

Perception[®]

ELECTRONIC BUSINESS COMMUNICATIONS SYSTEM

INSTALLATION AND MAINTENANCE MANUAL

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FCC REGISTRATION

The PERCEPTION electronic business communications system is registered in accordance with the provisions of Part 68 of the Federal Communications Commission's Rules and Regulations.

FCC REQUIREMENTS

Means of Connection

The Federal Communications Commission (FCC) has established rules which permit the PERCEPTION electronic business communications system to be connected directly to the telephone network. Connection points are provided by the telephone company-connections for this type of customer-provided equipment will not be provided on party lines or coin lines.

Incidence of Harm

If a PERCEPTION system is malfunctioning, it may also be disrupting the telephone network. The system should be disconnected until the problem can be determined and repaired. If this is not done, the telephone company may temporarily disconnect service.

Telephone Network Compatibility

The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of a PERCEPTION system, the telephone company is required to give adequate notice of the changes.

Notification to Telephone Company

Before connecting a PERCEPTION system to the telephone network, the telephone company must be provided with the following:

- A. Your telephone number
- B. The FCC registration number (BF287N-70443-MF-E)
- C. The ringer equivalence number 1.2B(AC)/4.0(DC)
- D. The USOC jack required (RJ21X)

Items B and C are also indicated on the equipment label.

You must notify the telephone company upon final disconnection of your equipment.

RADIO FREQUENCY INTERFERENCE

Warning: -This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference; in which case, the users, at his own expense, will be required to take whatever measures may be required to correct the interference.

PUBLICATION INFORMATION

Toshiba Telecom reserves the right, without prior notice, to revise this information publication for any reason, including, but not limited to, utilization of new advances in the state of technical arts or to simply change the design of this document,

Further, Toshiba Telecom also reserves the right, without prior notice, to make such changes in equipment design or components as engineering or manufacturing methods may warrant.

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Service Requirements

In the event of equipment malfunction, all repairs will be performed by Toshiba America, Inc., Toshiba Telecom, or an authorized agent of Toshiba America, Inc., Toshiba Telecom.

Perception

GENERAL DESCRIPTION

Perception

GENERAL DESCRIPTION

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01 GENERAL

01.00 Summary Description

01.01 PERCEPTION is an advanced business communication system, employing stored program control, digital switching, and custom LSI circuitry.

01.02 Utilizing the same electronic key telephone as the new Toshiba STRATA electronic key telephone systems (EKTS), PERCEPTION combines the functions of conventional electronic private branch exchange (EPABX) systems and electronic key telephone systems into a single design while remaining compatible with existing switching and station equipment.

01.03 PERCEPTION has a capacity of 120 stations and 32 trunks. The system provides a wide variety of basic and optional features to users of conventional rotary dial or touchtone telephones, as well as to users of Electronic Key Telephones.

01.04 Two different Electronic Key Telephones (EKTs) are available with PERCEPTION. Each is equipped with a push-button dial pad, speaker, four fixed feature keys (SPKR, MUTE, CONF and HOLD) and either 10 or 20 flexible assignment keys (hence the names 10-key and 20-key). Of the four fixed keys, only the SPKR key is equipped with an LED. Both EKTs feature modular handset cords and are connected to the system via four-conductor modular line cords.

- The basic PERCEPTION EKT is a 10-key, with 10 keys that may be assigned as directory number (DN) pickups or as access keys to any of the station custom calling features.
- The expanded 20-key EKT has an additional 10 flexible assignment keys that may be assigned as DN pickups or feature access keys.

01.05 The PERCEPTION Attendant Console is both attractive and efficient. Its digital display provides the operator with all the information required for easy operation. Two attendant consoles may be equipped in the system.

01.06 Housed in a single attractively styled cabinet, the noiseless operation, small size and environmental tolerance of the central equipment allows a wide choice of installation locations.

01.10 Physical Description

01.11 The physical parameters of the metal PERCEPTION equipment cabinet (Figure 1) are:

Height	39.25 in. (997 mm)
Width	20.47 in. (520 mm)
Depth	15.75 in. (400 mm)

It weighs 187.4 lb. (85 kg) when fully equipped.

01.12 The central equipment cabinet is divided into four shelves (Figure 2); two shelves for plug-in printed circuit board (PCB) mounting, one shelf for the power supply, and the top shelf contains the Floppy Disk/Ringer Assembly (DFRA).

01.13 External connections are made to the system via amphenol-ended cables connected at the rear of the cabinet (Figure 3), and terminated on a main distribution frame (MDF).

01.14 PCBs measure 12.01 inches (305 mm) high by 12.01 inches (305 mm) deep, and each one has a metal faceplate riveted to the front edge. The rear edge connector carries the electrical terminals: 60- and 40-pin terminals on the peripheral equipment PCBs and 100-pin terminals on the common equipment PCBs.

01.15 The 5 1/4-in. Floppy Disk Drive Unit (DFDD) stores system programs and customer office data securely. The DFDD is mounted in the left side of the DF RA subassembly.

01.16 The 20 Hz ringing power supply (DRNG) is mounted on the right side of the DFRA subassembly.

01.17 The primary power supply (DPSA) is mounted in the bottom of the equipment cabinet. It is operated by 115 VAC, 50/60 Hz commercial power and provides a fused output of -48 VDC, -24 VDC, ± 12 VDC and ± 5 VDC.

01.20 Reserve Power

01.21 A commercially-available Uninterruptible Power Supply system is used to supply emergency power.

01.30 Attendant Console

01.31 The PERCEPTION Attendant Console (Figure 4) is enclosed in an off-white plastic

except w/ LCR (doesn't provide separate calling)

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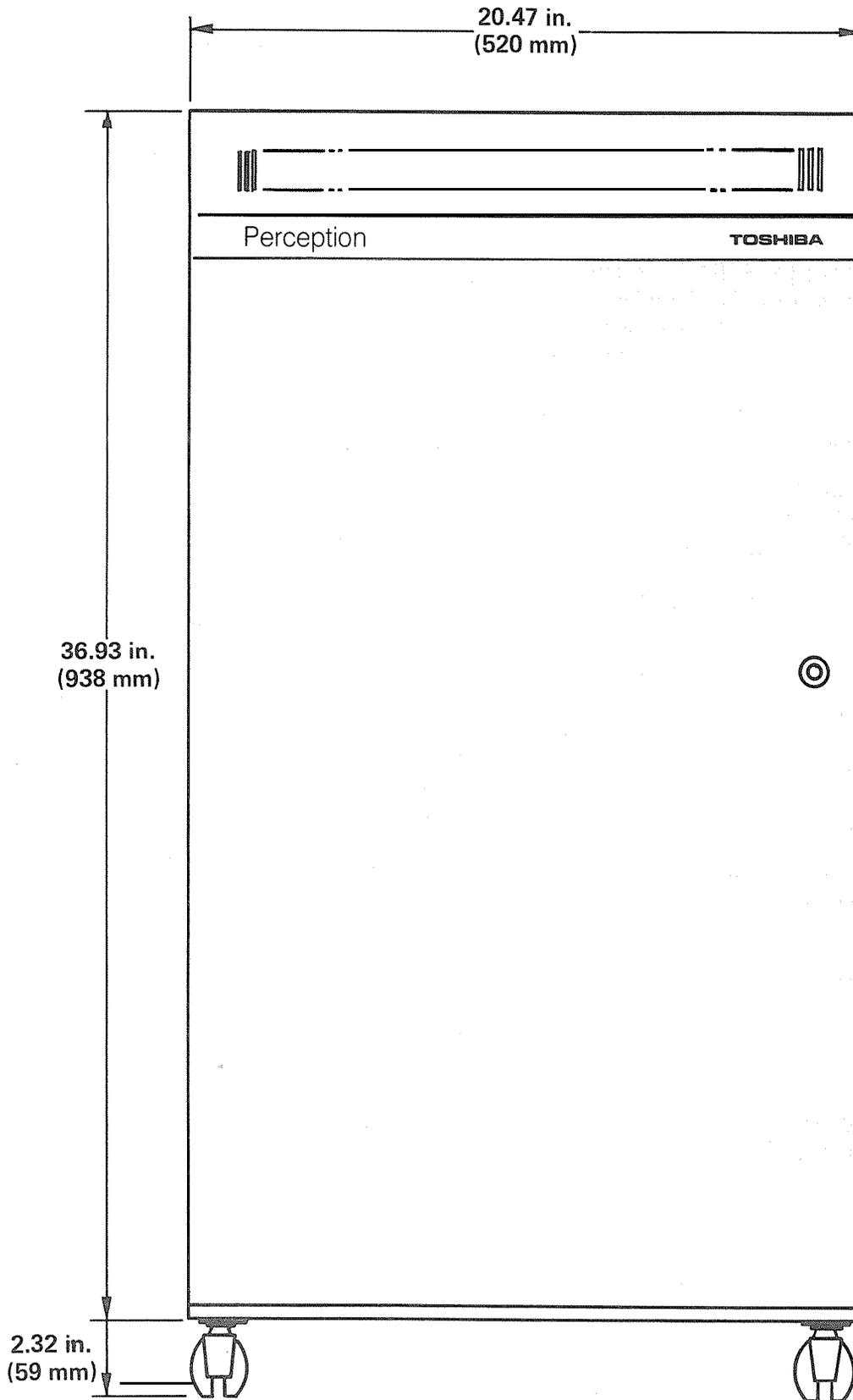


FIGURE 1 - CABINET (Dimensions)

DCFC
-2- DIGITAL CENTRAL EQUIP. CAB.

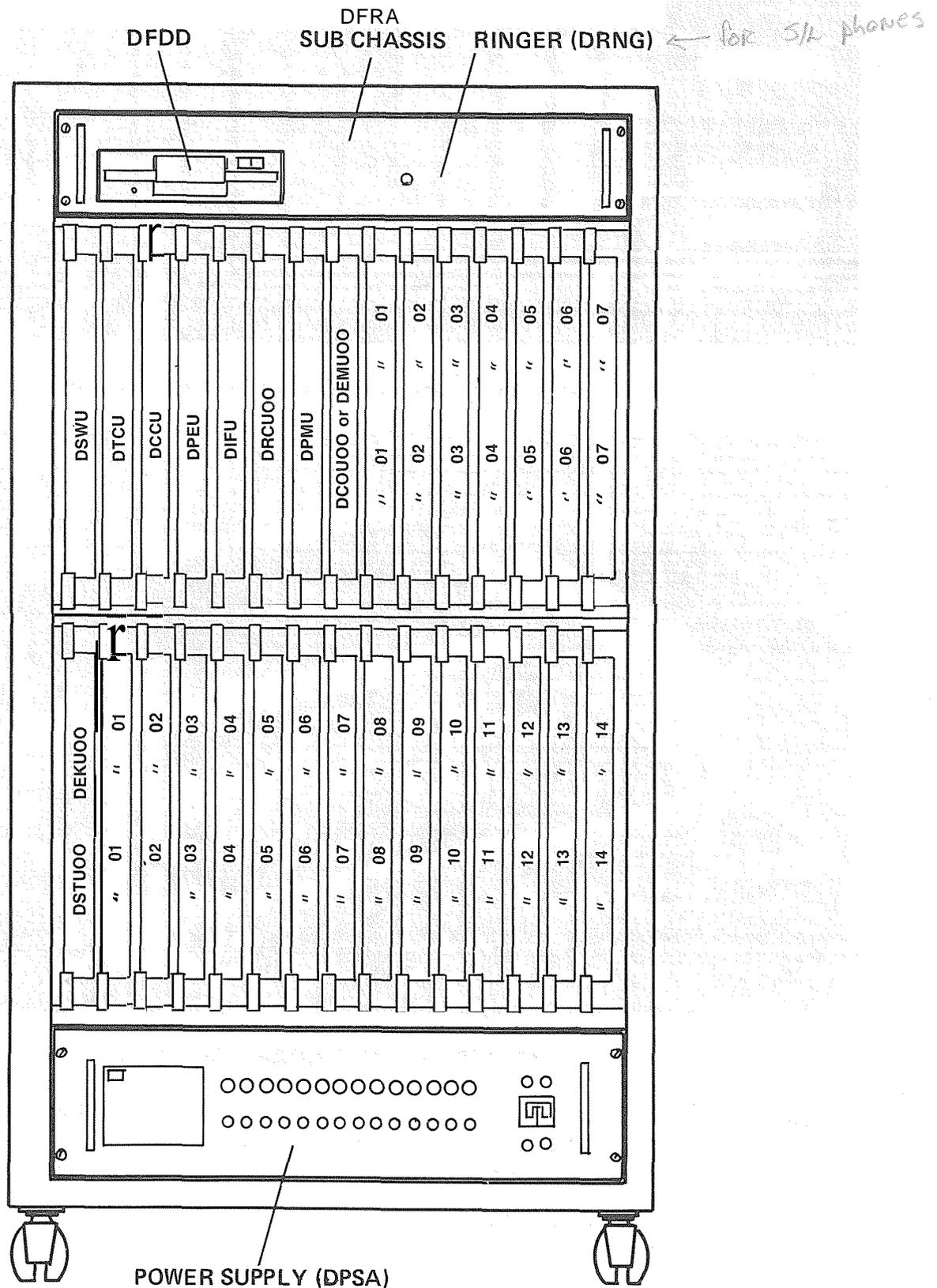


FIGURE 2 - CABINET (Interior)

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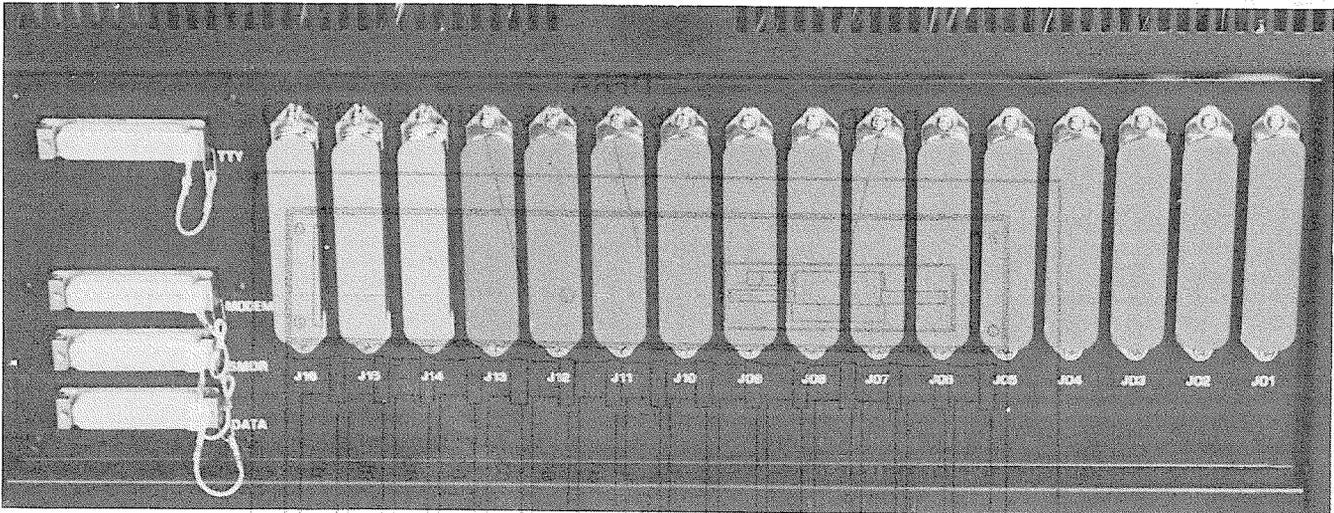


FIGURE 3—REAR CABINET CONNECTIONS

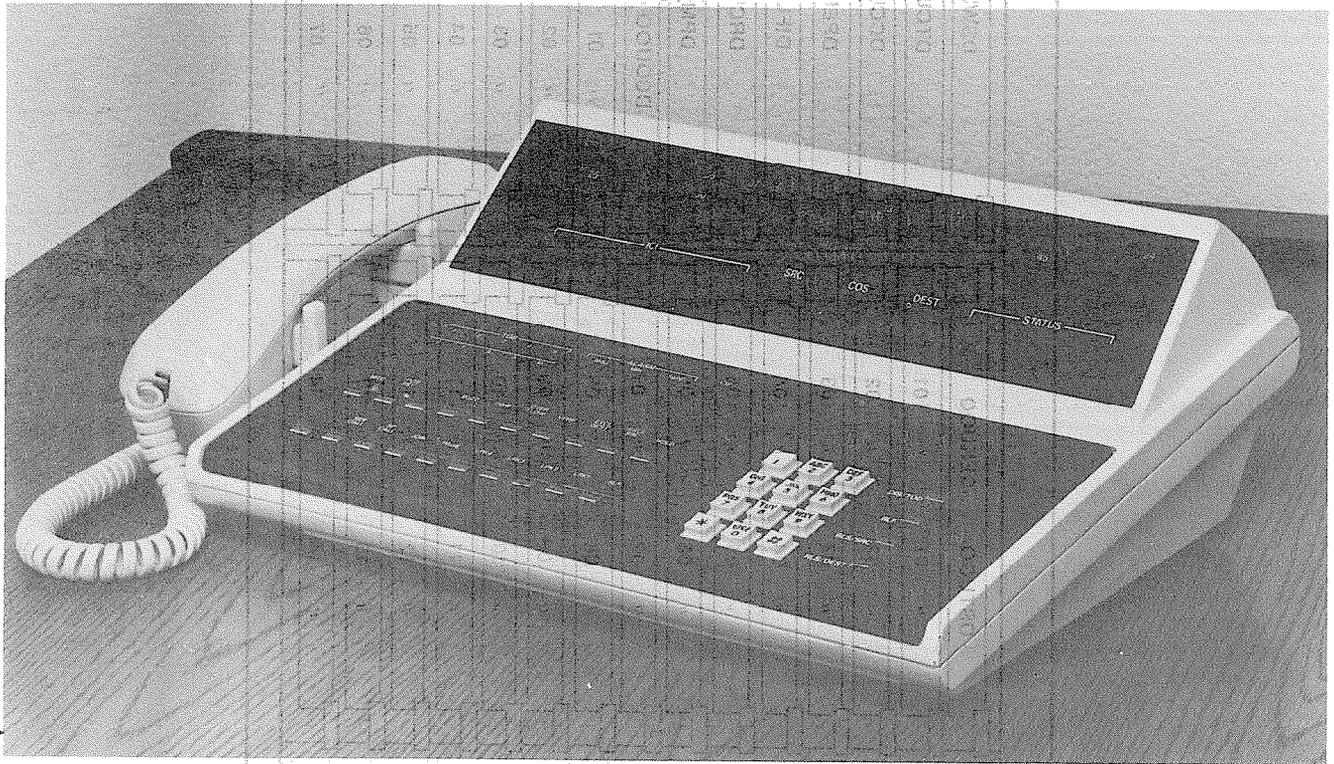


FIGURE 4—ATTENDANT CONSOLE

housing with headset/handset jacks, located on both sides. It is equipped with a keyboard having two horizontal rows of non-locking keys and LEDs, a standard 12-key dial pad and a vertical row of four keys. The console display functions include incoming call identification, source (calling party), class of service, destination (called party) and status (of called party). In addition, the console is equipped with a busy lamp field that displays 100 2-digit numbers (00~99), and a

“hundreds group” identifier that shows which of the two groups is currently being displayed. The display alternates between groups in response to operations of the **BLF** key (located on the console keyboard). Trunk group busy display, call waiting and alarm indications are also provided.

The Attendant Console measures:

Height	4.72 in. (120 mm)
Width	14.17 in. (360 mm)
Depth	10.24 in. (260 mm)



FIGURE 5 — STANDARD 10-key EKT

01.40 Electronic Key Telephones

01.41 The two EKTs that are available with PERCEPTION are housed in an off-white plastic case with interchangeable colored faceplates (brown, blue, black and wine). They are the same units as the STRATA series EKTs and measure:

Height	4.0 in. (102 mm)
Width	8.8 in. (224 mm)
Depth	9.1 in. (230 mm)

01.42 Each is equipped with a push-button dial pad, speaker, four fixed feature keys (SPKR, MUTE, CONF and HOLD) and either 10 or 20 flexible assignment keys. Of the four fixed keys, only the SPKR key is equipped with an LED.

Both EKTs feature modular handset cords and are connected to the system via 4-conductor modular line cords.

- The basic PERCEPTION EKT (Figure 5) is a 10-key, with 10 keys that may be assigned as directory number (DN) pickups or as access keys to any of the station custom calling features.
- The expanded 20-key EKT has an additional 10 flexible assignment keys that may be assigned as DN pickups or feature access keys.

01.50 Electrical Characteristics

01.5'1 The electrical characteristics of PERCEPTION are detailed in Table A.

TABLE A

SUMMARY OF PERCEPTION ELECTRICAL CHARACTERISTICS

Station loop limit	
Standard telephone	500 Ω (including telephone)
Electronic key telephone	1000 ft. 24 AWG cable
Minimum leak resistance	30,000 Ω
Maximum ringer/line (std. tele.)	3
Ringng (std. tele.)	85 \pm 10 Vrms, 20 Hz, immediate ringing
Ringng tone (EKT)	500/640 Hz, modulated at 10 Hz
Buzz tone	300 Hz
Busy override tone	2400 Hz
Ring trip	During silent or ringing period
Dial tone	350/440 Hz, continuous
Busy tone	480/620 Hz, interrupted at 60 ipm
Ringback tone	440/480 Hz, 1 sec. on, 3 sec. off
Overflow tone	480/620 Hz, interrupted at 120 ipm
Recall dial tone	350/440 Hz, three 1/8-sec. pulses, followed by continuous tone
Miscellaneous tones	440 Hz
Crosstalk	> 75 dB down
Insertion loss	
Station-to-station	5 dB
Station-to-trunk	1 dB
Trunk-to-trunk	1 dB
Longitudinal balance	> 60 dB (200 \sim 1000 Hz) on- and off-hook > 40 dB (1000 \sim 4000 Hz) on- and off-hook
Return loss	> 18 dB ERL
Idle circuit noise	25 dB _{BrnC}
System impedance	600 Ω for stations 600/900 Ω for trunks
Switching	TDM, PCM, non-blocking
Primary power	90 \sim 125 VAC, 500 watts, 50/60 Hz
Reserve power	An external charger/inverter supplies 115 VAC to the primary power supply
Central office loop limit	1500 Ω
Maximum distance between console and equipment cabinet	1000 ft. (24 AWG)
Operating temperature	32 \sim 104° F (0 \sim 40° C)
Operating humidity	20 \sim 80% without condensation
Storage temperature	14 \sim 149° F (-10 \sim 65° C)

01.60 Features and Services

in PERCEPTION are summarized in Tables B and C, which list the basic and optional features, respectively.

