"PULSE* 120" – SG-1A

ELECTRONIC PRIVATE AUTOMATIC BRANCH EXCHANGE

FAULT CLASSIFICATION

1. GENERAL

1.01 The flowchart in this section directs the user to a fault-clearing procedure related to the fault indications in the PULSE 120 Electronic Private Automatic Branch Exchange (EPABX).

1.02 The flowchart technique used in the fault classification and clearing procedure is described in section 553-5011-500.

2. FAULT CLASSIFICATION FLOWCHART

2.01 The starting point for all fault-clearing procedures in the PULSE 120 must originate through fault classification (Flowchart 1).

2.02 The instructions and decision blocks in the flowcharts may seen irrelevant to the fault reported, but accurate response directs the user to the appropriate fault-clearing procedure. Deviation from the order given of fault preference results in failure to clear the fault.

2.03 When the substituting apparatus is defective, the test indicates that the faulty apparatus created additional or different faults in the system. The faulty apparatus must then be tagged and returned to the stores.

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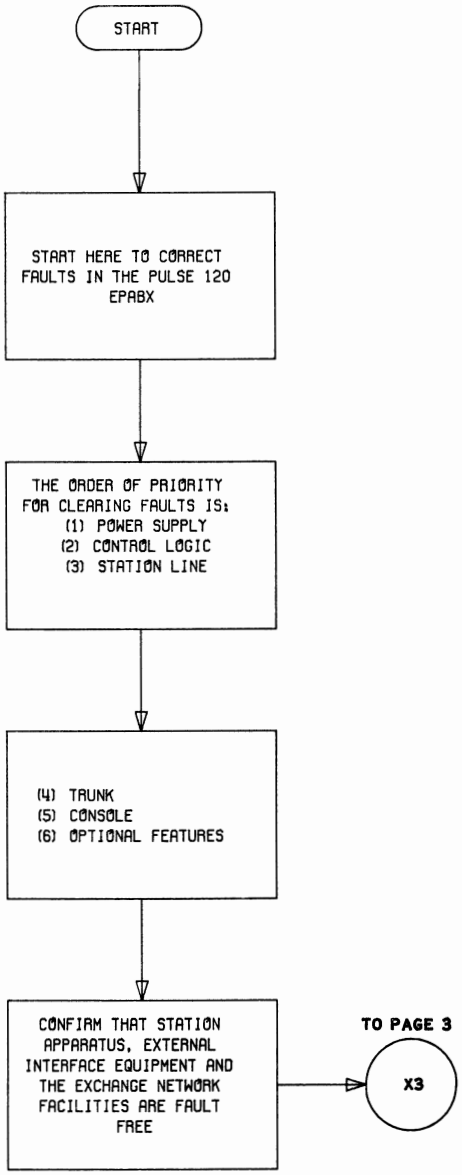
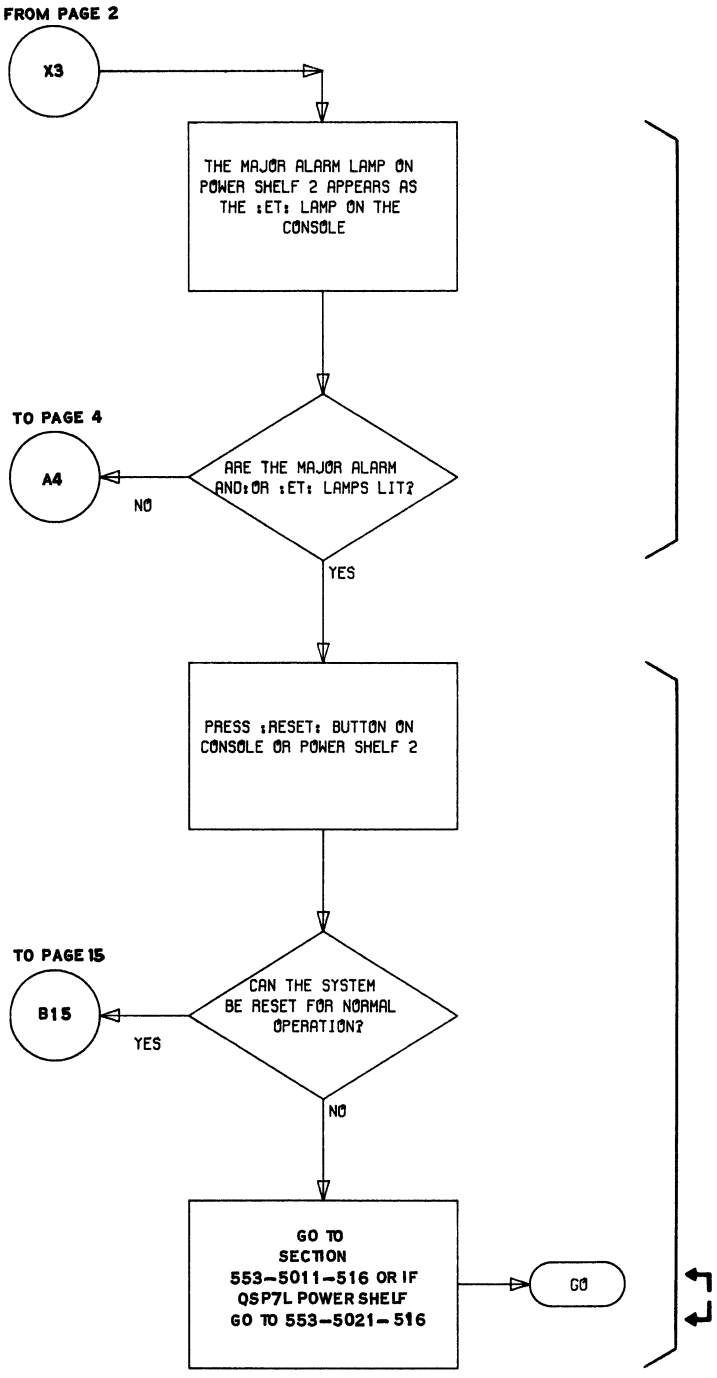


The fault classification flowchart categorizes the failure of an operation test and directs user to the appropriate section for fault clearing procedures. The failure is further classified in the appropriate section for rapid fault location and service restoration. This method of classification avoids unnecessary removal and insertion of circuit packs which shortens the life span of the pack.

All fault clearing flowchart sections are a continuation of the classification flowchart. The fault clearing sequence given eliminates the possibility of delay, repetition of operations and failure to correct fault. The customer's trouble report must not influence the sequence or directive given in the fault classification flowchart.

The intent of the maintenance flowchart is to help locate correct faults within the PULSE 120 EPABX. When external equipment is involved with the fault, this equipment must be isolated by disconnection.

