

**“PULSE\* 120” – SG-1A****ELECTRONIC PRIVATE AUTOMATIC BRANCH EXCHANGE****STATION LINE TONE FAULT CLEARING PROCEDURE****1. GENERAL**

1.01 Control-logic and power-failure faults *must* be cleared before correcting tone faults in the PULSE 120 Electronic Private Automatic Branch Exchange (EPABX).

**2. CIRCUIT DESCRIPTION**

2.01 The tones in the system are provided by:

- (a) three circuits each producing dial tone, busy tone and overflow tone. These tones are regulated by the central control;
- (b) four circuits producing ringback tone;
- (c) one circuit producing warning (beep) tone.

2.02 All tones in the PULSE 120 EPABX originate in trunk shelf no. 1 and are then distributed in the system through circuit packs.

**3. FAULT CLEARING PROCEDURE**

3.01 If a fault is not cleared by circuit pack substitution, the original circuit pack must be reinserted in the connector. If different and/or additional faults are created in the system by the substitution of a circuit pack, the replacement should be removed, tagged and returned as a defective unit.

3.02 If a fault is cleared by circuit pack substitution, and *the original circuit pack has not caused a fuse to blow and/or there is no visual evidence of burnt or damaged components* the contacts on this circuit pack and its associated connector must be cleaned. The original circuit pack is then inserted in the connector and if the fault reappears the new circuit pack is reinserted.

*Note 1:* At the end of the fault clearing procedure, a visual check should be made to ensure that all connectors are well seated, and that the screws in the connectors are tight. The cabling and connector arrangement is given in Section 553-5011-501.

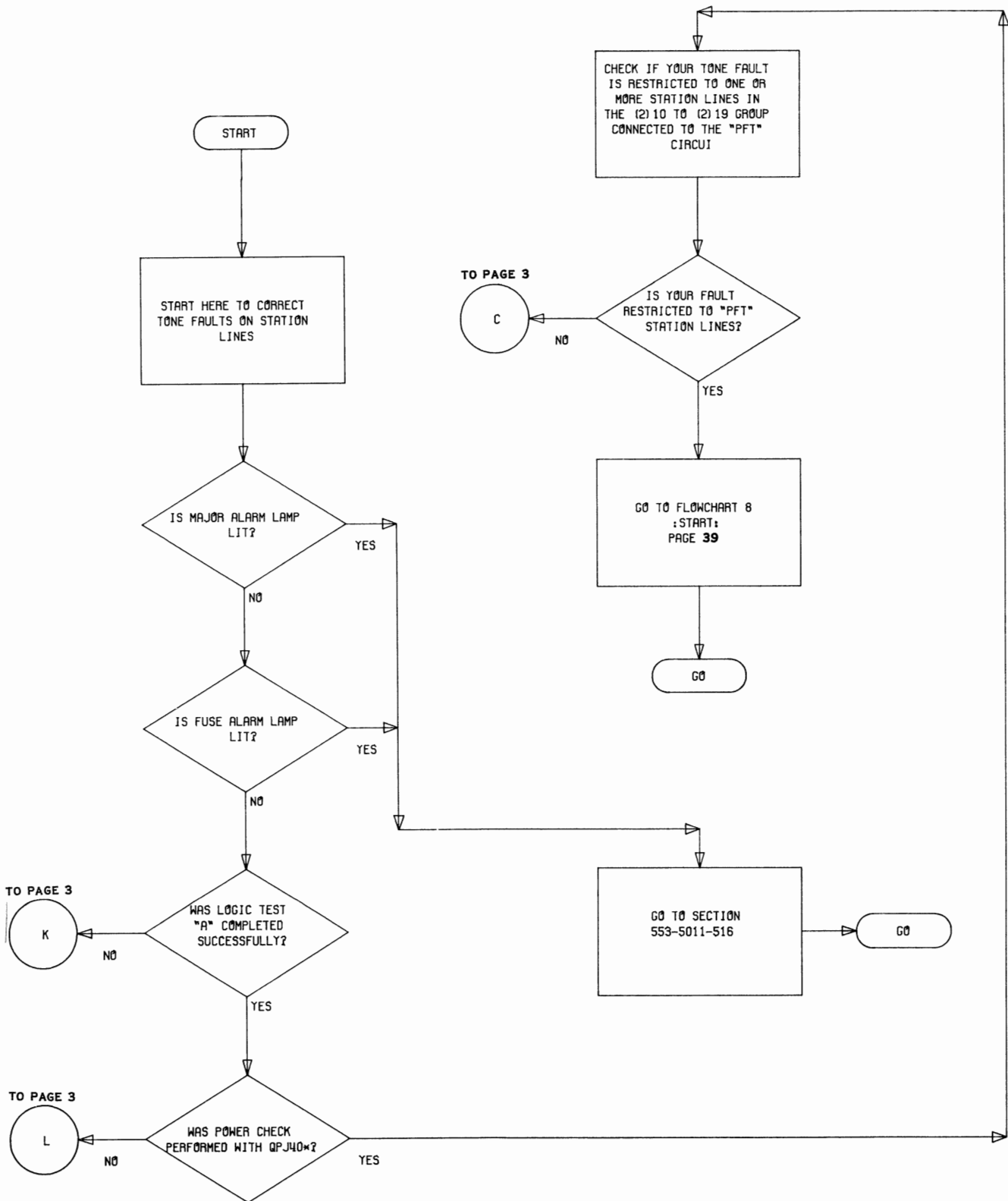
*Note 2:* Instructions for substituting a shelf are given in Section 553-5011-202.

*Note 3:* The asterisk (\*), after the circuit pack code, replaces the suffix letter.

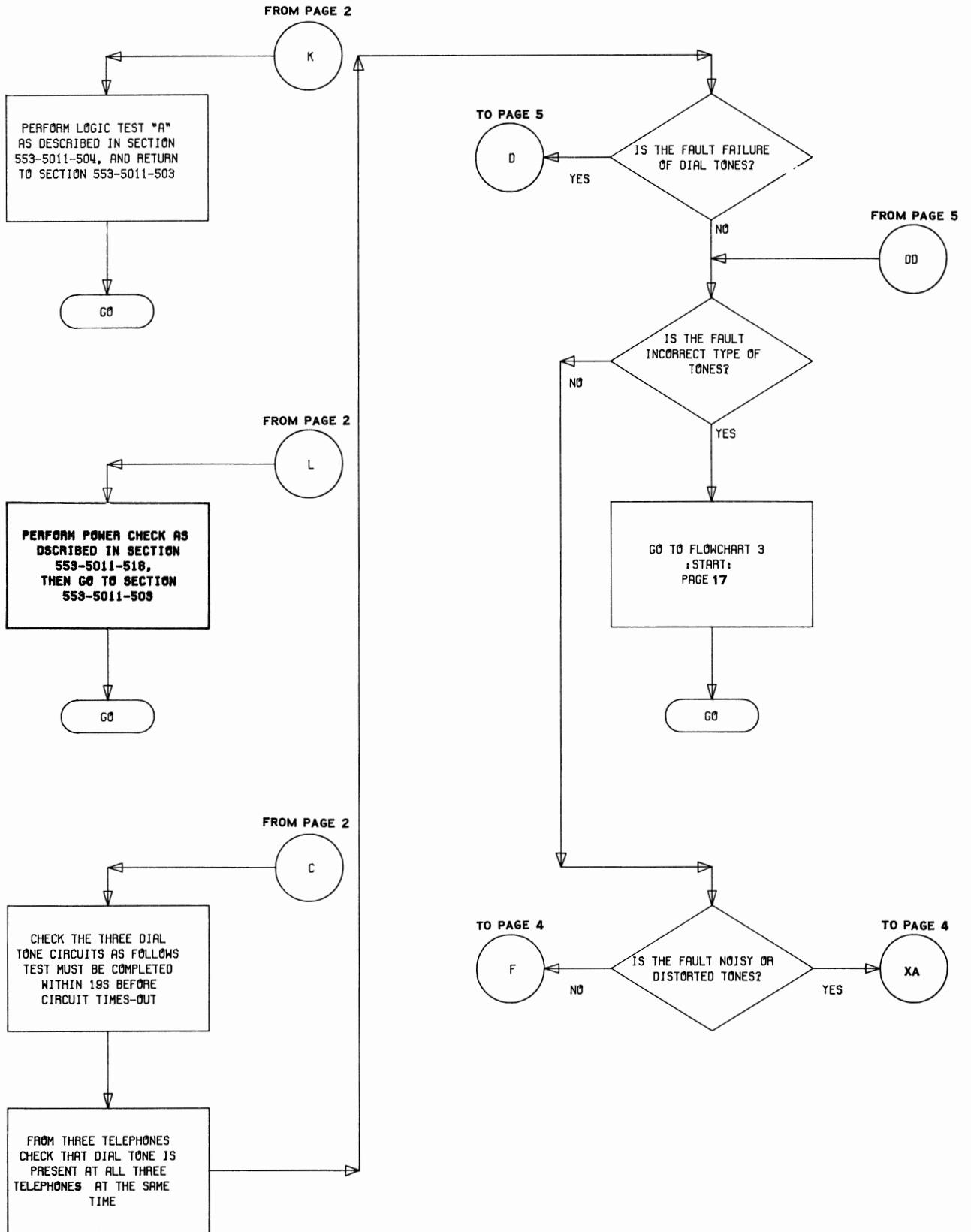
*Note 4:* For hotel/motel systems, see Section 553-5011-207 for the numbers to dial to access the station lines prescribed in the flowcharts. (In hotel/motel service the station lines prescribed are the system numbers, not the dialed numbers).

*Note 5:* Inserting a QPJ80\* (call-forward) circuit pack in the option shelf disconnects all calls through the EPABX. After insertion, press the RESET button on power shelf 2 to reactivate the EPABX.

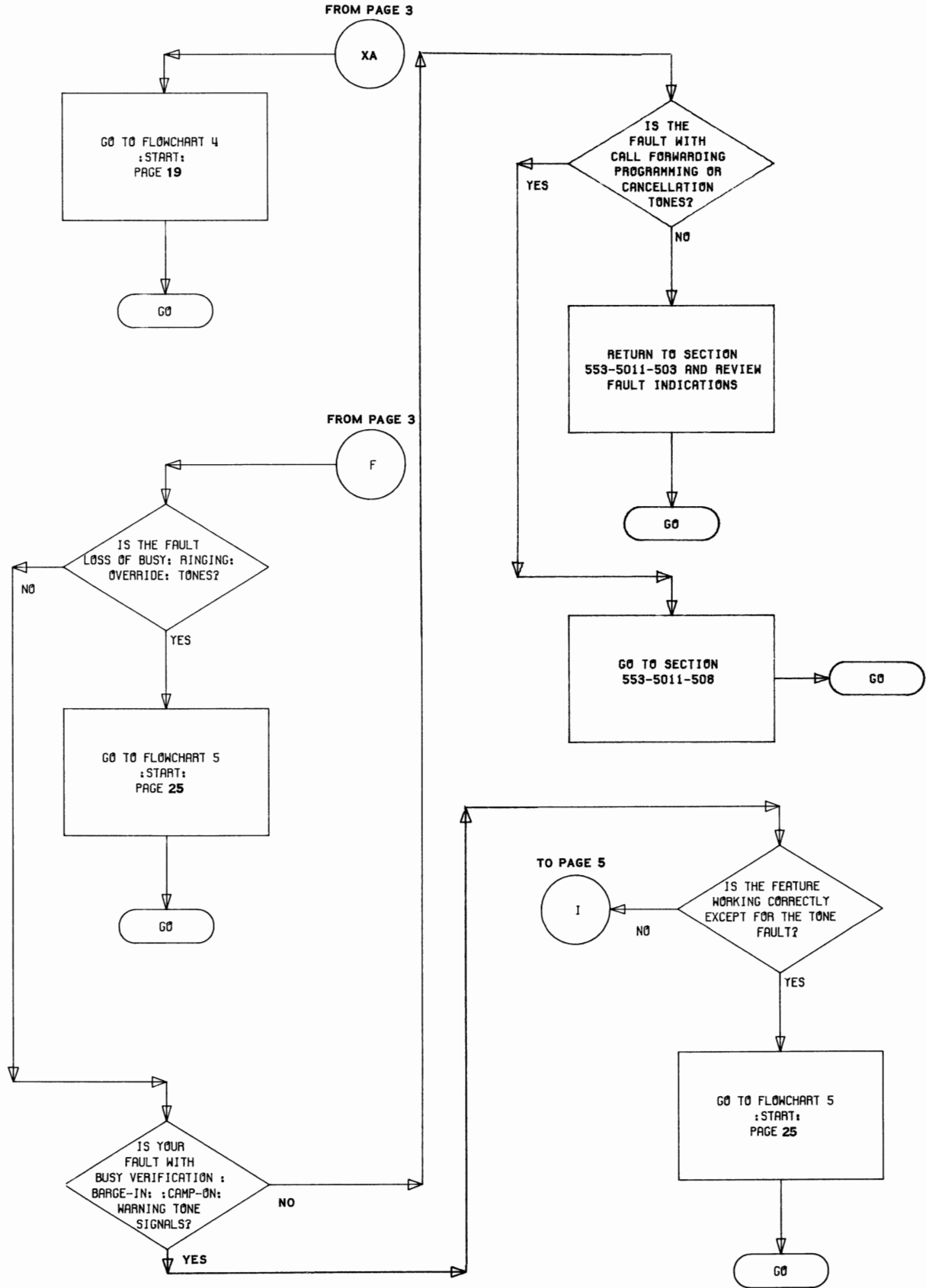
\* Trademark of Northern Telecom Limited



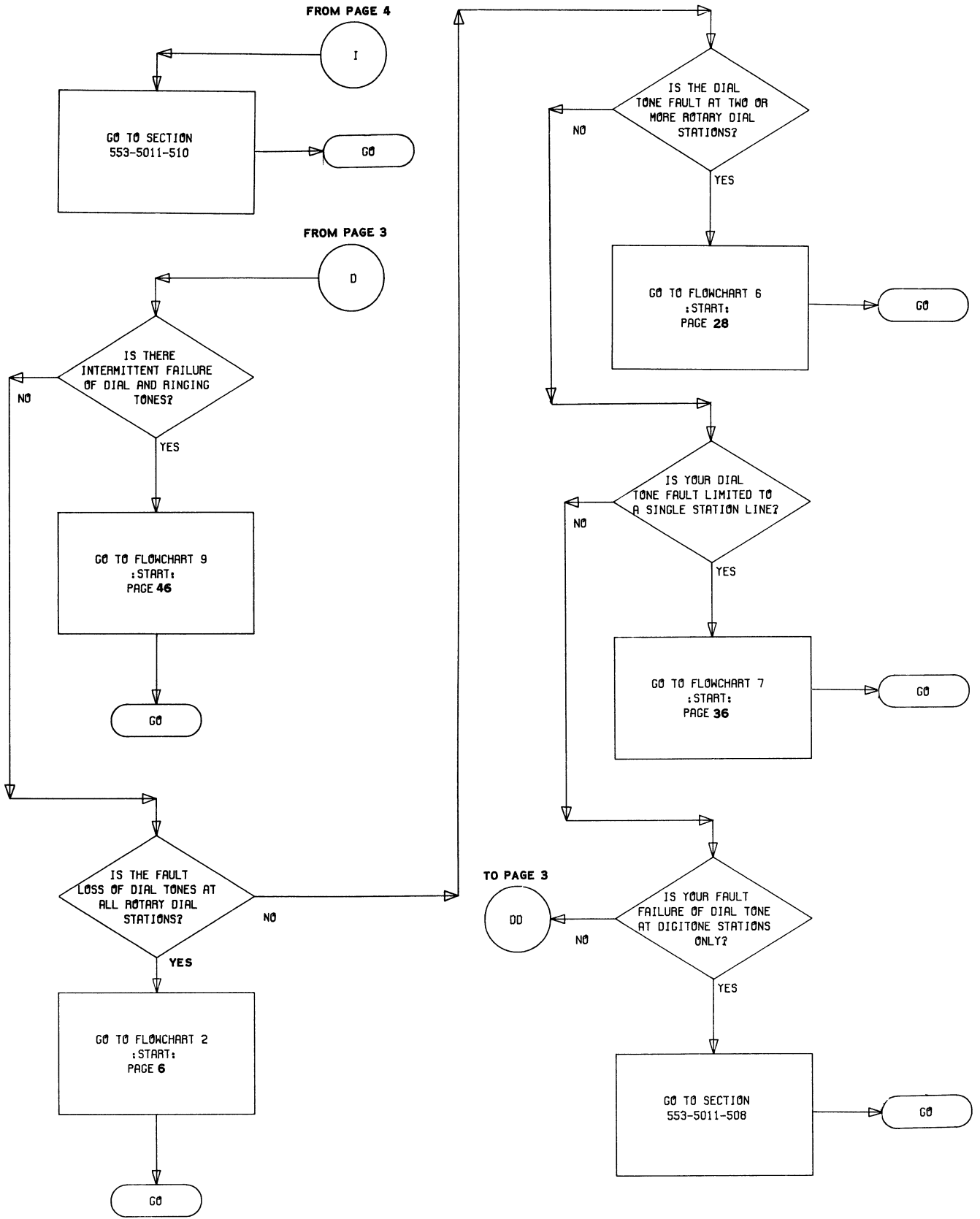
Flowchart 1 – Station Line Tone Fault Classification



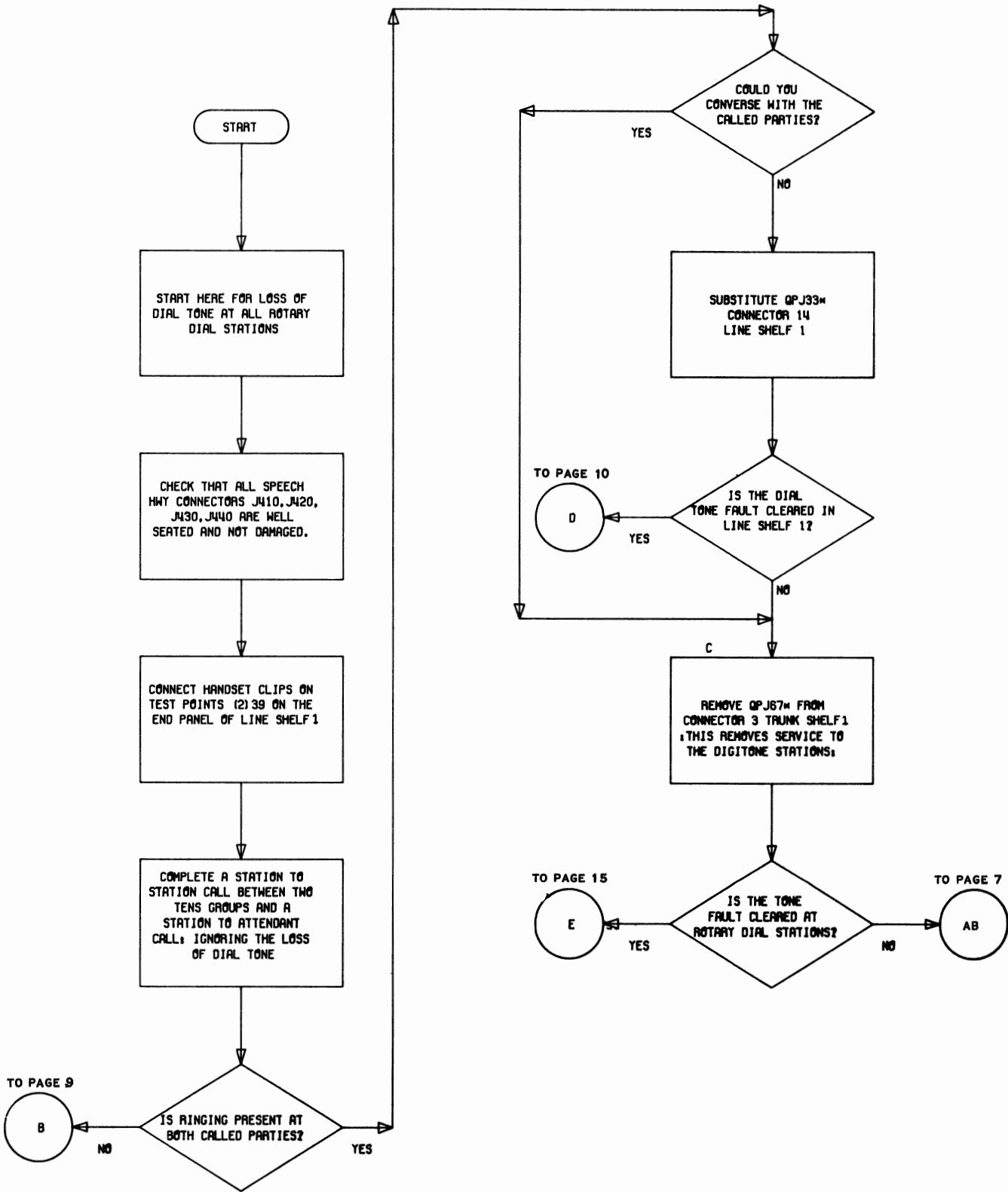
Flowchart 1 (Cont)