01.61 All the features and services available

TABLE B

STANDARD FEATURES

SYSTEM

- Access to Paging
- * ● CCSA Access
- Class of Service Restrictions
- Code Restrictions-3-digit
- Console-less Operation
- Data Transmission-voice band
- Distinctive Ringing
- Flexible Numbering
- Immediate Ringing
- Intercept
- Line Lockout
- Multiple Console Operation
- Multiple Trunk Groups
- Music-on-hold and Camp-on
- Night Service-Fixed
- Night Service-Flexible
- Night Service-Universal
- * ● Remote Access to Services
- Remote Administration/Maintenance
- Rotary Dial Compatibility
- Route Advance
- * ● Station Set Mix
- Tandem Switching
- Tenant Service
- Tie Trunks
- Toll Restriction
- Tone Dialing (DTMF)
- Tone-to-dial Pulse Conversion
- Traffic Measurement
- Uniform Distribution Wiring
- Variable Time-out

STATION

- Automatic Callback
- Call Forward-All Calls
- Call Forward-No Answer
- Call Pickup-Directed
- Call Pickup-Group
- Call Waiting
- Conference-3-party With Transfer
- Direct Outward Dialing
- Do Not Disturb
- Hold-All Calls
- * ● Manual Line Service
- Meet-me Page
- Message Waiting
- Override
- Private CO Line Services
- Remote Retrieval of Held Calls
- Repeat Last Number Dialed
- Speed Dialing
 - Station
 - System
- Station Hunting-Circular
- Station Hunting-Distributed
- Station Hunting-Secretarial
- Station Hunting-Terminal
- Trunk-to-trunk Connections
- Uninterrupted Line Connection

ELECTRONIC KEY TELEPHONE

- Automatic Dialing
- Automatic Line Preference
- Call Status Indication
- Common Audible Signalling
- End-to-end Signalling
- Handsfree Answerback with Speaker Cut-off
- Handsfree Monitoring
- I-hold Indication
- I-use Indication
- Manual Signalling
- Modular Cords
- Multiple Appearance Directory Number
- Non-locking Keys
- On-hook Dialing
- Prime Directory Number
- Privacy
- Privacy Release
- Push-button Dialing
- Push-button/key Access to Features
- Release
- Speaker/Amplifier
- Speakerphone
- Tone Buzzing
- Tone Ringing
- Voice Paging
- Volume Control

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ATTENDANT CONSOLE

- Alarm Lamps
- Attendant Camp-on with Indication
- Attendant Conference
- Attendant Emergency Transfer Control
- Attendant Initialize
- Attendant Recall
- Busy Lamp Field
- Call Waiting Lamp
- Digital Information Display
- Direct Access to Paging
- Incoming Call Identification
- Individual Trunk Access
- * ● Interposition Calling
- * ● Interposition Call Transfer
- Lockout
- Night Service Control
- Non-delayed Operation
- Overflow Facility
- Position Busv
- Push-button Dialing
- Secrecy
- Serial Call
- Speed Dialing-System
- Splitting
- Station Number Display
- Station Verification
- Switched Loop Termination
- Through Dialing
- Timed Reminders-Variable
- Time of Day Display, Set, Reset
- Trunk Group Access Control
- Trunk Group Busy Indication
- Trunk Equipment Number Display
- Trunk-to-trunk Connections
- Trunk Verification

**Future feature*

TABLE C

OPTIONAL FEATURES

SYSTEM

- Power Failure/Emergency Transfer
- * ● Direct Inward Dialing (DID)
 - Call Forward-Busy
 - Multiple Listed Directory Number
- * ● Least Cost Routing
- Station Message Detail Recording
- Reserve Power

ELECTRONIC KEY TELEPHONE

- 20-key EKT
- Wall Mount Kit

"Future feature"

02 SYSTEM OPERATION

02.00 General

* **02.01** The system diagram in Figure 6 shows the central equipment cabinet, attendant console, electronic key telephone, conventional 500/2500-type telephone, and emergency transfer unit. An external customer-provided tuner (or equivalent) is required as a music-on-hold source. All connections to on-premise equipment and the public telephone network are made via a customer-provided main distribution frame (MD F).

0 2.02 The functional block diagram in Figure 7 shows the central equipment divided into four main sections; power, central control, central service equipment and peripheral interface equipment.

- a) Power Section:
 - Main power supply
 - 20 Hz ringing
- b) Central Control:
 - Floppy disk unit
 - DCCU
 - DPEU
 - A portion of DPMU
- c) Central Service Equipment:
 - DTCU
 - DSWU
 - DRCU
 - A portion of DPMU
- d) Peripheral Interface Equipment:
 - DSTU (interfaces conventional telephones)
 - DEKU (interfaces the EKTs and attendant consoles)

PERCEPTION CENTRAL EQUIPMENT CABINET

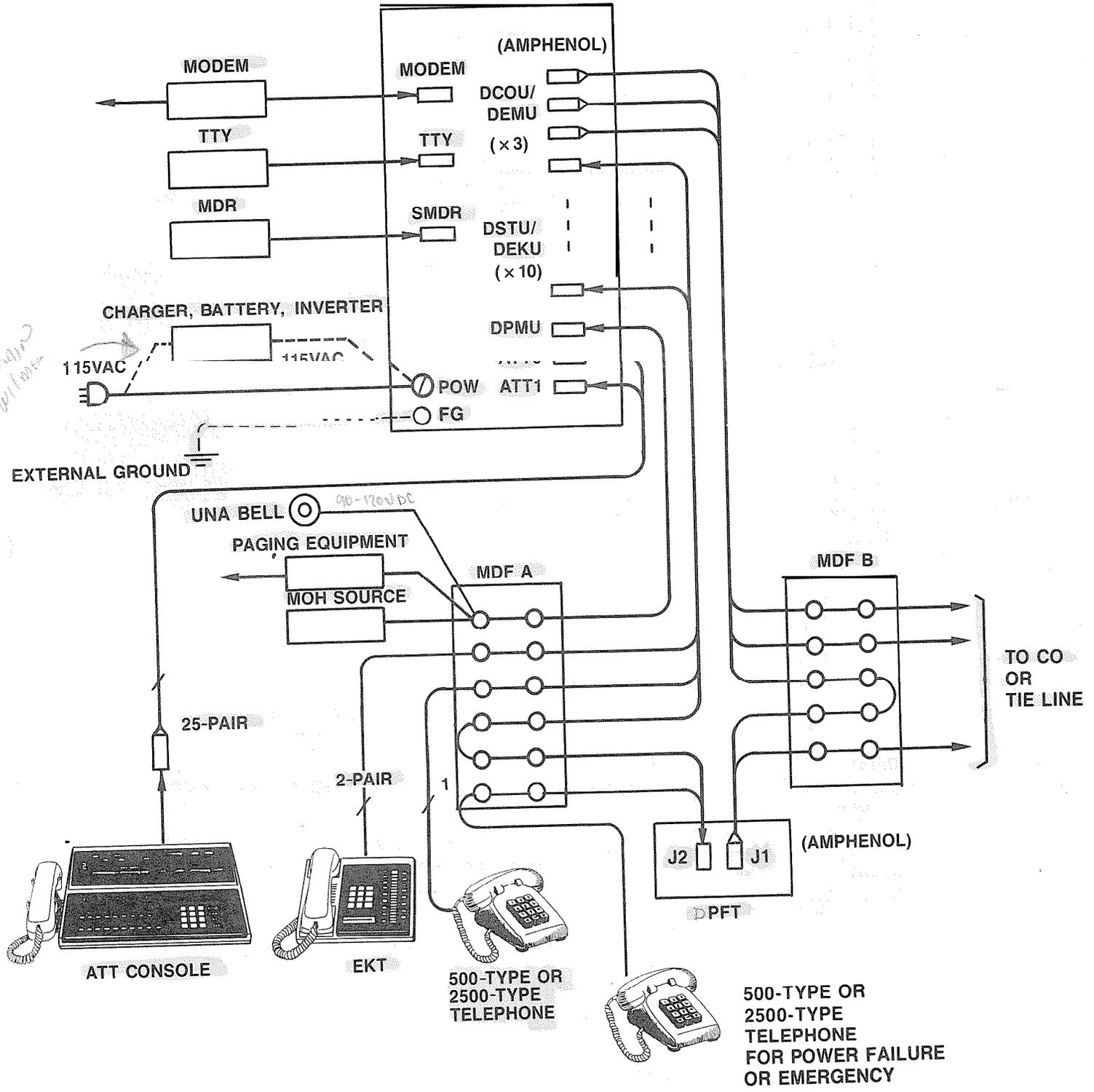


FIGURE 6—SYSTEM DIAGRAM

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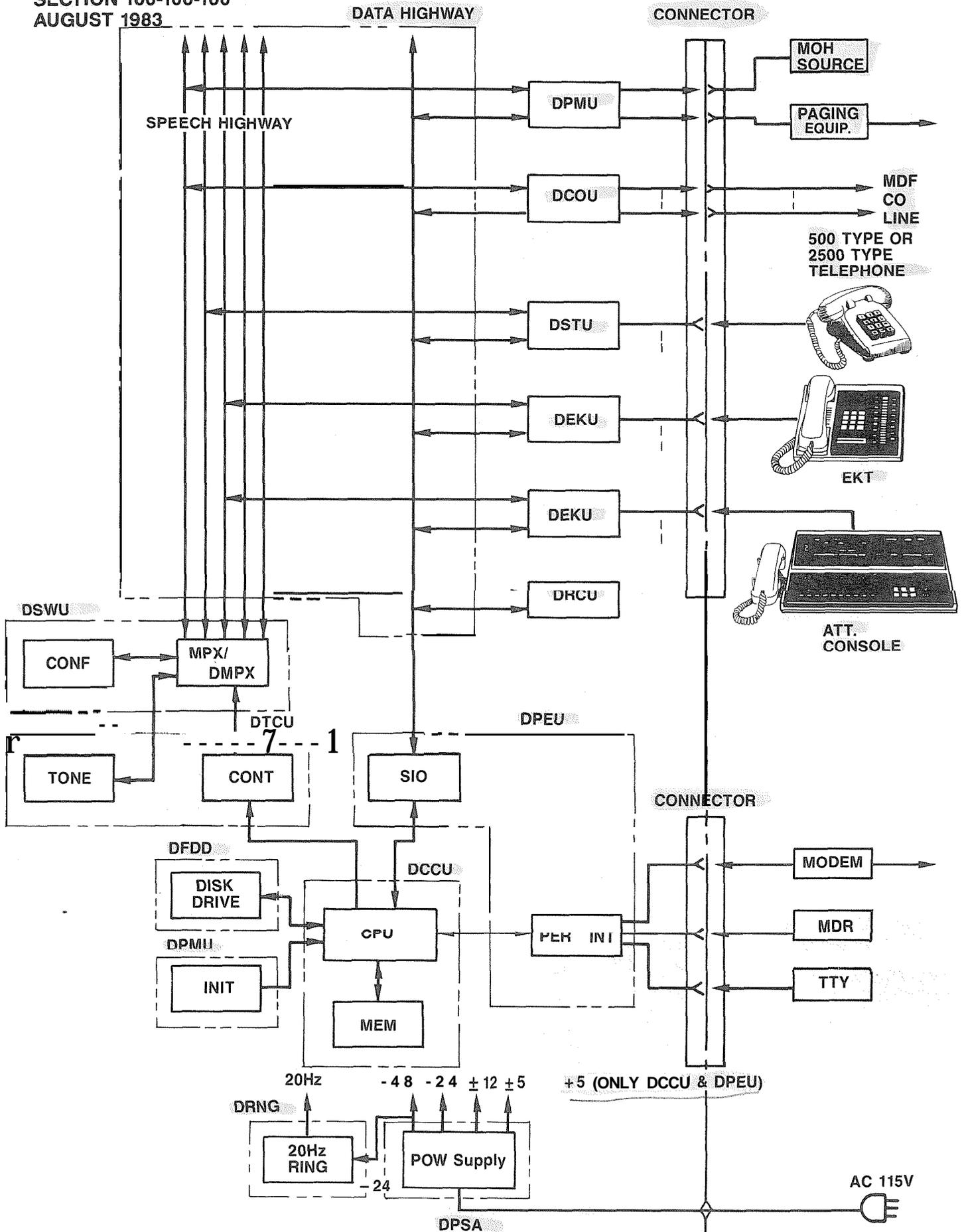


FIGURE 7 - FUNCTIONAL BLOCK DIAGRAM

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8 LEDs Count 1-4 RECORDS software ERR

- Various trunk interfaces, such as:
 - DCOU (CO trunk)
 - DEMU (tie trunk)

02.03 PERCEPTION utilizes a non-blocking, pulse code modulated (PCM), time division network consisting of six 32-time-slot PCM highways and a multiplexer circuit that performs time slot interchange, digital padding, and conferencing functions. Analog-to-digital conversion is performed on each peripheral PCB. System tones (dial, busy, etc) are stored in digital form in read-only-memory (ROM).

192 Time Slots

02.04 Central control consists primarily of a microprocessor and its associated memory. Hardware logic necessary for various system interfaces is located on the DPEU PCB; a floppy disk unit is used for secure memory storage.

03 SYSTEM CONFIGURATION

03.00 Central Equipment Cabinet

03.01 Figure 2 shows the location of the PCB mounting shelves, power supply, ringing supply, and floppy disk unit in the central equipment cabinet (DCEC). All PCBs plug in from the front of the cabinet; all external connections are made at the rear of the cabinet (Figure 3).

03.02 The DCEC is divided into four shelves, designated #1 through #4 from top to bottom.

03.03 Shelf #1 houses the DFRA subassembly containing the following equipment:

- a) Floppy Disk Drive (DFDD)—a secure storage area for system programs and customer office data.
- b) 20 Hz Ringing Supply (DRNG).

03.04 Shelf #2 houses the following PCBs (eight types) :

- a) Time Switch Unit (DSWU)—performs the time slot interchange function for the PCM switching and conferencing. Also provides digital speech path with digital padding.
- b) Time Control Unit (DTCU)—provides the timing and control for time slot switching and system tones.

c) Central Control Unit (DCCU)—contains the central processing unit and system memory; performs all system control functions.

d) Peripheral Unit (DPEU)—performs data transmission and receiving functions between station and trunk interfaces and the central control.

NOT Required for Rotary Phones

e) Receiver Unit (DRCU)—provides DTMF receivers, which are required for receiving dialing from 2500 telephones. Two types of DRCU PCBs are available: DRCU 2-4 and DRCU 2-6. The DRCU 2-4 contains four circuits and is suitable for most systems. For use in systems with extremely high outgoing traffic, the DRCU 2-6 (housing six circuits) is available. Only one DRCU per system is permitted.

Slot REC

f) Paging and Music Unit (DPMU)—interfaces with the music source (MOH) and the paging equipment. It also has the following functions:

- System program loading switch
- System initialization switch
- Attendant console power supply
- UNA signal control
- Power failure/emergency transfer unit (DPFT) control

ALL 1, 2, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z

g) CO Trunk Interface Unit (DCOU)—interfaces four CO lines to the system.

h) E&M Trunk Unit (DEMU)—connects four TIE trunks to the system.

I) DLSU TRK on 1 1 ID, 4 TRK

NO TE:

Either trunk PCB may be used at each trunk PCB slot.

03.05 Shelf #3 houses the station line PCBs. There are 15 slots, each PCB interfaces with eight stations. There are two types:

- 1) Standard Telephone Interface Unit (DSTU)
- 2) Electronic Key Telephone Interface Unit (DEKU)

03.06 Shelf #4 contains the power supply (DPSA).

03.10 Electronic Key Telephone

03.11 Two electronic key telephones are available with PERCEPTION (the same two

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EKT models are used in the Toshiba STRATA EKTS series). Each EKT is housed in an off-white, impact resistant plastic case with interchangeable colored faceplates, and is equipped with handset, dial pad, speaker, ringing volume control, speakerphone volume control, and modular handset and tail cords. In addition, each EKT has four fixed feature keys (SPKR, MUTE, CONF and HOLD) and either 10 or 20 flexible assignment keys (hence the names 10-key and 20-key). Of the four fixed keys, only the SPKR key is equipped with an LED.

03.12 The 10-key EKT has 10 flexible assignment feature keys. The 10 feature keys are all equipped with LEDs and may be assigned as Directory Number (DN) pick-ups or as access keys to any of the station custom calling features,

03.13 The expanded 20-key EKT has 10 additional keys (equipped with LEDs) that may be assigned as DN pickups or to access features.

03.14 Each EKT is supplied with a brown

faceplate but three additional colors (black, blue and wine) are available as options.

03.15 The EKT is easily wall mounted by using the optional wall mounting kit.

03.16 All PERCEPTION EKTs are fully functional speakerphones with handsfree answer-back capability,

03.20 Attendant Console

03.21 The PERCEPTION attendant console is the switched-loop type, and its housing is constructed of impact resistant, off-white plastic. The layout of the console display panel and faceplate is shown in Figure 8. A volume control for the console tone buzzer is located on the rear of the console behind the busy lamp panel. Modular jacks for the handset/headset are provided on both sides of the console. Also, the handset cradle can be mounted on either side of the console. The console display panel includes a Busy Lamp Field and the following displays: Incoming Call

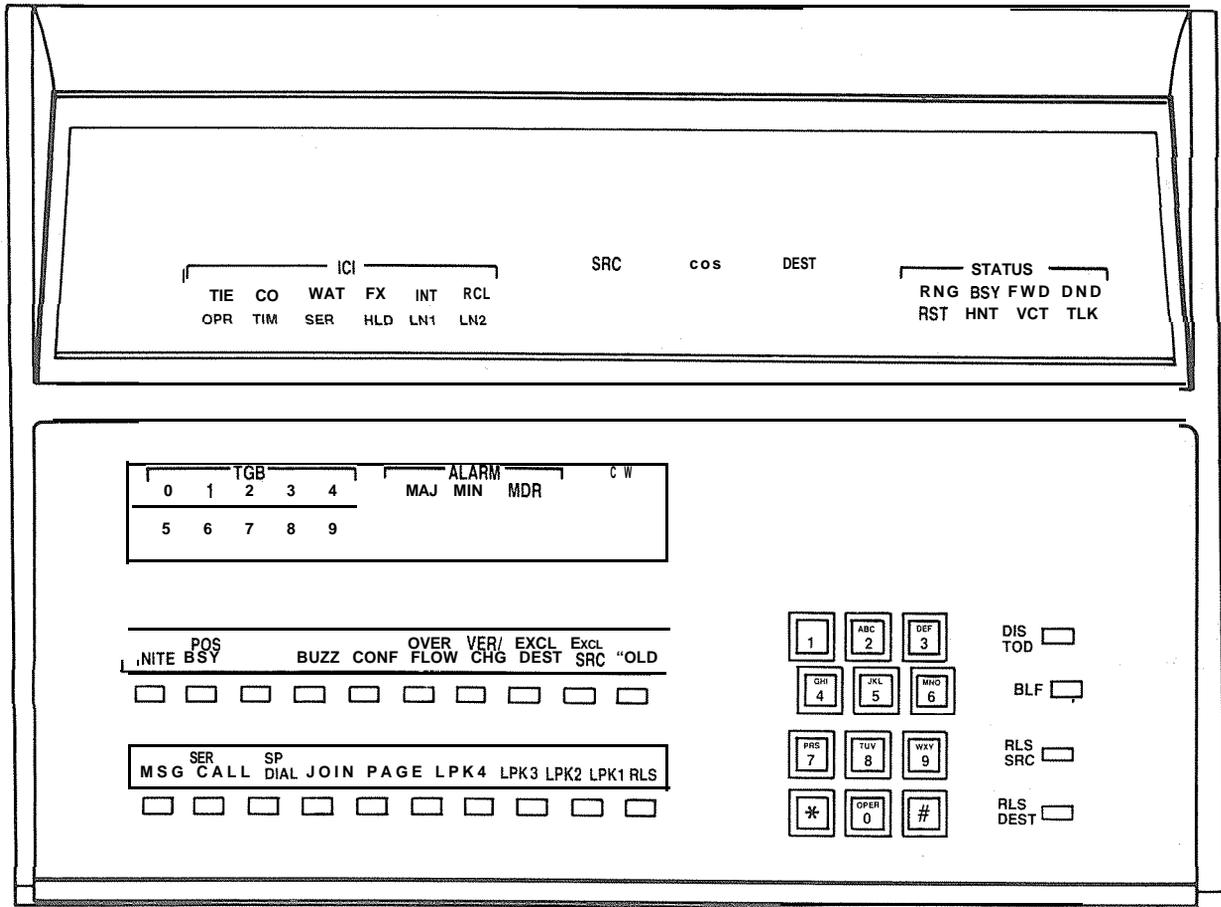


FIGURE 8 — ATTENDANT CONSOLE

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Identification, Calling Source Number, Class of Service, Call Destination Number and Call Destination Status.

03.22 The Busy Lamp Field (BLF) displays 100 2-digit numbers (00~99), and is equipped with a "hundreds group" identifier that shows which group is currently being displayed. The display alternates between groups in response to operations of the BLF key (located on the console keyboard).

03.23 Displays:

- The Incoming Call Identification (ICI) display is a backlighted panel that indicates the type of call that is currently connected to a console Loop LPK key. Twelve different displays are possible:

TIE: TIE trunk
co: CO trunk
WAT: WATS trunk
FX: Foreign exchange trunk
OPR: Dial "0" call
RCL: Recall
SER: Serial call
HLD: Held call recall
TIM: Timed reminder (Camp-on, RNA, etc.)
LN1: DID call to listed directory number 1
LN2: DID call to listed directory number 2
INT: Intercept

- The Source (SRC) display is a 3-character, 7-segment LED display that gives the attendant the number of the calling station or trunk equipment number.
- Class of Service (COS) is displayed as a 2-character, 7-segment LED display, giving the attendant the Class of Service of the calling station.
- The Destination (DEST) display is a 3-character, 7-segment LED display showing the station or trunk equipment number called by the attendant.
- The Status (STATUS) display is a backlighted panel that indicates the status of the called trunk or station. Eight different displays are possible:

RNG: Called station is ringing.
BSY: Called station is busy.

DND : Called station is in Do Not Disturb mode
FWD: Called station is forwarded to number now displayed as DEST.

RST: Attempted connection is not allowed.
HNT: Called station was busy and hunting has occurred to the number now displayed as DEST.

VCT: Called number does not exist or is disabled.

TLK: Attendant is in a voice connection with the called party.

03.24 The console keyboard design includes a display window, two horizontal rows of 10 keys each, a 12-key dial pad, and a vertical row of four keys.

- The faceplate display window houses the following displays:

- Trunk Group Busy (TGB) provides 10 numbered LEDs to indicate the status of trunk groups 0 ~9.

- ALARM LEDs for MAJOR, MINOR & MDR:

MAJOR: Alarm occurs when the system is not functional and is accompanied by an emergency transfer.

MINOR: Indicates that the system ringing power (DRNG) has failed or the system time and date was not reset following a reload or initialize.

MDR: Alarm indicates a problem with external SMDR equipment.

- Call Waiting (CW) LED indicates a call is waiting for the attendant.

- The lower horizontal row of keys are all equipped with LEDs and (reading from left to right) are labeled:

MSG : Activates the Message Waiting feature if the attendant is designated as the Message Center.

SER CALL: Activates the Serial Call feature.

SP DIAL: Activates the Speed Dial-System feature.

JOIN: Connects two parties which have reached the attendant on two different LPK keys.

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PAGE: Provides attendant with a direct, push-to-talk access to one paging zone or All Page.

LPK 1-4: The four Loop keys are used for answering and originating calls.

RLS: Releases the console from any connection.

- The upper horizontal row of keys, with the exception of the HOLD key, are all equipped with LEDs and are labeled left to right:

NITE: Activates the fixed, flexible and universal night answering features.

POS BSY: Used to "busy out" one position of a 2-console system.

SPARE: Reserved for future use.

BUZZ: Allows attendant to select whether or not signal tone will be heard during a Call Waiting condition.

CONF: Activates attendant conferencing (up to six parties including the attendant console).

OVERFLOW: Transfers waiting calls to an alternate answering point.

VER/CHG: Overrides busy station or trunk (also used to record an account number when extending a call).

EXCL DEST: Excludes destination party from a 3-way conversation.

EXCLSRC: Excludes source party from a 3-way conversation.

HOLD: Holds calls connected to Loop keys.

- The dial pad is the standard 12-key alphanumeric configuration and is used to dial both internal and outgoing calls from the console.

- The four keys in the vertical row on the right of the console are not equipped with LEDs and are labeled top to bottom:

DIS TOD: Displays time and date from

system clock (while being displayed the clock can be corrected).

BLF: Used to alternate between the "hundreds groups" displayed on the console.

RLS SRC: Disconnects the source party from a Loop key.

R LS DEST: Disconnects destination party from a Loop key.

03.25 A volume control for the console tone signal is located on the rear of the console below the Busy Lamp Field housing.

03.26 The console may be used with either a handset or headset, which may be plugged in on either side of the unit. Also, the handset cradle may be mounted on either side of the console.

03.27 Two switches are located on the underside of the console. These switches are for emergency use only and are labeled as follows:

EMT: The Emergency Transfer switch allows the attendant to set the EMT circuits manually in the event of a system malfunction.

INT: The Initialize switch resets the system logic in the event of a system malfunction.

03.30 Power Failure/Emergency Transfer Unit (DPFT)

03.31 The DPFT is mounted external to the DCEC (typically adjacent to the MDF) and is controlled via the DPMU PCB. This unit will connect eight conventional telephones to eight preselected trunks. When a reset signal is given to the DPTU active connections will be protected and finally reset when they become idle.

04 INSTALLATION and MAINTENANCE

04.01 All connections to the Central Equipment Cabinet (DCEC) are made via plug-in connector cables. Complete installation instructions, including connection diagrams, programming instructions, and operational procedures are included in the relevant sections of the Installation and Maintenance manual.

04.02 PERCEPTION maintenance is aided by software diagnostics, which assist in pin-pointing the fault to a particular printed circuit board or subassembly. A system malfunction is corrected by replacing a PCB or other subassembly.

05 FEATURE DESCRIPTION

05.00 Standard Features

05.01 This section contains a brief description of the PERCEPTION features listed earlier in Tables B and C along with some associated operating procedures. Detailed operation instructions can be found in the appropriate sections of the system documentation. Software for the features listed as standard is present in all PERCEPTION systems.

