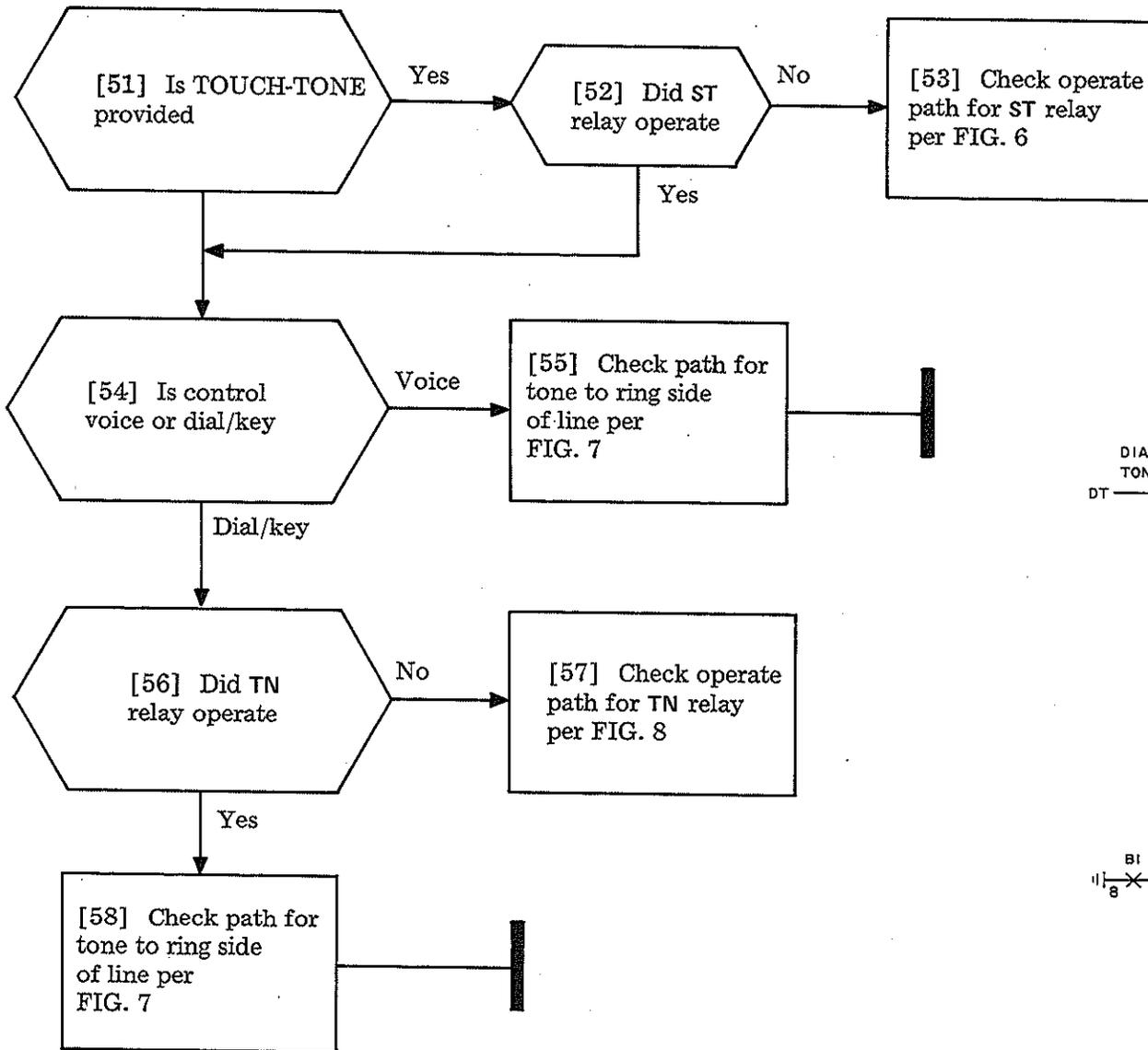
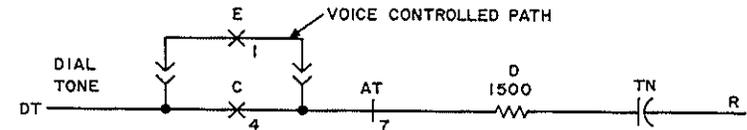
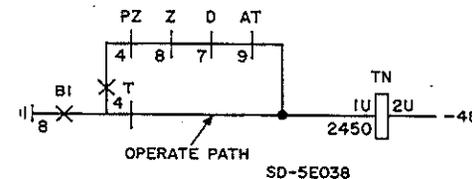


FIG. 6



SD-5E038

FIG. 7



SD-5E038

FIG. 8

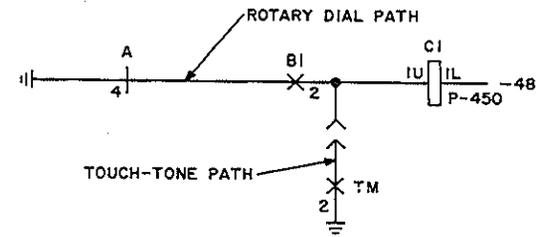
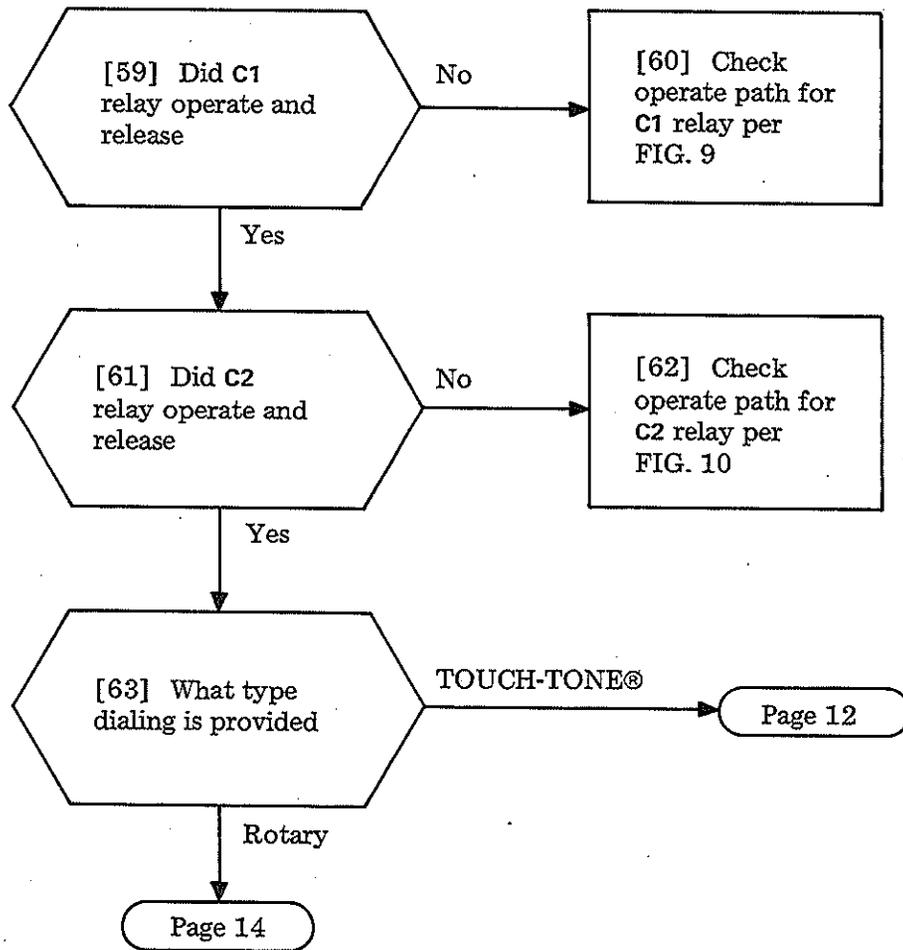
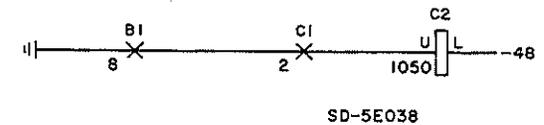


FIG. 9



SD-5E038

FIG. 10

| | |
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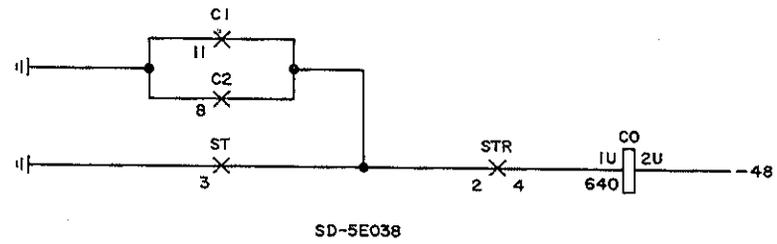
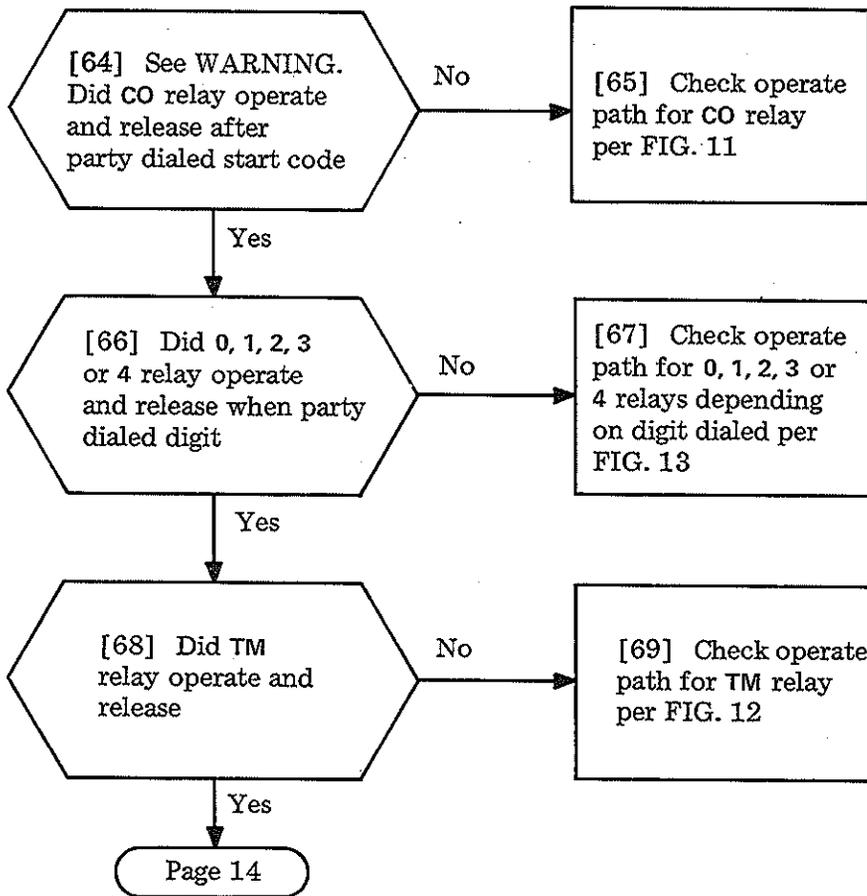


FIG. 11

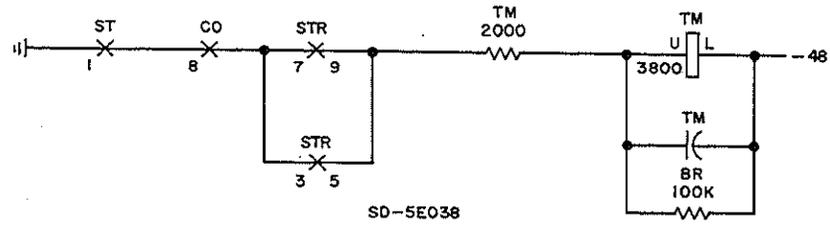


FIG. 12

WARNING
Relays L and H operate STR relay. These are dry reed relays and precaution should be taken not to damage them.

| | |
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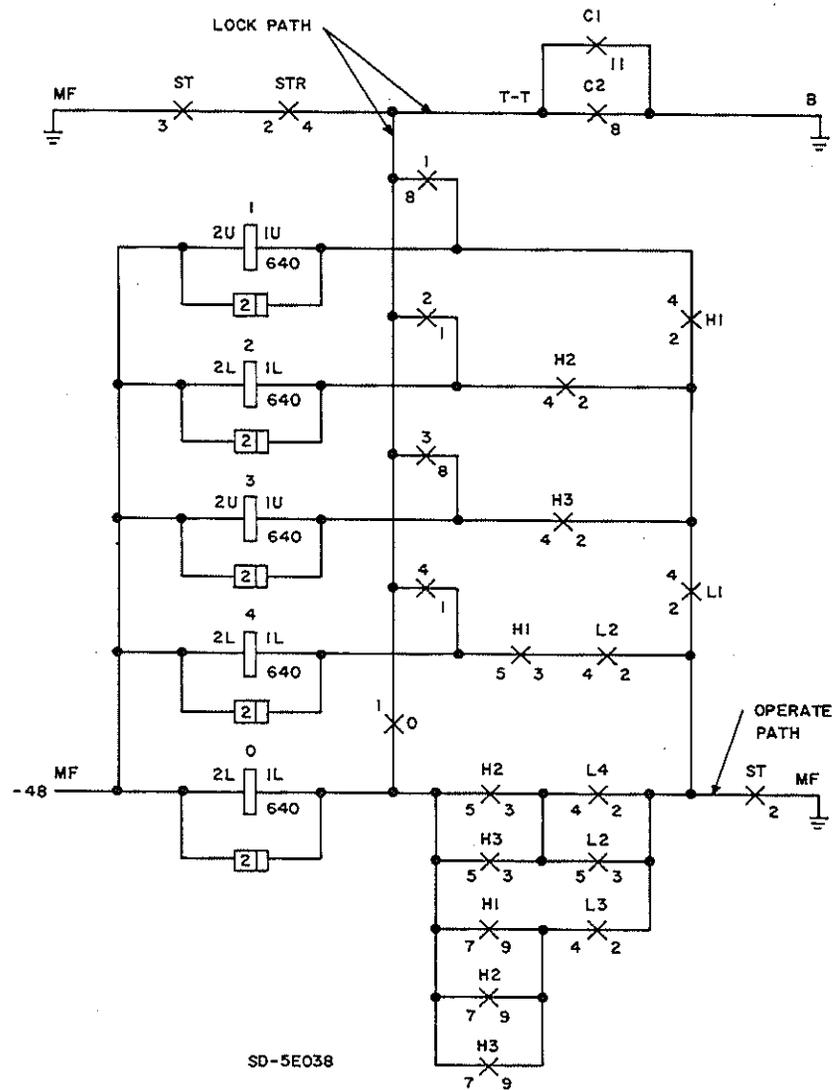


FIG. 13

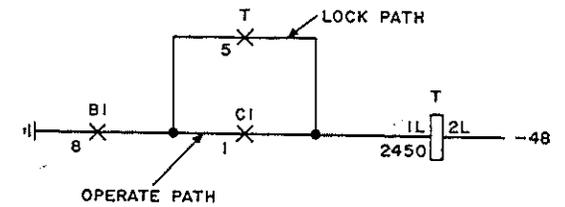
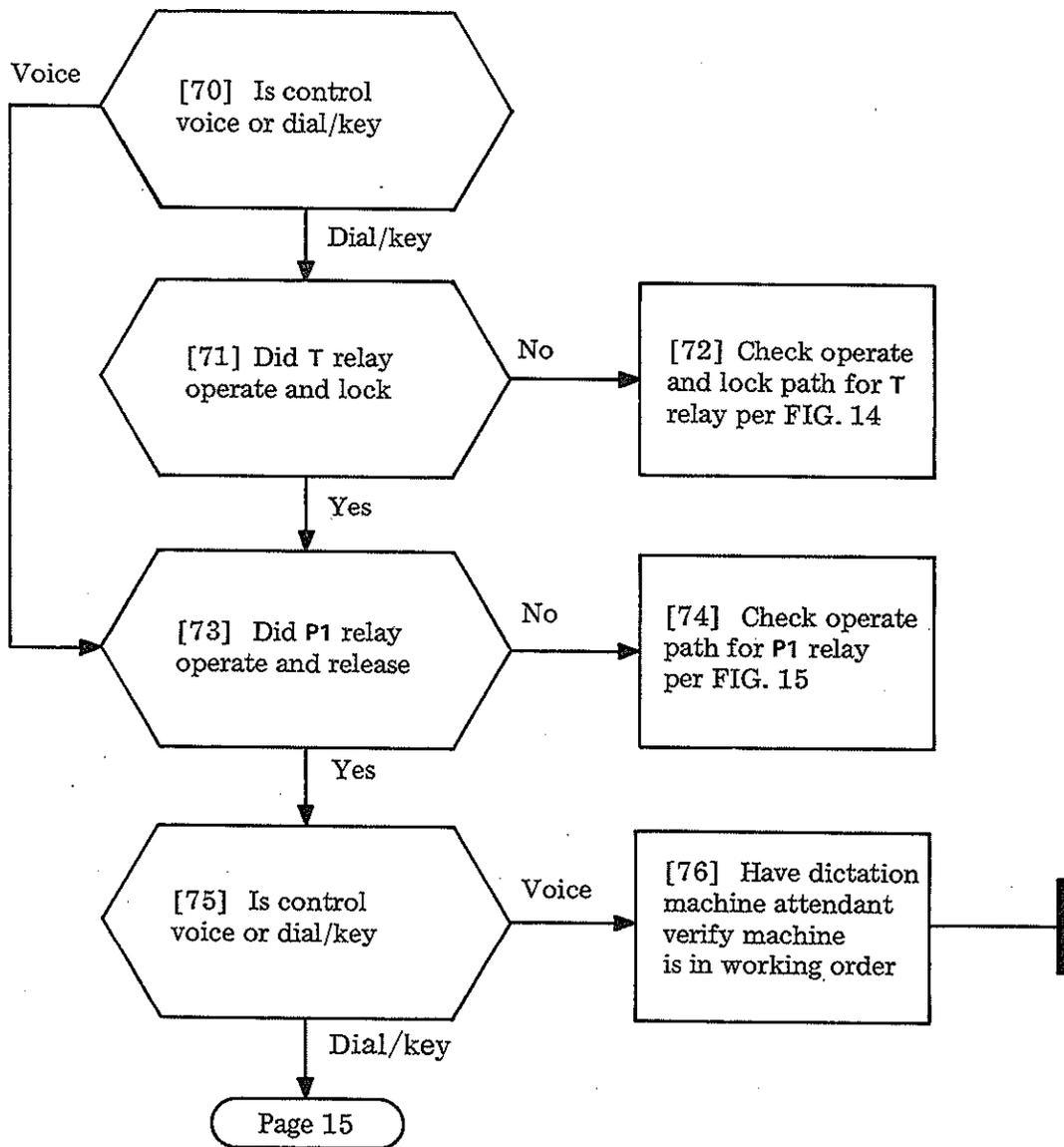


FIG. 14

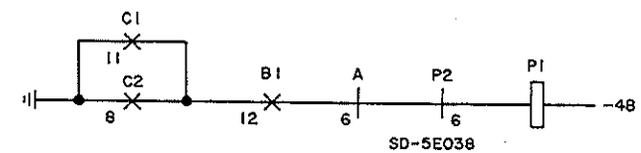


FIG. 15

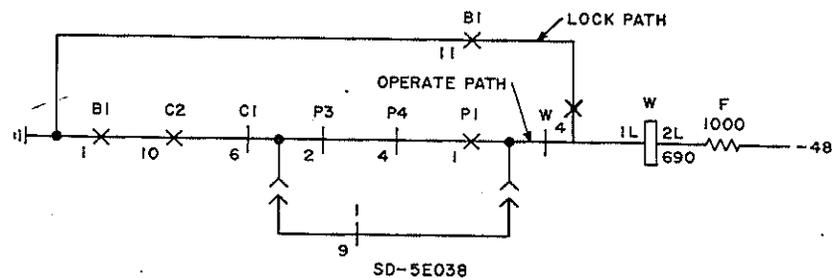
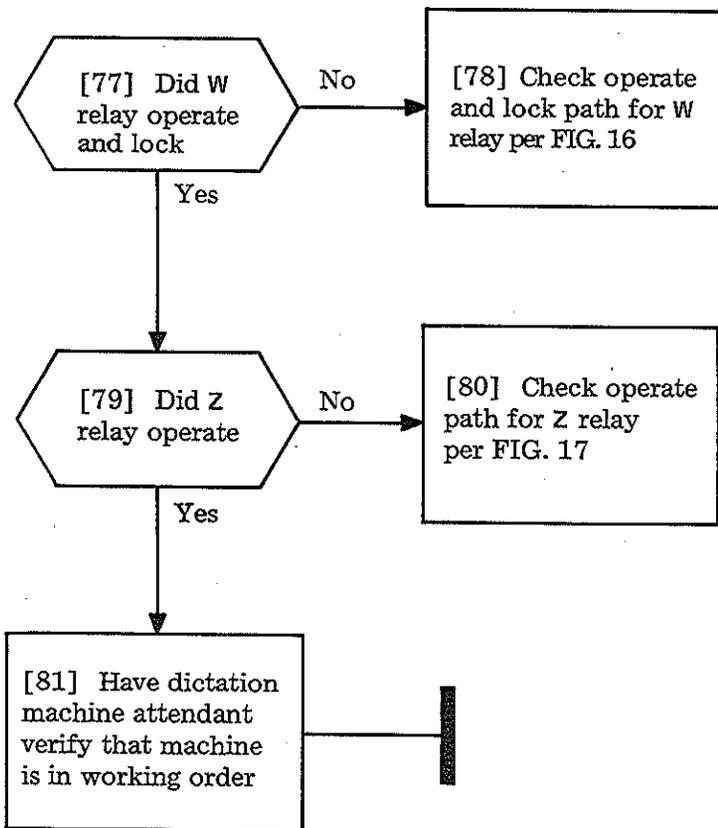


FIG. 16

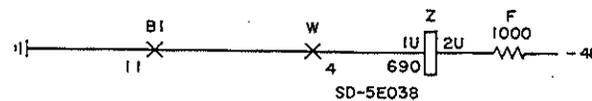


FIG. 17

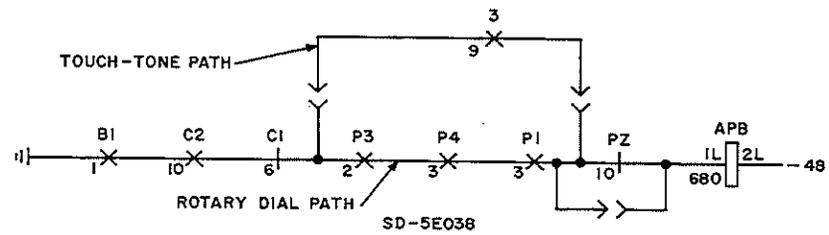
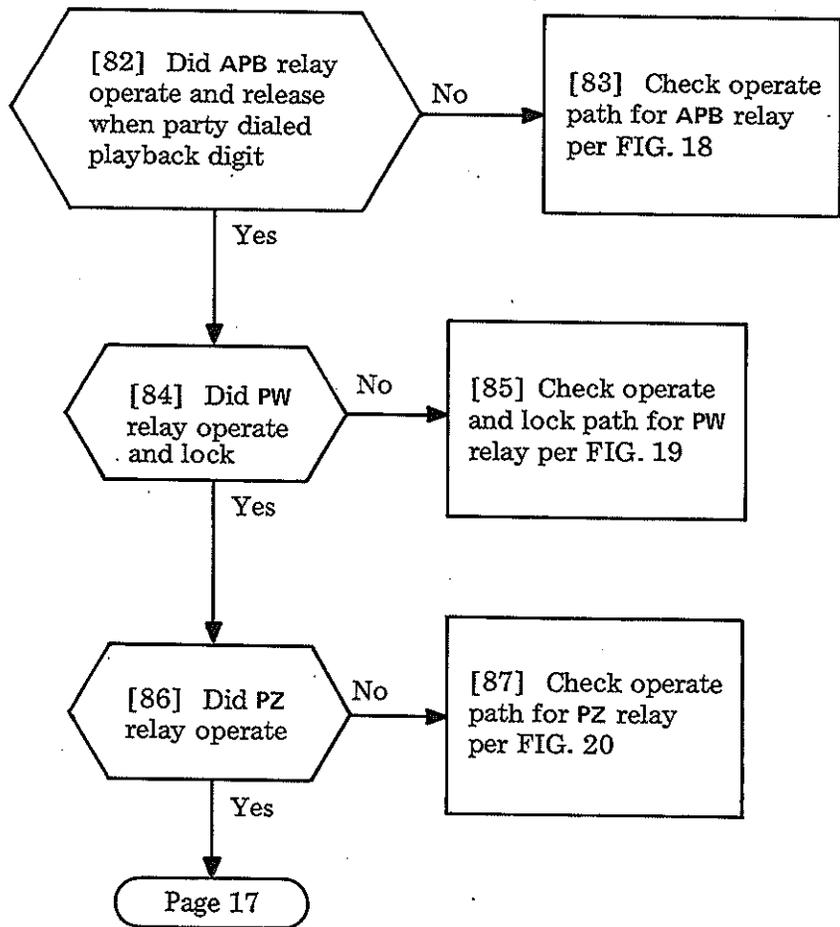


FIG. 18

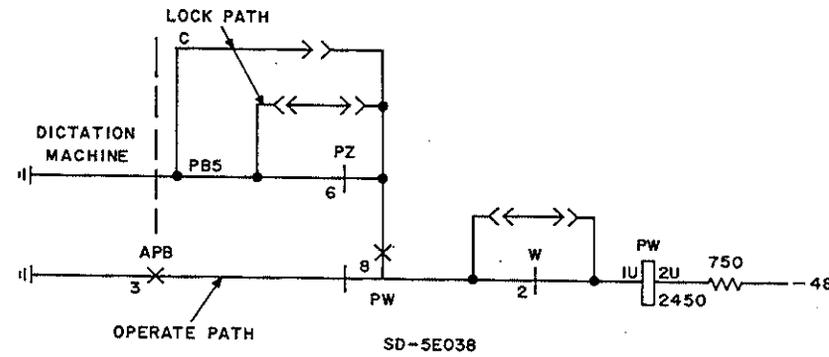


FIG. 19

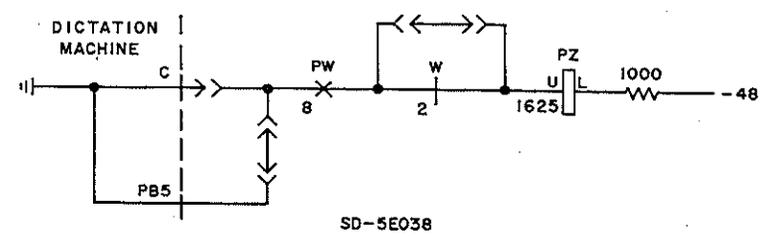


FIG. 20

| | |
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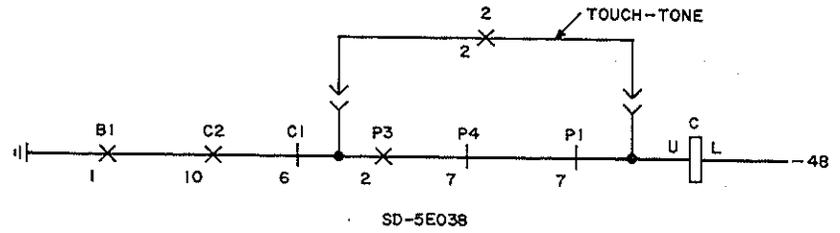
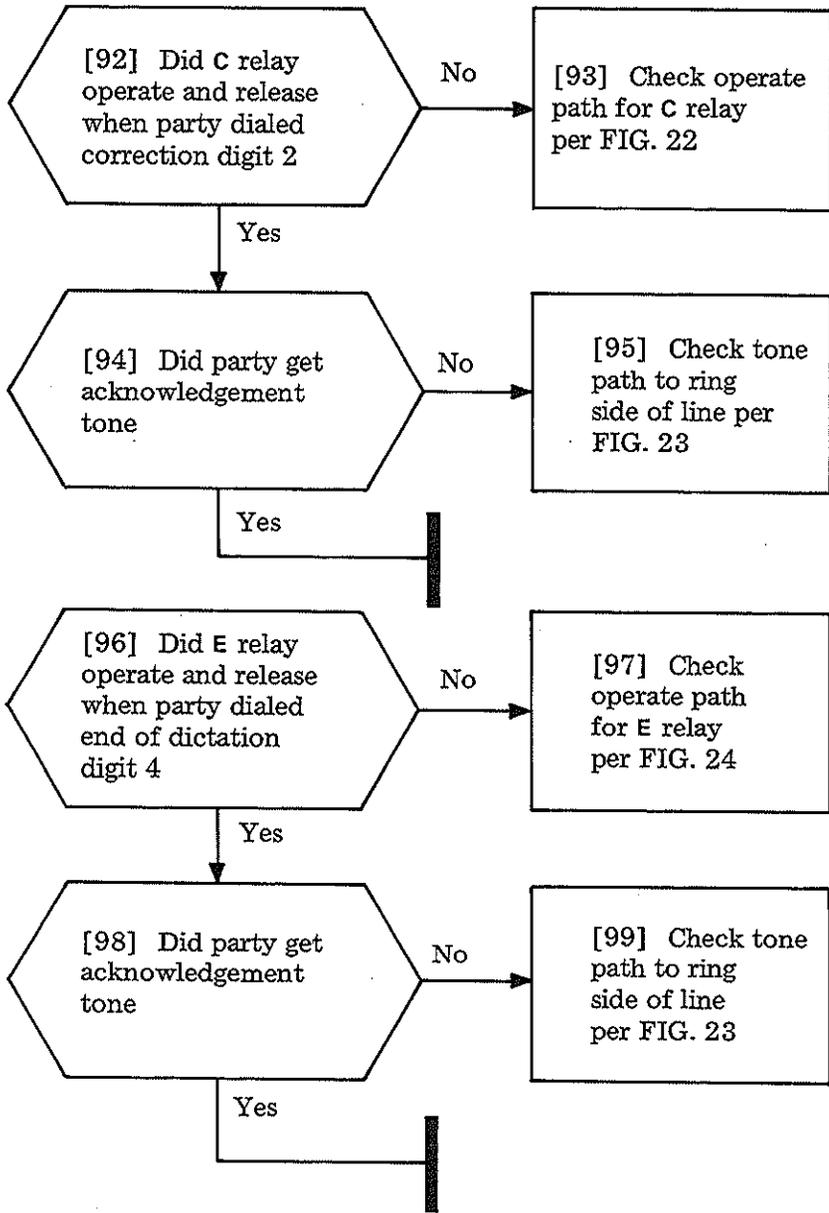


FIG. 22

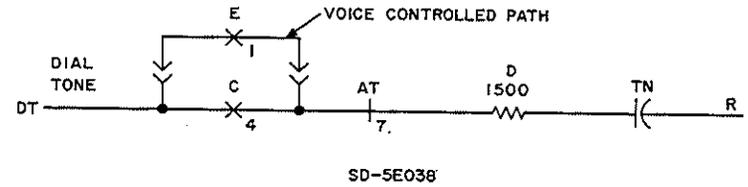


FIG. 23

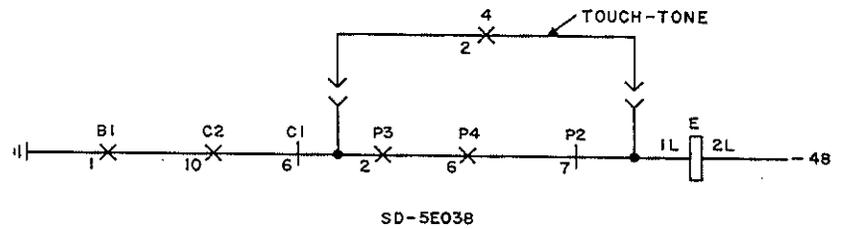


FIG. 24

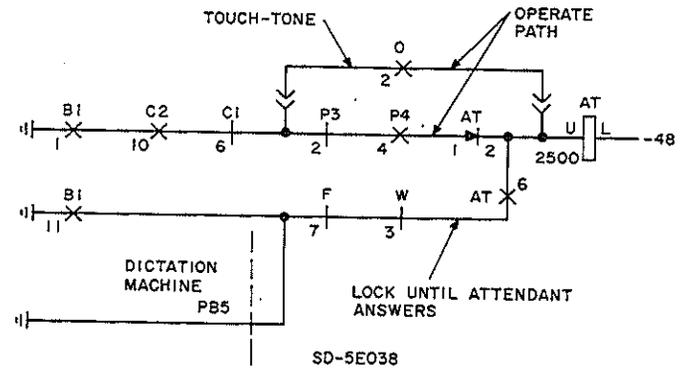
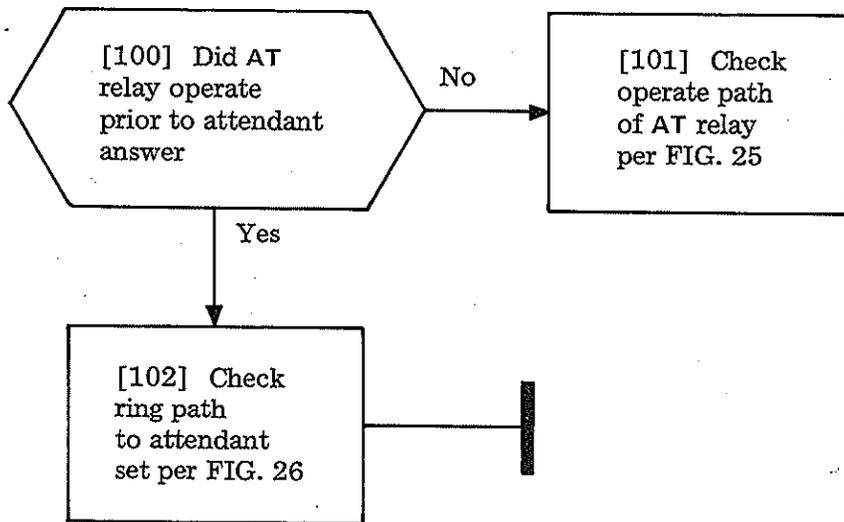


FIG. 25

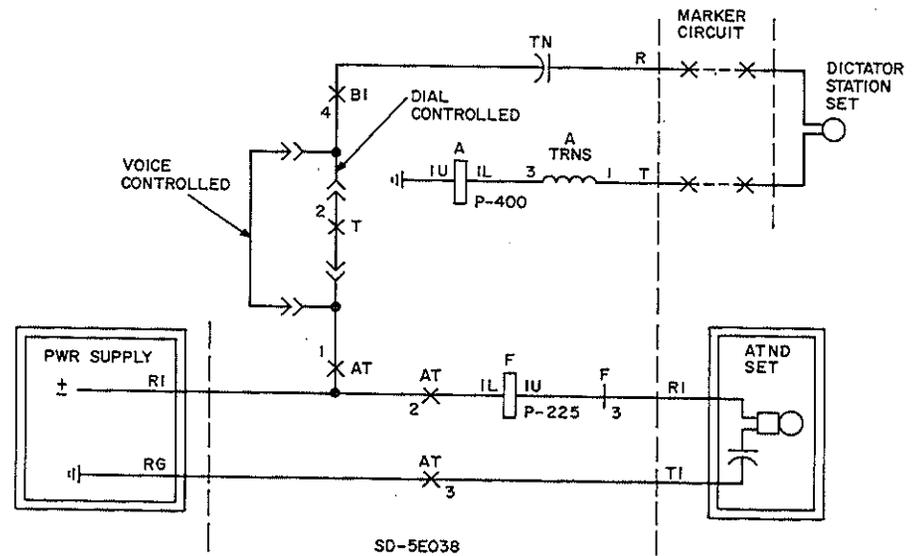


FIG. 26

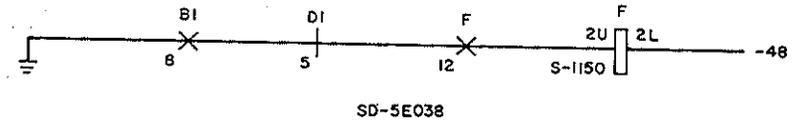
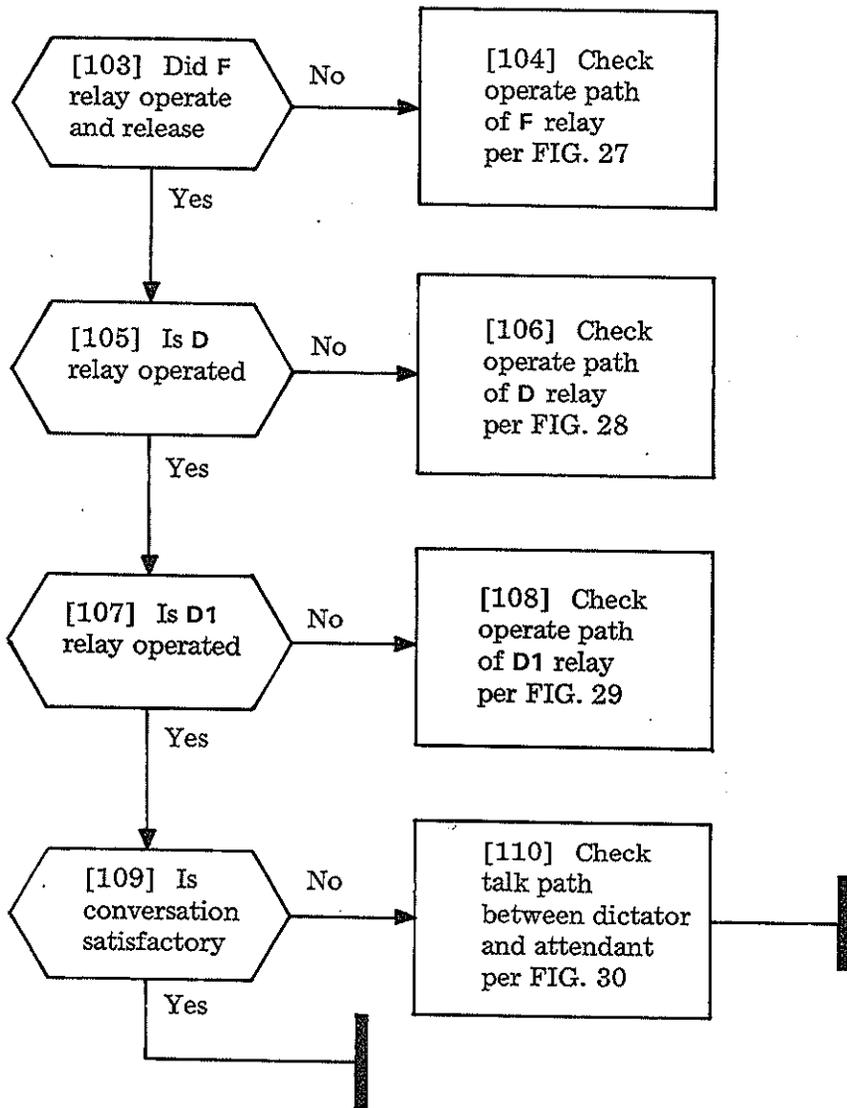


FIG. 27

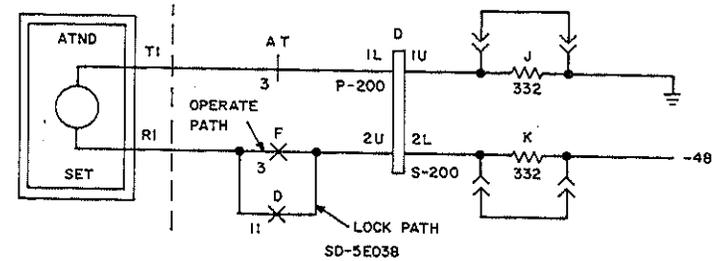


FIG. 28

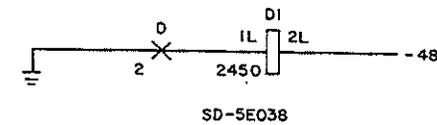


FIG. 29

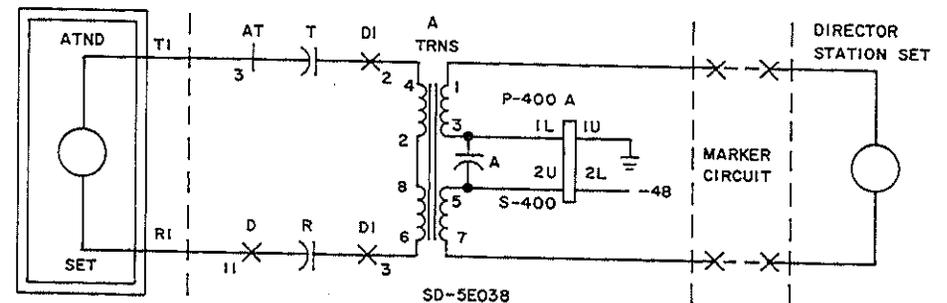


FIG. 30

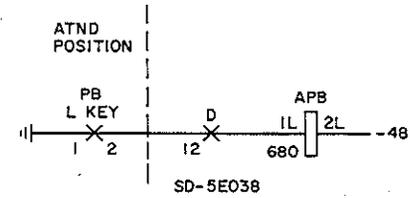
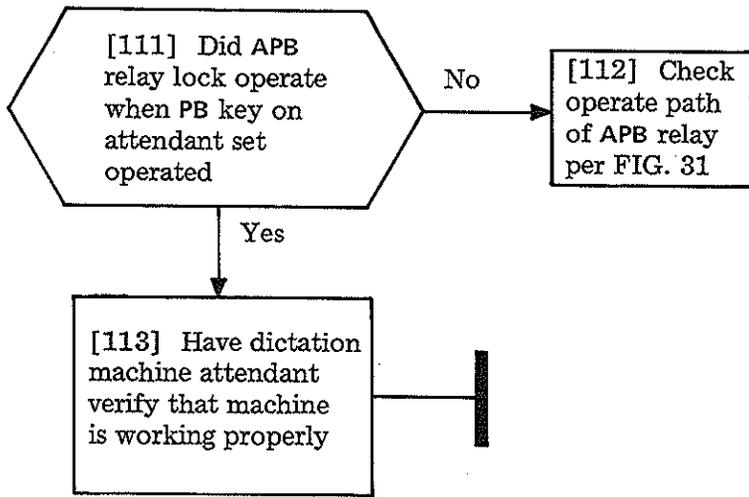


FIG. 31

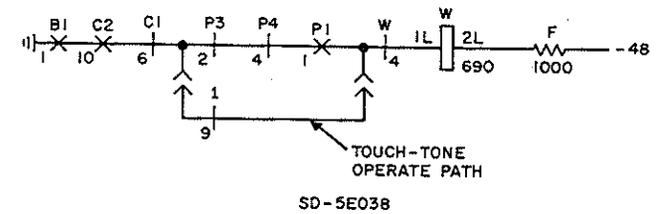
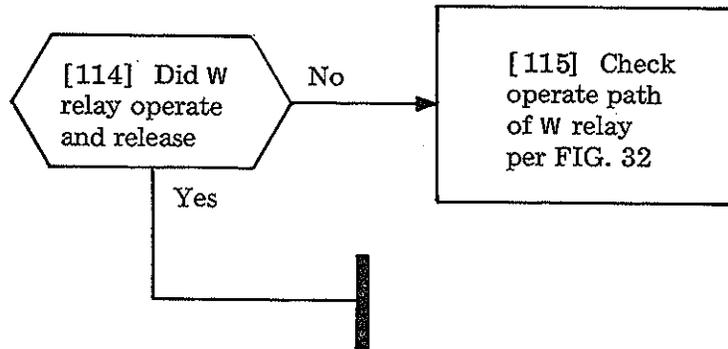
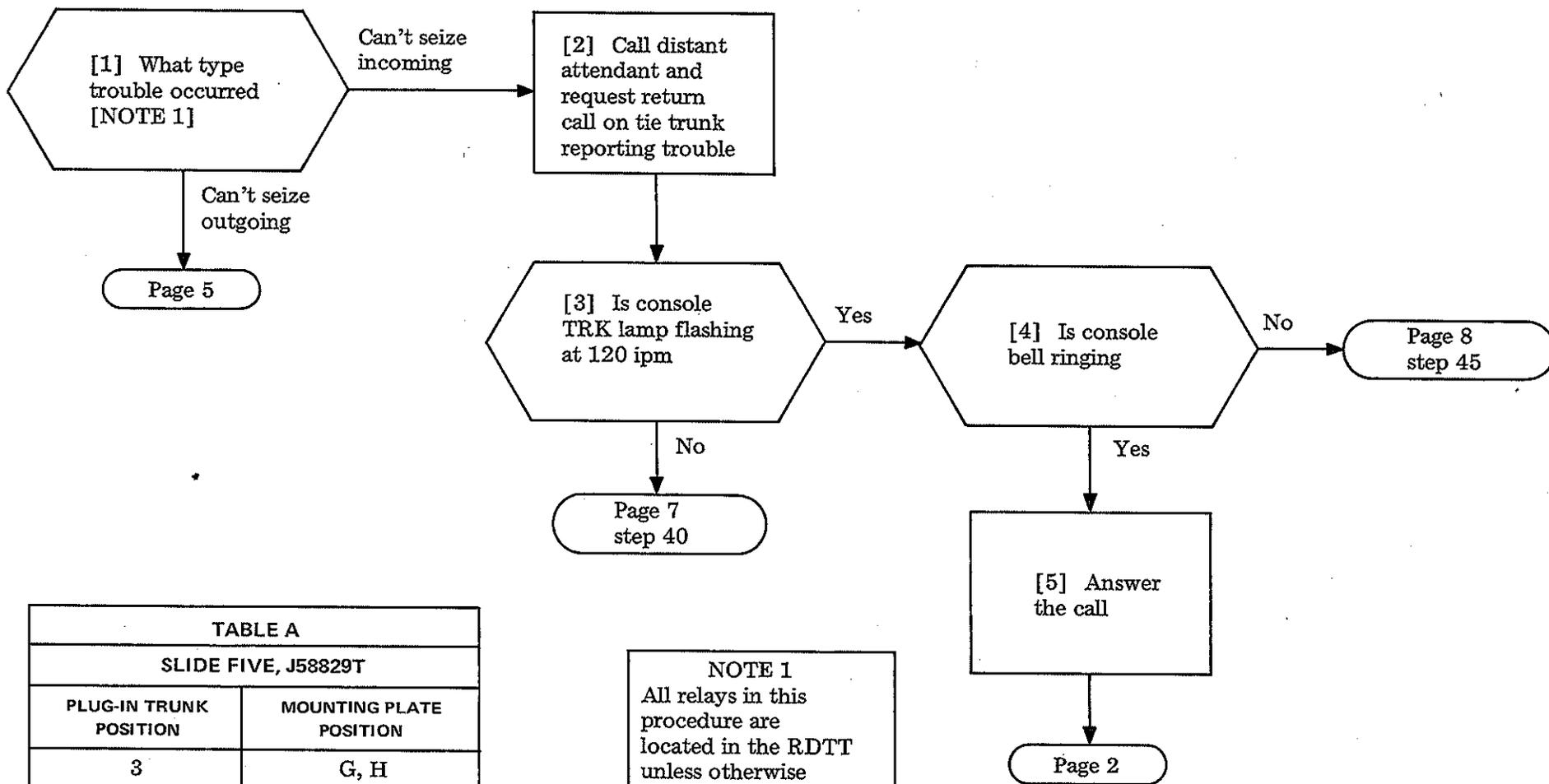


FIG. 32

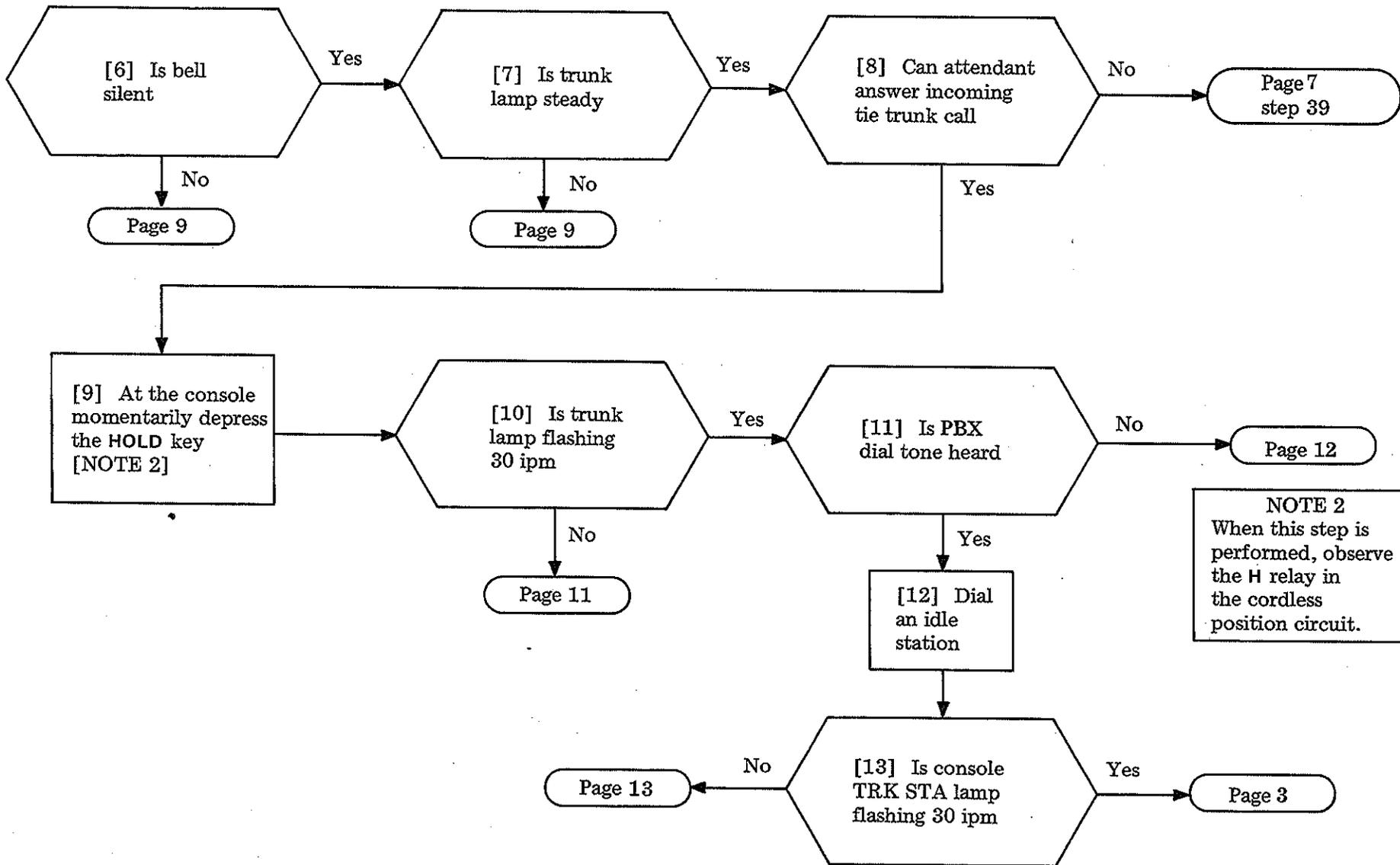


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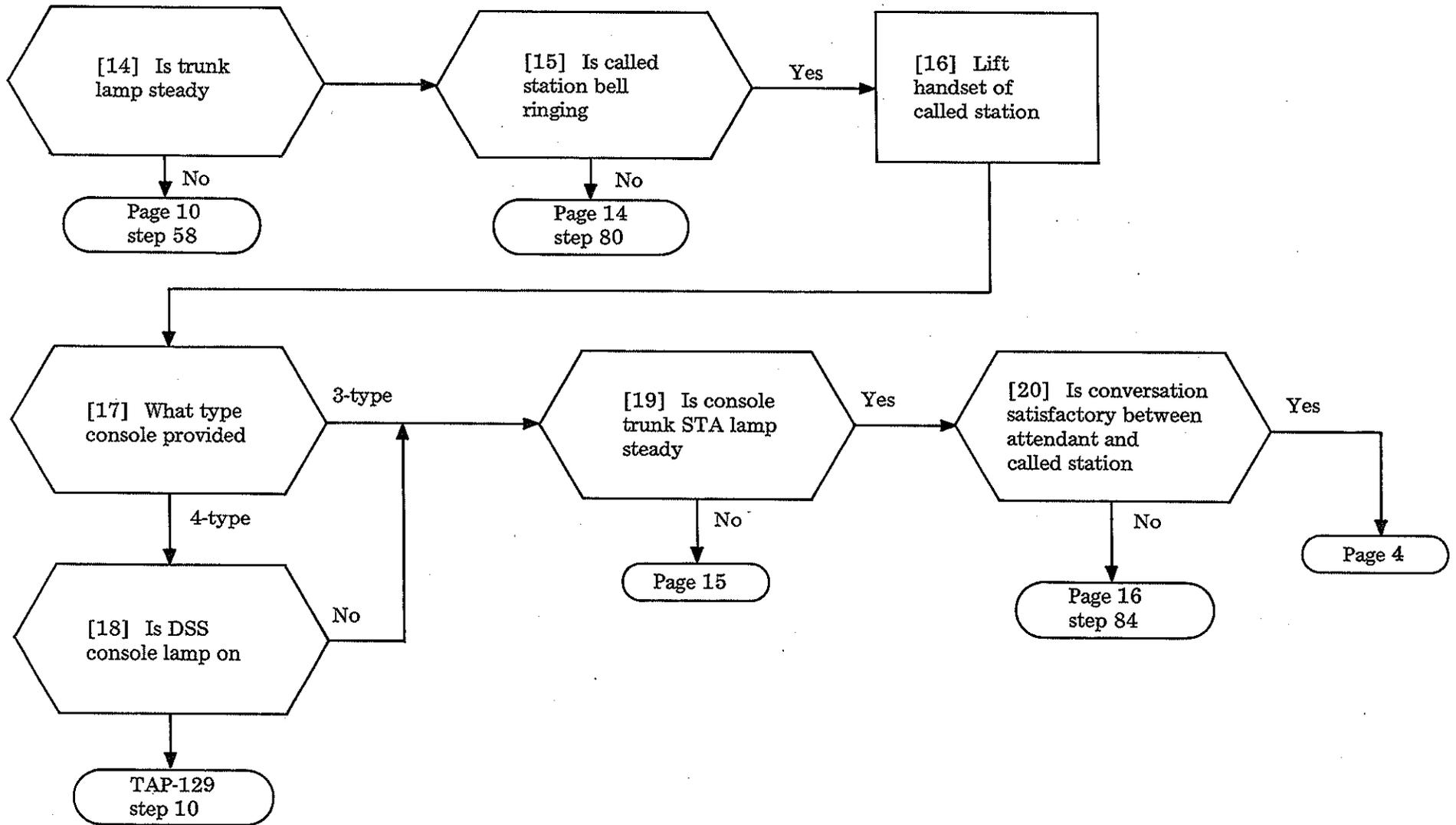
| TABLE A | |
|------------------------|-------------------------|
| SLIDE FIVE, J58829T | |
| PLUG-IN TRUNK POSITION | MOUNTING PLATE POSITION |
| 3 | G, H |
| 4 | K, L |
| 8 | T, U |
| 9 | W, X |

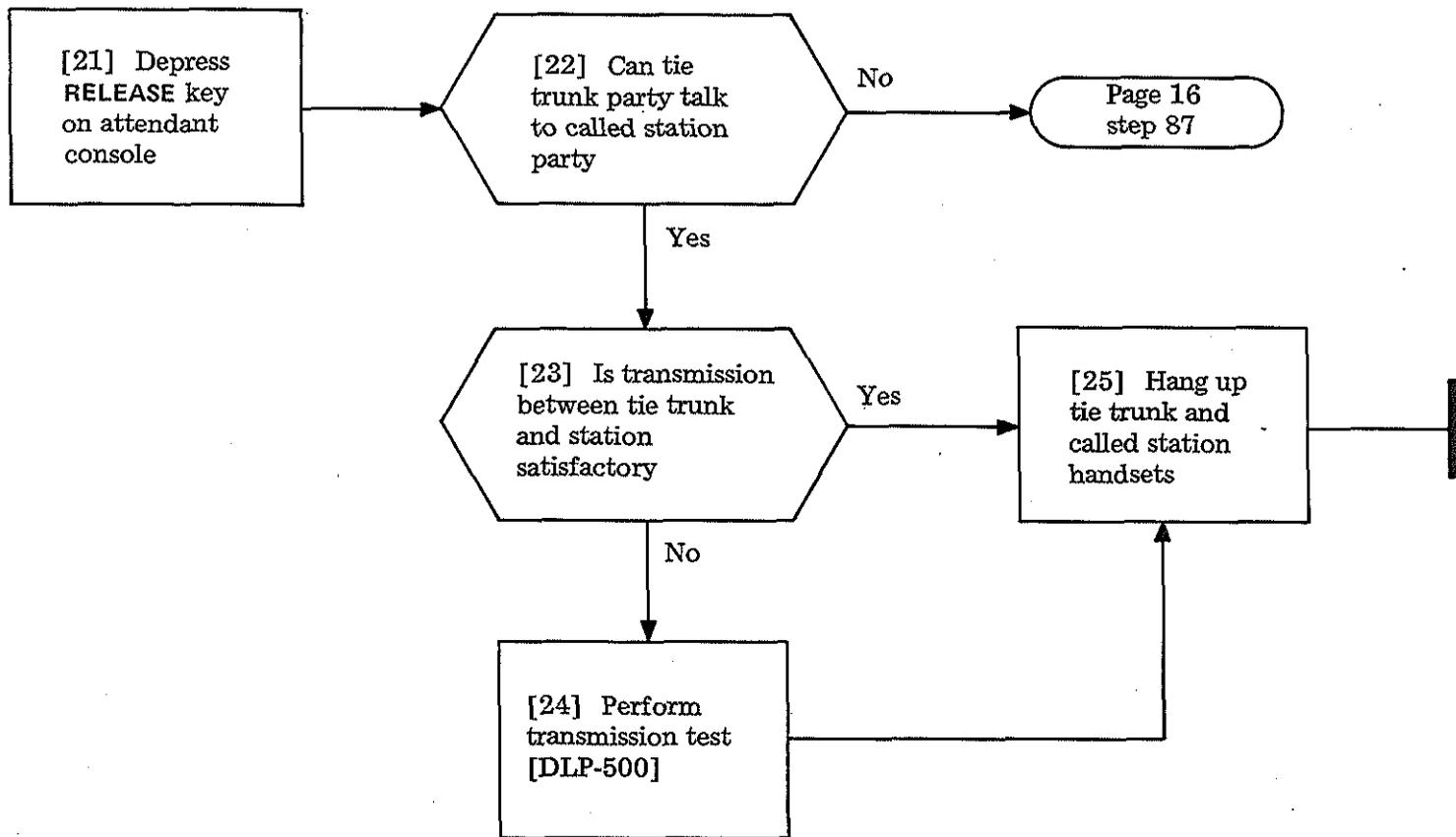
NOTE 1
All relays in this procedure are located in the RDTT unless otherwise marked. See TABLE A.