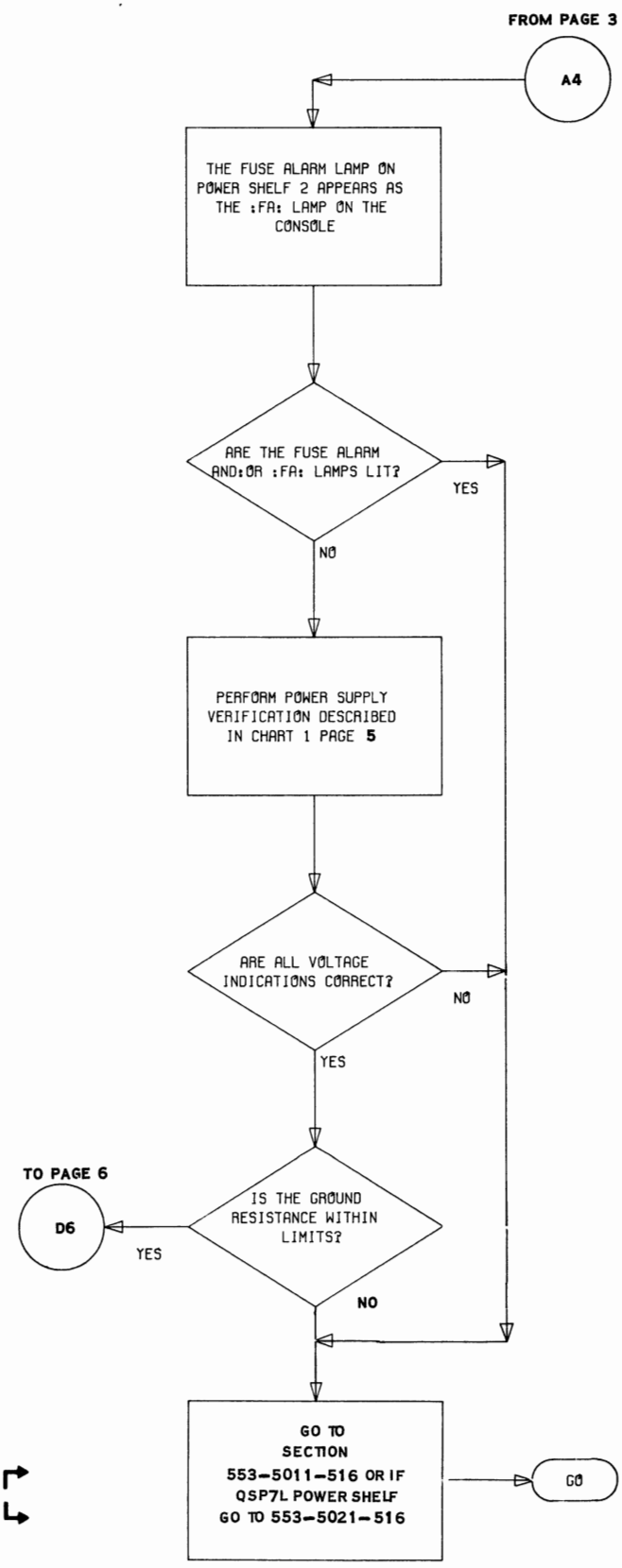
Flowchart 1 – Fault Classification



The major alarm lamps light when the interruption of a power supply affects the complete system. The EPABX automatically transfers to emergency service when the major alarm circuit is activated. The major alarm fault must be cleared before attempting to correct logic equipment, station line, trunk, console, and optional feature faults.

A momentary interruption of commercial power transfers the system in emergency service. The system resets automatically, when the power is restored, if the switch on the QPJ47-type circuit pack is in the AUTO position.

Flowchart 1 (Cont)



The fuse alarm lamps, when lit, indicate that a power supply failure has occured and rendered some features or call processing apparatus inoperative. Fuse alarm faults must be cleared before station line, trunks, console, and optional feature faults.

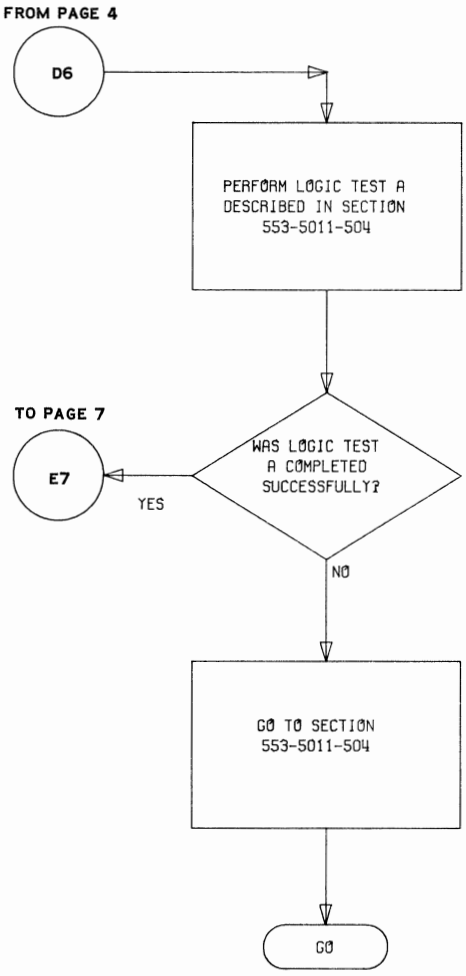
Light Emitting Diodes (LED) monitor the condition of fuses and the presence of power supplies at distribution points. Power fault indications must be corrected before station line, trunk, console, and optional feature faults.

A loose or poor ground connection will cause intermittent and random failures which are difficult to categorize in the flowchart. Ground connections must be checked before correcting any operations fault.