05.02 System Features:

Access to Paging:

Allows stations to access and use a customer-supplied amplifier for voice paging. The system provides five paging zones, which may be accessed individually or all together.

* CCSA Access:

Accesses a Common Control Switching Arrangement (CCSA) network for network inward dialing to the system, direct outward dialing to the CCSA network, and other features similar to those provided on the public exchange network.

Class of Service Restrictions:

The system provides 16 classes of service which may be assigned to stations to allow or deny access to features. 0-15

Code Restriction-3-digit:

Stations may be restricted from toll calls - a toll call is detected by system analysis of the first three digits dialed after the trunk access code.

Console-less Operation:

The system may be operated without a console, all incoming trunk calls are handled using the Plight Service features.

Data Transmission:

PERCEPTION is suitable for voice-band data applications and is compatible with conventional modems. , 300
9.6K

Distinctive Ringing:

Three types of ringing are provided to distinguish among station-to-station calls, trunk-to-station calls and automatic callbacks.

Flexible Numbering:

Station directory numbers, as well as trunk and special service access codes, may be assigned in accordance with the numbering plan desired by the customer.

immediate Ringing:

Ringing occurs at a called station as soon as it is determined to be idle. There is no delay caused by waiting for the ringing cycle.

Intercept:

Calls that cannot be completed because of system restrictions or dialing errors are intercepted and routed to either the attendant or to overflow tone depending on the type of call.

Line Lockout:

Stations that do not hang up at the end of a call, or that go off-hook and do not complete dialing within a predetermined length of time, are released from the common equipment.

Multiple Console Operation:

Two attendant consoles,, may be used with PERCEPTION. AT 0 (ATT)

Multiple Trunk Groups:

PERCEPTION can accommodate up to 16 trunk groups.

Music-on-hold and Camp-on:

A standard interface allows connection to a customer-provided music source. When music is provided in the system, it is connected to all calls placed in the hold or camp-on condition by a station or the attendant.

Night Service-Fixed:

When the system is in the night service mode, incoming trunk calls are routed to preselected stations.

Night Service-Flexible:

Allows the attendant to assign trunks to stations for night service. During night service, incoming calls on these trunks will be routed to stations assigned by the attendant.

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Night Service-Universal:

Trunks not otherwise assigned by Fixed or Flexible Night Service will ring a common bell or chime to indicate an incoming call. Any station can answer the call by dialing a specific access code.

Remote Access to Services:

Allows a user outside the system to access the system services via an exchange network connection. The user dials a preselected DDD number to connect to the system and then dials a 3-digit authorization code. The user may then make any call as if the user were a system station. This service is provided only when signalling is on a DTMF basis.

Remote Administration/Maintenance:

System will interface with a standard modem to allow administration and diagnostic software routines to be accessed from a software location.

Rotary Dial Compatibility:

The system is compatible with conventional rotary dial telephones.

Route Advance:

Routes outgoing calls over alternate facilities when the first trunk choice is busy.

*** Station Set Mix:**

The same directory number can appear simultaneously on a mixture of 500/2500 telephones and EKTs. A maximum of eight appearances is possible for a given directory number (DN).

Tandem Switching:

Trunk-to-trunk connections through the system are possible without attendant assistance.

no amplification

Tenant Service:

PERCEPTION can be used to serve two tenants.

TRK 5, NS NO.

TIE Trunks:

TIE Trunk PCBs are available to allow connections to other PBXs.

Toll Restriction:

Stations may be restricted from making toll calls. The system detects toll calls by recognizing "0" or "1" dialed as the first or second digit following the trunk access code.

Tone Dialing:

When equipped with DTMF receivers (DRCU PCB), PERCEPTION is compatible with 2500 telephones.

Tone-to-dial Pulse Conversion:

DTMF signals from 2500 telephones are automatically converted to rotary dial pulses for transmission to a rotary dial central office.

Traffic Measurement:

The system provides traffic information, such as peg counts and usage, to a terminal or printer.

Uniform Distribution Wiring:

Since PERCEPTION employs a 4-wire electronic key telephone, conventional key equipment is not required. It is possible, therefore, to prewire an installation site with 2- or 3-pair cable without concern for the future configuration of the system.

Variable Timeout:

The timeout intervals associated with most features are variable by system programming.

05.03 Station Features:

NO TE:

The following station features are available with either conventional telephones or EKTs.

Automatic Callback:

Permits a calling station user, upon encountering a busy directory number or trunk access code, to operate a dedicated key or dial an access code which causes the system to monitor the called number and alert the calling station when the number becomes idle.

Call Forward-All Calls:

Allows calls destined for a station to be routed to another station or trunk. The activating station may be used to originate calls while the feature is activated.

Call Forward-No Answer:

Any call which is not answered after the end of a specific time period is automatically routed to the next DN in the hunting sequence specified for the called DN.

time period

able

Call Pickup-Directed:

A station user can answer calls ringing at another station by operating the dedicated key

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or dialing a special pickup code and then dialing the ringing station's number.

Call Pickup-Group:

A station user can operate a dedicated key or dial a special code to answer an incoming call ringing on another station within the same pickup group.

Call Waiting:

During an established call, a tone signal informs the station user that a trunk call is waiting to be connected. The called station can accept the waiting call and then talk alternately to either party.

Conference-3-party with Transfer:

Stations may consult with another party (station or trunk) while on any type of call. The original party is held during this time and is excluded from the conversation. The station user may transfer the held party to the consulted party or the consulted party may be added to the original conversation to form a S-party conference.

Direct Outward Dialing:

Station users can gain access to trunks by dialing an access code.

Do Not Disturb:

Allows a station to give a busy indication to callers when the user does not wish to be disturbed.

Hold-All Calls:

A station user may hold any call in progress by depressing the **HOLD** key or by dialing a special hold code.

Manual Line Service

Manual or Hot Line service is provided to 500/2500 telephones only. When the station user comes off-hook the call is directed to the attendant or to a preselected DN without dialing.

Meet-me Page:

Allows the station user to remotely access a call which was "parked" for him by the attendant. *I call per 10.005.01*

Message Waiting:

The designated Message Center can indicate to a station user that a message is waiting. The

indication is a ring every 20 minutes or an EKT can be equipped with a **MSG** key/LED.

Override:

Enables a station user (after reaching a busy number) to override the busy condition and enter the existing conversation on a bridged basis. A warning tone notifies the existing conversation that a third party is about to enter the conversation.

Private CO Line Services:

Permits the appearance of a CO line on an EKT key or as the number of a 500/2500 telephone. Upon going off-hook, the station is connected to the CO by a dedicated trunk circuit inside the PERCEPTION system. Incoming calls to that trunk circuit ring that station directly.

Remote Retrieval of Held Calls:

Calls that have been placed on hold by a station can be retrieved by a different station with the Call Pick-up-Directed feature.

Repeat Last Number Dialed:

The system automatically stores the last number dialed by each station. The number can be redialed by dialing an access code or operating the dedicated key.

Speed Dialing:

Enables a station user to dial telephone numbers using abbreviated codes. Two types of Speed Dialing are provided:

Speed Dial-Station allows the user to maintain a separate IO-number directory which may be shared by any number of stations. *ES CONTROLLED MS*

Speed Dial-System allows the station users or attendant to access a system directory of up to 90 numbers.

Station Hunting-Circular:

Hunting occurs over all station directory numbers in the group, beginning with the called number. The call is completed to the first idle station directory number in the group. The directory numbers may be arranged in either consecutive or nonconsecutive order.

Station Hunting-Distributed:

This is a special circular hunt that provides

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a degree of call distribution. Hunting occurs over all stations in the group in ascending order by DN. The starting point for each hunt is incremented for each call regardless of which DN is dialed. Five groups are possible with a maximum of eight members per group.

Station Hunting-Secretarial:

Any directory number can be used as the last number in two or more station hunting groups.

Station Hunting-Terminal:

Hunting always starts with the called directory number and ends with the last directory number in the prearranged group; however, the call is completed to the first idle number. The hunting sequence can be either consecutive or nonconsecutive.

Trunk-to-trunk Connections:

A station user can use the Conference/Transfer feature to connect two trunks.

Uninterrupted Line Connection:

Prevents the insertion of "Warning Tones" on any given station line. This feature is intended to provide security for the line(s) used for data transmission, although other applications are also possible.

NOTE:

The following station features are available on the EKT. *only*

Automatic Dialing:

One or more keys may be assigned as automatic dialing keys with each key controlling a single telephone number. Operation of each key, after receiving dial tone, causes the stored number to be outpulsed.

Automatic Line Preference:

Automatically connects the EKT to its Prime Directory Number (PDN) upon going off-hook. *KEY ID*

Call Status Indication:

LEDs associated with DN keys provide a visual indication of the status of the call on that DN by various illumination states.

Common Audible Signalling:

Permits tone ringing at a station when an incoming call is presented on any DN appearing at that station.

End-to-end Signalling:

The EKT is able to transmit DTMF tones through the system to the distant end anytime following normal address dialing.

Handsfree Answerback with Speaker Cut-off:

All EKTs are equipped for handsfree answerback on voice-announced calls. The EKT may also be assigned a Speaker Cut-off *SCO* key. Activating *SCO* temporarily defeats handsfree answerback and forces all calls to ring the station.

Handsfree Monitoring:

The handset can go back on-hook for handsfree monitoring of an on-hold condition.

I-hold Indication: *1 flash*

A distinctive LED flash is provided to indicate the call that is on-hold at a given EKT.

i - use I n d i c a t i o n :

A distinctive LED is provided to indicate which Directory Number is currently in use at a given EKT.

Manual Signalling:

A station user may signal a predesignated station by operating a dedicated key on the EKT.

Modular Cords:

All EKTs are equipped with modular line and handset cords.

Multiple Appearance Directory Number:

This type of DN has key appearances on more than one station. Calls can be originated or received at any appearance.

Non-locking Keys:

All EKT keys are non-locking. I-use and I-hold indications are provided on DN LEDs to prevent confusion over which DN is active on a given EKT.

On-hook Dialing:

Permits the EKT user to dial without lifting the handset.

Prime Directory Number:

Each EKT has a Prime Directory Number (PDN) that is selected automatically when the station user goes off-hook (Automatic Line Preference). *KE, E*

*250
AAA
15 10
AAA
KEYS IN SYSTEM
KEY ID
KEY ID*

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Privacy:

Prevents the station user from entering an existing conversation. Privacy is the inherent mode of operation for all calls in PERCEPTION. The only exception is where bridging is specifically provided by use of the EKT/500 Station Set Mix feature.

Privacy Release:

By operating the Privacy Release key (if equipped), an EKT user can permit up to four more stations to enter a conversation on a Multiple Appearance DN.

Push-button Dialing:

All EKTs are equipped with push-button dial pads which generate digital messages to be translated by the system CPU. The buttons are arranged in the same fashion as a conventional DTMF dial pad.

Push-button/key Access to Features:

The EKT allows simplified access to sophisticated system features via dedicated keys.

Release:

A Release key can be provided on the EKT which allows the user to disconnect from an existing call without having to go on-hook or operate the hookswitch.

Speaker/Amplifier:

Each EKT is equipped with a speaker and amplifier to produce the ringing tone, buzz tone, warning tone and voice-page signals.

Speakerphone:

All EKTs are fully functional speakerphones.

Tone Buzzing:

- Alerts the EKT user via a buzz tone through the speaker, used for warning tones.

Tone Ringing:

An adjustable volume ringing tone via the EKT speaker is used to alert the user to an incoming call.

Voice Paging:

By depressing an assigned key, the calling EKT user causes a single tone burst to be sounded at the called EKT. Following the tone, the caller can speak and be heard through the called EKT's speaker. The called station user answers via handsfree answerback by speaking

directly toward the EKT. If SCO is activated, the call must be answered via the handset.

Volume Control:

The EKT has two volume controls: one varies the volume level of the ringing tone, buzzing tone and voice page, the other controls speaker-phone volume.

05.04 Attendant Console Features:

Alarm Lamps:

The attendant console is equipped with LEDs to indicate Major or Minor system alarms. An MDR alarm is also provided for use with an external Message Detail Recorder.

Attendant Camp-on with Indication:

Enables an incoming trunk call, which has been extended by the attendant to a busy station, to be held until the called station becomes idle. The busy station hears a tone to indicate the waiting call. When the called station becomes idle it rings with the waiting call. Camp-on and Call Waiting are mutually exclusive.

Attendant Conference:

The attendant has the ability to establish a conference with up to six parties (including the attendant console) or five parties with the console not included.

Attendant Emergency Transfer Control:

A switch is provided on the bottom of the console to manually control the optional Emergency Transfer Unit. The switch initiates transfer action for all emergency lines and trunks regardless of the system operational status.

Attendant Initialize:

A switch is provided on the bottom of the console to initialize the system logic. This switch is for emergency use.

Attendant Recall:

A station user may recall the attendant to any 2-party conference-

Busy Lamp Field:

The PERCEPTION attendant console is equipped with a 100-LED panel (displaying busy DN's) and a 7-segment display, under the control of the BLF key, indicating which

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of the two possible hundreds group is being displayed.

Call Waiting Lamp: *001 300 1117*
Indicates calls are waiting in the attendant queue.

Digital Information Display:
Displays five specific call details:

ICI: Incoming Call Identification
SRC: Source or calling party's number
cos: Class of Service of calling party
DEST: Destination or called party's number
STATUS: Status of called party

Direct Access to Paging:
The PAGE key on the attendant console provides the operator with direct, push-to-talk access to one paging zone or to all paging zones.

Incoming Call Identification:
The ICI section of the console display provides the attendant with the identity of each type of incoming call.

Individual Trunk Access:
The attendant can access each trunk individually with the VER/CHG key.

Future
"Interposition Call Transfer:
In a 2-console system, an attendant at one position can transfer a call to the other position for handling.

*Interposition Calling:
Each attendant can call the other for consultation.

• Lockout:
The attendant is denied the ability to re-enter an established connection held on the console unless recalled by the station user.

Night Service Control:
The console operator has the ability to activate and de-activate Night Service and to post trunks to specific night stations.

Non-delayed Operation:
The console operator can make a call for a station user (who has reached the console by dialing "0") without requiring the station user to go on-hook.

Overflow Facility:
When activated by the dedicated key, the overflow facility automatically transfers any incoming calls which remain unanswered by the attendant for a specified time period to a preassigned station or the Universal Night Answer facility.

Position Busy: *NO 1 TO*
In a 2-console system, either of the consoles can be taken out of service by using POS BSY key. If both consoles are "made busy", the system automatically switches to Night Service.

Push-button Dialing:
The attendant uses a push-button dial pad to establish all calls.

Secrecy:
Secrecy automatically splits the Source party from the connection when the attendant starts to extend the call or answers an attendant recall. The attendant can void the split manually.

Serial Call:
If an incoming trunk caller wishes to be connected to several stations in sequence, the attendant can arrange the trunk to recall the console as each station disconnects.

Speed Dialing:
A dedicated key provides access to the Speed Dialing-System feature for the attendant. The attendant also has the ability to reprogram the Speed Dial-System directory.

Splitting:
The attendant is able to consult privately with either party of a call that appear on the console.

Station Number Display:
The SRC and DEST displays show the identity of any station connected to the console.

Station Verification:
The attendant has the ability to establish a voice connection with a busy DN. During the connection, periodic bursts of tone alert the conversation to the attendant's presence.

Switched Loop Termination:
Each call requiring attendant assistance is automatically switched to one of four Loop keys.

Through Dialing:

At the attendant's discretion, station users may complete dialing after the attendant selects the trunk facility on attendant-handled outgoing calls.

Timed Reminders-Variable:

The time-out intervals (that determine the recall of the attendant to the calling party) are adjustable by system programming.

Time of Day Display, Set, Reset:

The time and date from the system's real-time clock can be displayed and reset at the attendant console. ()

Trunk Group Access Control:

The attendant can restrict dial-access by all station lines to individual trunk groups. Stations attempting to dial-access the restricted groups will be routed to the attendant for call completion.

Trunk Group Busy Indication:

The console is equipped with LEDs showing an "all trunks busy" condition for up to ten trunk groups.

Trunk Equipment Number Display:

The SRC and DEST displays show the identity of any trunk connected to the console.

Trunk-to-trunk Connections:

The attendant has the ability to connect an incoming trunk to an outgoing trunk through the console.

Trunk Verification:

The attendant has the ability to establish a voice connection with an apparently busy trunk or special service access line to determine if it is in working order. When the attendant is connected to a busy trunk, periodic bursts of tone alert the conversation to the attendant's presence.

05.10 Optional Features

05.11 System Features

Power Failure/Emergency Transfer:

If a control or power failure causes loss of call processing, selected trunk lines are automatically connected directly to preselected standard telephones. Optional hardware is required.

***Direct Inward Dialing (DID):**

Stations are assigned 7-digit listed directory numbers and can be called directly from the central office via direct-in-dial trunks.

- **Call Forward-Busy:** Incoming DID or CCSA calls are automatically routed to the attendant when the called station line is busy.
- **Multiple Listed Directory Number (LDN):** Allows two LDNs to be used for DID purposes on one installation. Each LDN can be assigned a unique Incoming Call Identification (ICI) on the attendant console.

***Least Cost Routing:**

Provides automatic routing over alternate customer facilities based on the dialed number and a customer-specified selection algorithm.

Station Message Detail Recording:

Provides PERCEPTION with the capability to record (on magnetic tape or hard copy device) the message data (such as call duration, digits dialed, and originating station) of calls made to and from the system.

Reserve Power:

The primary power supply is designed to operate from 115 VAC, which is provided by an optional charger/inverter and batteries mounted outside the equipment cabinet.

05.12 Station Features-EKT

20-key E KT:

The PERCEPTION EKT is available in an expanded 20-key version.

Wall Mount:

The EKT can be easily converted for wall mounting with an optional kit.

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01 GENERAL

01.01 This section describes the installation procedures necessary to ensure proper operation of the PERCEPTION system.

02 UNPACKING and INSPECTION

02.01 When the PERCEPTION system is received, examine all packages and make careful note of any visible damage. If any damage is found, bring it to the attention of the delivery carrier and make the proper claims.

02.02 Check the PERCEPTION system against the purchase order and packing slip. If it is determined that equipment is missing, contact your supplier immediately.

02.03 After unpacking (before the installation is started), inspect all equipment for damage. If any damage is detected, contact your supplier immediately.

CAUTION:

When handling (installing, removing, examining, etc.) PERCEPTION printed circuit boards (PCBs), do not touch the back (soldered) side or edge connector. Always hold the PCB by its edge whenever handling it.

03 PACKING and STORAGE

03.01 When storing or shipping PCBs, be sure they are packed in their original anti-static bags for protection against static discharge.

04

CENTRAL EQUIPMENT CABINET

LOCATION REQUIREMENTS

04.00 Commercial Power

04.01 The PERCEPTION system requires a power source of 90 ~ 125 VAC, 50/60 Hz, and has a maximum power consumption of 500 watts. The AC power outlet should be grounded and separately fused.

04.10 Reserve Power

04.11 If reserve power is required, it must be provided by a commercially-available uninterruptable power source system (battery, charger,

inverter).

04.20 Environmental Requirements

04.21 Humidity at the central equipment cabinet (DCEC) location should be within 20 ~ 80% (without condensation), and the temperature should be relatively constant within a range of 32 ~ 104° F (0 ~ 40° C). Exposure to dust and airborne chemicals should be avoided.

04.30 Equipment Room Recommendations

04.31 The minimum floor and maintenance space required for installation of the DCEC is shown in Figure 1.

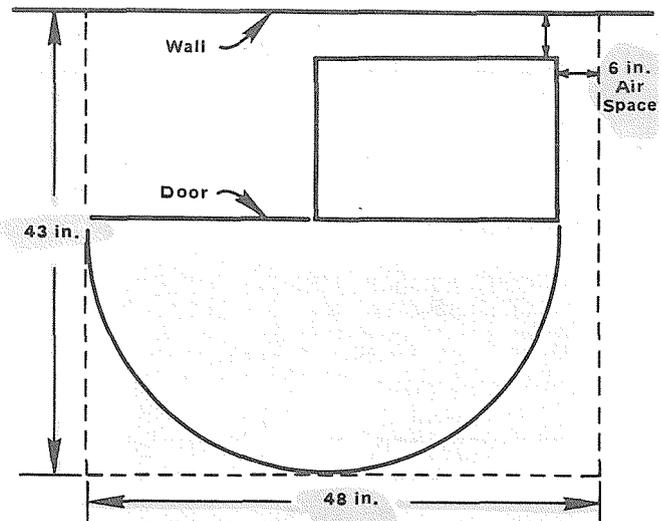


FIGURE 1—MINIMUM DCEC FLOOR SPACE

04.32 The following requirements must be considered when selecting a location for the DCEC:

The location **MUST BE**:

- Dry and clean
- Well ventilated
- Well lit
- Easily accessible

The location **MUST NOT BE**:

- Subject to extreme heat or cold
- Subject to corrosive fumes
- Next to a reproducing or copying machine

04.40 Cabling Consideration

04.41 The operating loop limits of the station equipment must be considered when choosing the location of the DCEC. The limit for each type of instrument:

- EKT (10- or 20-key)—1000 cable feet (24 AWG)

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- Conventional telephone-500 ohms (including telephone)
- Attendant Console-1000 cable feet (24 AWG)

04.42 Acceptable cable for all telephones is 22 or 24 AWG twisted pair inside telephone station cable, jacketed but not shielded. Two twisted pairs are required for an EKT and one pair for a conventional telephone.

04.43 A 25-pair cable is required for the attendant console. The console is equipped with a male 50-pin amphenol-type connector.

04.50 Grounding

04.51 The PERCEPTION system requires a solid earth ground on the ground connection block located behind the connector panel at the lower rear of the DCEC (Figure 2). Failure to provide such a ground may lead to confusing trouble symptoms in the system and, in extreme cases, circuit board failure.

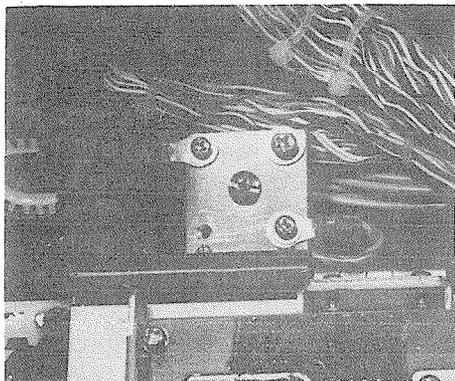


FIGURE 2— GROUND CONNECTION BLOCK

- In most installations, within the continental United States, the ground provided by the "third wire ground"-at the commercial power outlet will be satisfactory for all PERCEPTION requirements. However, in a small percentage of installations this ground may be installed incorrectly. Therefore, prior to installing a PERCEPTION system, the third wire ground must be tested for continuity by either measuring the resistance between the 3rd prong terminal (earth ground) and a metal cold water pipe (maximum: 1 ohm), or by using a commercially-available earth ground indicator. If neither procedure is possible, then the test procedures outlined in Paragraph **04.52** should be performed.

WARNING!:

Hazardous voltage that may cause death or injury is exposed during the following test. Use great care when working with AC power line voltage.

04.52 Test Procedure

1. Obtain a suitable voltmeter and set it for a possible reading of up to 250 VAC.
2. Connect the meter probes between the two main AC voltage points on the wall outlet. The reading obtained should be 90 ~ 130 VAC.
3. Move one of the meter probes to the third prong terminal (GND). Either the same reading or a reading of 0 volts should be obtained.
4. If the reading is 0V, leave one probe on the GND terminal and move the other probe to the second voltage terminal. If a reading of 0V is obtained on both voltage terminals, the outlet is not properly grounded. Omit steps 5 ~ 7, and proceed directly to step 8.
5. If a reading of 0V on one terminal and a reading of 90 ~ 130 VAC on the other terminal is not obtained, the outlet is not properly grounded. Omit steps 6 & 7, and proceed directly to step 8.
6. If a reading of 0V on one terminal and a reading of 90 ~ 130 VAC on the other terminal is obtained, remove both probes from the outlet.
7. Set the meter on the "OHMS/Rx1" scale, place one probe on the GND terminal and the other probe on the terminal which gave a reading of 0V. A reading of less than 1 ohm should be obtained. If a reading of less than 1 ohm is not obtained, the outlet is not adequately grounded.
8. If the above tests show that the outlet is not properly grounded, that condition should be corrected (per Article 250 of the National Electrical Code) by a qualified electrician before the PERCEPTION system is connected.