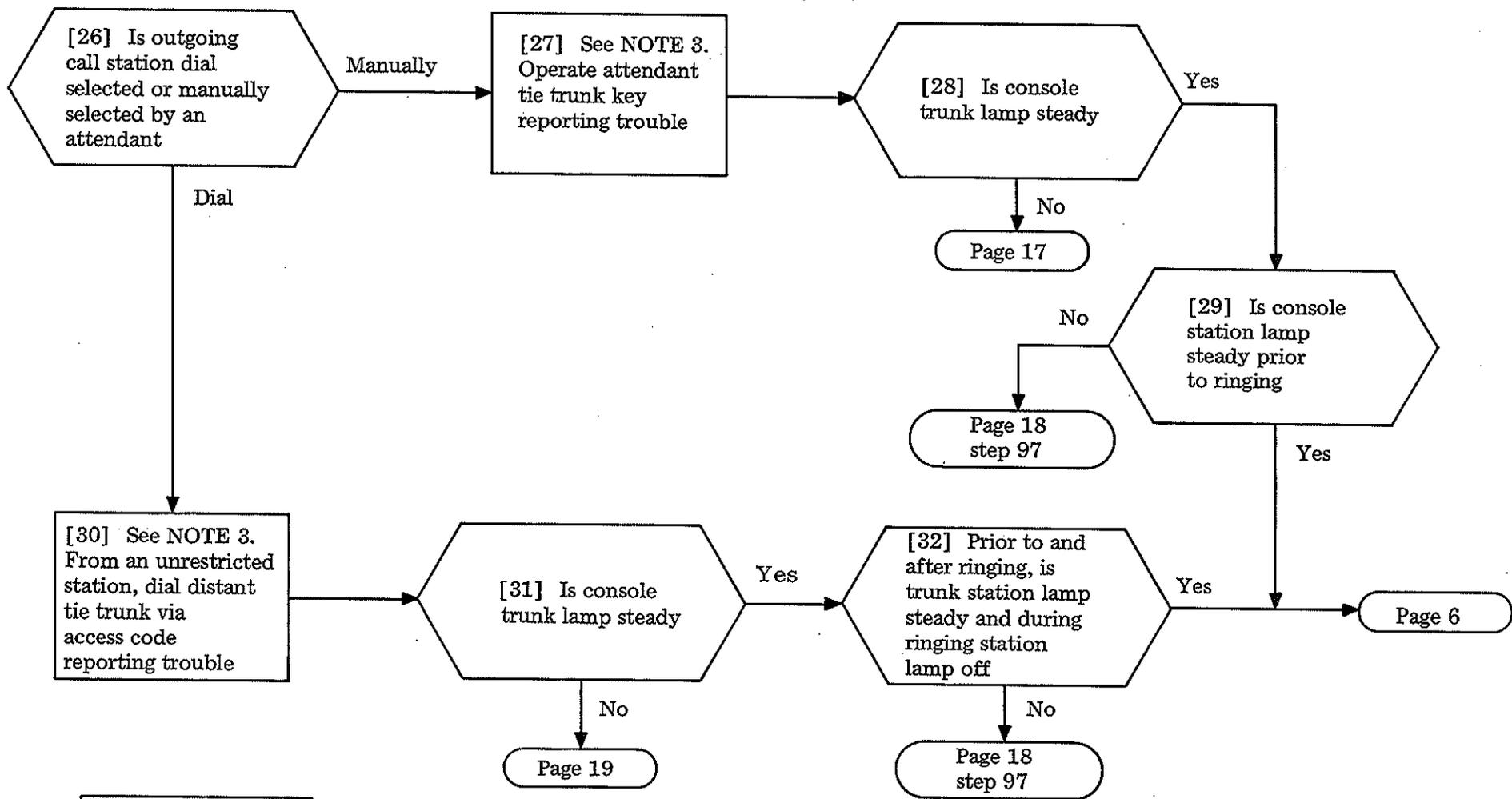


CLEAR RINGDOWN TIE TRUNK (RD TT) TROUBLE (SD-65756)

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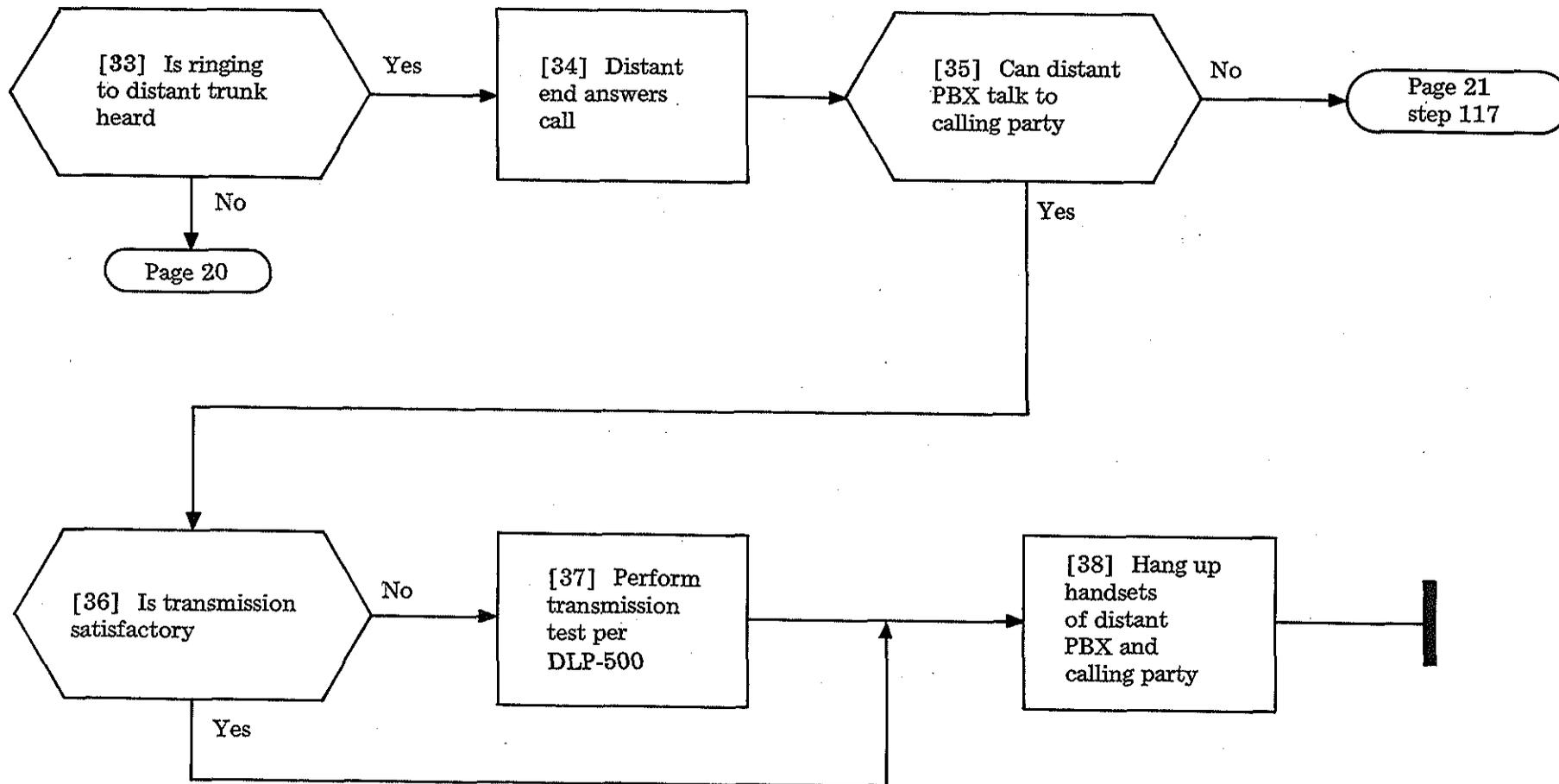






NOTE 3
 While performing this step, observe relays T, T1, TC, S1 and SR in RDTT.

| | |
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[39] Check operate path of talk circuit per FIG. 1.

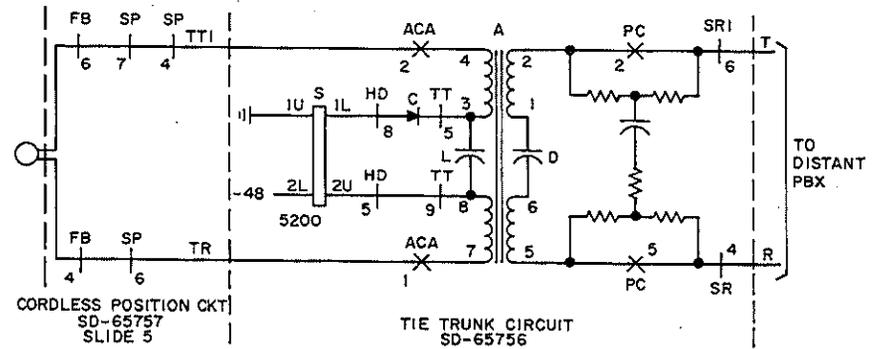
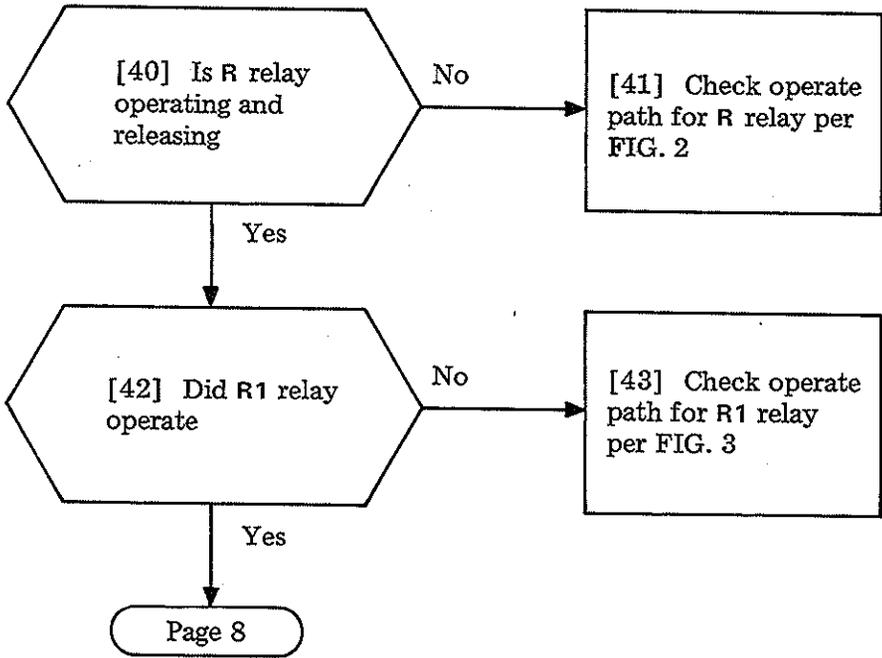


FIG. 1

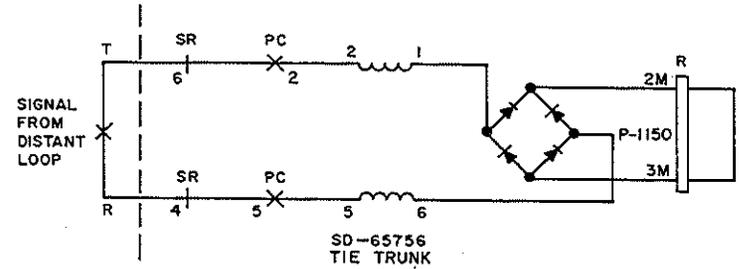


FIG. 2

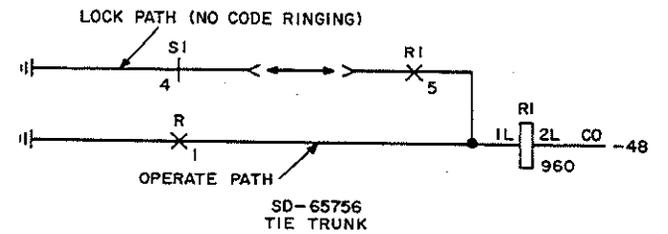


FIG. 3

| | |
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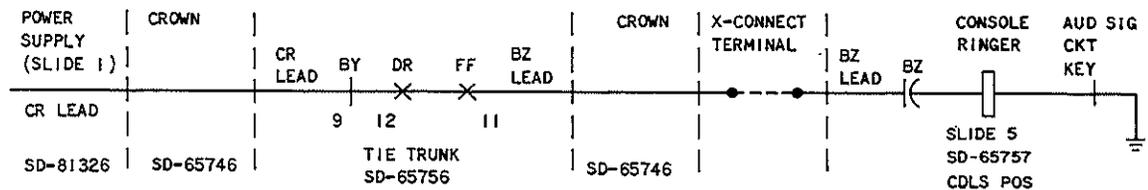
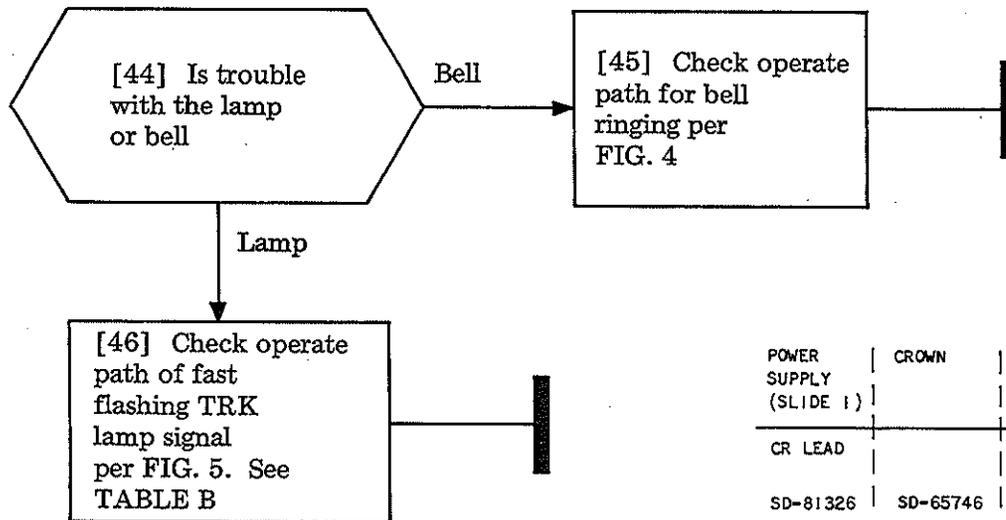


FIG. 4

| TABLE B | | | | |
|------------------------------------|------------------|---------|-----|-------------|
| LEADS FROM INTERRUPTER TO CO TRUNK | | SLIDE 5 | | LAMP SIGNAL |
| 0, 2, 4 6, 8 | 1, 3, 5, 7, 9 | PLUG | PIN | |
| | FF1 | | | 120 ipm |
| FF2 | | | | |

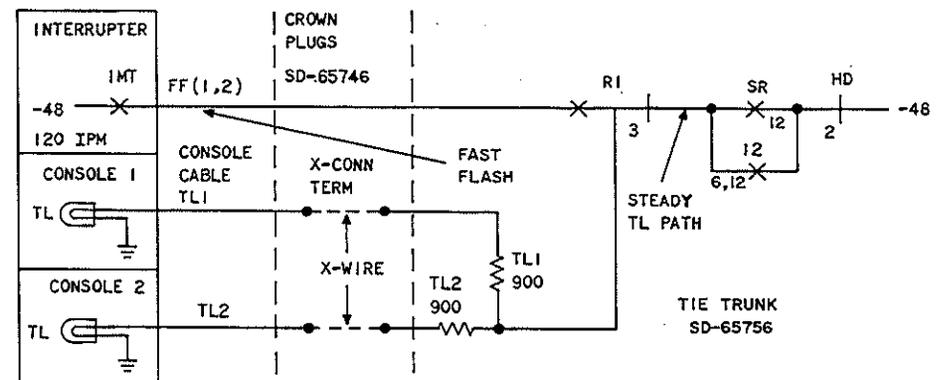


FIG. 5

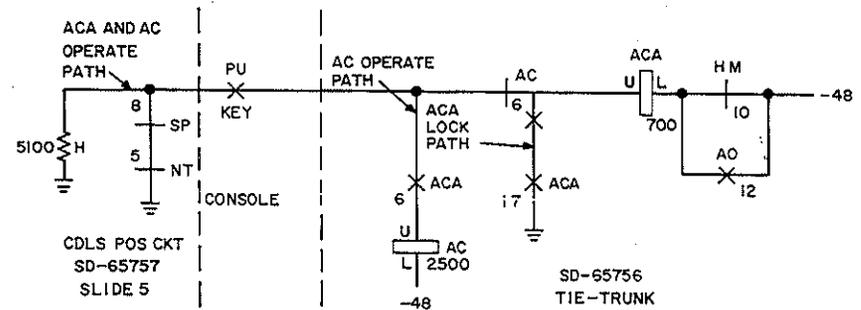
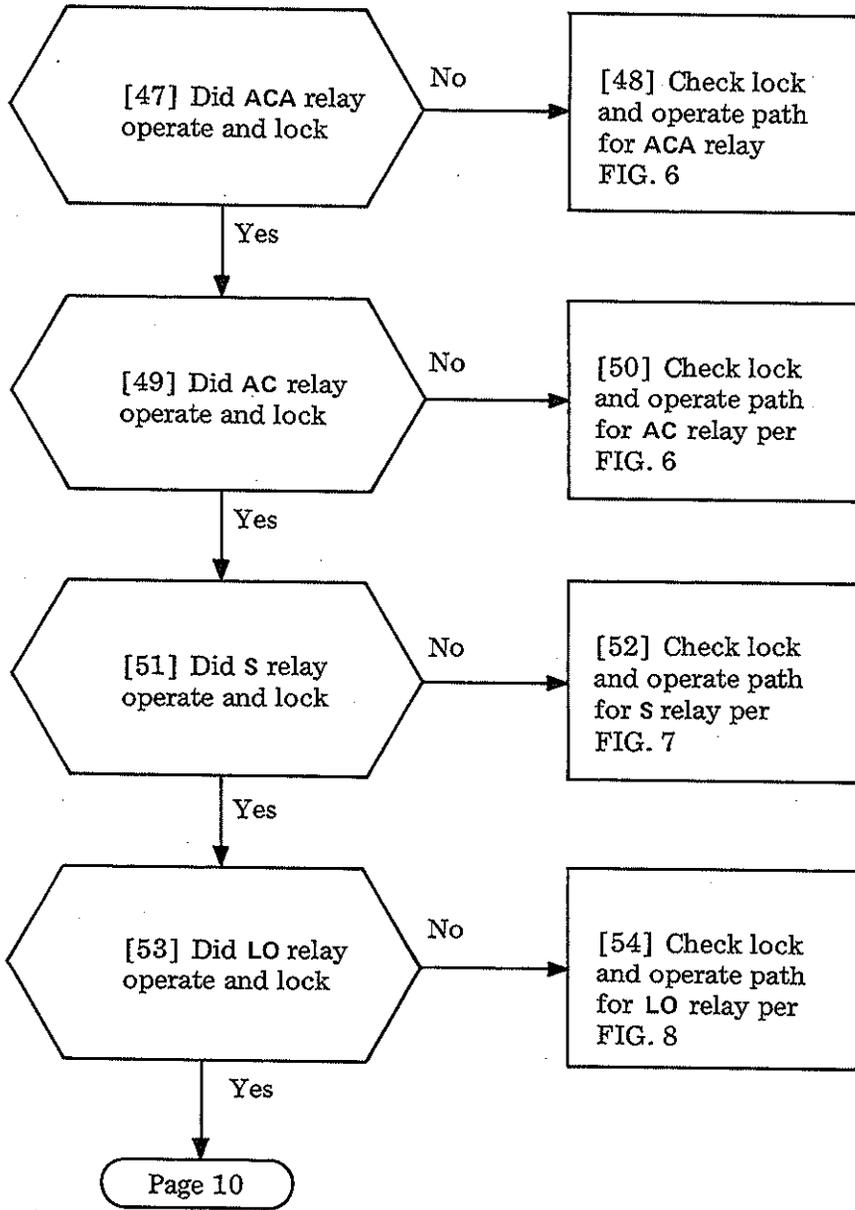


FIG. 6

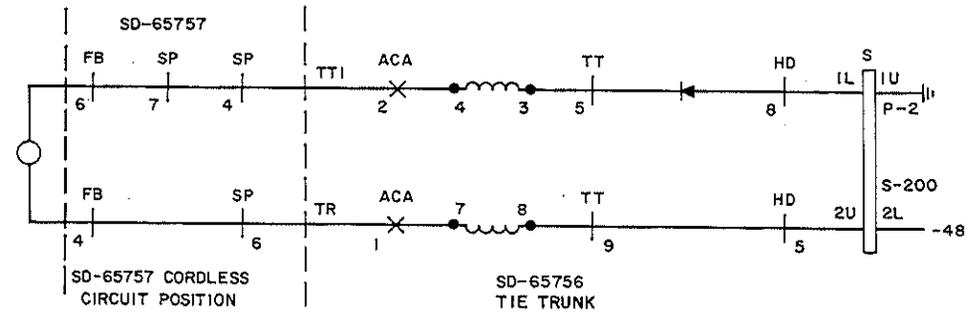


FIG. 7

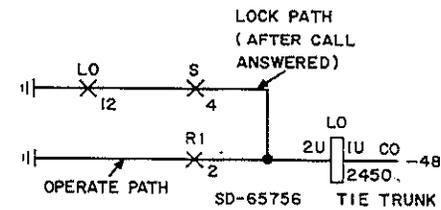


FIG. 8

| | |
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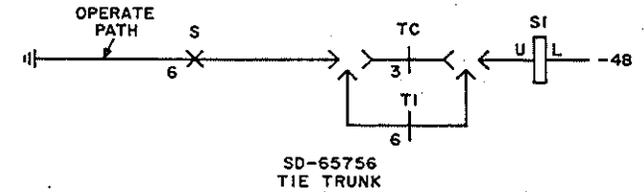
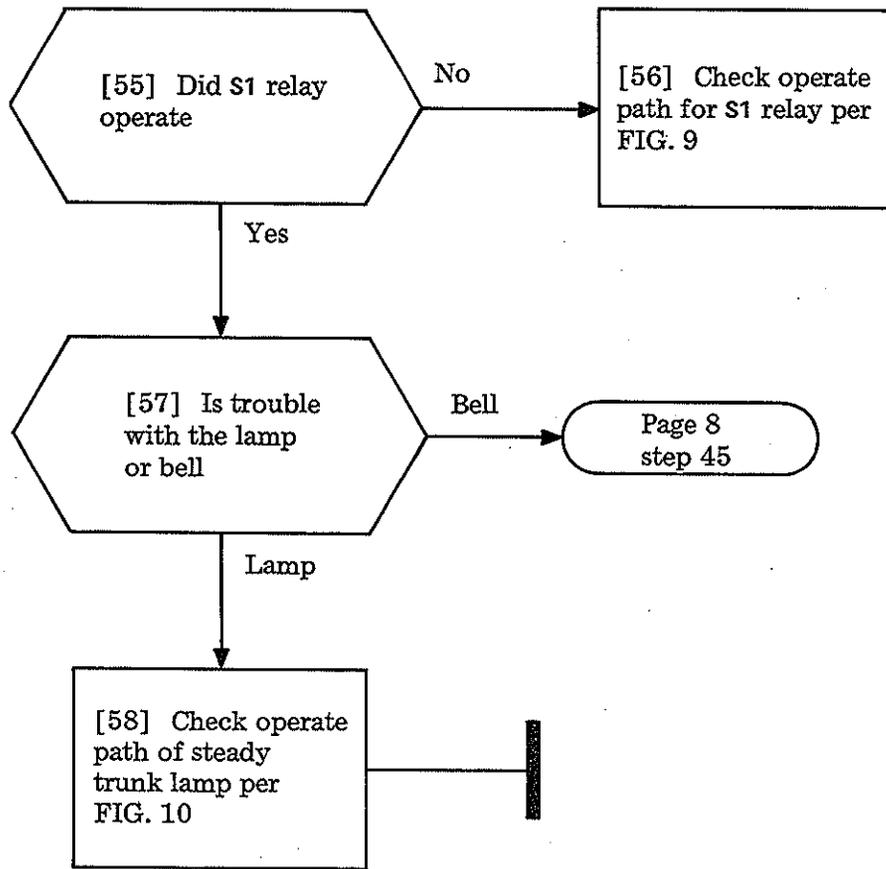


FIG. 9

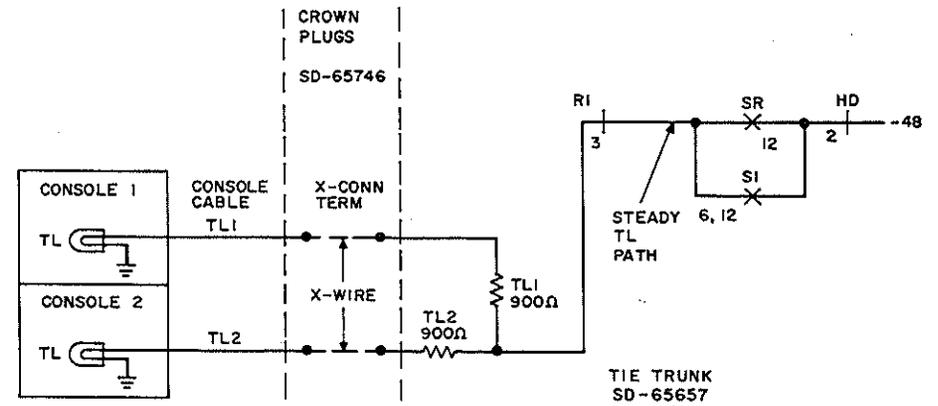
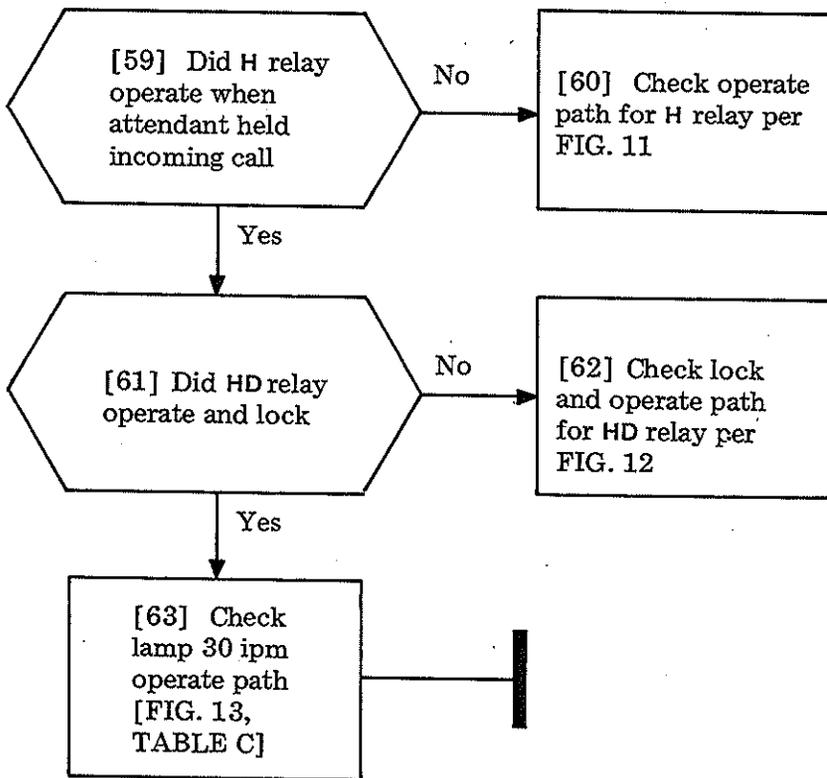


FIG. 10



| TABLE C | | | | |
|------------------------------------|---------------|---------|-----|-------------|
| LEADS FROM INTERRUPTER TO CO TRUNK | | SLIDE 5 | | LAMP SIGNAL |
| 0, 2, 4, 6, 8 | 1, 3, 5, 7, 9 | PLUG | PIN | |
| | SF1 | C | 0 | 30 ipm |
| SF2 | | F | 1 | |

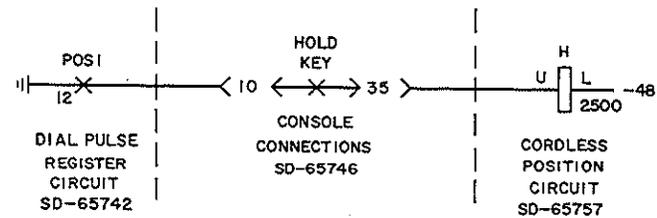


FIG. 11

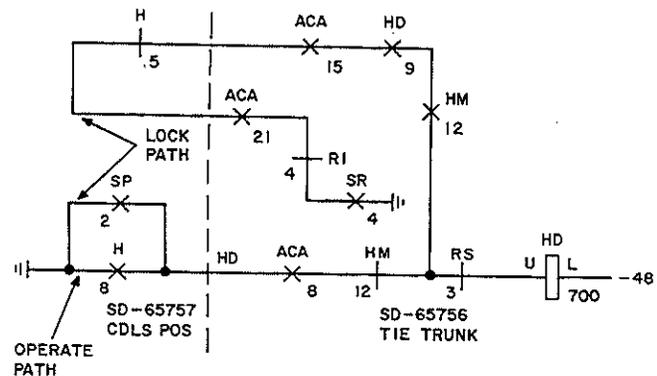


FIG. 12

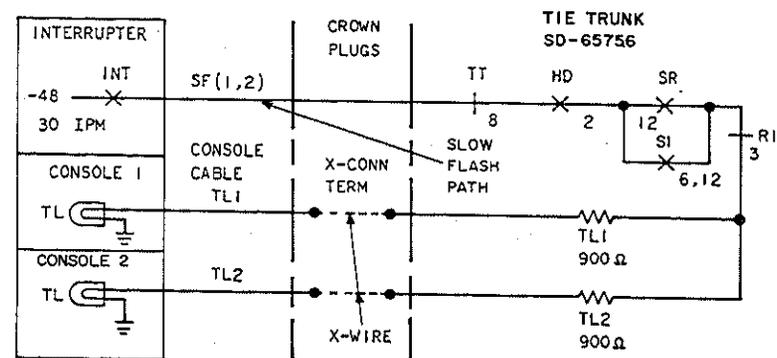


FIG. 13

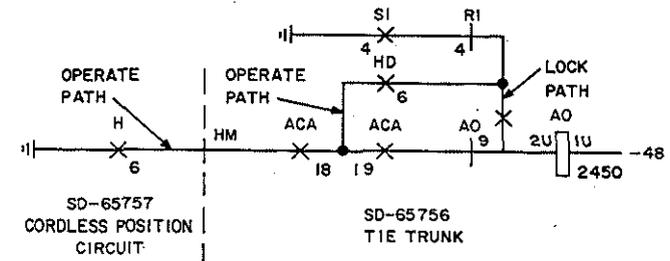
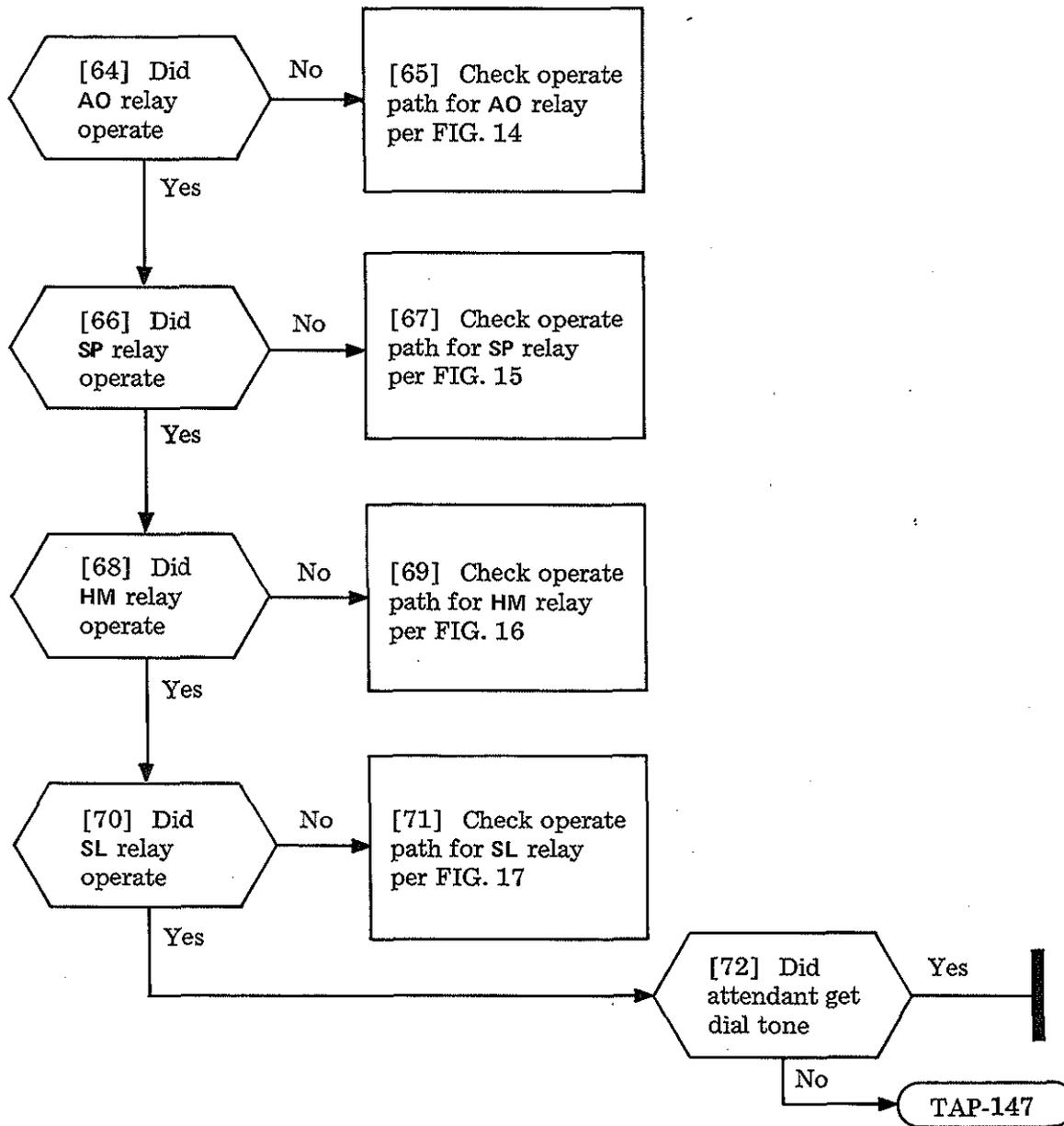


FIG. 14

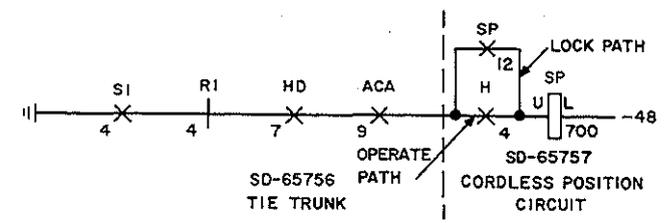


FIG. 15

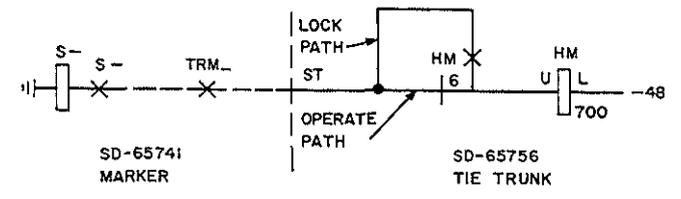


FIG. 16

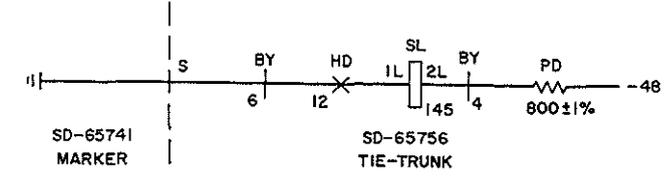


FIG. 17

CLEAR RINGDOWN TIE TRUNK (RDTT) TROUBLE (SD-65756)

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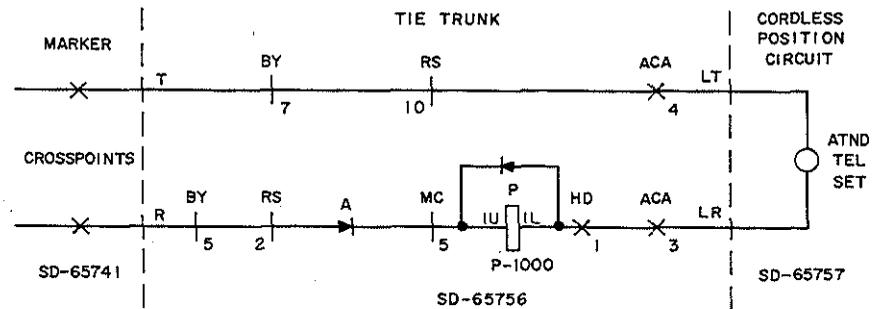
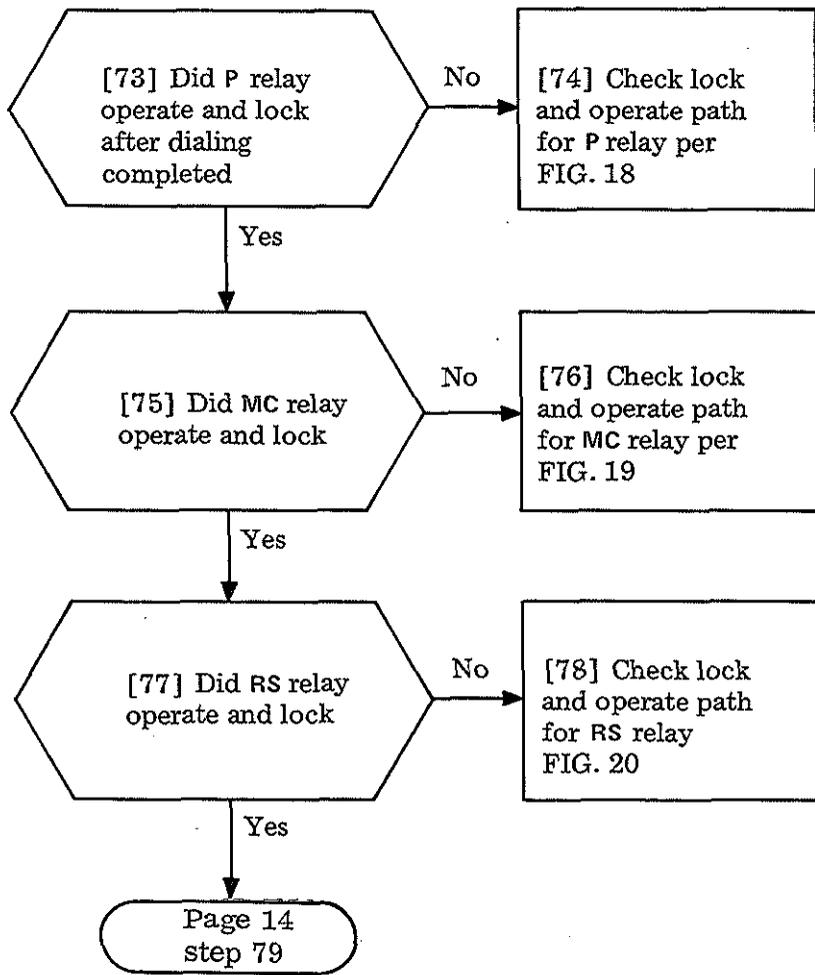


FIG. 18

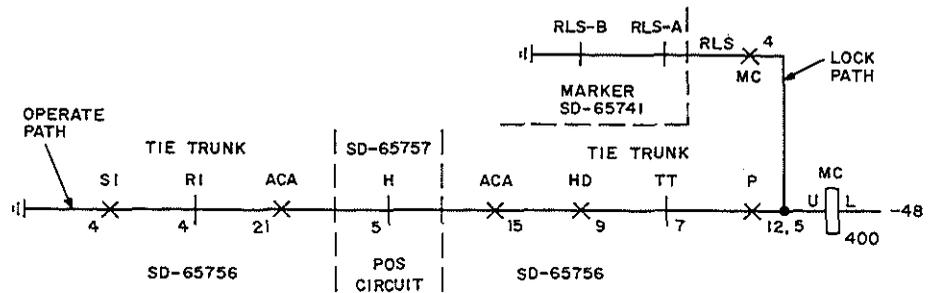


FIG. 19

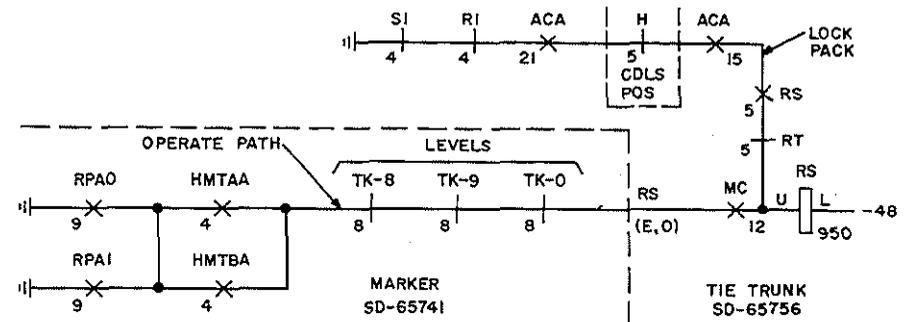


FIG. 20

[79] Check operate path of STA lamp 30 ipm signal per FIG. 21

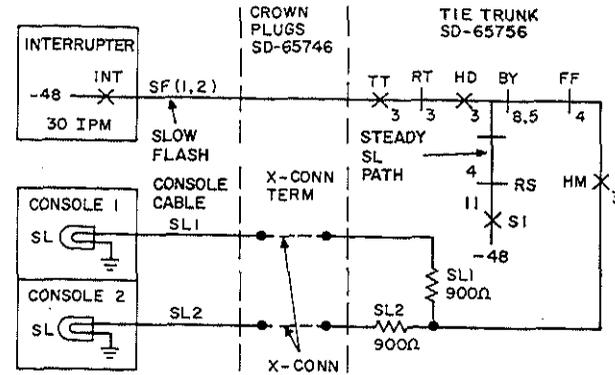


FIG. 21

[80] Check operate path for called station bell per FIG. 22

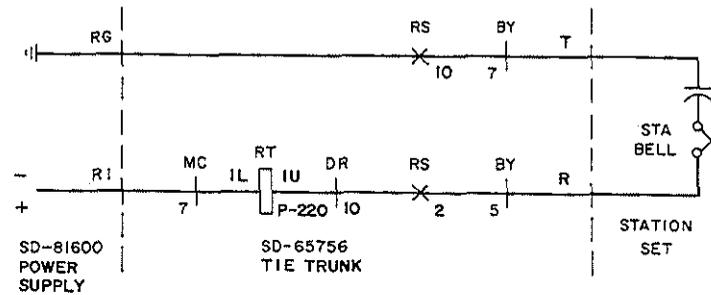


FIG. 22

| | |
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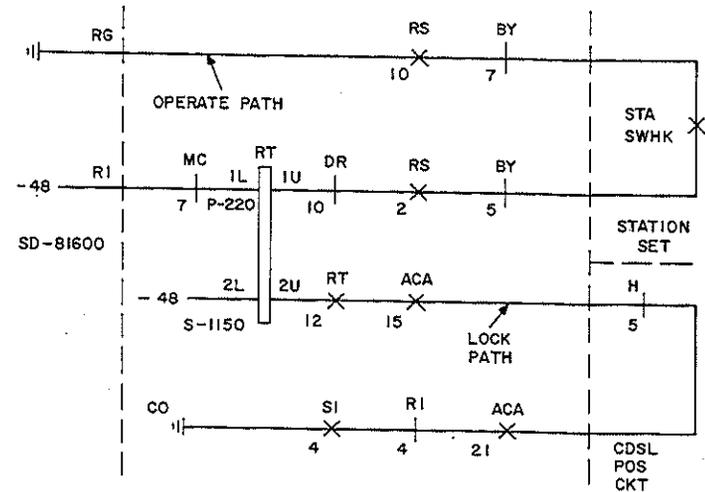
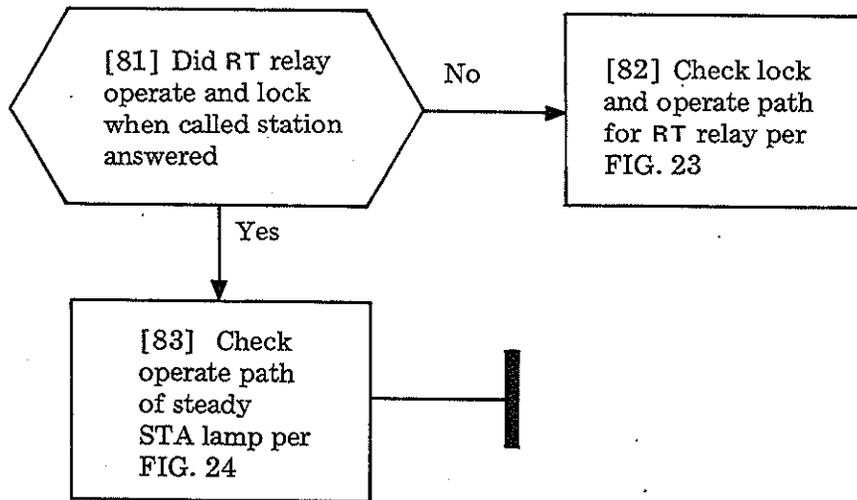


FIG. 23

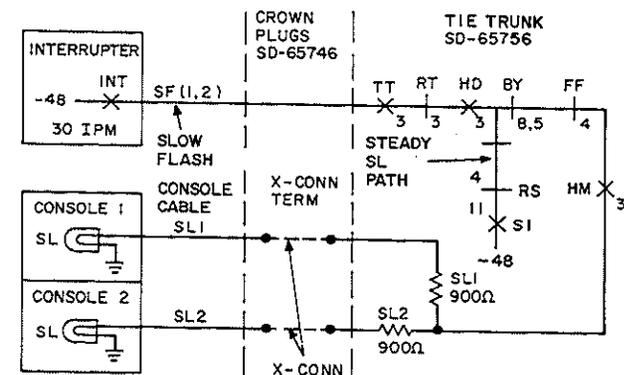


FIG. 24

[96] Check operate path of steady trunk lamp per FIG. 31

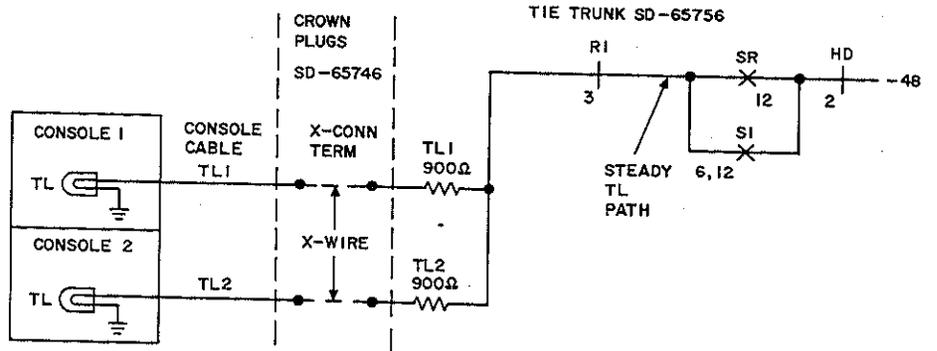


FIG. 31

[97] Check operate path of steady station lamp per FIG. 32

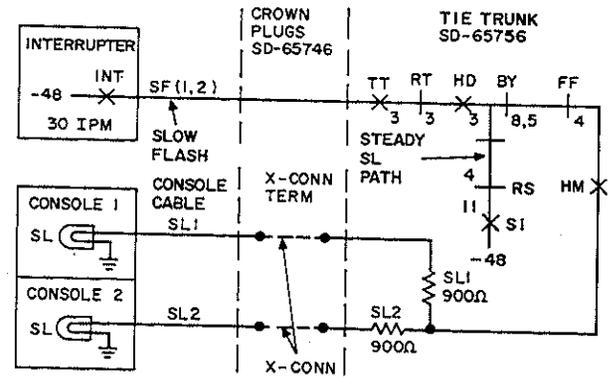


FIG. 32

CLEAR RINGDOWN TIE TRUNK (RD TT) TROUBLE (SD-65756)

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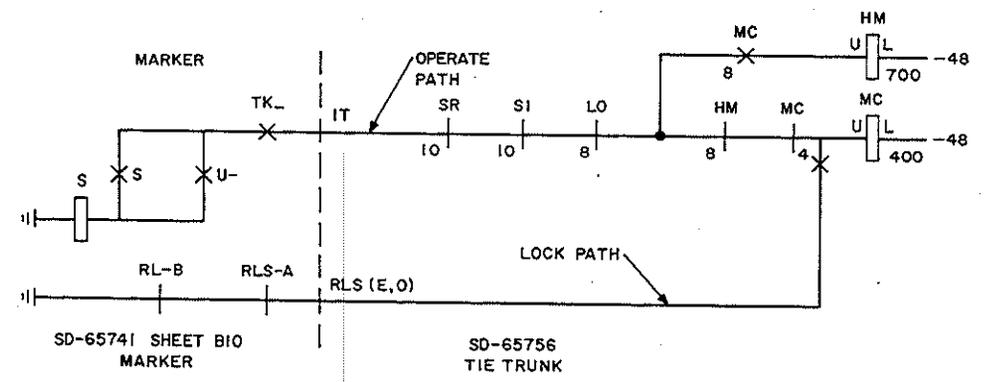
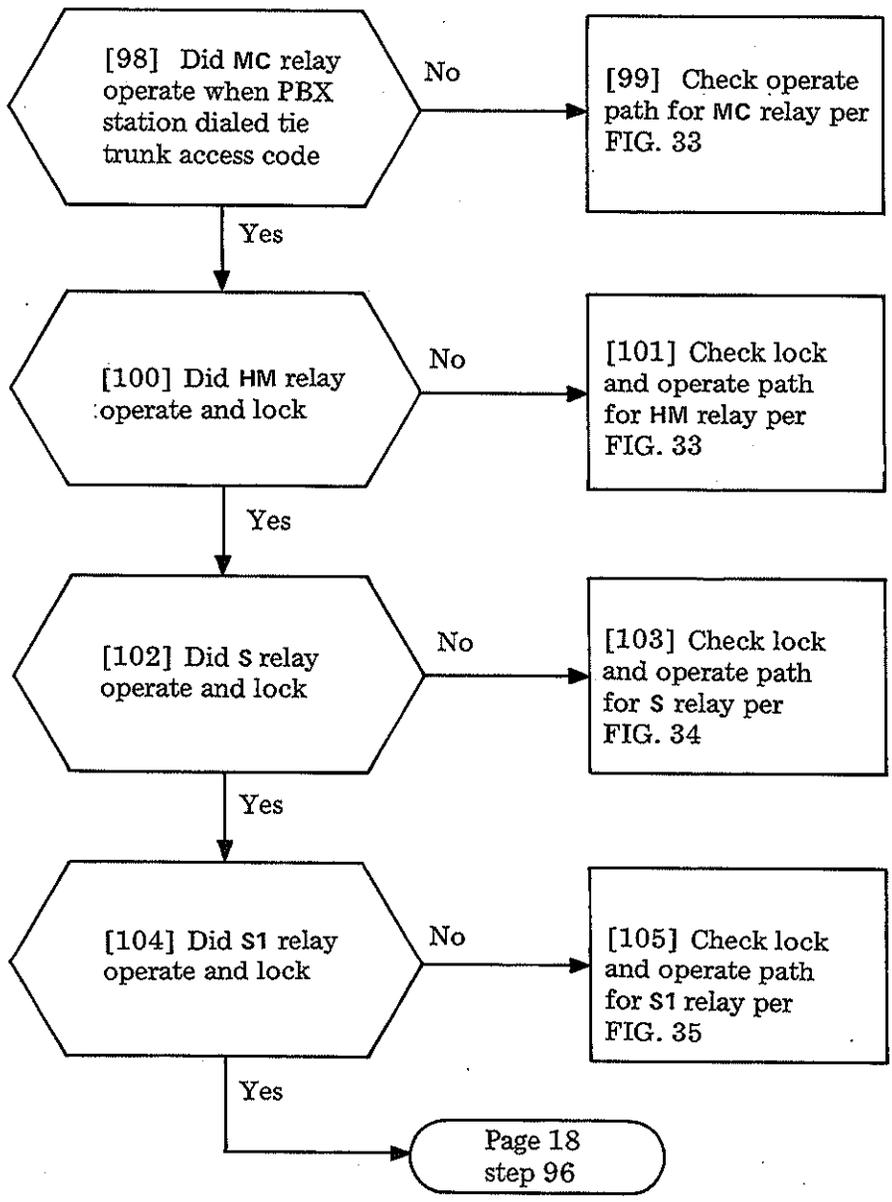


FIG. 33

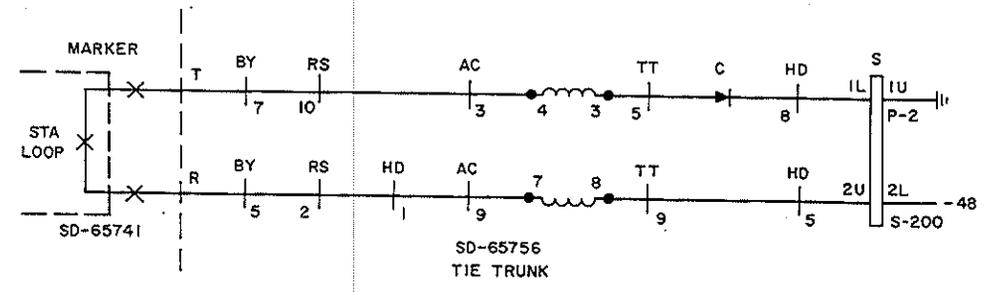


FIG. 34

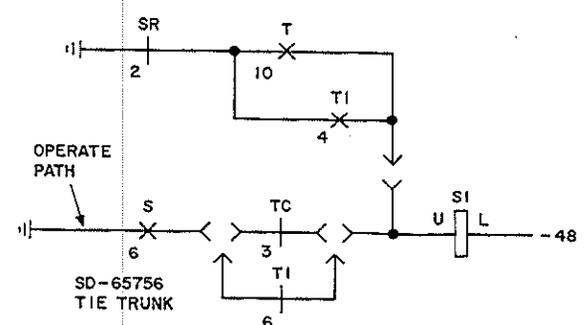


FIG. 35

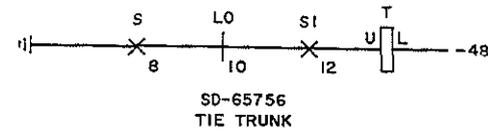
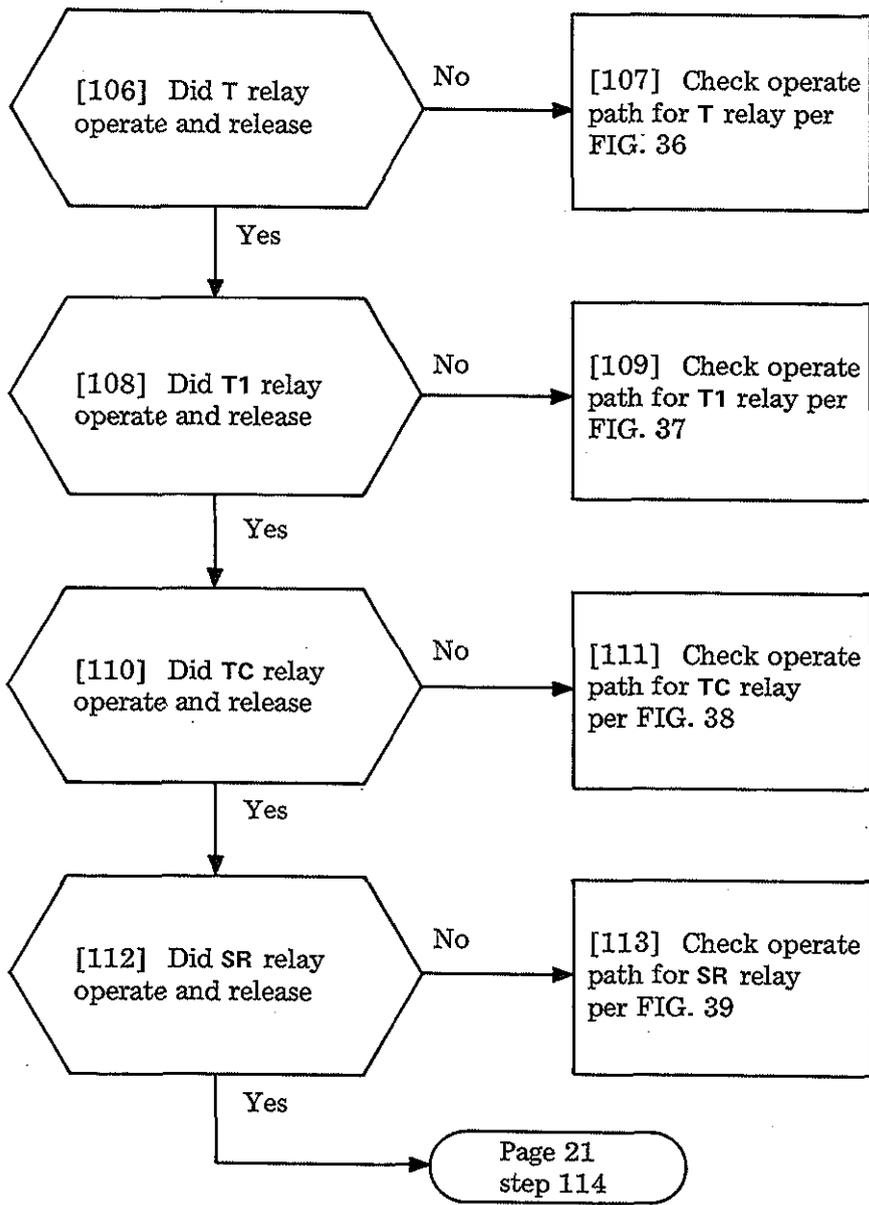


FIG. 36

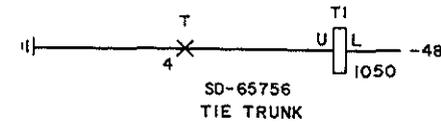


FIG. 37

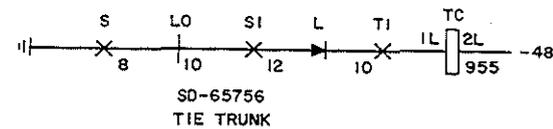


FIG. 38

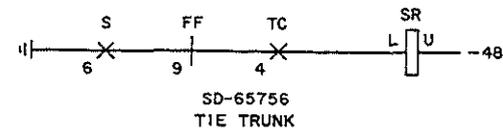


FIG. 39

| | |
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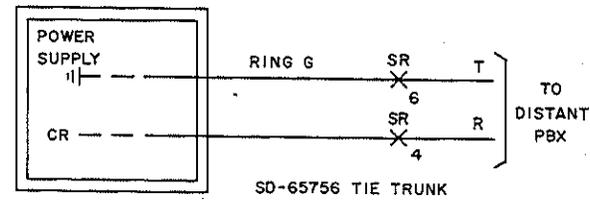
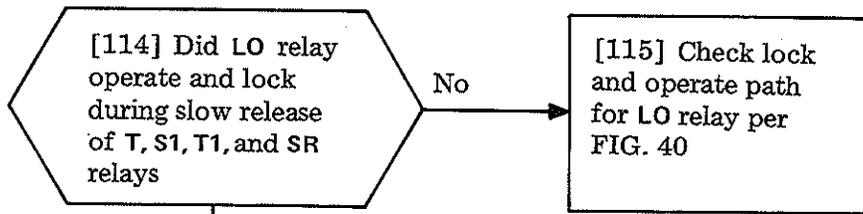


FIG. 41

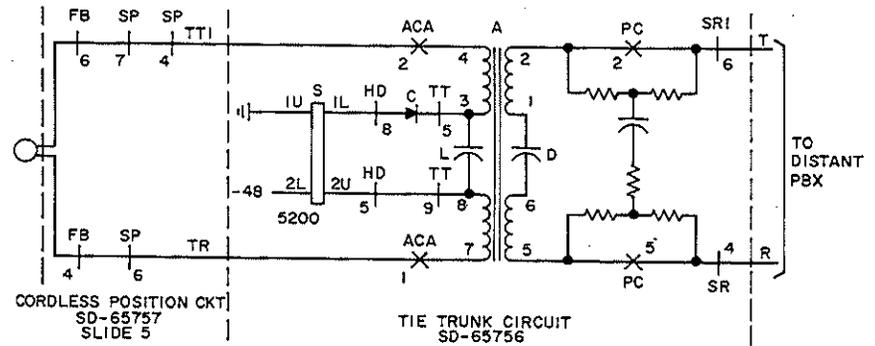
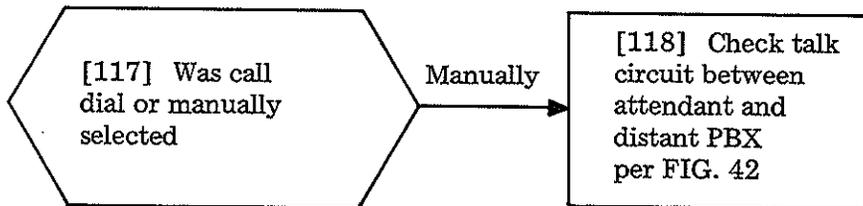
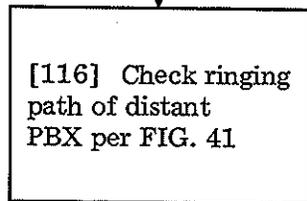


FIG. 42

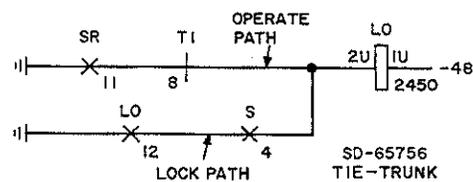
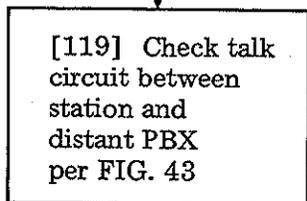


FIG. 40

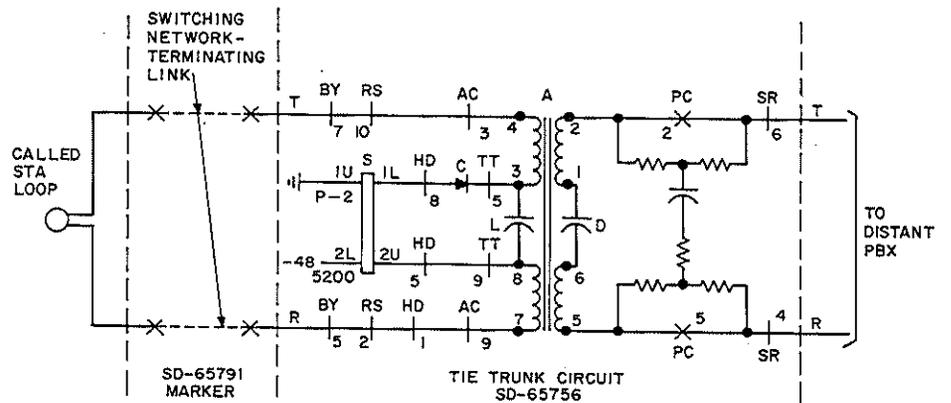
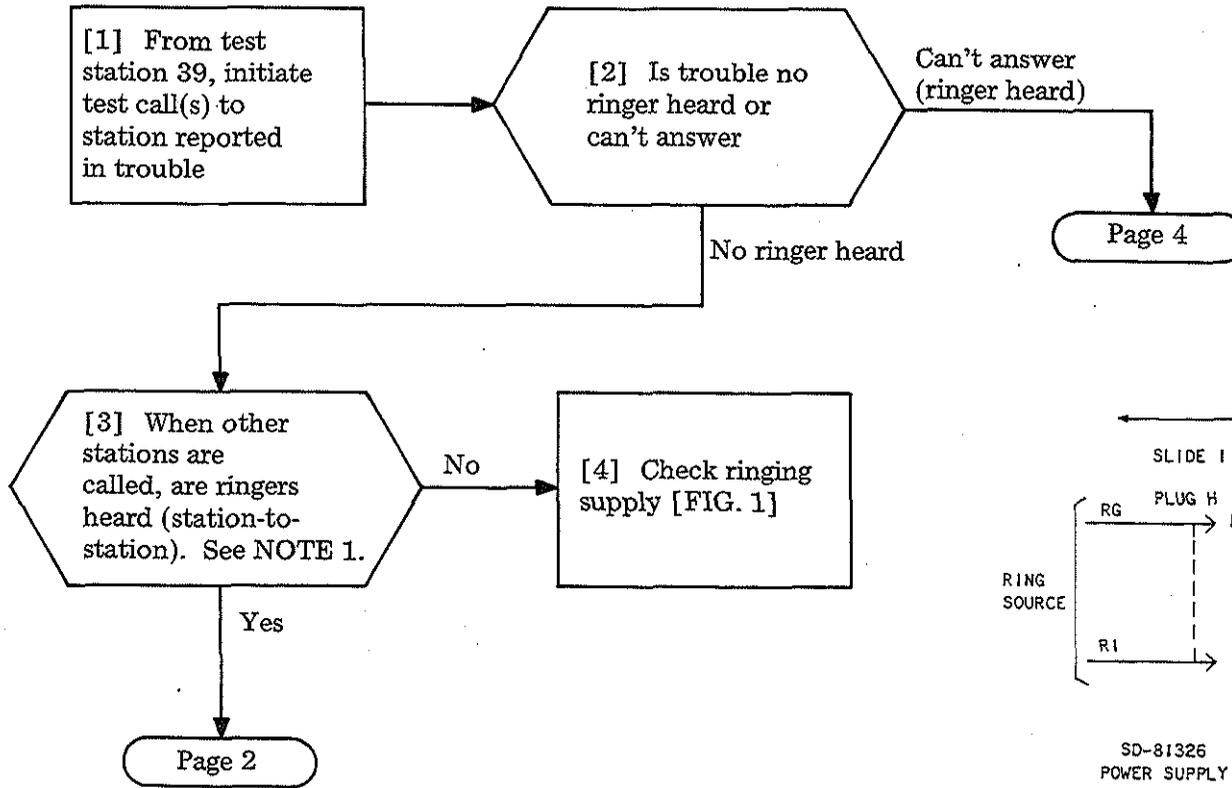


FIG. 43

SUMMARY

Determine if a call initiated from test station 39 is completed through the switching network and station ringer. If the "can't be called" (CBC) station ringer sounds, the connection has been completed through the switching network. If the ringer is not heard, check to see if the line hold magnet (LHM) of the called station has operated and closed the associated vertical contacts to complete call through the crossbar switches. If CBC failure is intermittent or

occurs to other stations, repeat test calls via each common circuit (junctur, dial pulse register, etc.) to isolate the defective equipment unit. Locate the fault using the figure or other reference given. This procedure assumes the marker and register function properly to provide dial tone and may be used to find trouble on station-to-station, dial repeating tie trunk-to-station, and attendant trunk-to-station (junctur) calls.