Flowchart 1 (Cont)

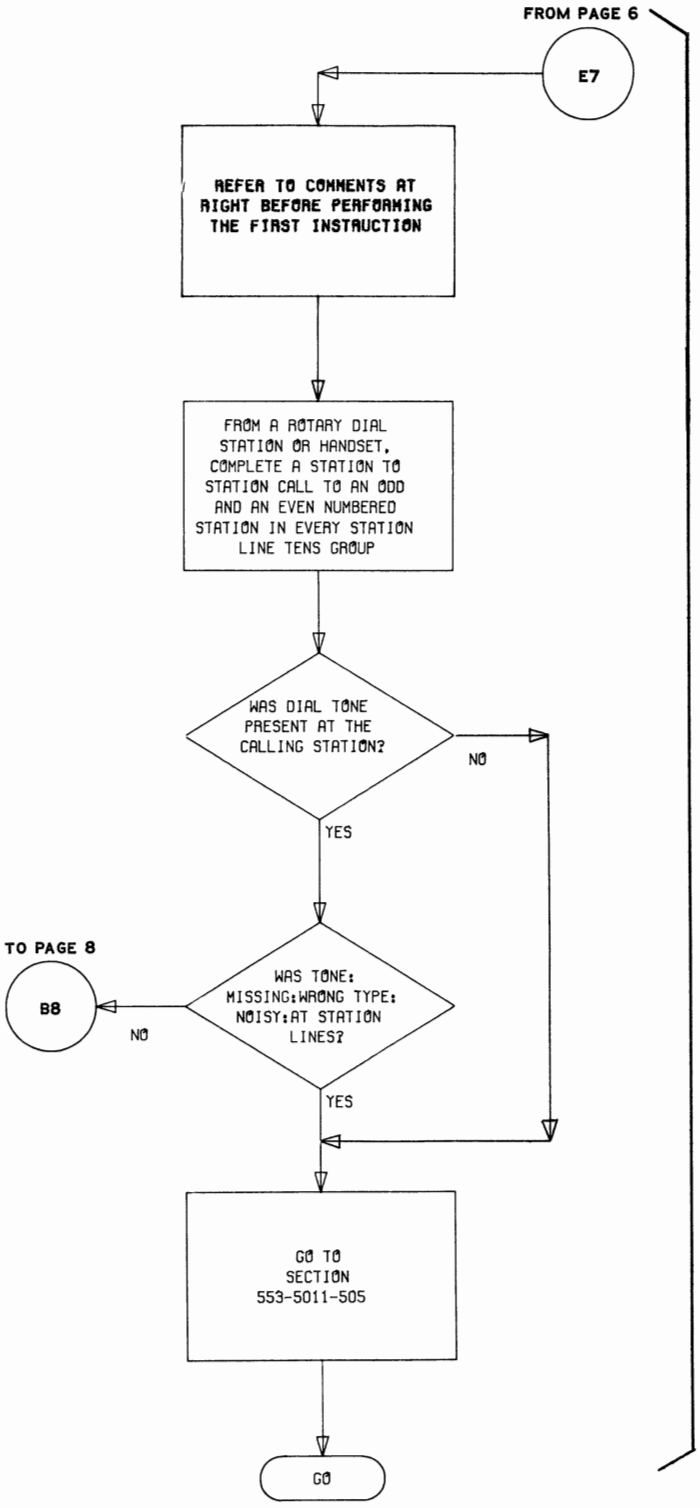
CHART 1 – POWER SUPPLY VOLTAGE TESTS (Required in Flowchart 1 Page 4)
FOR QSP7L POWER SUPPLY REFER TO 553-5021-516.

STEP	PROCEDURE	VERIFICATION
1	On the fuse panel on power shelf 1, Check whether all LED lamps are lit adjacent to Bussman fuses F1 through F4.	All LED lamps are lit. A blown fuse will light the MAJOR ALARM lamp.
2	Check whether any of the QFF-type fuses on power shelf 2 are blown. Substitute any blown fuse on the fuse panel on power shelf 2 with one having the same rating as that indicated by the color indicator above the fuse holder.	If the fuse blows again refer to the flowchart for instructions.
3	On the fuse panel in power shelf 2, check if all LED lamps are lit above the Bussman fuses F1 through F9.	All LED lamps are lit. An extinguished LED indicates a blown fuse.
4	With a pointed object press on the color indicator of one of the QFF-Type fuses.	The fuse alarm lamp lights.
5	Check that all LED lamps are extinguished on the QPJ47-type circuit pack in connector 5 on power shelf 2.	All seven LED lamps are extinguished.
6	Check that the - 12 V and +24 LED lamps are lit on the QPJ97-type circuit pack in connector 2 on the control shelf.	Both LED lamps are lit.
7	Insert the QPJ40-type circuit pack in a station line and trunk connector in each of the line and trunk shelves in the EPABX. When a single station of a station line tens group is faulty, insert the QPJ40-type circuit pack in the station line connector of the group concerned. The same operation applies to the fault trunks.	When inserted in a station line connector, all LED lamps, except for position 6, light: When in trunk connectors, LED lamps in positions 2 through 8 light.
8	Complete a visual inspection of the GRD connections in the EPABX and at the approved ground termination.	All connections are securely fastened.



The Logic Test A only exercises the logic equipment on the control shelf. The test also verifies the presence of all signals required to complete a station to station call. The test detects tone, ringing, transmission and dialing faults on the control shelf which affect station to station call. Outgoing trunk selection, incoming trunks, and attendant operation control faults are also detected.

Flowchart 1 (Cont)



1) If the system is equipped for hotel/motel service, refer to Section 553-5011-207 (in the PULSE cabinet) and call an odd and even station's number in each of the system's tens group.

2) If the system is equipped with the call forward feature, make sure that the called station in each tens group does not forward to another station because of a previously-entered call forward request.

When dial tone is heard at a rotary dial station, this indicates that:

(a) the address and state-of-line signals are reaching the line and trunks shelves from the control shelf.

(b) the main speech highway is functioning correctly.