05

CENTRAL EQUIPMENT CABINET ASSEMBLY

- 05.01** The central equipment cabinet (DCEC)

consists of a single, free-standing cabinet mounted on casters for easy movement. Assembly of the DCEC consists of installing the disk drive/ringing supply subassembly (DFRA), the power supply assembly (DPSA), and the various printed circuit boards (PCBs).

05.10 DFRA Installation

05.14 The DFRA subassembly, housing the Disk Drive (DFDD) and the ringing supply (DRGU), is mounted on the top shelf of the DCEC. To install the DFRA:

- a) Loosen the 6 screws securing the rear cover of the DCEC and lift the cover off while allowing the screw heads to clear the "keyhole" provided for each screw (Figure 3).
- b) Remove and save the 4 screws from the front of the DCEC top shelf (Figure 4).
- c) Unpack the DFRA and inspect it carefully for any visible damage.
- d) The DFRA is shipped with all cables attached but the connectors may have worked loose during shipping-check each connector carefully to be sure it is seated properly.
- e) Slide the DFRA into place from the front of the DCEC. Take care that its cables are not damaged and do not cause damage.
- f) Attach all DFRA cables to the DCEC motherboard as shown in Figure 5. The cable connectors are all different sizes and each one is

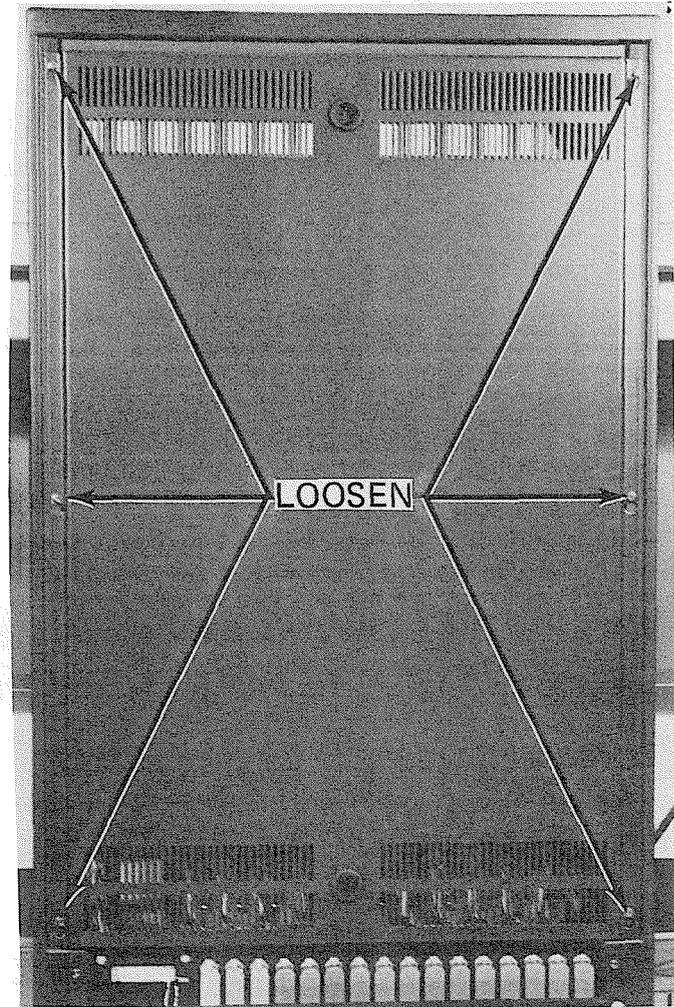


FIGURE 3—REMOVING DCEC REAR COVER

marked to designate its associated jack on the motherboard.

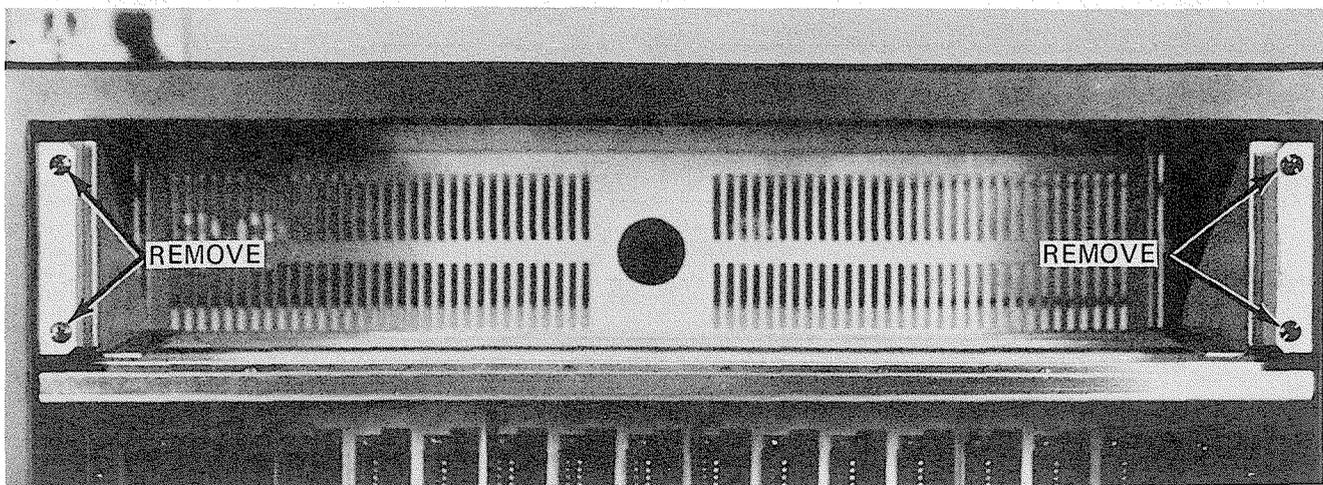


FIGURE 4—DCEC TOP SHELF

- g) Secure the DFRA to the front of the DCEC using the 4 screws removed earlier.
- h) Replace the DCEC rear cover and tighten the 6 screws.

05.20 Power Supply Installation

05.21 The DPSA (Figures 6 and 7) consists of a single metal chassis. Circuit breakers and LED indicators for each output, along with an AC ON/OFF switch, are located on the front panel. An AC power cord, green ground wire and two connectors are found on the rear of the unit. The two connectors are labeled J201 and J202 and will receive the two mating plugs in the DCEC.

05.22 Before the DPSA is installed in the DCEC, it should be bench tested in the following manner:

- a) Start with DPSA power switch off.
- b) Plug AC power cord into AC outlet.
- c) Momentarily depress each DPSA circuit breaker to be certain that it is not tripped.
- d) Place the DPSA power switch in the **ON** position.
- e) Verify that all DPSA power indicator LEDs are on. If any failures are noted, replace the DPSA.
- f) The DPSA outputs are checked at the two connectors (J201 and J202) on the rear (Figure 8). Each pin is plainly marked as to what voltage should be found there. Using a digital voltmeter (DVM) adjusted to the appropriate range, measure between the corresponding

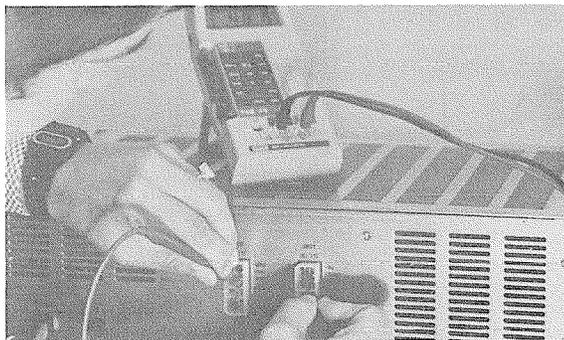


FIGURE 8—VOLTMETER CHECK

ground pins and the various voltage outputs. (Refer to Figure 9; use -24GND pin for testing the -24V pins, +5GND pin for +5V pins, etc.) Verify that the voltages are within the following tolerances:

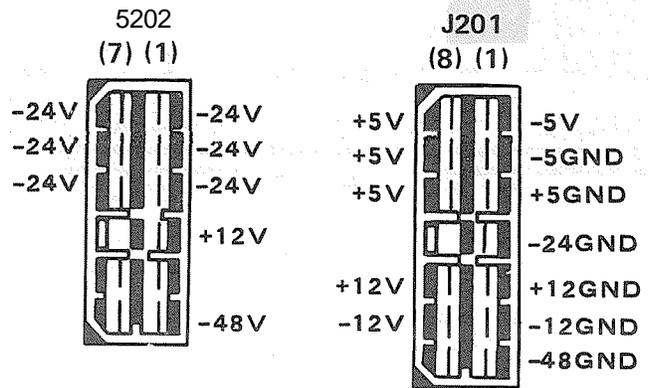


FIGURE 9—DPSA PINS

RANGE (VDC)	NOMINAL (VDC)
-47.52 w48.96	-48
-23.52 ~ 24.96	-24
+11.76 ~ 12.48	+12
-11.76 ~ 12.48	-12
+5.0 ~ 5.4	+5
-5.0 ~ 5.4	-5

If any failures are noted, replace the DPSA.

05.23 The DPSA is installed in the bottom shelf of the DCEC (Figure 10) as follows:

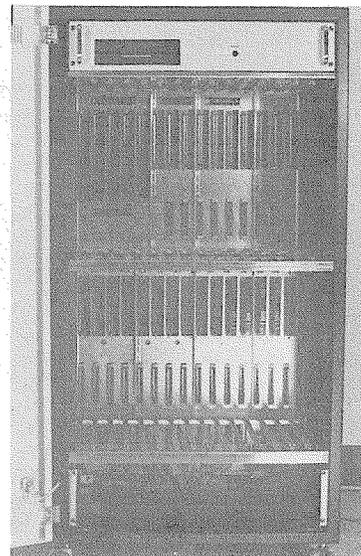


FIGURE 10—DPSA LOCATION

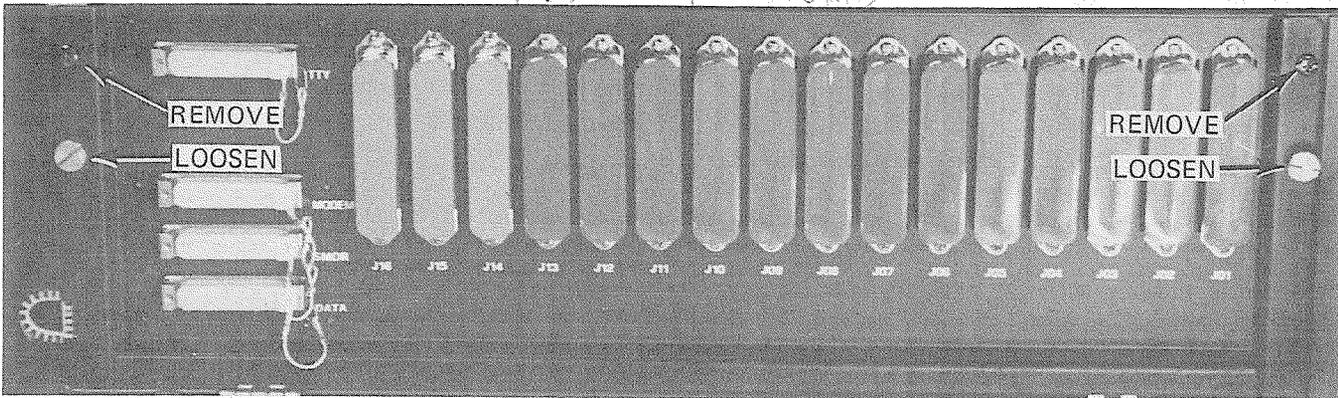


FIGURE 11—DCEC CONNECTOR PANEL

- a) Remove and save the two screws located in the upper corners of the DCEC connector panel (Figure 11).
- b) Loosen the thumb screws that are provided for securing the connector locking bar until the connector panel can move freely (Figure 11).
- c) The connector panel is hinged on the bottom; lower it carefully to expose the internal wiring.
- d) Locate the two white plastic connectors intended for the DPSA. Remove the tape securing their cables to the bottom of the DCEC and ensure that they are positioned so as not to be damaged or cause damage when the DPSA slides into place (Figure 12).
- e) Remove and save the four DPSA mounting screws from the front of the DCEC (Figure 13).
- f) Slide the DPSA in from the front of the DCEC (Figure 14). Take care that the AC power cord passes through the rear opening and that the ground wire is not caught behind the unit.
- g) Make certain that the DPSA is not crushing any wires and then secure the front panel to the DCEC using the four screws removed earlier.
- h) Plug the two connectors into J201 and J202 on the rear of the DPSA and connect the ground wire to the terminal in the upper right corner of the ground connection block (Figure 15).

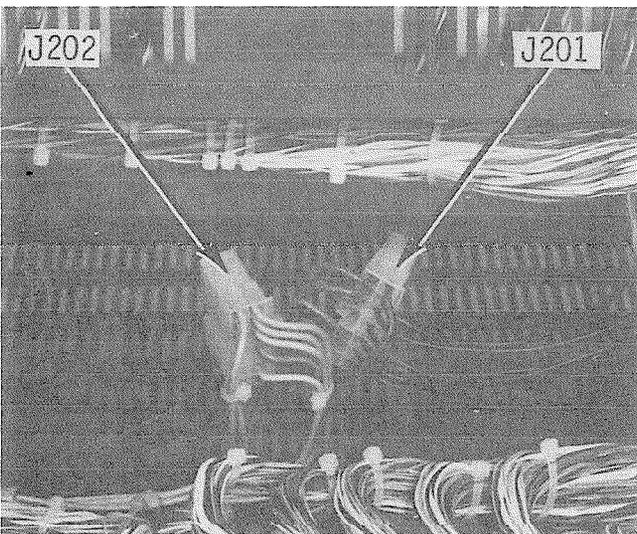


FIGURE 12—DPSA CABLES

- i) Route the DPSA AC power cord through the cable restraint and out through the grommeted slot in the left rear of the DCEC and carefully close the connector panel (Figure 16).
- j) Secure the connector panel with the two screws removed earlier. Do not install the connector locking bar until the cables are in place.

05.30 Printed Circuit Board Description

05.31 Ten different types of PCBs are used in the PERCEPTION DCEC. They are:

- DSWU (Time Switch Unit)-one per system:
Performs the time slot interchange function for the PCM switching, digital padding and conferencing.
- DTCU (Time Control Unit)-one per system:
Provides the timing and control for the time

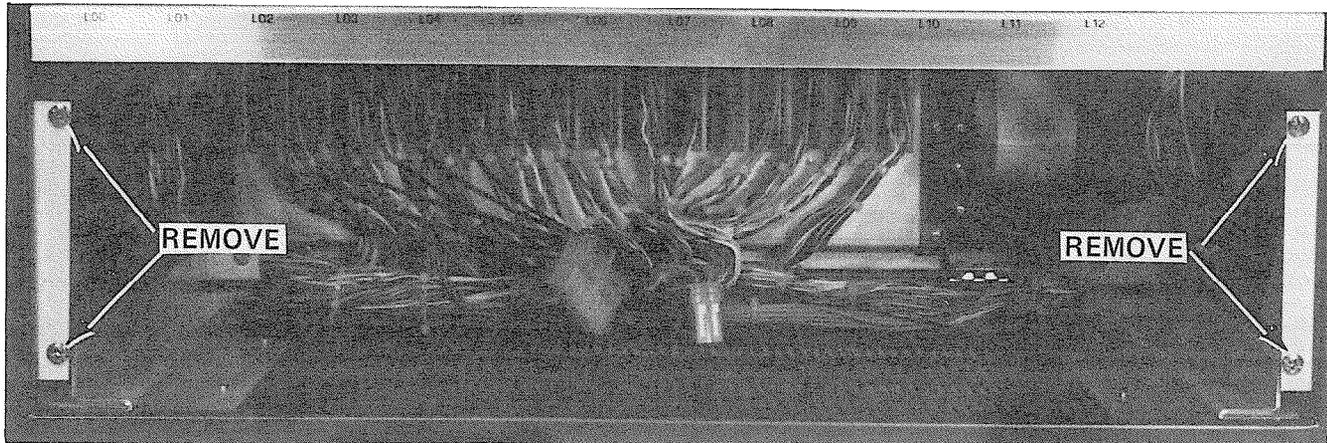


FIGURE 13—DPSA MOUNTING SCREWS

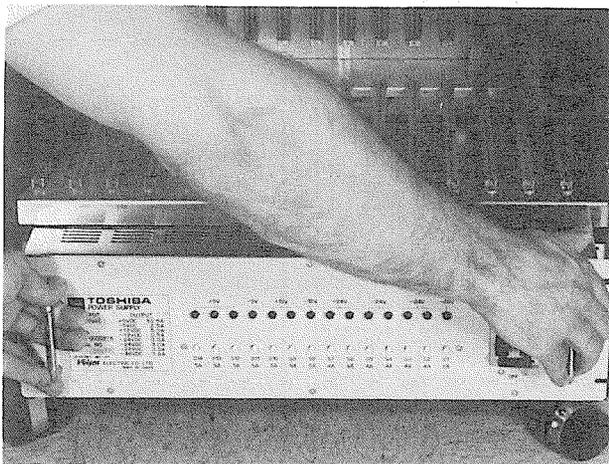


FIGURE 14—SLIDING DPSA INTO PLACE

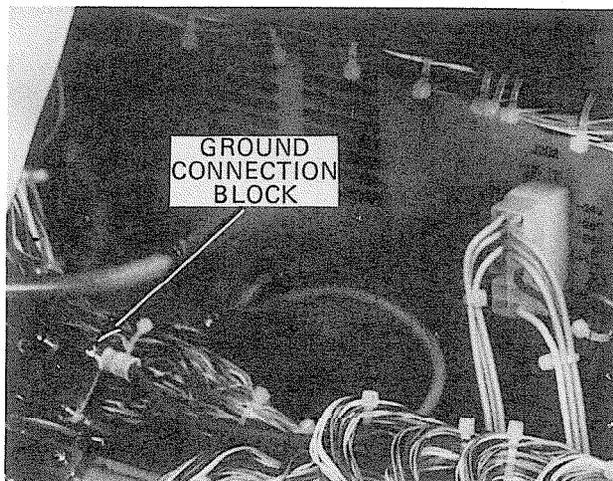


FIGURE 15—DPSA GROUND CONNECTION slot switching on the DSWU PCB and supplies the system tones.

DCCU (Central Control Unit)—one per system:
Contains the system central processor and

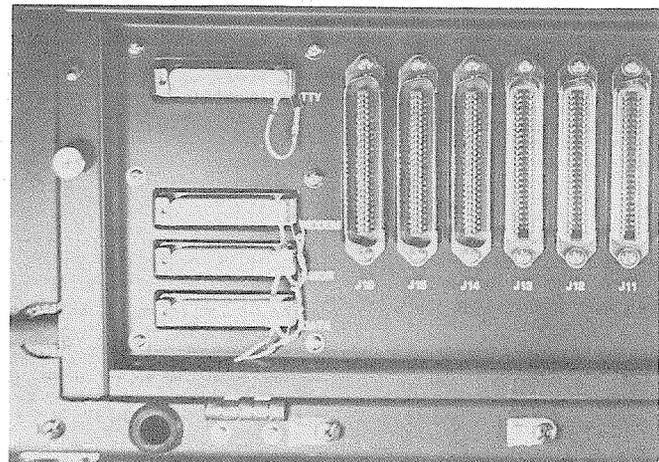


FIGURE 16—CLOSED CONNECTOR PANEL main memory. Performs all system control functions.

DPEU (Peripheral Equipment Interface Unit)—one per system:

Performs data transmission and receiving functions between the central control, and all peripheral equipment, including:

- Station PCBs
- Trunk PCBs
- Modem interface
- TTY interface
- SMDR interface

D RCU (Receiver Unit)—one per system:

Optional PCB provides DTMF receivers, which are required for receiving dialing from 2500 telephones. Two types of DRCU PCBs are available: DRCU 2-4 and DRCU 2-6. The DRCU 2-4 contains four circuits and is suitable for most systems. For use in systems with extremely high outgoing traffic, the DRCU

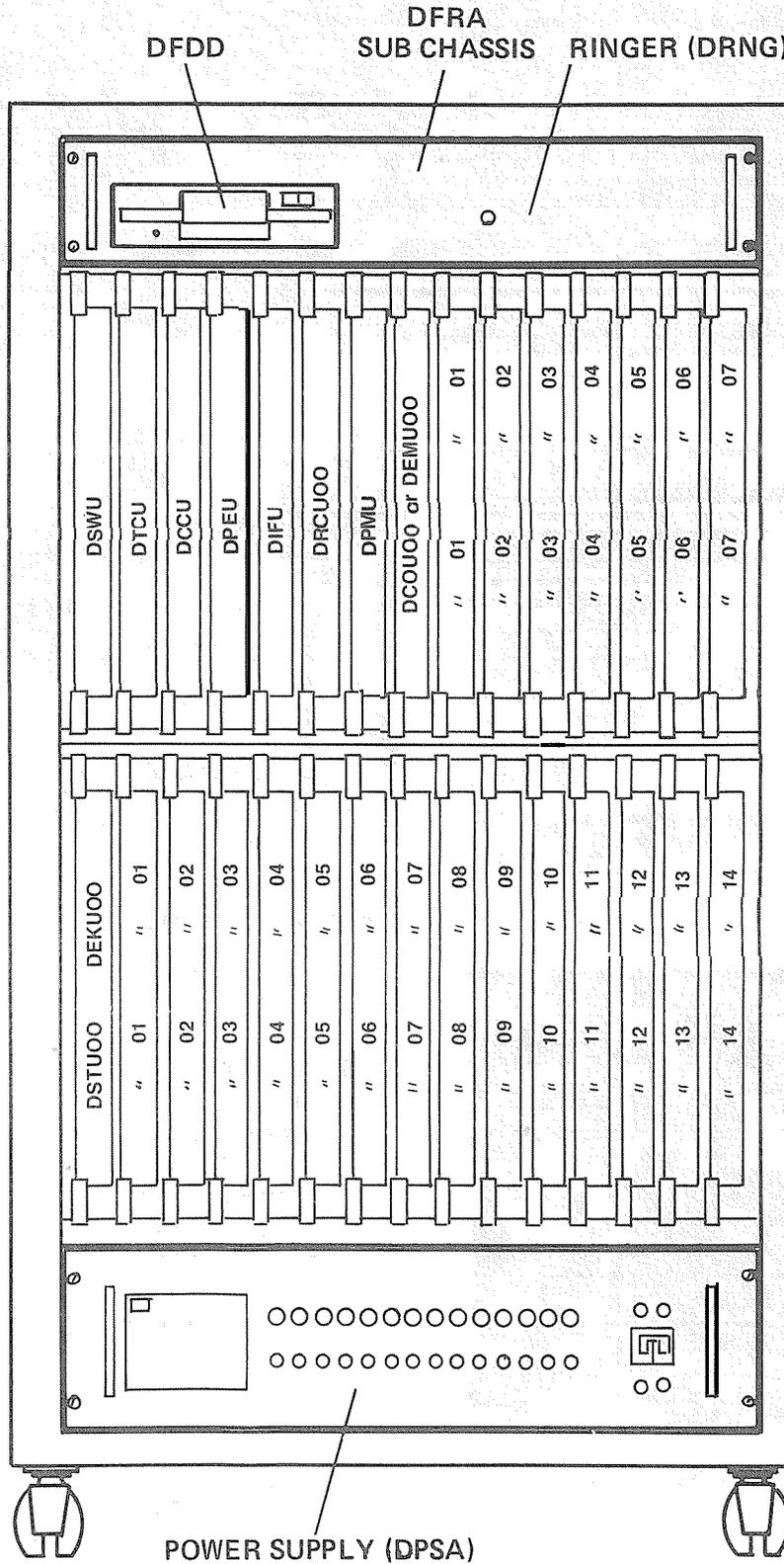


FIGURE 17 - DCEC INTERIOR

2-6 (housing six circuits) is available. Only one DRCU per system is permitted.

DPMU (Paging and Music-on-hold Unit)-one per system:

This PCB is required in every system, and performs several miscellaneous functions.

- Paging interface and control
- Music-on-hold interface
- Power Failure/Emergency transfer control
- UNA signal control
- Attendant Console power transmission
- Houses program load and initialize control switches

DCOU (Central Office Trunk Unit):

Each DCOU PCB interfaces four CO/FX/WATS lines to the system. It provides the following options on a per-circuit basis.

- Loop or Ground Start
- 600- or 900-ohm termination

A maximum of eight (8) DCOU PCBs (32 trunk lines) can be installed in a system (see DEMU).