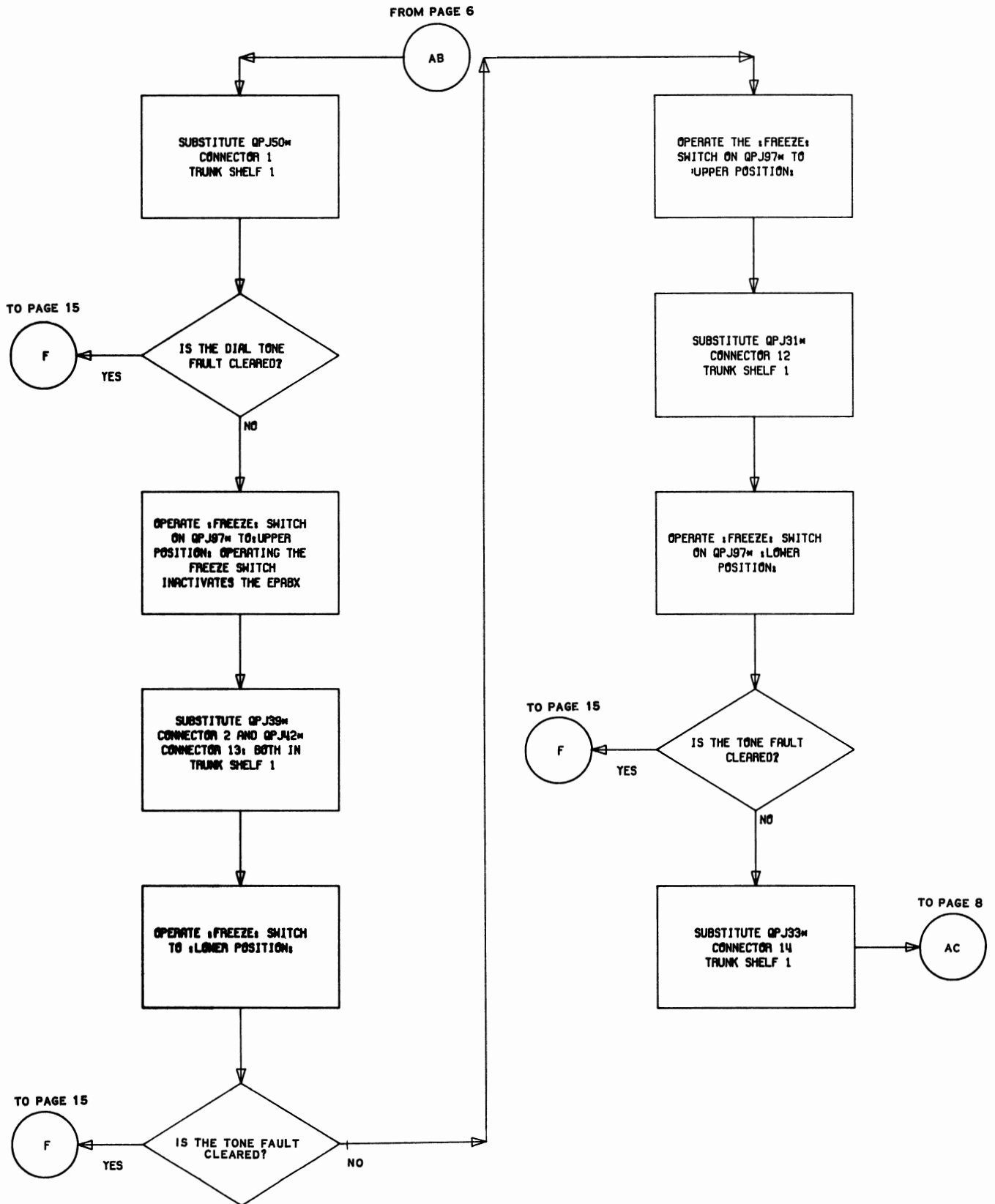
Flowchart 1 (Cont)



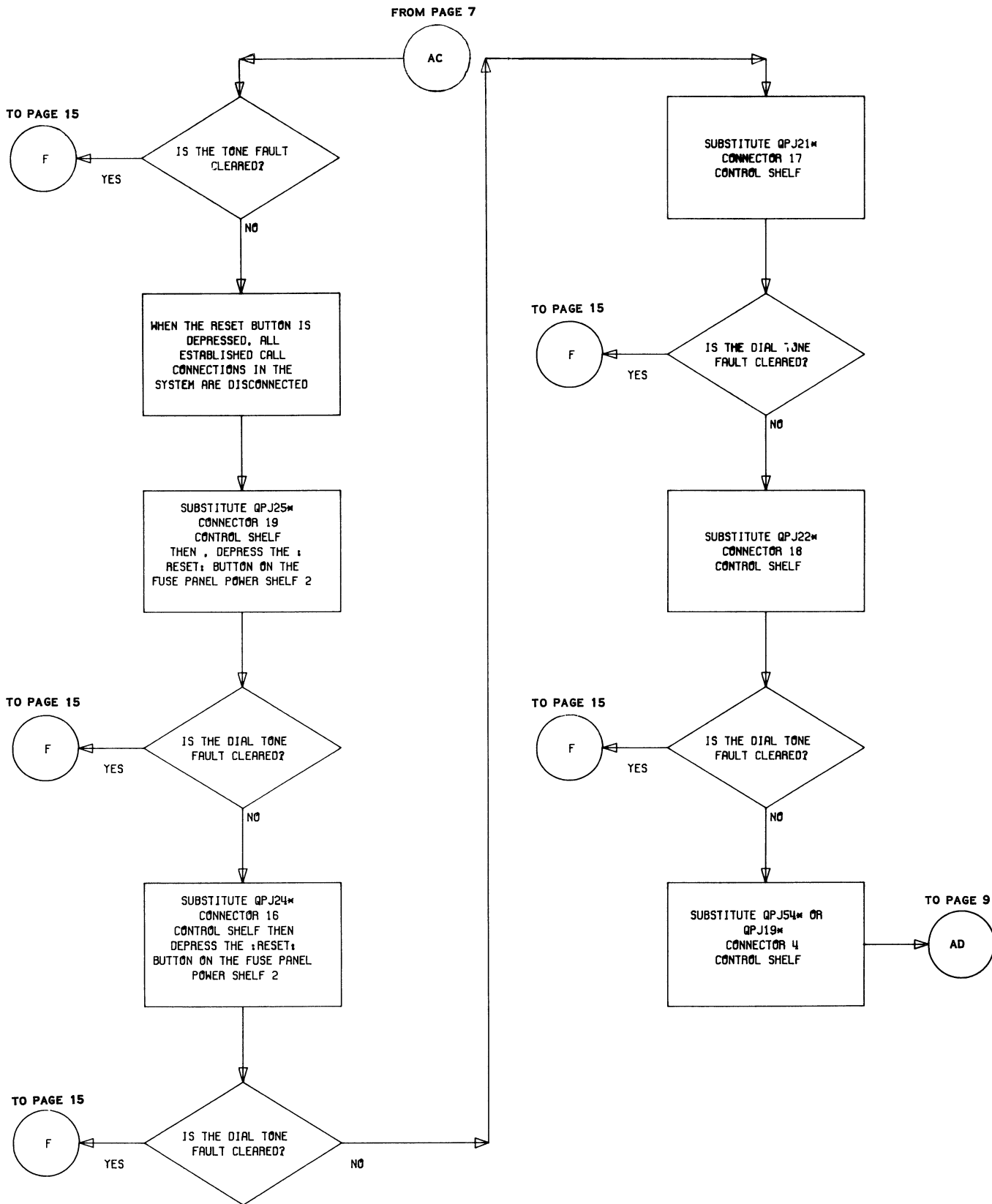
Flowchart 1 (Cont)



Flowchart 2 – Dial Tone Fault Clearing

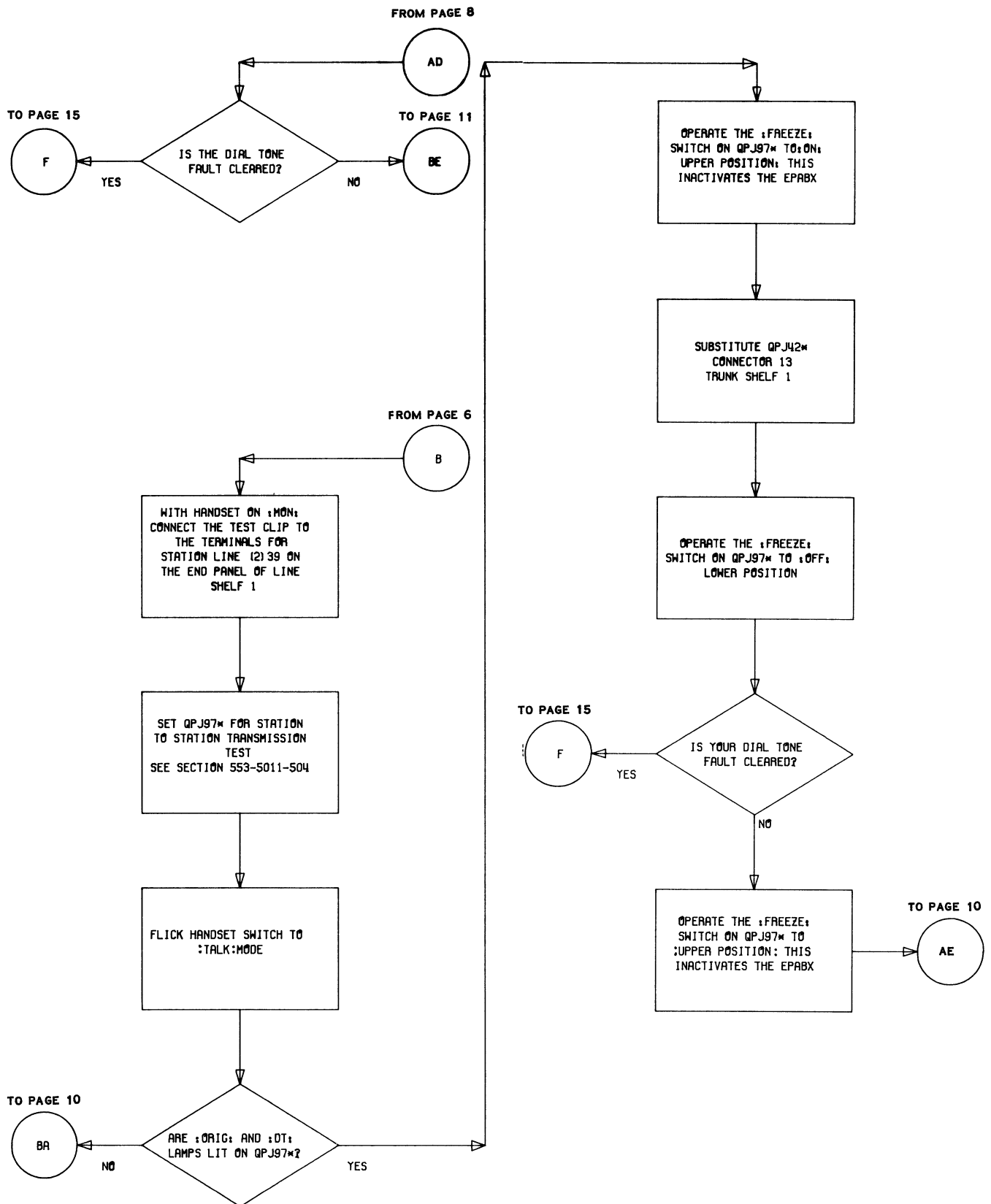


Flowchart 2 (Cont)

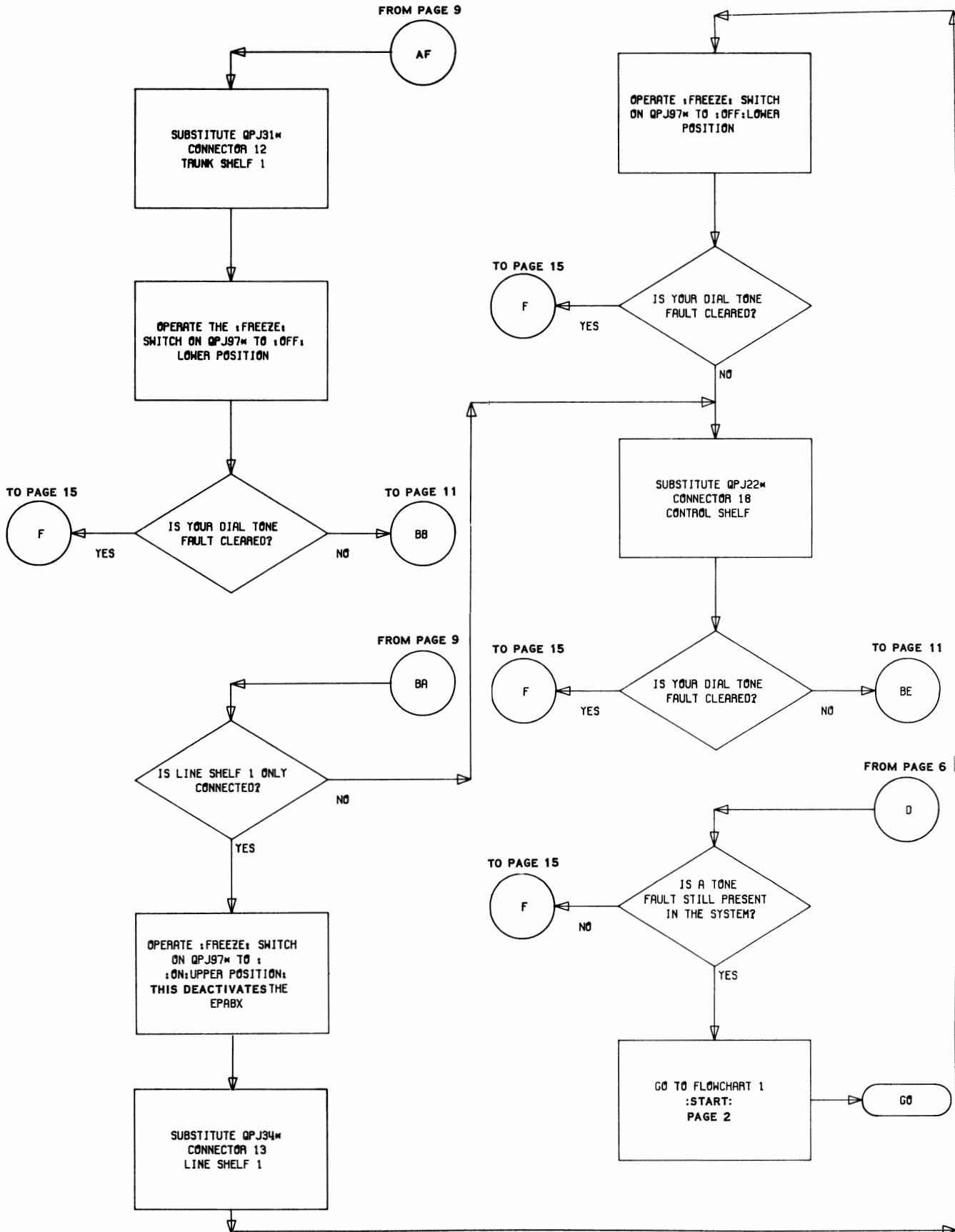


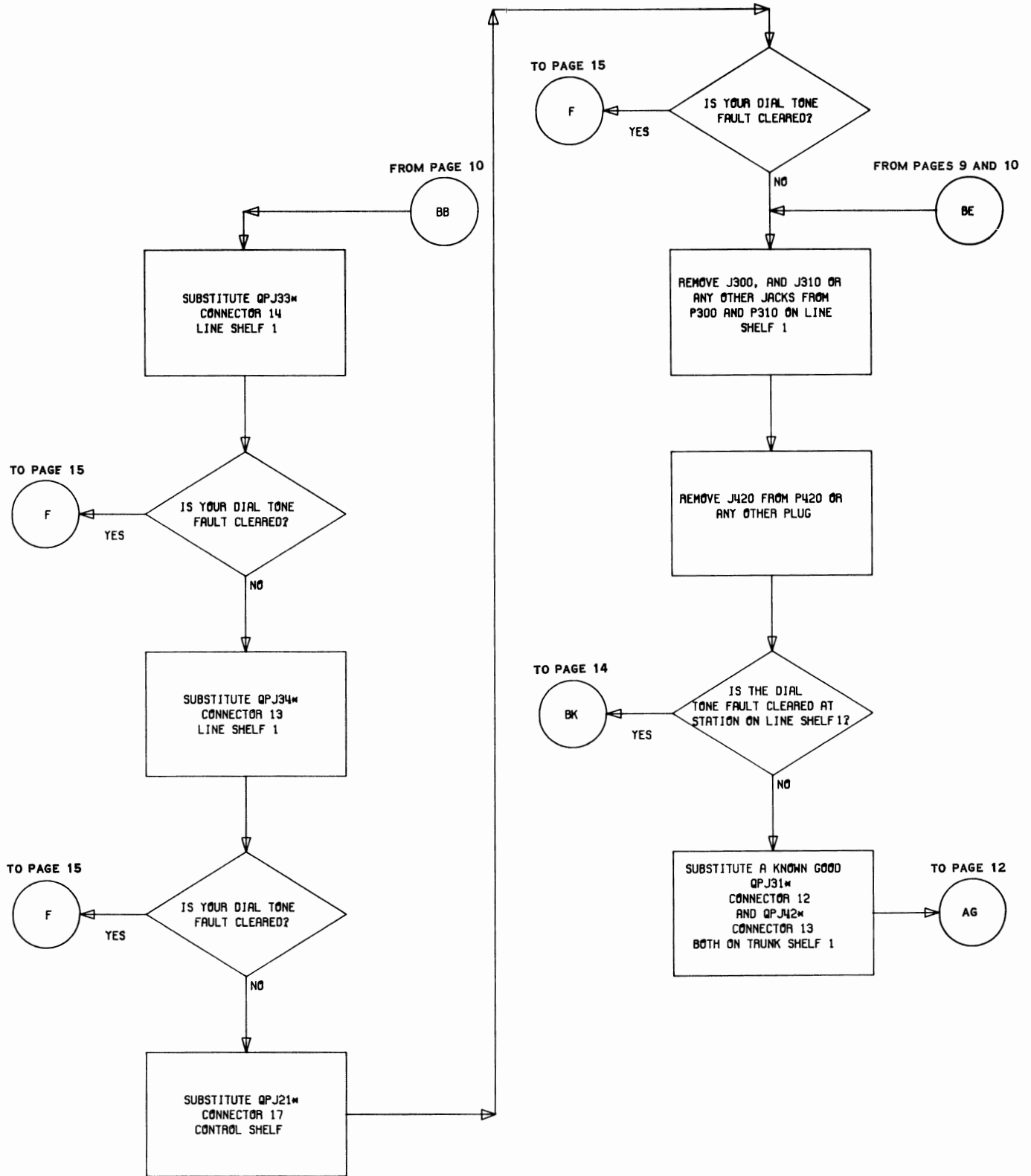
Flowchart 2 (Cont)



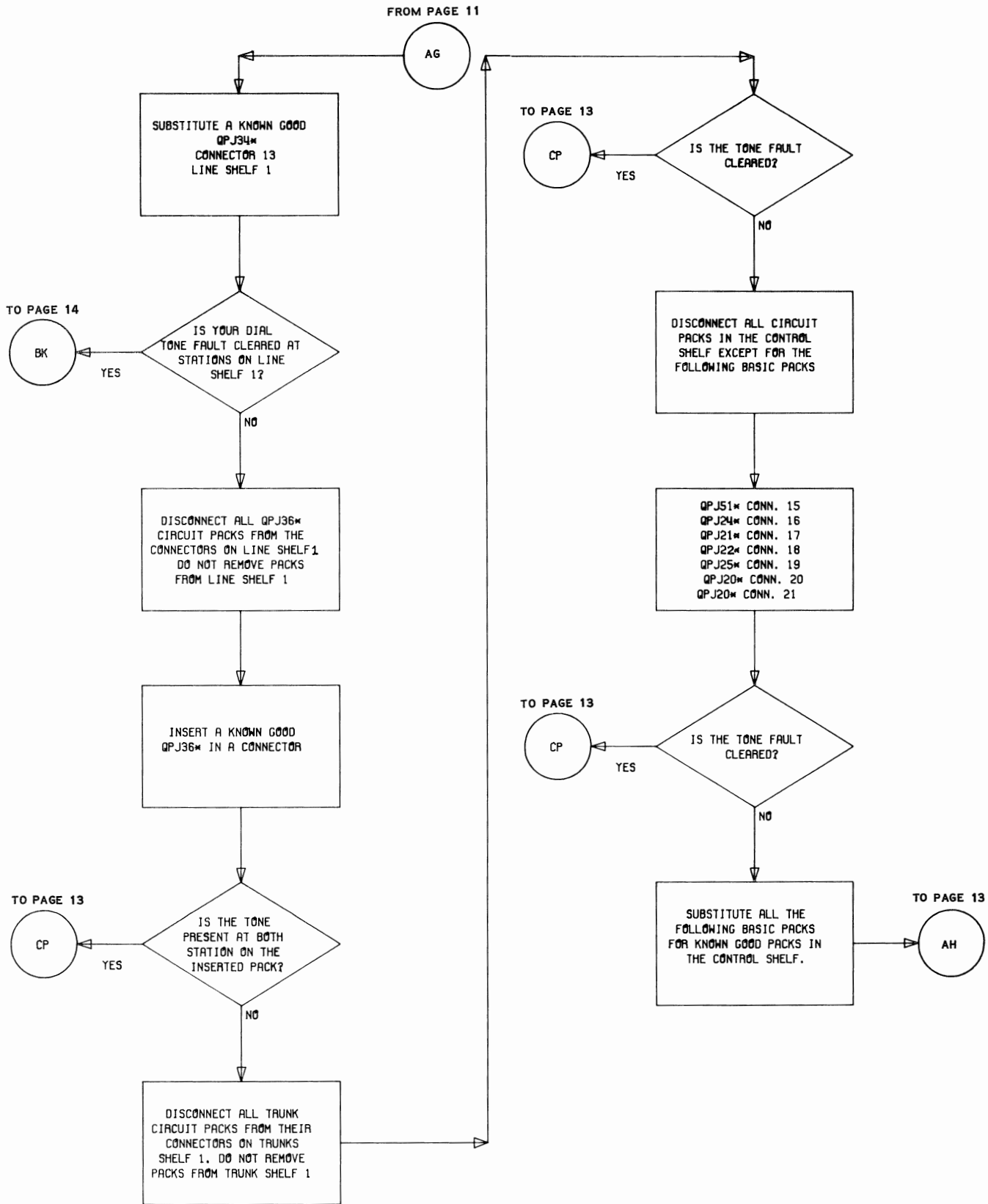


Flowchart 2 (Cont)