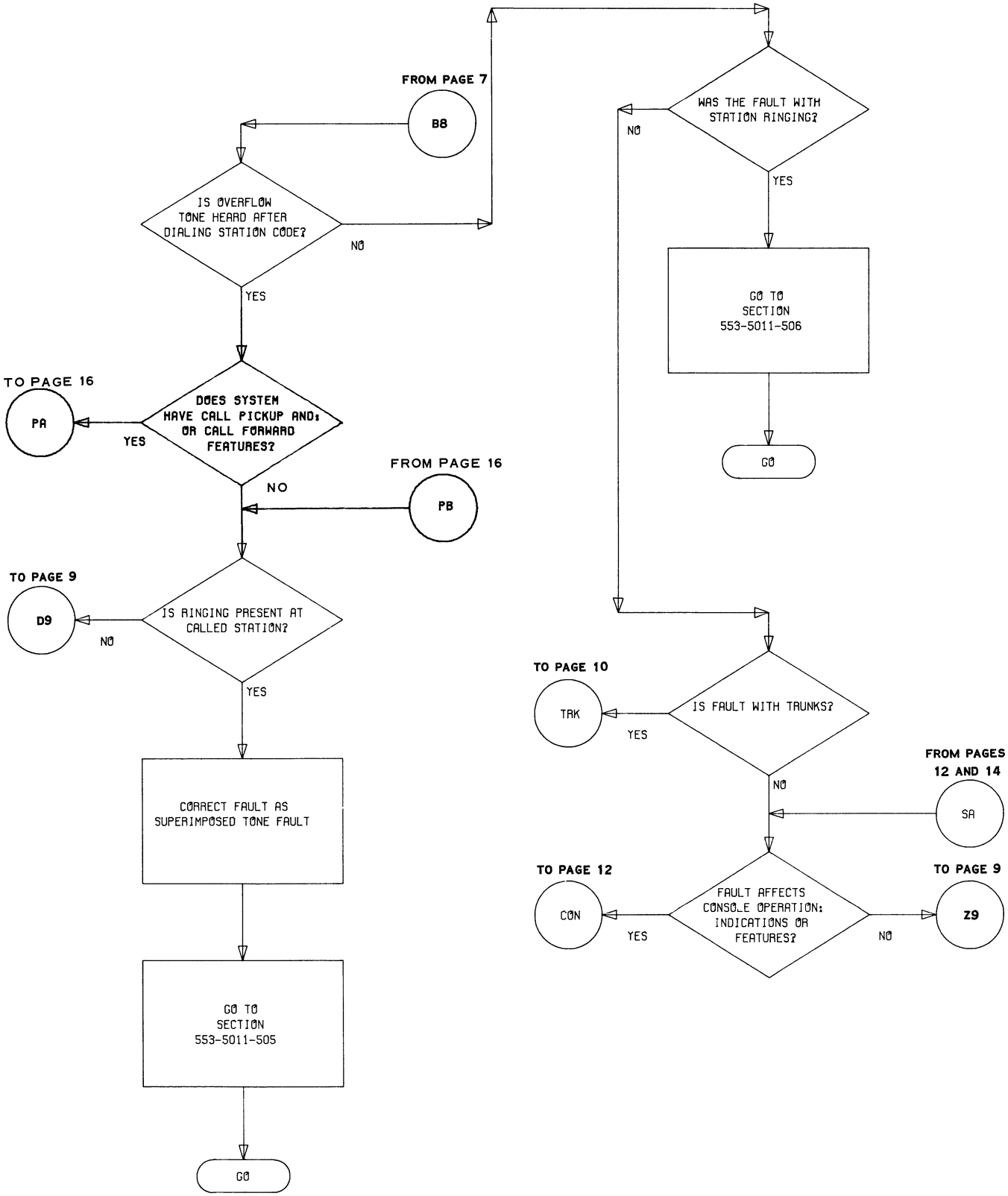
(c) the binary codes which make up the station line numbers are all received by the control shelf.

(d) all circuits are properly synchronized.

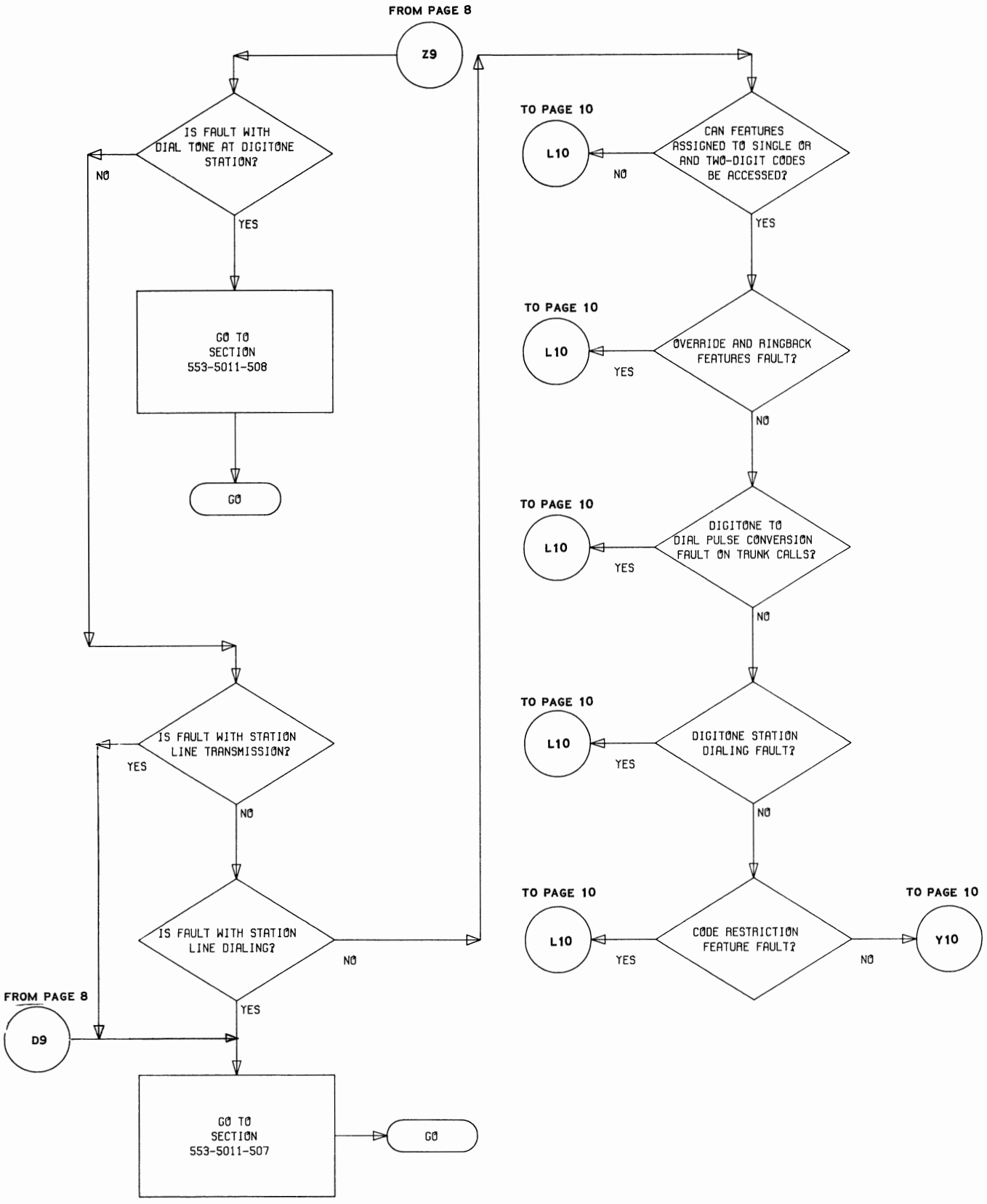
Dial tone faults must be cleared before ringing, transmission, and dialing faults affecting station to station calls, any type of trunks, and attendant faults.

If all these initial steps and fault clearing sequences are followed, any remaining faults can be cleared using the flowcharts.