DEMU (E & M Trunk Unit):

Each DEMU PCB interfaces four E & M Tie trunks to the system. The DEMU provides a "Type 1" 2-wire E & M interface with the option of a 600- or 900-ohm voice line termination, and, under software control, can be

operated in an Immediate Start, Delay Dial, or Wink Start mode. Each DEMU occupies a DCOU position and, therefore, a maximum of eight may be installed in a system.

DEKU (Electronic Key Telephone Unit):

Interfaces eight EKTs to the system. It is also used as the attendant console interface. Each attendant console utilizes one specific EKT circuit.

- ATT #0-PCB position LOO circuit #1
- ATT #1-PCB position L12 circuit #1

If that console is not used, a normal EKT can be connected to that circuit. A maximum of fifteen (15) DEKU or DSTU PCBs (120 stations) may be installed in the system.

DSTU (Standard Telephone Unit) :

Interfaces eight conventional telephones (DTMF or rotary dial) to the system. A maximum of fifteen (15) DSTU or DEKU PCBs (120 stations) may be installed in the system.

05.40 Printed Circuit Board Installation

05.41 Install the DSWU, DTCU, DCCU, DPEU, DRCU and DPMU in their proper positions per Figure 17. There are no options to select on these PCBs; however, there are plug verifications to be made on the DTCU, DCCU and DPEU boards. Refer to Figures 18, 19 and 20 and verify that the connection plugs are in place at the locations indicated prior to installation.

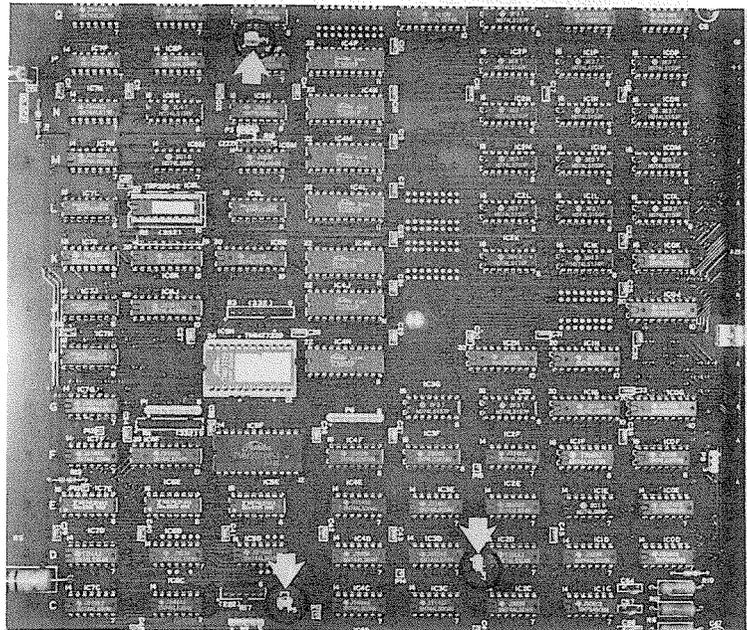


FIGURE 18-DTCU PCB

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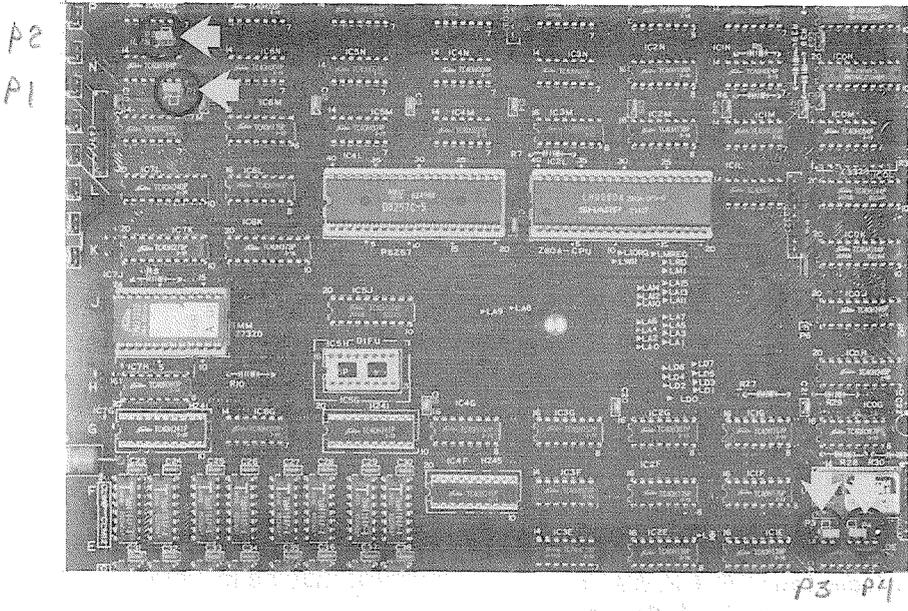


FIGURE 19-DCCU PCB

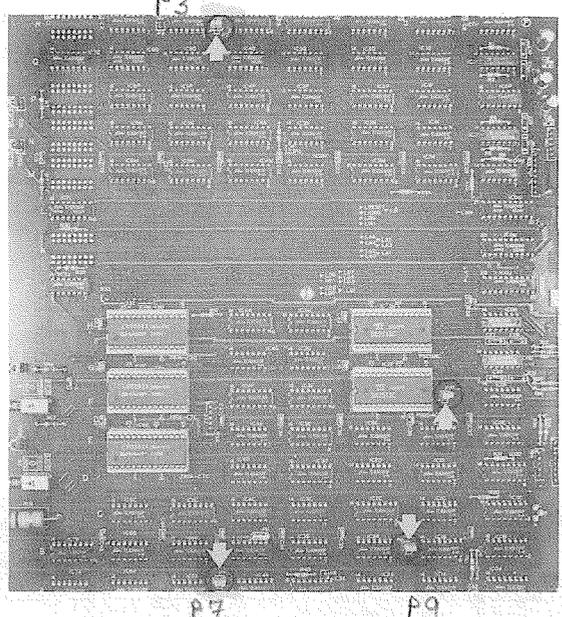


FIGURE 20-DPEU PCB

05.42 DCOU PCBs have Ground/Loop Start and 600/900-ohm termination options that must be selected before they are installed:

a) Ground/Loop Start selections are made individually for each of the four circuits using the strapping terminals (Figure 21).

- T B 102—Circuit 1
- T B 202—Circuit 2
- T B 302—Circuit 3
- T B 402—Circuit 4

b) The strapping terminal consists of five pins labeled A, B, C, D, and E, and an insulated

shorting bar that can connect any one pair of adjacent pins. Select the desired option according to the following table. (Note; the table is printed on each DCOU PCB for reference.)

	<u>OPTION</u>	<u>STRAP PINS</u>
GROUND START	NO EXTEND	D-E
	EXTEND	B-C
LOOP START	NORMAL	C-D
	REVERSE	A-B

c) The GROUND START "EXTEND/NO EX-

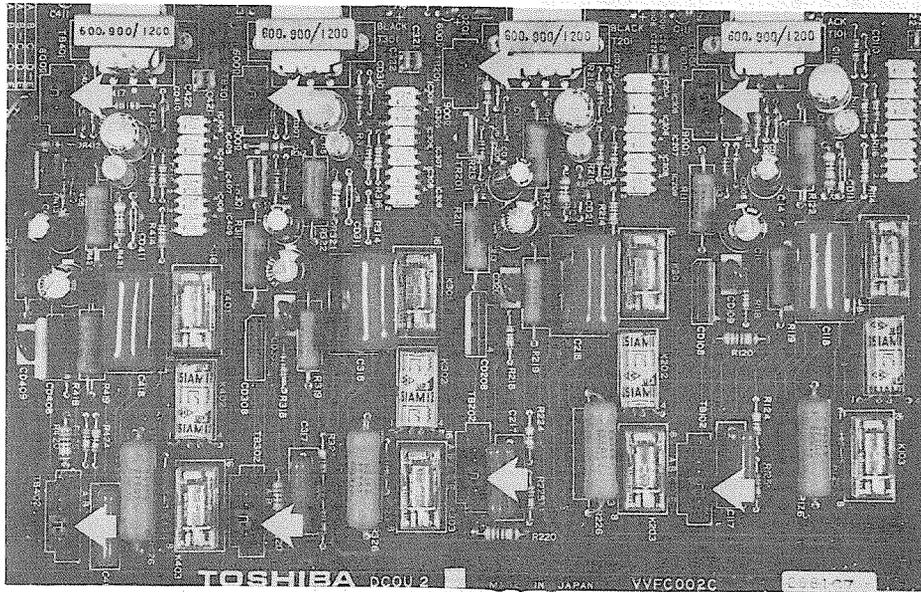


FIGURE 21—DCOU PCB

TEND” option refers to the use of “loop extenders” on long CO lines.

- If a battery boost is used on the trunk line, select “EXTEND”—otherwise, “NO EXTEND” should be selected.
- d) The LOOP START “NORMAL/REVERSE” option refers to the system’s ability to detect a pre-ring supervision signal in the form of a battery polarity reversal on the CO line TIP & RING.
- If “NORMAL” is selected, the system will not be sensitive to CO line polarity.
 - If “REVERSE” is selected, the CO circuit will be “made busy” when the CO reverses polarity prior to ringing on an incoming call.
- e) 600/900-ohm termination selections are made on an individual circuit basis using the strapping terminals (Figure 21).

TB 101 -Circuit 1
TB 201 -Circuit 2
TB 301 -Circuit 3
TB 401 -Circuit 4

- f) The strapping terminals consist of three pins and an insulated shorting bar capable of connecting two adjacent pins.
- g) Determine the proper impedance for the trunk

line to be used, and then make the selection with the shorting bar.

- Connect the center pin to the outer pin labeled either “600” or “900”.
- h) Install the DCOU PCB(s) (one for each group of four circuits) in the slots designated TOO through TO7 on the DCEC upper shelf (Figure 17).

05.43 DEMU PCBs have 600/900-ohm voice line termination selections that must be made before they are installed:

- a) The selections are made on an individual circuit basis using the strapping terminals (Figure 22):

TB 101 -Circuit 1
TB 201 -Circuit 2
TB 301 -Circuit 3
TB 401 -Circuit 4

- b) The strapping terminals consist of three pins and an insulated shorting bar capable of connecting two adjacent pins.
- c) Determine the proper impedance for the trunk lines to be used and make the selection with the shorting bar.
- Connect the center pin to the outer pin labeled either “600” or “900”.

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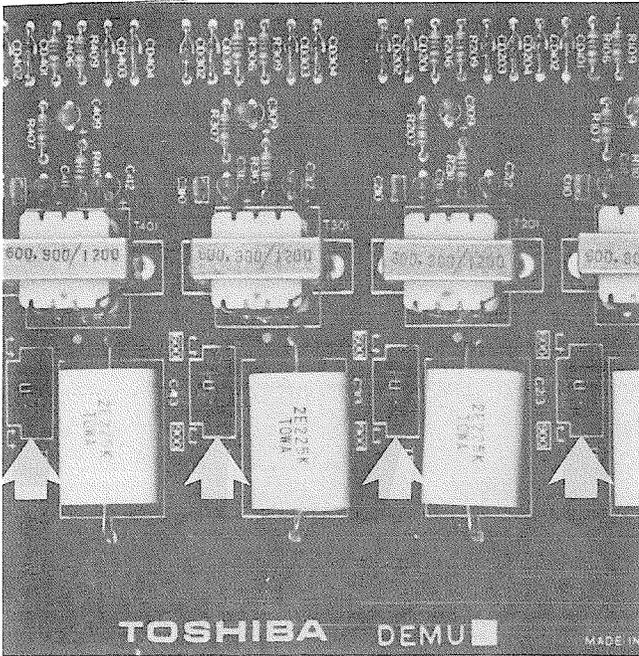


FIGURE 22—DEMU PCB

- d) Install the DEMU PCB(s) (one for each group of four circuits) in the slots designated T00 through T07 on the DCEC upper shelf (Figure 17).

NO 7-E:

The combined total of DCOU and DEMU PCBs cannot exceed eight.

05.44 DEKU PCBs are installed in locations L00 through L14 on the lower shelf of the DCEC at the rate of one PCB for each group of eight

EKTs. If an attendant console is to be installed, it must be included in the EKT count. A DEKU PCB must be used in the L00 position when Attendant Console #0 is used and in the L12 position for Attendant Console #1. Other DEKU positions are flexible.

05.45 DSTU PCBs are installed in locations L00 through L14 on the lower shelf of the DCEC at the rate of one PCB for each group of eight conventional telephones to be used.

NOTE:

The combined total of DEKU and DSTU PCBs cannot exceed 15.

06 MDF ARRANGEMENT

06.01 All connections from the DCEC to external equipment, such as trunks, station equipment, etc. are made via a customer-provided main distribution frame (MDF).

06.02 A typical layout for a PERCEPTION MDF is shown in Figure 24. Cables with amphenol-type connectors are attached to the connector panel of the DCEC and secured with the connector locking bar (Figure 23). Plastic cable clamps are provided along the base of the DCEC to secure the cables. The opposite ends of the cables are then terminated on "66"-type quickconnect terminal blocks. Split blocks with bridging clips should be used to allow for fault isolation. Connect each cable from the DCEC to one side of the block, external equipment cables to the other side, and use bridging clips to make the connections.

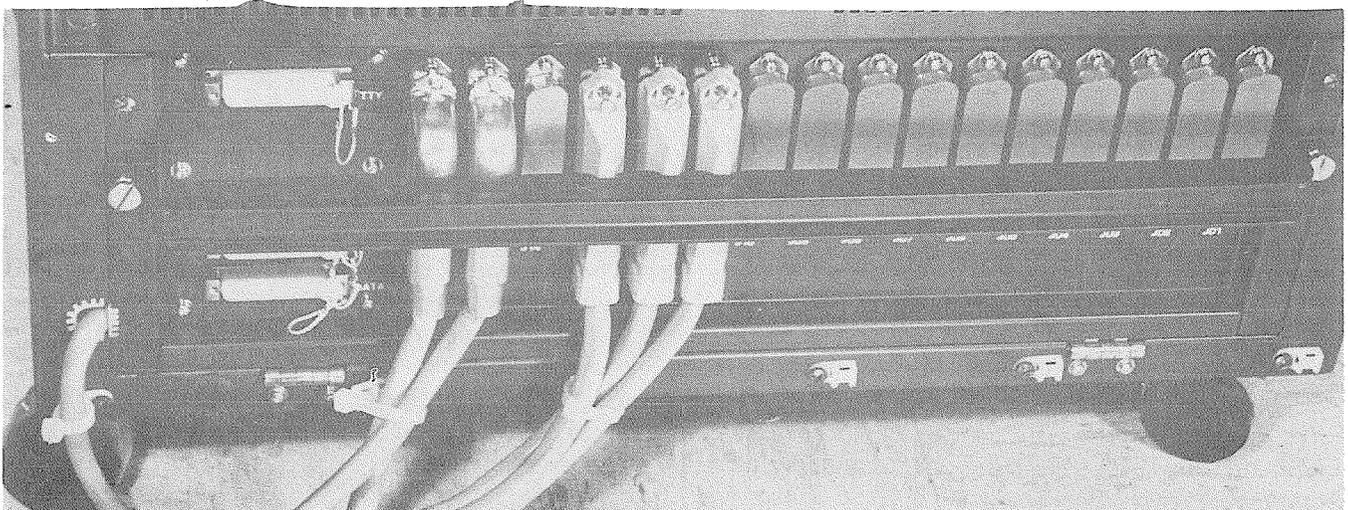


FIGURE 23—DCEC REAR CONNECTOR PANEL

PERCEPTION CENTRAL EQUIPMENT CABINET

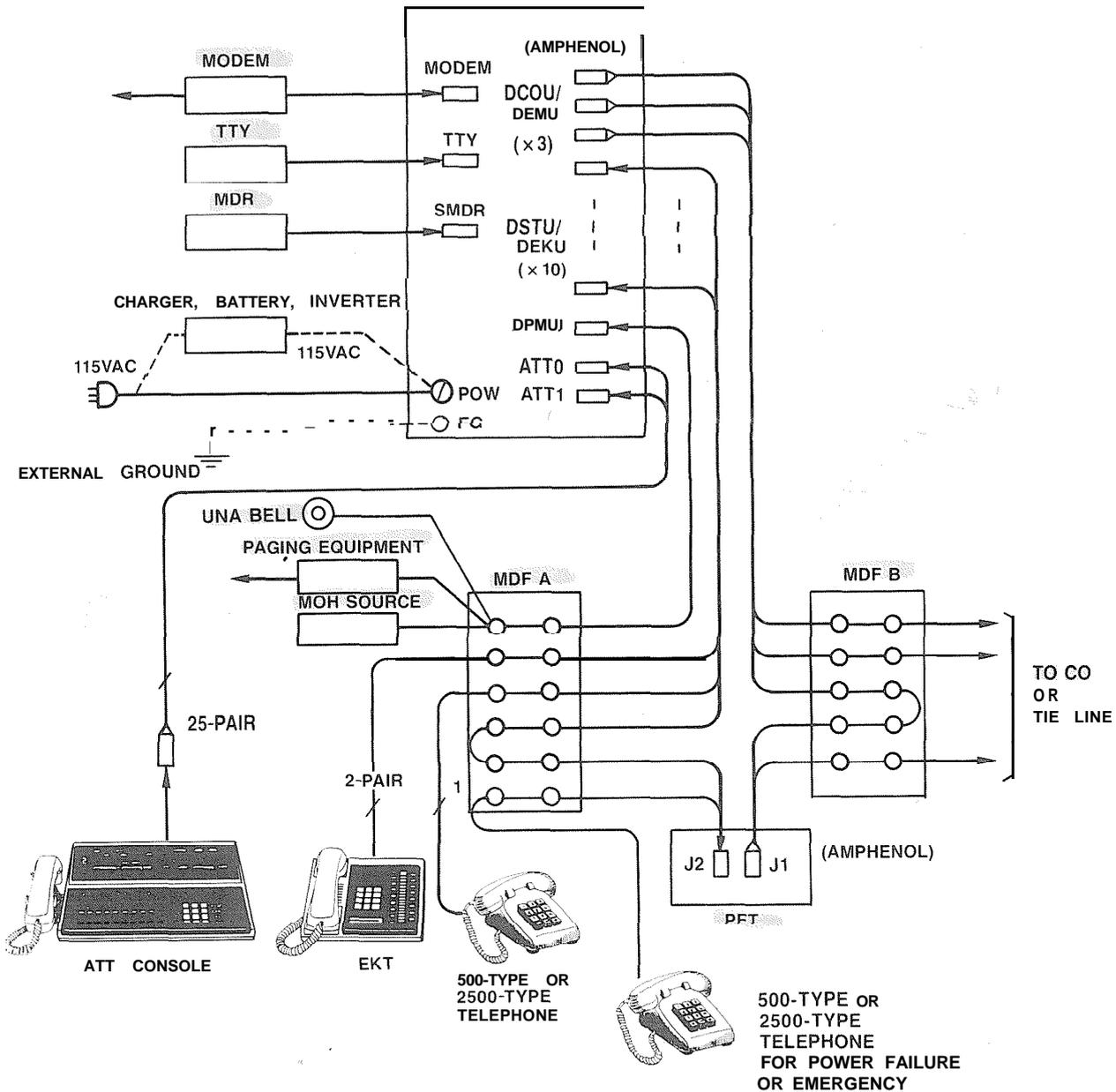


FIGURE 24—MAIN DISTRIBUTION FRAME

06.03 FCC regulations prohibit unregistered equipment from being terminated on the same block as trunk lines. It is good practice to separate trunk lines and all other equipment.

07 CABLE CONNECTIONS

07.01 A listing of connector cables required for the PERCEPTION system is shown in Table A.

07.02 All connections to the system are made

on the connector panel at the lower rear of the DCEC and on the Power Failure Transfer Unit. Cables with standard amphenol-type connectors are used for everything except the TTY, SMD R and MODEM terminals.

07.03 Detailed connection information for each cable is shown in Tables B through S.

IMPORTANT:
Note that station and trunk connections are identified only by the PCB location and cir-

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cuit number on that PCB. These numbers combine to form a Port Number and will be used in the programming section as the station's main identity when directory number and features are assigned.

08

PERIPHERAL EQUIPMENT INSTALLATION

08.00 Electronic Key Telephone Connection

- a) Find a station Port Number as follows:

PCB Location	Circuit on PCB	Port No.
LOO ~ L14	1 ~ 8	
EX. LO1	3	LO13

- b) Find a trunk Port Number as follows:

PCB Location	Circuit on PCB	Port No.
T00 ~ T07	1 ~ 4	
EX. TO2	4	TO24

08.01 See the DEKT Program in Section 100-1 00-300, Programming, for inputting information concerning the various EKTs. The system must be told which type of EKT (10- or 20-key), and what key assignment is required.

08.02 EKTs are connected to the MDF via standard twisted pair jacketed telephone cable. To accommodate the EKT modular line cord, terminate the cable in a modular station connector block at the station location. The standard modular

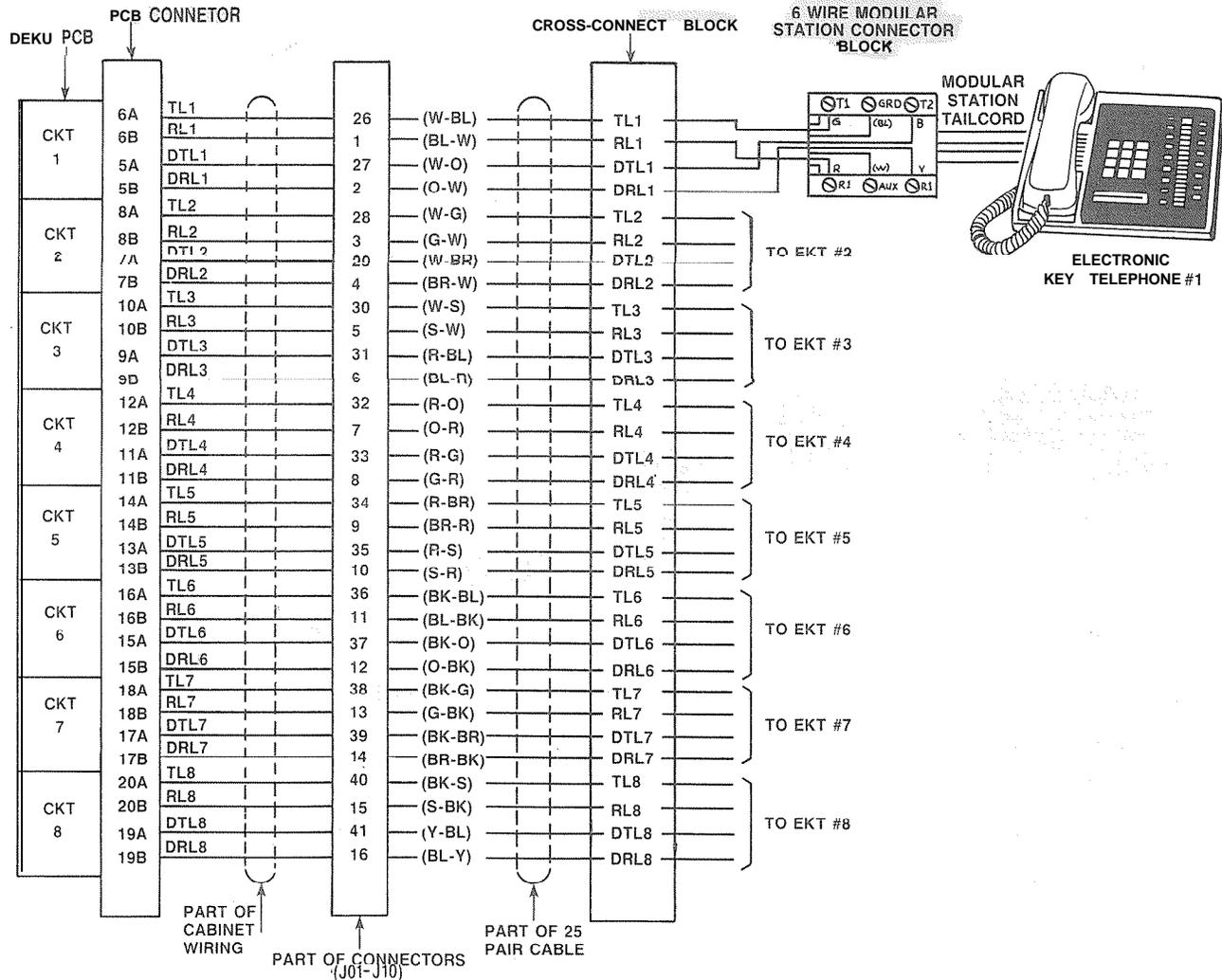


FIGURE 25—EKT CONNECTION

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EKT cord length is 7 ft., while the maximum allowed length is 25 ft.