NOTE 1
Steps 3 through 9 may require reestablishing test call(s) to point of failure.

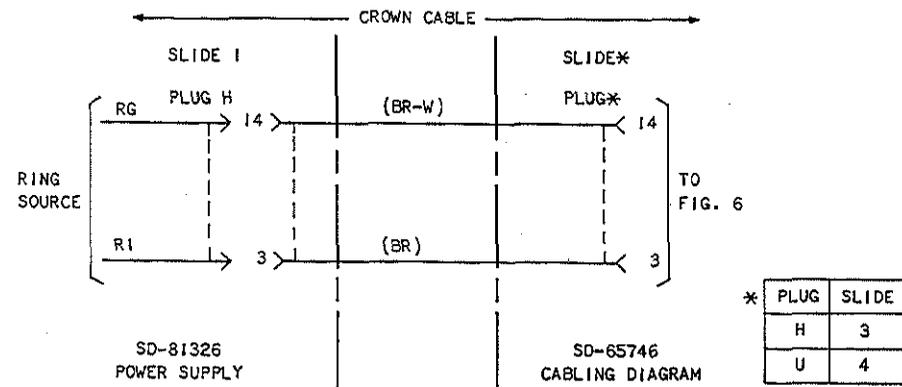


FIG. 1

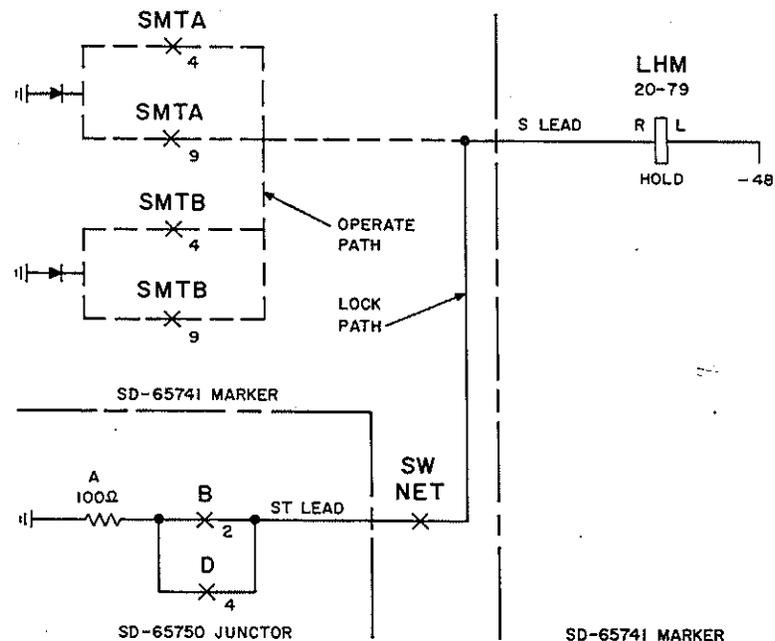
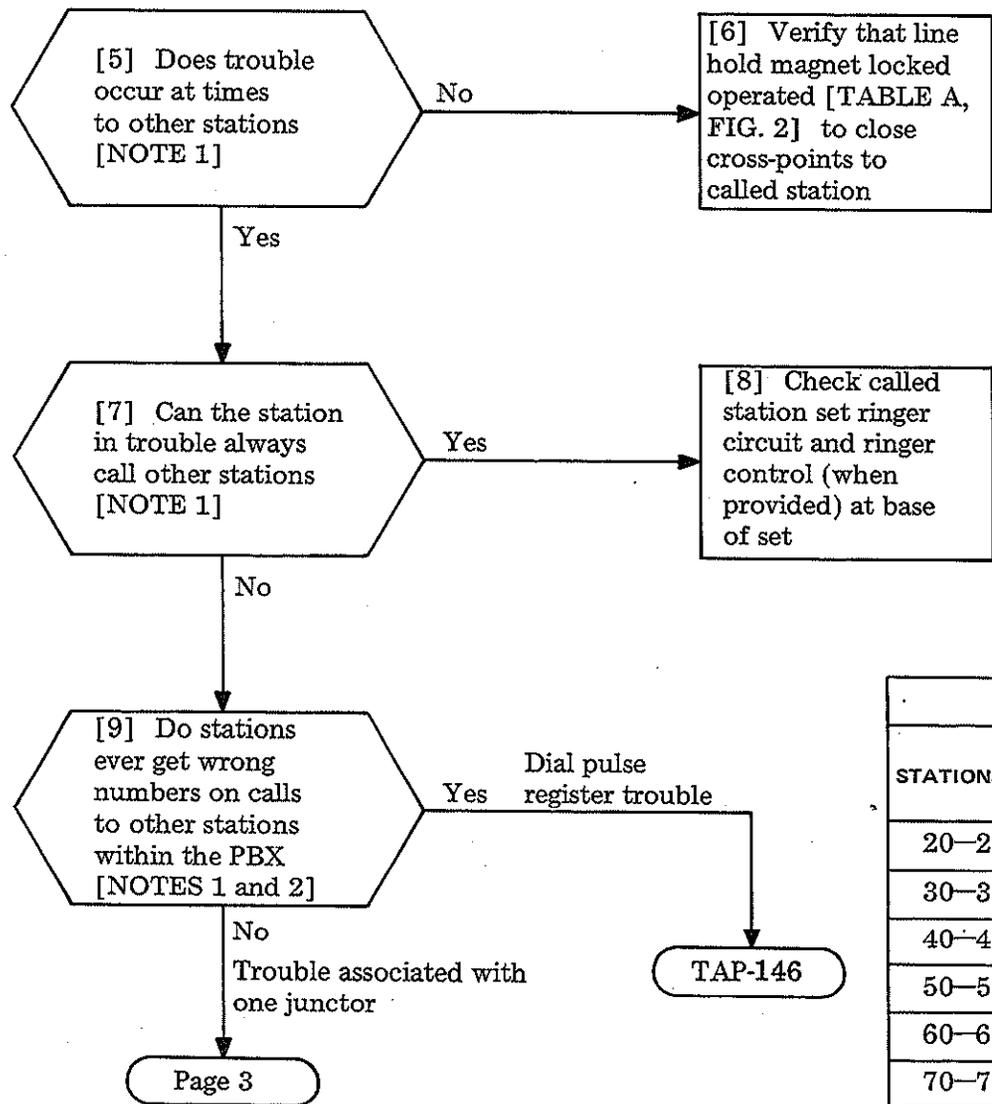
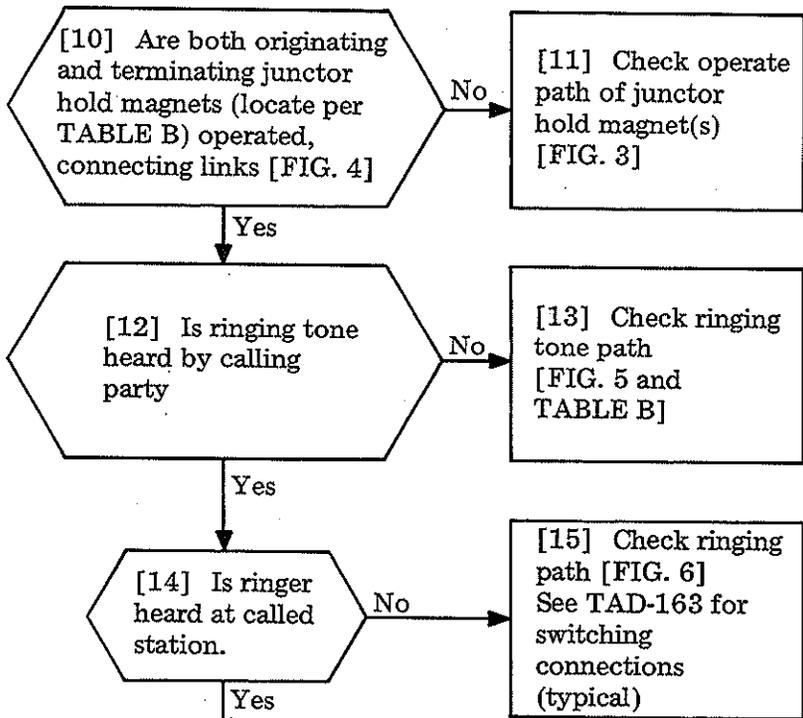


FIG. 2

| TABLE A | | | |
|----------|-------------------|--------|----------|
| STATIONS | LINE HOLD MAG LOC | | |
| | SLIDE | SWITCH | VERTICAL |
| 20-29 | 2 | 2 | 0-9 |
| 30-39 | | 3 | |
| 40-49 | 3 | 4 | |
| 50-59 | | 5 | |
| 60-69 | 4 | 6 | |
| 70-79 | | 7 | |

NOTE 2
On station-to-station calls, REG 0 will normally seize JCTR 0, 1, or 2 (in order) and REG 1 will normally seize JCTR 3, 4, or 5 (in order).



| TABLE B | | | | | |
|---------|----------|---------|----|-------------------|------|
| JCTR | LOCATION | | | | |
| | SLIDE | REL EQ | SW | HOLD MAG-VERTICAL | |
| | | MTG PLT | | ORIG | TERM |
| 0 | 3 | T | 1 | 0 | 1 |
| 1 | | U | | 2 | 3 |
| 2 | | | | 4 | 5 |
| 3 | 4 | Y | 8 | 1 | 2 |
| 4 | | 3 | | 4 | |
| 5 | 3 | U | 1 | 6 | 7 |

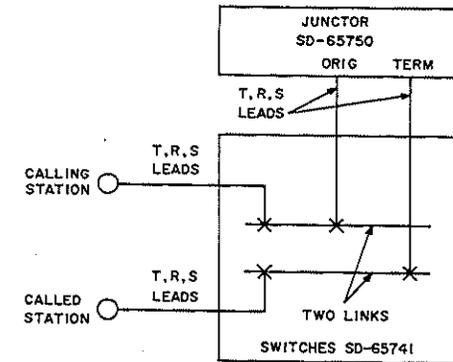


FIG. 4

Ringling associated with junctor satisfactory

[16] Repeat steps 10 through 15 until all junctors have been tested or ringing failure is isolated

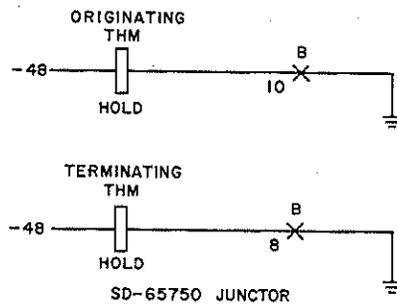


FIG. 3

| PLUG | SLIDE |
|------|-------|
| H | 3 |
| U | 4 |

TO RINGING SUPPLY (FIG. 1)

SD-65746 CABLING DIAGRAM

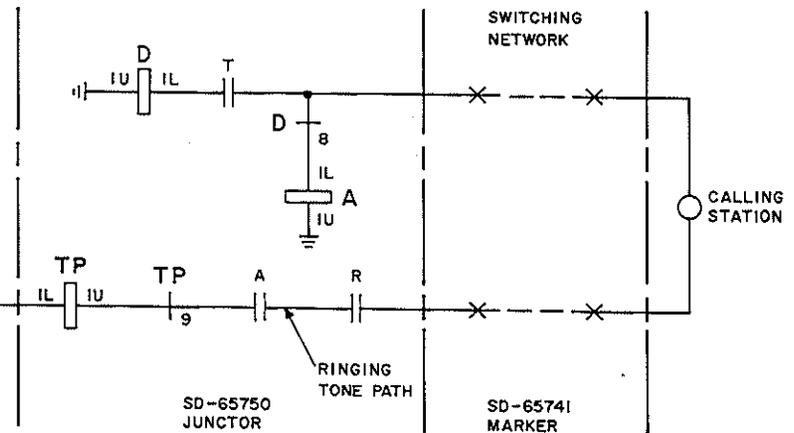


FIG. 5

CLEAR STATION CAN'T BE CALLED TROUBLE (SD-65750)

| | |
|-------------|----------|
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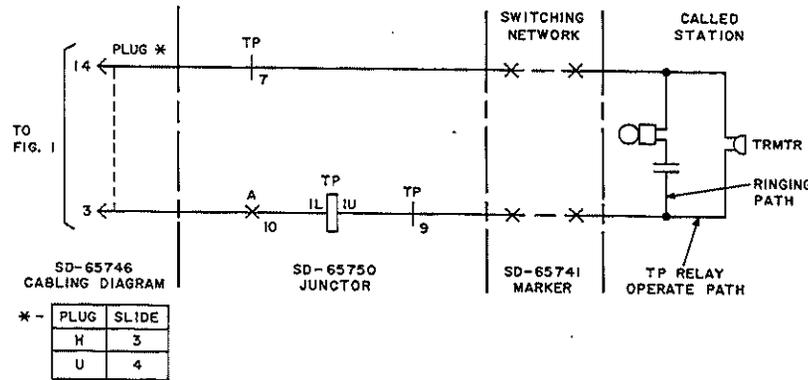
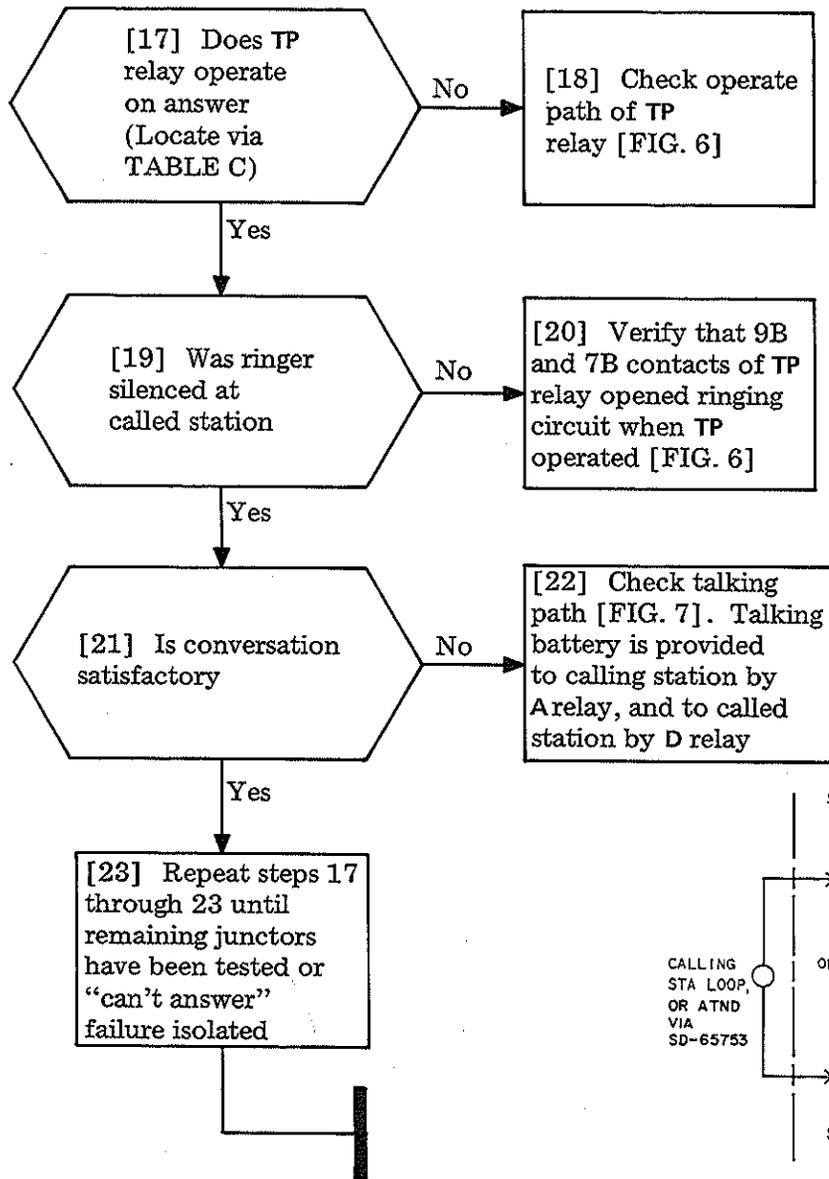


FIG. 6

| JCTR | REL LOC | |
|------|---------|---------|
| | SLIDE | MTG PLT |
| 0 | | |
| 1 | 3 | T |
| 2 | | U |
| 3 | | Y |
| 4 | 4 | |
| 5 | 3 | U |

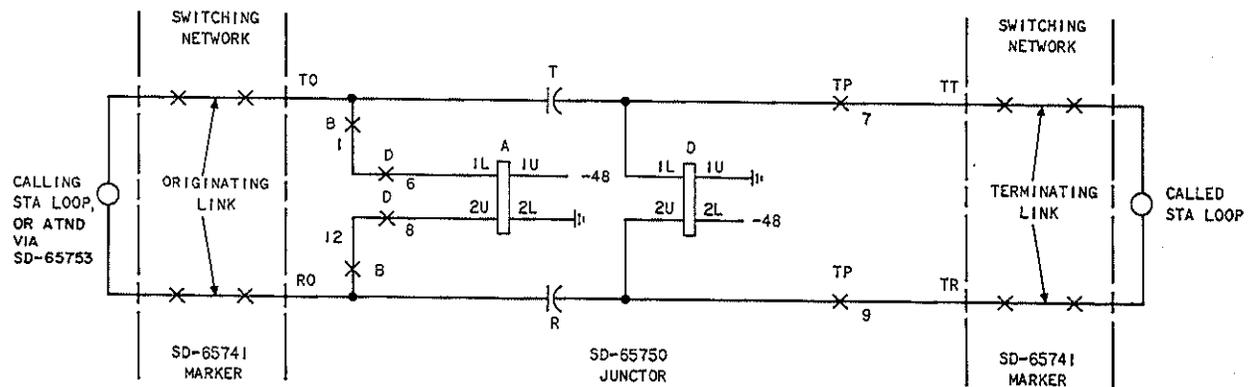


FIG. 7

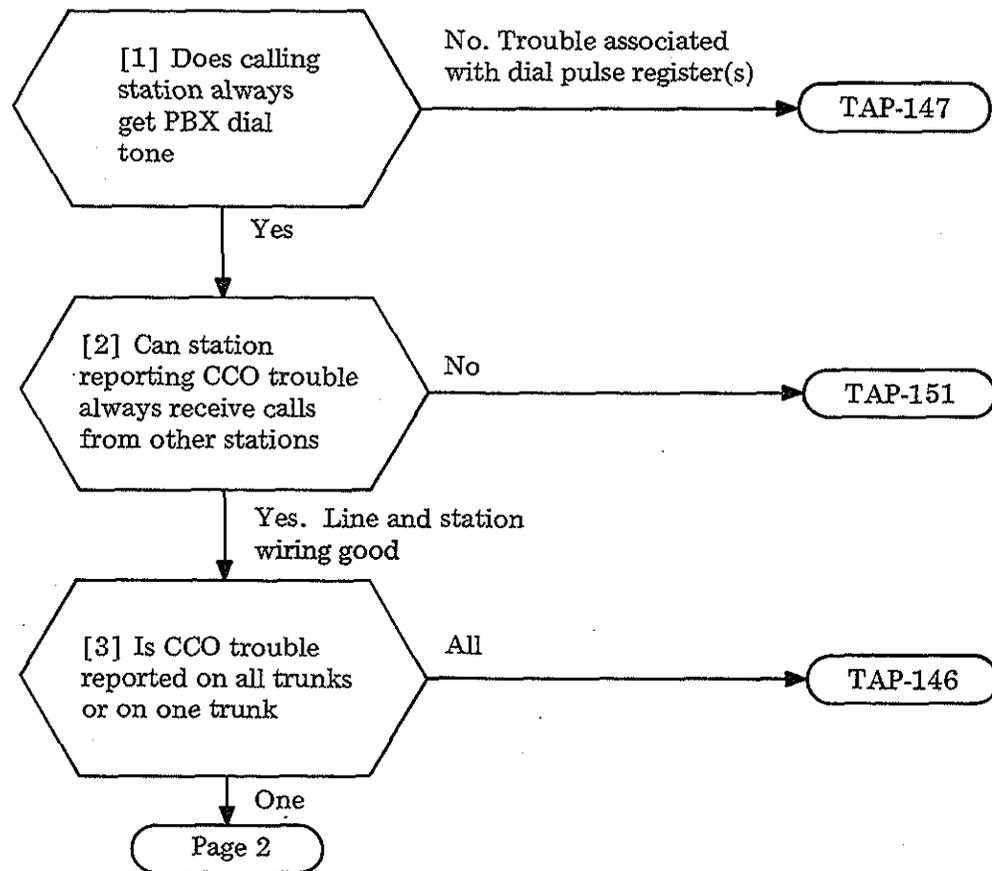
SUMMARY

Initiate test "dial 9—" call(s) from either the station reporting "can't call out" (CCO) trouble or from test station 39 (slide 2), as indicated. Via test call(s) or other furnished information (attendant, listed directory number, etc.), seize the defective trunk and locate the associated equipment [NOTE 1]. Find the trouble using the figure or other reference given. This procedure assumes:

- Station(s) associated with the trouble have access to the trunk(s) dialed.

- There is no trouble in the station wiring or set(s).
- CO trunks are modified for ring ground start.

After defective unit has been identified, repeat seizure (dial 9 or 9-) as required to observe operation and/or release of relay(s), as indicated by step(s) of this procedure. Listed directory number of seized defective trunk can be identified by observing key designation associated with steady station lamp (red) and steady trunk lamp (white) at console.



NOTE 1
 The seized CO trunk equipment unit location within slide 5 [FIG. 1] can be identified by observing the steadily lighted CO TRK (0-9) lamp of the make-busy and busy display unit (top of slide 2), if provided, or by observing which HM relay operated when the trunk access code (9 or 9-) is dialed.

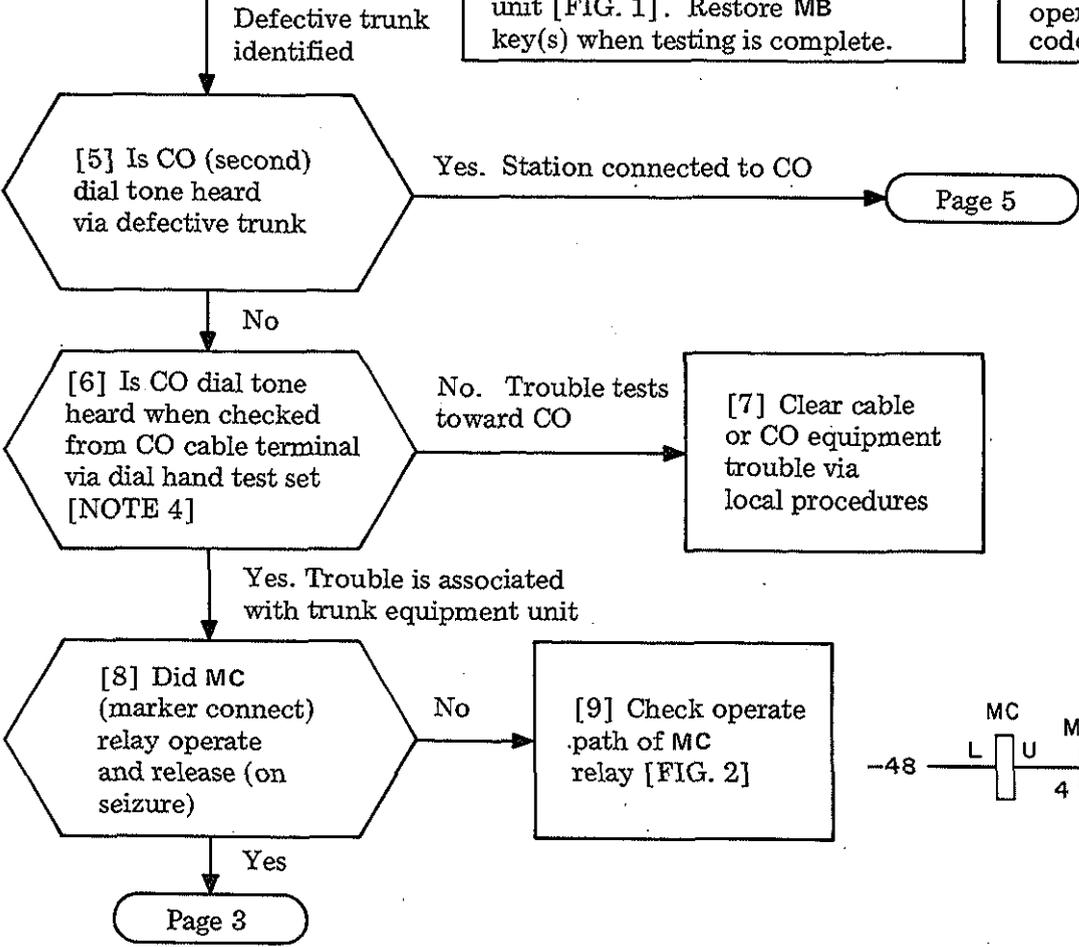
| | |
|-------------|----------|
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[4] Initiate test calls from test station 39 (slide 2) until defective trunk unit [FIG. 1] is seized [NOTES 2 and 3]

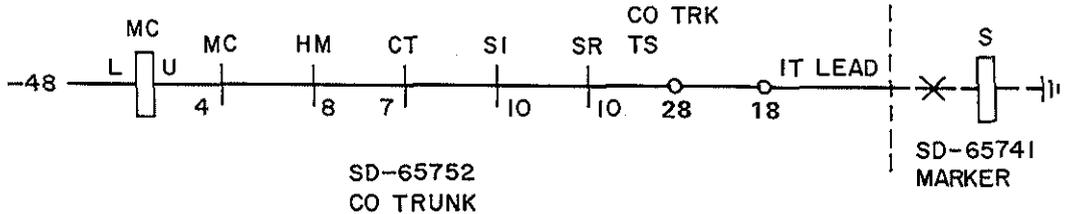
NOTE 2
If customer needs permit, good CO trunks (0-9) can be busied out after testing. Pull out MB key of make-busy and busy display unit at top of slide 2 (if provided) or block operated SR relay in trunk unit [FIG. 1]. Restore MB key(s) when testing is complete.

NOTE 3
The seized CO trunk equipment unit location in slide 5 [FIG. 1] can be identified by observing the steadily lighted CO TRK (0-9) lamp of the make-busy and busy display unit (top of slide 2), if provided, or by observing which HM relay operated when the trunk access code (9 or 9-) was dialed

| INDICATION OF CAMP-ON UNIT | |
|------------------------------|---|
| ATND TRUNK 2 | |
| ATND TRUNK 1 | |
| ATND TRUNK 0 | |
| CO TRUNK OR RINGDOWN TIE TRK | 9 |
| POS CKT AND TRK PTCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 8 |
| CO TRUNK | 7 |
| CO TRUNK | 6 |
| CO TRUNK | 5 |
| CO TRUNK OR RINGDOWN TIE TRK | 4 |
| POS CKT AND TRK PATCH | |
| CO TRUNK OR RINGDOWN TIE TRK | 3 |
| CO TRUNK | 2 |
| CO TRUNK | 1 |
| CO TRUNK | 0 |



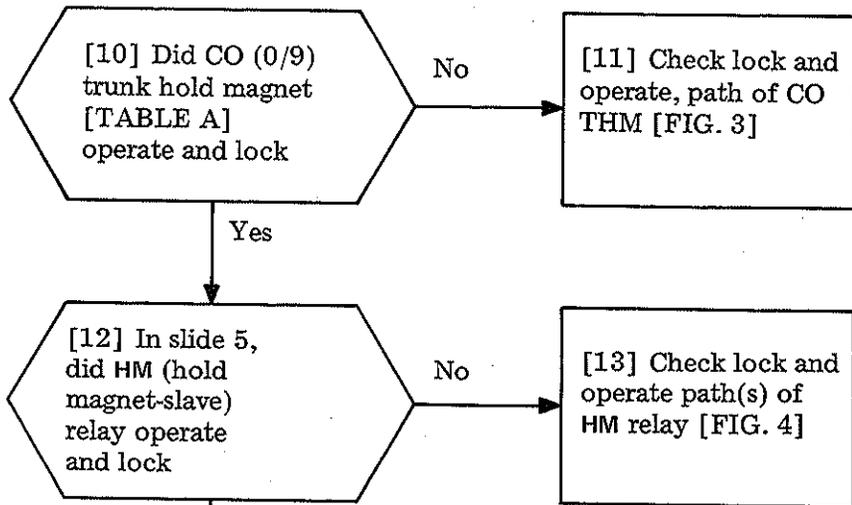
NOTE 4
The check for CO dial tone is made by connecting dial hand test set to CO trunk cable pair and momentarily grounding tip.



SLIDE 5
FIG. 7

FIG. 2

| | |
|-------------|----------|
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| CO TRK | THM LOC | | |
|--------|---------|----|------|
| | SL | SW | VERT |
| 0 | | | 0 |
| 1 | | | 1 |
| 2 | | 0 | 2 |
| 3 | | | 3 |
| 4 | 4 | | 4 |
| 5 | | | 5 |
| 6 | | | 6 |
| 7 | | 8 | 7 |
| 8 | | | 8 |
| 9 | | | 9 |

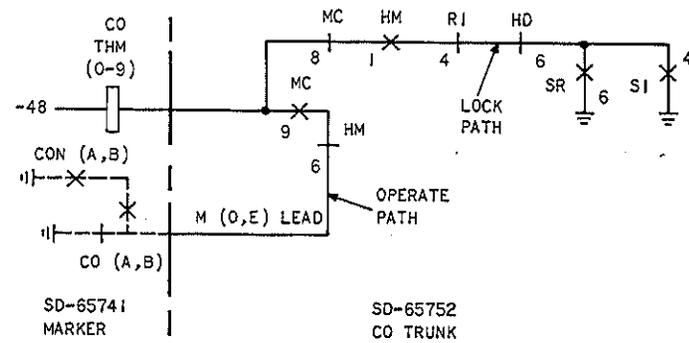


FIG. 3

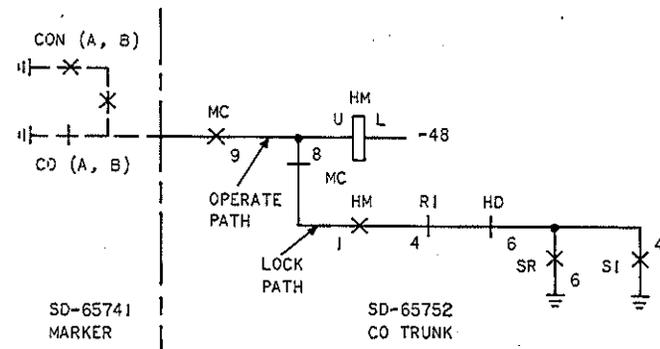
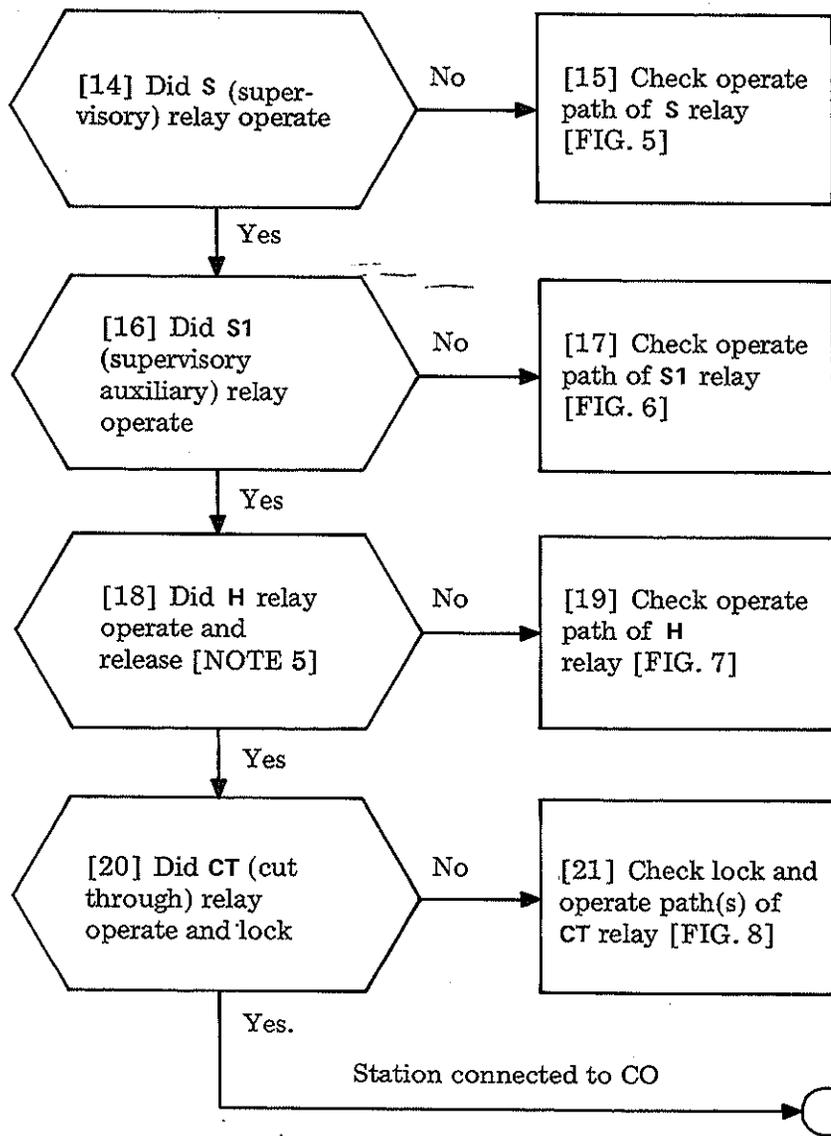


FIG. 4



Page 5

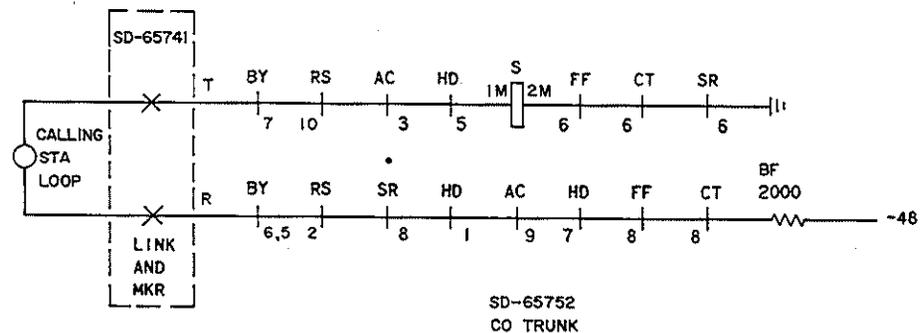


FIG. 5

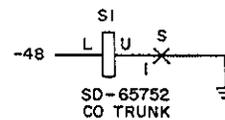


FIG. 6

NOTE 5
Armature movement of H relay is difficult to observe. IF CT relay (Step 20) is operated, it can be assumed H relay operated

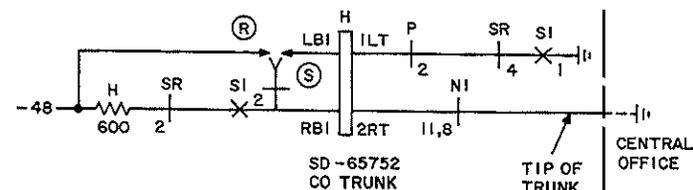


FIG. 7

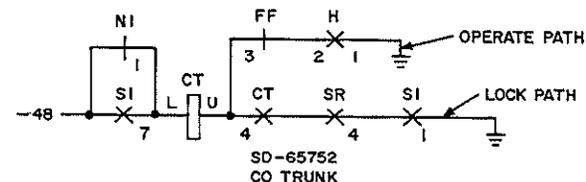


FIG. 8

| | |
|-------------|----------|
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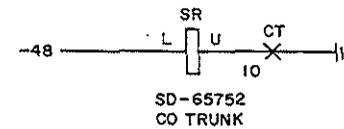
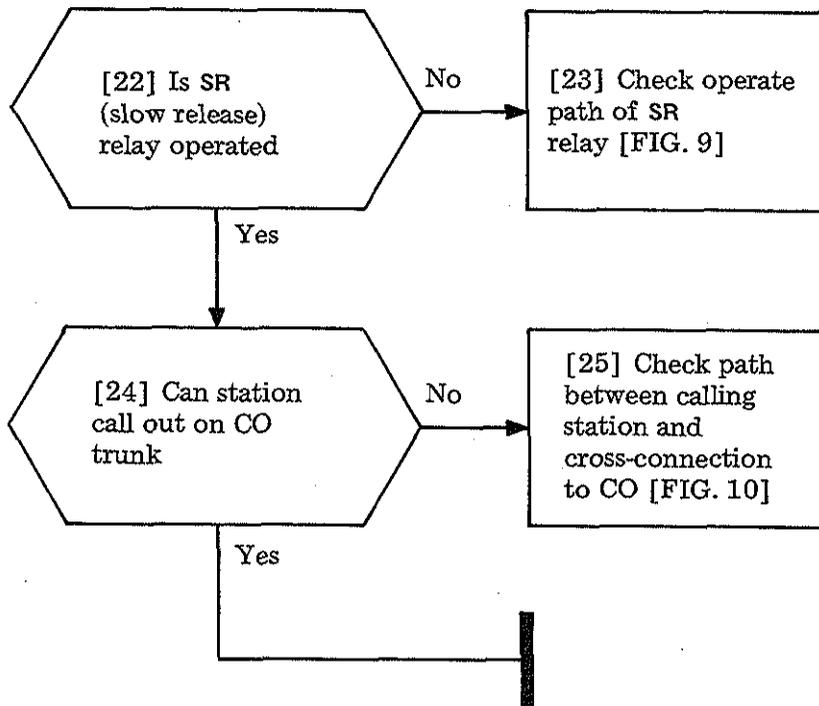


FIG. 9

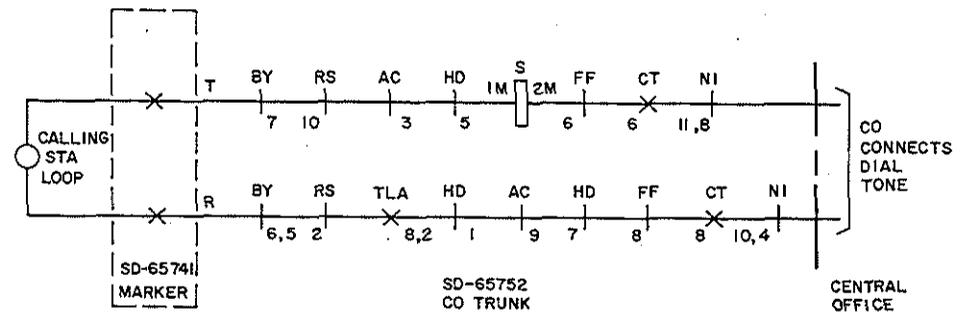


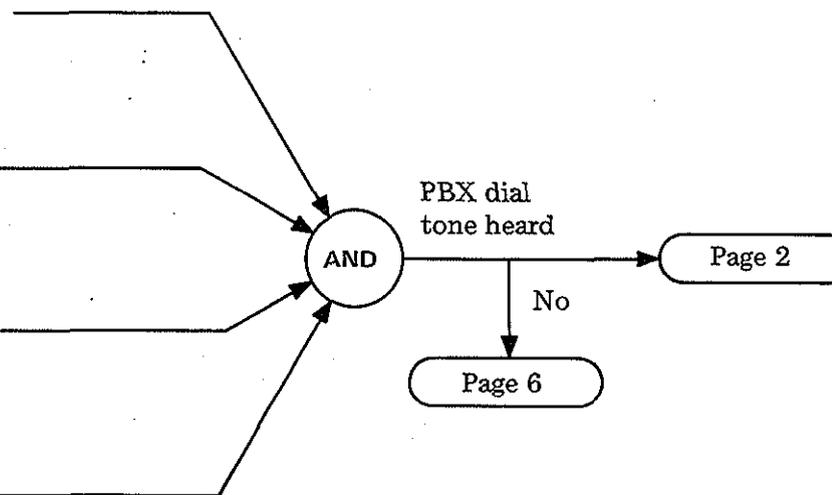
FIG. 10

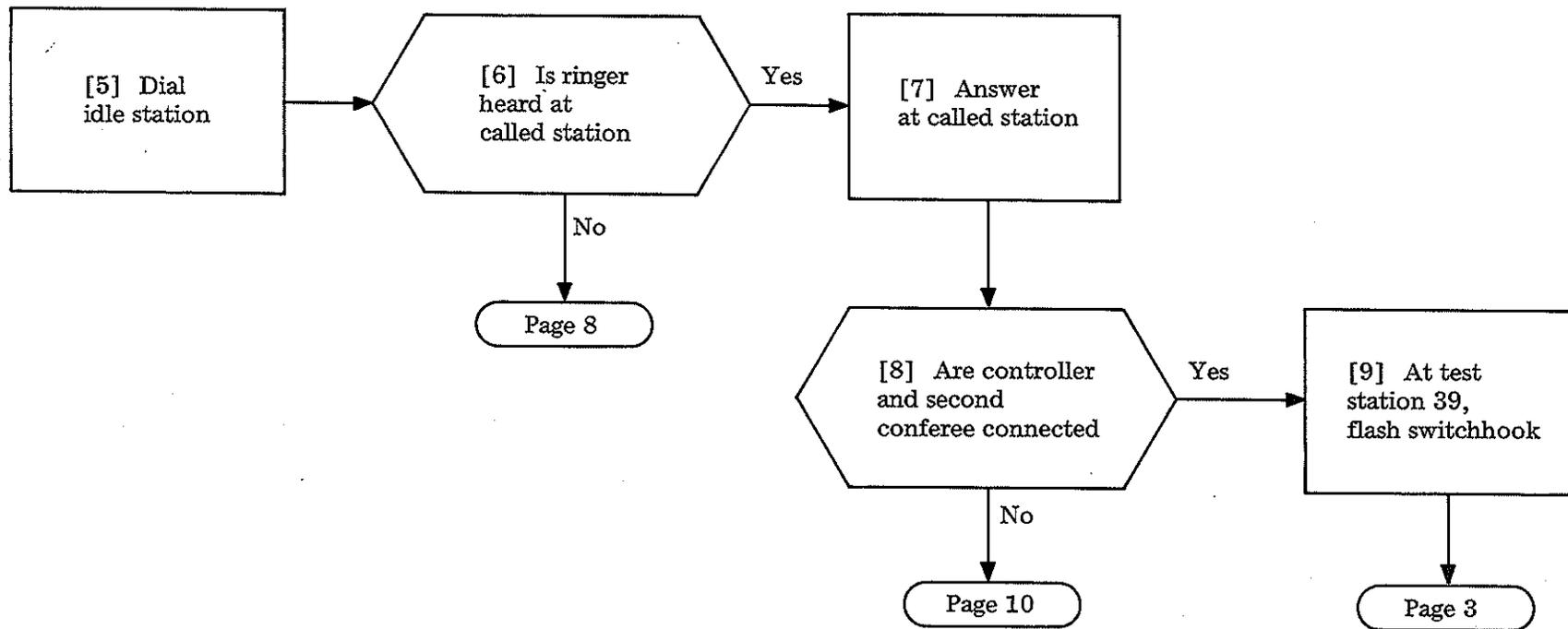
SUMMARY

Locate the J58829AD-2 plug-in dial conference unit (top of slide 2). Temporarily connect a 500D-type telephone (for testing) to test station 39 terminals. Get ready to watch each trunk hold magnet (THM) operate as conferees are added. This procedure assumes the six verticals of crossbar switch 2 used are 0-5 (associated with conference ports 80-85). Using the temporary 500D set for controller or first conferee:

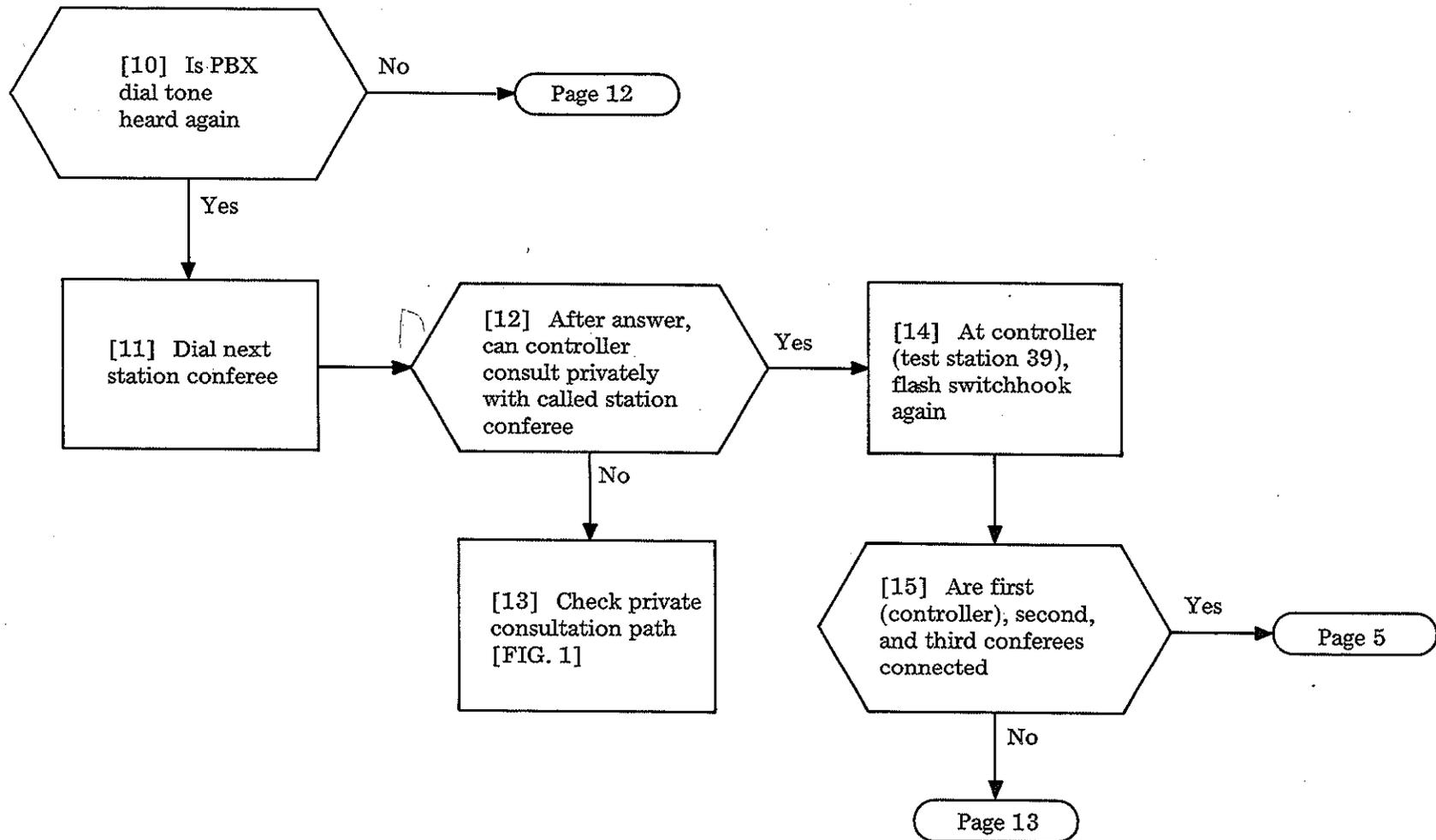
- Dial the conference code (assumed to be 80)
 - Watch vertical 0 operate to connect station 39, and vertical 1 operate to provide both PBX dial tone and connect second conferee
 - Dial (idle) station number of second conferee
 - After answer, flash test station switchhook for PBX dial tone
 - Add remaining four conferees via the same method (six total)
- Proceed until a failure occurs (assumed — no marker or register trouble). This procedure assumes circuit is equipped for private consultation.