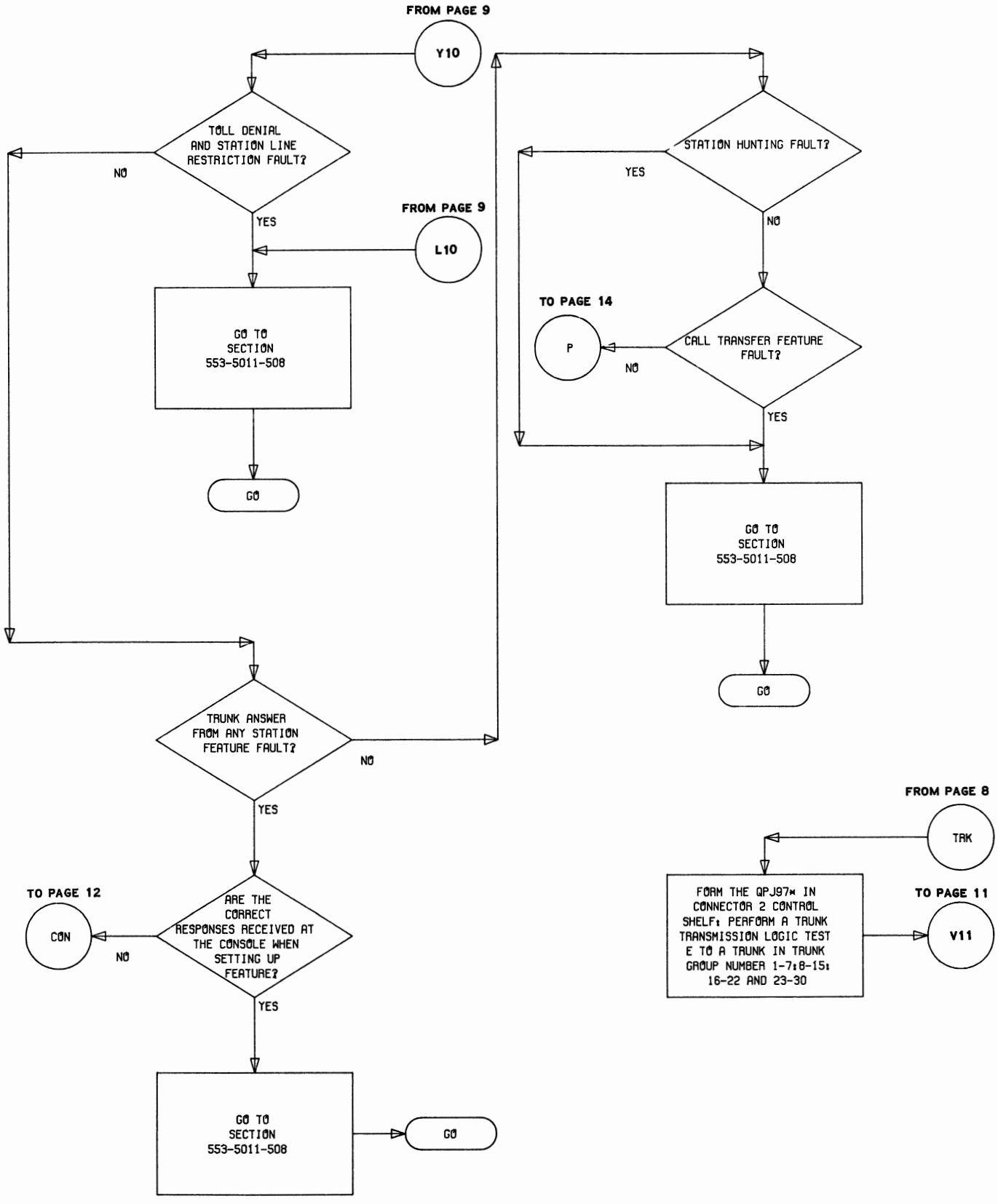
Flowchart 1 (Cont)



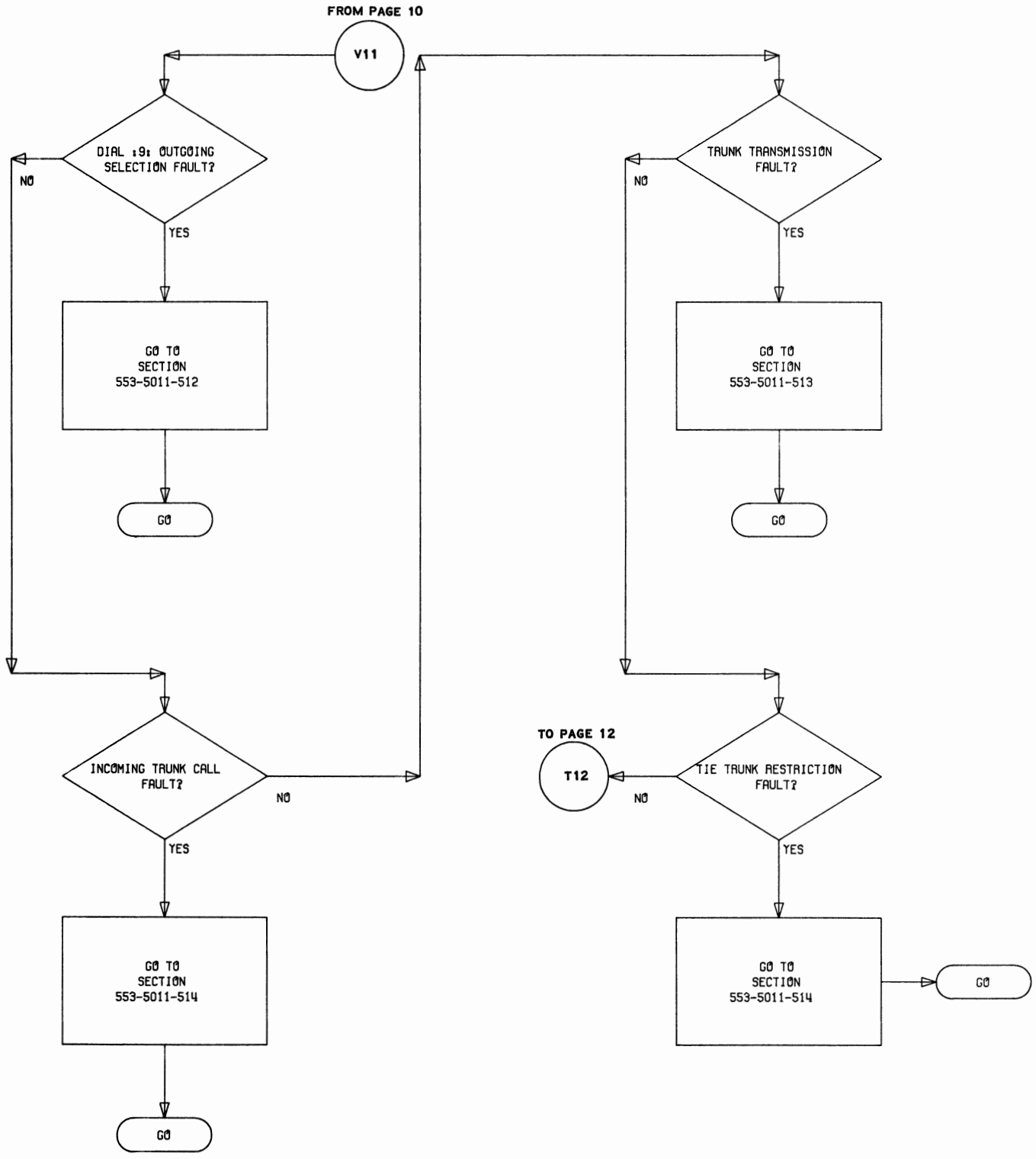
Flowchart 1 (Cont)