08.03 The overall length of the cable run must not exceed 1000 ft. for 24 AWG wire.

IMPORTANT:

When installing EKT station cable, do not run parallel to and within 3 ft. of an AC power line. Such power lines should be crossed at right angles (90°) only.

08.04 EKT connection details are shown in Figure 25.

08.10 Standard Telephone Connections

08.11 See the DSTT Program in Section

100-100-300, Programming, for inputting information concerning single line telephones. The system must be told which type of telephone is at each station.

08.12 Conventional telephones require only single-pair wire and are connected to the MDF via standard twisted pair telephone cable.

08.13 Standard telephone connection details are shown in Figure 26.

08.20 Attendant Console Connection

08.21 The PERCEPTION attendant consoles are connected to the MDF via industry-standard 25-pair cables equipped with a female amphenol-type connector at the console location.

08.22 Connection details for the attendant console are shown in Figures 27 and 28.

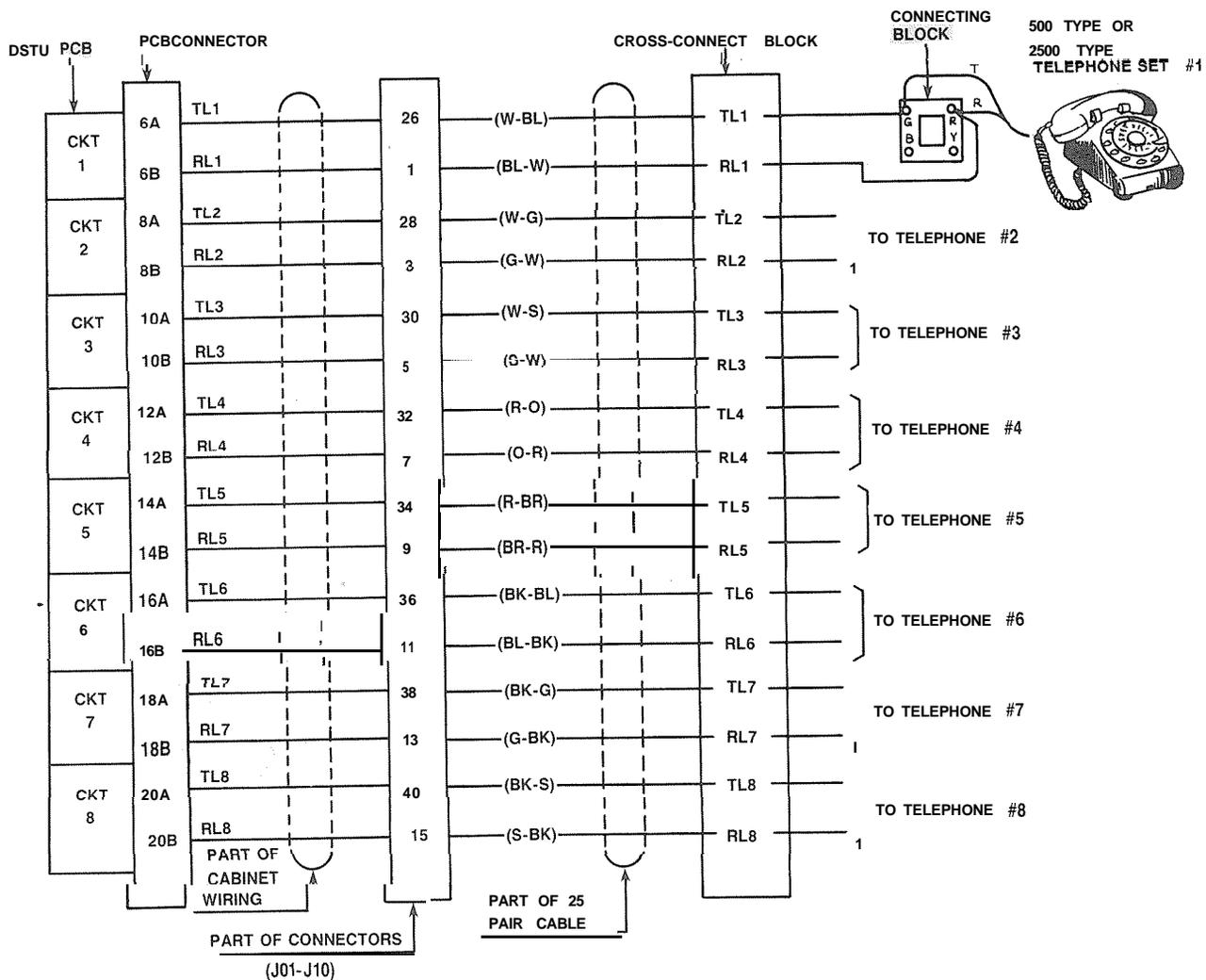


FIGURE 26—STANDARD TELEPHONE CONNECTION

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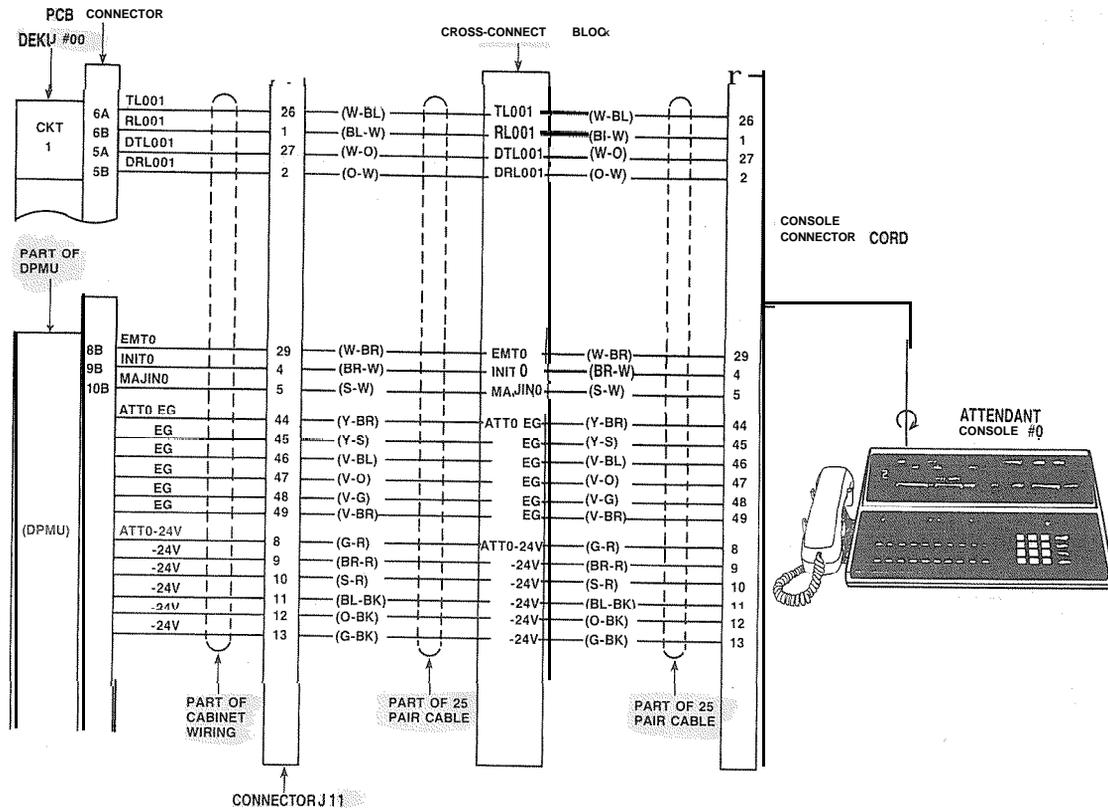


FIGURE 27—ATTENDANT CONSOLE #0 CONNECTION

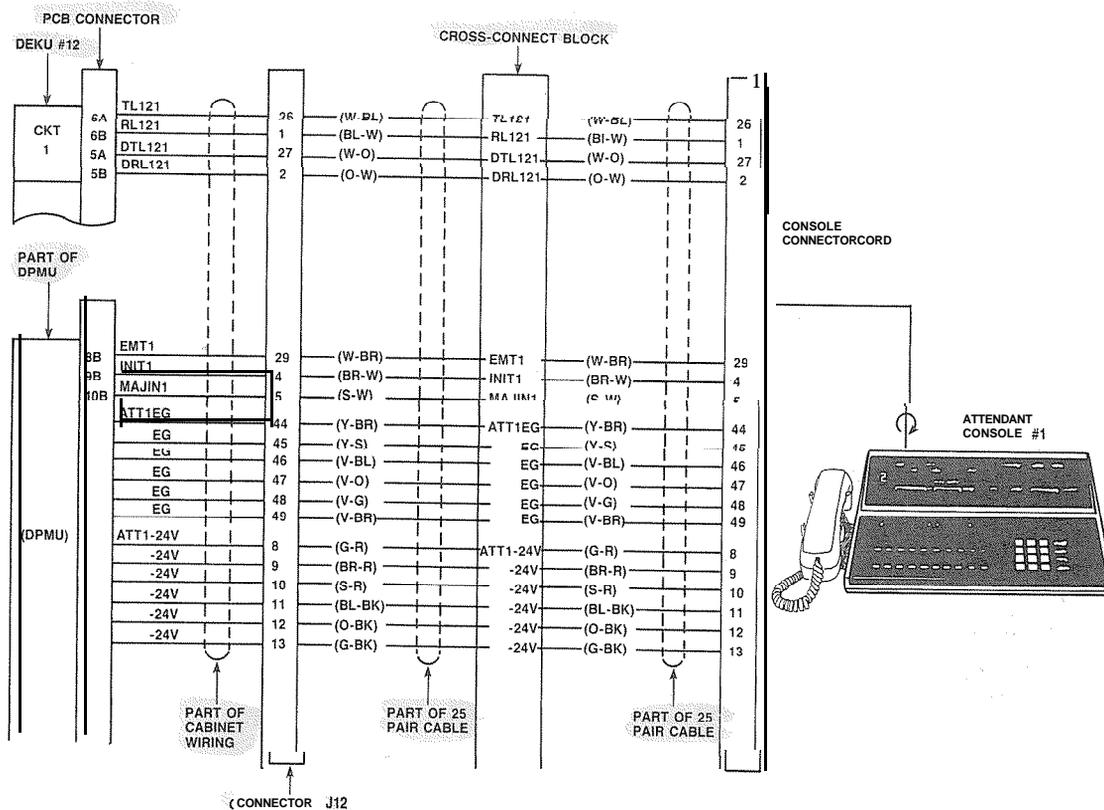


FIGURE 28—ATTENDANT CONSOLE #1 CONNECTION

08.30 Trunk Connections

08.31 Connections from the telephone company jack (RJ21X for CO/FX/WATS and RJ2EX for E & M TIE trunk) should be terminated on a "66"-block, and then cross-connected to the appropriate leads on the CO portion of the PERCEPTION MDF, using Tables O, P and Q as guides.

08.40 Maintenance Terminal/MODEM

08.41 A keyboard/printer terminal (Texas Instruments Model 743/745 or equivalent) is required to communicate with the PERCEPTION system. (See Section 100-1 00-300, Programming, for operating details.)

08.42 The terminal is connected to the system via a female-type RS 232C connector (labeled TTY) located on the connector panel on the lower rear of the DCEC.

08.43 In addition to the TTY connector, a MODEM connector is provided. By attaching a customer-provided "answer only" modem, all functions normally performed by the local terminal can be performed from a remote location.

08.44 The TTY and MODEM ports can operate at a speed of 300 or 1200 bps, and utilize a standard 7-level ASCII code with one start bit, one stop bit and one parity bit. The system transmits *even* parity and ignores the parity bit on the receive side. The speed is selected by a push-on/push-off switch located on the front of the DPEU PCB. The associated LED is on when 1200 bps is selected.

08.45 The speed selection is made simultaneously for the TTY and MODEM ports. These two ports are wired in a logical "OR" fashion and cannot be used at the same time. One must be "open".

08.46 The pin assignments of the TTY and modem connectors are:

TTY:

Pin No.	Designation
2	RXD Received Data (from TTY)
3	TXD Transmit Data (to TTY)
5	CTS Clear to Send"
6	DSR Data Set Ready"
7	SG Signal Ground
8	CD Carrier Detect"

20 DTR Data Terminal Ready (from TTY)

**Connect to + 12 VDC internally*

MODEM:

Pin No.	Designation
2	TXD Transmit Data (to modem)
3	RXD Receive Data (from modem)
4	RTS Request to Send (to modem)
5	CTS Clear to Send (from modem)
6	DSR Data Set Ready (from modem)
7	SG Signal Ground

**09 ELECTRONIC KEY
TELEPHONE INFORMATION**

09.00 General

09.01 All standard PERCEPTION EKTs may be used as desk units or wall-mounted telephones. Each one measures:

- Width: 8.8 inches (224 mm)
- Depth: 9.1 inches (230 mm)
- Height: 4.0 inches (102 mm)

and is equipped with 14 line and feature keys in addition to its push-button dial pad. All 10 keys in the vertical row are equipped with LEDs and are available for flexible assignment (Figure 29). Normally one key in the vertical row is designated as the DN key, while the remaining keys may have several different designations depending upon programming. The horizontal row of keys on each EKT has fixed assignments. Looking from left to right, they are **SPKR** , **MUTE** , **CONF** and **HOLD** . Of the four, only the speaker key is equipped with an in-use LED.

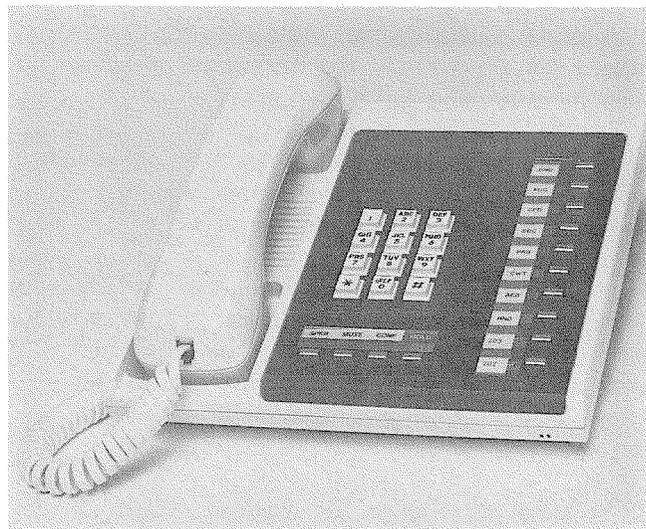


FIGURE 29—10-key EKT

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09.02 The 20-key EKT (Figure 30) has the same overall dimensions as the standard EKT, and is installed in exactly the same manner. It provides an additional 10 flexible assignment keys in the vertical row.

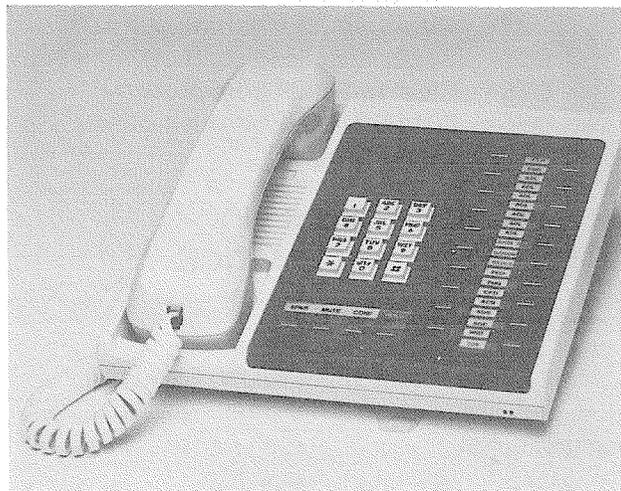


FIGURE 30—20-key EKT

09.03 Each EKT has a modular handset cord and is connected to the system via a 2-conductor modular line cord.

09.10 Wall Mounting

09.11 An optional handset hanger kit is required to convert either type of EKT for wall mounting. The EKT may be mounted on a wall or any other flat, vertical surface to which the base can be secured.

09.12 When selecting the mounting site, consider the EKT weight and the additional stresses to which the mounting will be subjected.

09.13 Mounting screws or mollies, appropriate for the surface on which the telephone is to be secured, must be provided by the installer.

09.14 Locking tabs secure the base to the EKT. The direction in which the base is attached to the EKT determines whether it will be used as a desk unit or wall unit (it is factory-configured as a desk unit). Disengage the locking tabs by pushing downward on the base (Figure 31).

09.15 Refer to Figure 32, choose which of the knockouts are appropriate for the tail cord route, and then cut them.

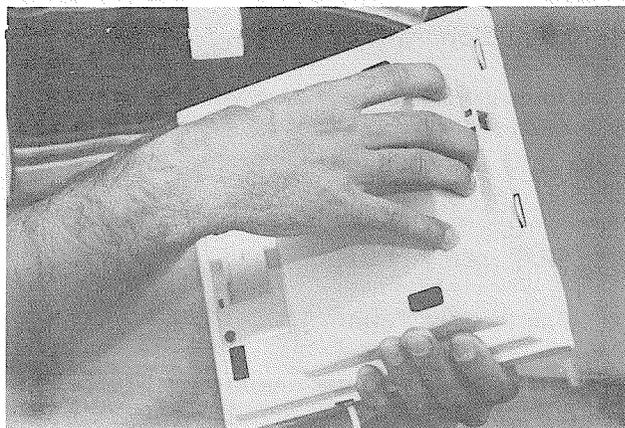


FIGURE 31—REMOVING EKT BASE

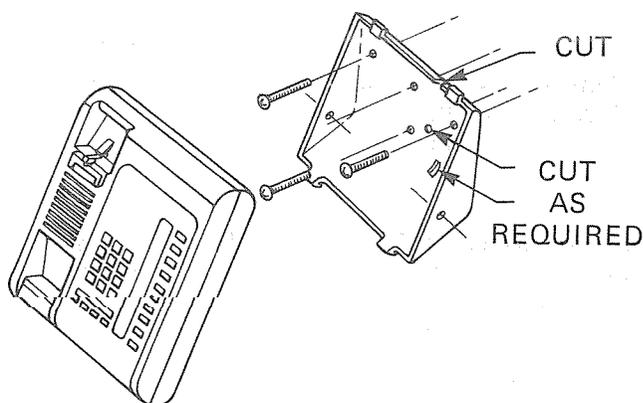


FIGURE 32—EKT WIRE ACCESS

09.16 Secure the base to the desired wall site. Use a spirit level and make certain the top of the base is level and that the deeper portion is down.

09.17 Route the tail cord through the holes in the base and secure the EKT (Figure 33).

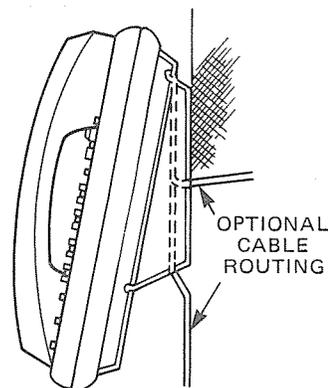


FIGURE 33—EKT WIRE ROUTING

Four leds on bottom of DCCU constantly check system, if any are on MJE system problem

09.18 The optional 13-ft. modular handset cord is recommended for use with wall-mounted EKTs.

09.20 Converting the EKT

09.21 Refer to Figure 34, the optional handset hanger kit (available from your Toshiba supplier) must be used whenever the EKT is wall-mounted.

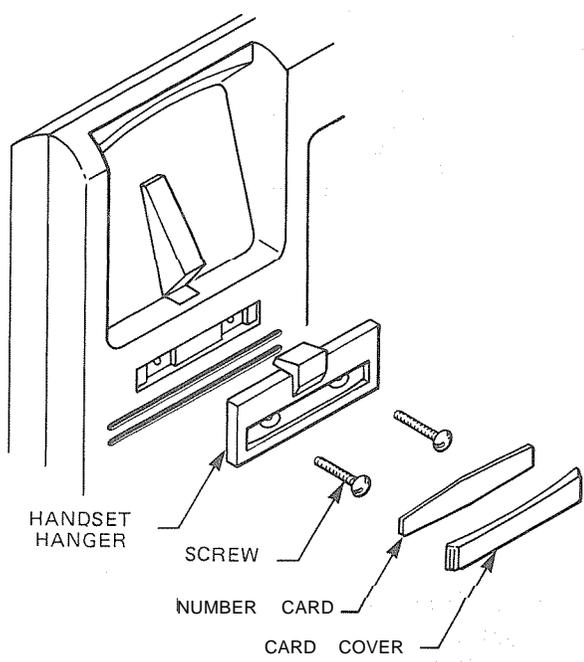


FIGURE 34—HANDSET HANGER KIT

09.22 Remove the card cover by inserting a paper clip in the hole at one end. Bend the cover up and remove it and the number card.

09.23 Install the handset hanger into place and tighten the screws. Reinstall the number card and card cover.

09.30 EKT Connections

09.31 Connect the appropriate length line cord to the modular connector, route the cord to the EKT and connect to the EKT modular jack. Test the EKT using the TTRM Program, Section 100-100-300, *Programming*.

10 SYSTEM INDICATORS and CONTROLS

10.01 Several system indicators and controls are located on the front panel of the various PCBs. The location and functions are as follows:

DTCU

- CLOCK LED-flashes continuously when system is functioning normally.

DCCU

- DISP LEDs 1 through 8-used to display system status during a program load (see Paragraph 11.02) and to indicate the following fault conditions.
- DISP LED #6 will light to indicate a failure of the 20 Hz ringing power. This will be accompanied by a MIN alarm on the console.
- DISP LED #7 will light to indicate that the system clock has not been set. This will be accompanied by a MIN alarm on the console.

DPEU

- MAJ LED-lights when a major alarm exists in the system.
- MDR LED-lights when the DTR signal from the SMD R device is not present.
- TTY/MODEM switch-push-on/push-off switch used to select 300 or 1 200 bps speed for TTY and MODEM ports. An LED visible near the switch will be on when 1200 bps is selected and off for 300 bps.
- SMD R switch-push-on/push-off switch used to select 300 or 1200 bps speed for the SMD R port. An LED visible near the switch will be on when 1200 bps is selected and off for 300 bps.

DPMU

- FALT LED-used to indicate software-detected faults concerning the MOH or Paging circuits. See maintenance section for details.
- BSY LED #1 and #2 { #1 lights when any page is in progress. #2 indicates when MOH is in use (a call is on-hold or camp-on).
- MOH volume control-used to adjust Music-on-hold volume level.
- LOAD switch-a momentary switch used in an emergency condition to reload system program and data from disk.
- INT switch-a momentary switch used in emergency conditions to reset system logic. All existing calls will be dropped when this switch is pushed.
- PFT switch-a momentary switch used to manually activate a transfer with the DPFT unit. A transfer activated by this switch can only be reset by this switch.

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- PFT LED-LED is on whenever a transfer condition, caused by anything other than a power failure, exists.

DRCU-4

- FALT LEDs 1 & 2-used to indicate software-detected faults or to indicate a disabled state caused by an input command from the maintenance terminal (TPER Program). Each LED indicates for two of the four circuits on the DRCU:

FALT #1 = Circuits 1 & 2
 FALT #2 = Circuits 3 & 4

DRCU-6

- FALT LEDs 1, 2 & 3-used to indicate software-detected faults or to indicate a disabled state caused by an input command from the maintenance terminal (TPER Program). Each LED indicates for two of the six circuits on the DRCU:

FALT #1 = Circuits 1 & 2
 FALT #2 = Circuits 3 & 4
 FALT #3 = Circuits 5 & 6

DCOU/DEMU

- FALT LEDs 1 & 2-used to indicate software-detected faults or to indicate a disabled state caused by an input command from the maintenance terminal (TPER Program). Each LED indicates for two of the four circuits on the DCOU or DEMU:

FALT #1 = Circuits 1 & 2
 FALT #2 = Circuits 3 & 4

- BSY LEDs 1, 2, 3 & 4-used to indicate the busy/idle status of each of the four circuits on the DCOU or DEMU. LED is on when circuit is busy.