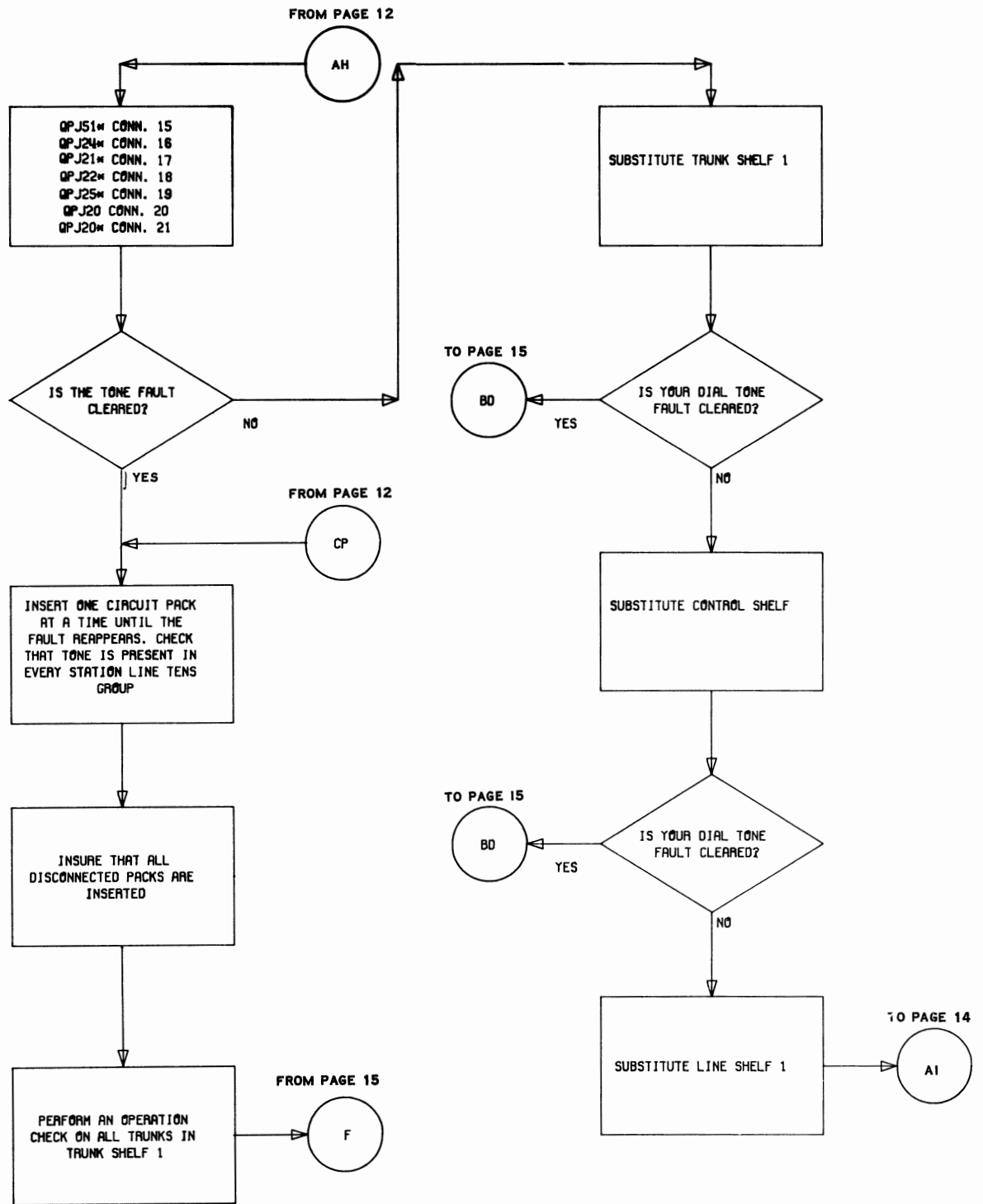




Flowchart 2 (Cont)

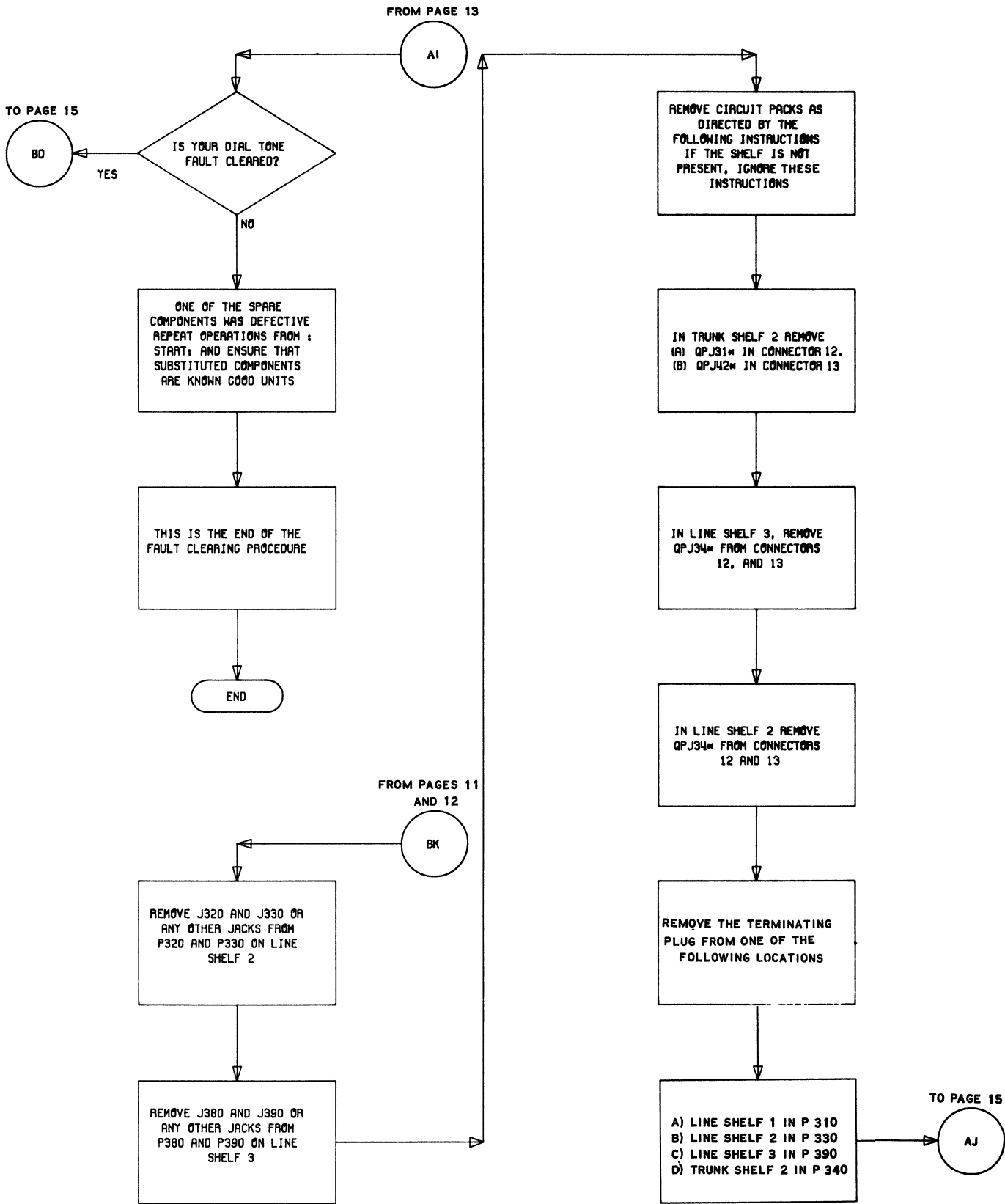


Flowchart 2 (Cont)

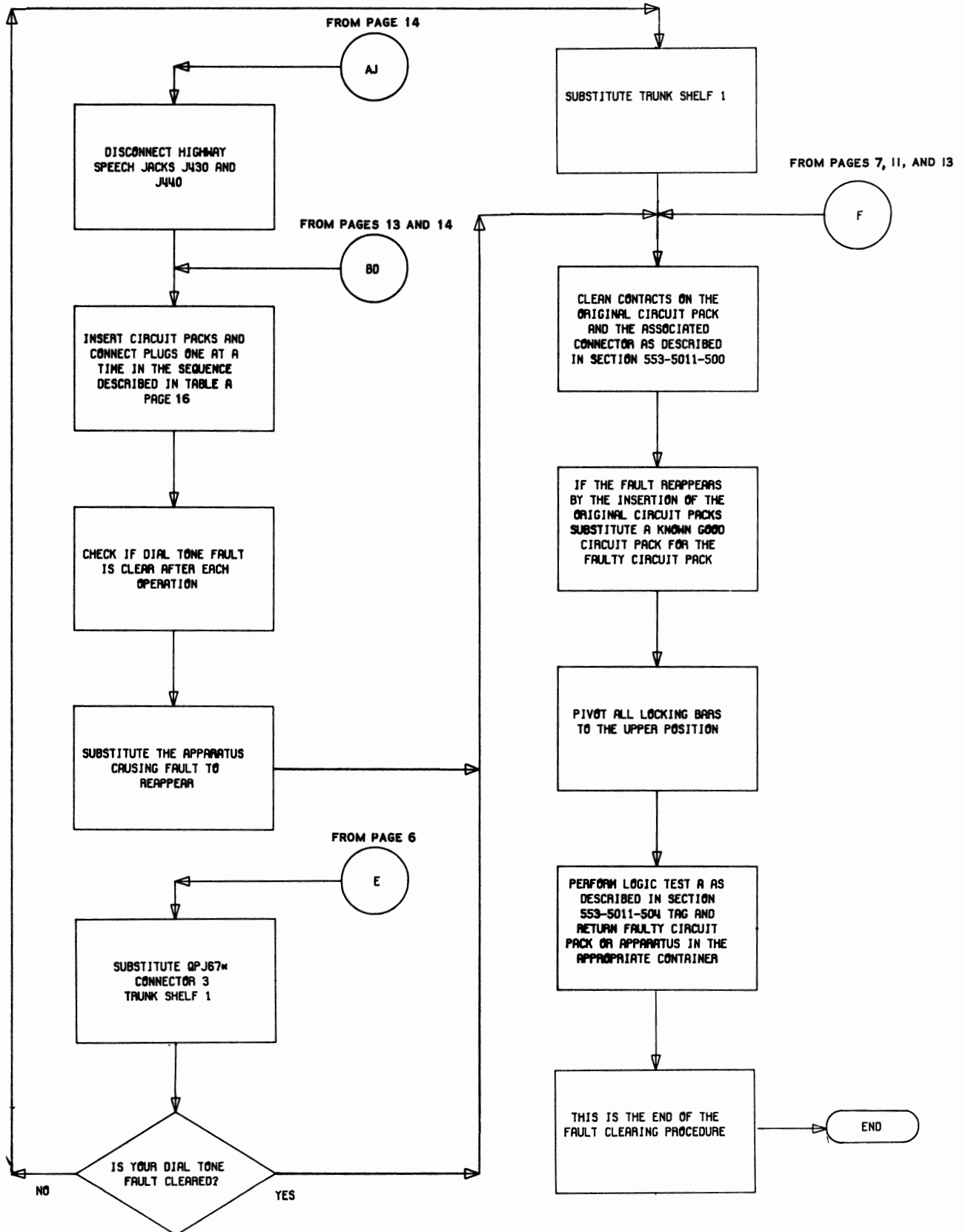


Flowchart 2 (Cont)

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Flowchart 2 (Cont)

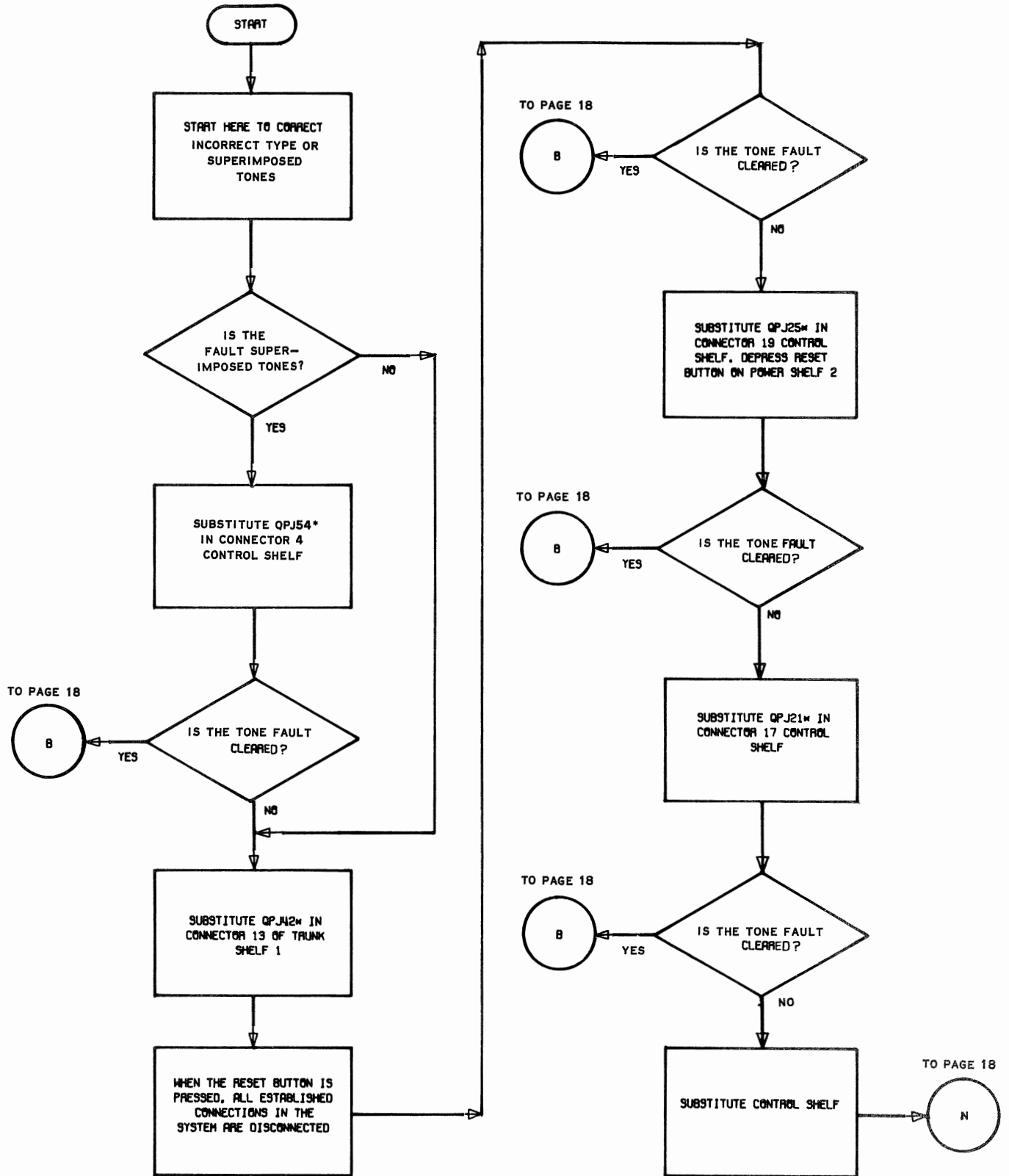


Flowchart 2 (Cont)

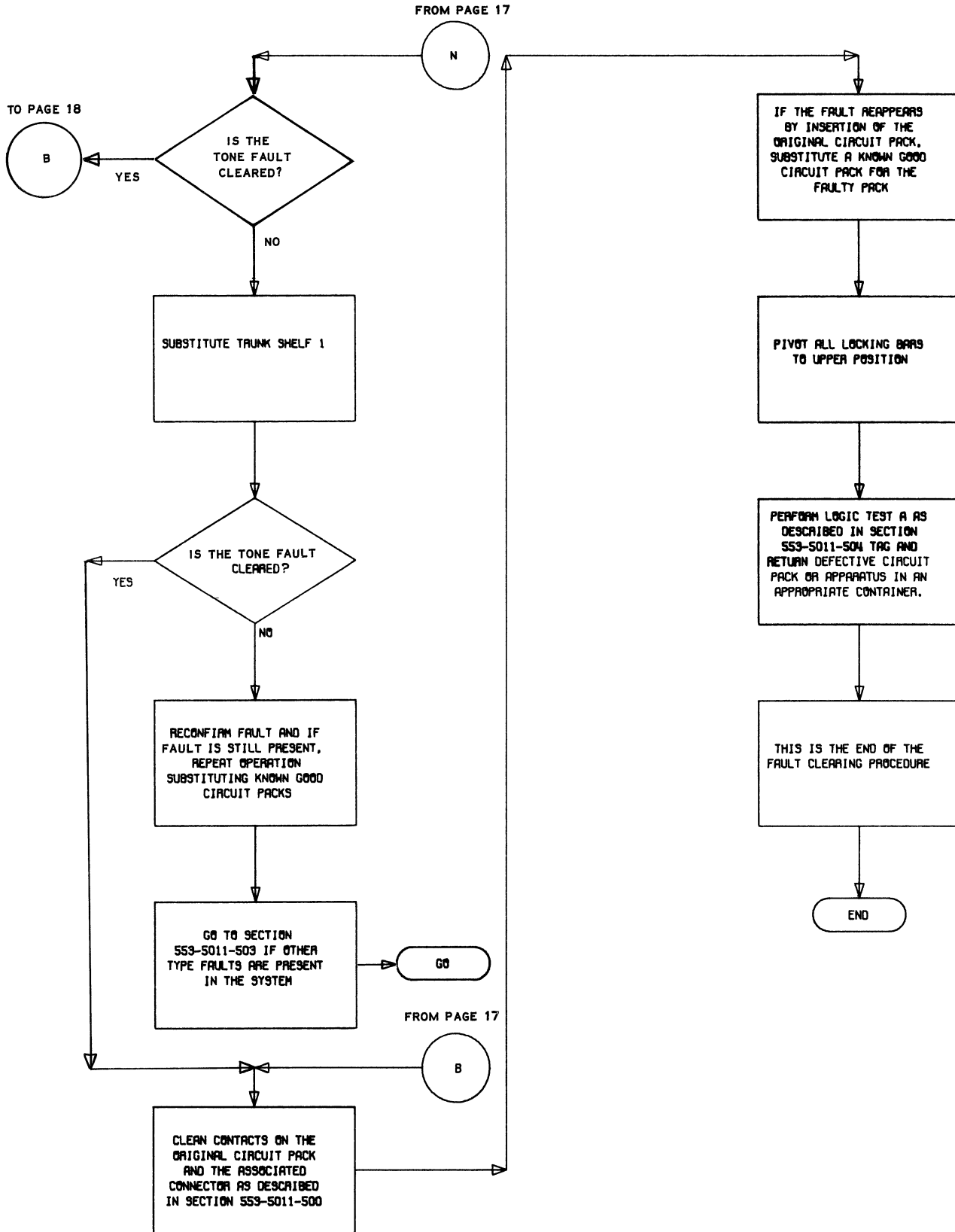
**TABLE A**  
**INSERTION ORDER OF CIRCUIT PACKS**

ORDER OF OPERATIONS	CIRCUIT PACK	CONNECTOR	JACK	SHELF SERVED
1			J300 J310	Line Shelf No. 2 Line Shelf No. 2
2	QPJ34*	12		Line Shelf No. 2
3	QPJ34*	13		Line Shelf No. 2
4			J320	Line Shelf No. 3
5	QPJ34*	12		Line Shelf No. 3
6	QPJ34*	13		Line Shelf No. 3
7			J380	Trunk Shelf No. 2
8			J390	Trunk Shelf No. 2
9	QPJ31*	12		Trunk Shelf No. 2
10	QPJ42*	13		Trunk Shelf No. 2
11			TERM. JACK	P310 or P330 or P340 or P390