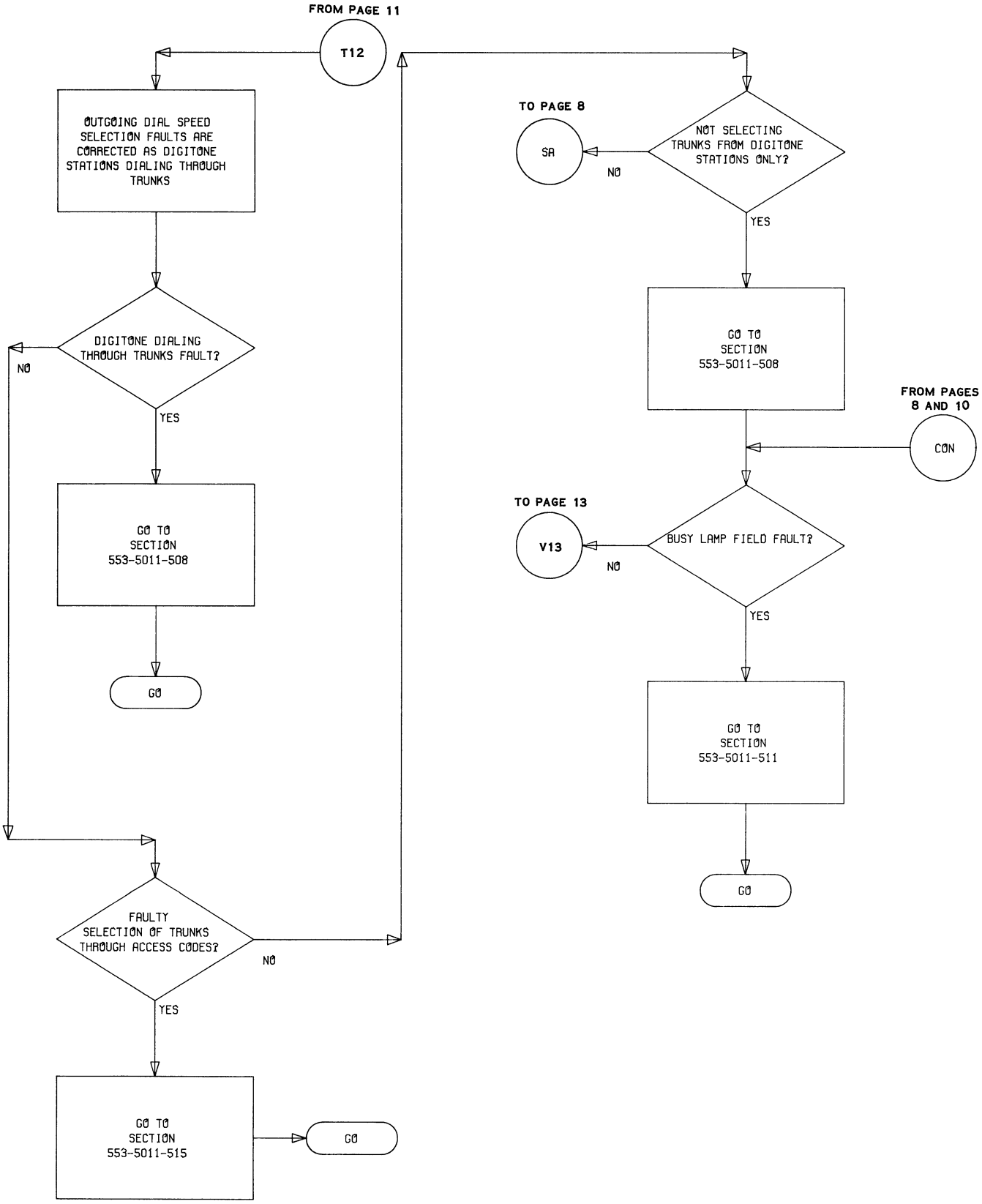
Flowchart 1 (Cont)