DEKU/DSTU

- FALT LEDs 1 & 2-used to indicate software-detected faults or to indicate a disabled state caused by an input command from the maintenance terminal (TPER Program). Each LED indicates for four of the eight circuits on the DEKU or DSTU:

FALT #1 = Circuits 1 ~ 4
 FALT #2 = Circuits 5 ~ 8

11 SYSTEM POWER UP

11.01 Upon initial power up, PERCEPTION will automatically load its operating system and customer data from the floppy disk. Two diskettes

system will always come up in the nite mode

are provided with each system; one should always be mounted in the drive, the other kept as a spare.

11.02 Activate the system as follows:

- a) Be sure the main power switch on the DPSA is in the OFF position (Figure 35), and plug the AC power cord into the outlet.

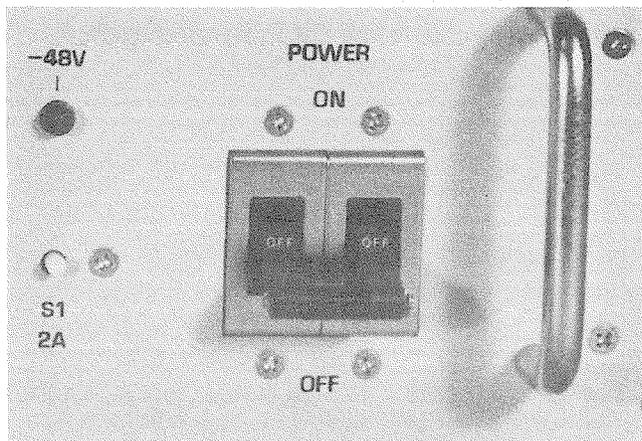


FIGURE 35—DPSA POWER SWITCH

- b) Place one of the diskettes in the drive, with the title appliques on the disk facing up (Figure 36), and close the drive door.

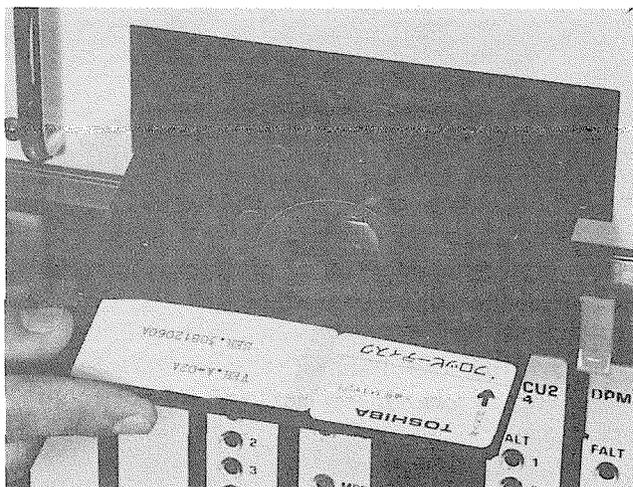


FIGURE 36—INSERTING DISKETTE

- c) Turn the main power switch on the DPSA to the ON position.
- d) Floppy disk drive will run:
 - MAJ ALARM LED on DPEU will be on.
 - FALT LEDs on all peripheral PCBs will be on.
 - PFT LED will be on (DPMU).
 - DISP LEDs (DCCU) will indicate loading

sequence. LED #4 will light for a short time and then 1, 2, 3, and 4 will be on until loading is complete.

- e) When loading is complete, system will initialize and clear all LEDs. Only a true fault indication will remain. Refer to Section 100-100-500, *Fault Finding Procedures*, for meaning of indications and assistance with fault clearing.
- f) Refer to Section 100-100-300, *Programming*, to complete customer data assignments.

NOTE:

DISP LED #7 and the console's MIN LED will be on until the system's Date and Time have been set via the console.

12 MISCELLANEOUS EQUIPMENT CONNECTIONS

12.00 General

12.01 All connections to miscellaneous equipment are made via J13, TTY, Modem or SMDR connectors on the connector panel of the DCEC.

NOTE:

The DATA connector is reserved for future use.

12.10 Power Failure/Emergency Transfer

12.11 The function of the Power Failure/Emergency Transfer Unit (DPFT) is to automatically connect selected trunks to selected conventional telephones in the event of system failure while permitting normal operation when the system is in service.

12.12 The DPFT is a self-contained module (Figure 37) that mounts externally to the DCEC, typically on the MDF. Connections to the trunks, stations and DCEC are made via two 50-pin amphenol-type connectors (J1 and J2). A functional diagram is shown in Figure 38.

12.13 The module consists of eight relays that are normally held operated, thus connecting the telephones to the DSTU circuit and the trunks to the DCOU circuits. Should a transfer occur, the telephones bypass the DCEC equipment and are connected directly to the trunks.

12.14 In systems where ground start trunks

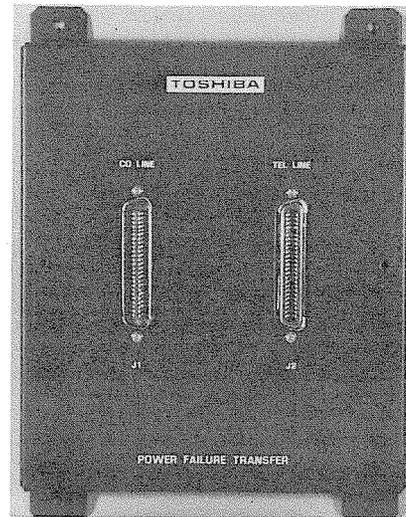


FIGURE 37—DPFT

are used, each of the assigned station instruments must be equipped with a grounding push-button switch if the station is to make outgoing calls during a power failure.

12.15 A transfer can be caused by a loss of power or triggered manually by either of two buttons, one of which is located on the underside of the attendant console and the other is on the front of the DPMU PCB. A transfer that is caused by a power failure will be reset automatically when power is restored; a manual transfer must be reset manually.

12.16 When the DPFT is reset after a transfer, existing conversations will be protected. Individual circuits will be restored only when they become idle.

12.17 The DPFT is installed as follows:

- a) Mount the DPFT on the MDF.
- b) Using 25-pair cables with amphenol-type connectors (female for J1, male for J2), connect the DPFT to two "66"-type quick-connect blocks.
- c) Using Table R for a guide:
 - Connect the trunks selected for emergency use to the J1 block "CO TIP" and "CO RING" terminals.
 - Connect the DCOU circuits relating to the

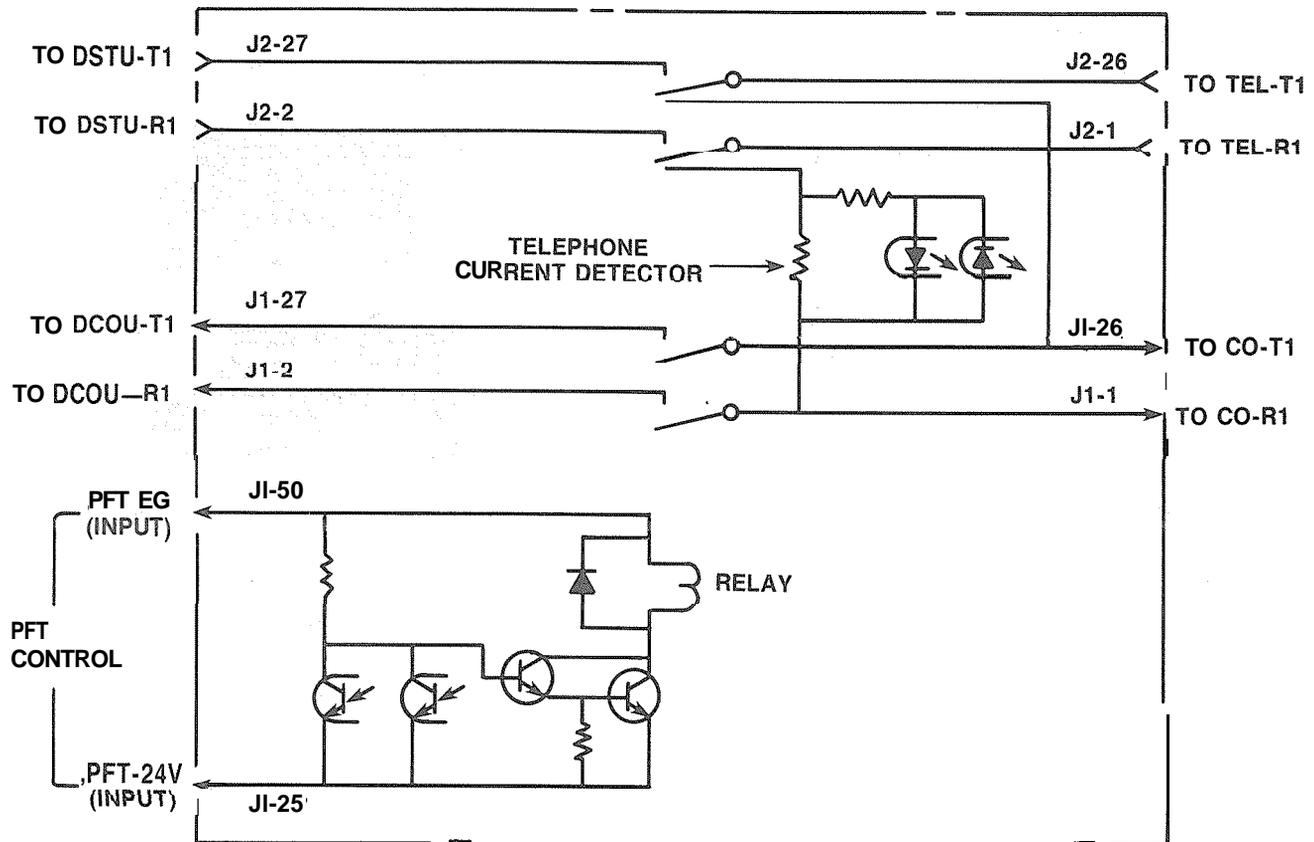


FIGURE 38—DPFT FUNCTIONAL DIAGRAM

emergency trunks to the J1 block "DCOU TIP" and "DCOU RING" terminals.

- d) Using Table S for a guide:
- Connect the conventional stations, designated for emergency use, to the proper terminals on the J2 block "TEL TIP" and "TEL RING" terminals.
 - Connect the DSTU circuits relating to the emergency telephones to the J2 block "DSTU TIP" and "DSTU RING" terminals.
- e) Connect the DPFT to the DCEC control as follows: DPFT J1 — DCEC J14, 15 or 16
Pin 25 (S-V) — Pin 25 (S-V)
Pin 50 (V-S) — Pin 50 (V-S)

12.20 Paging Equipment

12.21 By combining a single customer-supplied paging amplifier with the PERCEPTION paging interface and speaker zone switching, it is possible to provide a paging system of up to five zones

with All Page capability.

12.22 Figures 39 & 40 show possible paging arrangements. As a standard feature (part of the DPMU PCB), the system provides a 600-ohm output to a paging amplifier. If more than one paging zone is required, the output of the amplifier can be routed back to the DPMU PCB where it will be switched to one of five sets of speakers via relays K1 through K5. The relay to be operated is determined by the access code dialed by the station user. The actual access code is assigned in software (see Section 100-100-300, Programming).

12.23 An All Page code can also be defined in software. When that code is dialed, all relays will be activated simultaneously to permit paging to all speaker zones.

12.24 If the power loads of the different zones are such that a single amplifier is not suitable, multiple amplifiers (up to one for each zone) can be connected as shown in Figure 41.

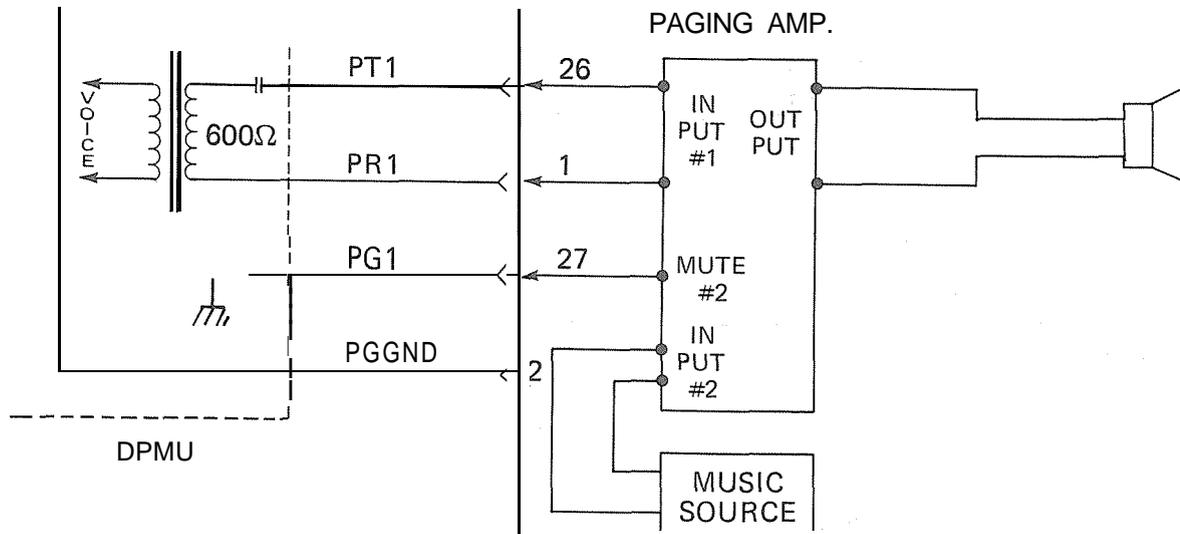


FIGURE 39—PAGING WITH MOH FROM SAME AMPLIFIER

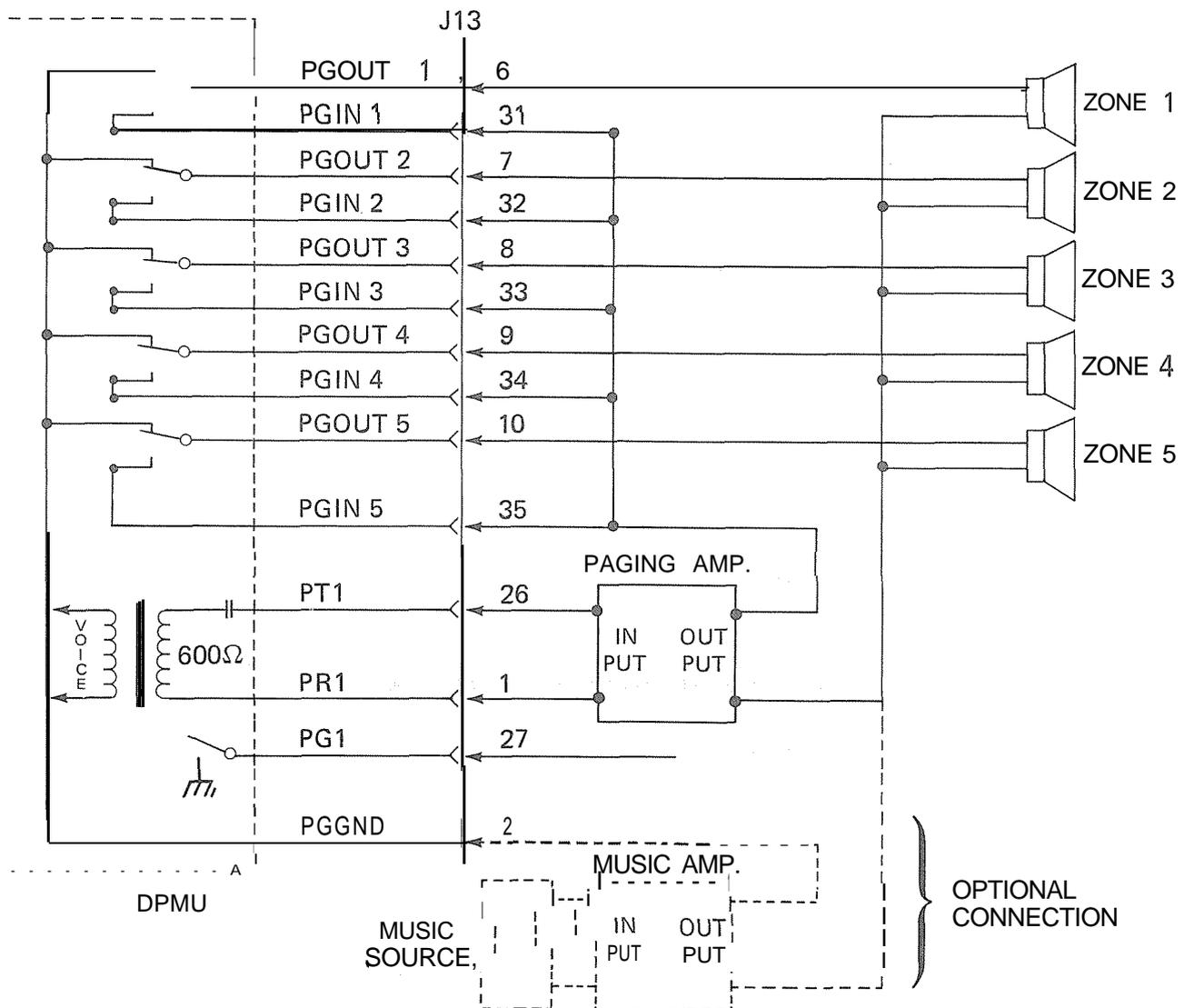


FIGURE 40—PAGING WITH ONE AMPLIFIER

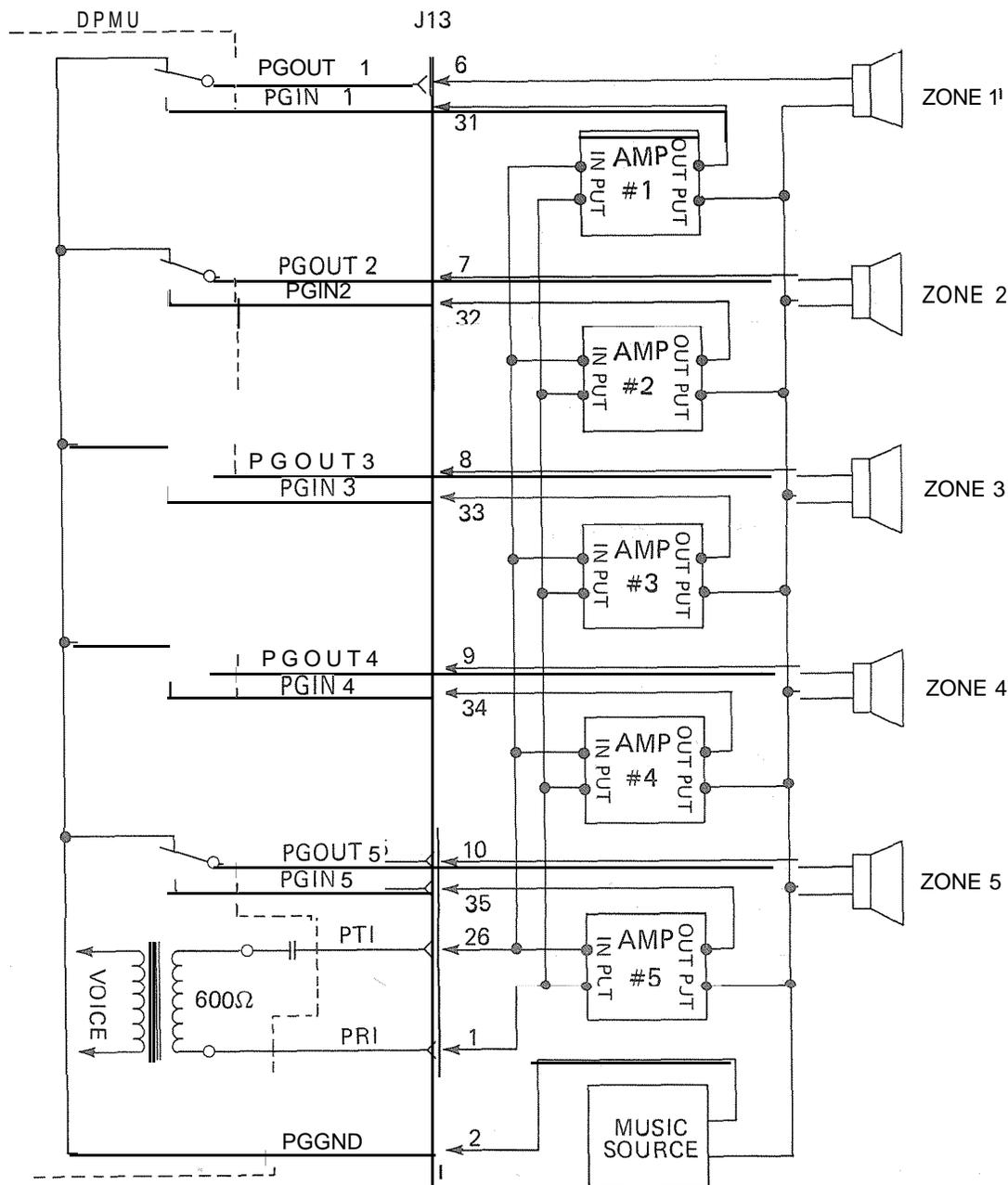


FIGURE 41—PAGING WITH MULTIPLE AMPLIFIERS

12.25 If background music is to be used on the paging system, two arrangements are possible:

- 1) If the music is supplied from a separate amplifier (as in Figures 40 & 41), it can be connected between the speaker common line and the PG GND input to the DPMU (J13 pin #2). Through the K1 ~ K5 relay "break" contacts, the music will be connected to all speaker zones when no page is in progress. When a page access code is dialed, the proper relay operates, the music is disconnected from that zone, and the page amplifier output is connected.
- 2) If the music is connected to a second input of the paging amplifier (as in Figure 39), the PG 1 control lead (J13 pin #27) can be connected to the MUTE terminal of the page amplifier music channel. When any page access code is dialed, a ground output is applied to the PG1 lead to mute the music.

12.26 All paging connections are made via J13 in the DCEC connector panel. See Table N for details.

12.30 Music-on-hold

112.31 A Music-on-hold (MOH) interface is a standard PERCEPTION feature. The circuitry occupies part of the DPMU PCB. When MOH is equipped it will be heard by any station or trunks on-hold in the system, or by any trunk put into the camp-on state.

12.32 A tuner or other program source must be provided by the customer. The program source is connected to the MOH input via pins #4 and #29 (Br-W and W-Br) of J13 (see Table N). The input impedance is 600 ohms.

12.33 Adjust the MOH volume with the MOW volume control on the front of the DPMU PCB. Maximum volume is limited by internal circuits in order to comply with FCC regulations.

12.40 Universal Night Answer

12.41 The Universal Night Answer (UNA) feature provides an output of interrupted ringing voltage (85 ± 10 VRMS, 20 Hz superimposed on -24 VDC) whenever the system is in NITE service and an incoming call is received by a trunk designated for UNA. Any station user, upon hearing the chime or bell, can dial the UNA access code and be connected to the caller.

12.42 The ringing voltage output is intended to control a strategically located chime or loud ringing bell. The available power is five (5) ringer equivalents.

12.43 Connections to the UNA ringing signal are via pins #22 and #47 (O-V, V-O) of J13 (see Table N) or J16 (see Table Q).

12.50 Station Message Detail Recording

12.51 The PERCEPTION Station Message Detail Recording (SMDR) feature allows a business to analyze, and thusly control, its telephone costs. Data can be collected for each outgoing and/or incoming trunk call. Each such call generates a call record which is available at the female type RS232C connector (labeled SMDR) located on the connector panel at the lower rear of the DCEC.

12.52 The SMDR output can be connected to:

- A local 80-column printer for an on-line print-out at the termination of each trunk call.
- A recording device to store data for subsequent processing, either on-site or by a service bureau.

12.53 The pin assignments of the SMDR connectors are:

Pin No.	Designation
3	TXD Transmit Data (to SMDR device).
5	CTS Clear to Send"
6	DSR Data Set Ready*
7	SG Signal Ground
8	CD Carrier Detect*
20	DTR Data Terminal Ready (from SMDR device)

***Connected to +12VDC internally**

12.54 Printers known to be compatible are:

- Texas Instruments Silent 700 series (models 743/745)
- OKI Data model 82A

See Figure 42 for proper connections.