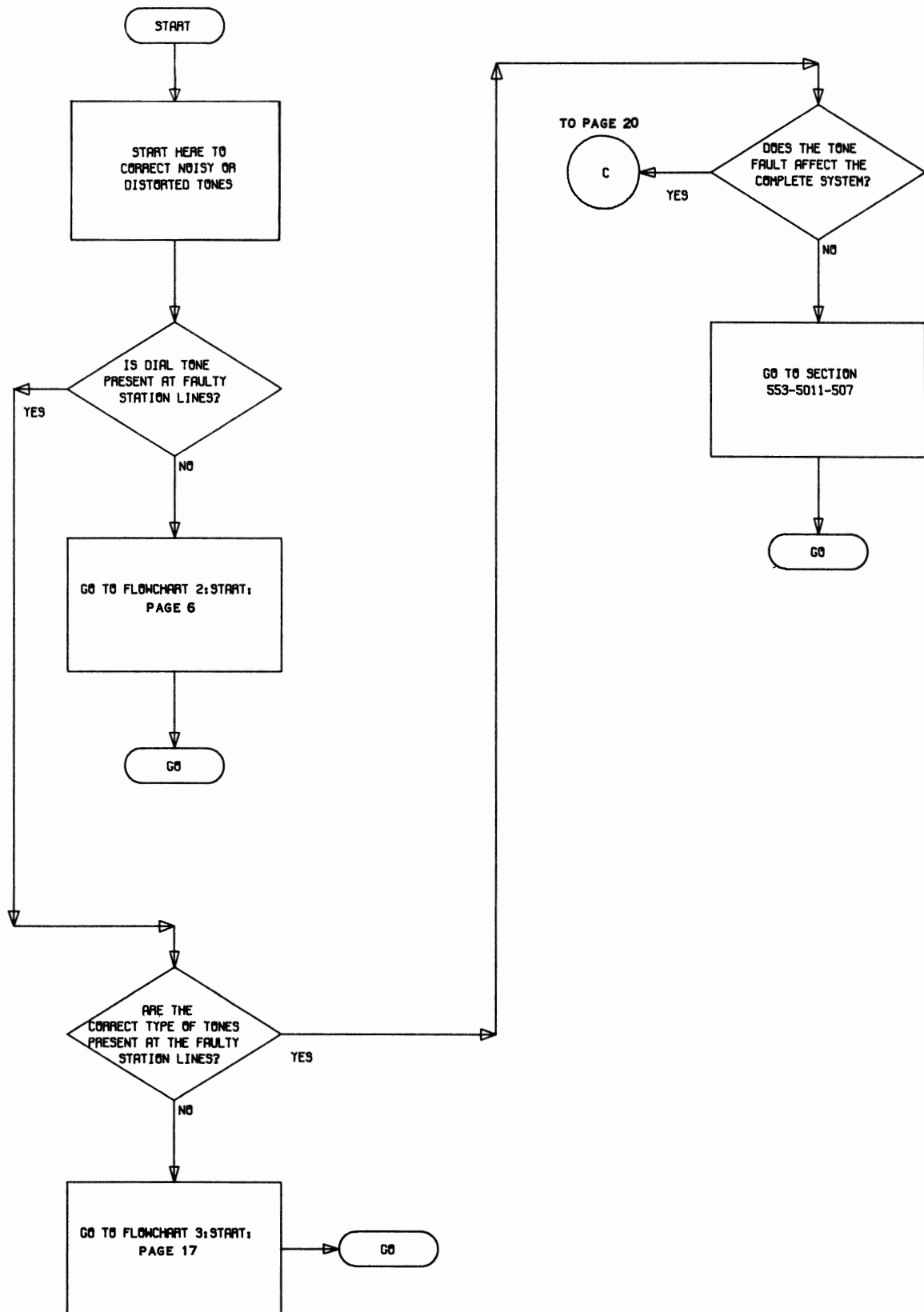




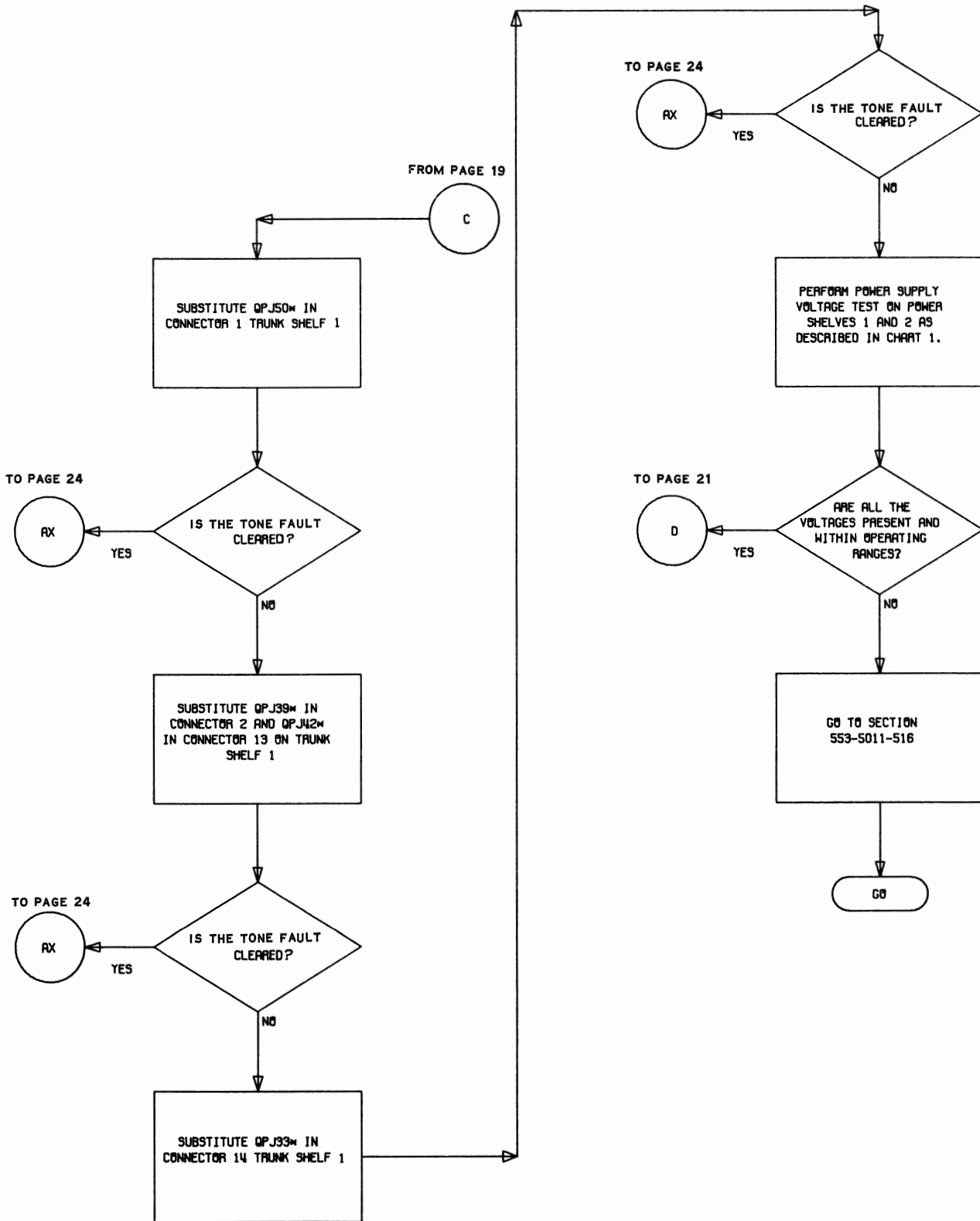
Flowchart 3 – Incorrect Type or Superimposed Tones, Fault-Clearing Procedure



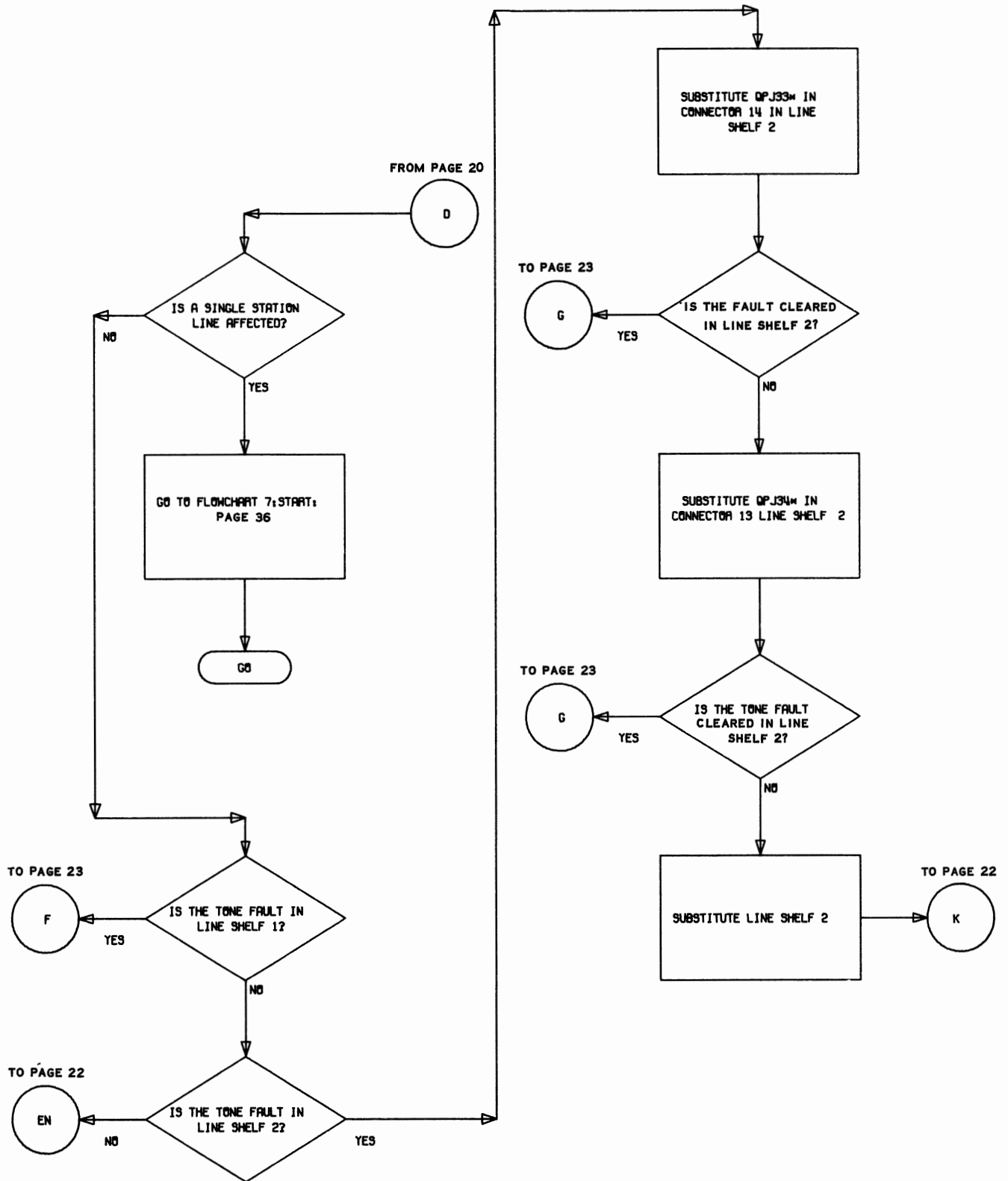
Flowchart 3 (Cont)



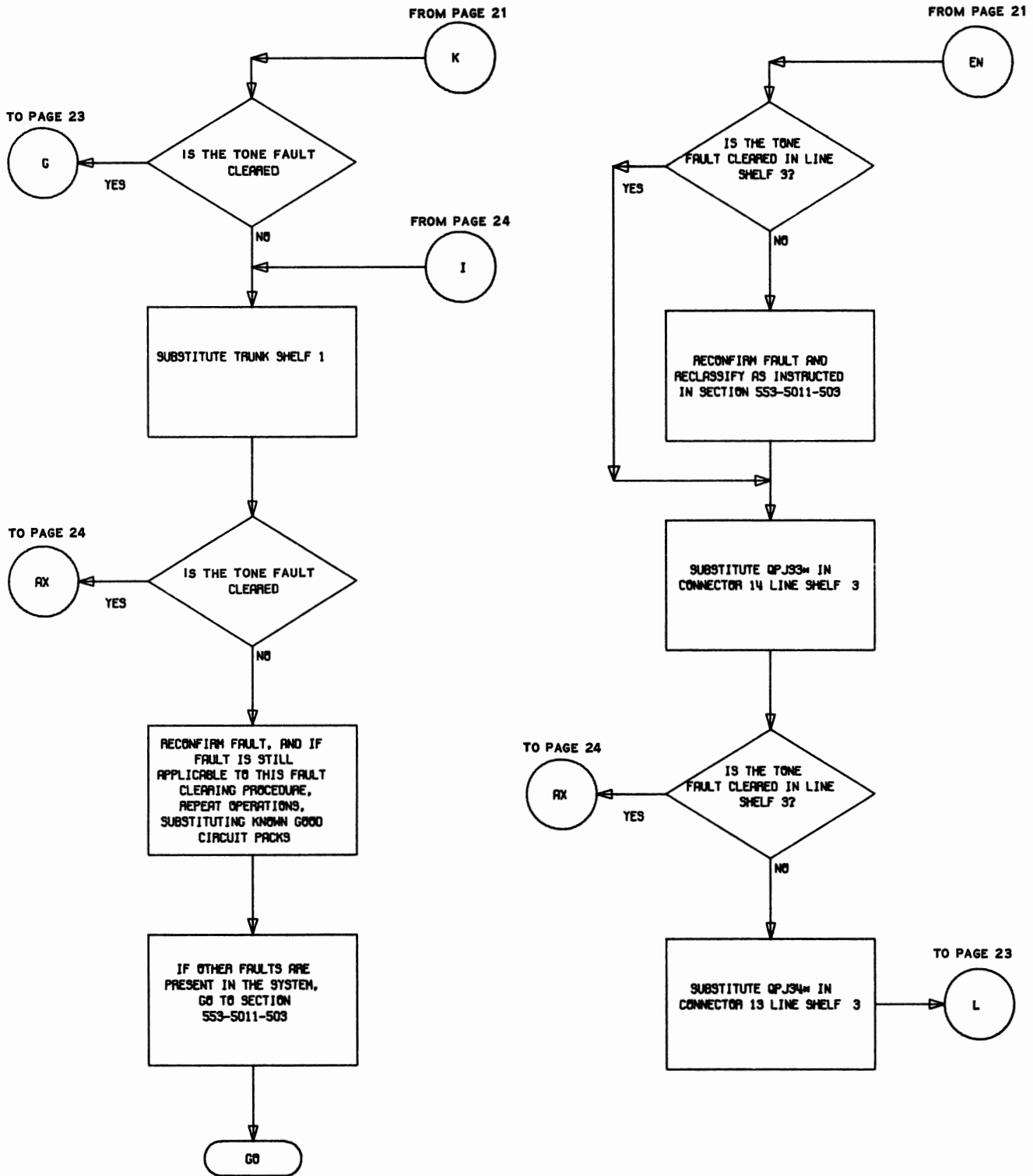
Flowchart 4 – Noisy or Distorted Tone Fault-Clearing Procedure



Flowchart 4 (Cont)

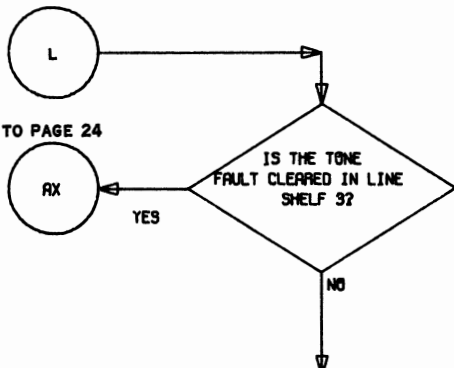


Flowchart 4 (Cont)

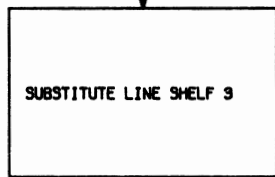
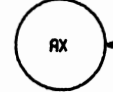


Flowchart 4 (Cont)

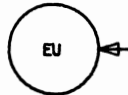
FROM PAGE 22



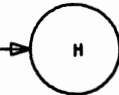
TO PAGE 24



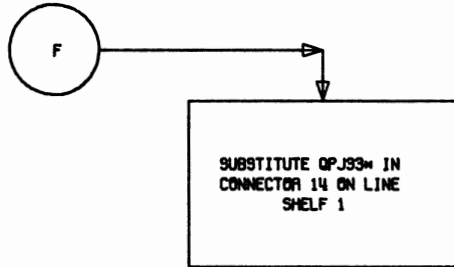
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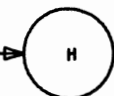
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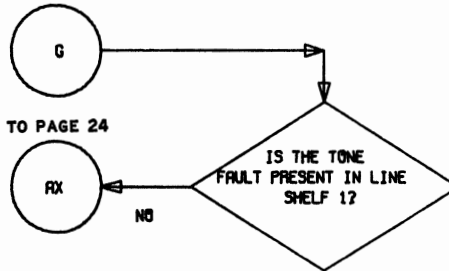
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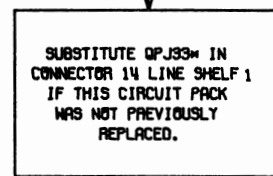
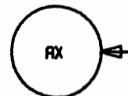
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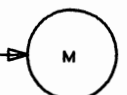
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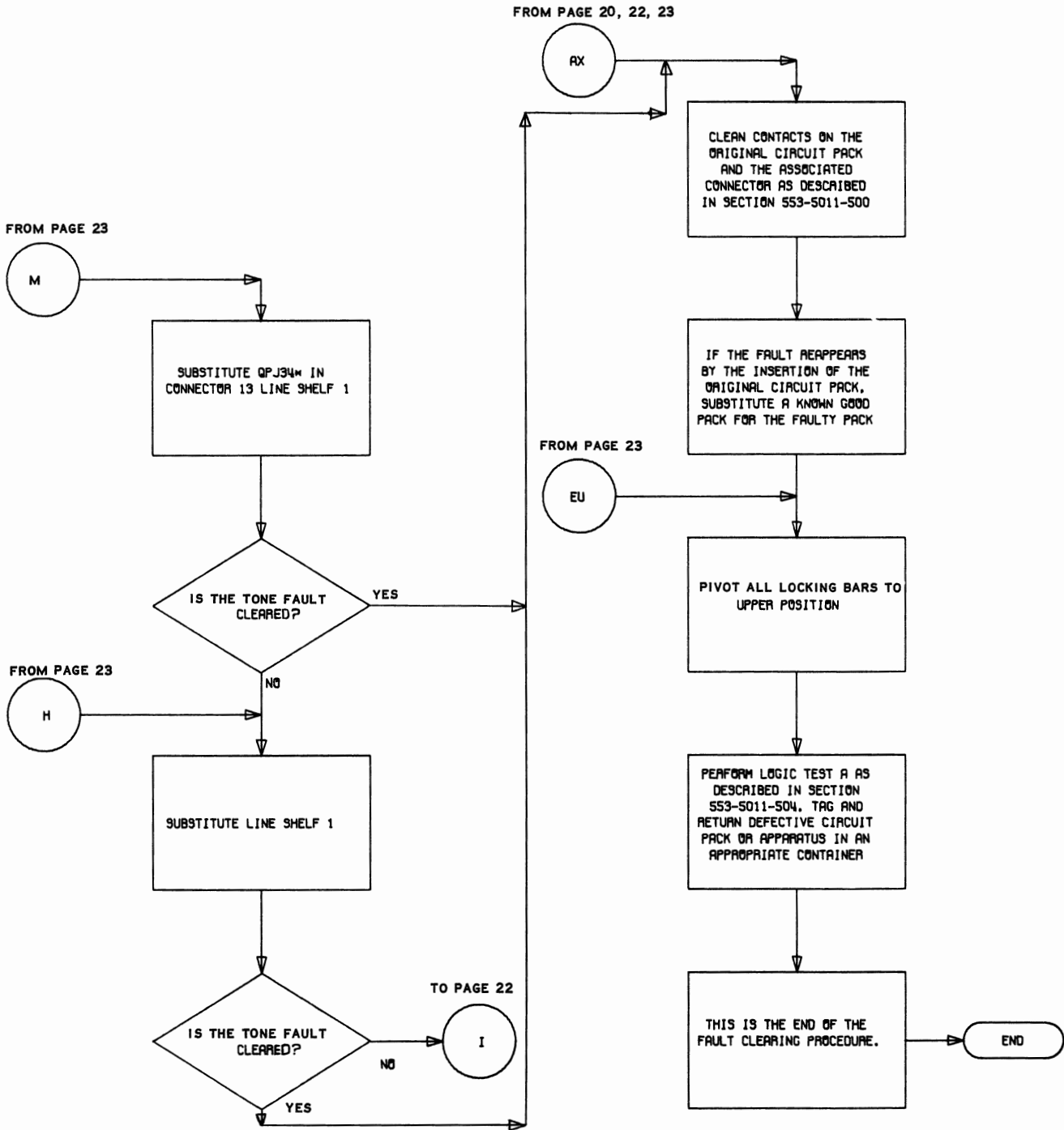
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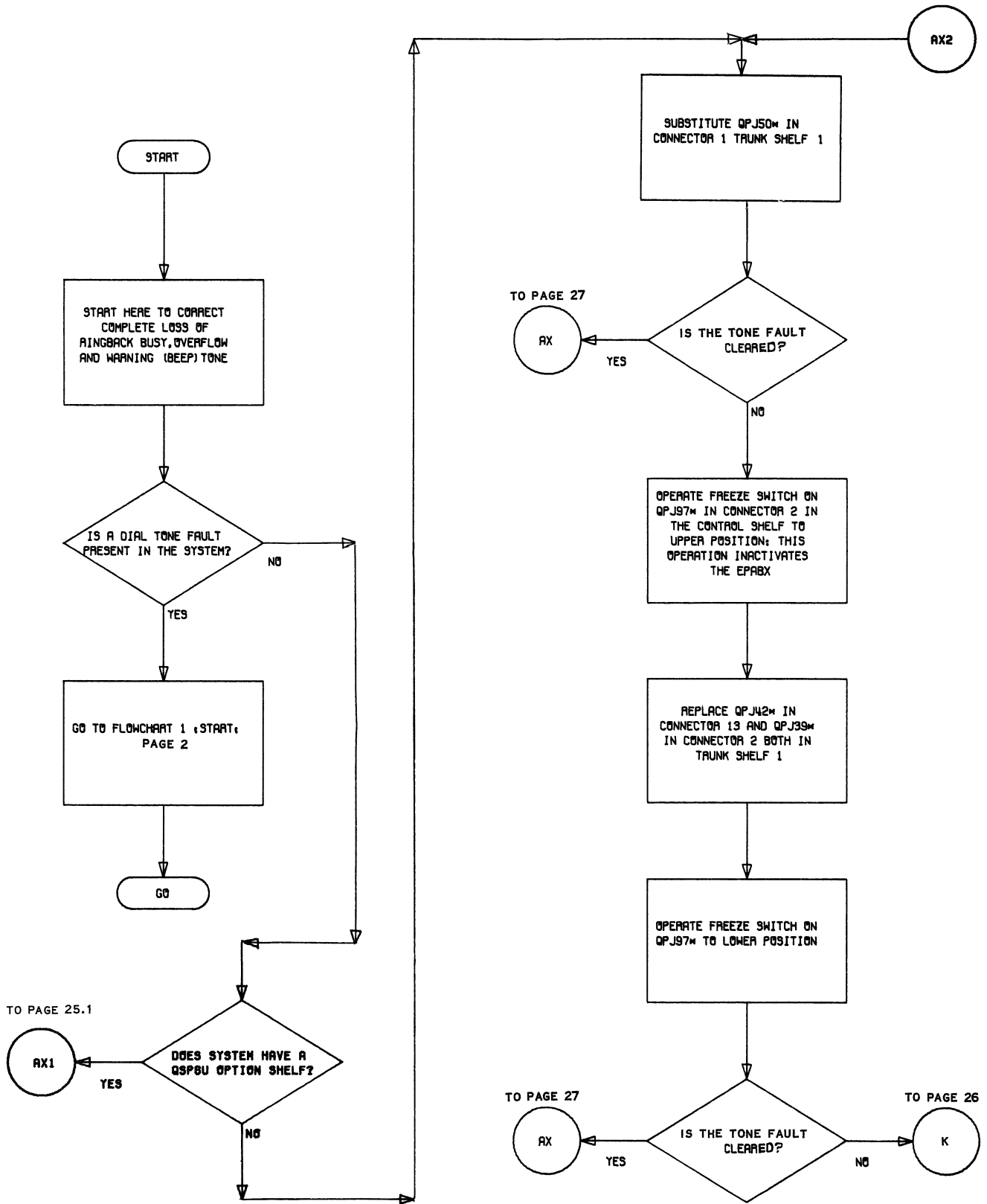