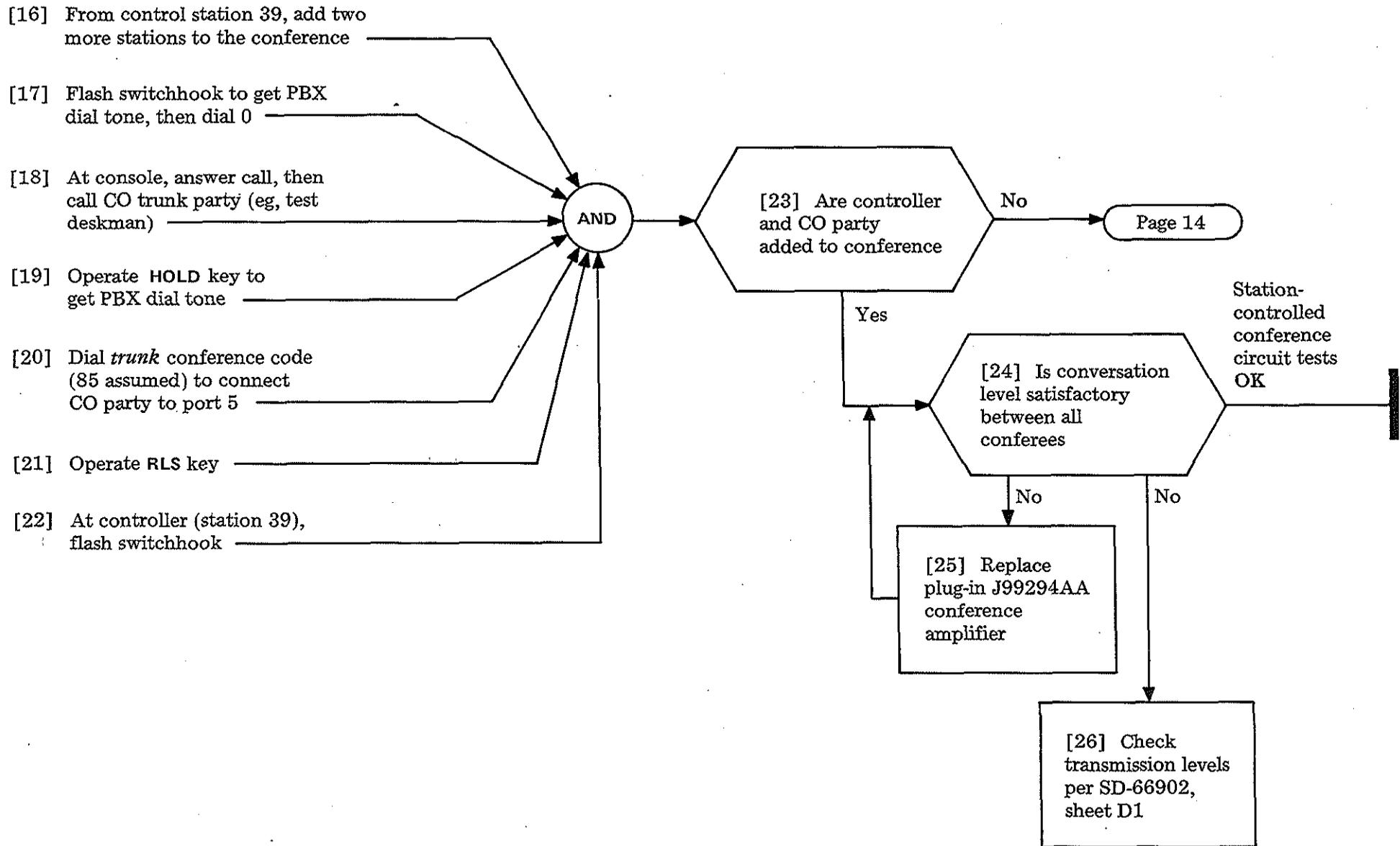
- [1] Locate J58829AD-2 plug-in dial conference unit (top of slide 2 — four mounting plates) and the J99294A CA transistorized conference amplifier (on lowest of the four mounting plates)
- [2] Locate trunk hold magnets 0-6 (slide 2, crossbar switch 2) so connection of conferees to conference ports 80-85 may be observed
- [3] Temporarily connect 500D (typical) telephone set to terminals of test station 39 (slide 2)
- [4] Using test station 39 as controller (first conferee) dial conference access code number (assumed to be 80)





| | |
|--------------|----------|
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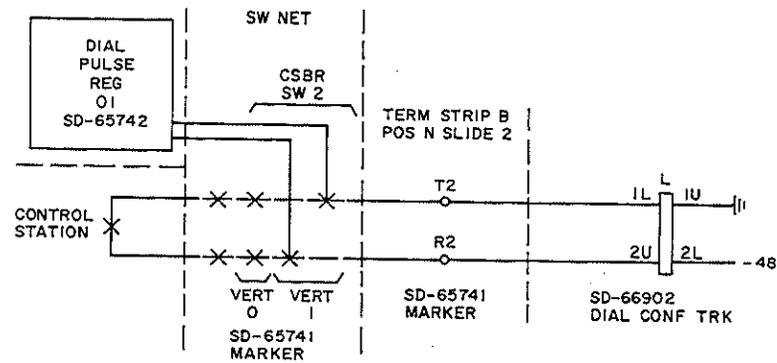
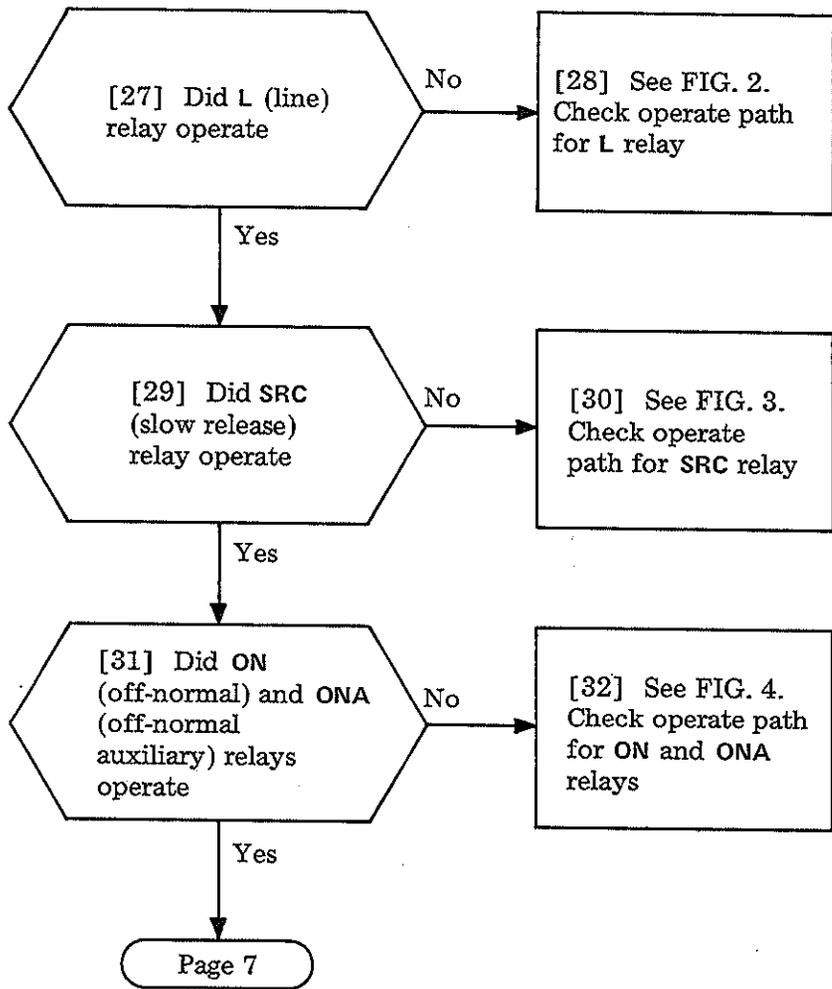


FIG. 2

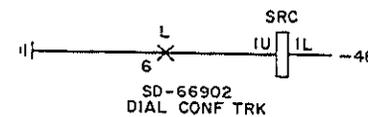


FIG. 3

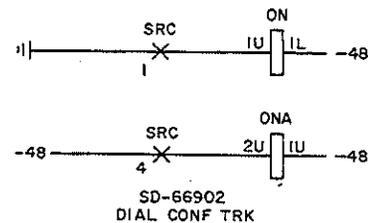


FIG. 4

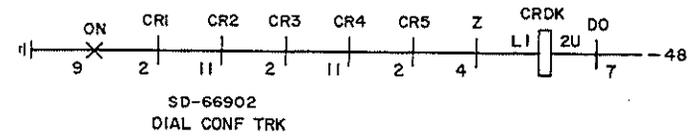
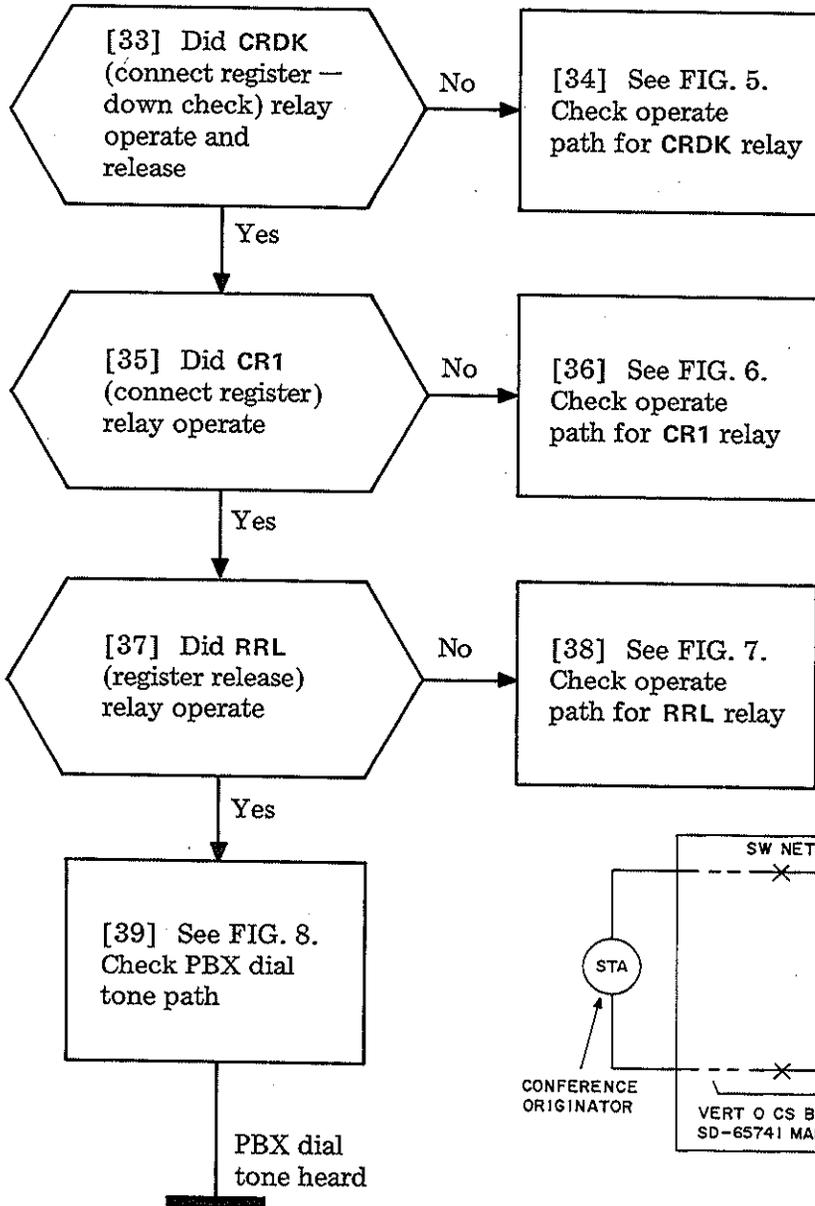


FIG. 5

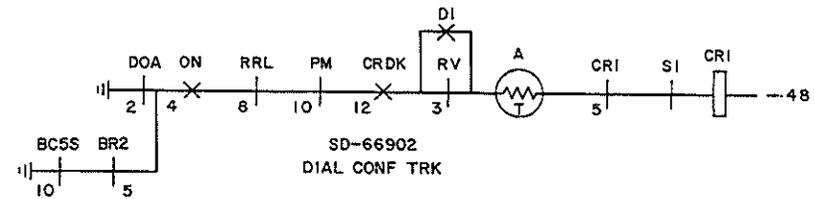


FIG. 6

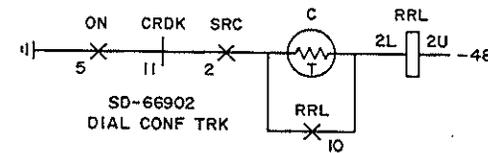


FIG. 7

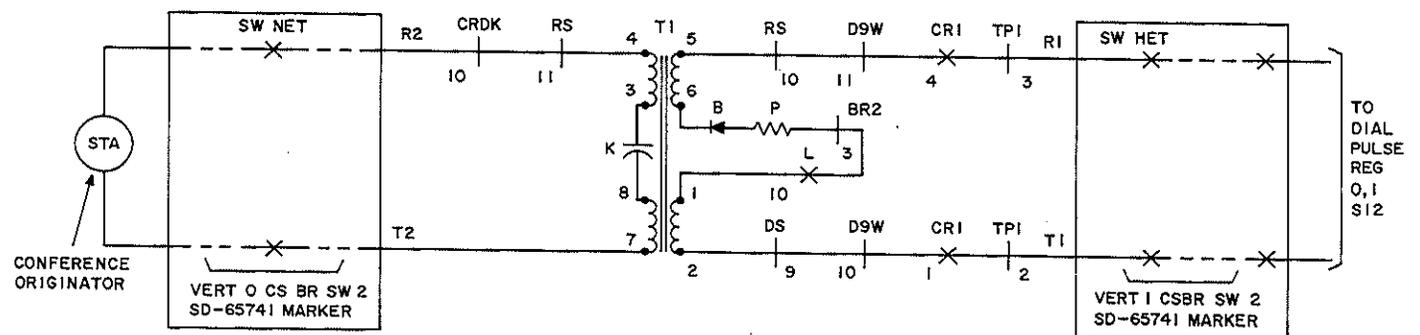


FIG. 8

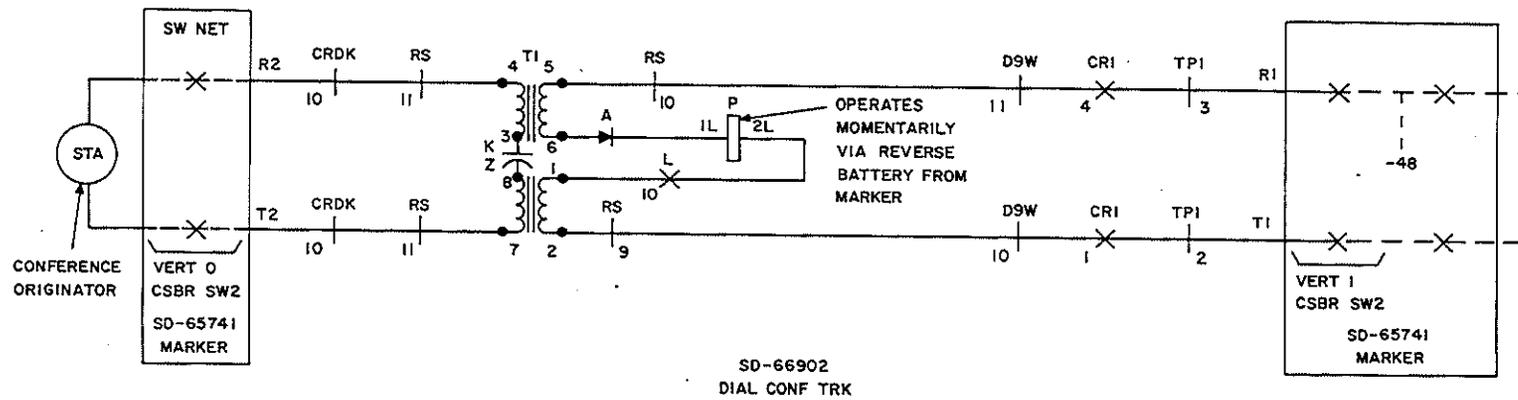


FIG. 9

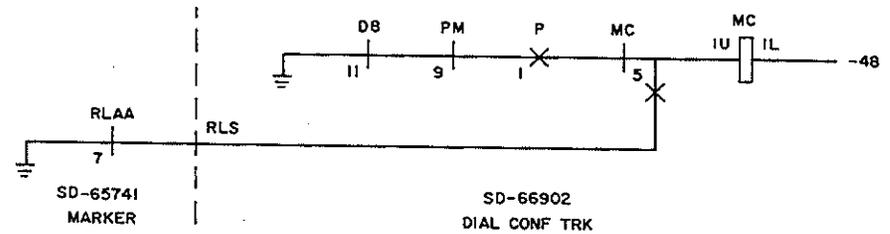
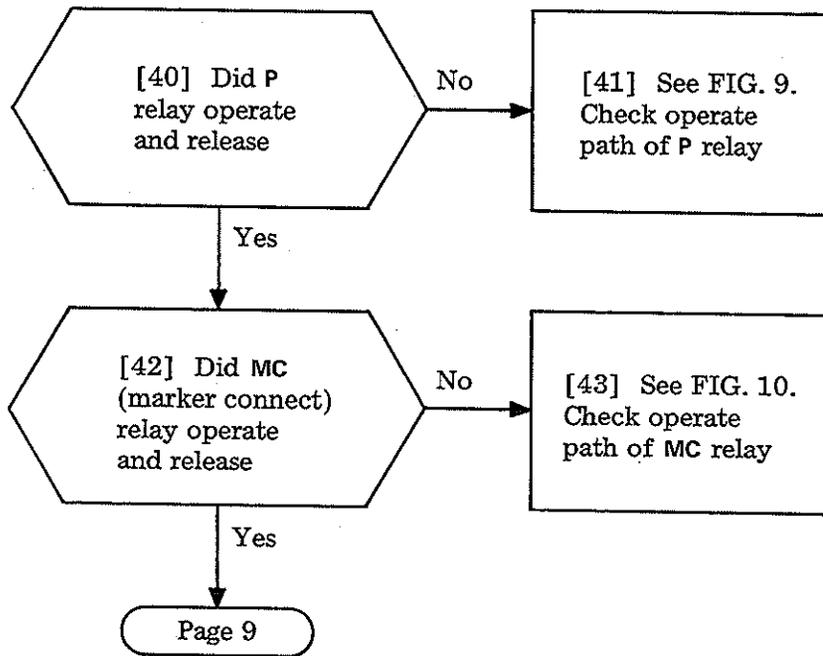


FIG. 10

| | |
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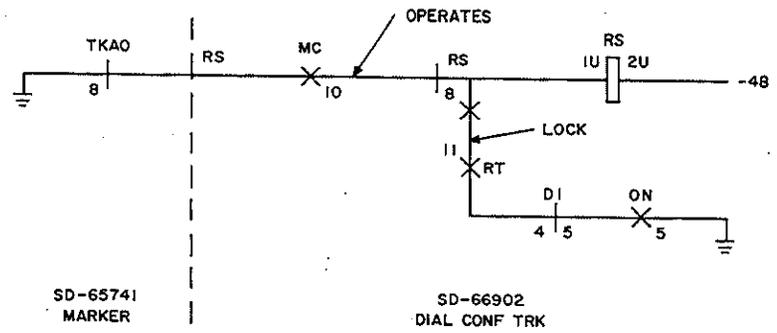
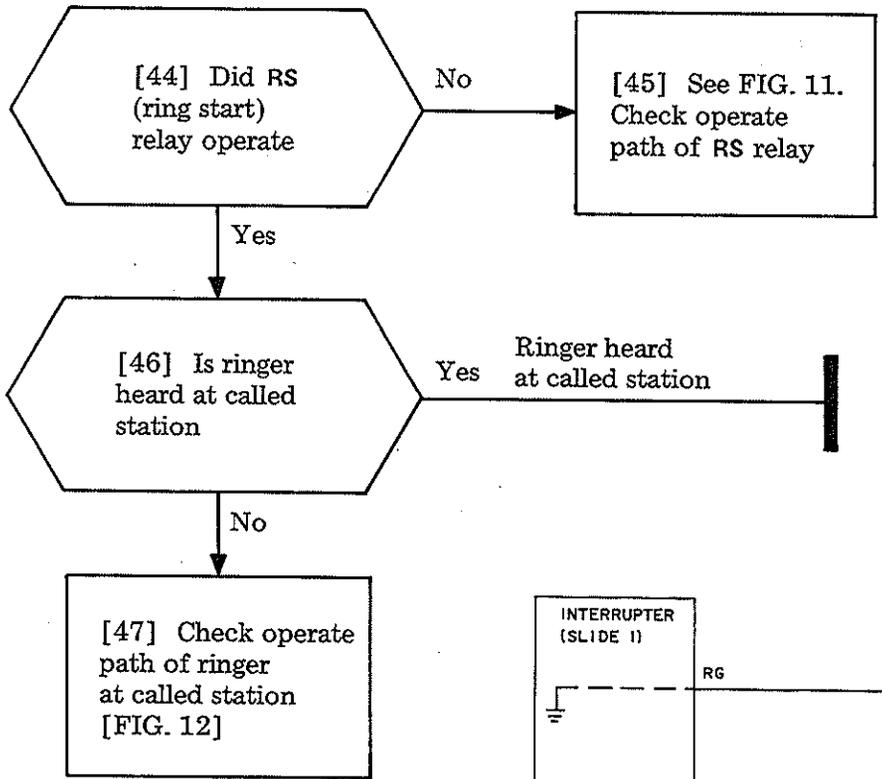


FIG. 11

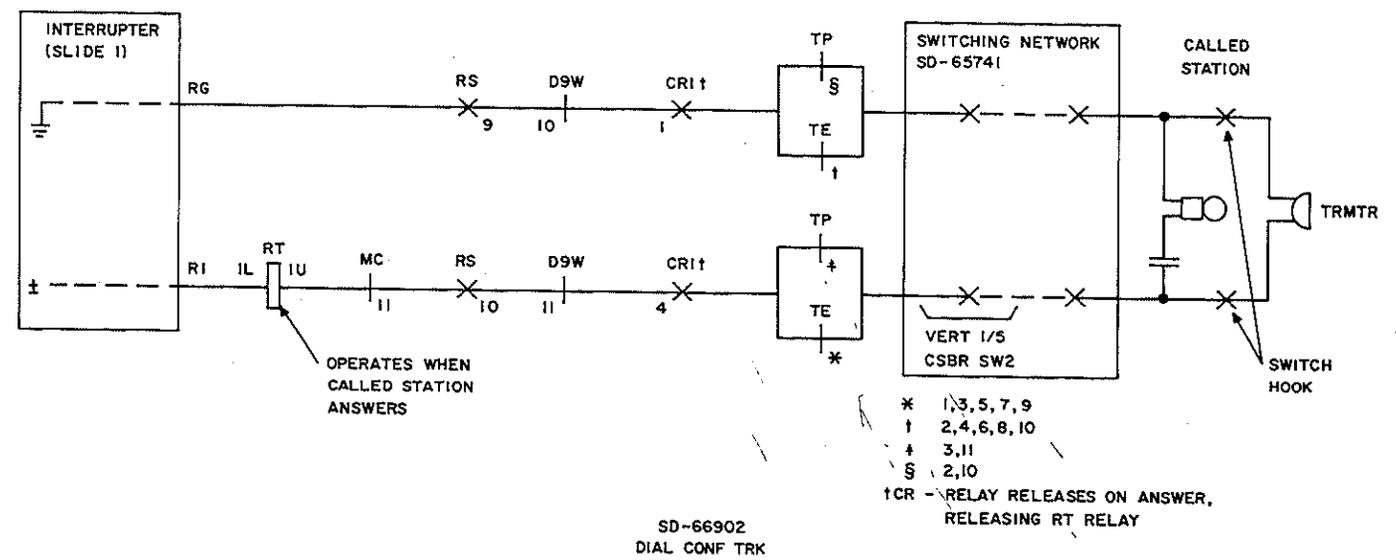


FIG. 12

| | |
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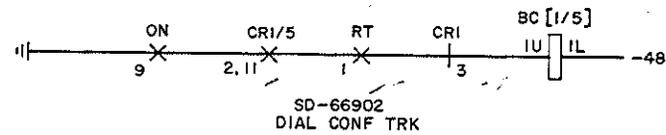
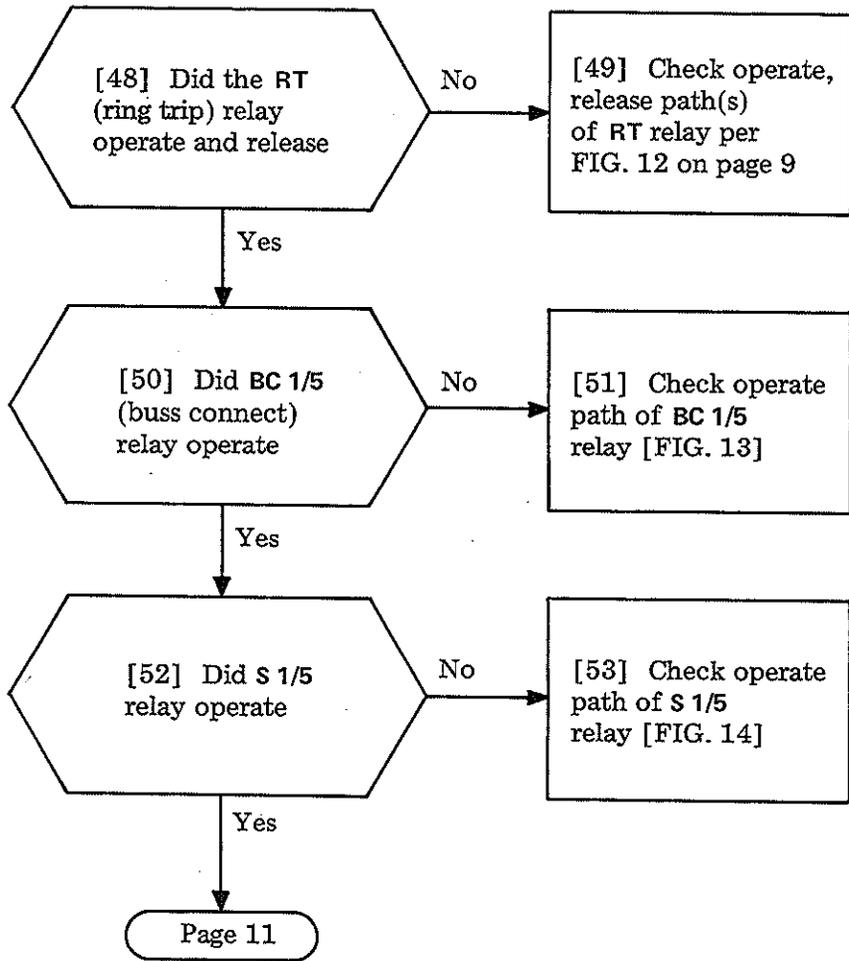


FIG. 13

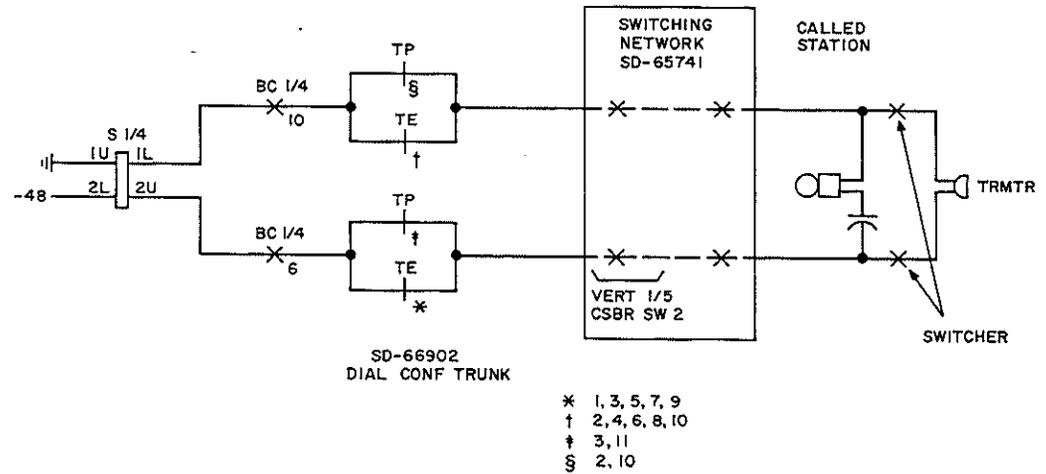


FIG. 14

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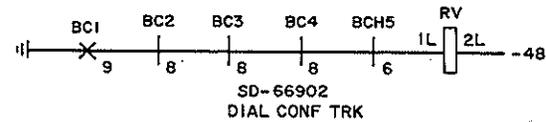
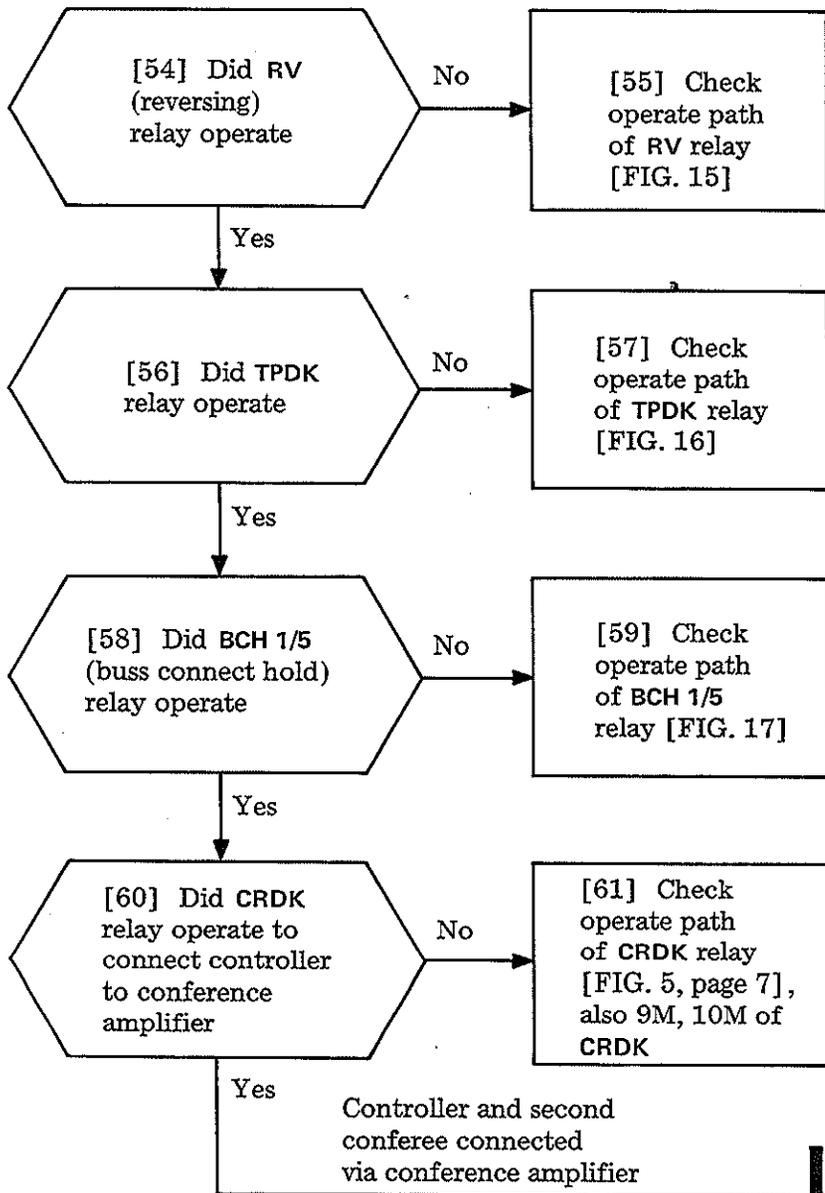


FIG. 15

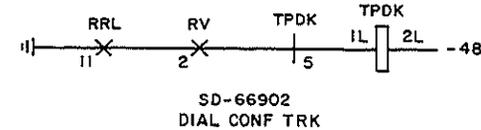
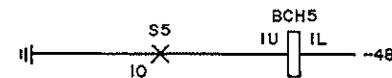
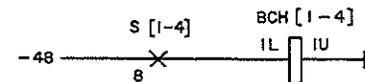


FIG. 16



SD-66902
DIAL CONF TRK

FIG. 17

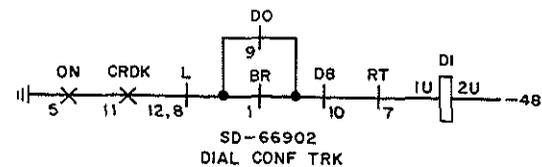
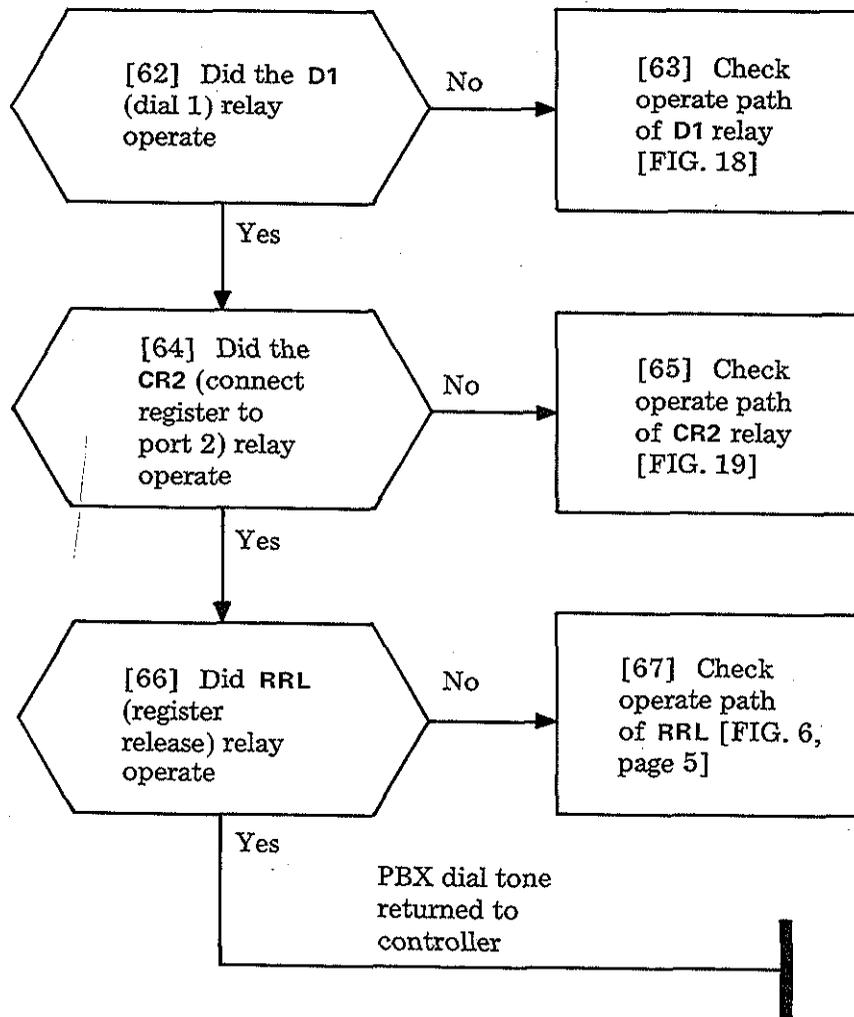


FIG. 18

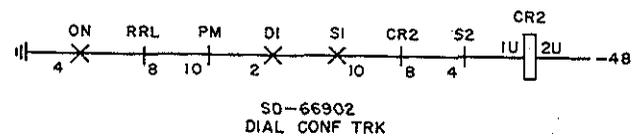
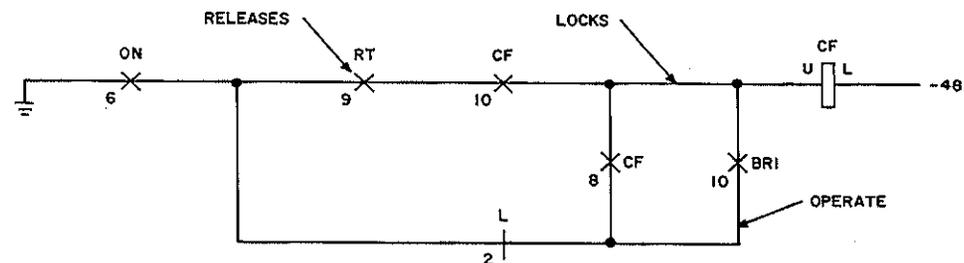
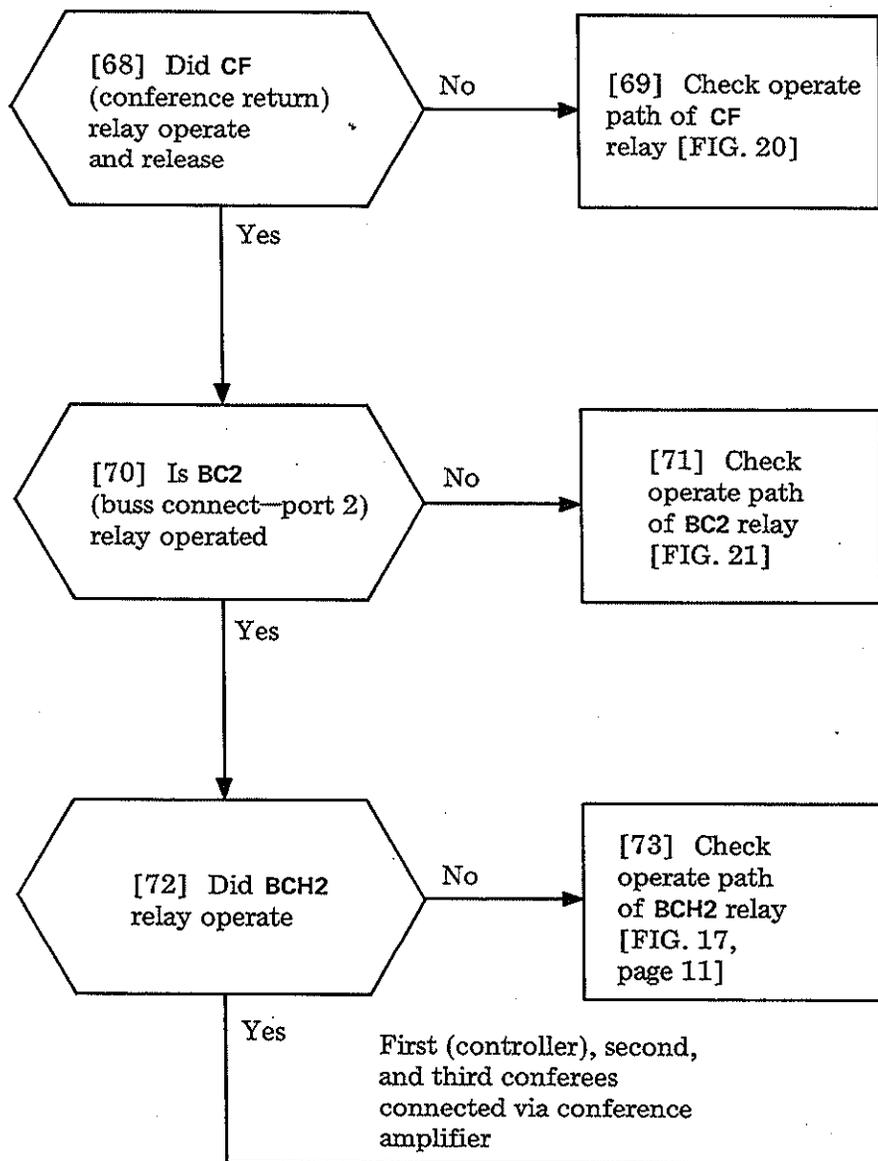
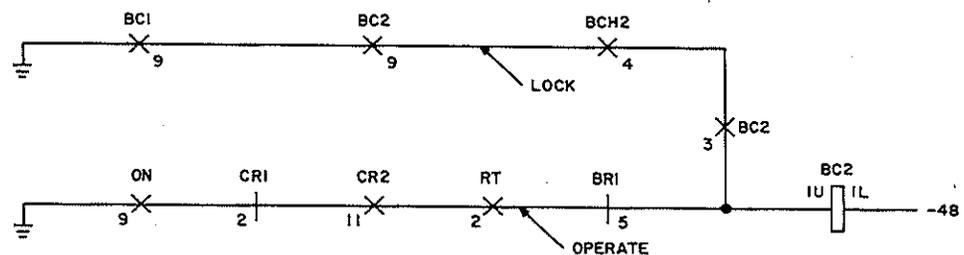


FIG. 19



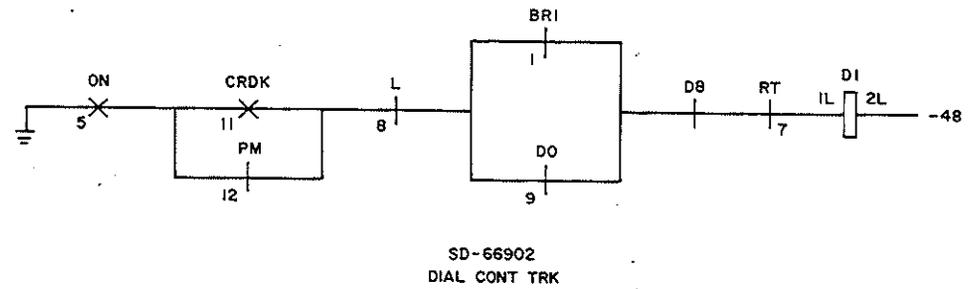
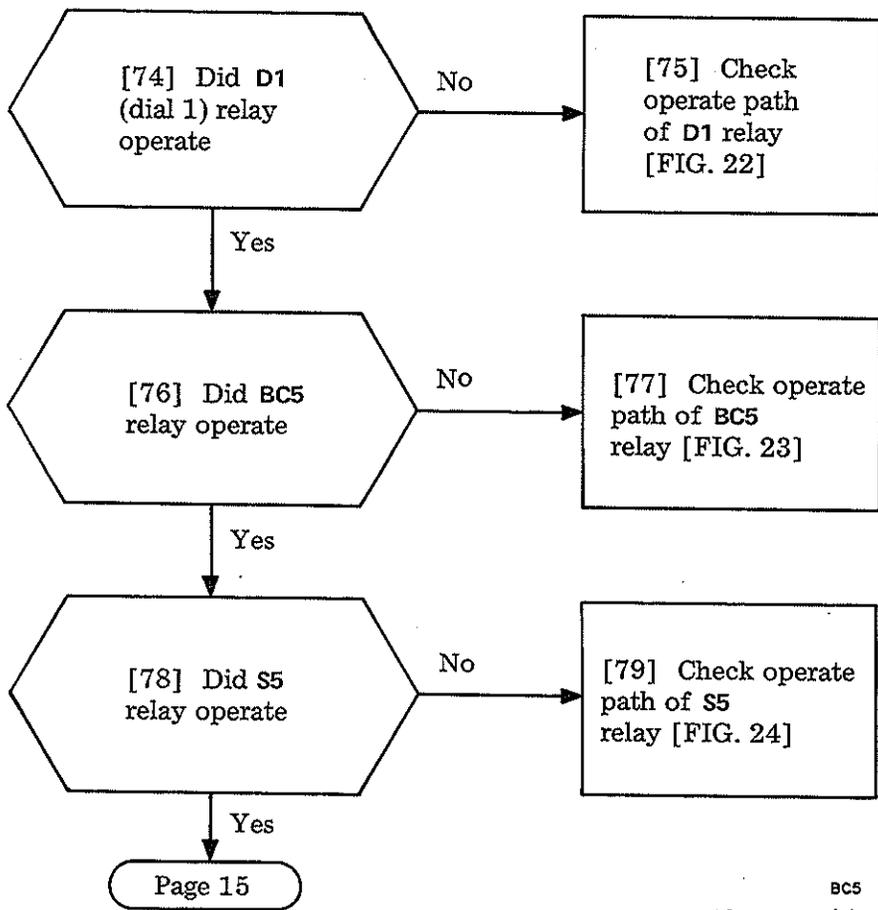
SD-66902
DIAL CONT TRK

FIG. 20



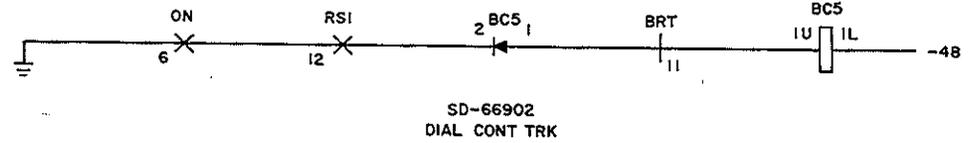
SD-66902
DIAL CONT TRK

FIG. 21



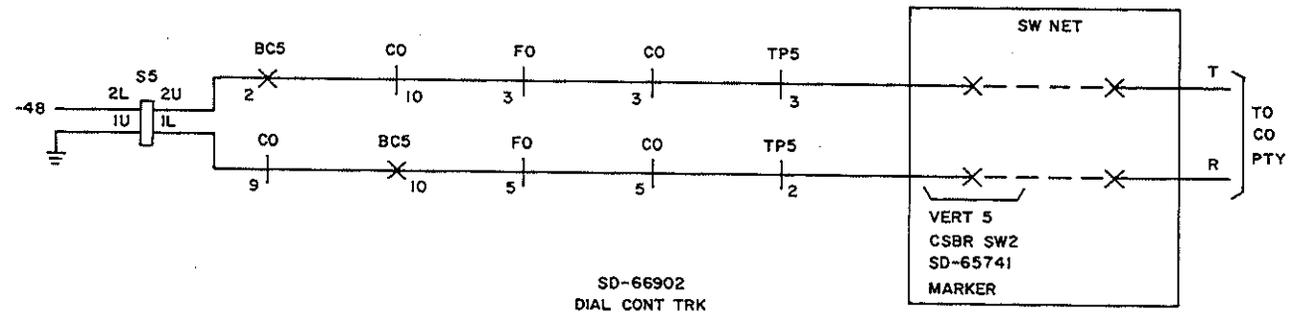
SD-66902
DIAL CONT TRK

FIG. 22



SD-66902
DIAL CONT TRK

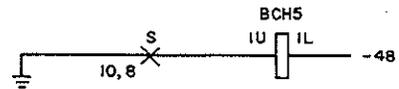
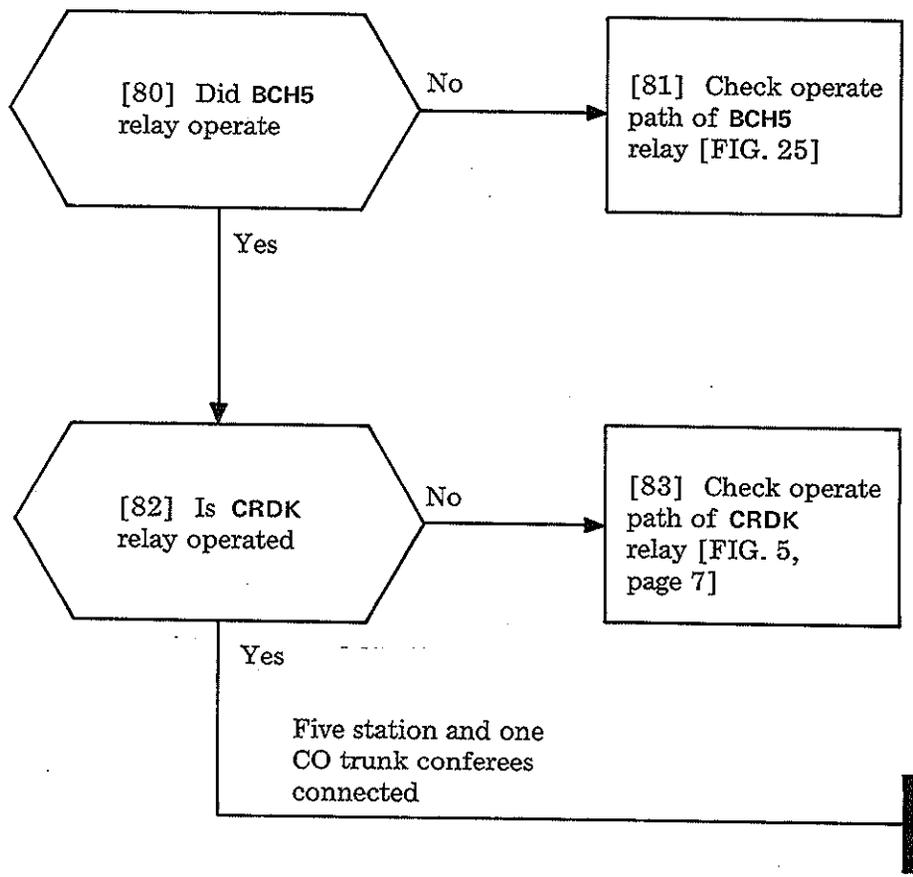
FIG. 23



SD-66902
DIAL CONT TRK

FIG. 24

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SD-66902
DIAL CONF TRK

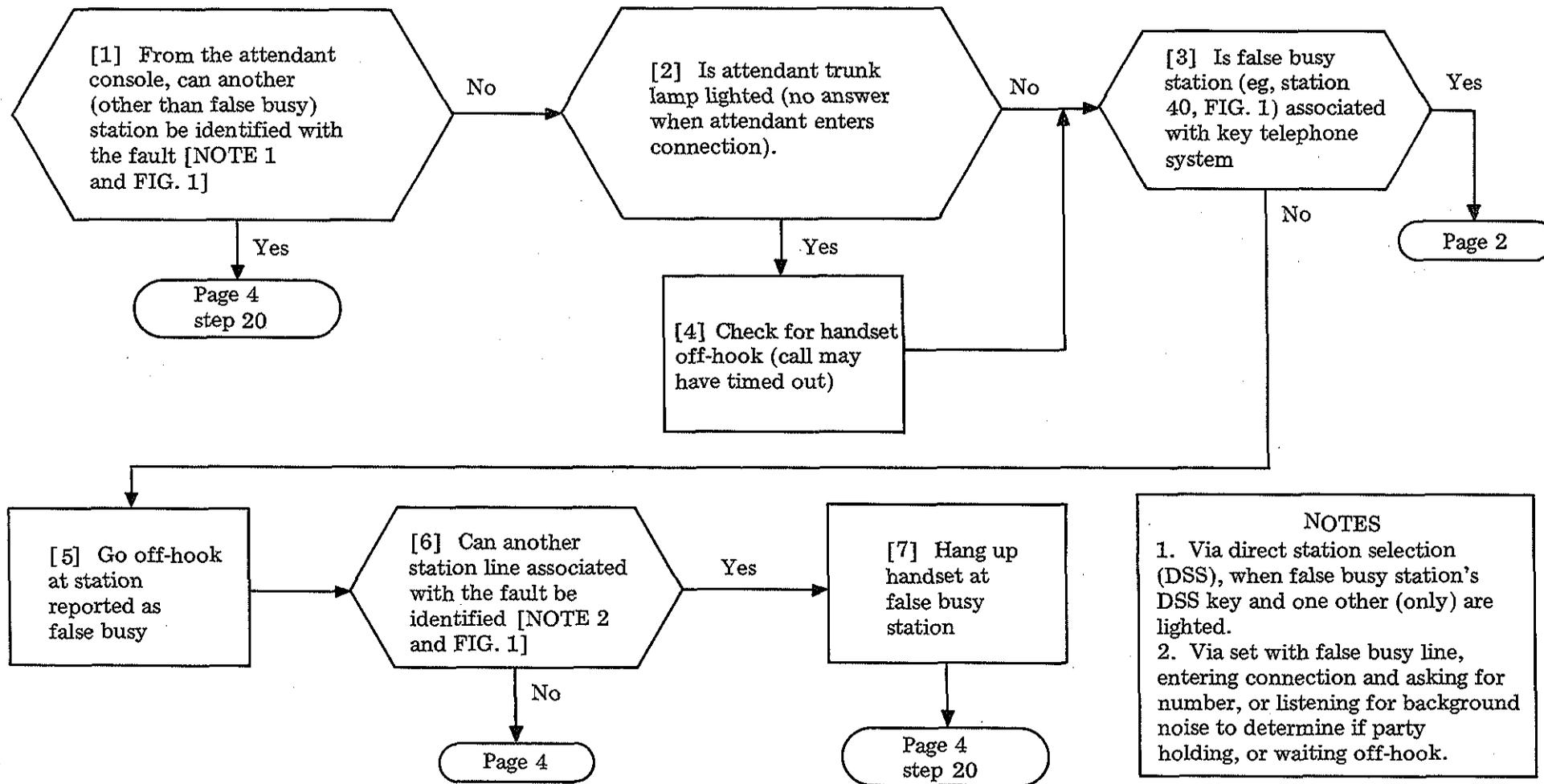
FIG. 25

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SUMMARY

Go to false busy station set (that seemed idle, but caller got busy tone). See FIG. 1 for example. Make sure handset is on-hook. If key telephone set(s) is involved, verify that line is not held. Go off-hook and check for possible second station [FIG. 1, station 50] that may be associated with the trouble; perhaps caller waiting off-hook, or

unattended. If unattended, background noise may help to identify the location of this set. Since the 756A PBX switching network operates via calling party hold, locate originating set or wiring that is holding operated the line hold magnet (LHM) of the station reported as false busy, using the figure(s) or other reference given in this procedure.



NOTES

1. Via direct station selection (DSS), when false busy station's DSS key and one other (only) are lighted.
2. Via set with false busy line, entering connection and asking for number, or listening for background noise to determine if party holding, or waiting off-hook.

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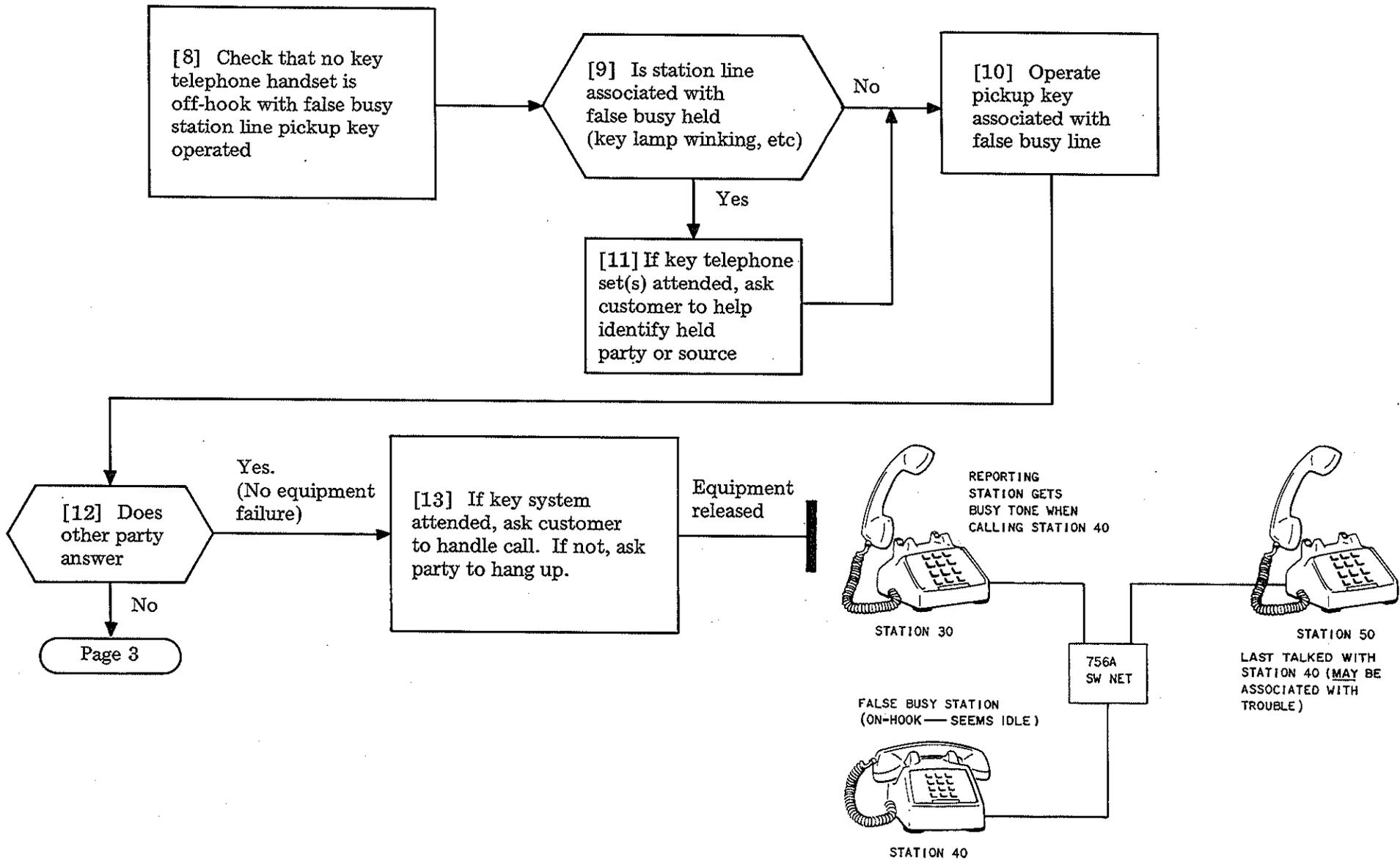
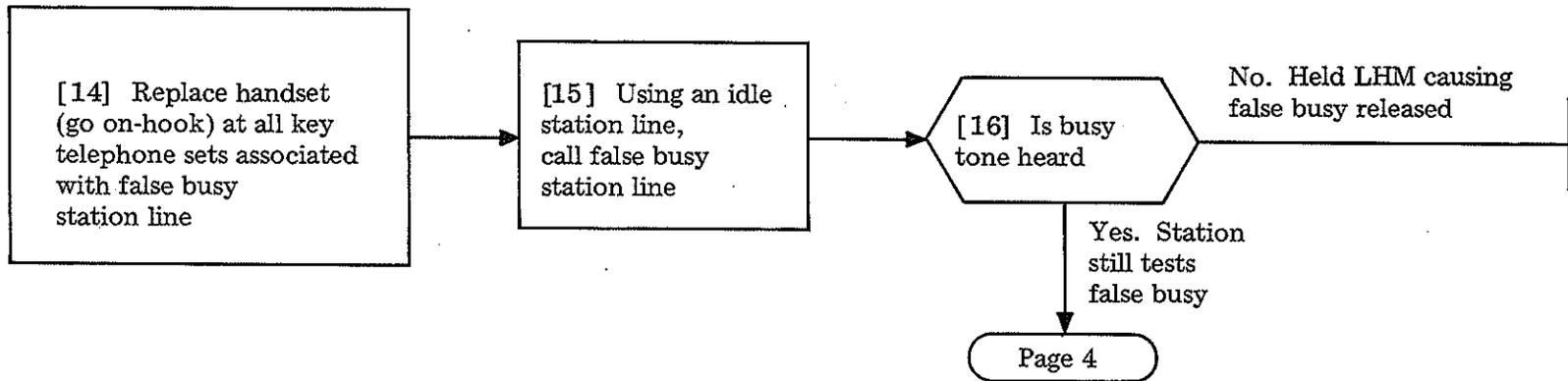


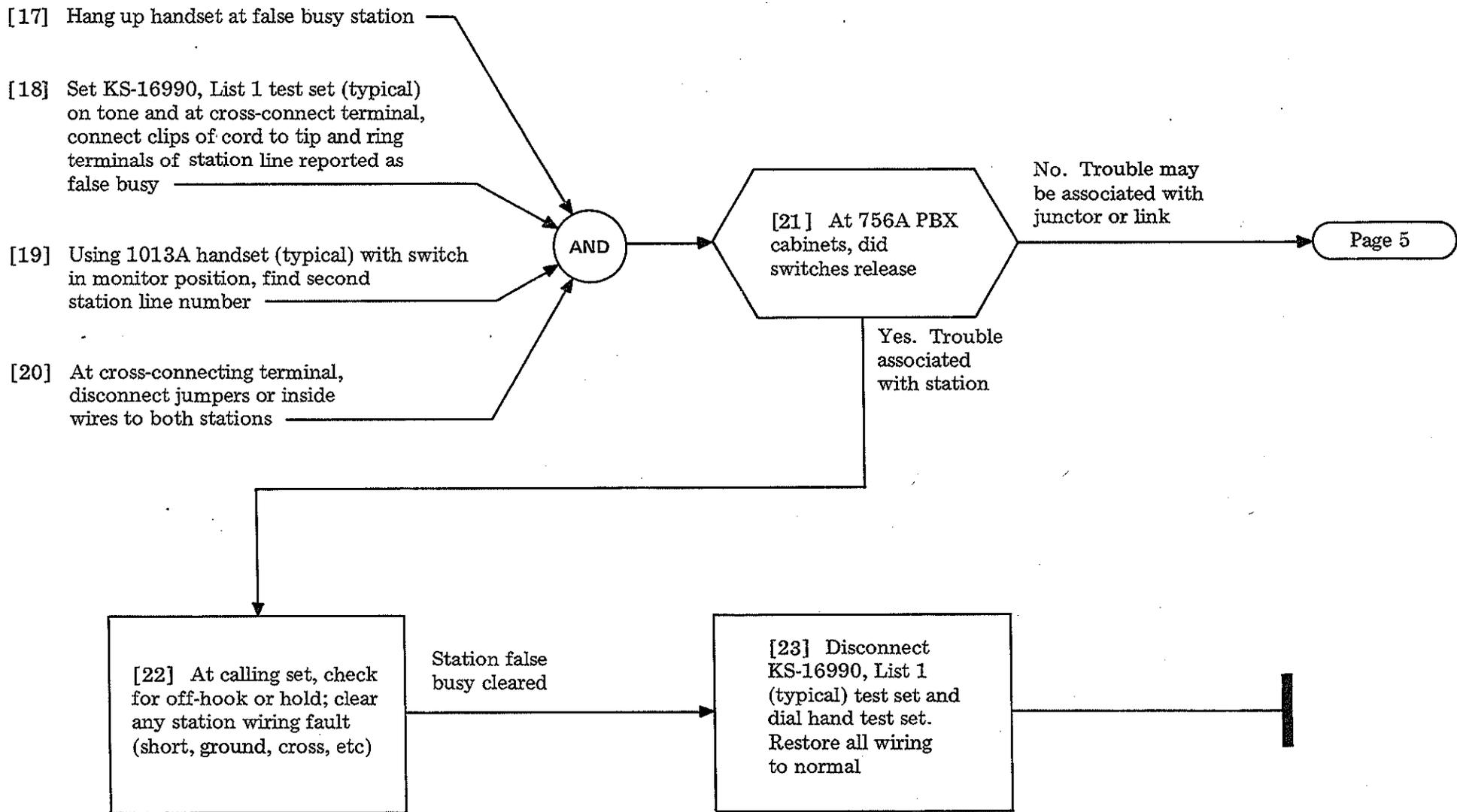
FIG. 1

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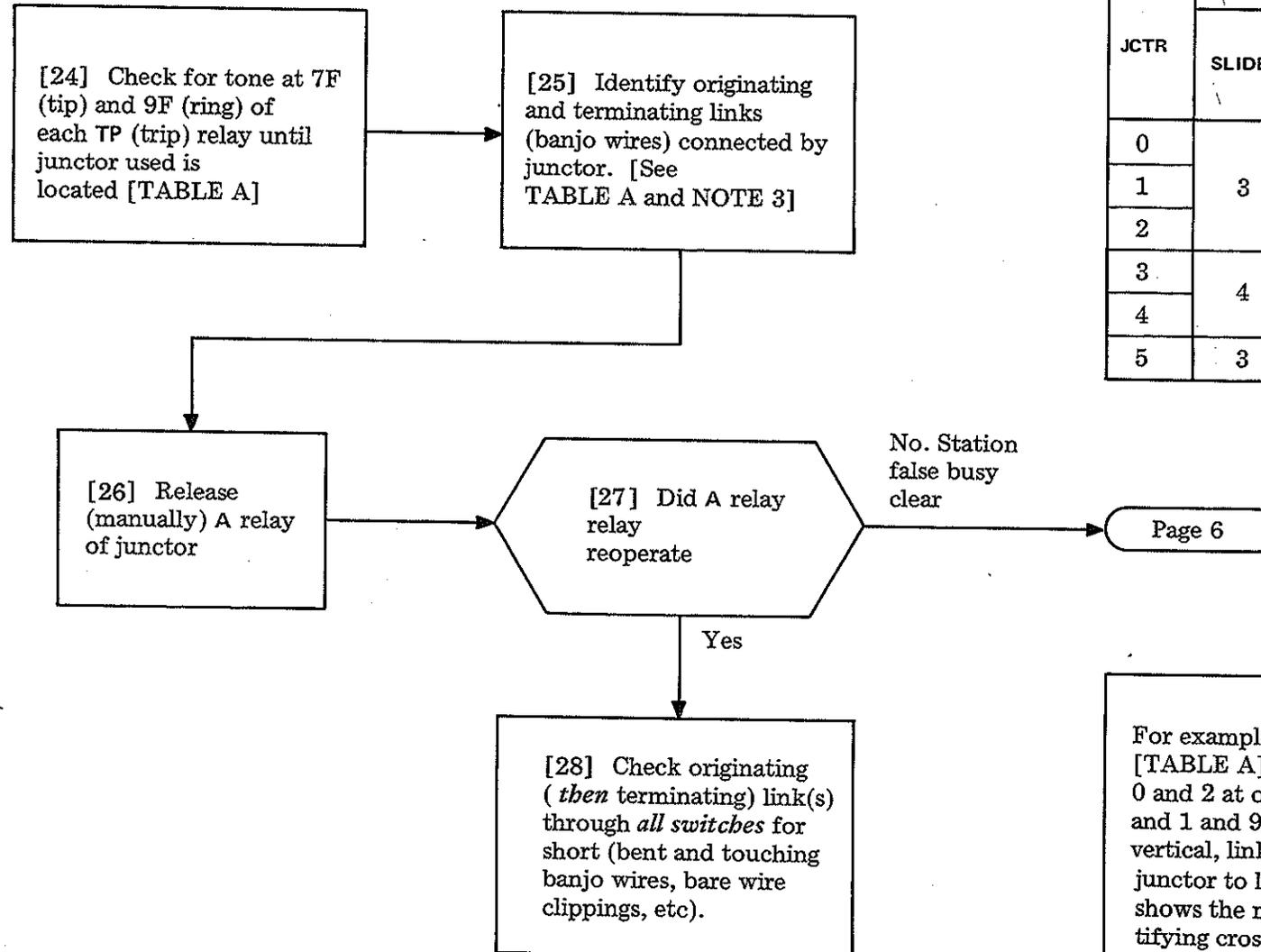
CLEAR STATION FALSE BUSY TROUBLE

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CLEAR STATION FALSE BUSY TROUBLE

| | |
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| TABLE A | | | | | |
|---------|----------|-------------|-------------|-------------------|------|
| JCTR | LOCATION | | | | |
| | SLIDE | REL-MTG PLT | CSBR SWITCH | HOLD MAG VERTICAL | |
| | | | | ORIG | TERM |
| 0 | 3 | T | 1 | 0 | 1 |
| 1 | | | | 2 | 3 |
| 2 | | U | | 4 | 5 |
| 3 | 4 | Y | 8 | 1 | 2 |
| 4 | | | | 3 | 4 |
| 5 | 3 | U | | 1 | 6 |

NOTE 3
 For example, if hold magnets [TABLE A] operated crosspoints 0 and 2 at originating vertical, and 1 and 9 at terminating vertical, link 02 is connected by the junctor to link 19. TAD-163 shows the method of identifying crosspoints and links.