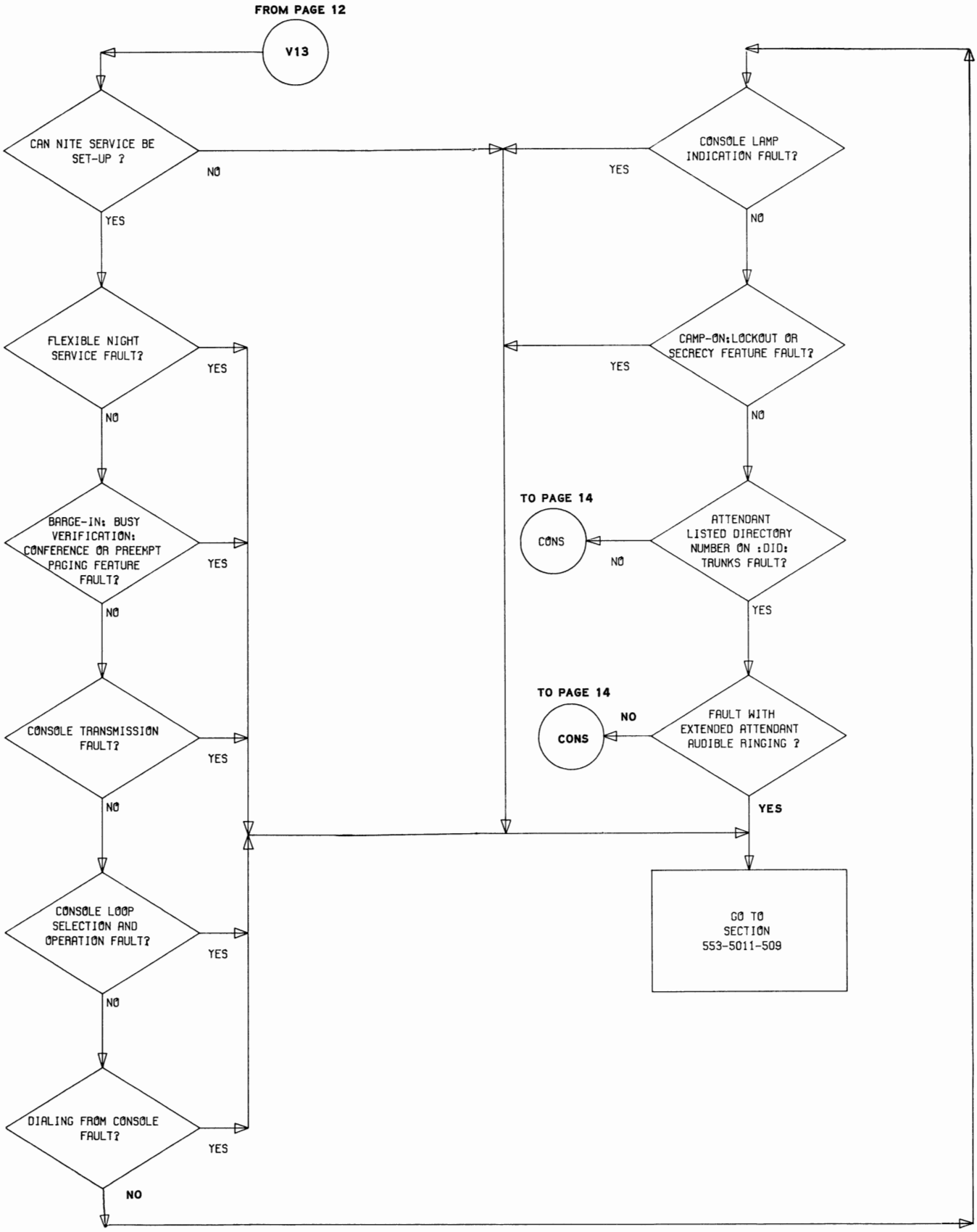
Flowchart 1 (Cont)



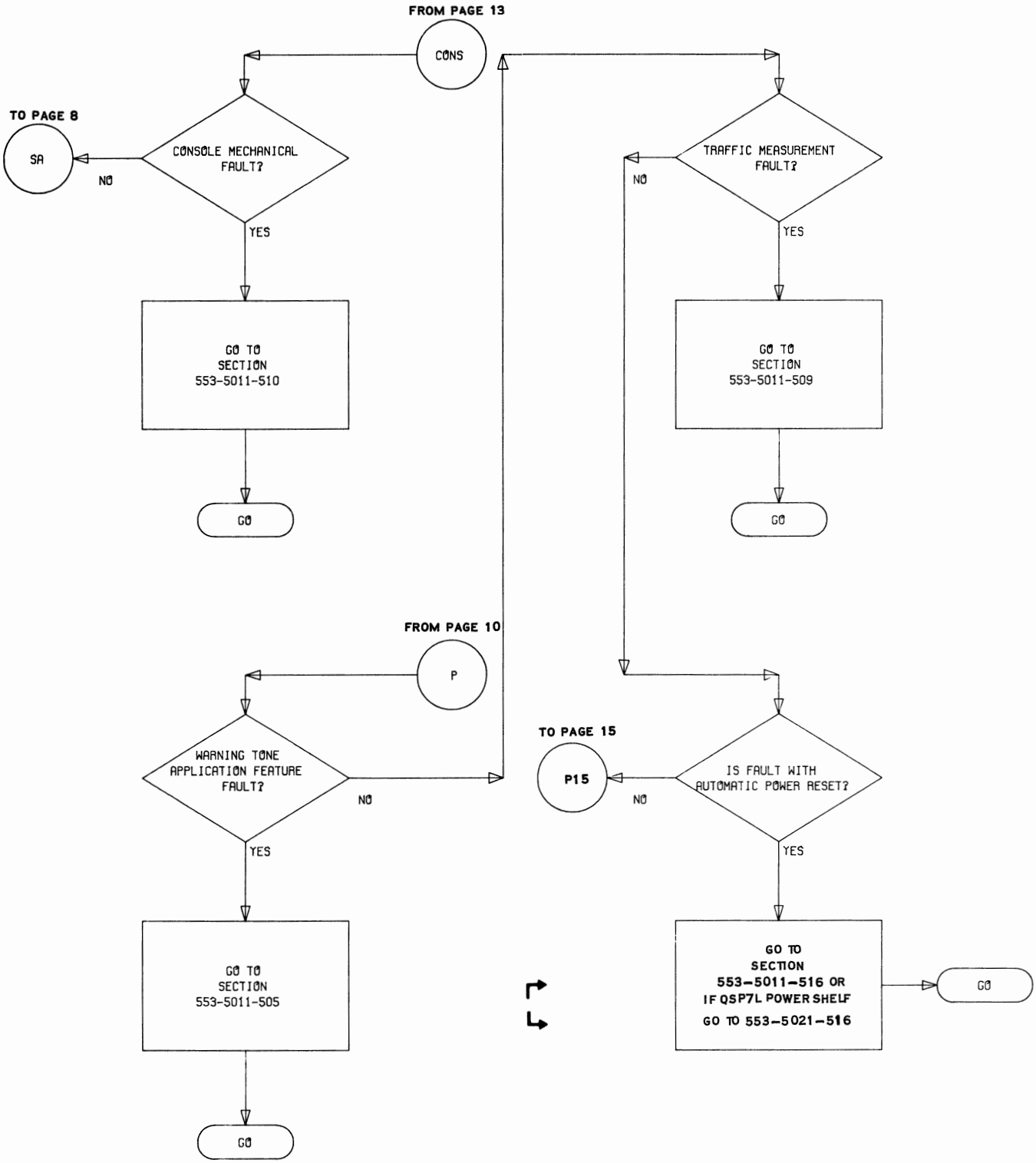
Flowchart 1 (Cont)