Flowchart 4 (Cont)



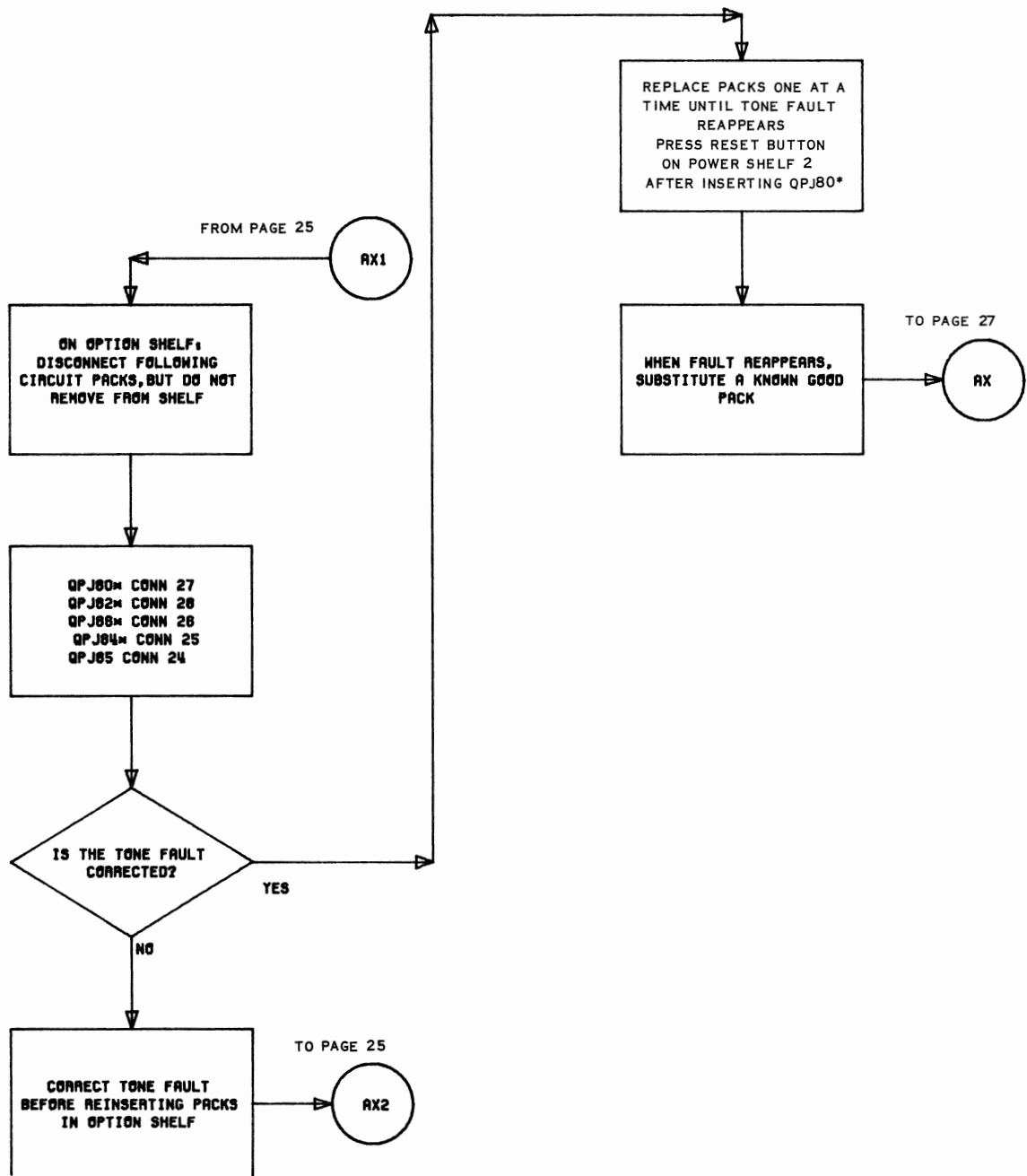
Flowchart 4 (Cont)





Flowchart 5 - Ringing, Busy, Overflow, and Warning (Beep) Tone Fault-Clearing Procedure

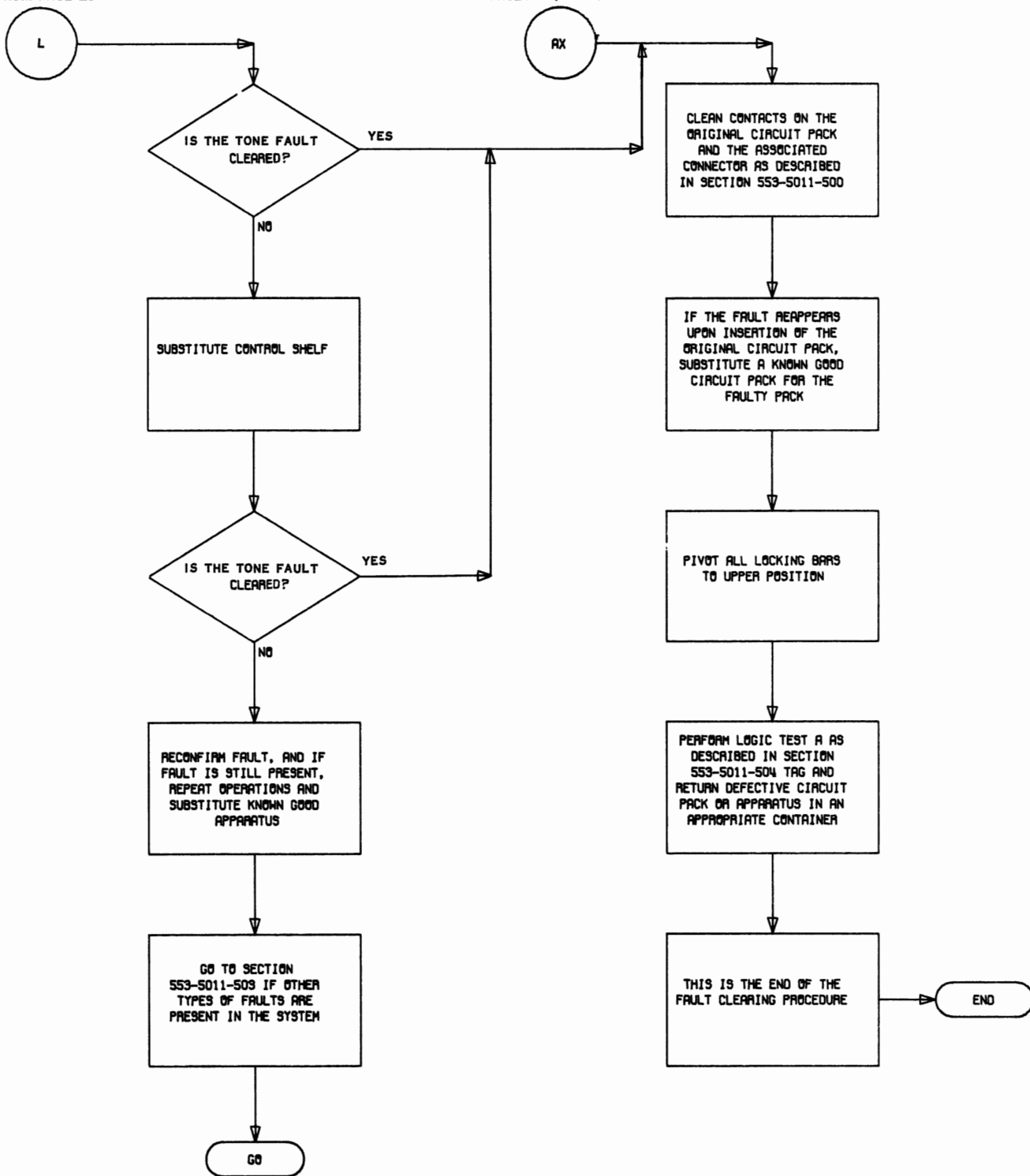




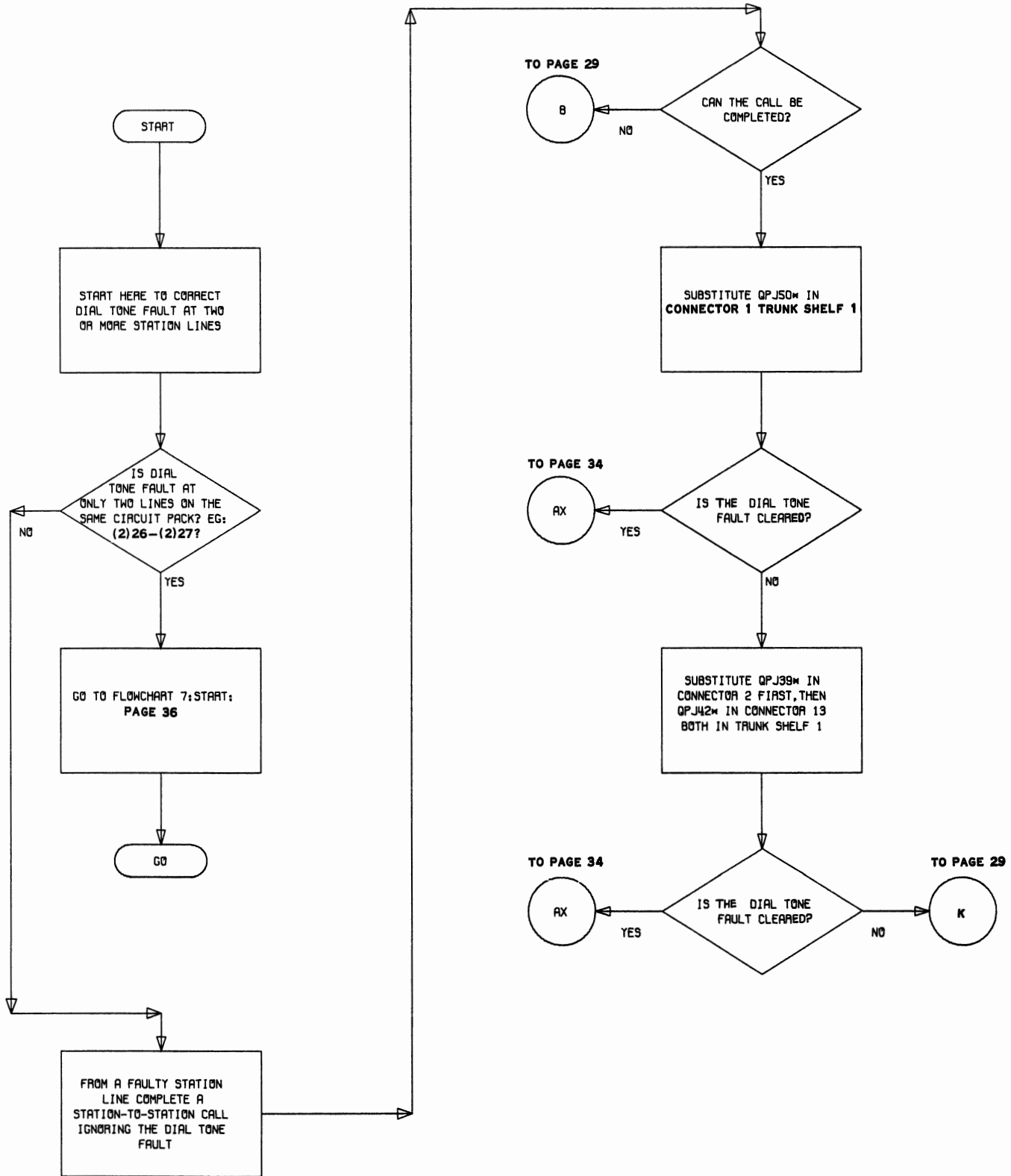


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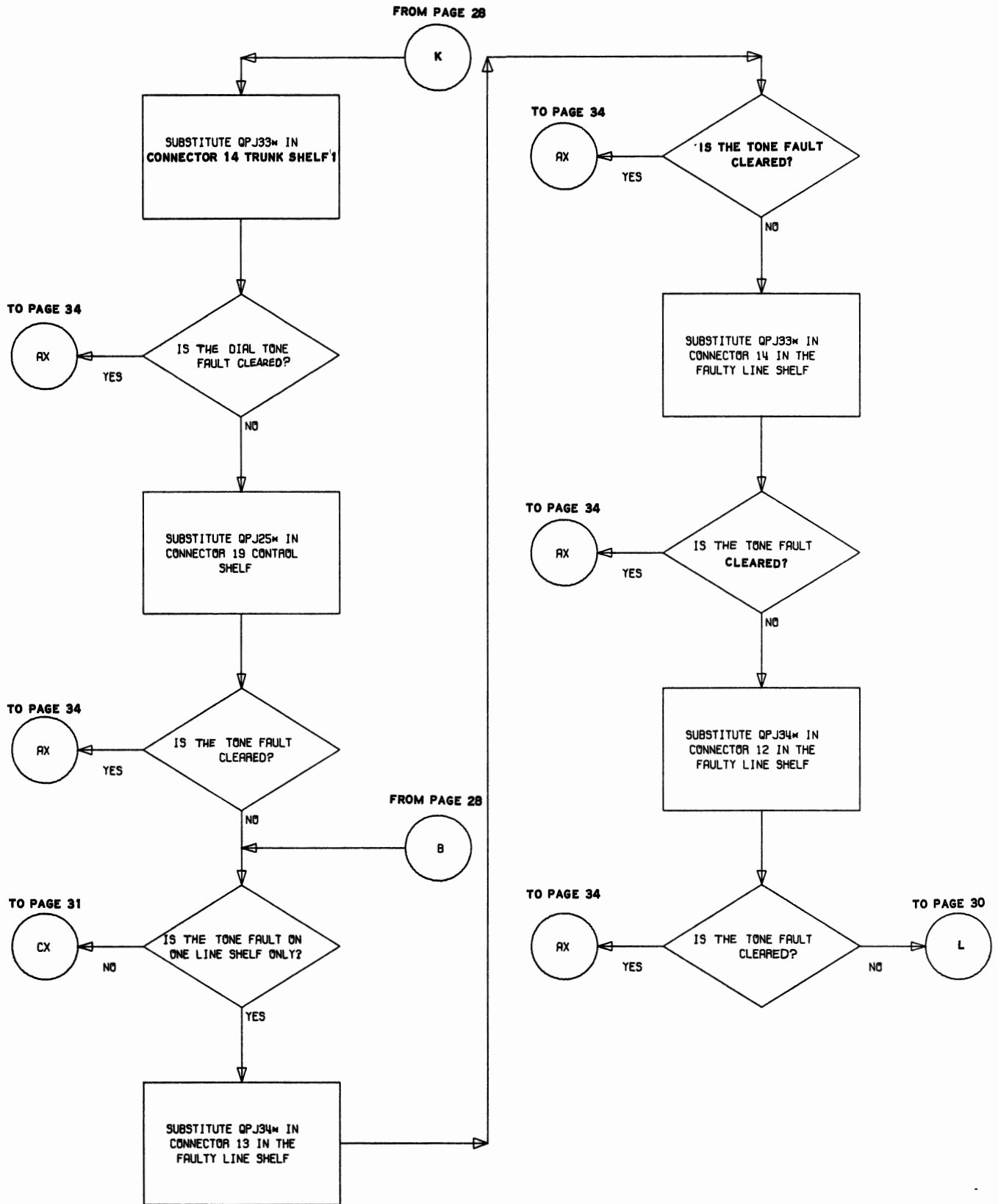
PAGES 25, 25.1, 26



Flowchart 5 (Cont)

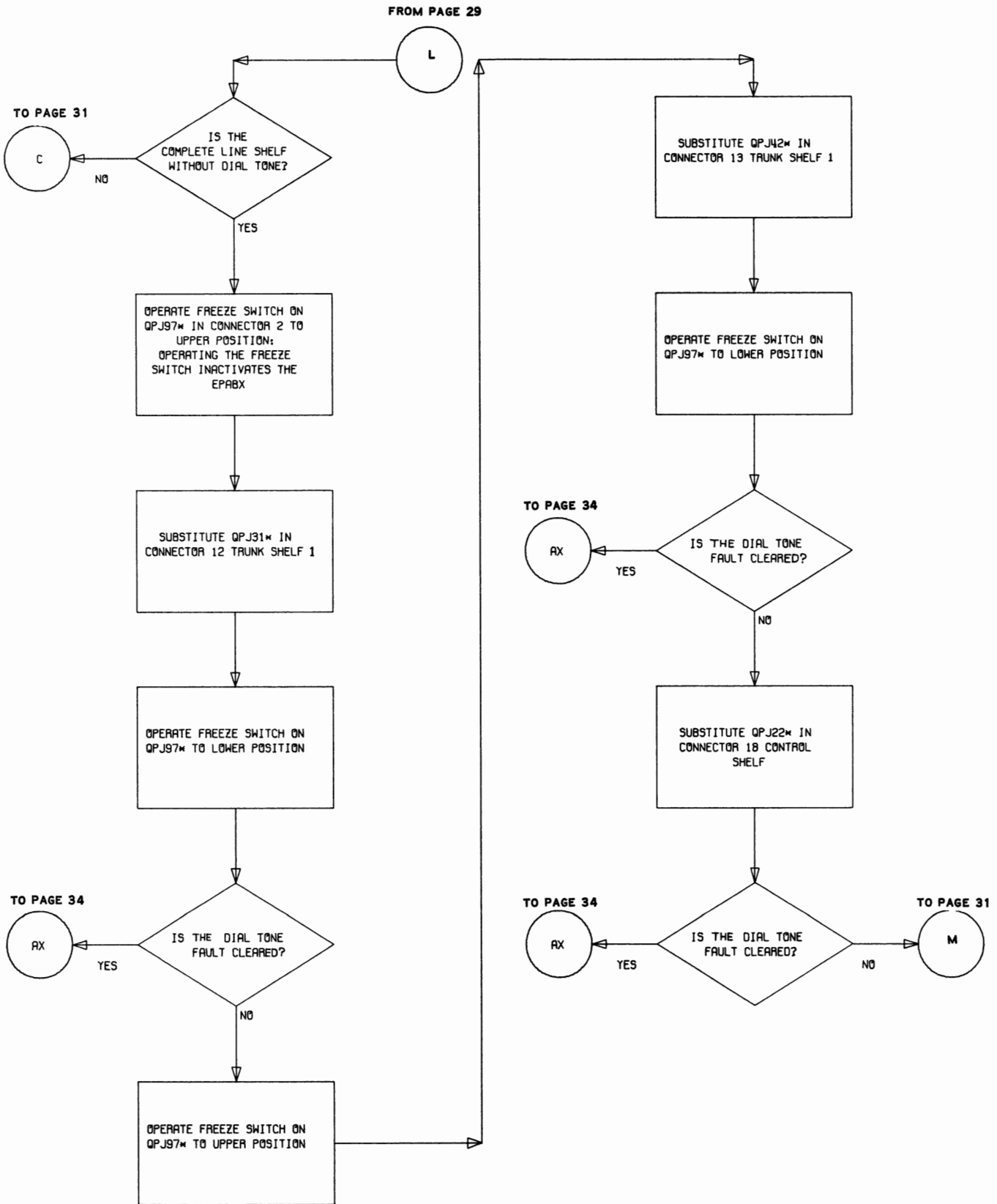


Flowchart 6 – Dial Tone Fault at Two or More Station Lines Fault-Clearing Procedures