CLEAR STATION FALSE BUSY TROUBLE

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| TABLE B | | |
|---------|---------|---------|
| JCTR | REL LOC | |
| | SLIDE | MTG PLT |
| 0 | 3 | T |
| 1 | | U |
| 2 | 4 | Y |
| 3 | | Y |
| 4 | | Y |
| 5 | 3 | U |

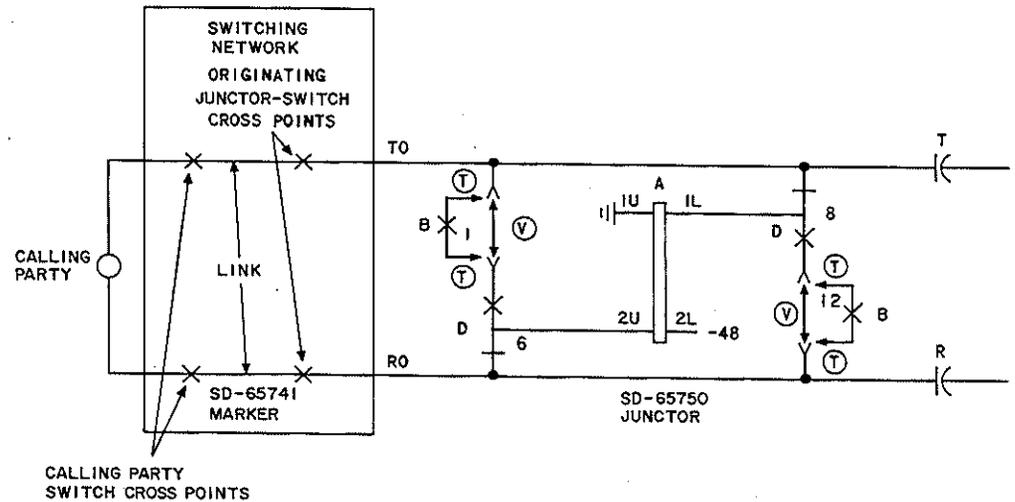


FIG. 2

[29] Verify that all junctors are provided with option T [NOTE 4, TABLE B, FIG. 1]

[30] Disconnect test set (tone) and 1013A (typical) handset. Restore all equipment and wiring to normal

All junctors wired for option T

NOTE 4
 Junctors stamped prior to SD-65750, Issue 6B are furnished with option V as standard. Later issues are furnished with T option as standard to prevent reoperation of A relay when D relay releases

[1] At convenient station, place outgoing CO trunk call (dial 9) to the LDN of an idle incoming trunk

[2] Have attendant extend call to restricted station with reported trouble

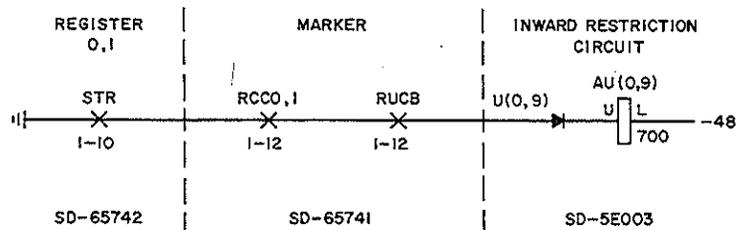
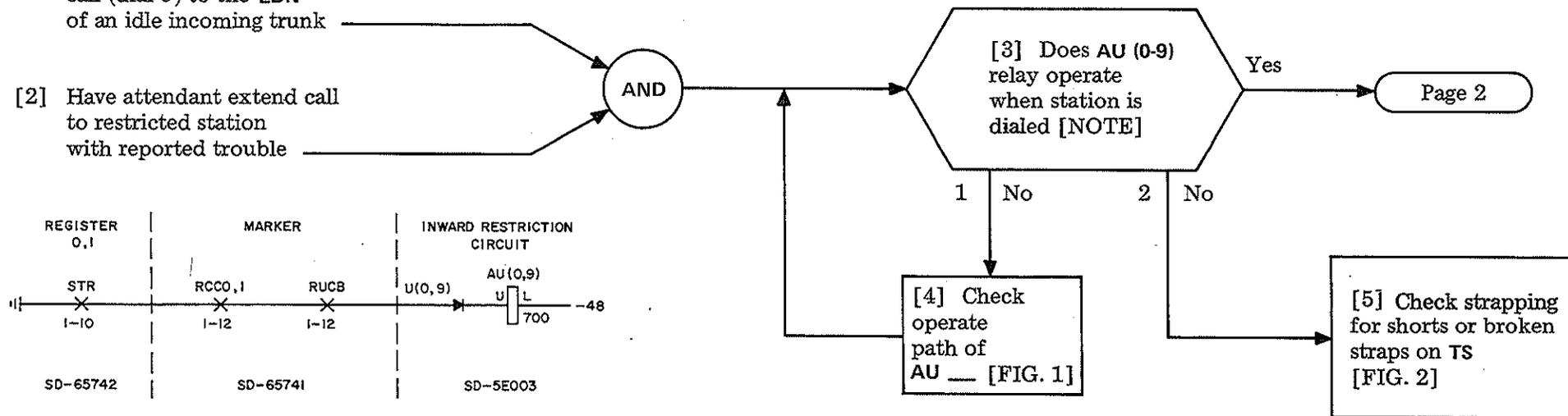


FIG. 1

NOTE
Relays for the inward restriction equipment are located in an external cabinet mounted near the PBX equipment

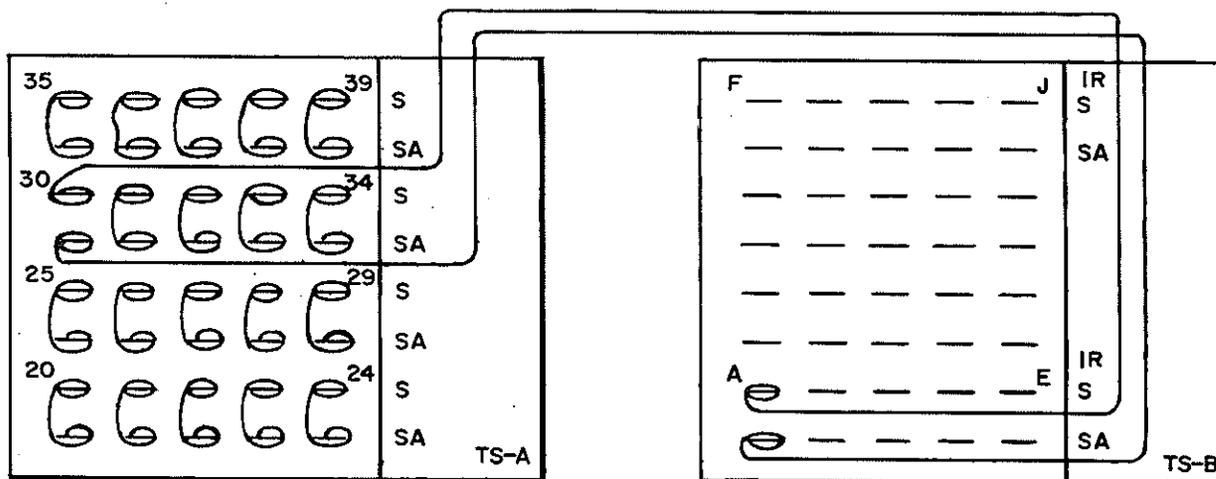


FIG. 2 — Example, STA 30 Inward Restricted

CLEAR STATION INWARD RESTRICTION TROUBLE

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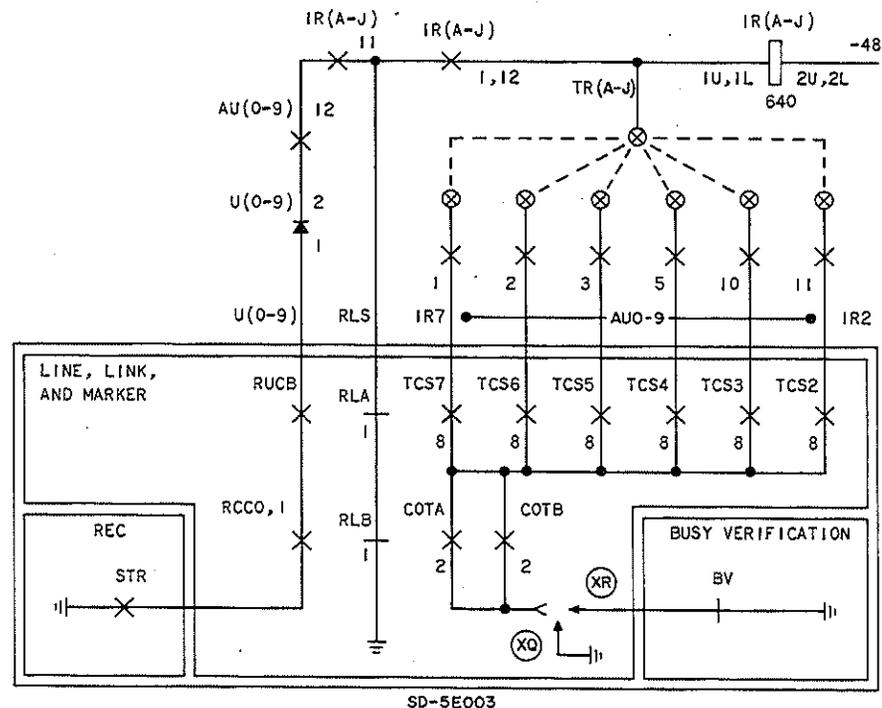
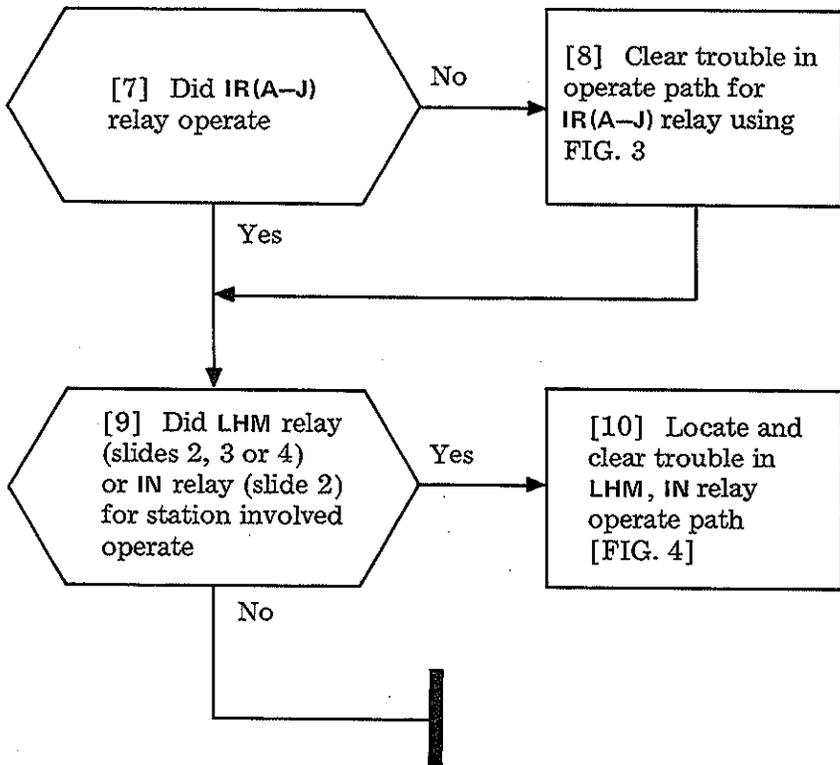


FIG. 3

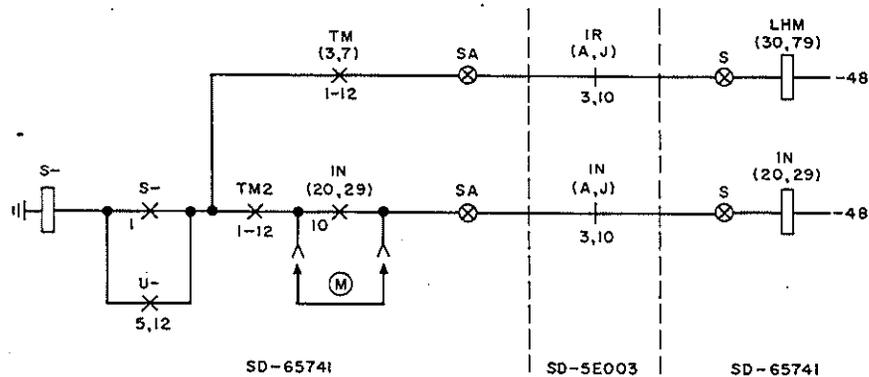
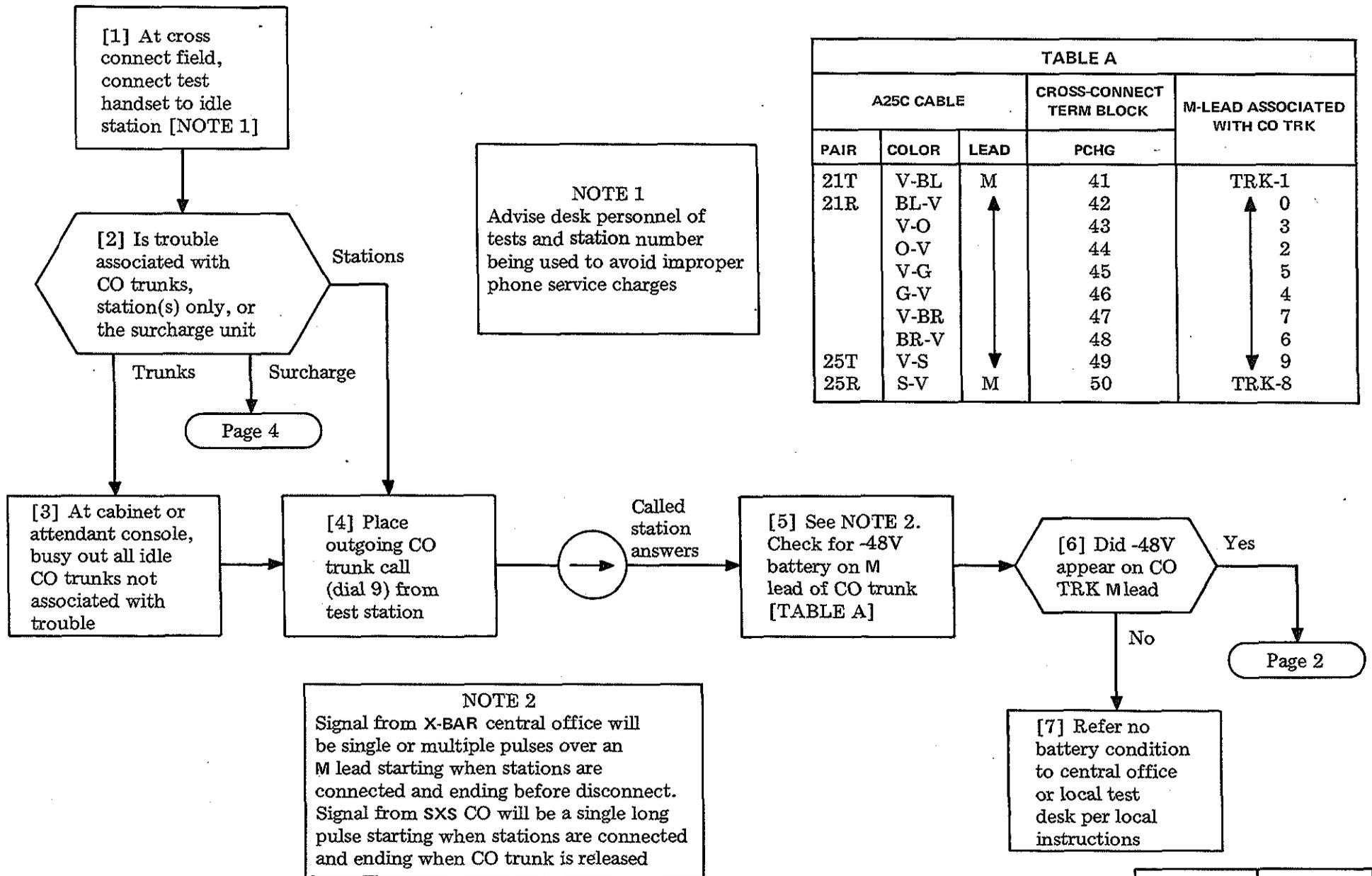
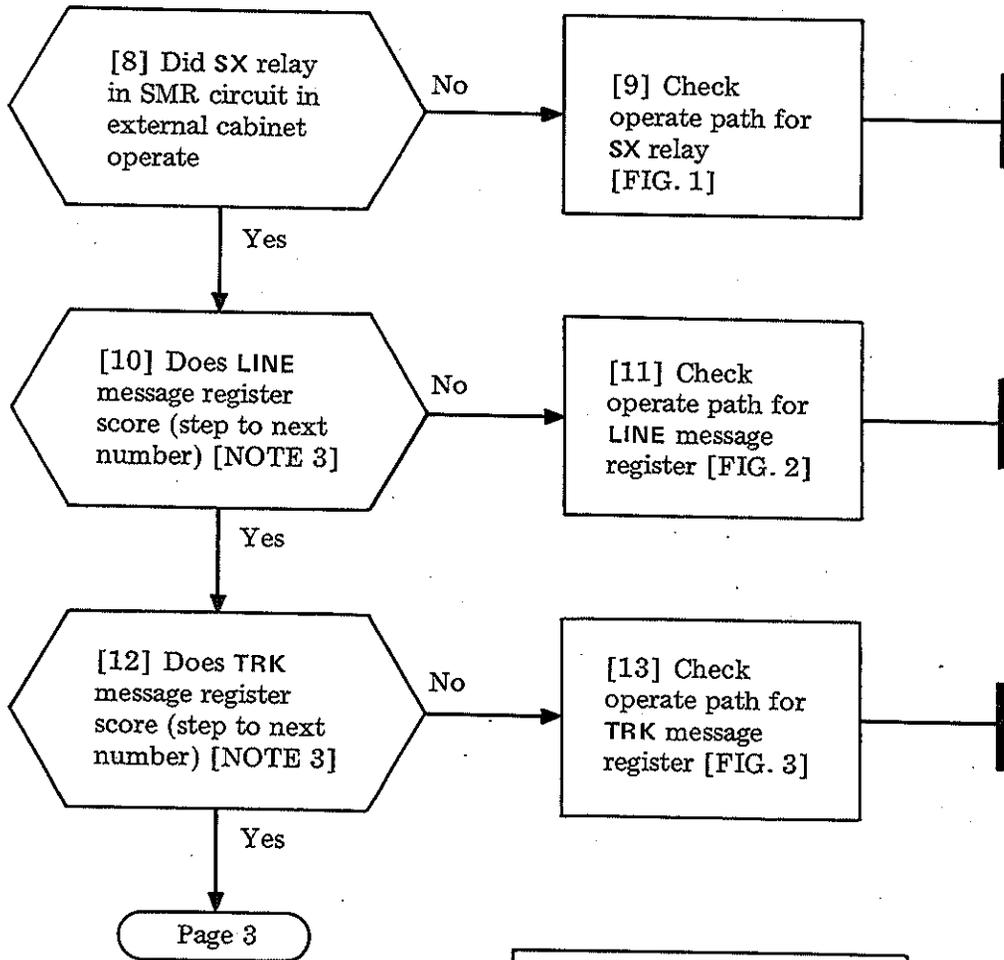


FIG. 4





NOTE 3
 When call requires several station message units, SX relay will operate and release with LINE register and COD relay following SX relay for each unit registration

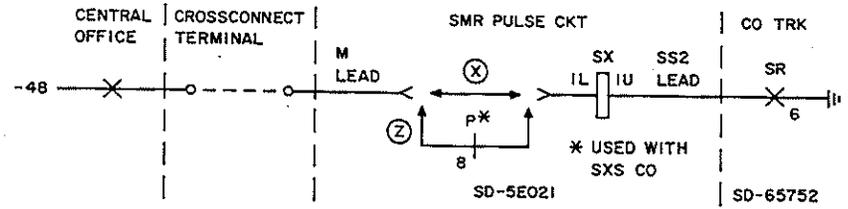


FIG. 1

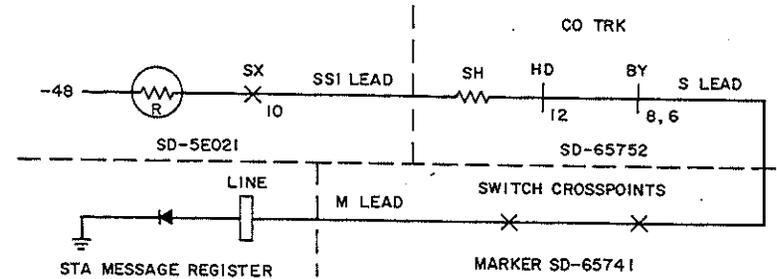


FIG. 2

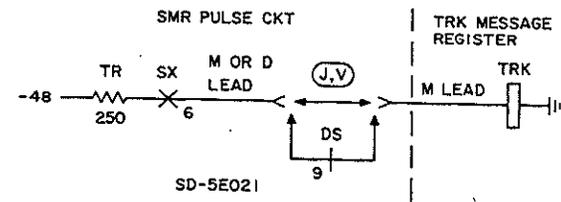
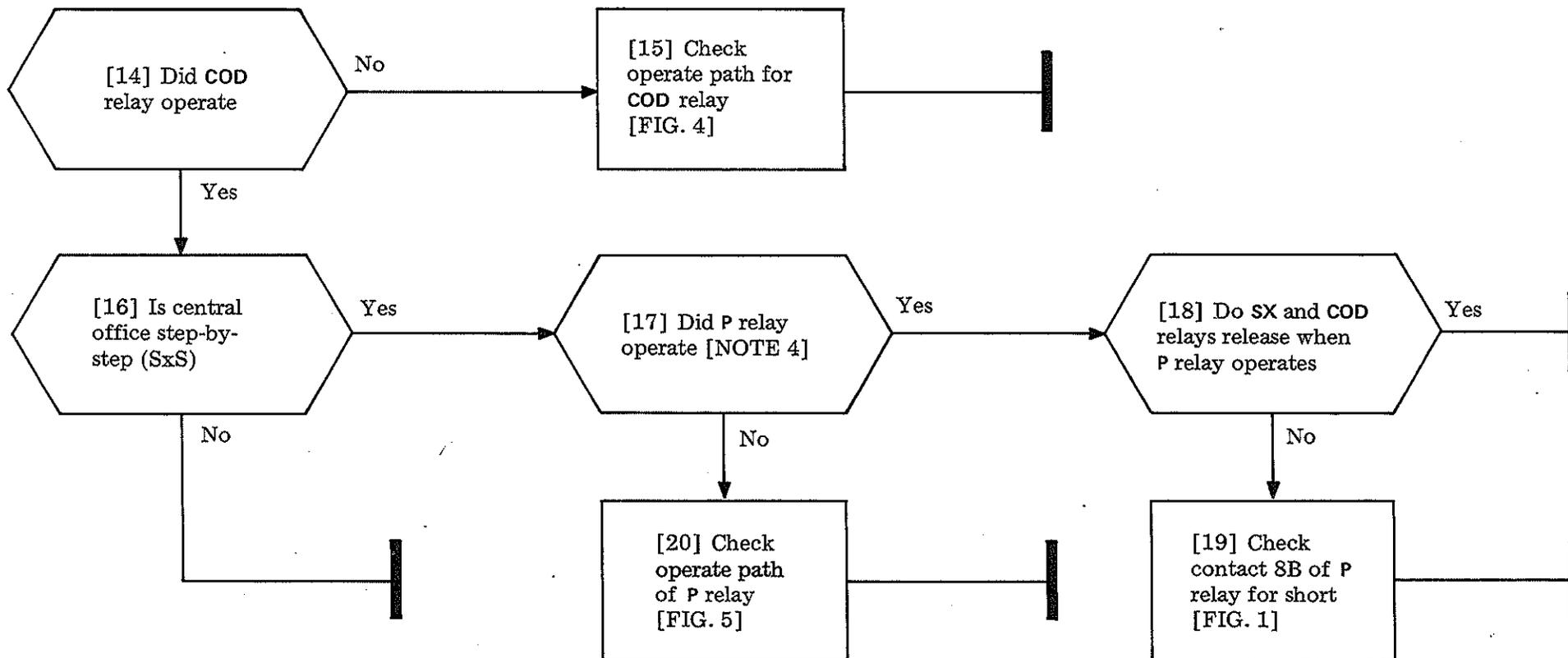


FIG. 3

| | |
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NOTE 4
 When SX relay remains operated longer than 200 to 1000 milliseconds, P relay should operate

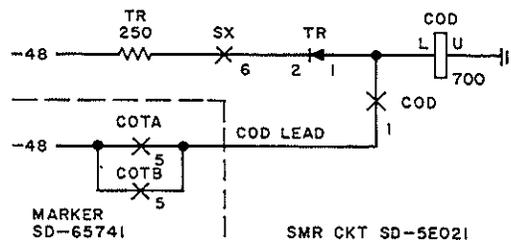


FIG. 4

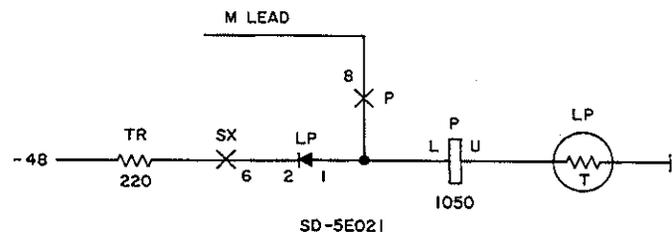
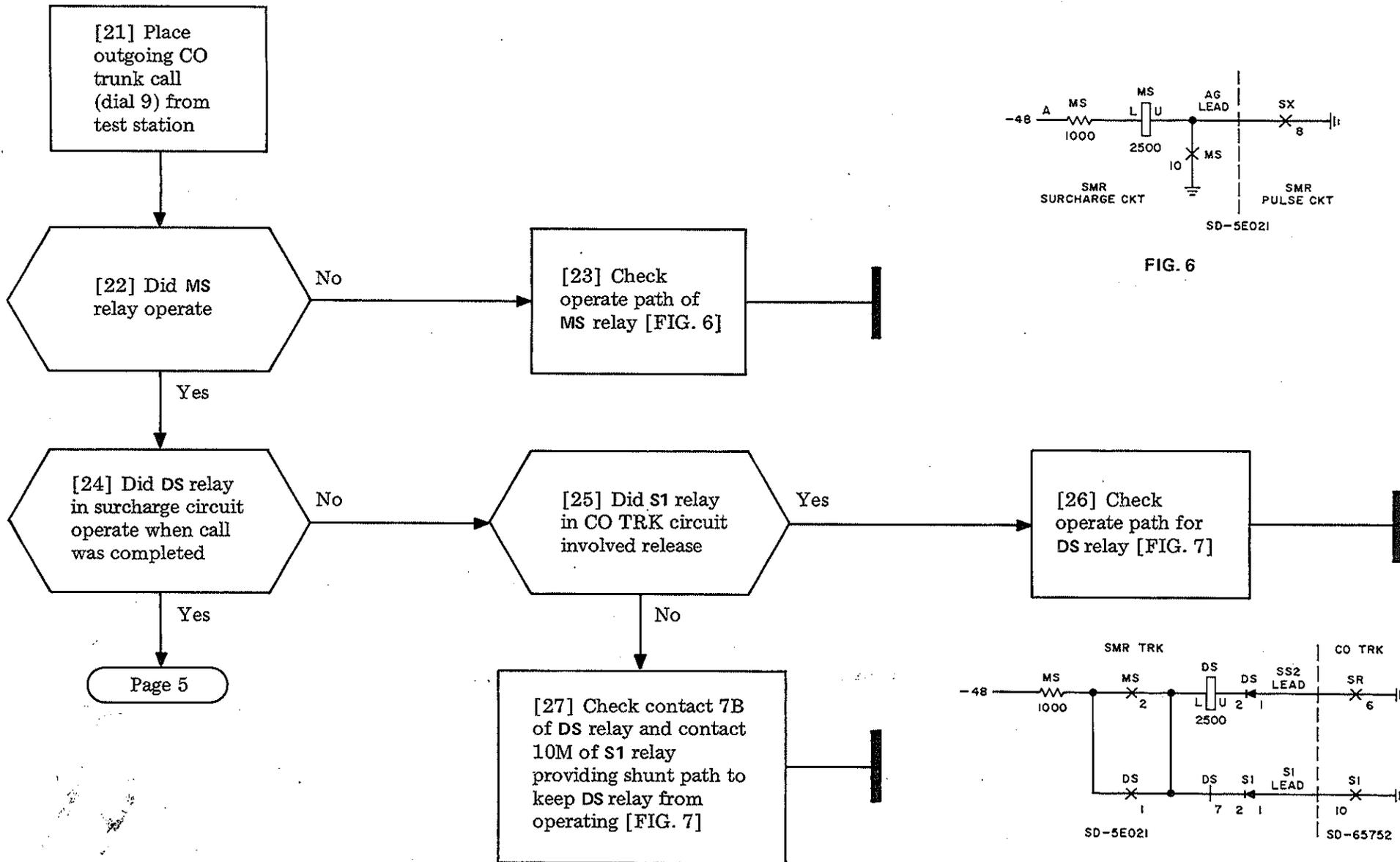
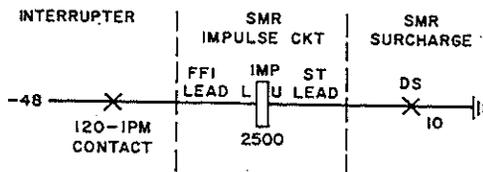
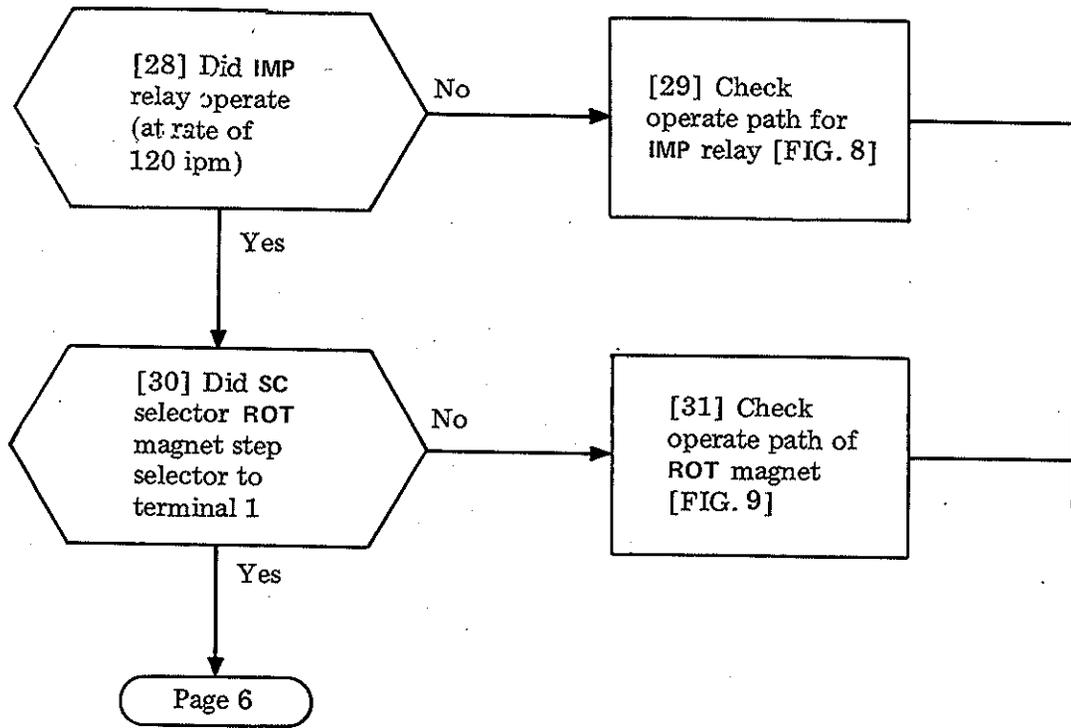


FIG. 5

| | |
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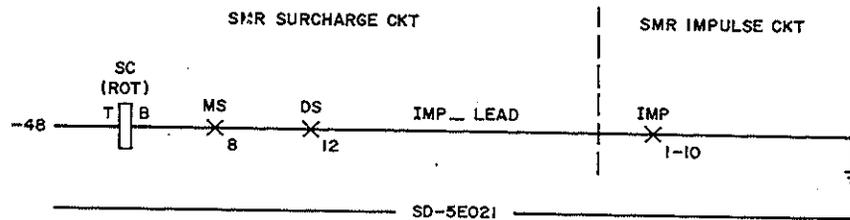


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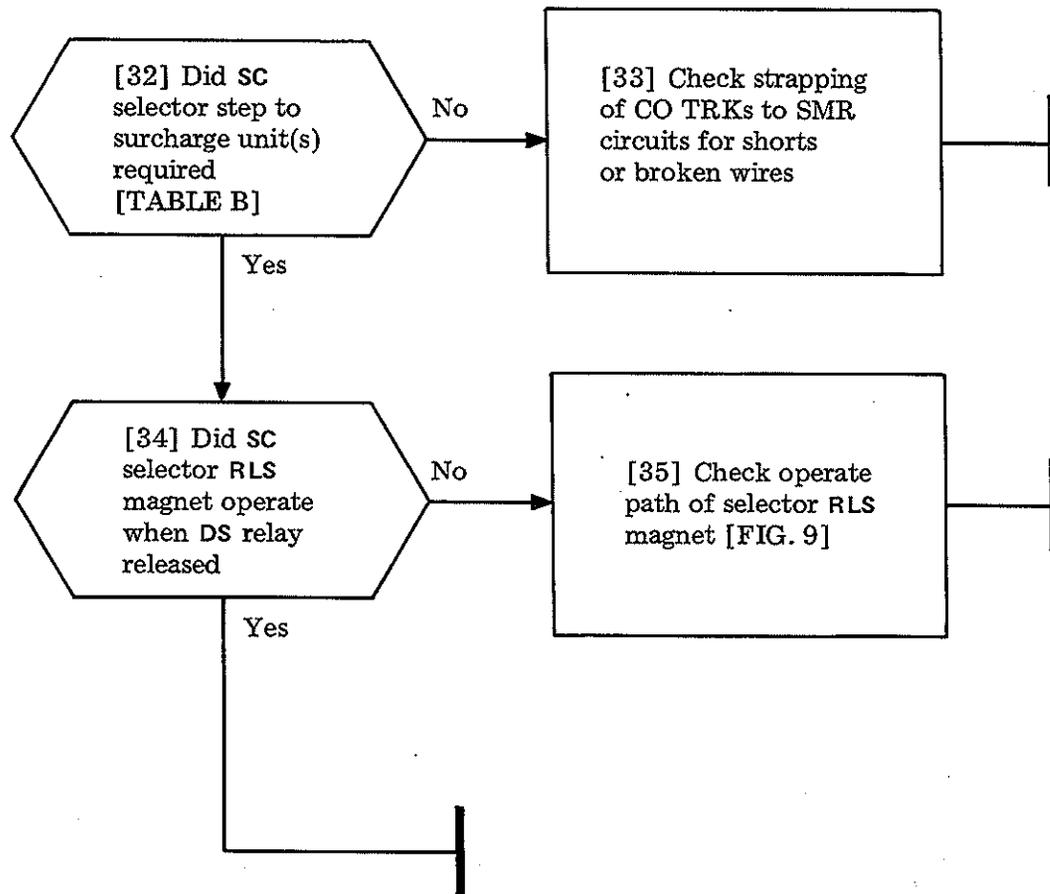
SD-5E021

FIG. 8



SD-5E021

FIG. 9



| TABLE B | |
|-----------------------|--------------------|
| SC SELECTOR TERMINALS | REGISTRATION UNITS |
| 1 | unused |
| 2 | unused |
| 3 | 0 |
| 4 | 1 |
| 5 | 2 |
| 6 | 3 |
| 7 | 4 |
| 8 | 5 |
| 9 | 6 |
| 10 | unused |

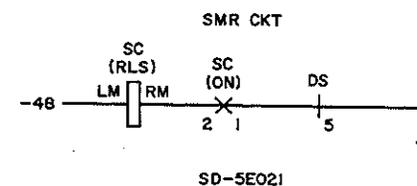
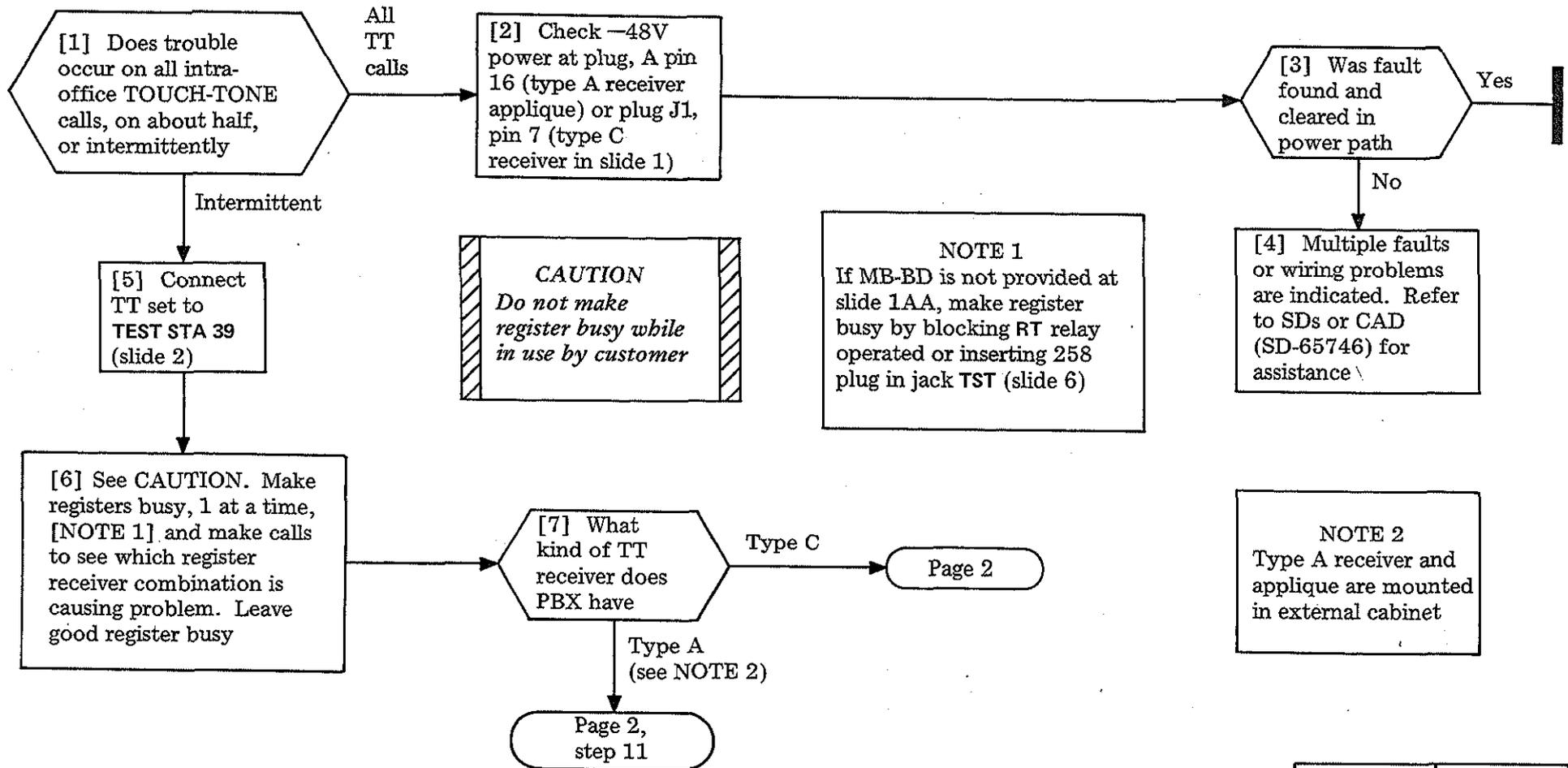


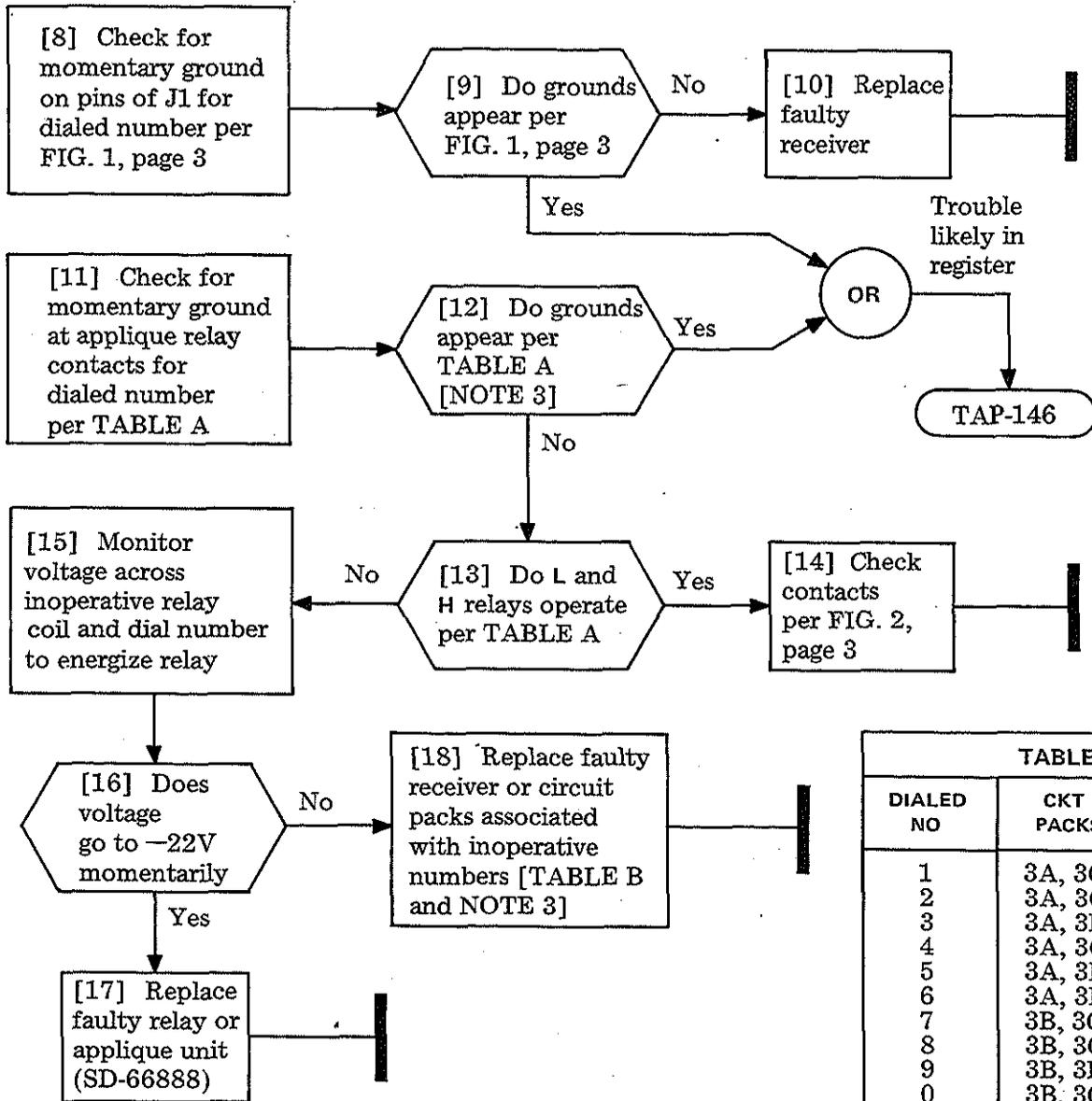
FIG. 10

SUMMARY

Reported "TOUCH-TONE" troubles may be caused by the TT receiver, its associated dial pulse register, or translation circuit (type "A" receiver applique). If TT equipment is operating, the KP_ (1-0) leads will be grounded during digit registration. This can be checked at STR_ (1-10) fixed contact at the associated DP register, at a pin of

J1 (see TABLE A) for C-type receivers, or H_ relay contacts (TABLE B) at type A receiver appliques. Repair of C type receivers (slide 1) is by replacement. Type A receivers are mounted externally and have replaceable boards. If receivers check OK, refer to TAP-146 for DP register trouble





NOTE 3
 If problem appears to be timing or irregular fault, replace CPS 1, 2, 5, and 6 (if available) before replacing entire unit

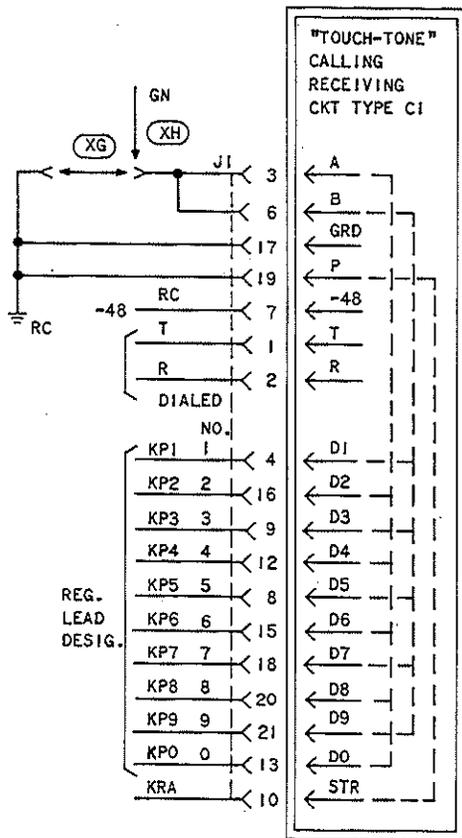
TABLE A

| DIALED NO | REG LEAD | OPERATED H RELAY/CONTACT | OPERATED L RELAY |
|-----------|----------|--------------------------|------------------|
| 1 | KP1 | H1 2 | L1 |
| 2 | KP2 | H2 2 | L1 |
| 3 | KP3 | H3 2 | L1 |
| 4 | KP4 | H1 5 | L2 |
| 5 | KP5 | H2 5 | L2 |
| 6 | KP6 | H3 5 | L2 |
| 7 | KP7 | H1 6 | L3 |
| 8 | KP8 | H2 6 | L3 |
| 9 | KP9 | H3 6 | L3 |
| 0 | KP0 | H2 9 | L4 |

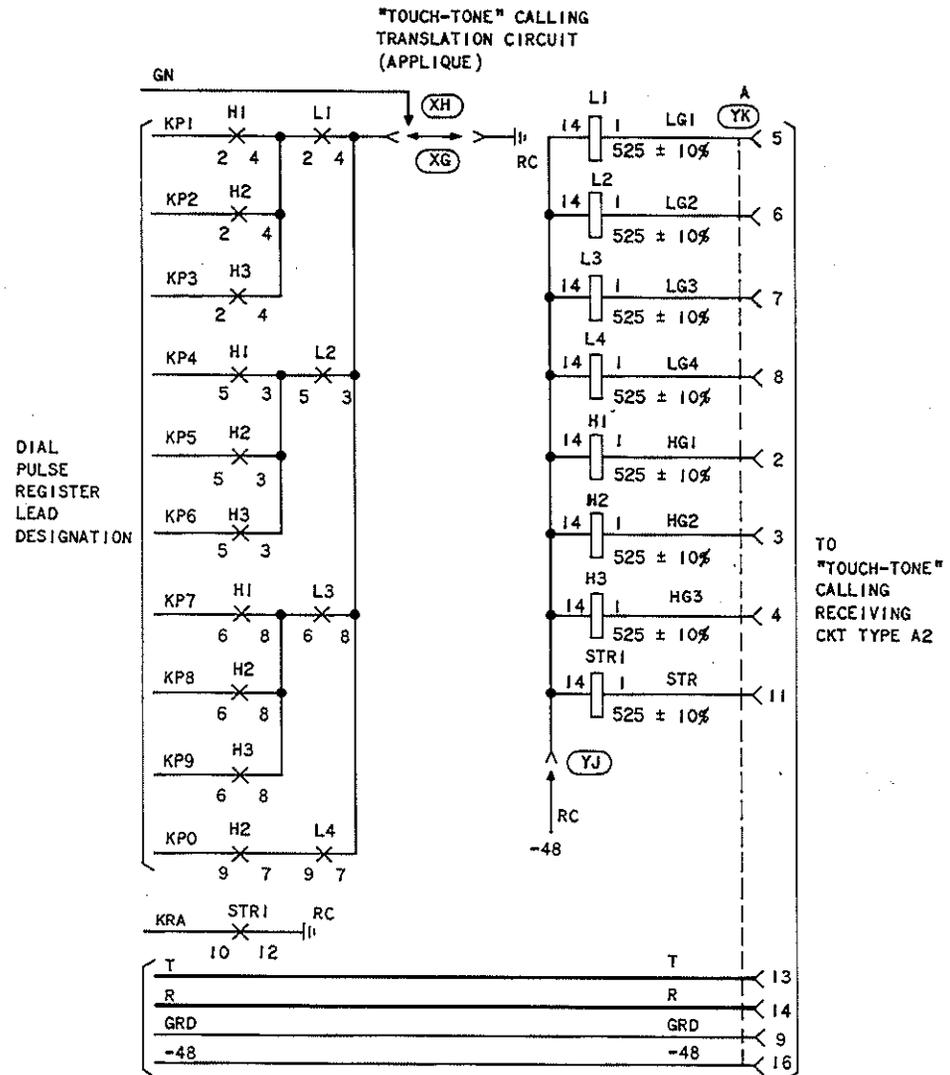
TABLE B

| DIALED NO | CKT PACKS | EQUIP CODE |
|-----------|-----------|------------|
| 1 | 3A, 3C | B3, B5 |
| 2 | 3A, 3C | B5 |
| 3 | 3A, 3D | B6 |
| 4 | 3A, 3C | B5 |
| 5 | 3A, 3B | B4 |
| 6 | 3A, 3D | B3, B6 |
| 7 | 3B, 3C | B4, B5 |
| 8 | 3B, 3C | B5 |
| 9 | 3B, 3D | B6 |
| 0 | 3B, 3C | B4, B5 |

| | |
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SD-65742
FIG. 1



SD-65742
FIG. 2

SUMMARY

This procedure aids trouble clearing in traffic usage (TU) lead going to a traffic measurement set (TMS). Signaling is done by grounding the TU lead. Faulty grounding would normally occur because of improper relay closure or bad contacts. Use (1) volt-ohmmeter, (2) traffic lead test set, or (3) locally made test set (DLP-122) to isolate troubles. Refer to TABLE A for applicable figure on SD.

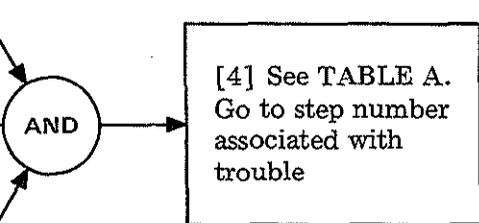
| TABLE A | | | |
|------------------------|------------|---|------|
| CIRCUIT OR TRUNK | STEP/ PAGE | | FIG. |
| Registers | 5 | 1 | 1 |
| Junctors | 11 | 2 | 2 |
| CO Trunk | 15 | 2 | 3, 4 |
| Attendant Trunk | 30 | 4 | 5 |
| Busy-Tone Trunk | 39 | 5 | 6 |
| Ringdown Tie Trunk | 44 | 5 | 7 |
| Station Dial Transfer | 51 | 6 | 8 |
| Universal Line Circuit | 52 | 6 | 9 |
| Links | 56 | 7 | 10 |

NOTE 1
If not equipped with MB-BD circuit (slide 2AB), block operated RT relay (REG—) slide 6

[1] Locate P3, P4 connectors of J58829A, L57 cable

[2] Locate TMS terminals at slide 3V

[3] See CAUTION 1. Disconnect remote scanner



[5] See CAUTION 2. Busy out register not associated with trouble [NOTE 1]

[6] Go off-hook at convenient station or test handset at station 39

[7] Check ground path through SR and RT relay contacts (of register with trouble) from P3 connector [FIG. 1]

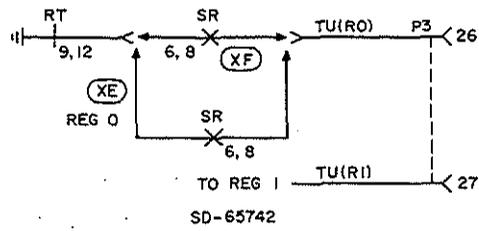
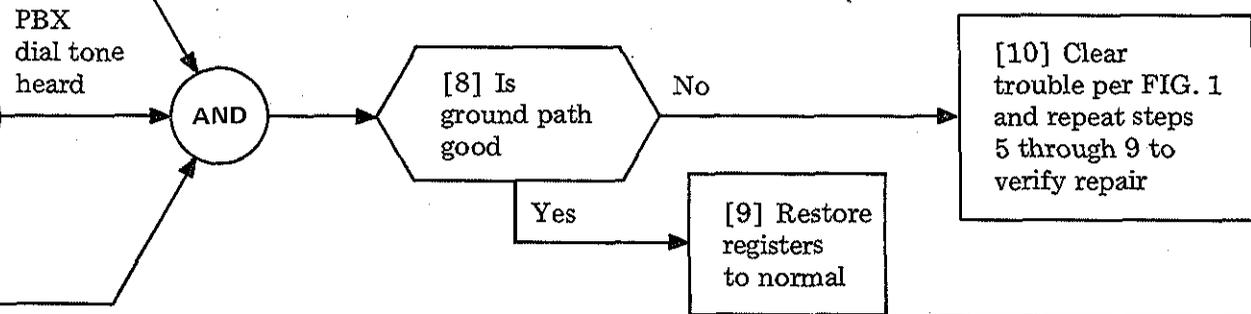


FIG. 1

CAUTION

1. Consult traffic department before disconnecting remote scanner and associated equipment to clear trouble
2. Do not busy out equipment that would interrupt a call in progress



CLEAR TRAFFIC LEAD TROUBLE

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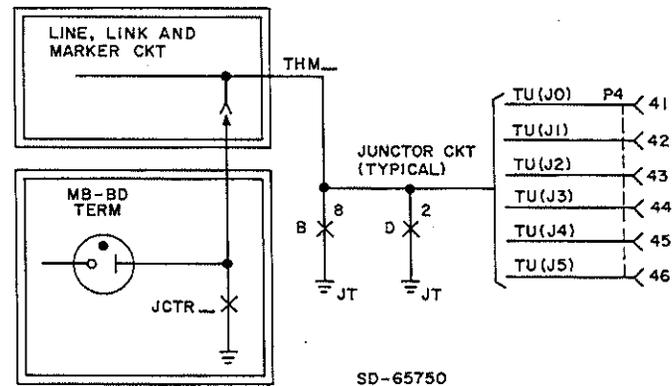
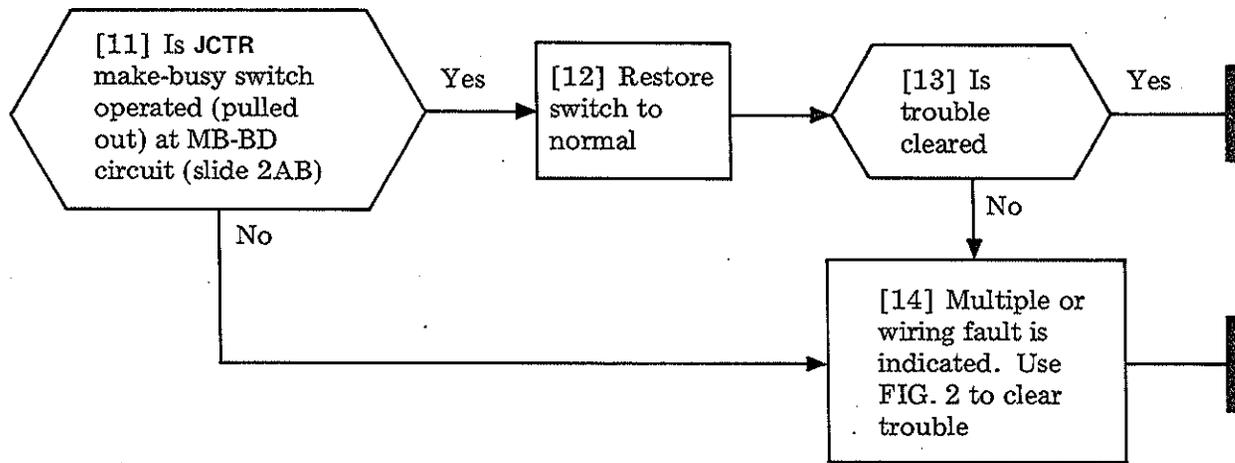


FIG. 2

[15] See CAUTION 2. Insulate contacts 5, 6, and 7 of BY relay

[16] Block CT relay operated

SR relay operates



[18] Is TU (T-) lead grounded

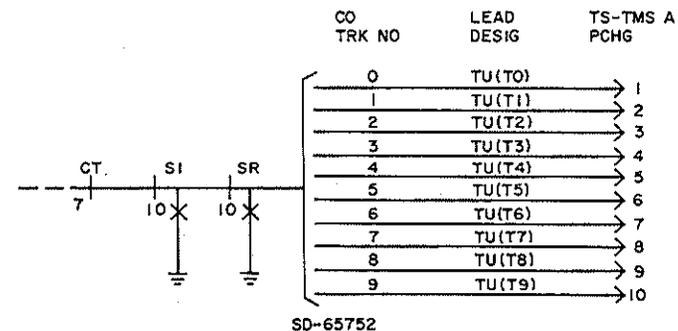
Yes

Page 3

step 26

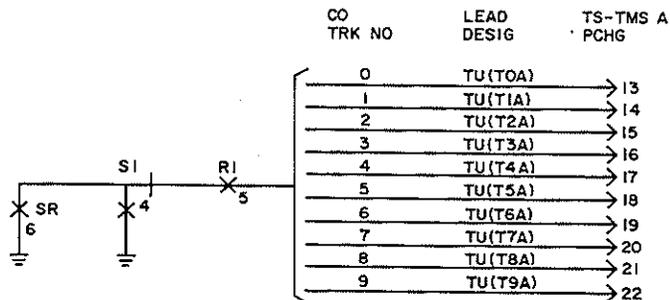
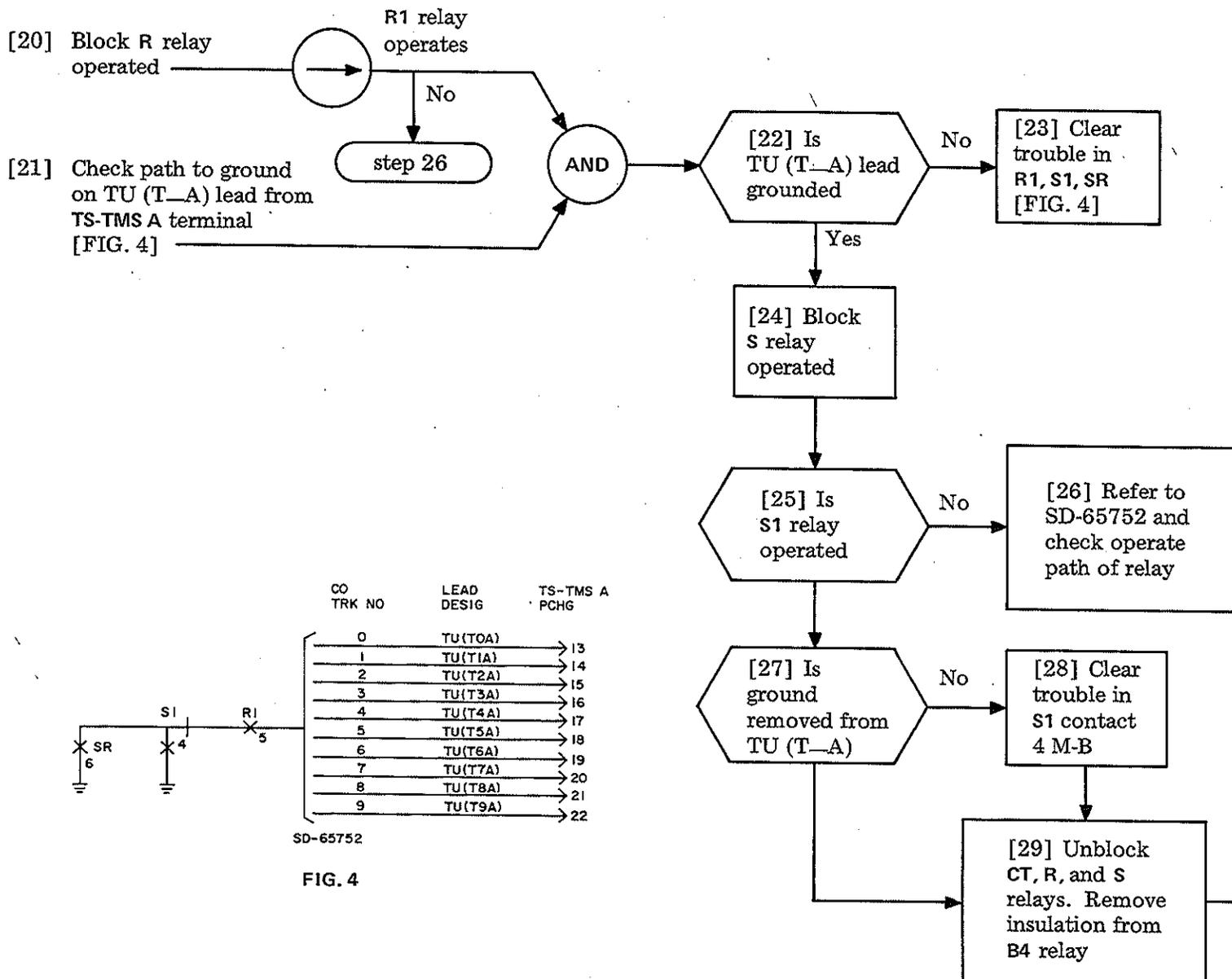
[17] Check path to ground on TU (T-) lead from TS-TMS A terminal [FIG. 3] located in slide 3V