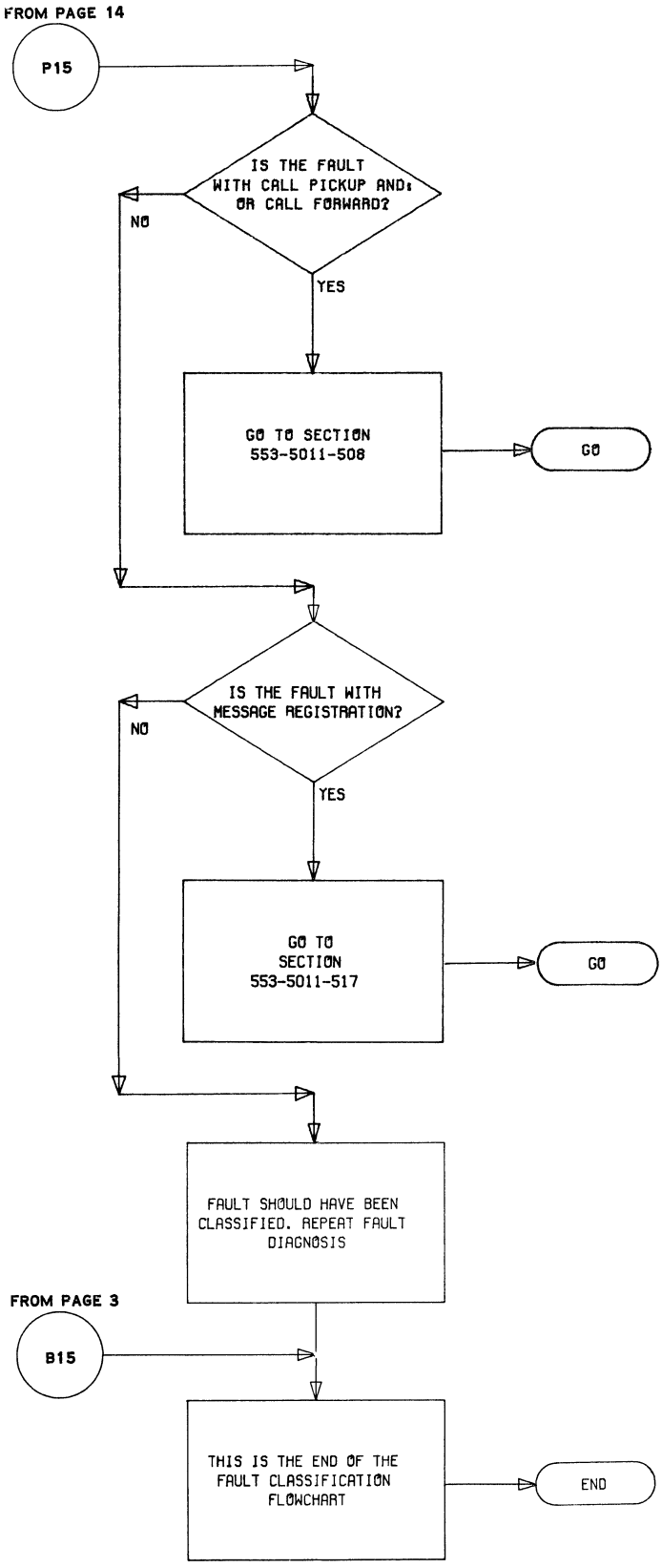
Flowchart 1 (Cont)



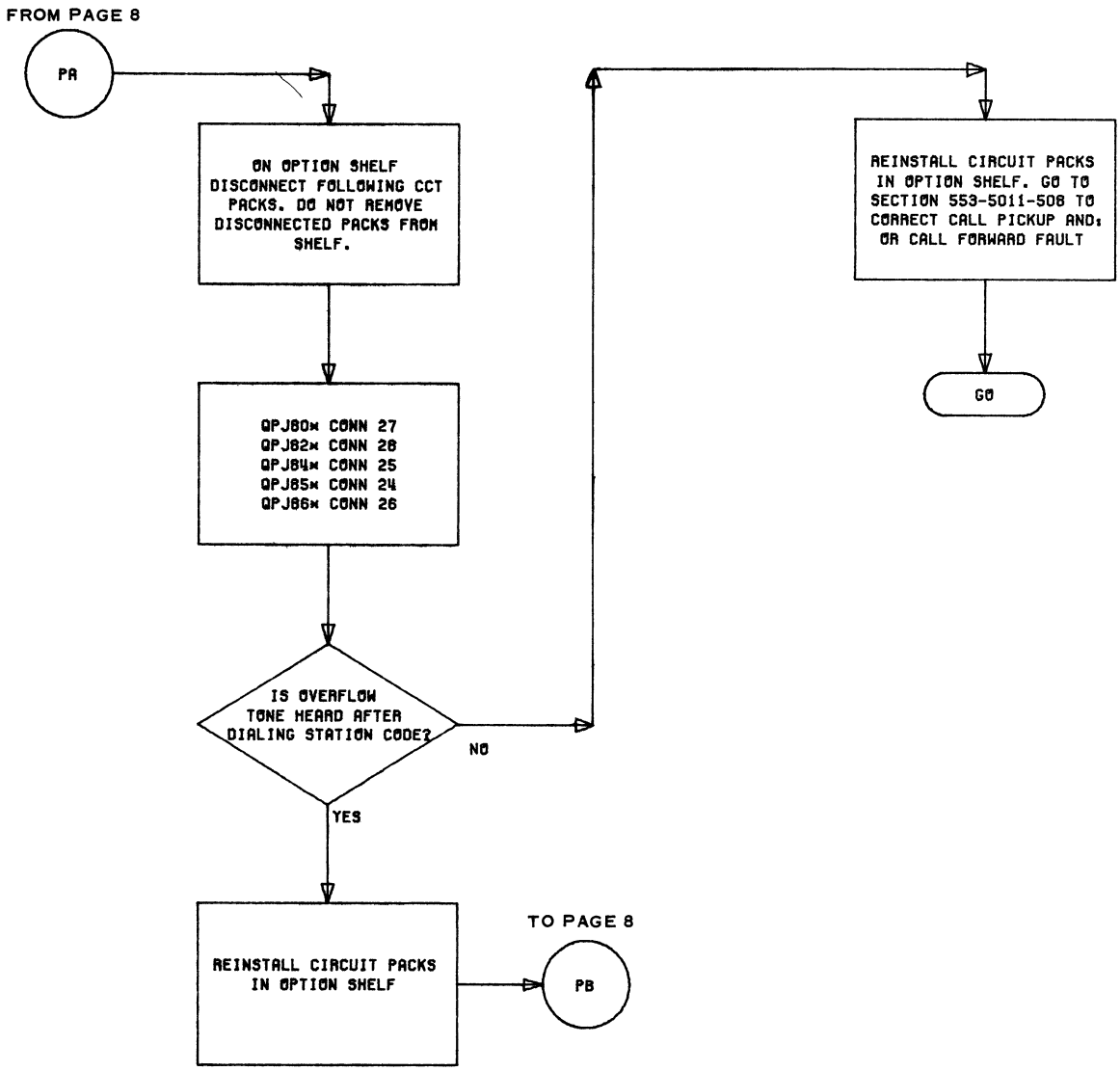
Flowchart 1 (Cont)



Flowchart 1 (Cont)



Flowchart 1 (Cont)



Flowchart 1 (cont)