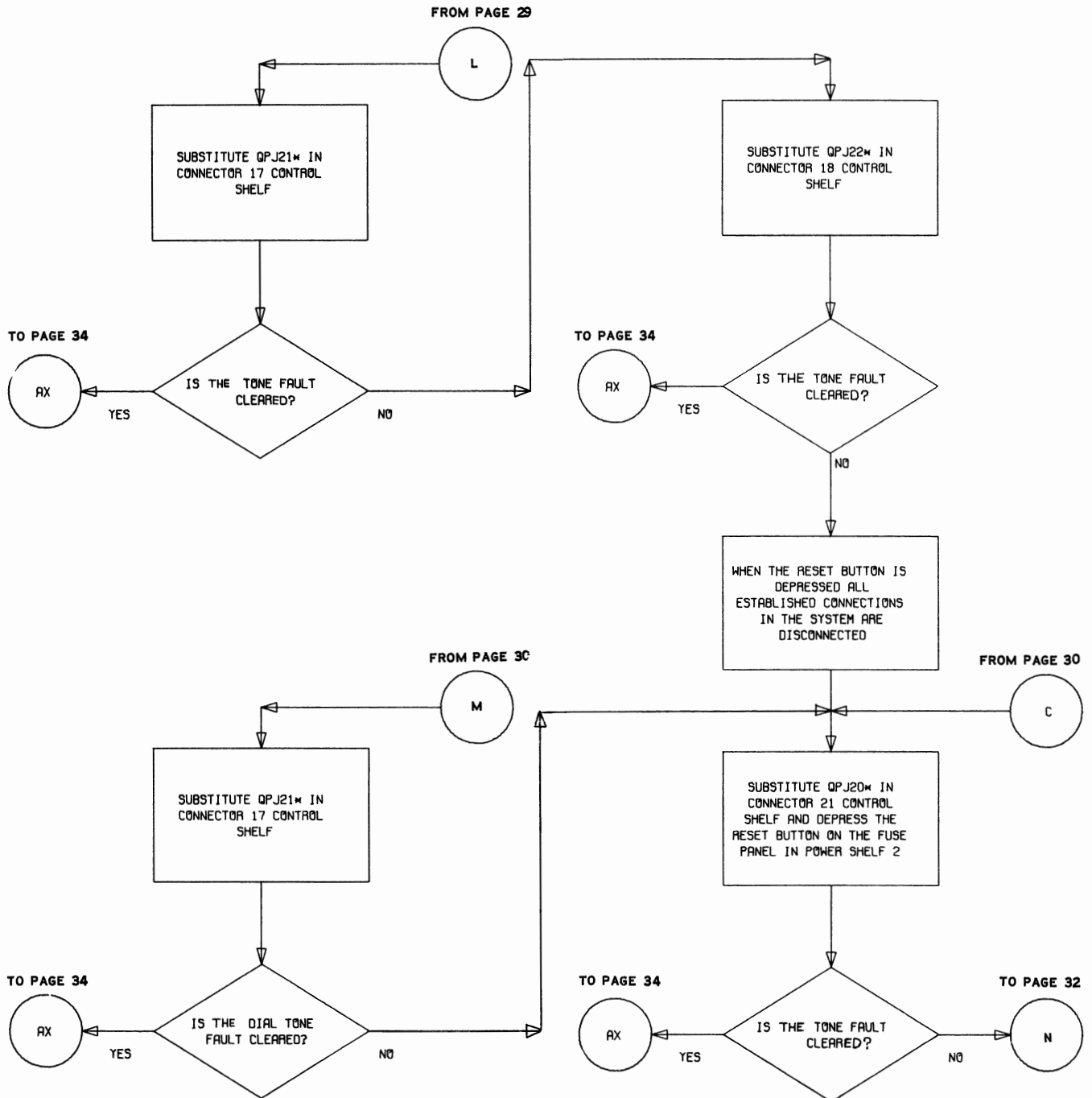
Flowchart 6 (Cont)

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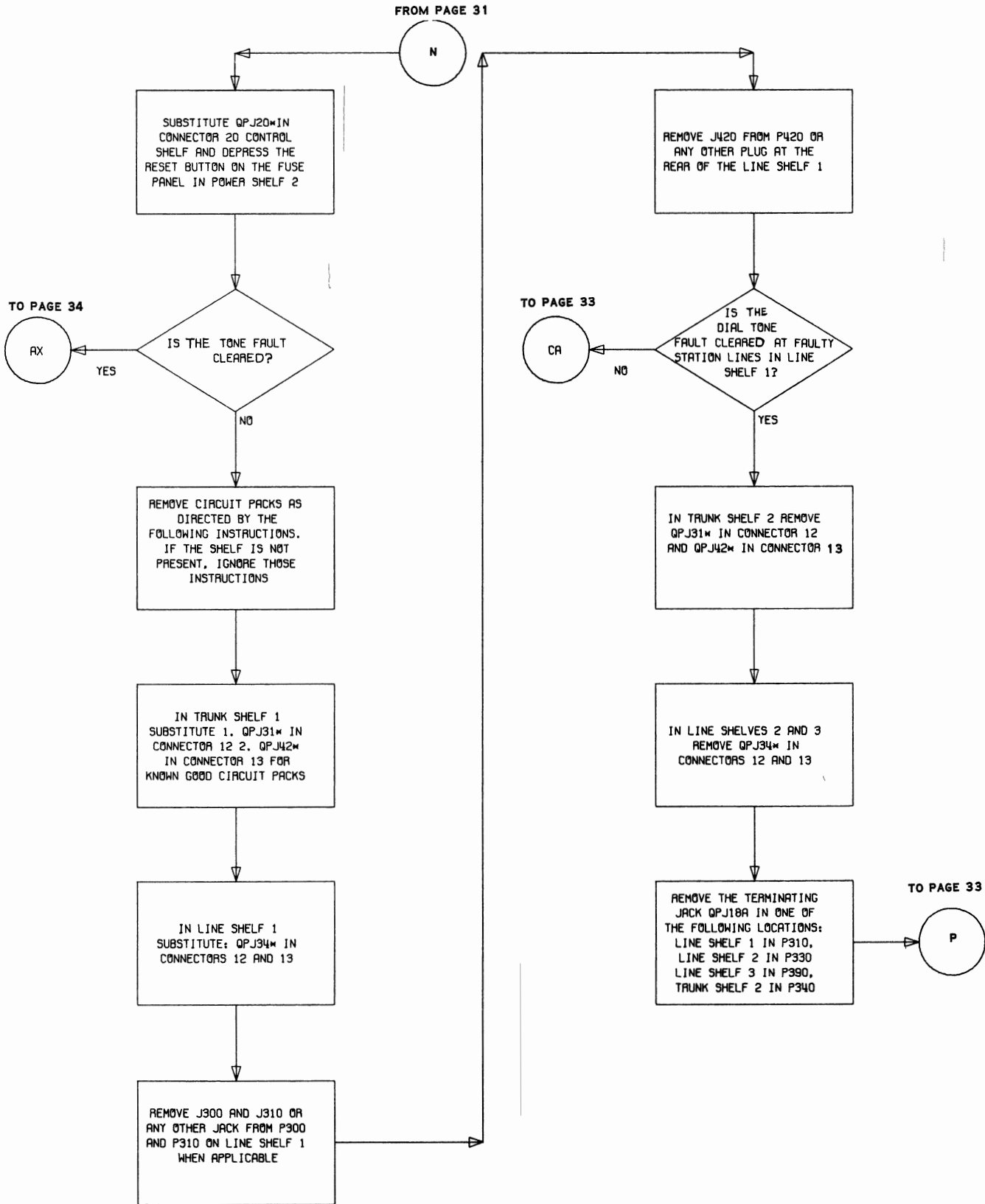


Flowchart 6 (Cont)

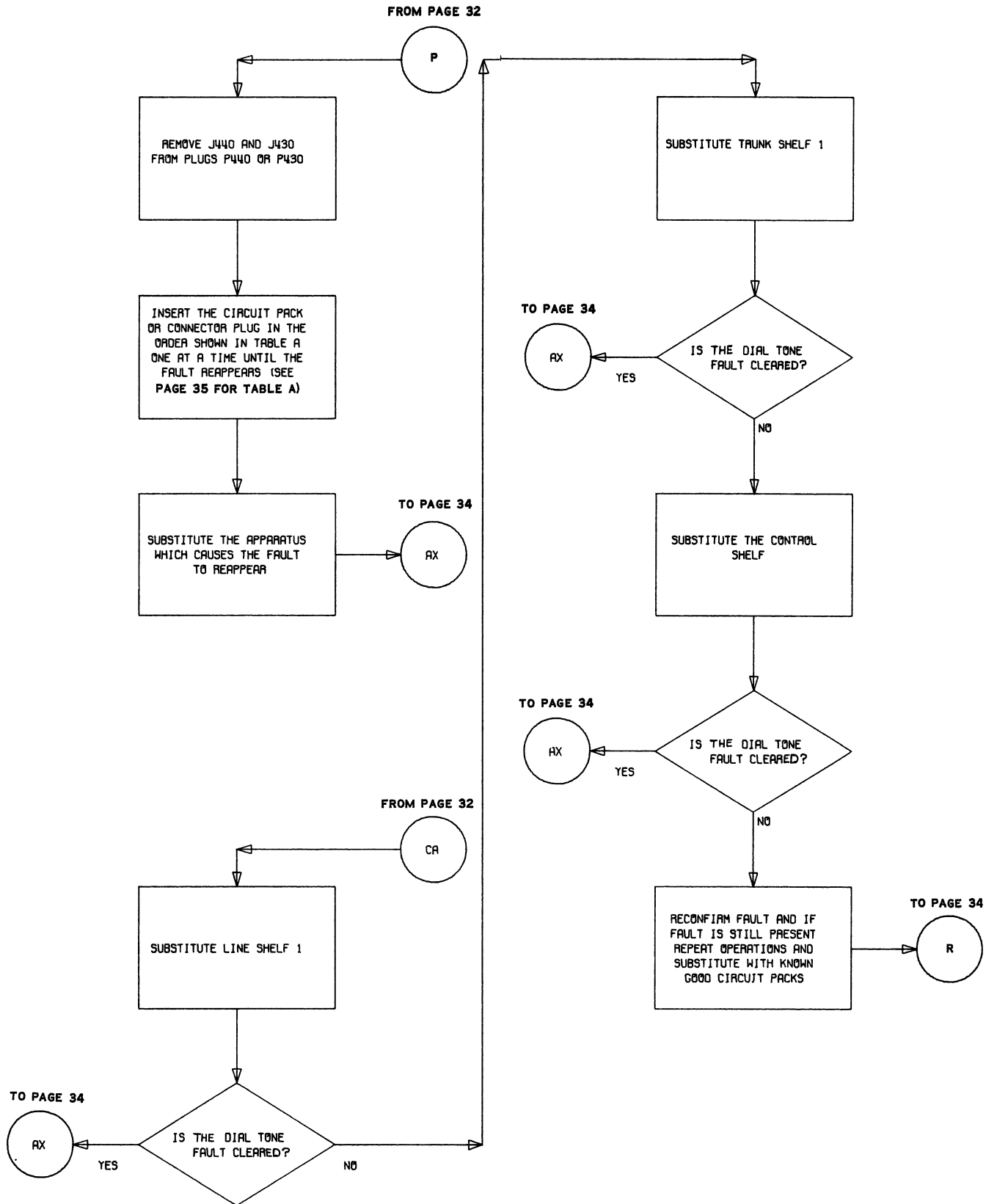




Flowchart 6 (Cont)

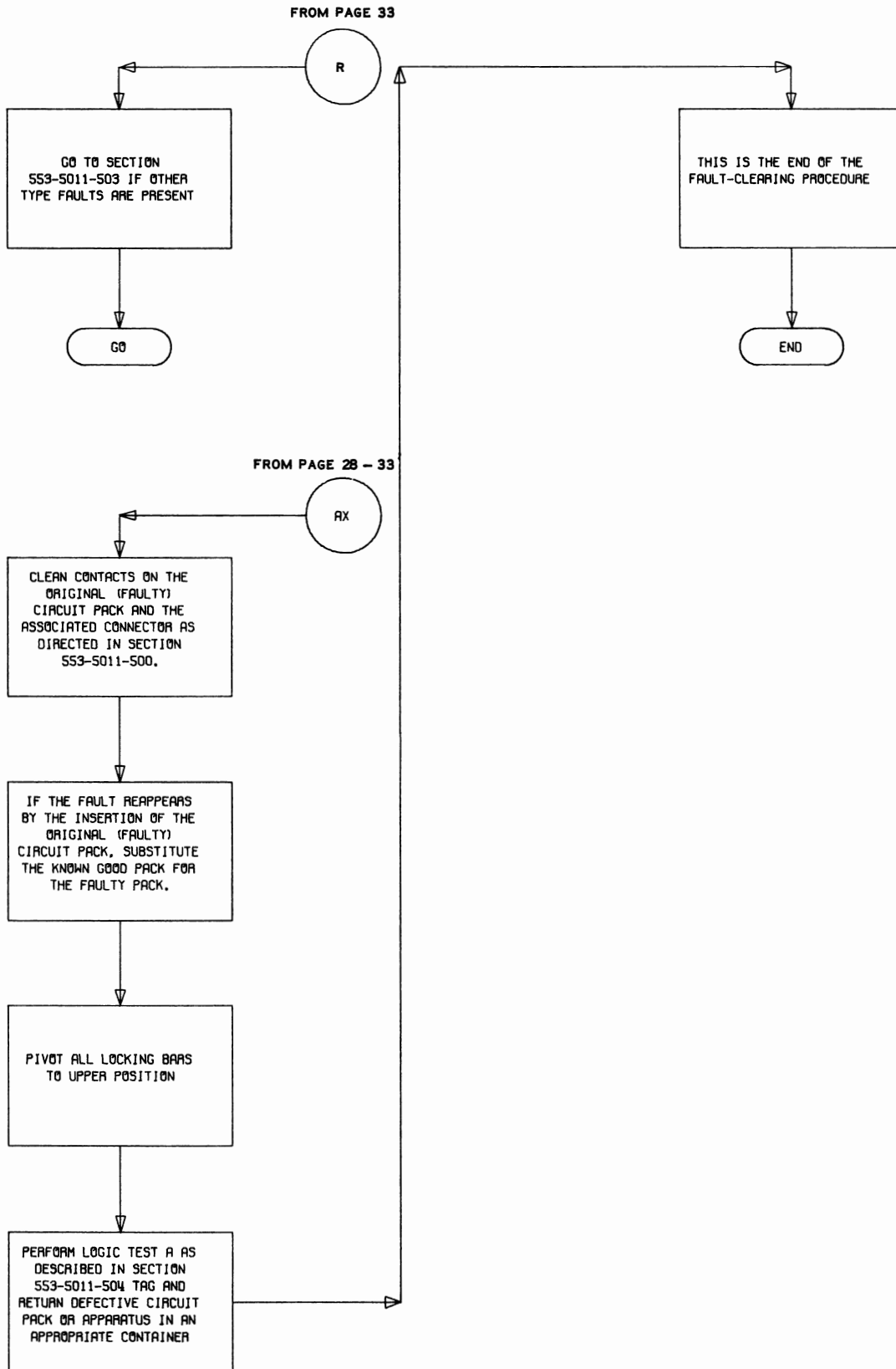


Flowchart 6 (Cont)



Flowchart 6 (Cont)

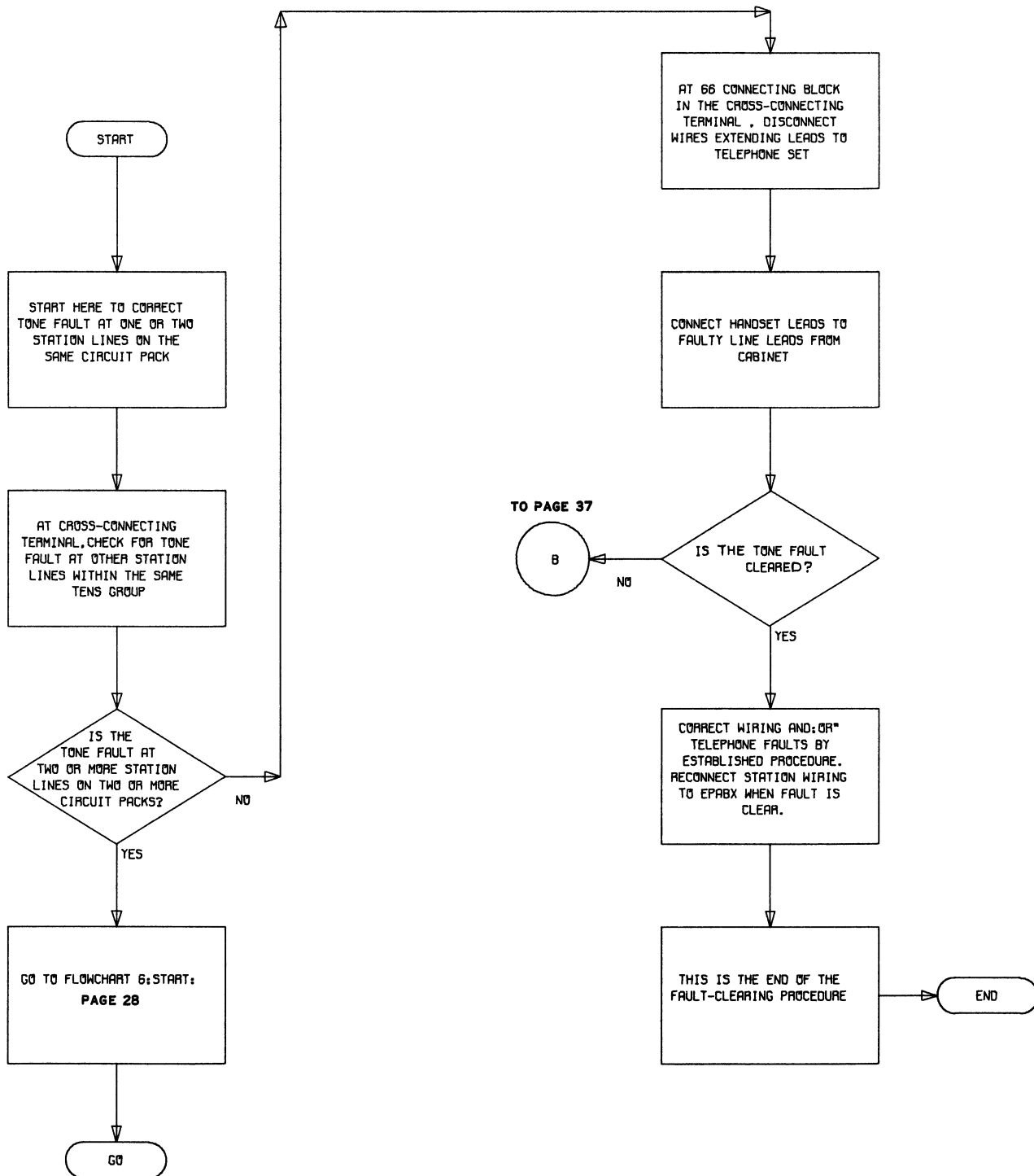
SECTION 553-5011-505



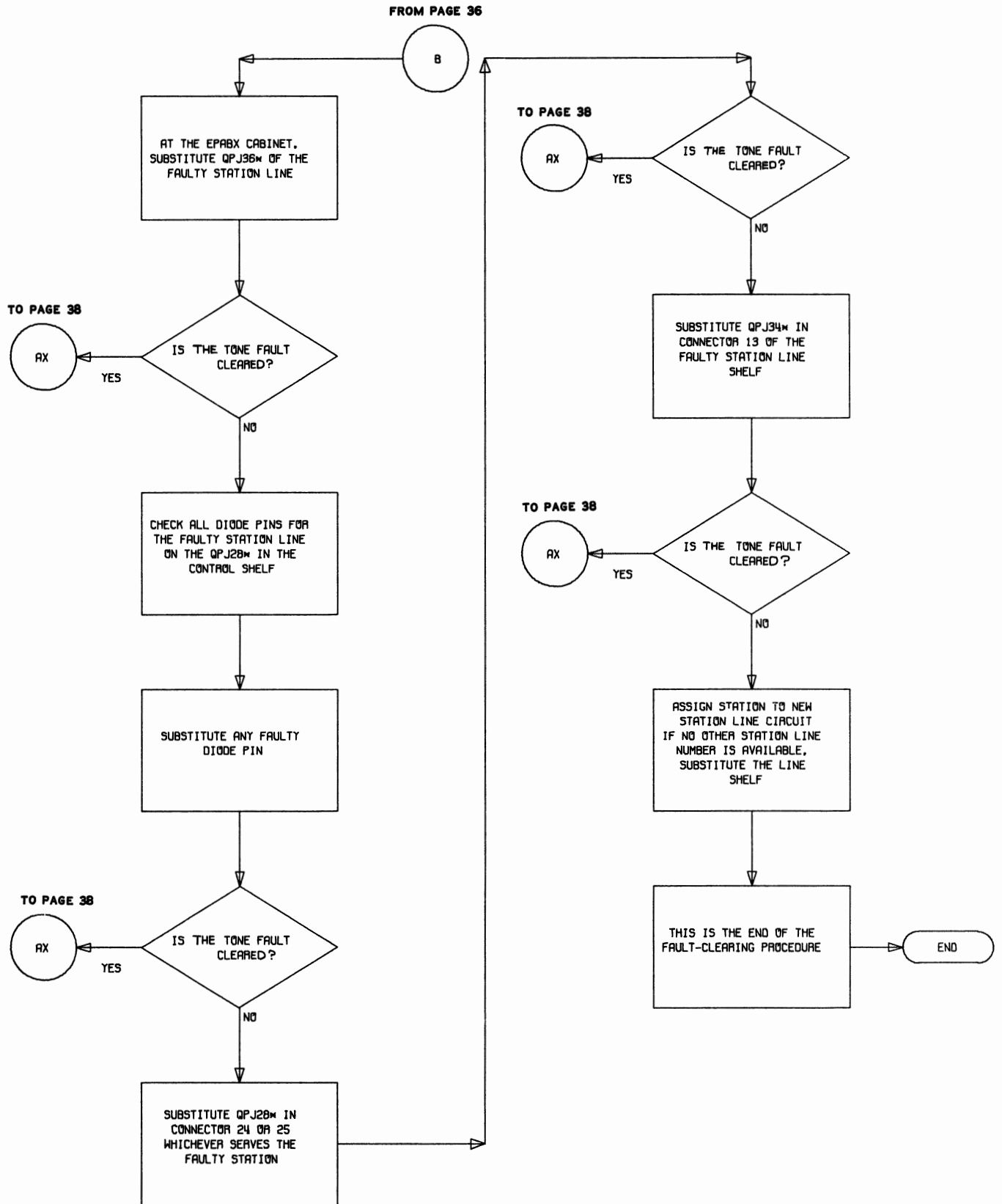
Flowchart 6 (Cont)