[19] Check SR 10-make contact. Repeat step 17



SD-65752

FIG. 3

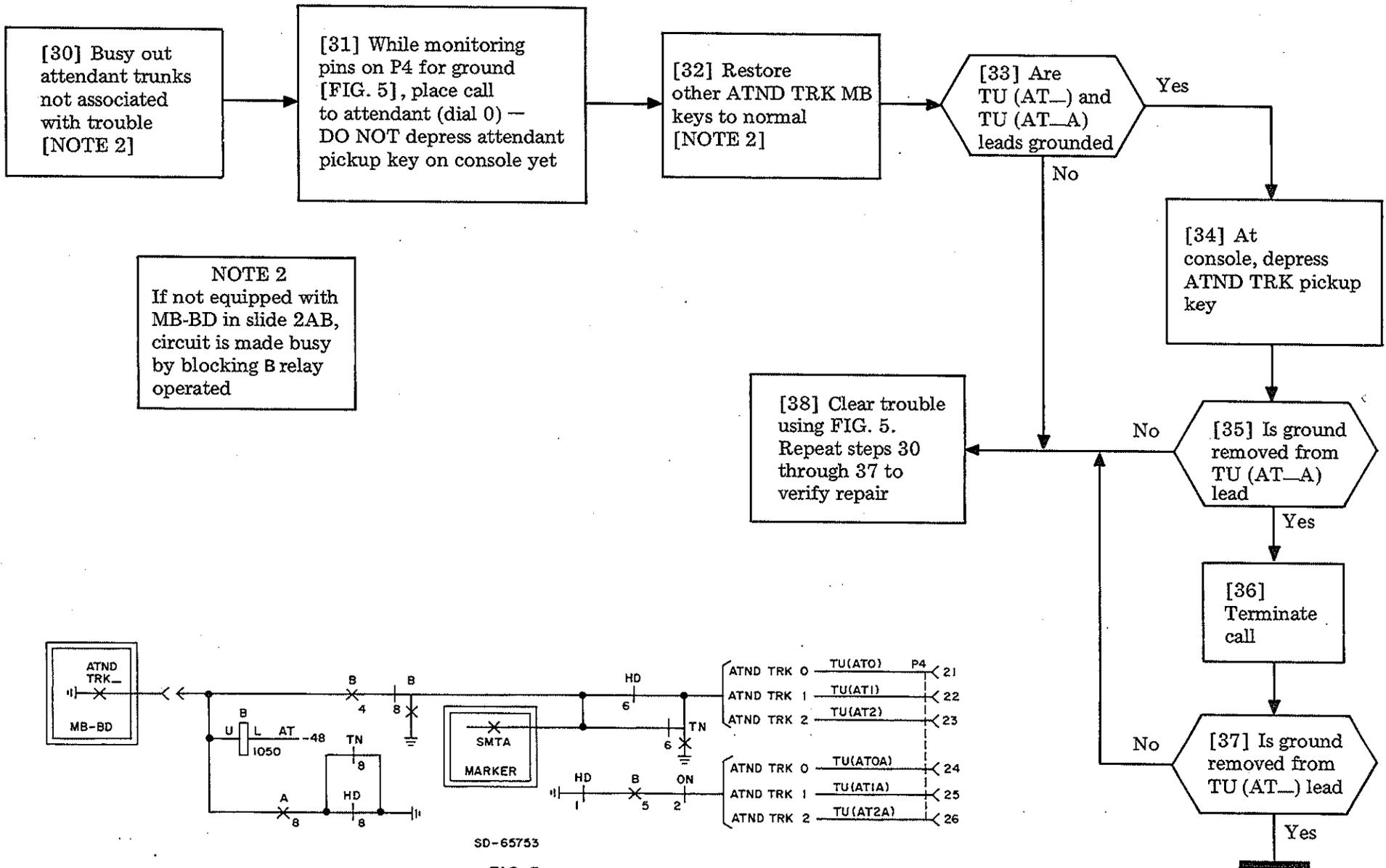


SD-65752

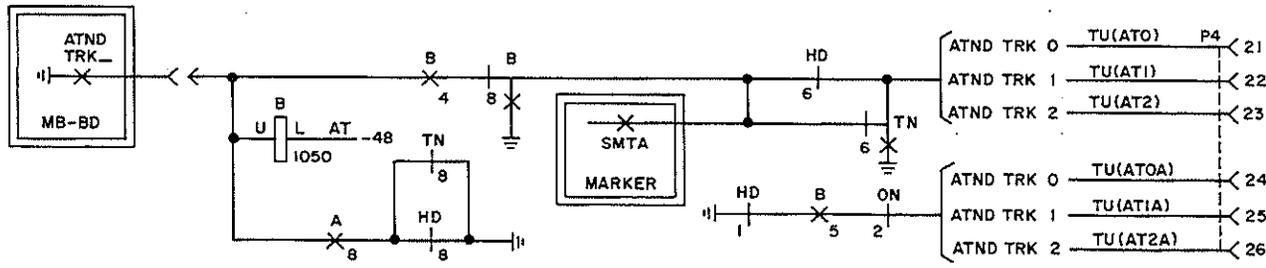
FIG. 4

CLEAR TRAFFIC LEAD TROUBLE

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NOTE 2
 If not equipped with MB-BD in slide 2AB, circuit is made busy by blocking B relay operated



SD-65753
 FIG. 5

CLEAR TRAFFIC LEAD TROUBLE

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[39] At slide 3V, monitor TU (BTT) lead on TS-TMS A (terminal 33) for ground

[40] While observing A and RA relays (slide 4AA), place call to busy station

[44] At slide 3V, monitor TU (T₋) and TU (T₋A) leads for ground from TS-TMS A terminals [FIG. 7]

[45] Place outgoing call from attendant position

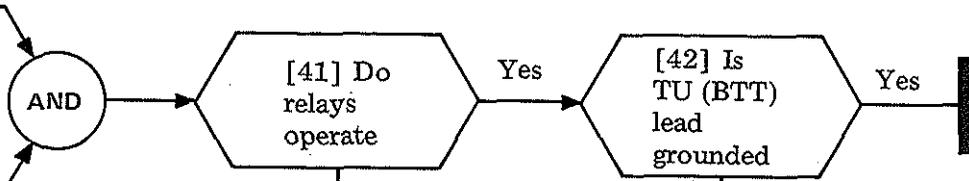
[47] Check S1 relay and 10-make contacts [FIG. 7]. Clear trouble and verify

[46] Is TU (T₋) lead grounded

[48] Arrange for incoming call to be placed

[50] Clear trouble using FIG. 7. Repeat steps 40 through 46 to verify

[49] Is TU (T₋A) lead grounded through R relay 1-make, and TU (T₋) lead grounded through LO 8-make [FIG. 6]



[43] Clear trouble using FIG. 6. Repeat steps 38 through 41 to verify repair

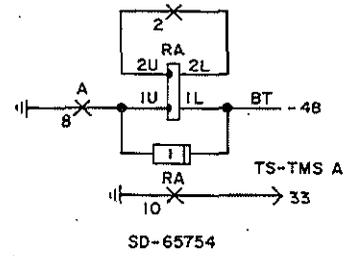


FIG. 6

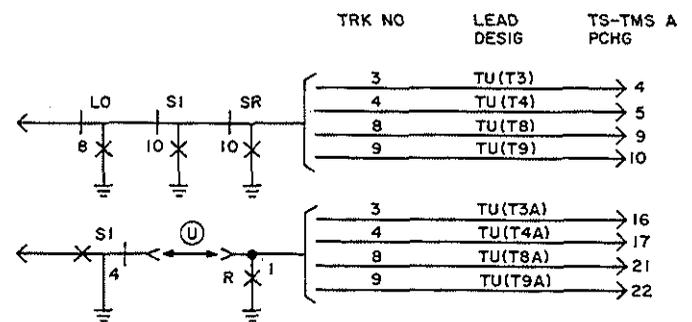
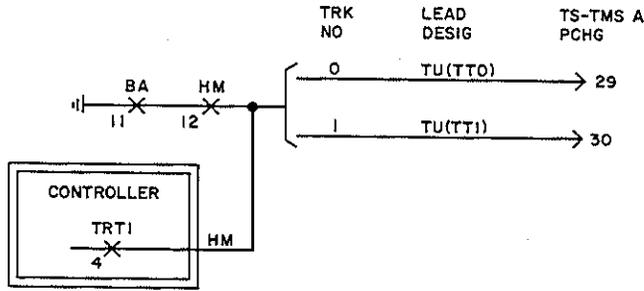


FIG. 7

CLEAR TRAFFIC LEAD TROUBLE

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[51] Check relay operation and contacts of relays shown in FIG. 8

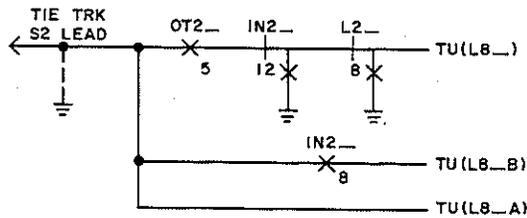
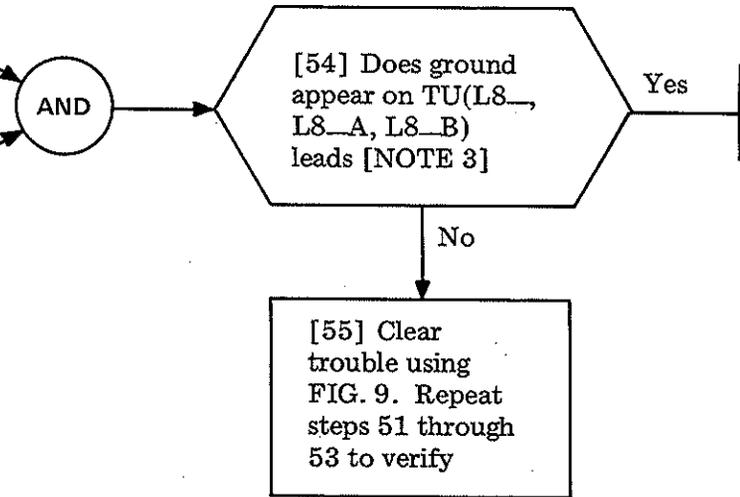


SD-66921

FIG. 8

[52] At slide 3V, monitor terminals listed in TABLE B (for the associated line circuit) for ground path

[53] See CAUTION 2. Operate corresponding S relay on line circuit



SD-65741 B35

FIG. 9

NOTE 3
Ground is initially furnished through S relay coil

| TABLE B | |
|------------|---------------|
| LEAD DESIG | TS-TMS B PCHG |
| TU(L80) | 13 |
| 81 | 14 |
| 82 | 15 |
| 83 | 16 |
| 84 | 17 |
| 85 | 18 |
| 86 | 19 |
| 87 | 20 |
| 88 | 21 |
| TU(L89) | 22 |
| TU(L80A) | 25 |
| 81 | 26 |
| 82 | 27 |
| 83 | 28 |
| 84 | 29 |
| 85 | 30 |
| 86 | 31 |
| 87 | 32 |
| 88 | 33 |
| TU(L89A) | 34 |
| TU(L80B) | 37 |
| 81 | 38 |
| 82 | 39 |
| 83 | 40 |
| 84 | 41 |
| 85 | 42 |
| 86 | 43 |
| 87 | 44 |
| 88 | 45 |
| TU(L89B) | 46 |

[56] At slide 2AB, turn on make-busy/busy display (MB-BD)

[57] Operate (pull out) MB key for link to be tested

[58] Measure voltage at pin of TU lead on connector P3 [TABLE C]

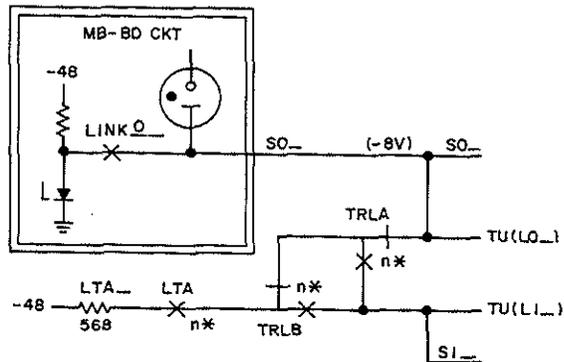
AND

[59] Does pin to ground voltage measure approximately -8 Vdc (or less)

Yes

No

[60] Clear trouble using FIG. 10. Verify and set MB key to normal



SD-65741 B38, 39

* SEE TABLE C FOR CONTACT NUMBERS

FIG. 10

| TABLE C | | | | |
|-------------------|-----------|----------------------|------|-----|
| LINK & LEAD DESIG | P3 PIN NO | FIXED RELAY CONTACTS | | |
| | | TRLA | TRLB | LTA |
| TU(L02) | 16 | 12 | 3 | 1 |
| 03 | 17 | 11 | 4 | 2 |
| 04 | 18 | 10 | 6 | 3 |
| 05 | 19 | 9 | 7 | 4 |
| 06 | 20 | 3 | 12 | 9 |
| 07 | 21 | 4 | 11 | 10 |
| 08 | 22 | 6 | 10 | 11 |
| TU(L09) | 23 | 7 | 9 | 12 |
| TU(L12) | 24 | 12 | 3 | 1 |
| 13 | 25 | 11 | 4 | 2 |
| 14 | 26 | 10 | 6 | 3 |
| 15 | 27 | 9 | 7 | 4 |
| 16 | 28 | 3 | 12 | 9 |
| 17 | 29 | 4 | 11 | 10 |
| 18 | 30 | 6 | 10 | 11 |
| TU(L19) | 31 | 7 | 9 | 12 |

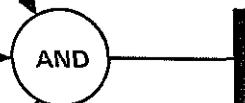
CLEAR TRAFFIC LEAD TROUBLE

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[1] Use REG DESIG to locate register relay operate path in FIG. 1 [TABLE A]

[2] Check register with reported trouble for open BAT lead (RB1), open coil, or faulty advance mechanism

[3] Check marker relays in operate path for crossed or dirty contacts or faulty relay operation (relay location shown in parentheses)



| TABLE A | | |
|-------------------|-------------|-------------------------------------|
| | REG. DESIG. | REGISTER FUNCTION |
| OVERFLOW | ROF | Dial pulse register overflow |
| | LOF | Link overflow |
| | BTOF | Busy-tone trunk overflow |
| | JOF | Junctor overflow |
| | OF8 | Trunk group 8 overflow |
| | OF9 | Trunk group 9 overflow |
| | OF0 | Trunk group 0 overflow |
| TRAFFIC PEG COUNT | JPC | Junctor peg count |
| | BTPC | Busy-tone trunk peg count |
| | TPC8 | Trunk group 8 terminating peg count |
| | OPC8 | Trunk group 8 originating peg count |
| | TPC9 | Trunk group 9 terminating peg count |
| | OPC9 | Trunk group 9 originating peg count |
| | TPC0 | Trunk group 0 terminating peg count |
| | OPC | Originating peg count |
| | TPC | Terminating peg count |
| TROUBLE | TOPC | Time out peg count |
| | STPC | Second trial peg count |
| | NCPC | No connection peg count |
| | TRPC | Trouble release peg count |

CLEAR TRAFFIC REGISTER TROUBLE

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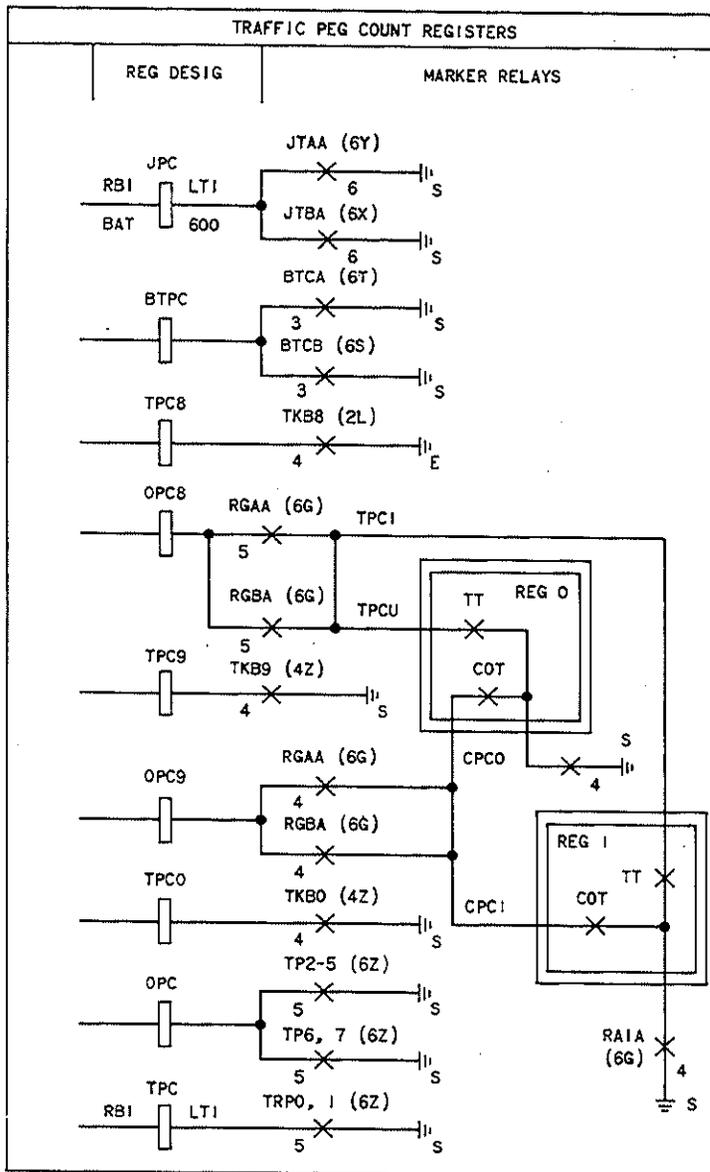
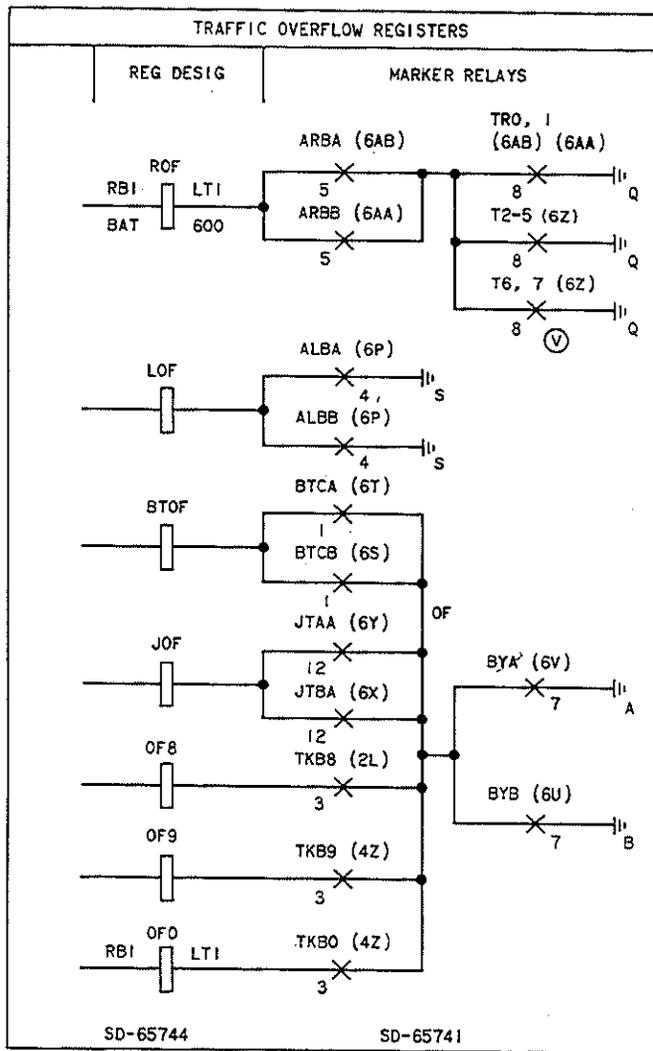
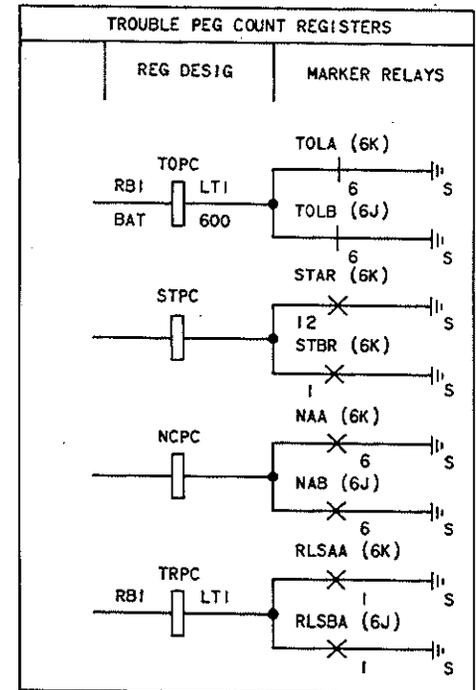


FIG. 1



CLEAR TRAFFIC REGISTER TROUBLE

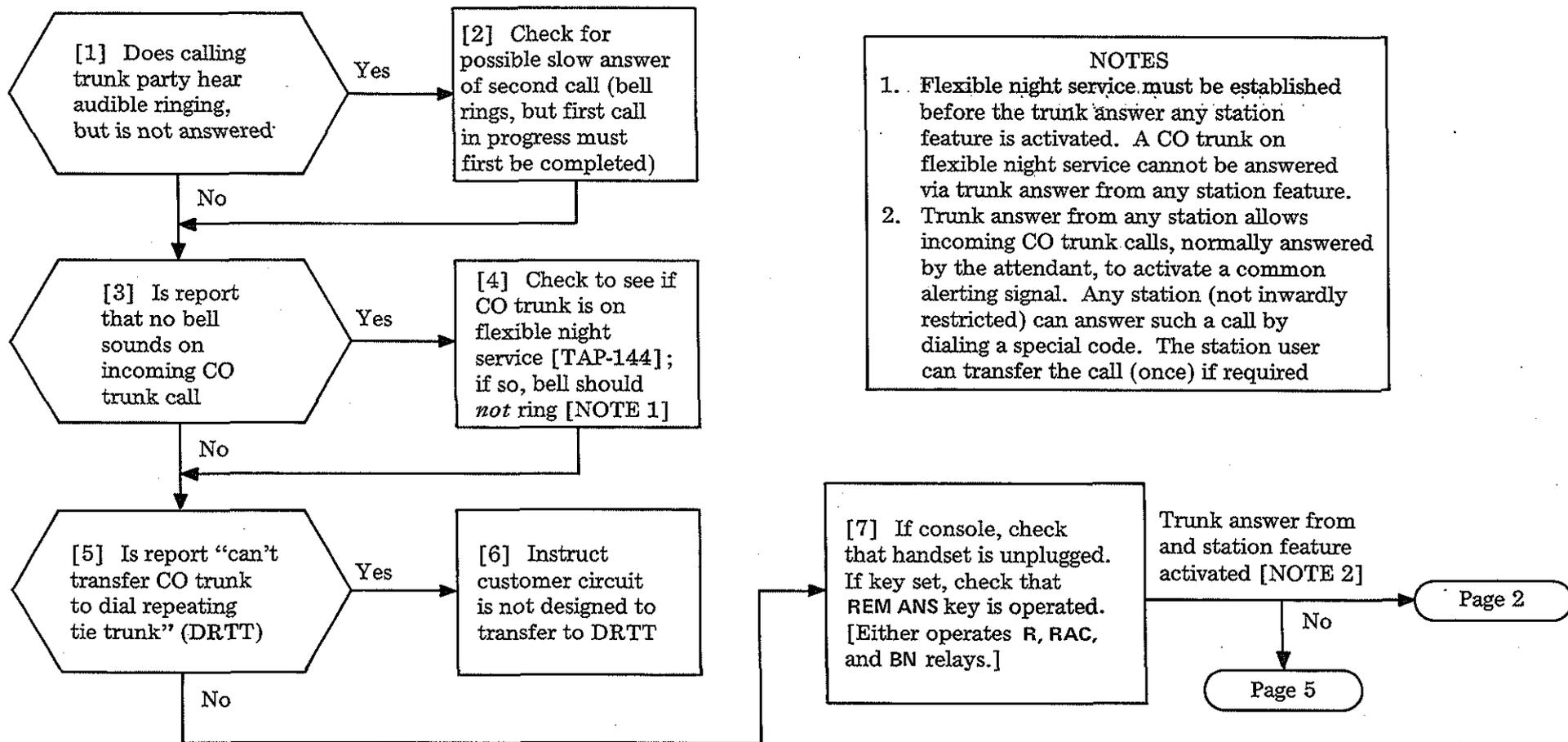
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SUMMARY

Initiate incoming CO trunk call(s) (eg, via test desk) using trunk(s) associated with reported trouble. Try to answer the call (from a station not inwardly restricted) by dialing the (8 or 8-) trunk answer code. Flash switchhook for PBX dial tone, and dial the code of another inwardly unrestricted station. Answer the call at the second station. Hang up at the first station and verify that CO trunk to second station connection has been made (conversation

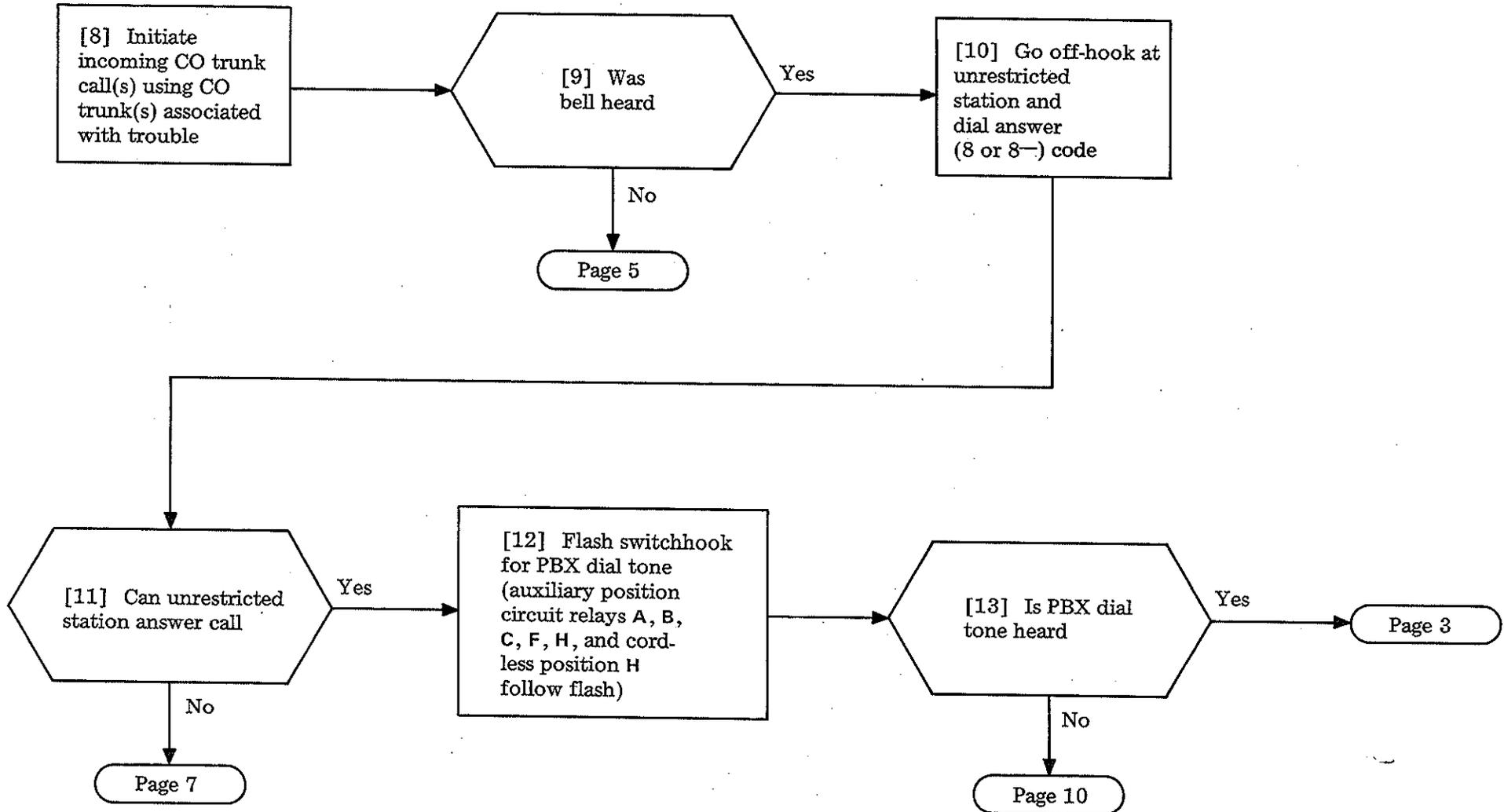
satisfactory). Repeat test calls until all CO trunks have been tested, or a failure occurs. This procedure assumes:

- Auxiliary position circuit is in external (may be in line-up) cabinet
- No alarm; CO trunks, marker, and both dial pulse registers function properly when 756A PBX not in Trunk Answer From Any Station (formerly Remote Trunk Answer) mode [NOTE 2]
- Audible signal is a bell (chime, lamp, gong, etc, may also be used).



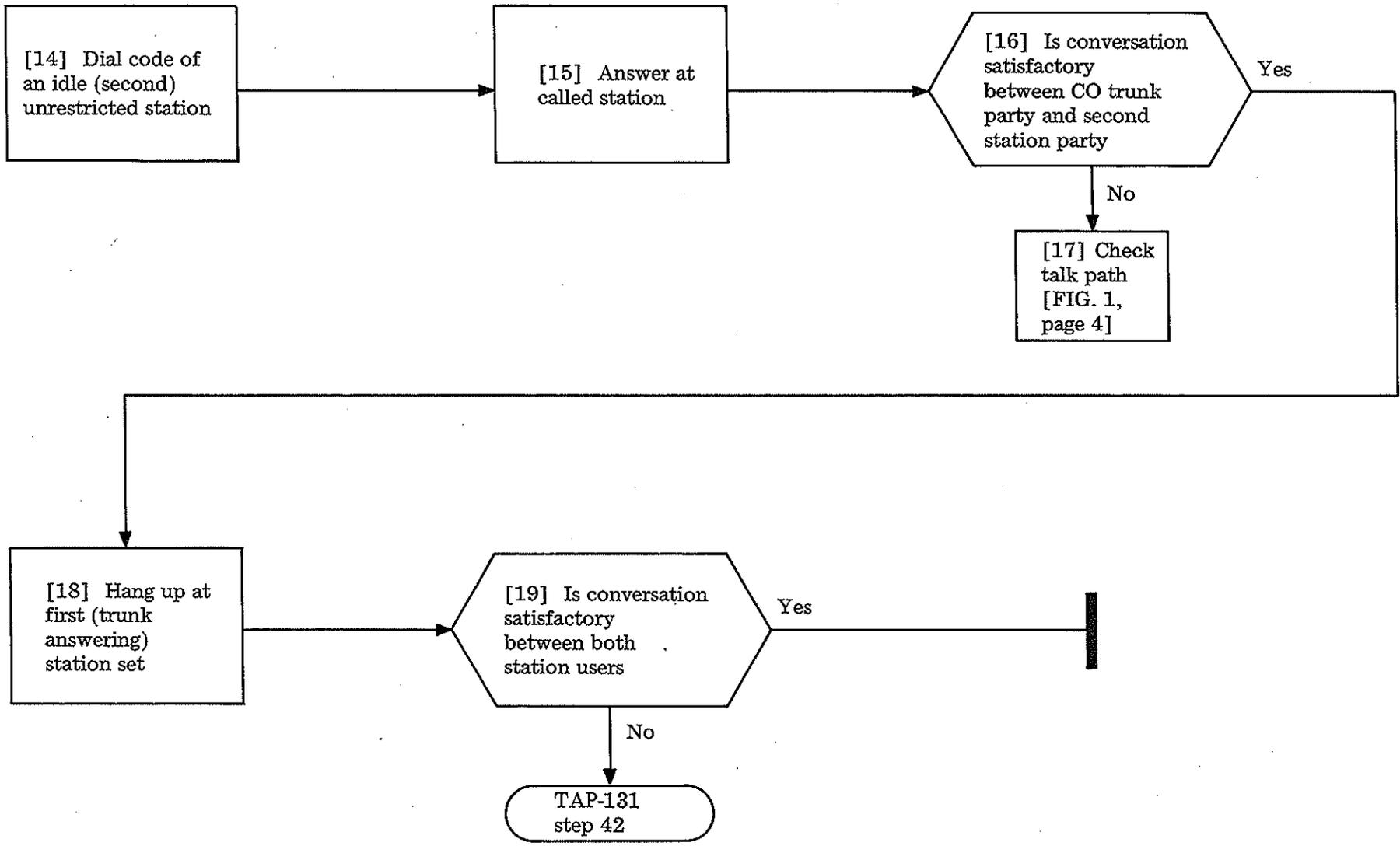
NOTES

1. Flexible night service must be established before the trunk answer any station feature is activated. A CO trunk on flexible night service cannot be answered via trunk answer from any station feature.
2. Trunk answer from any station allows incoming CO trunk calls, normally answered by the attendant, to activate a common alerting signal. Any station (not inwardly restricted) can answer such a call by dialing a special code. The station user can transfer the call (once) if required



CLEAR TRUNK ANSWER FROM ANY STATION TROUBLE (WAS REMOTE TRUNK ANSWER) (SD-66910)

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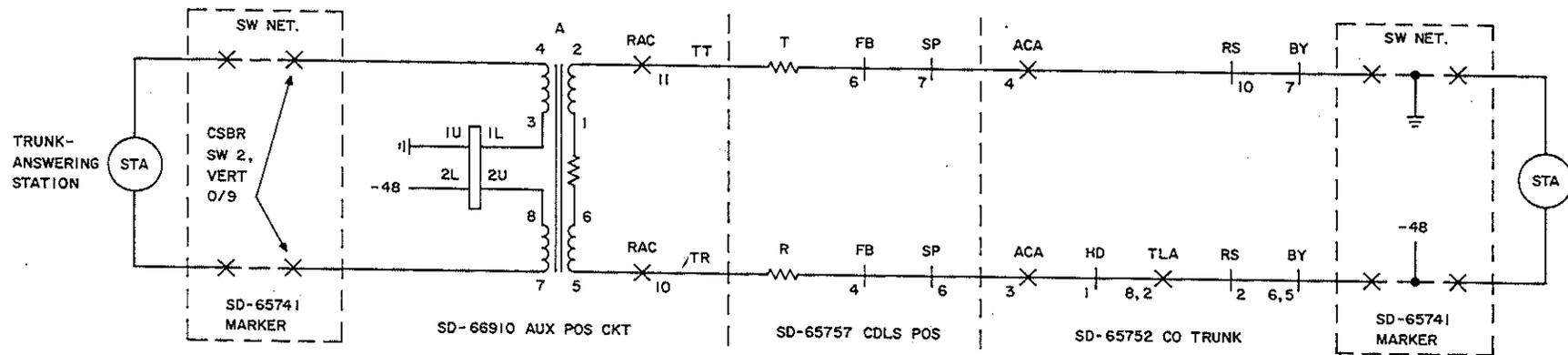


FIG. 1

CLEAR TRUNK ANSWER FROM ANY STATION TROUBLE (WAS REMOTE TRUNK ANSWER) (SD-66910)

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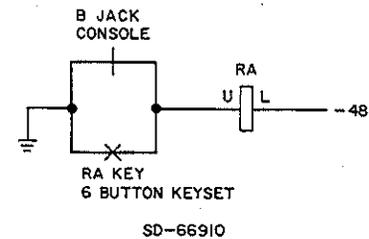
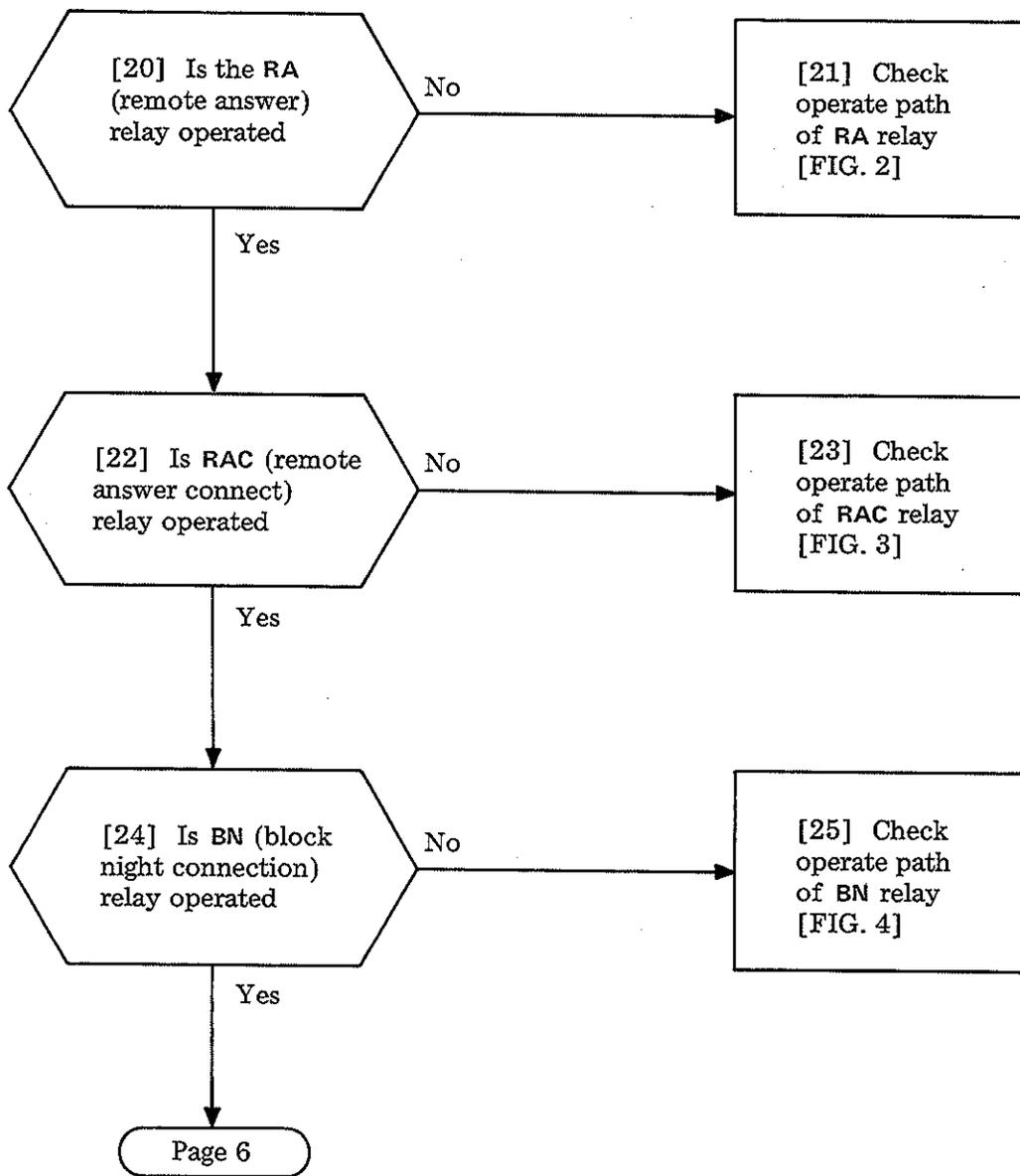


FIG. 2

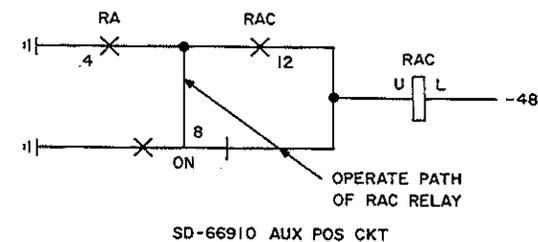


FIG. 3

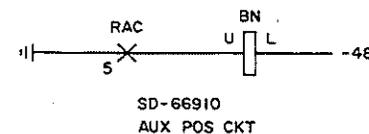


FIG. 4

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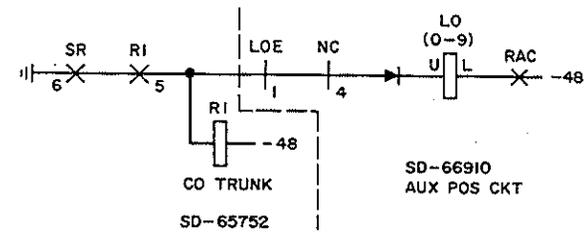
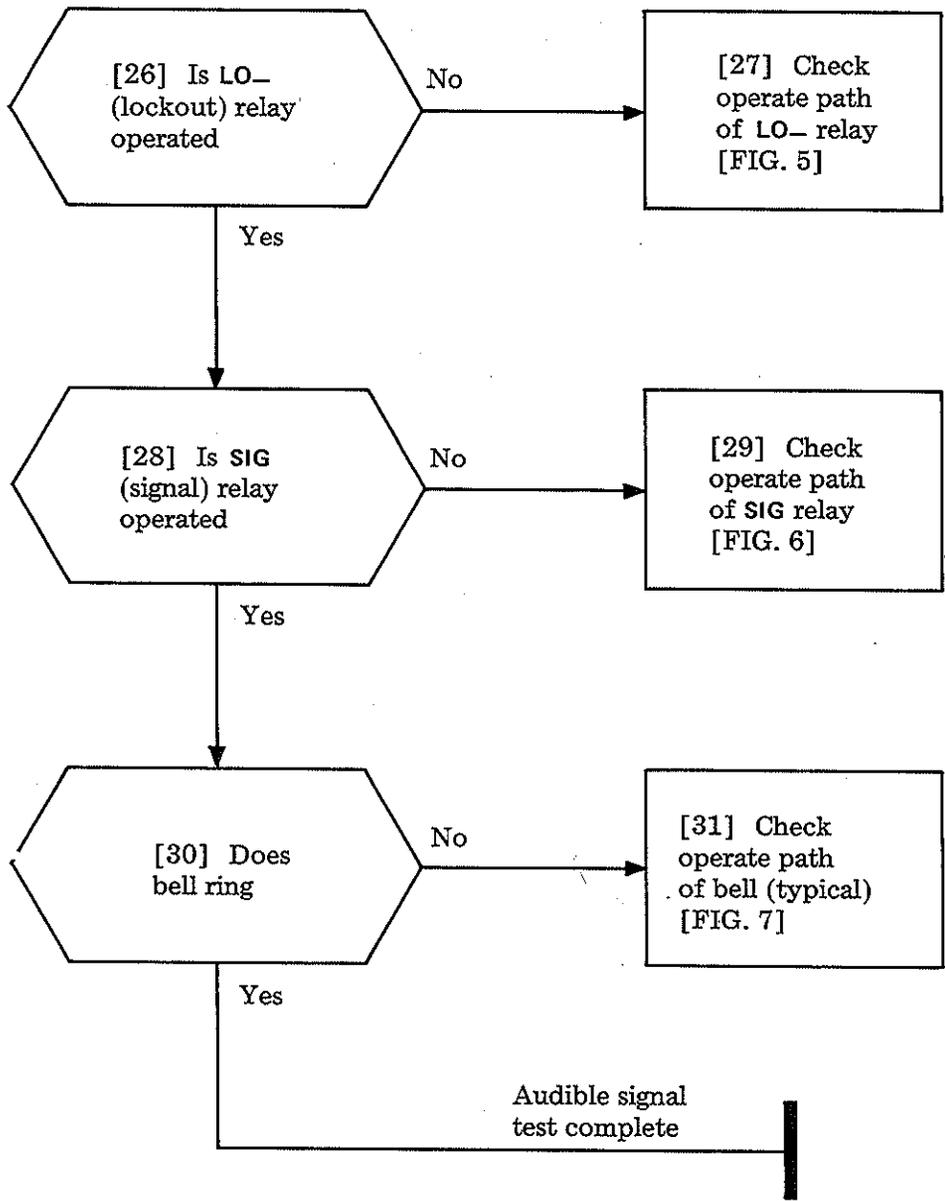


FIG. 5

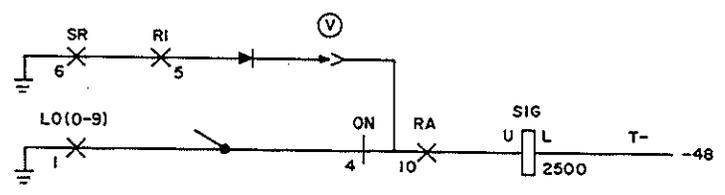


FIG. 6

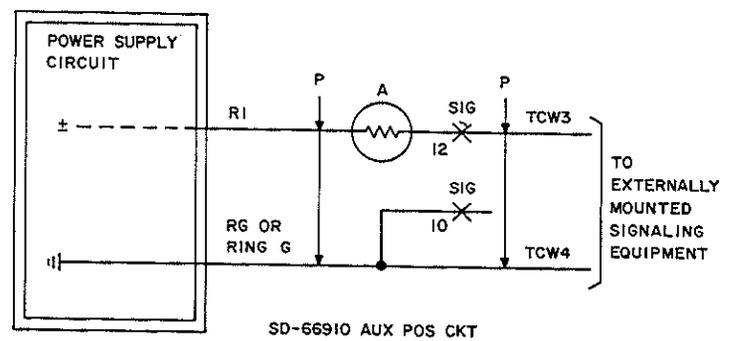
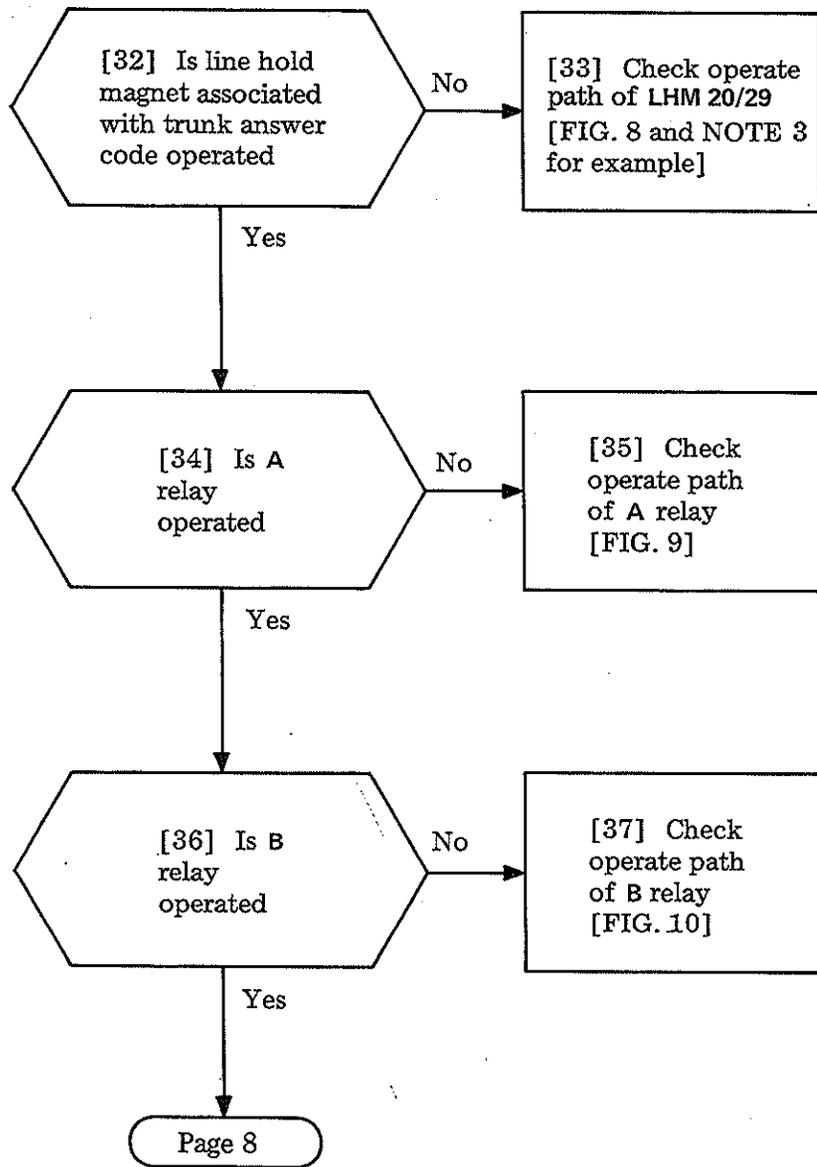


FIG. 7

CLEAR TRUNK ANSWER FROM ANY STATION TROUBLE (WAS REMOTE TRUNK ANSWER) (SD-66910)

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NOTE 3
 If code 83 is dialed for trunk answer from any station, LHM 3 should operate at crossbar switch 2, located on slide 2

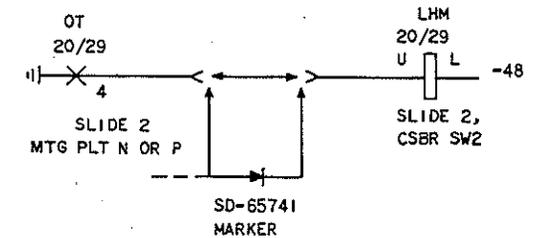


FIG. 8

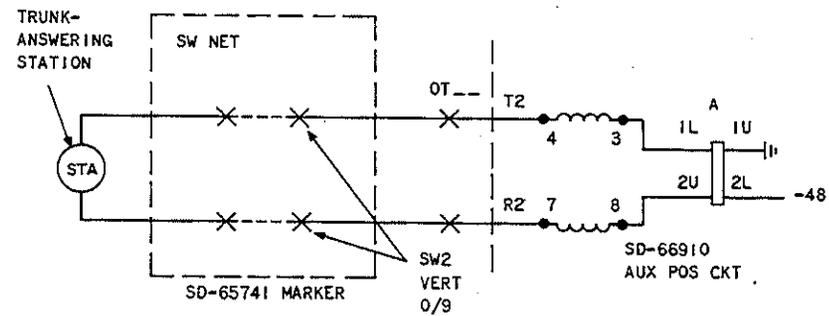


FIG. 9

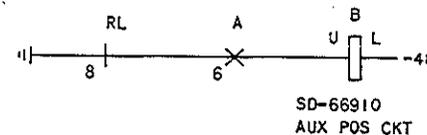


FIG. 10

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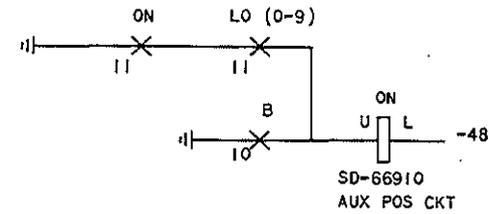
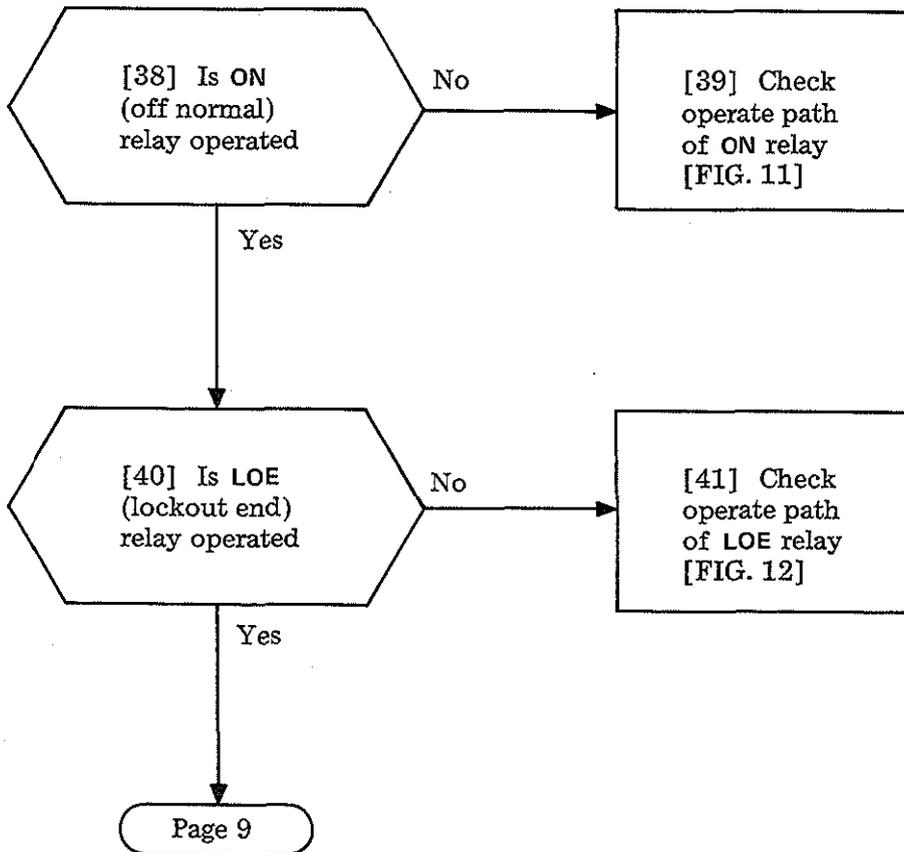


FIG. 11

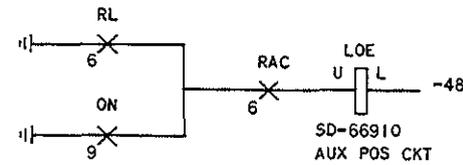


FIG. 12

CLEAR TRUNK ANSWER FROM ANY STATION TROUBLE (WAS REMOTE TRUNK ANSWER) (SD-66910)

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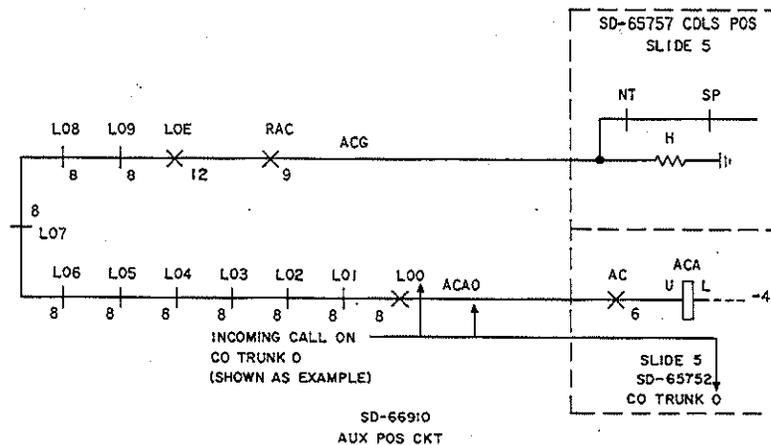
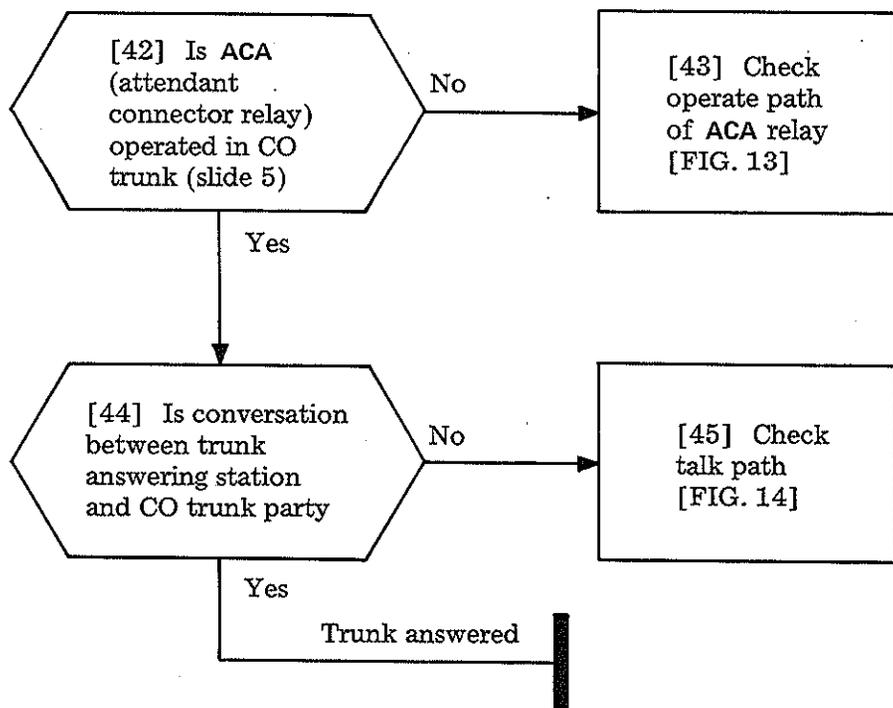


FIG. 13

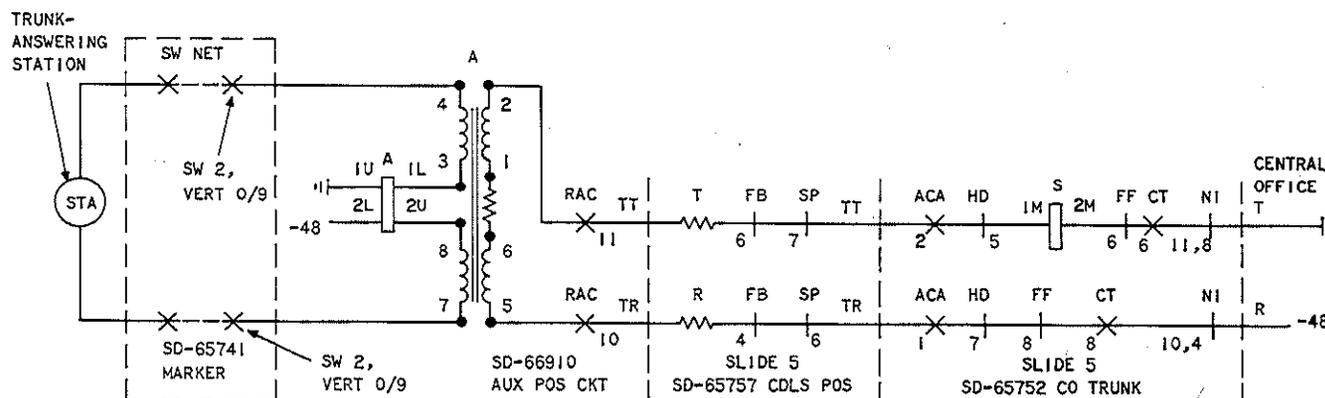


FIG. 14

CLEAR TRUNK ANSWER FROM ANY STATION TROUBLE (WAS REMOTE TRUNK ANSWER) (SD-66910)

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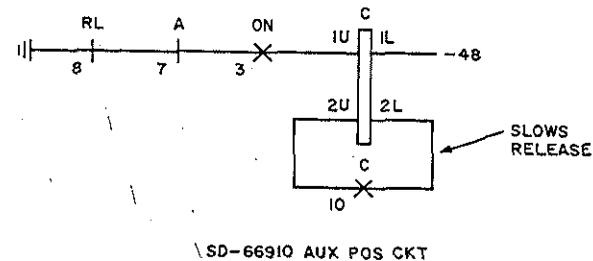
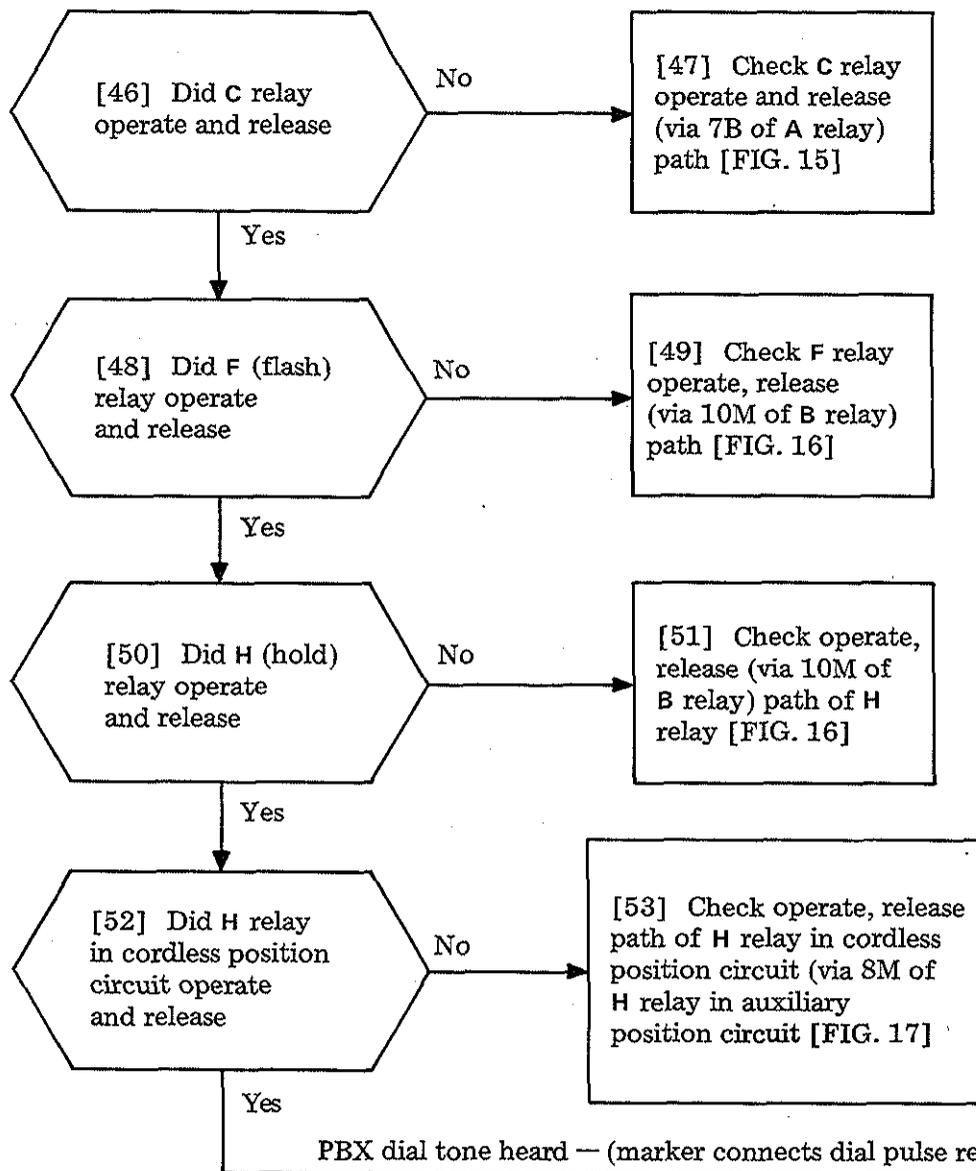


FIG. 15

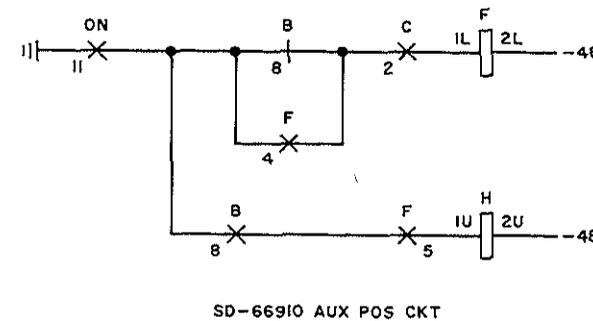


FIG. 16

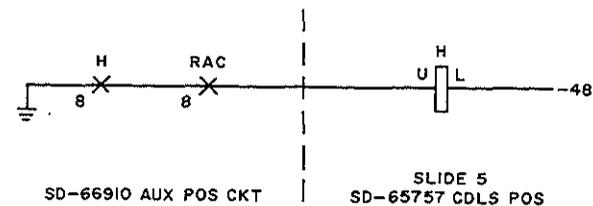
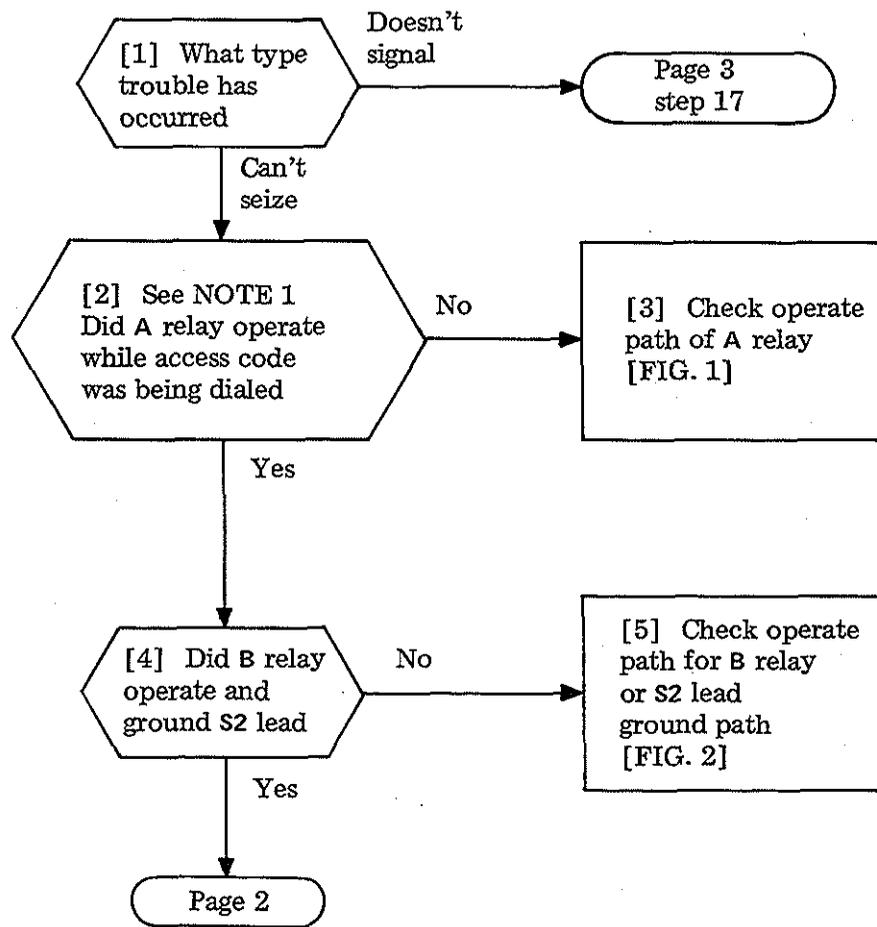


FIG. 17

CLEAR TRUNK ANSWER FROM ANY STATION TROUBLE (WAS REMOTE TRUNK ANSWER) (SD-66910)

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NOTE 1
Relays referred to in this procedure are located on the 3A code call equipment in an external cabinet unless otherwise noted

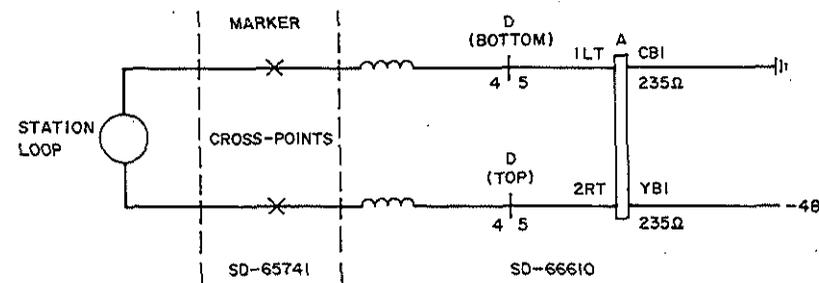


FIG. 1

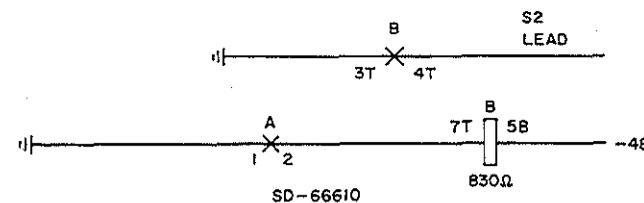
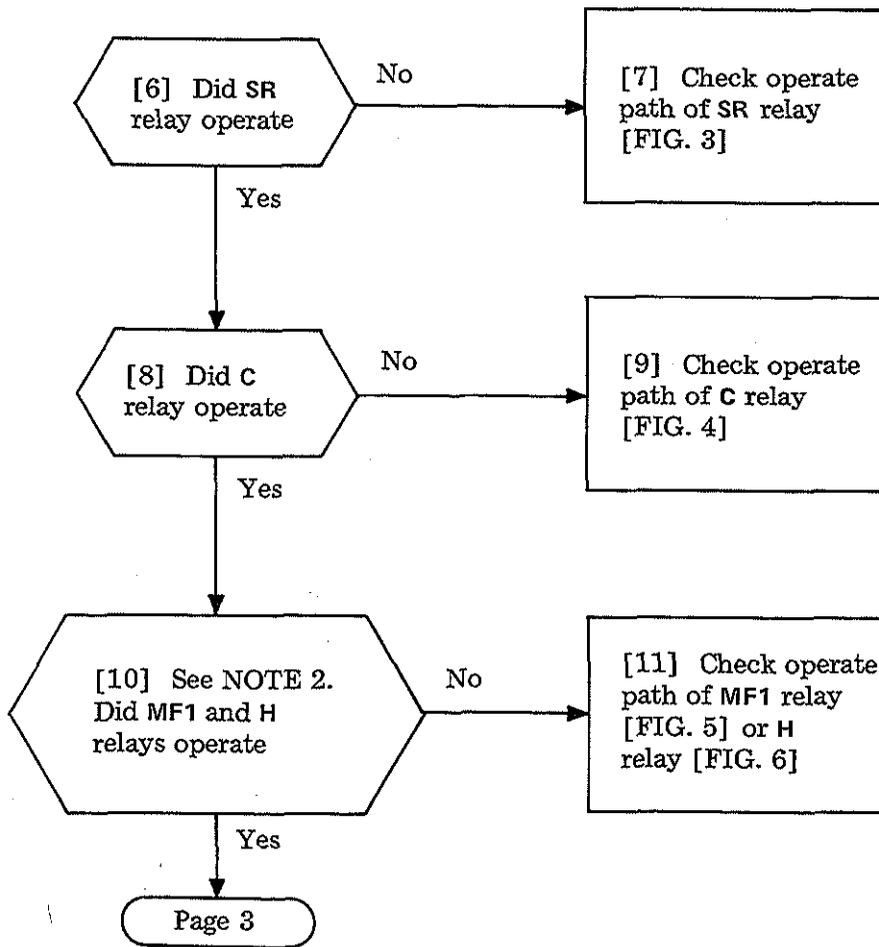


FIG. 2



NOTE 2
 MF 1 relay is associated only with TOUCH-TONE®. H relay is associated with rotary dial and TOUCH-TONE

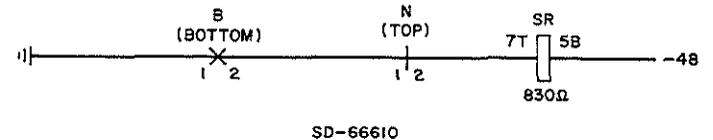


FIG. 3

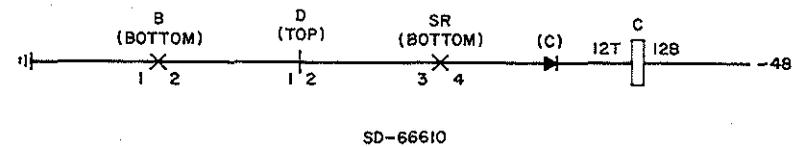


FIG. 4

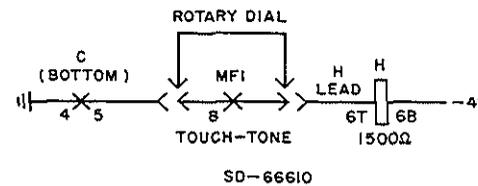


FIG. 6

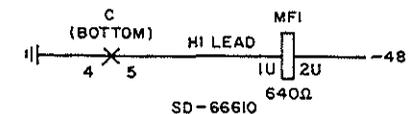


FIG. 5

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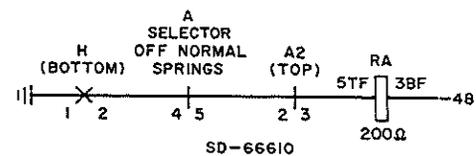
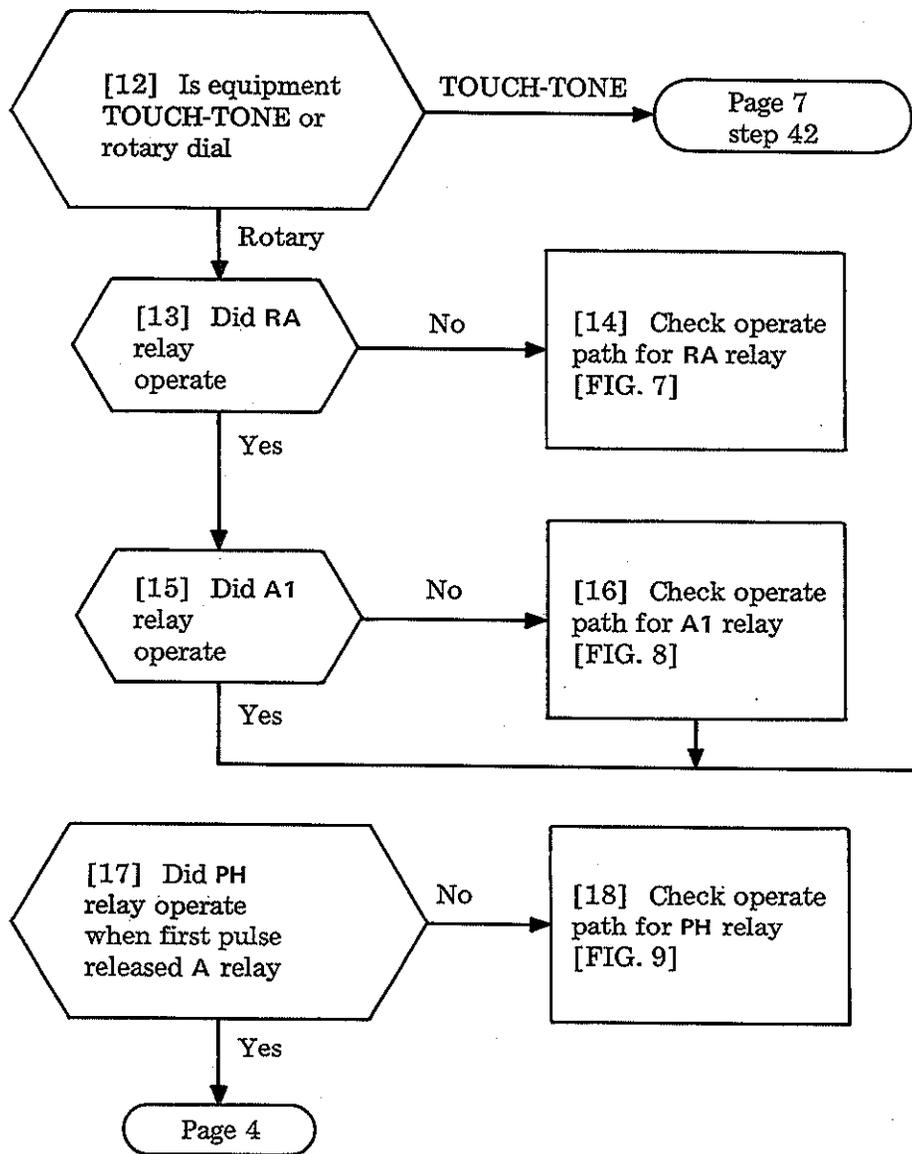


FIG. 7

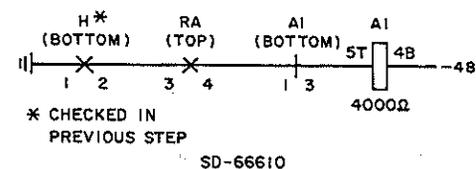


FIG. 8

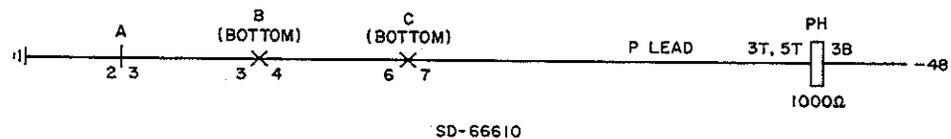
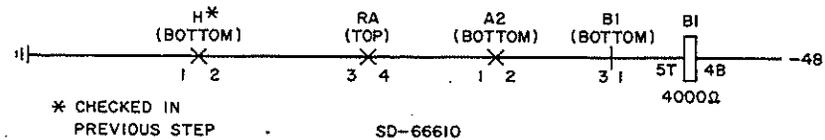
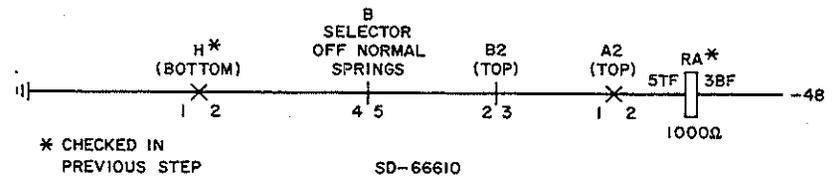
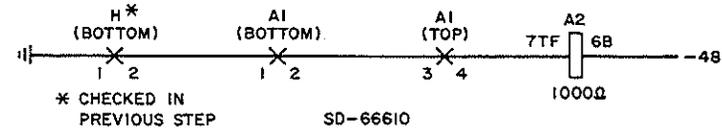
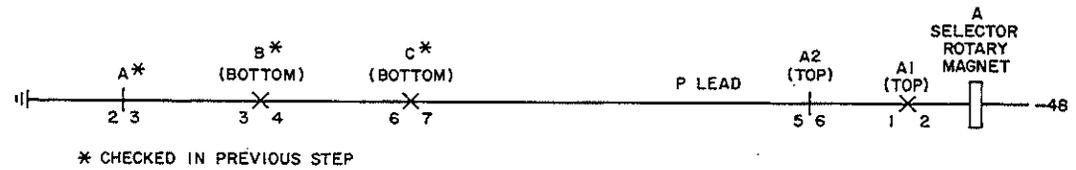
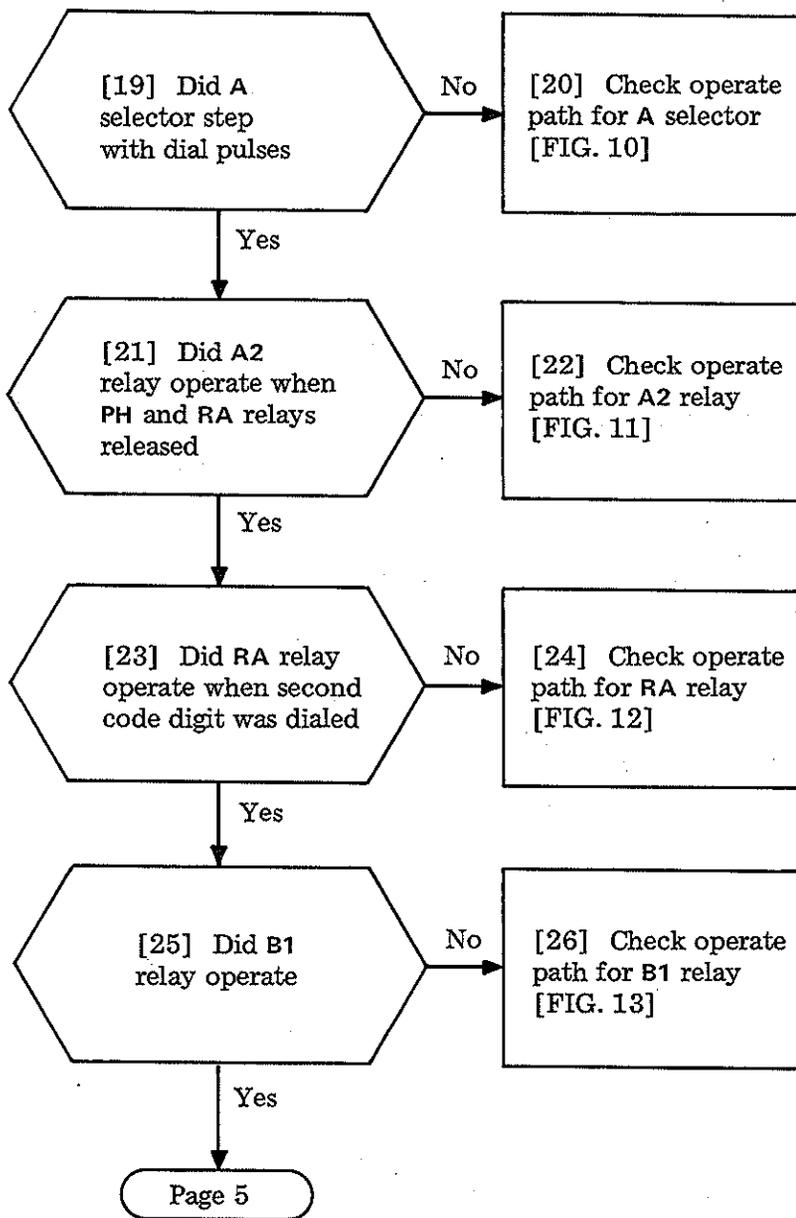


FIG. 9



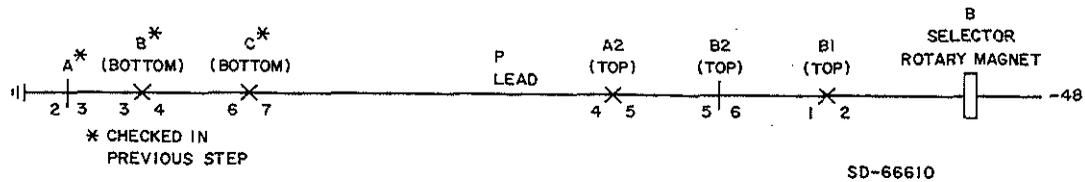
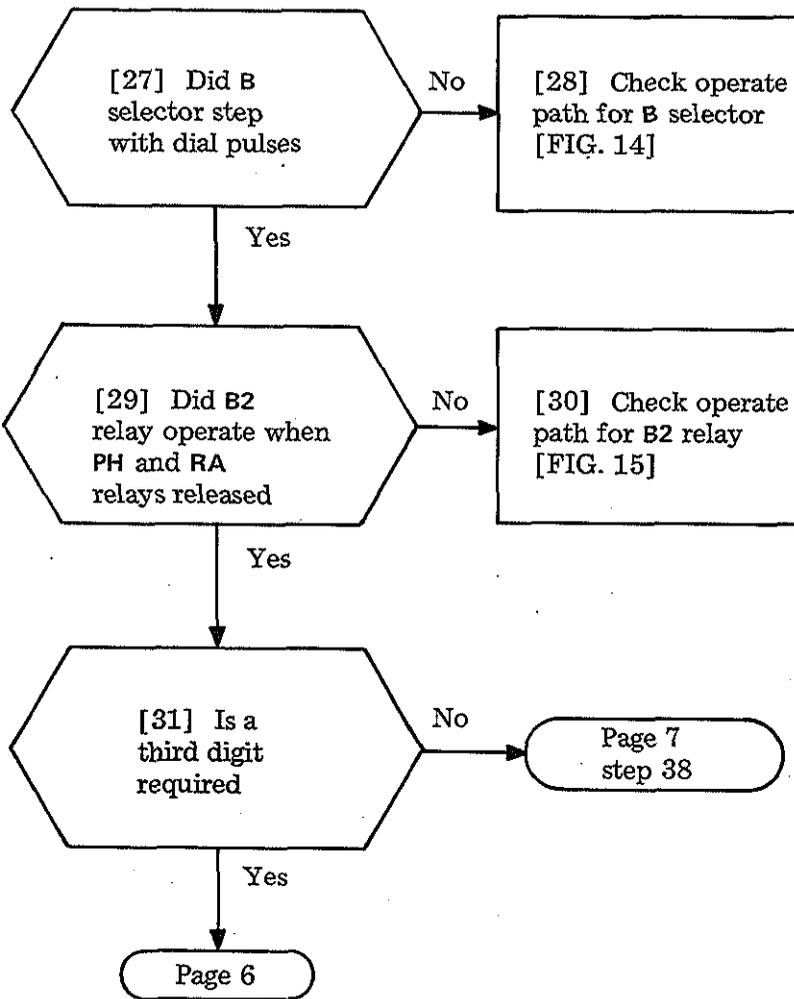


FIG. 14

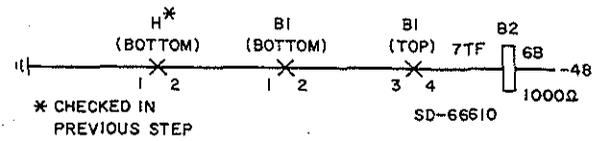


FIG. 15

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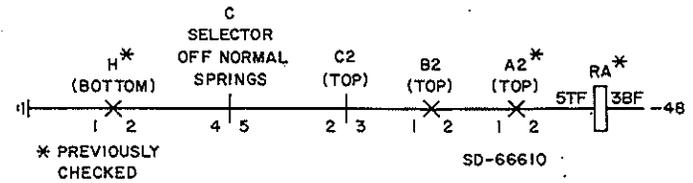
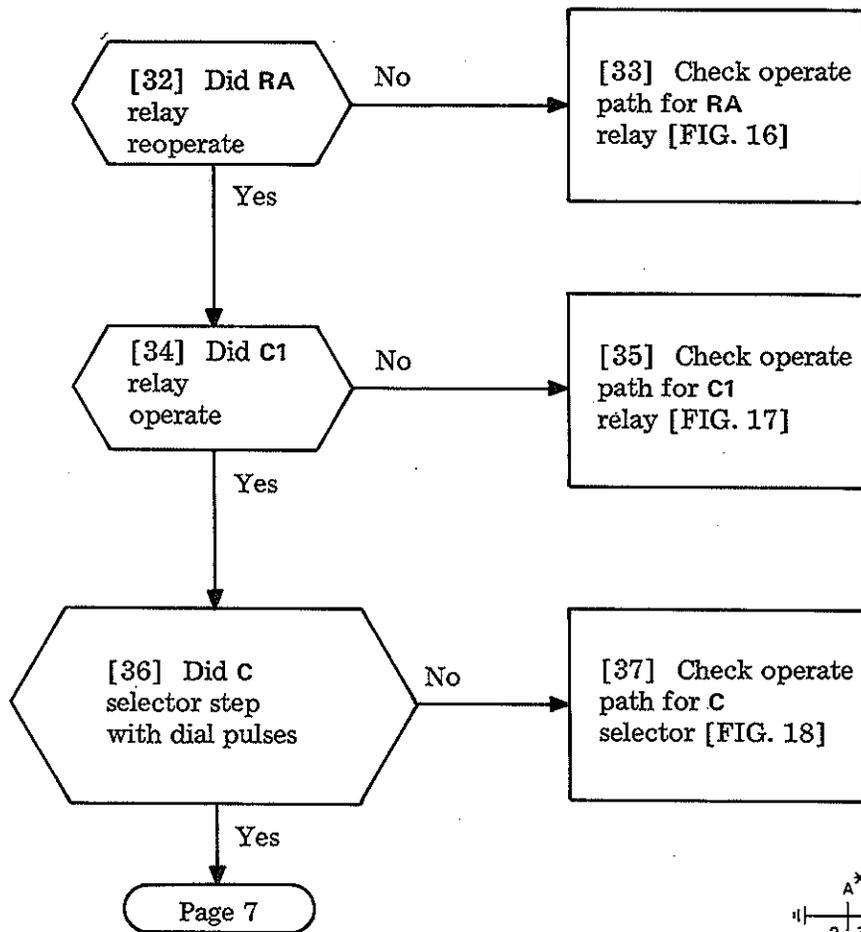


FIG. 16

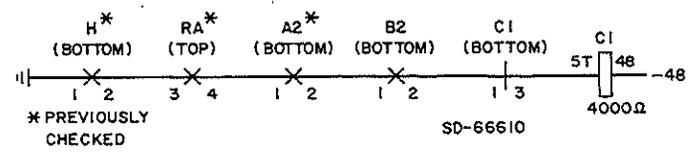


FIG. 17

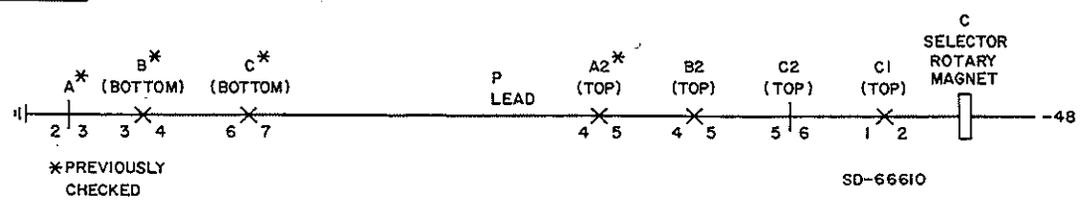


FIG. 18

CLEAR 3A CODE CALL TROUBLE (SD-66610)

| | |
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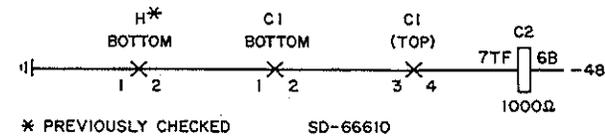
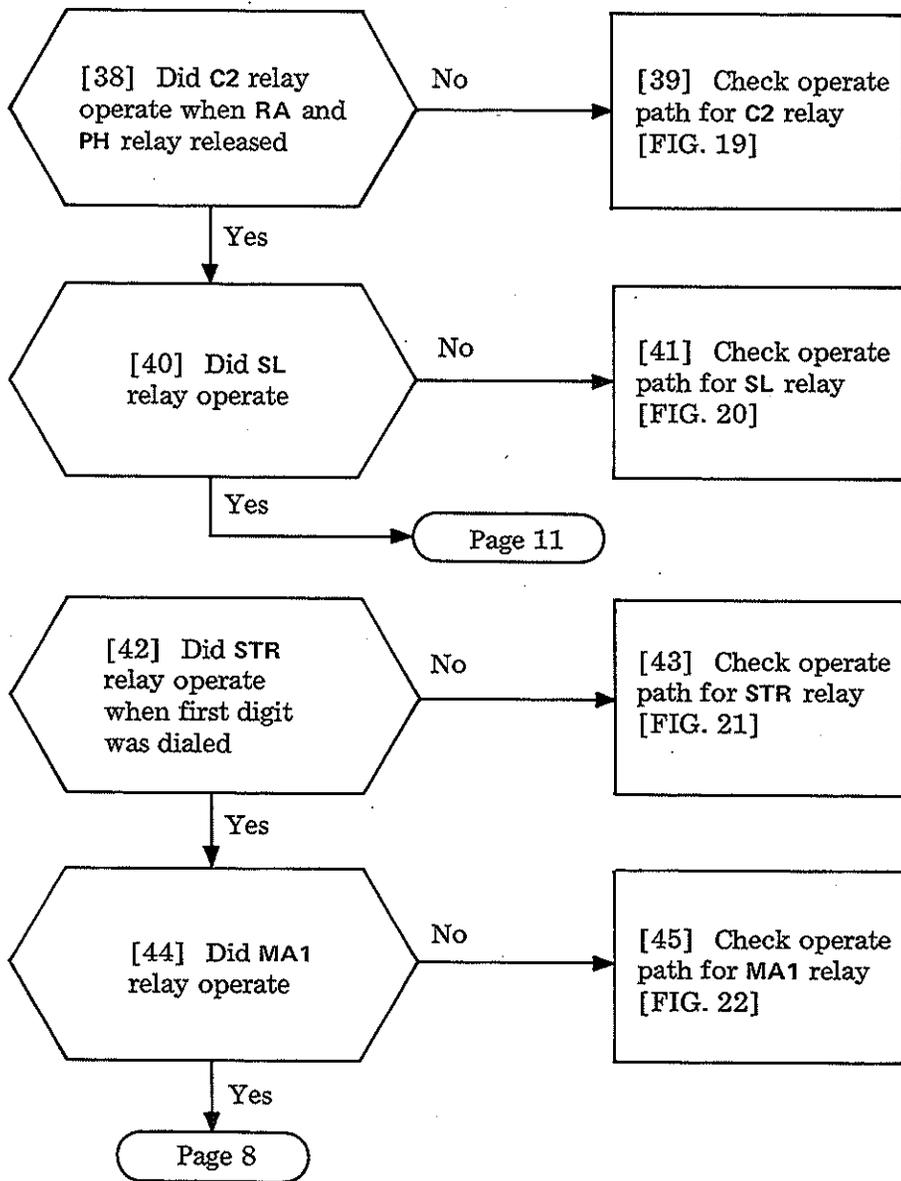


FIG. 19

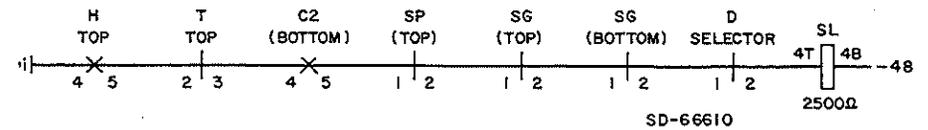


FIG. 20

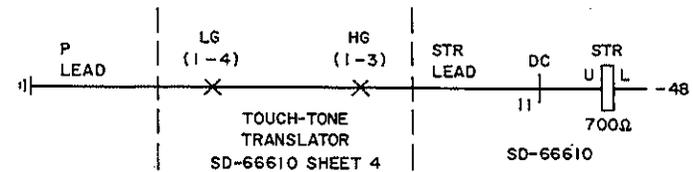


FIG. 21

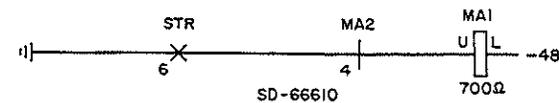


FIG. 22

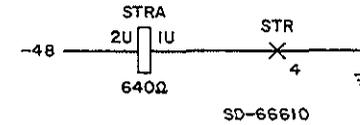
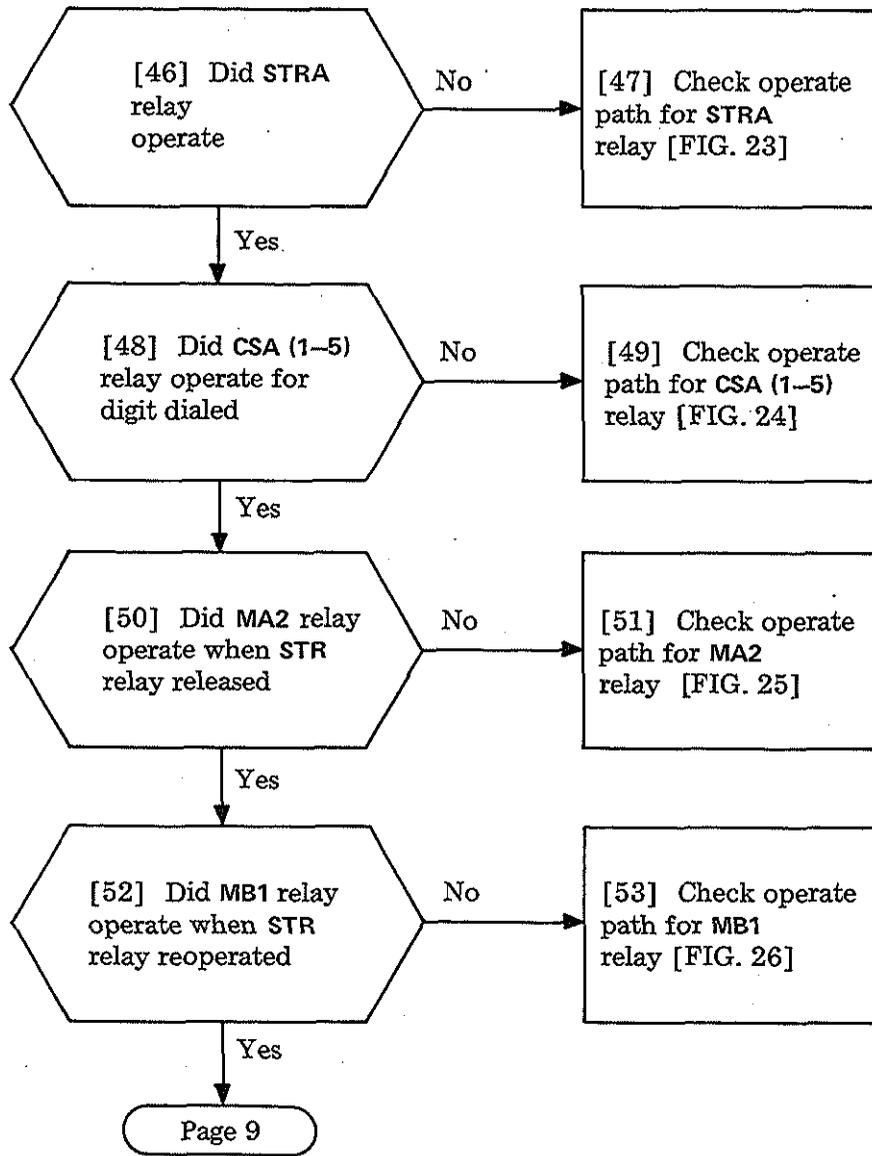


FIG. 23

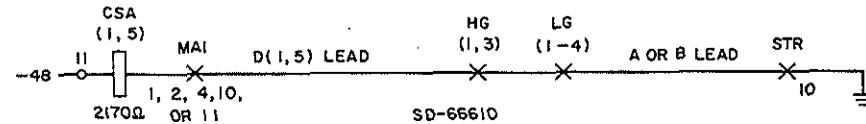


FIG. 24

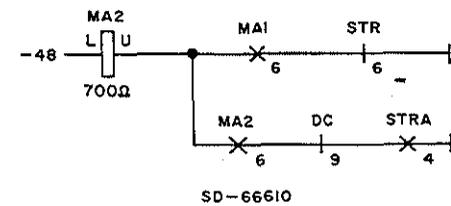


FIG. 25

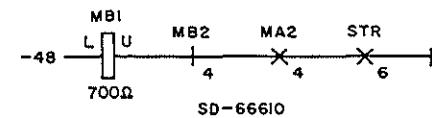


FIG. 26

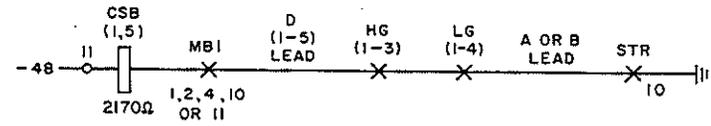
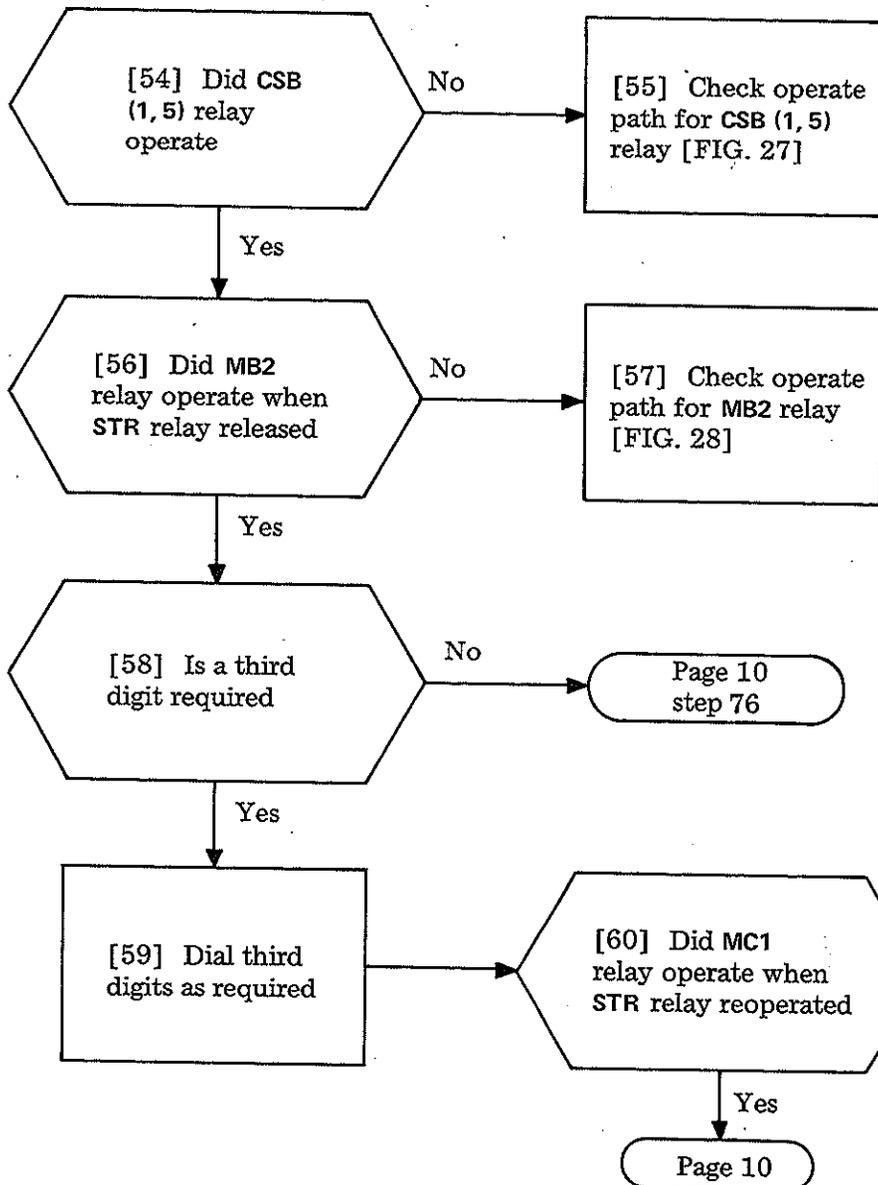


FIG. 27

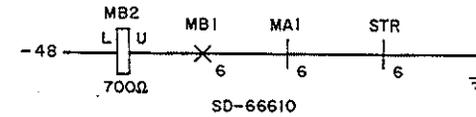


FIG. 28

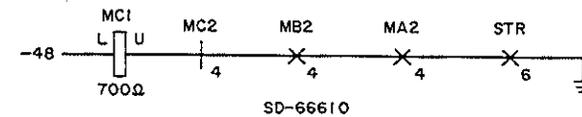


FIG. 29

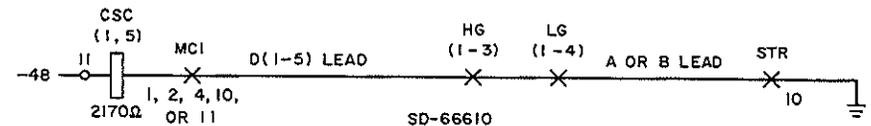
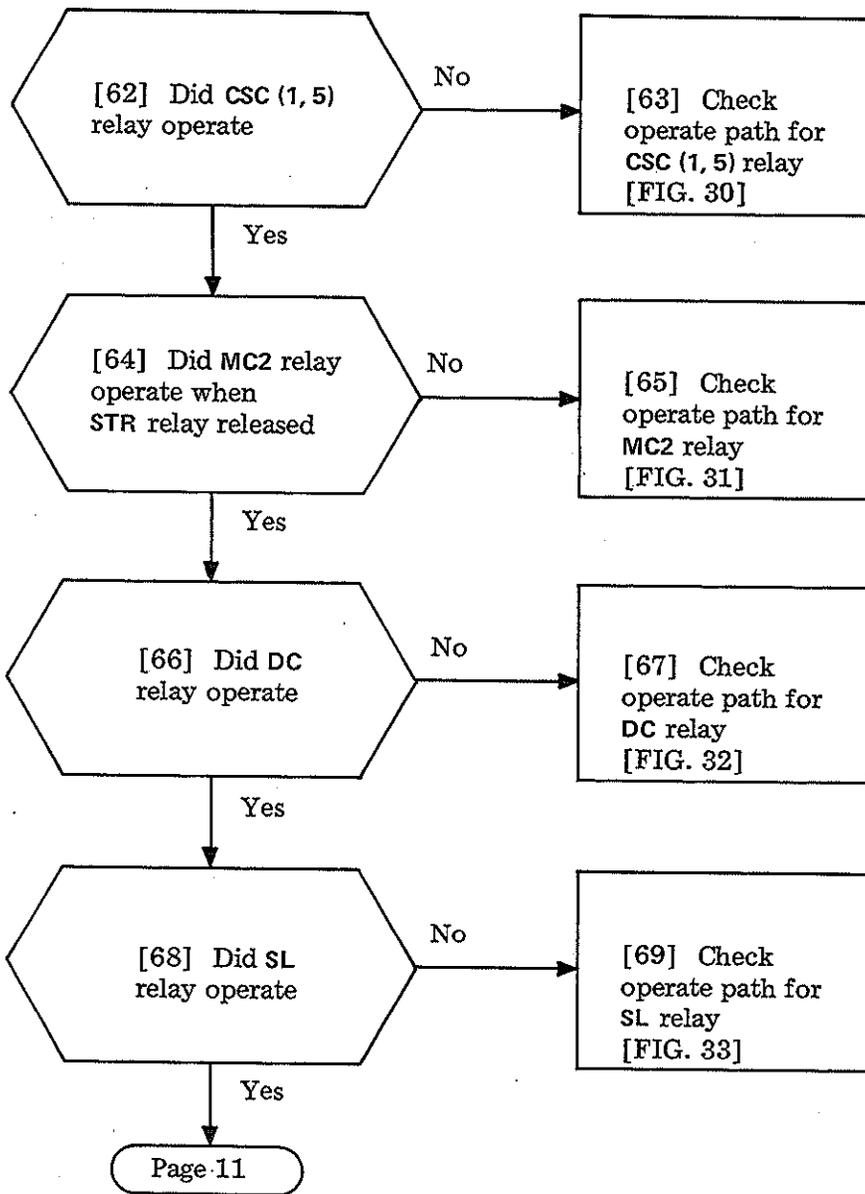


FIG. 30

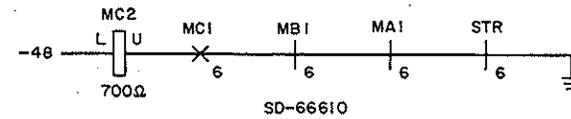


FIG. 31

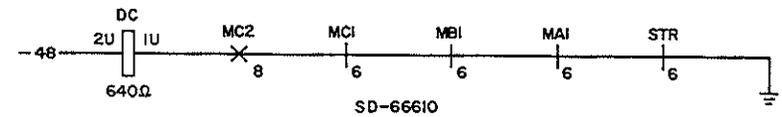


FIG. 32

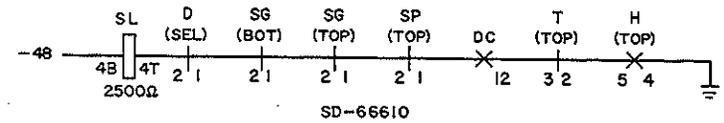


FIG. 33

| | |
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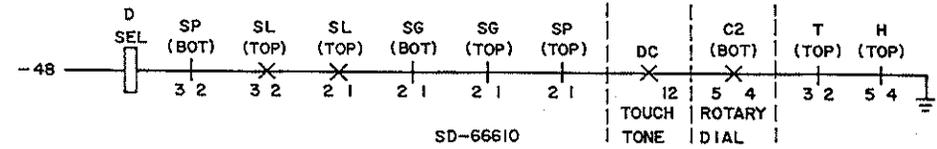
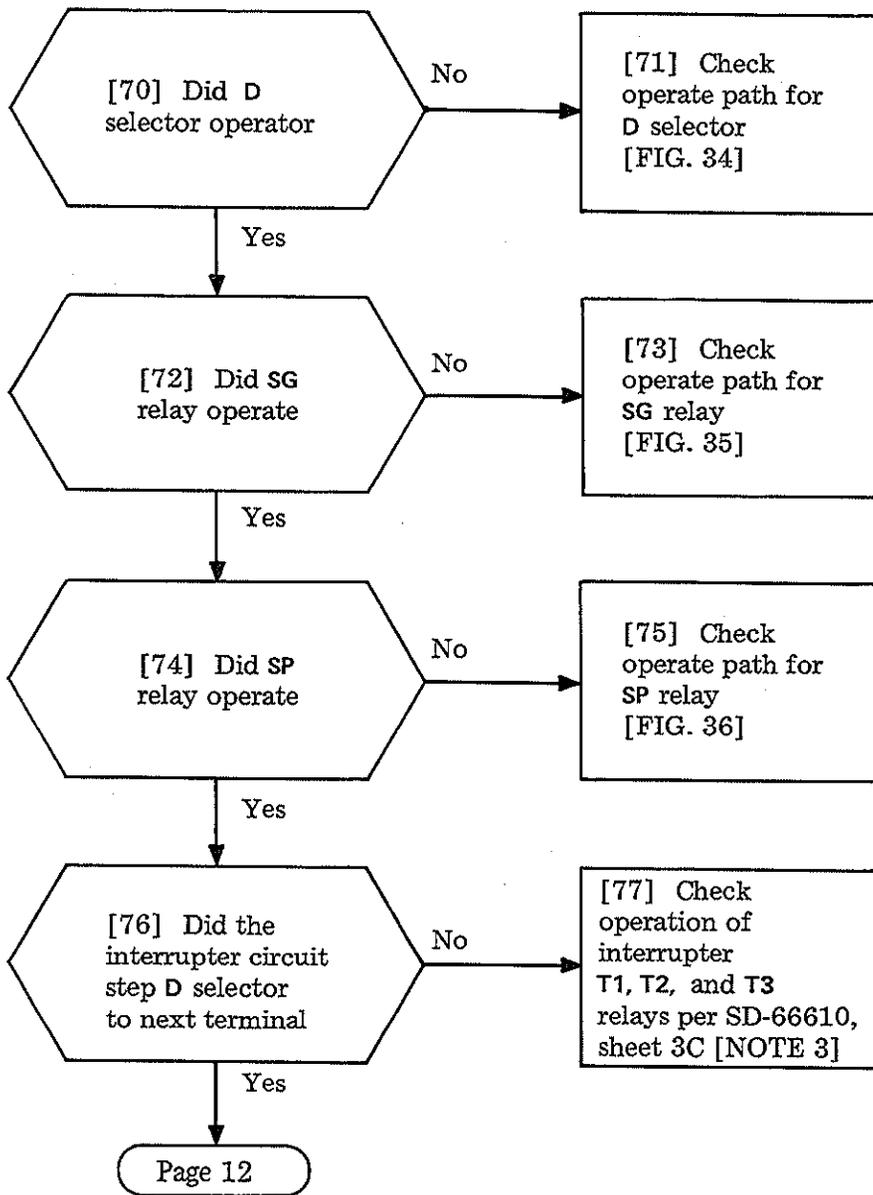


FIG. 34

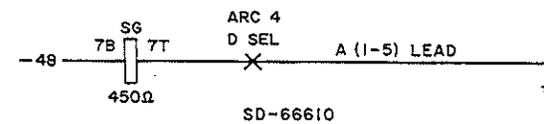
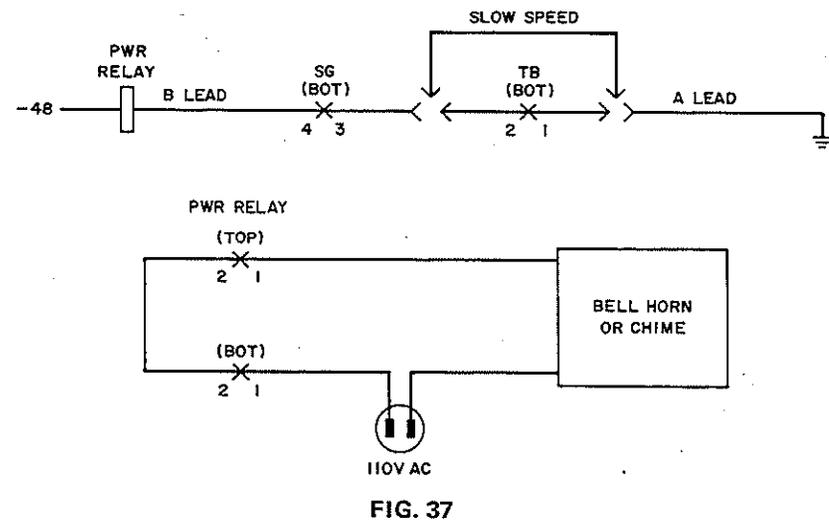
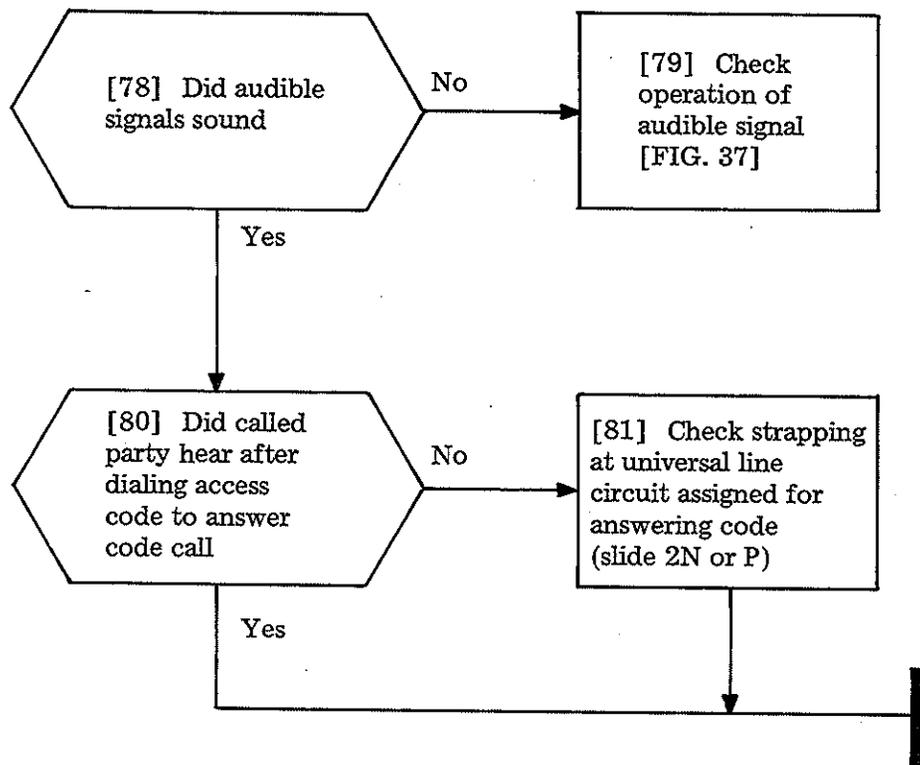


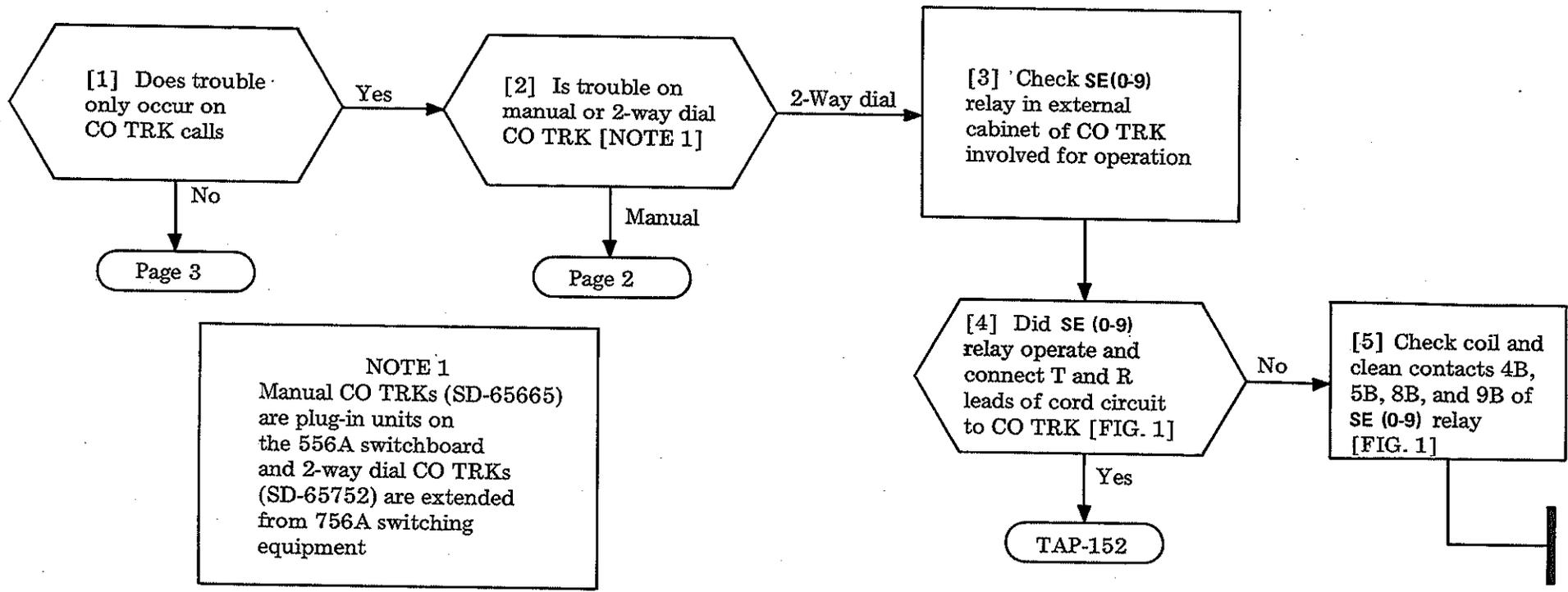
FIG. 35



FIG. 36

NOTE 3
 If slower pulsing rate is desired, FIG. B will be required in addition to FIG. 3 on SD-66610





NOTE 1
 Manual CO TRKs (SD-65665) are plug-in units on the 556A switchboard and 2-way dial CO TRKs (SD-65752) are extended from 756A switching equipment