**TABLE A**  
**INSERTION ORDER OF CIRCUIT PACKS**

<b>ORDER OF OPERATIONS</b>	<b>CIRCUIT PACK</b>	<b>CONNECTOR</b>	<b>JACK</b>	<b>SHELF SERVED</b>
1			J300 J310	Line Shelf No. 2 Line Shelf No. 2
2	QPJ34*	12		Line Shelf No. 2
3	QPJ34*	13		Line Shelf No. 2
4			J320	Line Shelf No. 3
5	QPJ34*	12		Line Shelf No. 3
6	QPJ34*	13		Line Shelf No. 3
7			J380	Trunk Shelf No. 2
8			J390	Trunk Shelf No. 2
9	QPJ31*	12		Trunk Shelf No. 2
10	QPJ42*	13		Trunk Shelf No. 2
11			<b>TERM. JACK</b>	P310 or P330 or P340 or P390

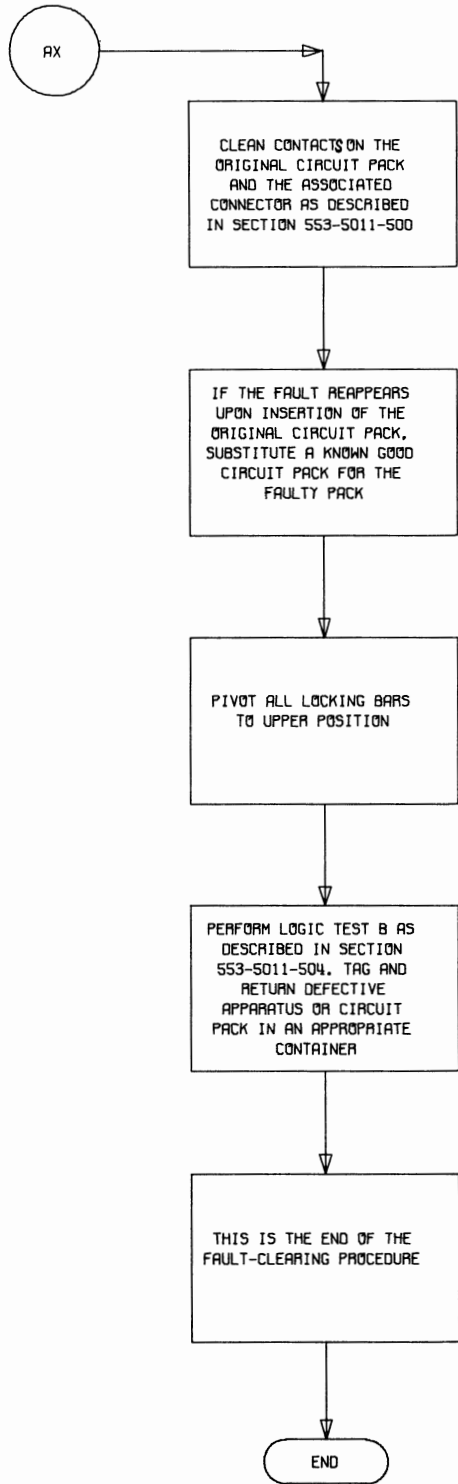


Flowchart 7 – Dial Tone Fault at a Single Station Line or Two Station Lines on the Same Circuit Pack. Fault-Clearing Procedure



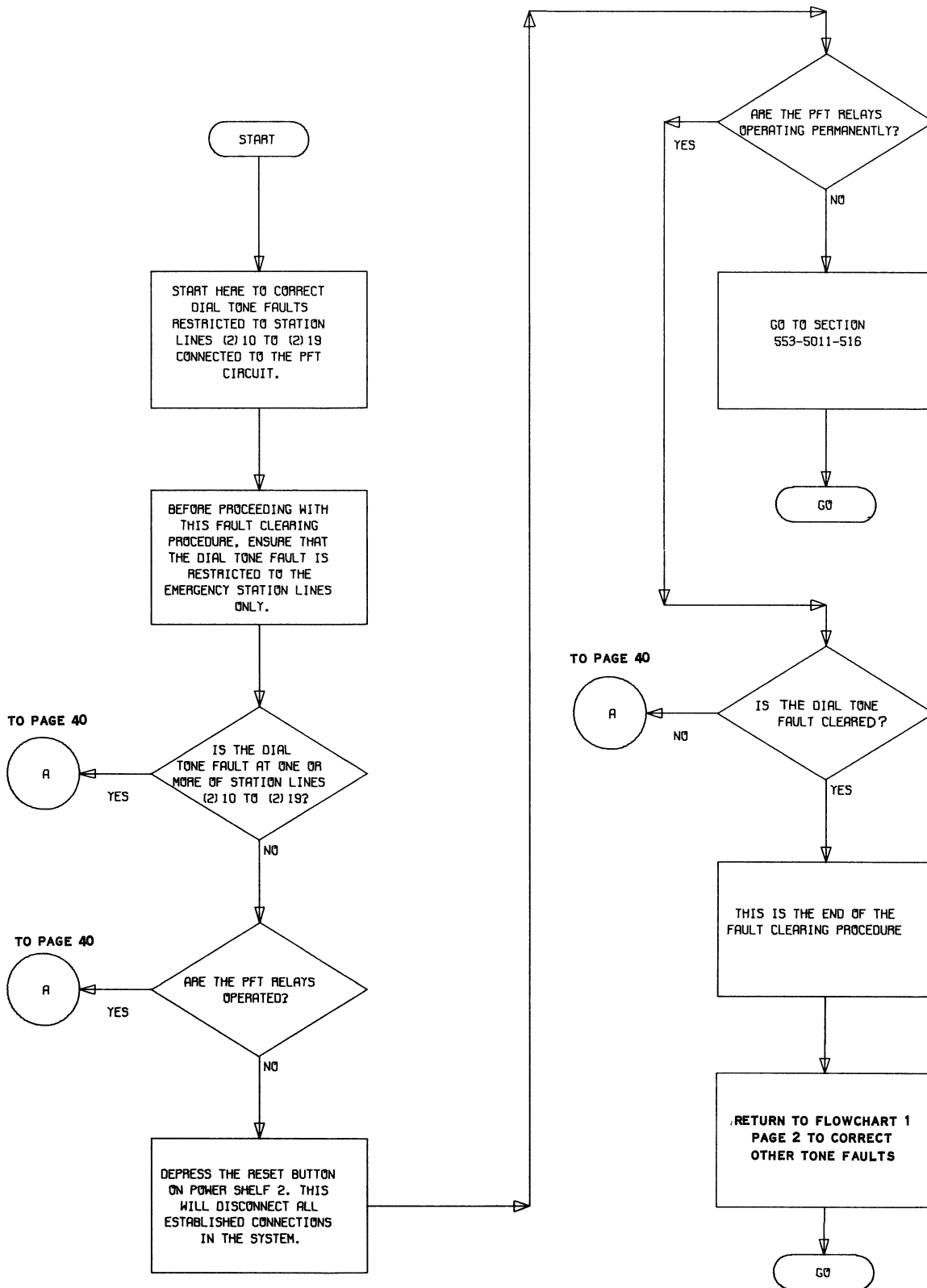
Flowchart 7 (Cont)

FROM PAGE 37

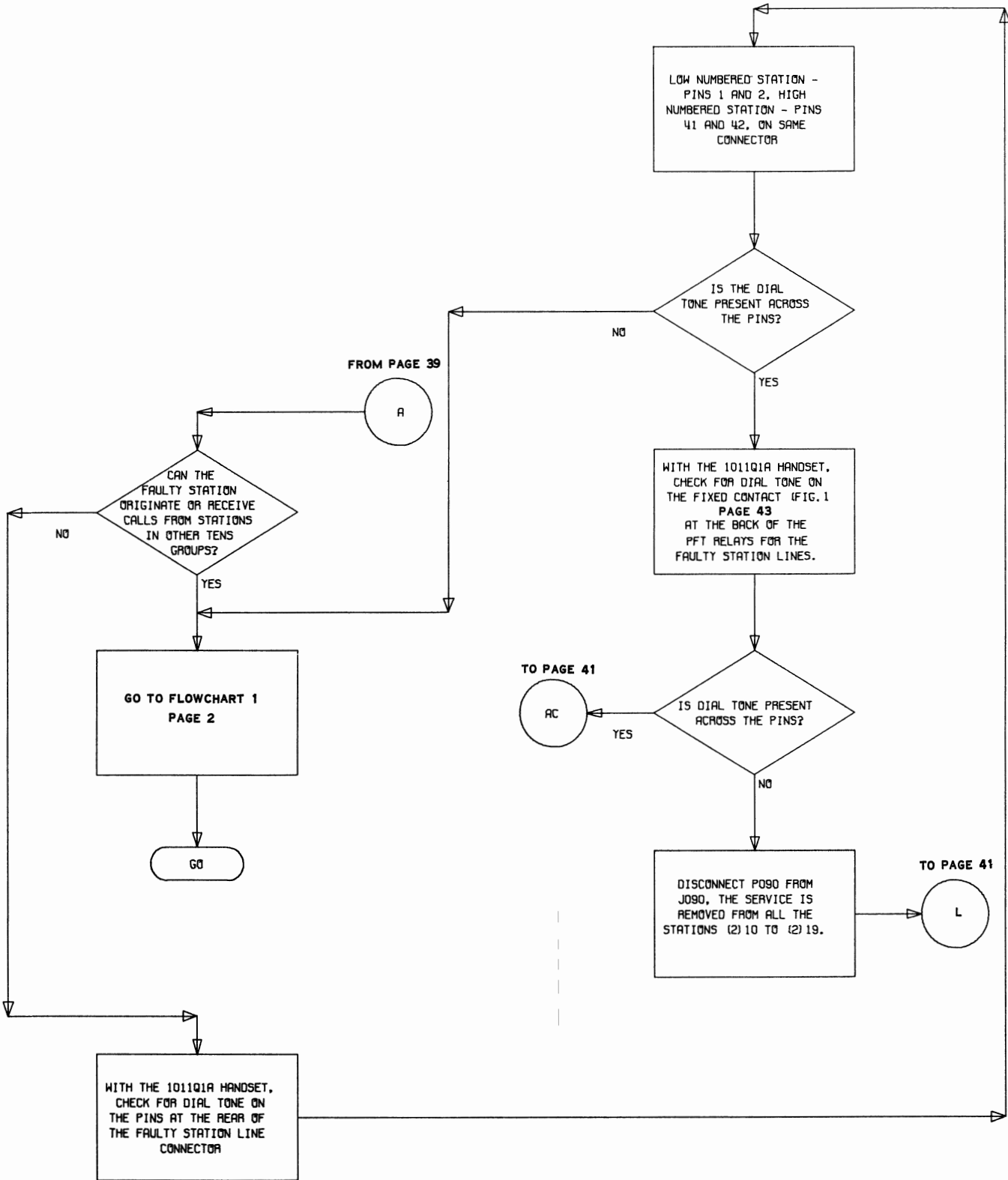


Flowchart 7 (Cont)

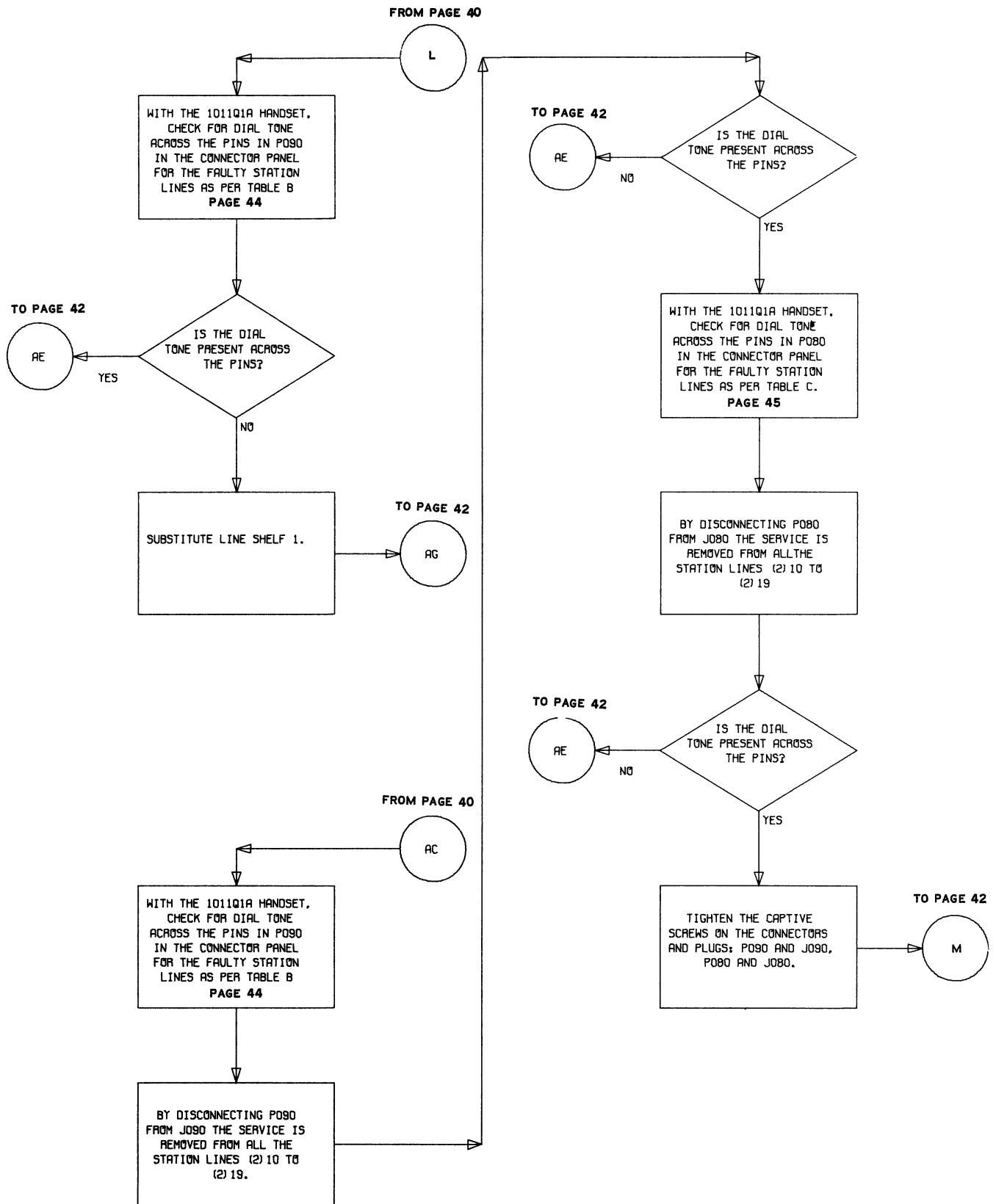




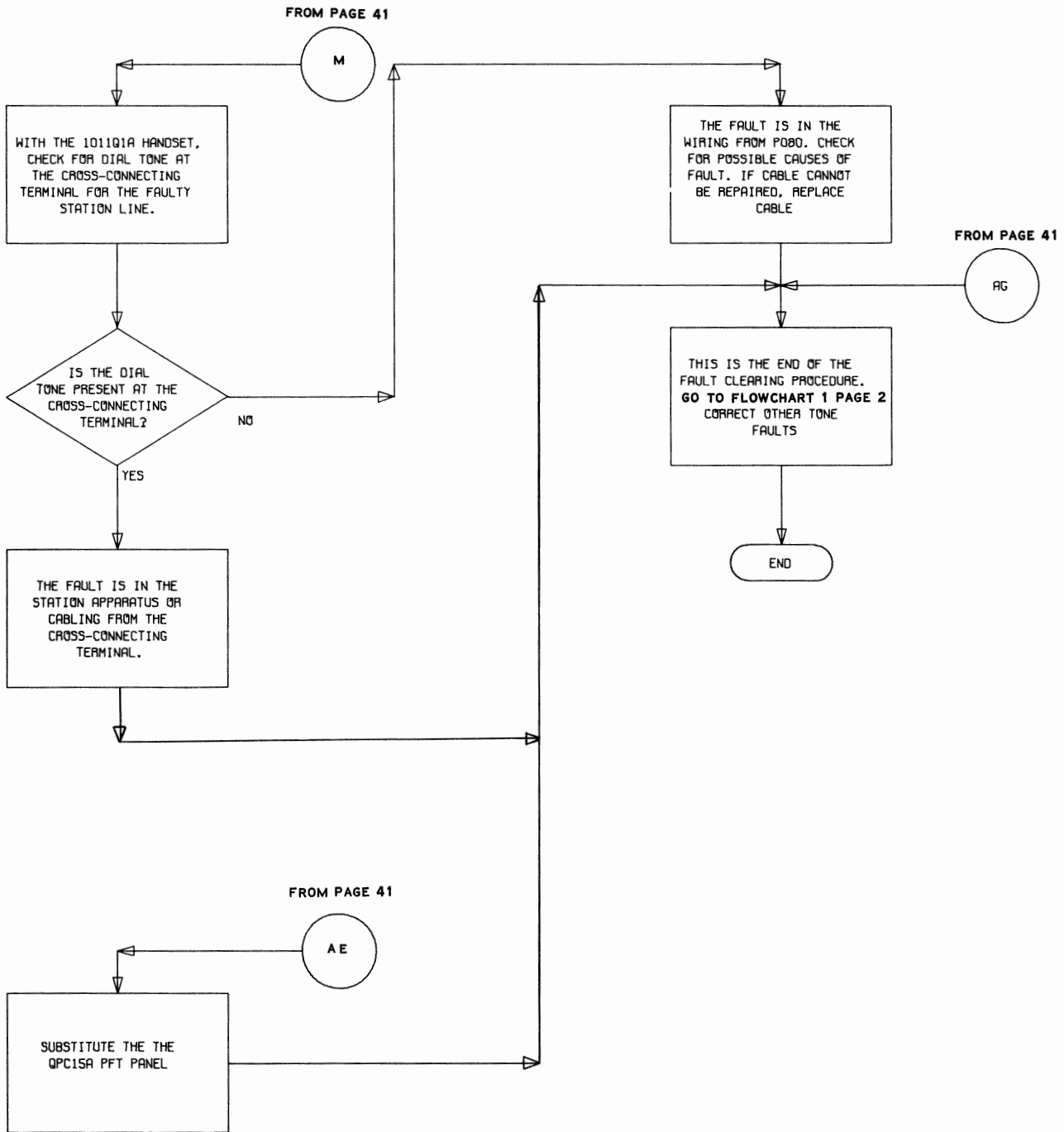
Flowchart 8 – Dial Tone Fault on PFT Station Lines, Fault-Clearing Procedure



Flowchart 8 (Cont)



Flowchart 8 (Cont)



Flowchart 8 (Cont)

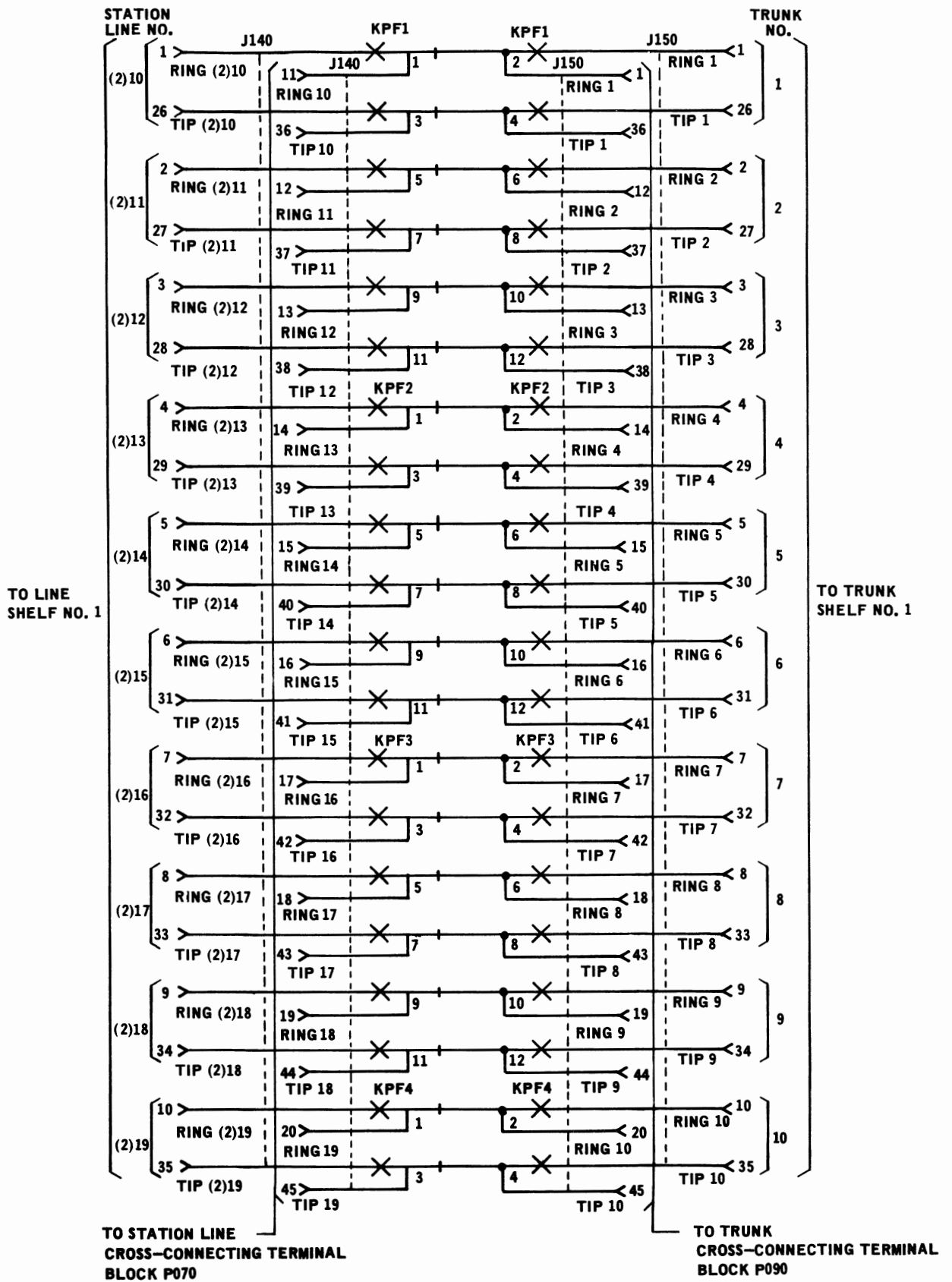


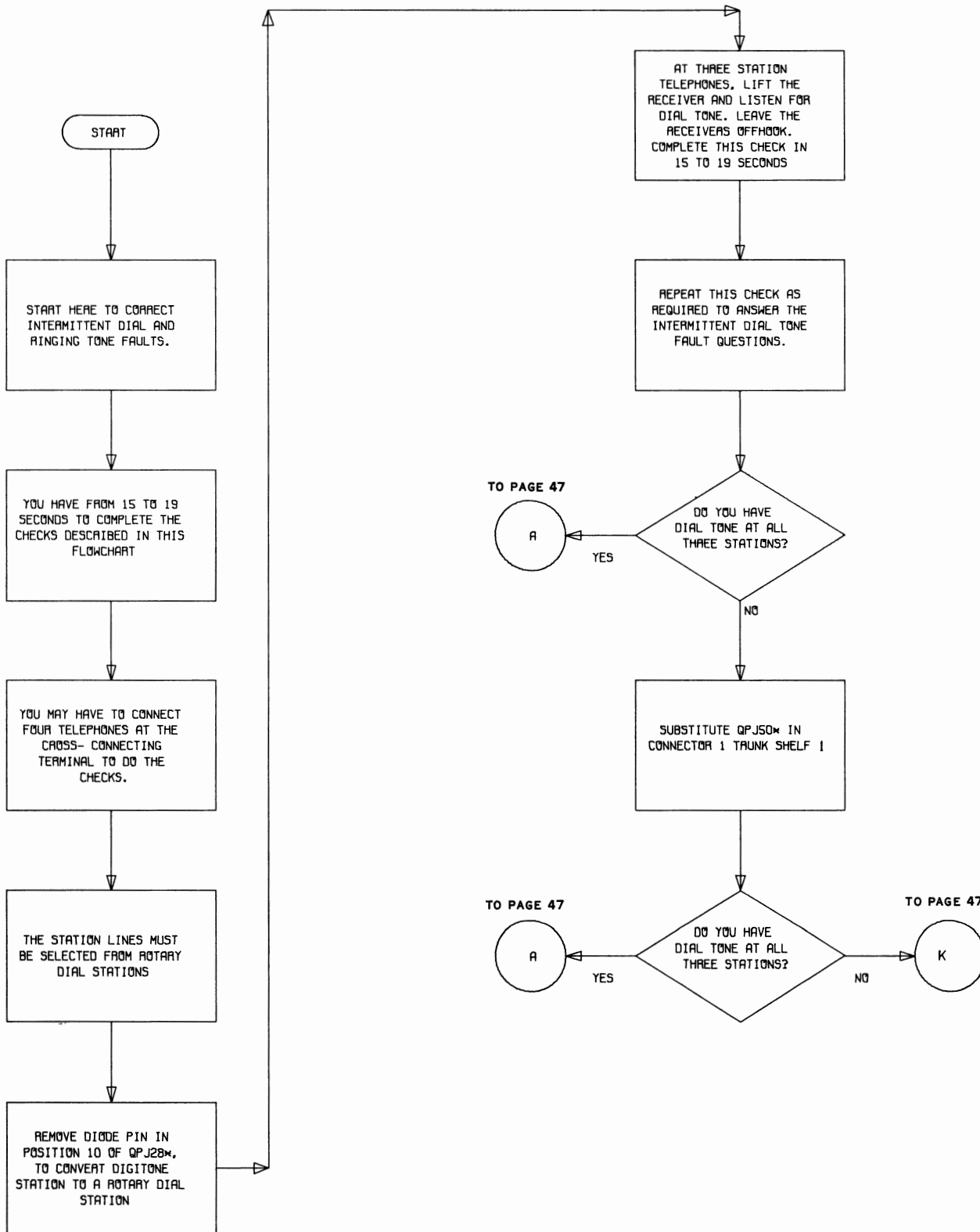
Fig. 1 - Identification of Leads and Pins on PFT Panel

**TABLE B**  
**IDENTIFICATION OF PINS IN P090 ON CONNECTOR PANEL**

TRUNK NO.	PIN NO.	COLOR CODE	DESTINATION THROUGH J150	
			RELAY	CONTACT
1	T R	26 1	W-BL BL-W	KPF1 4 2
2	T R	27 2	W-O O-W	KPF1 8 6
3	T R	28 3	W-G G-W	KPF1 12 10
4	T R	29 4	W-BR BR-W	KPF2 4 2
5	T R	30 5	W-S S-W	KPF2 8 6
6	T R	31 6	R-BL BL-R	KPF2 12 10
7	T R	32 7	R-O O-R	KPF3 4 2
8	T R	33 8	R-G G-R	KPF3 8 6
9	T R	34 9	R-BR BR-R	KPF3 12 10
10	T R	35 10	R-S S-R	KPF4 4 2

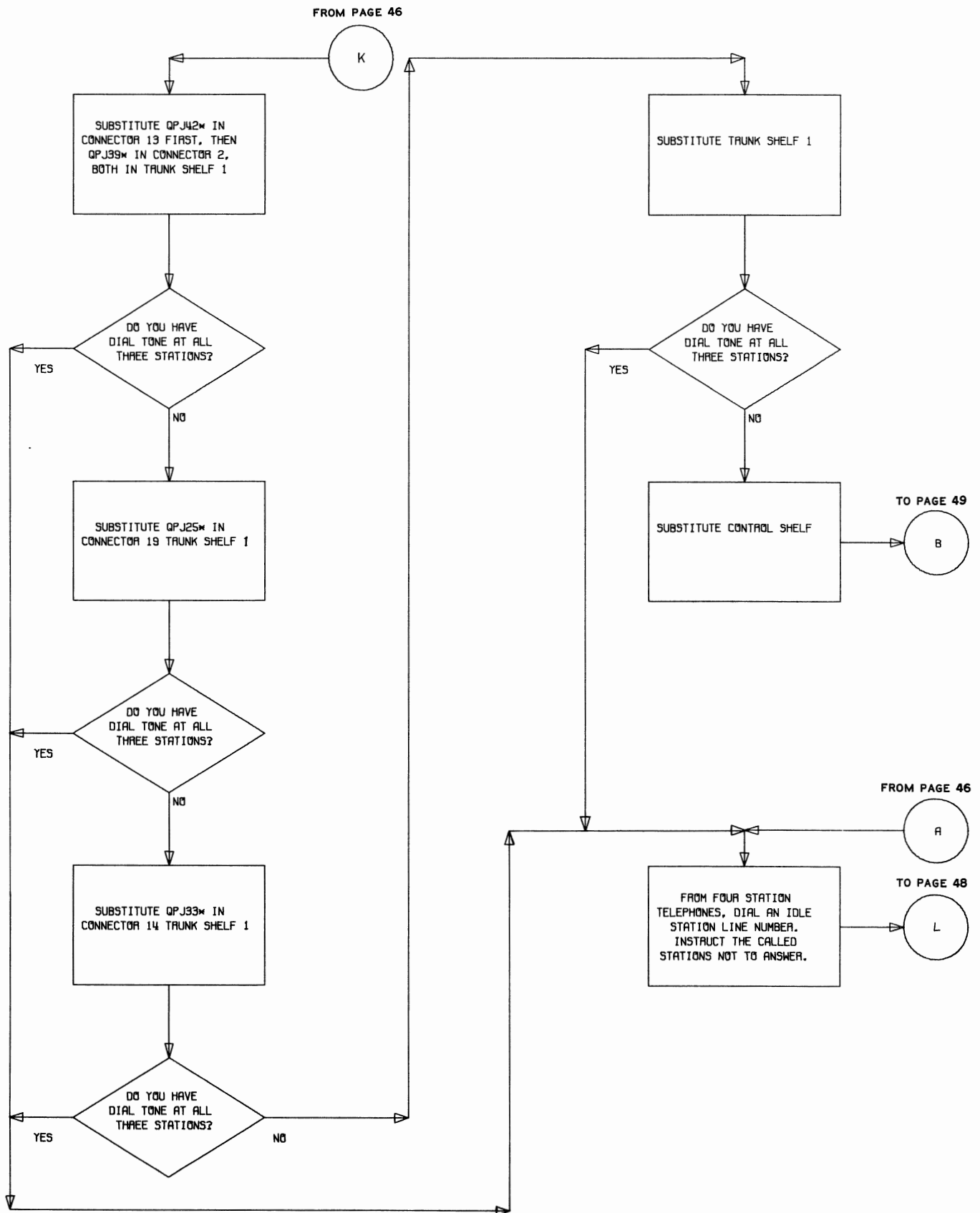
**TABLE C**  
**IDENTIFICATION OF PINS IN P070 ON CONNECTOR PANEL**

STATION LINE NO.	PIN NO.	COLOR CODE	DESTINATION THROUGH J140	
			RELAY	CONTACT
(2) 10 T R	26 1	W-BL BL-W	KPF1	3 1
(2) 11 T R	27 2	W-O O-W	KPF1	7 5
(2) 12 T R	28 3	W-G G-W	KPF	11 9
(2) 13 T R	29 4	W-BR BR-W	KPF	3 1
(2) 14 T R	30 5	W-S S-W	KPF	7 5
(2) 15 T R	31 6	R-BL BL-R	KPF	11 9
(2) 16 T R	32 7	R-O O-R	KPF	3 1
(2) 17 T R	33 8	R-G G-R	KPF	7 5
(2) 18 T R	34 9	R-BR BR-R	KPF	11 9
(2) 19 T R	35 10	R-S S-R	KPF	3 1

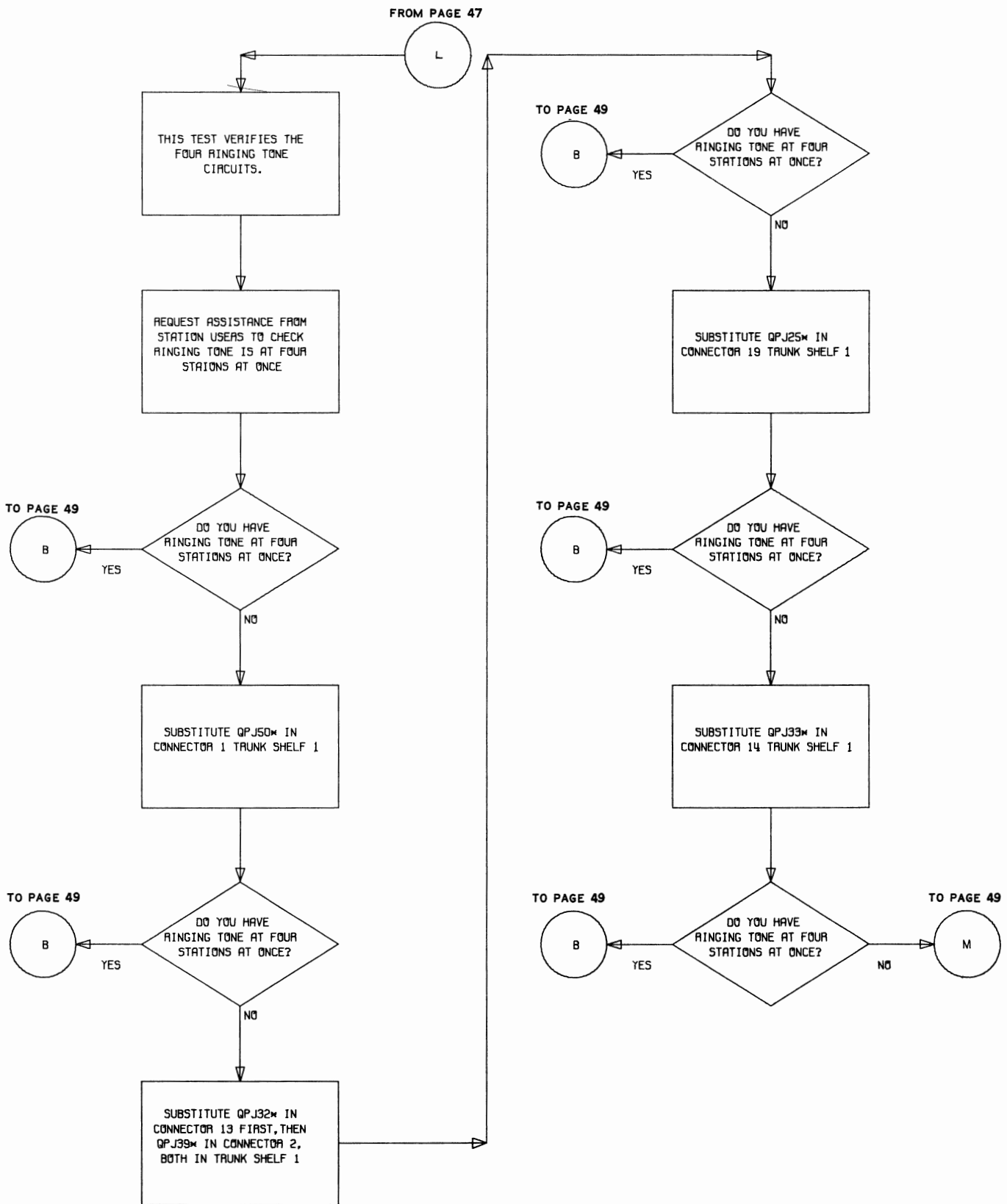


Flowchart 9 – Intermittent Dial and Ringing Tone Faults  
Fault-Clearing Procedure

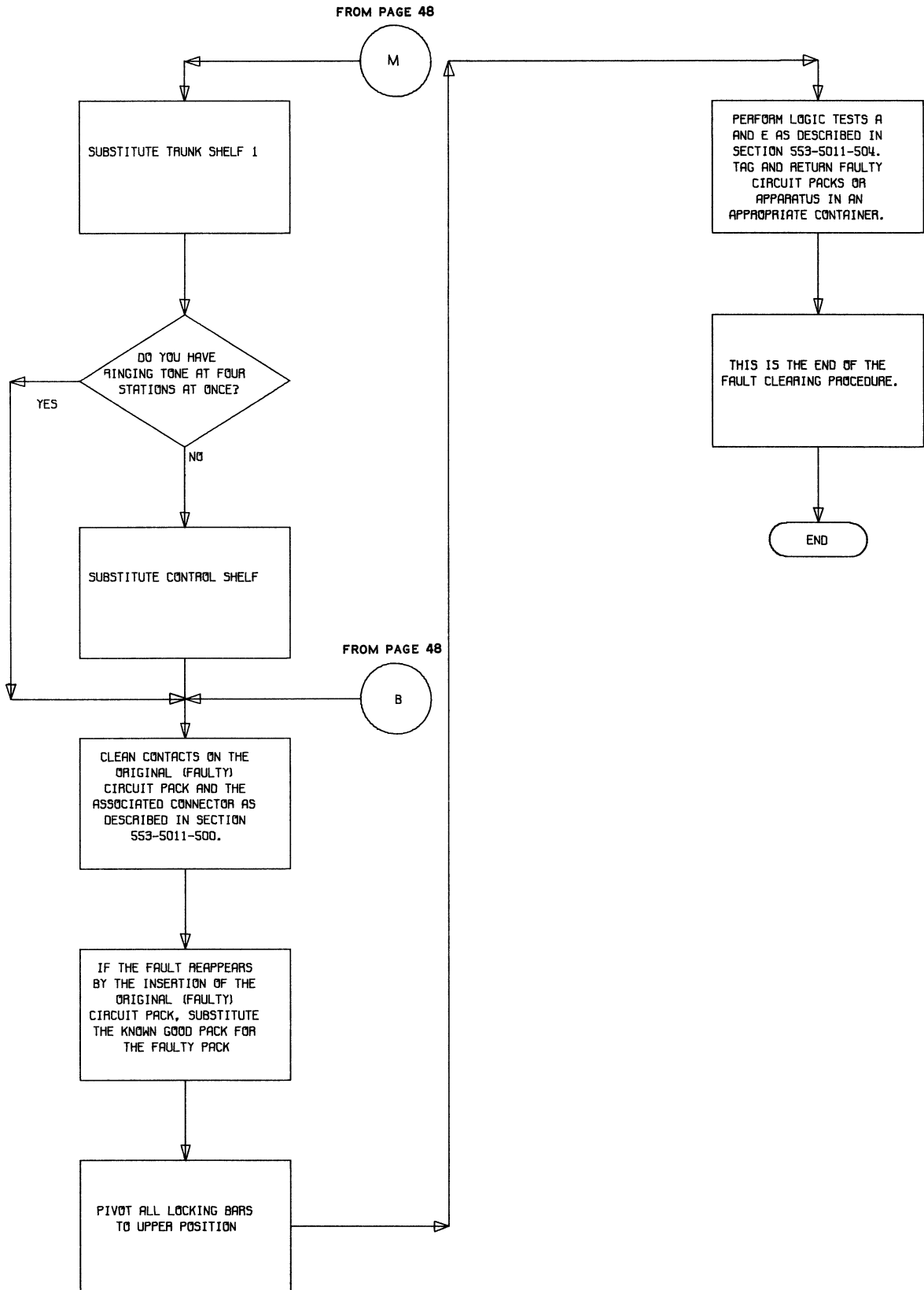




Flowchart 9 (Cont)



Flowchart 9 (Cont)



Flowchart 9 (Cont)