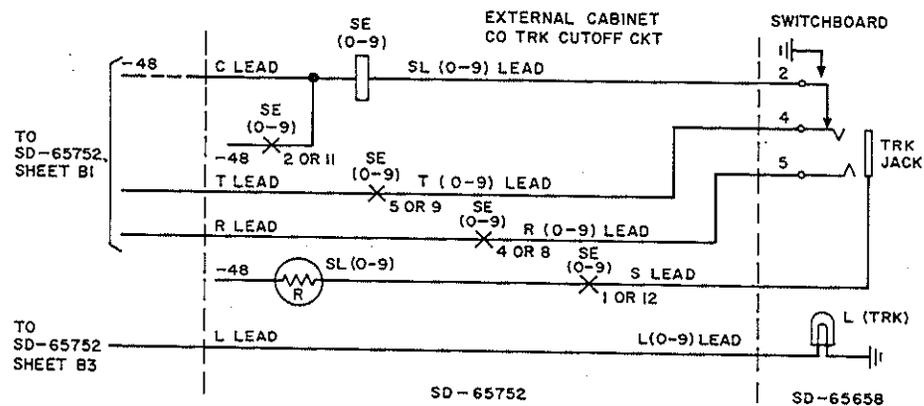
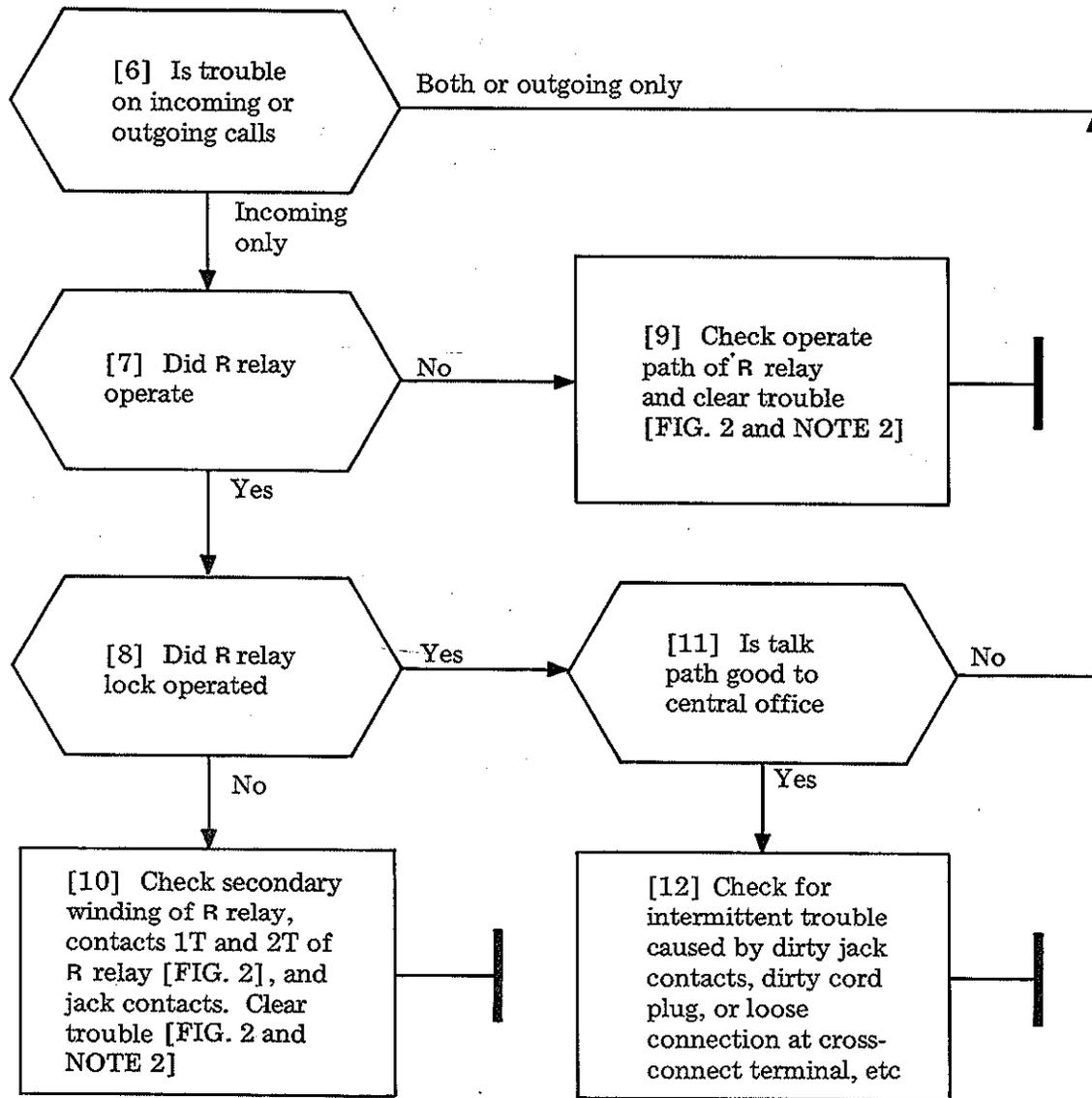


FIG. 1

| | |
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[13] Check trunk jack springs and T and R leads at cross-connect terminal [NOTE 2]

NOTE 2
When trouble cannot be cleared (bad relay winding, etc), replace trunk plug-in unit

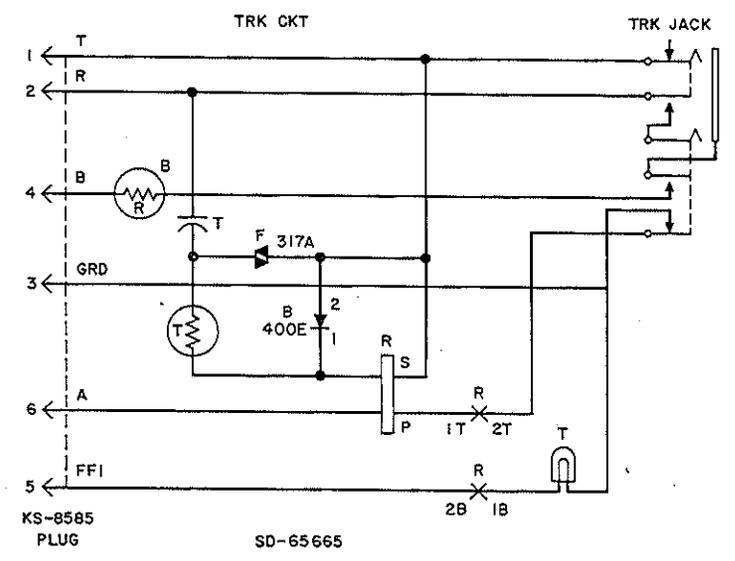
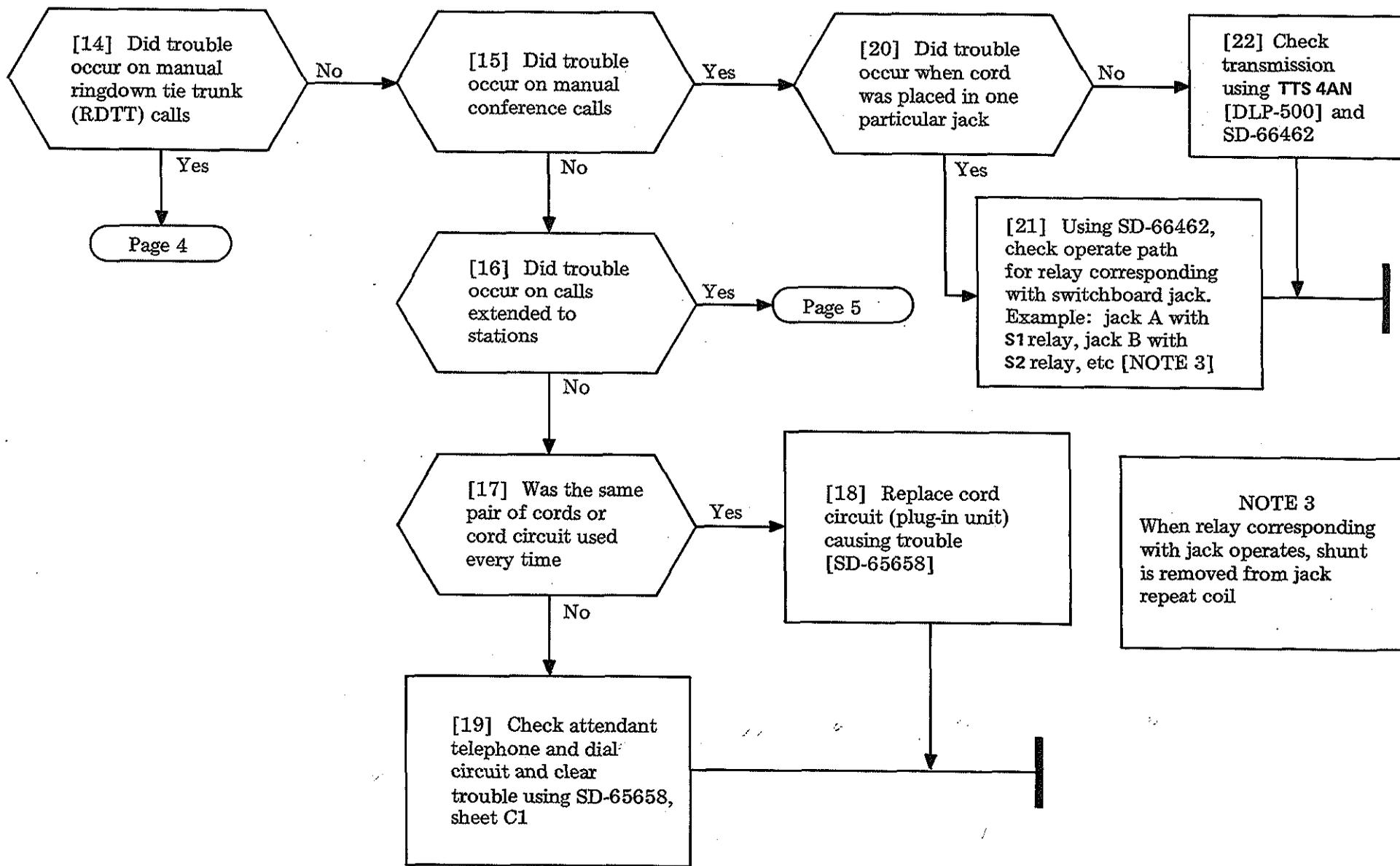


FIG. 2

| | |
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NOTE 3
When relay corresponding with jack operates, shunt is removed from jack repeat coil

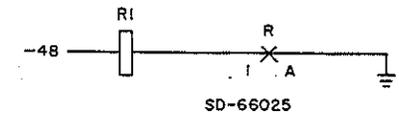
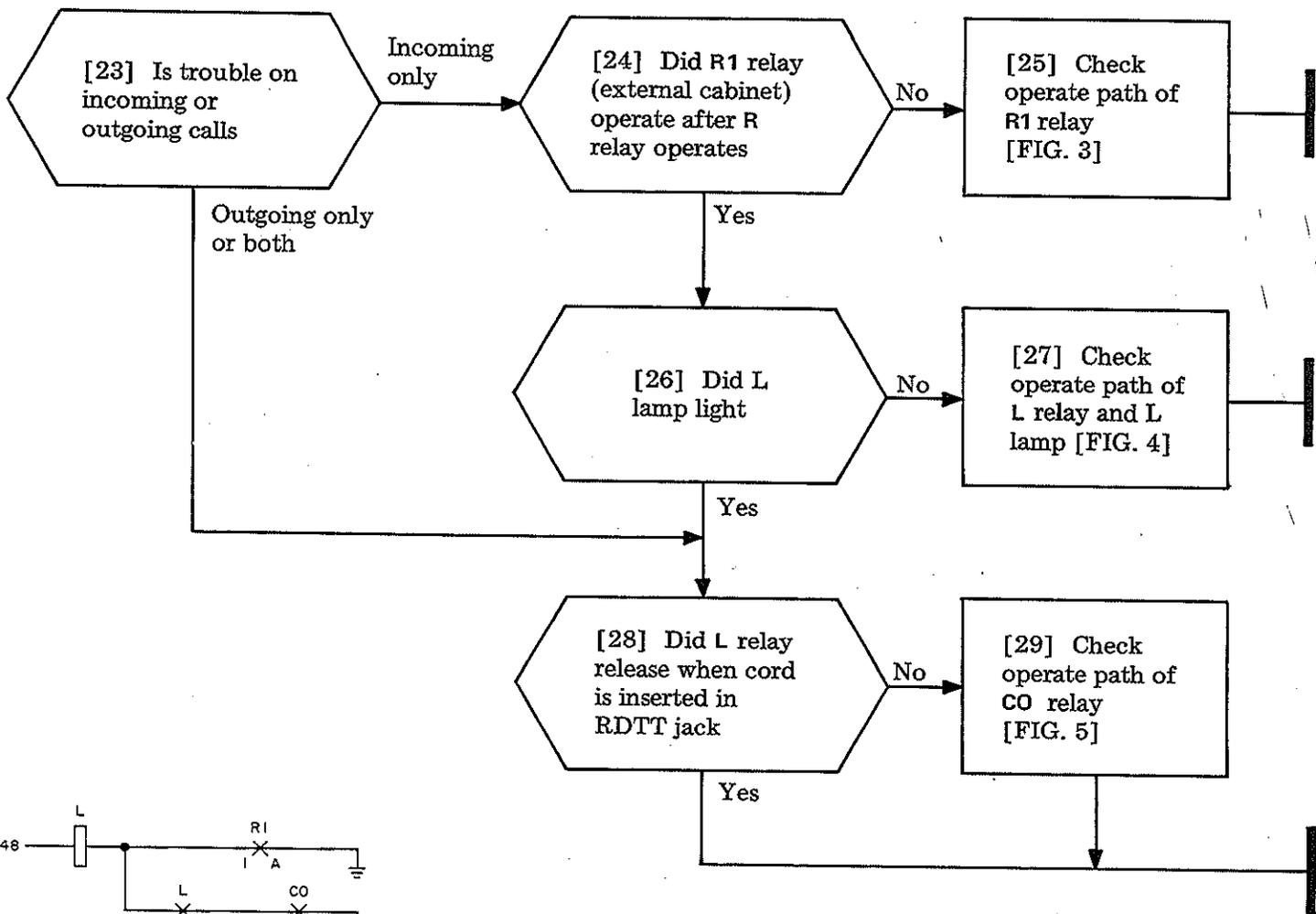


FIG. 3

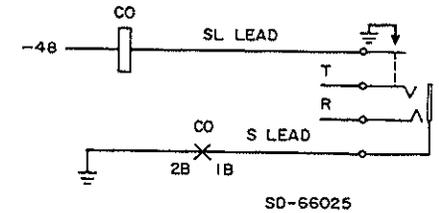


FIG. 5

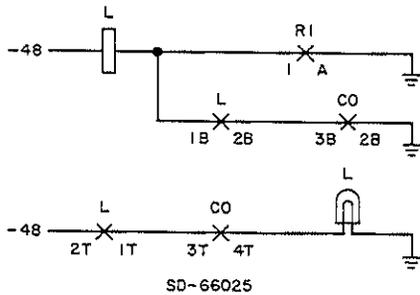
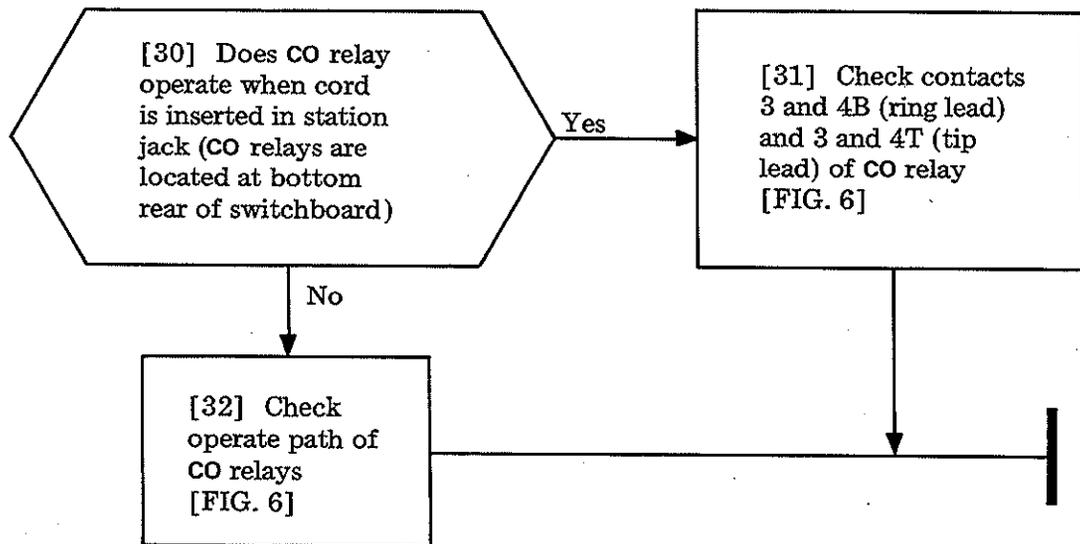


FIG. 4

CLEAR 556A SWITCHBOARD TROUBLE

| | |
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| TABLE A | |
|----------|------------------|
| CO RELAY | MON 2-7 CONTACTS |
| CO-0 | 1 |
| CO-1 | 2 |
| CO-2 | 3 |
| CO-3 | 4 |
| CO-4 | 5 |
| CO-5 | 6 |
| CO-6 | 7 |
| CO-7 | 8 |
| CO-8 | 9 |
| CO-9 | 10 |

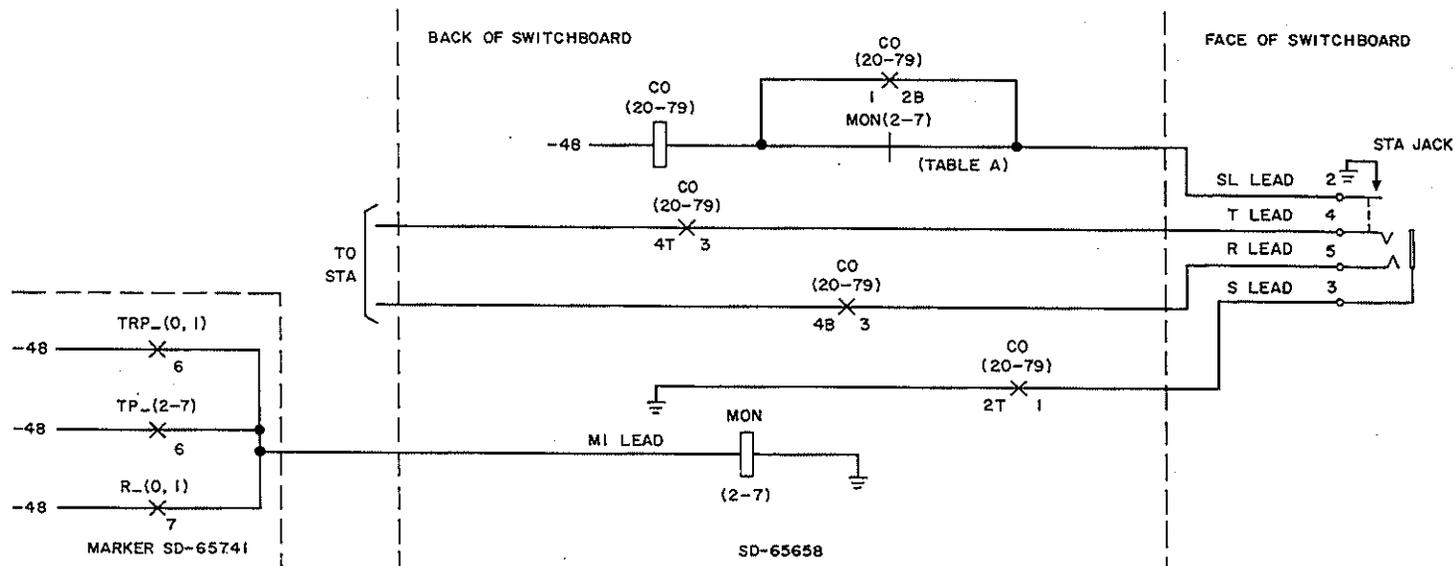


FIG. 6

GENERAL

The trouble analysis procedures in this volume generally assume:

- The 756A PBX was installed and tested properly and all faults cleared at that time
- There is *one* case of trouble
- Marker and dial pulse registers are without trouble.

A general knowledge of how the system functions, as well as how to remove equipment from service, will aid in using these procedures.

The straight bare wires on the apparatus side of each crossbar switch (banjo wires) are *physically connected at all times* on a wire-for-wire basis to *all* other crossbar switches within the 756A PBX system. These form the 16 three-wire links between switches [FIG. 1].

Each circuit (station, CO trunk, dial pulse register, etc) is hard-wired to crosspoints of a vertical(s) (T, R, S leads) on a crossbar switch. The marker operates the line hold magnet(s) to close the crosspoints of the calling and called circuits, linking them together. Some calls (eg, station-to-station) require two different 3-wire links be joined (via junctor) to complete a call.

If the system is furnished with a make-busy, busy-display unit, a circuit may be removed from service by operating the associated key. Without the make-busy, busy-display feature, refer to method shown in TOP procedure and/or section six of the circuit description for the circuit(s) involved.

When using the trouble analysis procedures (TAPs) in this volume, it is recommended that:

- The time-out feature of each dial pulse register is disabled while testing (block TMO relay of each register nonoperated)

- When referencing from one TAP to an internal page and/or step of another TAP, read the summary statement of the second TAP, *regardless of the point of entry.*

A good troubleshooter will think of questions (and/or ask customer) that can narrow the trouble area:

Example 1—

Report: Attendant can't DSS station 42.

Question: Does DSS lamp 42 light steadily after attendant operates DSS key 42.

Conclusion: If answer is *yes*, call was completed through the 756A PBX, and the line hold magnet associated with station 42 operated to light DSS lamp 42. Thus the failure is probably with station wiring or equipment rather than the PBX. If answer is *no*, refer to TIL-095 to locate the proper TAP to use to locate the fault.

Example 2—

Report: Station 38 can't be called.

Question: After dialing station 38, at crossbar switch 3 (slide 2), is line hold magnet 8 operated?

Conclusion: If answer is *yes*, call has been completed through the 756A PBX. Fault is probably in station wiring or equipment. If troubleshooter gets PBX dial tone at station 38, station wiring is probably good, and the fault may be in the ringer circuit. If the answer is *no*, refer to TIL-095 to locate the proper TAP to use to locate the fault.

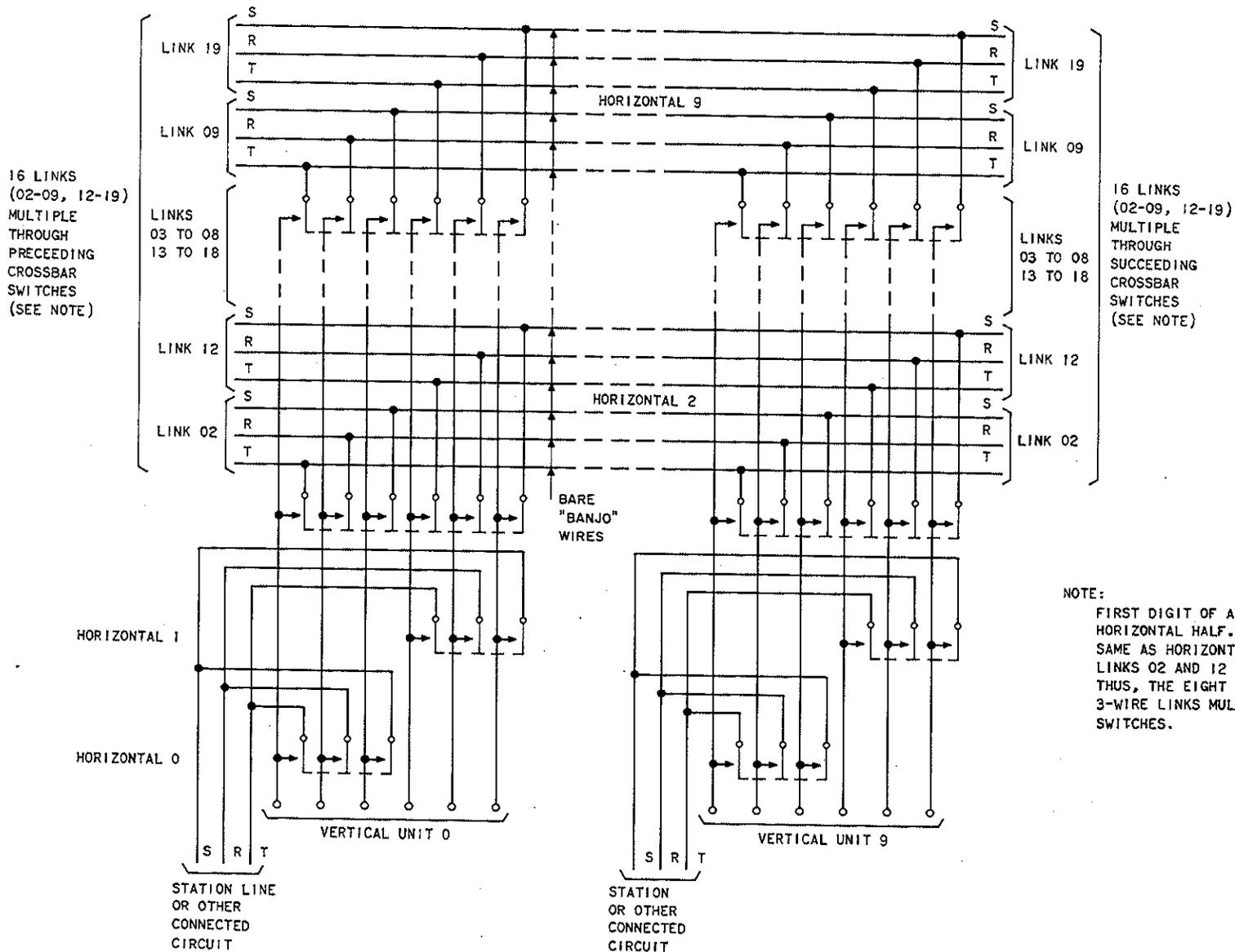


FIG. 1 – Crossbar Switch (Typical) – Showing How 10 Verticals Gain Access to Any One of 16 Links

Assumed alarm did not activate:

7. Remove paper insulators from contacts of one relay pair at a time.
8. Originate calls through marker as required until relay pair causing trouble is located.
9. Turn to G-sheet of SD-65741-01 showing operate path of relay pair in trouble.
10. Locate trouble using same method as above.

Assume after steps 1 and 2 alarm does not activate:

11. Remove paper insulators from half of those paths opened.
12. Originate calls through marker.

Assume alarm activates:

13. Place insulators on contacts of one relay at a time (those removed in step 11).
14. Originate calls as required until relay pair causing trouble is located.

Assume after step 12 alarm did not activate:

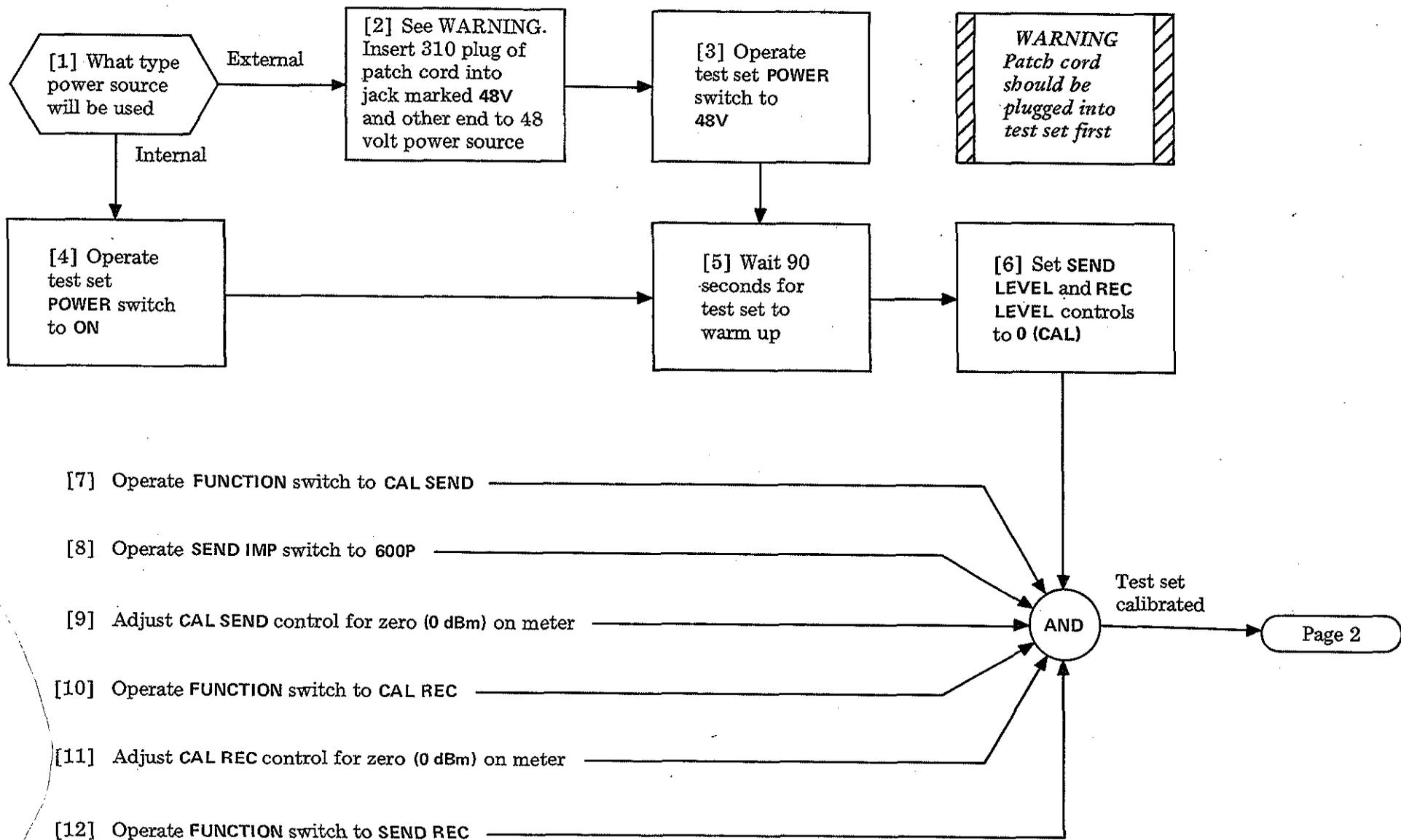
15. Remove paper insulators from one relay pair at a time.
16. Originate calls as required until relay pair causing trouble is located.

Clear trouble:

17. Turn to G-sheet of SD-65741-01 showing operate path of relay pair in trouble and use isolation method to locate trouble.

Carefully remove all contact paper insulators and replace relay covers after clearing troubles. Restore all equipment to normal.

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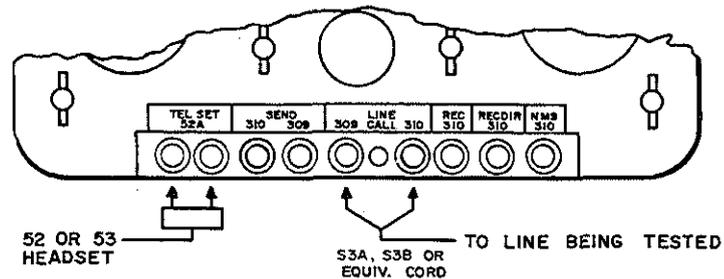
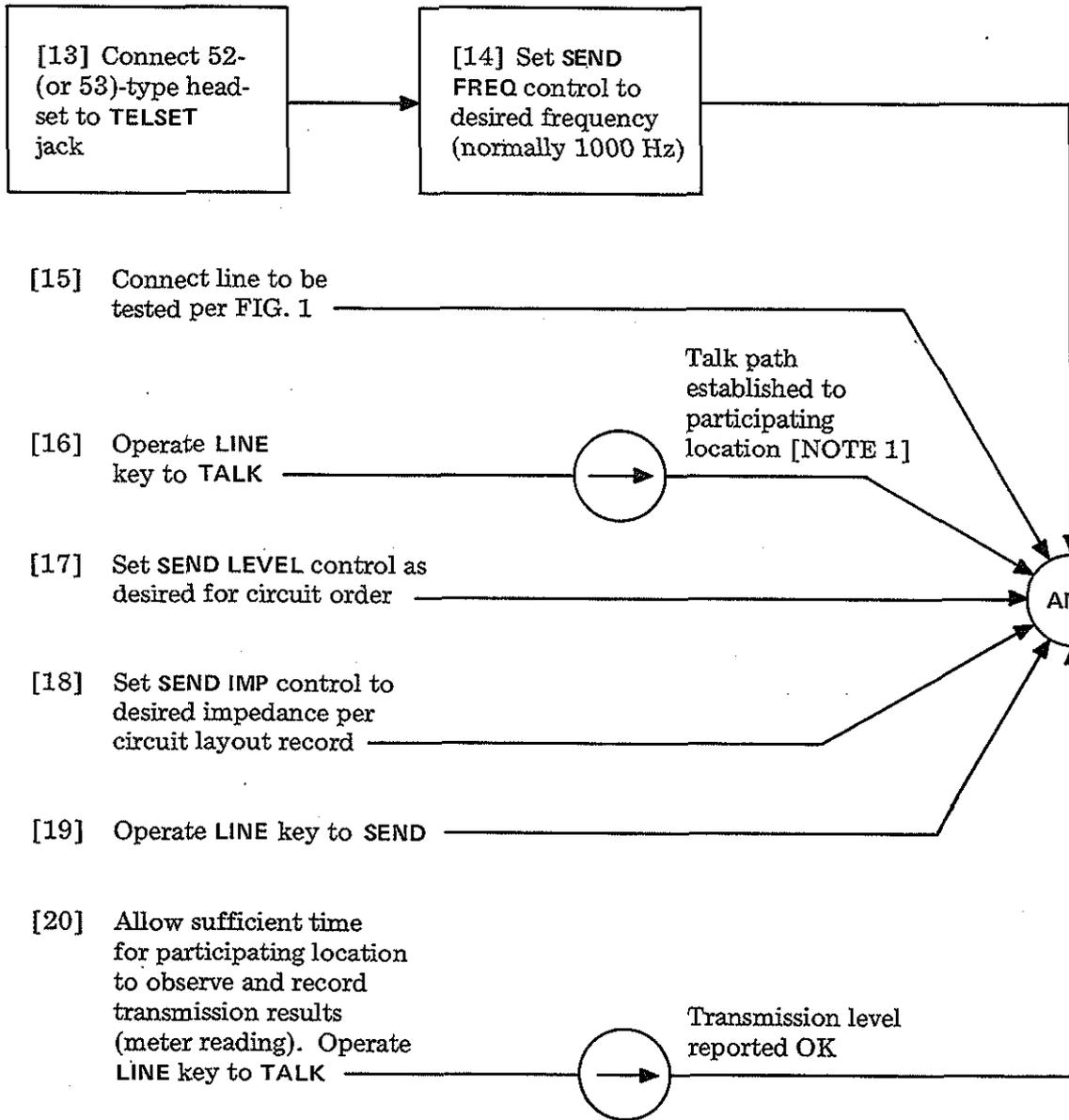
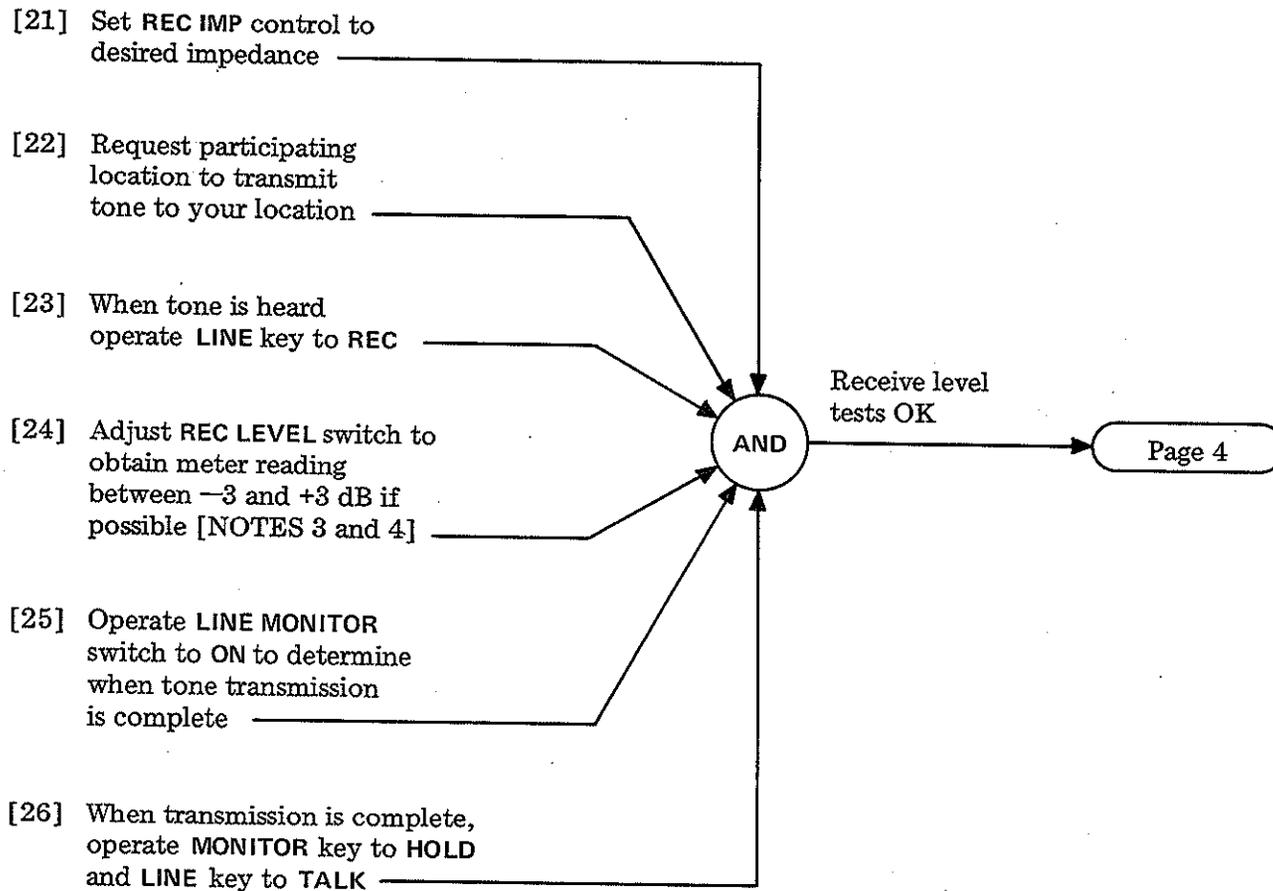


FIG. 1—Jack Field for TTS 4AN



NOTES

3. DBM level will be the sum of REC LEVEL switch and meter reading.
 Example:
 REC LEVEL + meter = level
 +7 +2 = +9

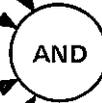
4. High or low level readings could indicate trouble with cable pair such as long cable pair, unbalanced pair, etc. Refer these indications to transmission engineering or per local procedures

[27] Repeat steps 15 through 26 for remaining lines

[28] See WARNING. Operate test set POWER switch to OFF

[29] Remove test set connections

[30] Remove head sets from test set



Transmission tests complete, equipment restored to operating condition

WARNING
If test set is operating from an external power source: operate POWER switch to OFF, remove cord from external power source, then remove cord from test set jack.

| | |
|--|-----|
| (SD-65753) ... Clear Intercept Trouble | 141 |
| (SD-65753) ... Clear Station to Attendant Trunk Call Trouble | 123 |
| (SD-65754) ... Clear Busy Tone Trunk Trouble | 133 |
| (SD-65756) ... Clear Incoming Ringdown Tie Trunk to Station Call Trouble | 121 |
| (SD-65756) ... Clear Outgoing Manual and Dial Selected Tie Trunk Call Trouble | 122 |
| (SD-65756) ... Clear Ringdown Tie Trunk (RDTT) Trouble | 150 |
| (SD-65784) ... Clear Message Waiting Trouble | 143 |
| (SD-66610) ... Clear 3A Code Call Trouble | 161 |

| | |
|--|-----|
| (SD-66796) ... Clear Power Alarm (PA) Trouble | 107 |
| (SD-66796) ... Clear Power Failure Transfer Trouble | 148 |
| (SD-66902) ... Clear Station Controlled Dial Conference Trouble | 153 |
| (SD-66906, SD-66921) ... Clear Call Transfer-Individual Trouble (Was Station Dial Transfer) | 135 |
| (SD-66908) ... Clear Attendant Controlled Dial Conference Trouble | 128 |
| (SD-66910) ... Clear Trunk Answer From Any Station Trouble (Was Remote Trunk Answer) | 160 |
| (SD-66911) ... Clear Busy Verification Trunk Trouble | 134 |
| (SD-66920) (SD-5E021) ... Clear Station Message Register (SMR) Trouble | 156 |

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| (TAL) Trouble ... Clear Tens Alarm | 110 |
| Time-Out Alarm (TOAL) Trouble ... Clear | 112 |
| (TOAL) Trouble ... Clear Time-Out Alarm | 112 |
| Touch-Tone® Trouble ... Clear | 157 |
| Traffic Measurement Lead Trouble ... Clear | 158 |
| Traffic Register Trouble ... Clear | 159 |
| (TRAL) Trouble ... Clear Tens Release Alarm | 109 |
| Transfer Trouble (SD-65753) ... Clear Attendant | 131 |
| Transfer Trouble (SD-66796) ... Clear Power Failure | 148 |
| Trouble Advance Alarm (TAAL) Trouble ... Clear | 113 |
| Trouble Clearing ... General 756A PBX | 163 |
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| Trunk Answer From Any Station Trouble (Was Remote Trunk Answer) (SD-66910) ... Clear | 160 |
| Trunk Release Trouble ... Clear Central Office | 139 |
| (TS) Trouble ... Clear Test Alarm | 111 |
| (UAL) Trouble ... Clear Units Alarm | 114 |
| (UAL1) Trouble ... Clear Units Alarm | 115 |
| (UAL2) Trouble ... Clear Units Alarm | 116 |
| Units Alarm (UAL) Trouble ... Clear | 114 |
| Units Alarm (UAL1) Trouble ... Clear | 115 |
| Units Alarm (UAL2) Trouble ... Clear | 116 |

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| (XCAL) Trouble ... Clear Cross-Check Alarm. | 117 |
| 3A Code Call Trouble (SD-66610) ... Clear | 161 |
| 556A Switchboard Trouble ... Clear | 162 |
| 756A PBX Trouble Clearing ... General | 163 |
| (SD-5E021) (SD-66920) ... Clear Station Message Register (SMR) Trouble | 156 |
| (SD-5E038) ... Clear Recorded Telephone Dictation Trunk Trouble | 149 |
| (SD-65742) ... Clear Attendant Direct Station Selection Trouble | 129 |
| (SD-65742) ... Clear Dial Pulse Register Trouble | 146 |
| (SD-65742) ... Clear PBX Dial Tone Trouble | 147 |
| (SD-65745) ... Clear Meet-Me-Type Conference Trouble | 142 |
| (SD-65747) ... Clear Paging Trouble | 145 |
| (SD-65750) ... Clear Station Can't Be Called Trouble | 151 |
| (SD-65752) ... Clear Attendant Can't Be Called on Central Office Trunk Trouble | 127 |
| (SD-65752) ... Clear Camp-On Trouble | 136 |
| (SD-65752) ... Clear Central Office Trunk to Station Call Trouble | 120 |
| (SD-65752) ... Clear Station Can't Call Out on CO Trunk Trouble | 152 |
| (SD-65752) ... Clear Station to Central Office Trunk Call Trouble | 124 |
| (SD-65753) ... Clear Attendant Transfer Trouble | 131 |
| (SD-65753) ... Clear Attendant Trunk to Station Call Trouble | 119 |
| (SD-65753) ... Clear Attendant Trunk to Station Hold Trouble | 132 |
| (SD-65753) ... Clear Dial 0 Trouble | 140 |

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| Junctor Register Alarm (JRAL) Trouble ... Clear | 103 |
| (LAL1) Trouble ... Clear Link Test Alarm | 104 |
| (LAL2) Trouble ... Clear Link Test Alarm | 105 |
| Lamp Trouble ... Clear Console CO and Attendant Trunk | 137 |
| Link Test Alarm (LAL1) Trouble ... Clear | 104 |
| Link Test Alarm (LAL2) Trouble ... Clear | 105 |
| (MAL) Trouble ... Clear Miscellaneous Alarm | 106 |
| Meet-Me-Type Conference Trouble (SD-65745) ... Clear | 142 |
| Miscellaneous Alarm (MAL) Trouble ... Clear | 106 |
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| Measure Transmission Level Using TTS 4AN | 500 |
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| Outgoing Manual and Dial Selected Tie Trunk Call Trouble (SD-65756) ... Clear | 122 |
| Paging Trouble (SD-65747) ... Clear | 145 |
| (PA) Trouble (SD-66796) ... Clear Power Alarm | 107 |
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| Power Failure Transfer Trouble (SD-66796) ... Clear | 148 |
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| Release Alarm (RLAL) Trouble ... Clear | 108 |
| Restriction Trouble ... Clear Station Inward | 155 |
| Ringdown Tie Trunk (RDTT) to Station Call Trouble (SD-65756) ... Clear Incoming | 121 |
| Ringdown Tie Trunk (RDTT) Trouble (SD-65756) ... Clear | 150 |

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| (RLAL) Trouble ... Clear Release Alarm | 108 |
| Station Call Trouble (SD-65752) ... Clear Central Office Trunk to | 120 |
| Station Call Trouble (SD-65753) ... Clear Attendant Trunk to | 119 |
| Station Can't Be Called Trouble (SD-65750) ... Clear | 151 |
| Station Can't Call Out on CO Trunk Trouble (SD-65752) ... Clear | 152 |
| Station Controlled Dial Conference Trouble (SD-66902) ... Clear | 153 |
| (Station Dial Transfer, Was) (SD-66906, SD-66921) ... Clear Call Transfer-Individual Trouble | 135 |
| Station False Busy Trouble ... Clear | 154 |
| Station Hold Trouble (SD-65753) ... Clear Attendant Trunk to | 132 |
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| Station Message Register (SMR) Trouble (SD-5E021) (SD-66920) ... Clear | 156 |
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| Station-to-Station Call Trouble ... Clear | 125 |
| Switchboard Trouble ... Clear 556A | 162 |
| Tens Alarm (TAL) Trouble ... Clear | 110 |
| Tens Release Alarm (TRAL) Trouble ... Clear | 109 |
| Test Alarm (TS) Trouble ... Clear | 111 |
| Tie Trunk Call Trouble (SD-65756) ... Clear Outgoing Manual and Dial Selected | 122 |
| Tie Trunk (RDTT) To Station Call Trouble (SD-65756) ... Clear Incoming Ringdown | 121 |

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| Clear Release Alarm (RLAL) Trouble | 108 |
| Clear Ringdown Tie Trunk (RDTT) Trouble (SD-65756) | 150 |
| Clear Station Can't Be Called Trouble (SD-65750) | 151 |
| Clear Station Can't Call Out on CO Trunk Trouble (SD-65752) | 152 |
| Clear Station Controlled Dial Conference Trouble (SD-66902) | 153 |
| Clear Station False Busy Trouble | 154 |
| Clear Station Inward Restriction Trouble | 155 |
| Clear Station Message Register (SMR) Trouble (SD-5E021) (SD-66920) | 156 |
| Clear Station to Attendant Trunk Call Trouble (SD-65753) | 123 |
| Clear Station to Central Office Trunk Call Trouble (SD-65752) | 124 |
| Clear Station-to-Station Call Trouble | 125 |
| Clear 556A Switchboard Trouble | 162 |
| Clear Tens Alarm (TAL) Trouble | 110 |
| Clear Test Alarm (TS) Trouble | 111 |
| Clear Tens Release Alarm (TRAL) Trouble | 109 |
| Clear Time-out Alarm (TOAL) Trouble | 112 |
| Clear Touch-Tone® Trouble | 157 |
| Clear Traffic Measurement Lead Trouble | 158 |
| Clear Traffic Register Trouble | 159 |
| Clear Trouble Advance Alarm (TAAL) Trouble | 113 |
| Clear Trunk Answer From Any Station Trouble (Was Remote Trunk Answer (SD-66910) | 160 |
| Clear Units Alarm (UAL) Trouble | 114 |

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| Clear Units Alarm (UAL1) Trouble | 115 |
| Clear Units Alarm (UAL2) Trouble | 116 |
| (COAL) Trouble ... Clear Camp-On Alarm | 100 |
| Code Call Trouble (SD-66610) ... Clear 3A | 161 |
| Conference Trouble (SD-65745) ... Clear Meet-Me-Type | 142 |
| Console CO and Attendant Trunk Lamp Trouble ... Clear | 137 |
| Console Key Trouble ... Clear | 138 |
| Cross Check Alarm (XCAL) Trouble ... Clear | 117 |
| Dial Back Trouble ... Clear Attendant | 130 |
| Dial Conference Trouble (SD-66908) ... Clear Attendant Controlled | 128 |
| Dial Conference Trouble (SD-66902) ... Clear Station | 153 |
| Dial Pulse Register Trouble (SD-65742) ... Clear | 146 |
| Dial Tone Trouble (SD-65742) ... Clear PBX | 147 |
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| Direct Station Selection Trouble (SD-65742) ... Clear Attendant | 129 |
| (EXT) Alarm Trouble ... Clear External | 101 |
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| (FA) Trouble ... Clear Fuse Alarm | 102 |
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| General 756A PBX Trouble Clearing | 163 |
| Intercept Trouble (SD-65753) ... Clear | 141 |
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| Central Office Trunk Trouble (SD-65752) ... Clear Attendant Can't Be Called on | 127 |
| Clear All Registers Busy (ARB) Alarm Trouble | 118 |
| Clear Attendant Audible Signal Trouble | 126 |
| Clear Attendant Can't Be Called on Central Office Trunk Trouble (SD-65752) | 127 |
| Clear Attendant-Controlled Dial Conference Trouble (SD-66908) | 128 |
| Clear Attendant Direct Station Selection Trouble (SD-65742) | 129 |
| Clear Attendant Dial Back Trouble | 130 |
| Clear Attendant Transfer Trouble (SD-65753) | 131 |
| Clear Attendant Trunk to Station Call Trouble (SD-65753) | 119 |
| Clear Attendant Trunk to Station Hold Trouble (SD-65753) | 132 |
| Clear Busy Tone Trunk Trouble (SD-65754) | 133 |
| Clear Busy Verification Trunk Trouble (SD-66911) | 134 |
| Clear Call Transfer-Individual Trouble (Was Station Dial Transfer) (SD-66906, SD-66921) | 135 |
| Clear Camp-On Alarm (COAL) Trouble | 100 |
| Clear Camp-On Trouble (SD-65752) | 136 |
| Clear Central Office Trunk to Station Call Trouble (SD-65752) | 120 |
| Clear Central Office Trunk Release Trouble | 139 |
| Clear 3A Code Call Trouble (SD-66610) | 161 |
| Clear Console CO and Attendant Trunk Lamp Trouble | 137 |
| Clear Console Key Trouble | 138 |

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|---|-----|
| Clear Cross-Check Alarm (XCAL) Trouble | 117 |
| Clear Incoming Ringdown Tie Trunk (RDTT) to Station Call Trouble (SD-65756) | 121 |
| Clear Dial 0 Trouble (SD-65753) | 140 |
| Clear Dial Pulse Register Trouble (SD-65742) | 146 |
| Clear External (EXT) Alarm Trouble | 101 |
| Clear Fuse Alarm (FA) Trouble | 102 |
| Clear Intercept Trouble (SD-65753) | 141 |
| Clear Junctor Register Alarm (JRAL) Trouble | 103 |
| Clear Link Test Alarm (LAL1) Trouble | 104 |
| Clear Link Test Alarm (LAL2) Trouble | 105 |
| Clear Meet-Me-Type Conference Trouble (SD-65745) | 142 |
| Clear Message Waiting Trouble (SD-65784) | 143 |
| Clear Miscellaneous Alarm (MAL) Trouble | 106 |
| Clear Night Service Trouble | 144 |
| Clear Outgoing Manual and Dial Selected Tie Trunk Call Trouble (SD-65756) | 122 |
| Clear Paging Trouble (SD-65747) | 145 |
| Clear PBX Dial Tone Trouble (SD-65742) | 147 |
| Clear Power Alarm (PA) Trouble (SD-66796) | 107 |
| Clear Power Failure Transfer Trouble (SD-66796) | 148 |
| Clear Recorded Telephone Dictation Trunk Trouble (SD-5E038) | 149 |

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| Alarm (COAL) Trouble ... Clear Camp-On | 100 |
| Alarm (FA) Trouble ... Clear Fuse | 102 |
| Alarm (JRAL) Trouble ... Clear Junctor Register | 103 |
| Alarm (LAL1) Trouble ... Clear Link Test | 104 |
| Alarm (LAL2) Trouble ... Clear Link Test | 105 |
| Alarm (MAL) Trouble ... Clear Miscellaneous | 106 |
| Alarm (PA) Trouble (SD-66796) ... Clear Power | 107 |
| Alarm (RLAL) Trouble ... Clear Release | 108 |
| Alarm (TAAL) Trouble ... Clear Trouble Advance | 113 |
| Alarm (TAL) Trouble ... Clear Tens | 110 |
| Alarm (TOAL) Trouble ... Clear Time-Out | 112 |
| Alarm (TRAL) Trouble ... Clear Tens Release | 109 |
| Alarm Trouble ... Clear All Registers Busy (ARB) | 118 |
| Alarm Trouble ... Clear External (EXT) | 101 |
| Alarm (TS) Trouble ... Clear Test | 111 |
| Alarm (UAL) Trouble ... Clear Units | 114 |
| Alarm (UAL1) Trouble ... Clear Units | 115 |
| Alarm (UAL2) Trouble ... Clear Units | 116 |
| Alarm (XCAL) Trouble ... Clear Cross-Check | 117 |
| All Registers Busy (ARB) Alarm Trouble ... Clear | 118 |
| (ARB) Alarm Trouble ... Clear All Registers Busy | 118 |
| Attendant Audible Signal Trouble ... Clear | 126 |

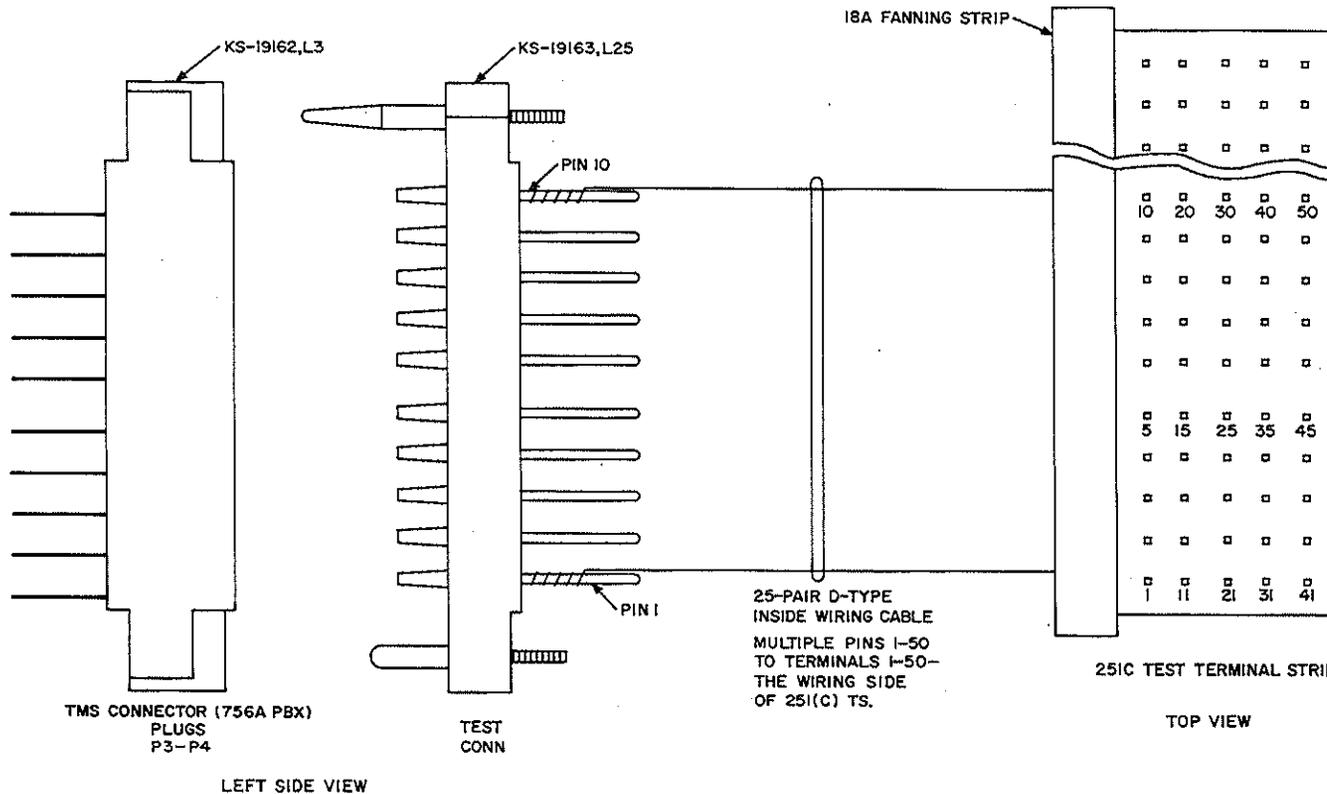
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| Attendant Can't Be Called on Central Office Trunk Trouble (SD-65752) ... Clear | 127 |
| Attendant Controlled Dial Conference Trouble (SD-66908) ... Clear | 128 |
| Attendant Direct Station Selection Trouble (SD-65742) ... Clear | 129 |
| Attendant Dial Back Trouble ... Clear | 130 |
| Attendant Transfer Trouble (SD-65753) ... Clear | 131 |
| Attendant Trunk Call Trouble (SD-65753) ... Clear Station To | 123 |
| Attendant Trunk to Station Call Trouble (SD-65753) ... Clear | 119 |
| Attendant Trunk to Station Hold Trouble (SD-65753) ... Clear | 132 |
| Audible Signal Trouble ... Clear Attendant | 126 |
| Build Test Adapter and Lamp Indicator to Test Traffic Measurement (TMS 1A) Feature | 501 |
| Busy Tone Trunk Trouble (SD-65754) ... Clear | 133 |
| Busy Verification Trunk Trouble (SD-66911) ... Clear | 134 |
| Call Transfer-Individual Trouble (Was Station Dial Transfer) (SD-66906, SD-66921) ... Clear | 135 |
| Camp-On Alarm (COAL) Trouble ... Clear | 100 |
| Camp-On Trouble (SD-65752) ... Clear | 136 |
| Can't Be Called on Central Office Trunk Trouble (SD-65752) ... Clear Attendant | 127 |
| Can't Be Called Trouble (SD-65750) ... Clear Station | 151 |
| Can't Call Out on CO Trunk Trouble (SD-65752) ... Clear Station | 152 |
| Central Office Trunk Call Trouble (SD-65752) ... Clear Station to | 124 |
| Central Office Trunk Release Trouble ... Clear | 139 |
| Central Office Trunk to Station Call Trouble (SD-65752) ... Clear | 120 |

[3] Make test adapter [FIG. 2] for extending terminals of J58829A, L57 cable connectors 3 and 4 using equipment listed in TABLE B

[4] Mount 251C terminal strip on a backboard

Test equipment prepared

AND



| TABLE B | |
|-------------------------------|----------|
| EQUIPMENT REQUIRED | QUANTITY |
| Terminal Strip 251C [NOTE 1] | 1 |
| Connector KS-19163, L25 | 1 |
| Fanning Strip 18A | 1 |
| Cable, 25-pr, D-inside wiring | 10 ft |

NOTE 1
251C TS terminal numbers are the same as connector KS-19163, L25 pin number

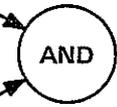
FIG. 2

BUILD TEST ADAPTER AND LAMP INDICATOR TO TEST TRAFFIC MEASUREMENT (TMS 1A) FEATURE

| | |
|-------------|----------|
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[1] Make test lamp indicator
[FIG. 1] using equipment
listed in TABLE A

[2] Mount test lamp indicator
on a backboard



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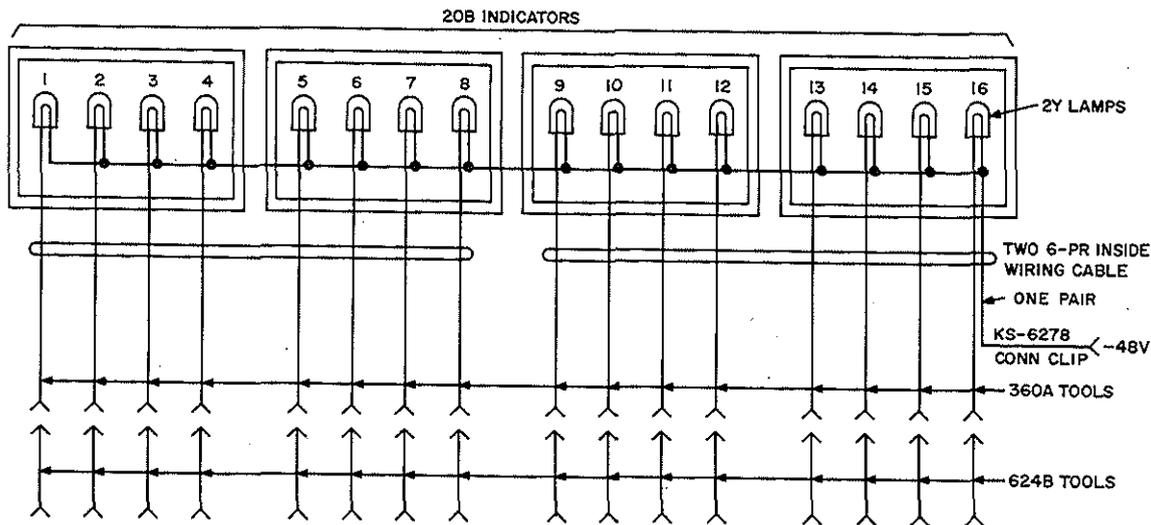


FIG. 1

| TABLE A | |
|-------------------------------------|------------------------------------|
| EQUIPMENT REQUIRED | QUANTITY |
| Lamp Indicators 20B-Type | 4 |
| Lamps 2Y | 16 |
| Connecting Clip KS-6278 | 1 |
| Tool 360A, B, or C | 16 |
| Tool 624B | 16 |
| Cable 6 pr, D-type inside wiring | 12 ft (2 pieces, 6 ft long). |