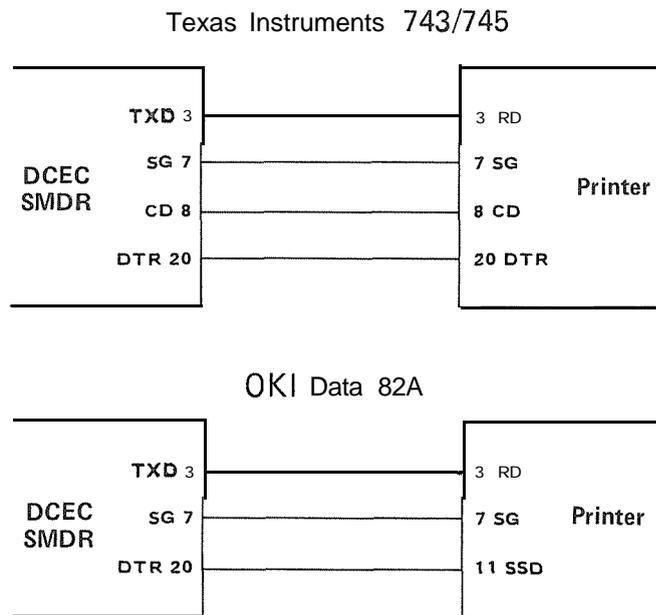


FIGURE 42—PRINTER CONNECTIONS

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12.55 The data rate at the SMDR output may be selected as 300 or 1200 bps by operating the SMDR push-on/push-off switch on the front panel of the DPEU PCB. When the 1200 bps speed is chosen, the LED will be lit.

12.56 The code used by the SMDR is standard 7-level ASCII using one start bit, one stop bit and one parity bit (even parity).

12.57 On an optional basis, it is possible to select the following recording criteria for each trunk group:

- No recording
- Incoming calls only
- Outgoing calls only
- Incoming and outgoing calls
- Outgoing toll calls only
- All incoming calls and outgoing toll calls

12.58 When outgoing calls are chosen, all calls seizing a trunk will be recorded regardless of duration. On incoming calls, all answered calls will be recorded. Calls disconnected by Toll or Code Restriction features are *not* recorded.

12.59 Timing for recorded calls will start as follows:

- Outgoing-when trunk is seized
- Incoming to attendant only-when attendant answers
- Incoming and extended by the attendant—when attendant answers.

12.60 It is possible for the station users to enter a Charge Account code of up to 12 digits into a call record.

12.61 The recording criteria and Charge Account code length are defined in the DMDR Data Block Program (see Section 100-100-300, *Programming*).

12.62 Each time a trunk is seized, information is collected for that trunk until it is released. The call record is output at the SMDR port in the following format (see Figure 43).

- Time
 - Start of Call Hour - tens
 - units
 Minute - tens
 - units
 - Call Duration Hour - units
 Minute - tens
 - units
 Seconds - tens
 - units
- Condition Code (See Table)
 - A = Attendant handled
 - D = Call > 10 hours
 - E = Maintenance (SMDR port)
 - F = Maintenance (trunk test)
 - I = Incoming call
 - K = Outgoing call
 - L = Conference Attendant or 3-party
 - M = Transfer or Call Forward
 - N = SPCC #1
 - O = SPCC #2
- Access Code 3 digits maximum
- Dialed Number 15 digits maximum
- Calling DN 3 digits maximum
- Calling Port Number 3 digits maximum
- Account Code 12 digits maximum

This is a standard call record.

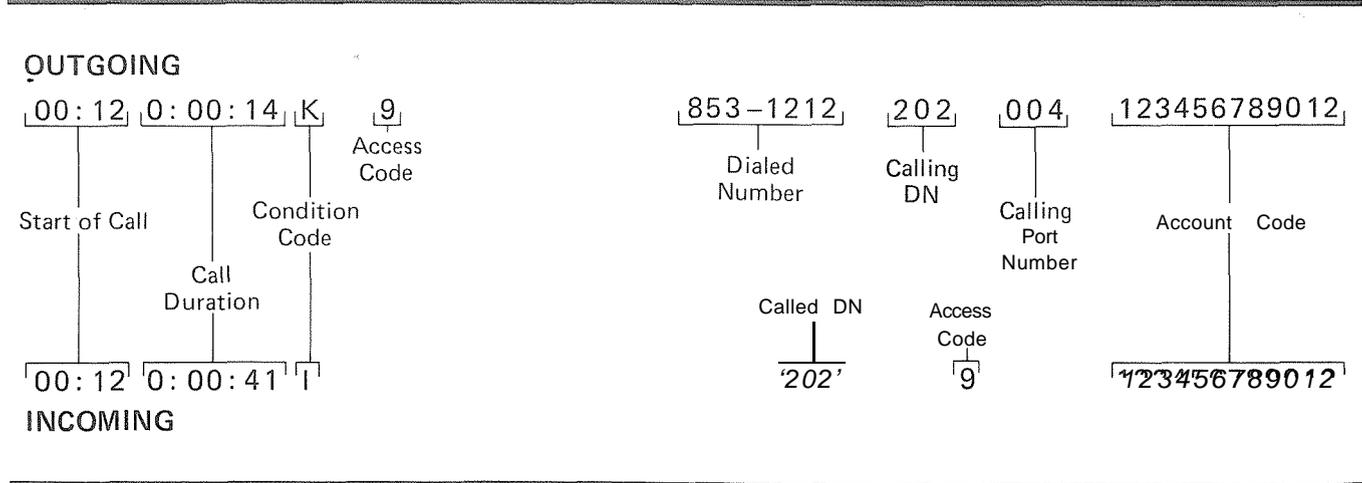


FIGURE 43—EXAMPLE: SMDR CALL RECORD

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The format of the special records, Initialize/Reload and Time Change is as follows:

Initialize/Reload:

NNNN etc. (previous records-usual call)

00 (Initialize or Reload)

Any record printed after the initialize record will appear on the same line and be offset three columns from the usual record.

Example:

NNNN (previous record)

00 NNNNN (init. and next record)

NNNNNN

Time Change:

Following an Initialize/Reload

00 00 00

HH :MM (elapsed time since Init. or Reload)

MM DD (new date)

HH : MM (new time)

Without Initialize or Reload

MM DD (old date)

HH :MM (old time)

MM DD (new date)

HH :MM (new time)

12.63 Some complex calls will cause multiple call records (CR) for the same station or trunk.

Examples:

1) Station #1 transfers Trunk #1 to Station #2

CR for Station 1 ~Trunk 1

= Condition Code I or K

CR for Station 2 ~Trunk 1

= Condition Code M

2) Station #1 transfers Trunk #1 to Trunk #2

CR for Station 1 ~Trunk 1

= Condition Code I or K

CR for Station 1 ~Trunk 2

= Condition Code L

CR for Trunk 1 ~Trunk 2

= Condition Code M

3) Station #1 holds Trunk #1 and calls Trunk #2

CR for Station 1 ~Trunk 1

= Condition Code I or K

CR for Station 1 ~Trunk 2

= Condition Code K

TABLE A

LIST OF CONNECTOR CABLES

CABLE NO.	FROM DCEC TO	DCEC CONN. NO.	CONTENT OF CONNECTOR	CONN. REQUIRED ON CABLE	DESC. TABLE
1	MDF	J01	DSTU/DEKU 00~01 (1/2)*	M	8
2	MDF	J02	DSTU/DEKU 01(1/2)~02	M	C
3	MDF	J03	DSTU/DEKU 03~04(1/2)	M	D
4	MDF	J04	DSTU/DEKU 04(1/2)~05	M	E
5	MDF	J05	DSTU/DEKU 06~07(1/2)	M	F
6	MDF	J06	DSTU/DEKU 07(1/2)~08	M	G
7	MDF	J07	DSTU/DEKU 09~10(1/2)	M	H
8	MDF	J08	DSTU/DEKU 10(1/2)~11	M	I
9	MDF	J09	DSTU/DEKU 12~13(1/2)	M	J
10	MDF	J10	DSTU/DEKU 13(1/2)~14	M	K
11	MDF	J11	ATT 0	M/F**	L
12	MDF	J12	ATT 1	M/F	M
13	MDF	J13	DPMU	M	N
14	MDF	J14	DCOU/DEMU 00~02	F	O
15	MDF	J15	DCOU/DEMU 03~05	F	P
16	MDF	J16	DCOU/DEMU 06~07	F	Q
17	FROM PFT TO MDF	PFTCONN. NO. J1	CO LINE & DCOU 00~07 (maximum: 8) (maximum: 8)	F	R
18	FROM PFT TO MDF	PFT CONN. NO. J2	STT LINE & DSTU 00~14 (maximum: 8) (maximum: 8)	M	S

**(1/2) indicates that only the first four or last four circuits of that PCB are connected to that cable.*

***Attendant console requires a male connector at the DCEC and a female connector at the console location.*

TABLE B
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J01
DEKU/DSTU POSITIONS L00~L01(1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 001	TIP-LINE	DEKU/DSTU L00
R	1	BI-W	RL 001	RING-LINE	" " "
2T	27	W-O	DTL 001	DATA TIP-LINE	" " "
R	2	O-W	DRL 001	DATA RING-LINE	" " "
3T	28	W-G	TL 002	TIP-LINE	" " "
R	3	G-W	RL 002	RING-LINE	" " "
4T	29	W-Br	DTL 002	DATA TIP-LINE	" " "
R	4	Br-W	DRL 002	DATA RING-LINE	" " "
5T	30	W-S	TL 003	TIP-LINE	" " "
R	5	s-w	RL 003	RING-LINE	" " "
6T	31	R-BI	DTL 003	DATA TIP-LINE	" " "
R	6	BI-R	DRL 003	DATA RING-LINE	" " "
7T	32	R-O	TL 004	TIP-LINE	" " "
R	7	O-R	RL 004	RING-LINE	" " "
8T	33	R-G	DTL 004	DATA TIP-LINE	" " "
R	8	G-R	DRL 004	DATA RING-LINE	" " "
9T	34	R-Br	TL 005	TIP-LINE	" " "
R	9	Br-R	RL 005	RING-LINE	" " "
10T	35	R-S	DTL 005	DATA TIP-LINE	" " "
R	10	S-R	DRL 005	DATA RING-LINE	" " "
11T	36	Bk-BI	TL 006	TIP-LINE	" " "
R	11	BI-Bk	RL 006	RING-LINE	" " "
12T	37	Bk-O	DTL 006	DATA TIP-LINE	" " "
R	12	O-Bk	DRL 006	DATA RING-LINE	" " "
13T	38	Bk-G	TL 007	TIP-LINE	" " "
R	13	G-Bk	RL 007	RING-LINE	" " "
14T	39	Bk-BI	DTL 007	DATA TIP-LINE	" " "
R	14	Br-Bk	DRL 007	DATA RING-LINE	" " "
15T	40	Bk-S	TL 008	TIP-LINE	" " "
R	15	S-Bk	RL 008	RING-LINE	" " "
16T	41	Y-BI	DTL 008	DATA TIP-LINE	" " "
R	16	BI-Y	DRL 008	DATA RING-LINE	" " "
17T	42	Y-O	TL 011	TIP-LINE	DEKU/DSTU L01 (1/2)
R	17	O-Y	RL 011	RING-LINE	" " "
18T	43	Y-G	DTL 011	DATA TIP-LINE	" " "
R	18	G-Y	DRL 011	DATA RING-LINE	" " "
19T	44	Y-Br	TL 012	TIP-LINE	" " "
R	19	Br-Y	RL 012	RING-LINE	" " "
20T	45	Y-S	DTL 012	DATA TIP-LINE	" " "
R	20	S-Y	DRL 012	DATA RING-LINE	" " "
21T	46	V-BI	TL 013	TIP-LINE	" " "
R	21	BI-V	RL 013	RING-LINE	" " "
22T	47	V-O	DTL 013	DATA TIP-LINE	" " "
R	22	O-V	DRL 013	DATA RING-LINE	" " "
23T	48	V-G	TL 014	TIP-LINE	" " "
R	23	G-V	RL 014	RING-LINE	" " "
24T	49	V-Br	DTL 014	DATA TIP-LINE	" " "
R	24	Br-V	DRL 014	DATA RING-LINE	" " "
25T	50	v-s	SPARE		
R	25	s-v	"		

TABLE C
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J02
DEKU/DSTU POSITIONS L01(1/2)~L02

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 015	TIP-LINE CKT 015	DEKU/DSTU L01 (1/2)
R	1	BI-W	RL 015	RING-LINE CKT 015	" " "
2R	27	W-W	DTL 015	DATATIP-LINE CKT 015	" " "
		..	DRL 015	DATA RING-LINE CKT 015	" " "
3T	28	W-G	TL 016	TIP-LINE CKT 016	" " "
R	3	G-W	RL 016	RING-LINE CKT 016	" " "
4T	29	W-Br	DTL 016	DATA TIP-LINE CKT 016	" " "
R	4	Br-W	DRL 016	DATA RING-LINE CKT 016	" " "
5T	30	w-s	TL 017	TIP-LINE CKT 017	" " "
R	5	s-w	RL 017	RING-LINE CKT 017	" " "
6T	31	R-BI	DTL 017	DATA TIP-LINE CKT 017	" " "
R	6	BI-R	DRL 017	DATA RING-LINE CKT 017	" " "
7T	32	R-O	TL 018	TIP-LINE CKT 018	" " "
R	7	O-R	RL 018	RING-LINE CKT 018	" " "
8T	33	R-O	DTL 018	DATA TIP-LINE CKT 018	" " "
			018	DATA RING-LINE CKT 018	" " "
9T	34	R-Br	TL 021	TIP-LINE CKT 021	DEKU/DSTU L02
R	9	Br-R	RL 021	RING-LINE CKT 021	" " "
10T	35	R-S	DTL 021	DATA TIP-LINE CKT 021	" " "
R	10	S-R	DRL 021	DATA RING-LINE CKT 021	" " "
11T	36	Bk-BI	TL 022	TIP-LINE CKT 022	" " "
R	11	BI-Bk	RL 022	RING-LINE CKT 022	" " "
12T	37	D BR-O L D	DTL 022	P - L I N E CKT 022	" " "
		O-Bk	TL 022	DATA RING-LINE CKT 022	" " "
13T	38	Bk-G	TL 023	TIP-LINE CKT 023	" " "
R	13	G-Bk	RL 023	RING-LINE CKT 023	" " "
14T	39	Bk-Br	DTL 023	DATA TIP-LINE CKT 023	" " "
R	14	Br-Bk	DRL 023	DATA RING-LINE CKT 023	" " "
15T	40	Bk-S	TL 024	TIP-LINE CKT 024	" " "
R	15	S-Bk	RL 024	RING-LINE CKT 024	" " "
16T	41	Y-BI	DTL 024	DATA TIP-LINE CKT 024	" " "
R	16	BI-Y	DRL 024	DATA RING-LINE CKT 024	" " "
17T	42	Y-O	TL 025	TIP-LINE CKT 025	" " "
R	17	O-Y	RL 025	RING-LINE CKT 025	" " "
18T	43	Y-G	DTL 025	DATATIP-LINE CKT 025	" " "
R	18	G-Y	DRL 025	DATA RING-LINE CKT 025	" " "
19T	44	Y-Br	TL 026	TIP-LINE CKT 026	" " "
R	19	Br-Y	RL 026	RING-LINE CKT 026	" " "
20T	45	Y-S	DTL 026	DATATIP-LINE CKT 026	" " "
R	20	S-Y	DRL 026	DATA RING-LINE CKT 026	" " "
21T	46	V-BI	TL 027	TIP-LINE CKT 027	" " "
R	21	BI-V	RL 027	RING-LINE CKT 027	" " "
22T	47	V-O	DTL 027	DATA TIP-LINE CKT 027	" " "
R	22	O-V	DRL 027	DATA RING-LINE CKT 027	" " "
23T	48	V-G	TL 028	TIP-LINE CKT 028	" " "
R	23	G-V	RL 028	RING-LINE CKT 028	" " "
24T	49	V-Br	DTL 028	DATA TIP-LINE CKT 028	" " "
R	24	Br-V	DRL 028	DATA RING-LINE CKT 028	" " "
25T	50	V-S	SPARE		
R	25	S-V	"		

TABLE D
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J03
DEKU/DSTU POSITIONS L03~L04(1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
IT	26	W-BI	TL 031	TIP-LINE CKT 031	DEKU/DSTU L03
R	1	BI-W	RL 031	RING-LINE CKT 031	" " "
2T	27	w-o	DTL 031	DATA TIP-LINE CKT 031	" " "
R	2	o-w	DRL 031	DATA RING-LINE CKT 031	" " "
3T	28	W-G	TL 032	TIP-LINE CKT 032	" " "
R	3	G-W	RL 032	RING-LINE CKT 032	" " "
4T	29	W-Br	DTL 032	DATA TIP-LINE CKT 032	" " "
R	4	Br-W	DRL 032	DATA RING-LINE CKT 032	" " "
5T	30	w-s	TL 033	TIP-LINE CKT 033	" " "
R	5	s-w	RL 033	RING-LINE CKT 033	" " "
6T	31	R-BI	DTL 033	DATA TIP-LINE CKT 033	" " "
R	6	BI-R	DRL 033	DATA RING-LINE CKT 033	" " "
7T	32	R-O	TL 034	TIP-LINE CKT 034	" " "
R	7	O-R	RL 034	RING-LINE CKT 034	" " "
8T	33	R-G	DTL 034	DATA TIP-LINE CKT 034	" " "
R	8	G-R	DRL 034	DATA RING-LINE CKT 034	" " "
9T	34	R-Br	TL 035	TIP-LINE CKT 035	" " "
R	9	Br-R	RL 035	RING-LINE CKT 035	" " "
10T	35	R-S	DTL 035	DATA TIP-LINE CKT 035	" " "
R	10	S-R	DRL 035	DATA RING-LINE CKT 035	" " "
11T	36	Bk-BI	TL 036	TIP-LINE CKT 036	" " "
R	11	BI-Bk	RL 036	RING-LINE CKT 036	" " "
12T	37	Bk-O	DTL 036	DATA TIP-LINE CKT 036	" " "
R	12	O-Bk	DRL 036	DATA RING-LINE CKT 036	" " "
13T	38	Bk-G	TL 037	TIP-LINE CKT 037	" " "
R	13	G-Bk	RL 037	RING-LINE CKT 037	" " "
14T	39	Bk-Br	DTL 037	DATA TIP-LINE CKT 037	" " "
R	14	Br-Bk	DRL 037	DATA RING-LINE CKT 037	" " "
15T	40	Bk-S	TL 038	TIP-LINE CKT 038	" " "
R	15	S-Bk	RL 038	RING-LINE CKT 038	" " "
16T	41	Y-BI	DTL 038	DATA TIP-LINE CKT 038	" " "
R	16	BI-Y	DRL 038	DATA RING-LINE CKT 038	" " "
17T	42	Y-O	TL 041	TIP-LINE CKT 041	DEKU/DSTU L04(1/2)
R	17	O-Y	RL 041	RING-LINE CKT 041	" " "
18T	43	Y-G	DTL 041	DATA TIP-LINE CKT 041	" " "
R	18	G-Y	DRL 041	DATA RING-LINE CKT 041	" " "
19T	44	Y-Rr	TL 042	TIP-LINE CKT 042	" " "
R	19	Br-Y	RL 042	RING-LINE CKT 042	" " "
20T	45	Y-S	DTL 042	DATA TIP-LINE CKT 042	" " "
R	20	S-Y	DRL 042	DATA RING-LINE CKT 042	" " "
21T	46	V-BI	TL 043	TIP-LINE CKT 043	" " "
R	21	BI-V	RL 043	RING-LINE CKT 043	" " "
22-r	47	v-o	DTL 043	DATA TIP-LINE CKT 043	" " "
R	22	O-V	DRL 043	DATA RING-LINE CKT 043	" " "
23T	48	V-G	TL 044	TIP-LINE CKT 044	" " "
R	23	G-V	RL 044	RING-LINE CKT 044	" " "
24T	49	V-Br	D-I-L 044	DATA TIP-LINE CKT 044	" " "
R	24	Br-V	DRL 044	DATA RING-LINE CKT 044	" " "
25T	50	V-S	SPARE		
R	25	S-V	"		

035

TABLE E
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J04
DEKU/DSTU POSITIONS L04(1/2)~L05

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 045	TIP-LINE CKT 045	DEKU, DSTU L04(1/2)
R	1	BI-W	RL 045	RING-LINE CKT 045	" " "
2T	27	w-o	DTL 045	DATATIP-LINE CKT 045	" " "
R	2	o-w	DRL 045	DATA RING-LINE CKT 045	" " "
3T	28	W-G	TL 046	TIP-LINE CKT 046	" " "
R	3	G-W	RL 046	RING-LINE CKT 046	" " "
4T	29	W-Br	DTL 046	DATA TIP-LINE CKT 046	" " "
R	4	Br-W	DRL 046	DATA RING-LINE CKT 046	" " "
5T	30	w-s	TL 047	TIP-LINE CKT 047	" " "
R	5	s-w	RL 047	RING-LINE CKT 047	" " "
6T	31	R-BI	DTL 047	DATA TIP-LINE CKT 047	" " "
R	6	BI-R	DRL 047	DATA RING-LINE CKT 047	" " "
7T	32	R-O	TL 048	TIP-LINE CKT 048	" " "
R	7	O-R	RL 048	RING-LINE CKT 048	" " "
8T	33	R-G	DTL 048	DATA TIP-LINE CKT 048	" " "
R	8	G-R	DRL 048	DATA RING-LINE CKT 048	" " "
9T	34	R-Br	TL 051	TIP-LINE CKT 051	DEKU/DSTU L05
R	9	Br-R	RL 051	RING-LINE CKT 0517	" " "
10T	35	R-S	DTL 051	DATA TIP-LINE CKT 051	" " "
R	10	S-R	DRL 051	DATA RING-LINE CKT 051	" " "
11T	36	Bk-BI	TL 052	TIP-LINE CKT 052	" " "
R	11	BI-Bk	RL 052	RING-LINE CKT 052	" " "
12T	37	Bk-O	DTL 052	DATATIP-LINE CKT 052	" " "
R	12	O-Bk	DRL 052	DATA RING-LINE CKT 052	" " "
13T	38	Bk-G	TL 053	TIP-LINE CKT 053	" " "
R	13	G-Bk	RL 053	RING-LINE CKT 053	" " "
14T	39	Bk-Br	DTL 053	DATA TIP-LINE CKT 053	" " "
R	14	Br-Bk	DRL 053	DATA RING-LINE CKT 053	" " "
15T	40	Bk-S	TL 054	TIP-LINE CKT 054	" " "
R	15	S-Bk	RL 054	RING-LINE CKT 054	" " "
16T	41	Y-BI	DTL 054	DATA TIP-LINE CKT 054	" " "
R	16	BI-Y	DRL 054	DATA RING-LINE CKT 054	" " "
17T	42	Y-O	TL 055	TIP-LINE CKT 055	" " "
R	17	O-Y	RL 055	RING-LINE CKT 055	" " "
18T	43	Y-G	DTL 055	DATATIP-LINE CKT 055	" " "
R	18	G-Y	DRL 055	DATA RING-LINE CKT 055	" " "
19T	44	Y-Br	TL 056	TIP-LINE CKT 056	" " "
R	19	Br-Y	RL 056	RING-LINE CKT 056	" " "
20T	45	Y-S	DTL 056	DATA TIP-LINE CKT 056	" " "
R	20	S-Y	DRL 056	DATA RING-LINE CKT 056	" " "
21T	46	V-BI	TL 057	TIP-LINE CKT 057	" " "
R	21	BI-V	RL 057	RING-LINE CKT 057	" " "
22T	47	V-O	DTL 057	DATA TIP-LINE CKT 057	" " "
R	22	O-V	DRL 057	DATA RING-LINE CKT 057	" " "
23T	48	V-G	TL 058	TIP-LINE CKT 058	" " "
R	23	G-V	RL 058	RING-LINE CKT 058	" " "
24T	49	V-Br	DTL 058	DATA TIP-LINE CKT 058	" " "
R	24	Br-V	DRL 058	DATA RING-LINE CKT 058	" " "
25T	50	V-S	SPARE		
R	25	S-V	"		

TABLE G
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J06
DEKU/DSTU POSITIONS L07(1/2)~L08

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 075	TIP-LINE CKT 075	DEKU/DSTU L07(1/2)
R	1	BI-W	RL 075	RING-LINE CKT 075	" " "
2T	27	W-O	DTL 075	DATA TIP-LINE CKT 075	" " "
R	2	O-W	DRL 075	DATA RING-LINE CKT 075	" " "
3T	28	W-G	TL 076	TIP-LINE CKT 076	" " "
R	3	G-W	RL 076	RING-LINE CKT 076	" " "
4T	29	W-Br	DTL 076	DATA TIP-LINE CKT 076	" " "
R	4	Br-W	DRL 076	DATA RING-LINE CKT 076	" " "
5T	30	W-S	TL 077	TIP-LINE CKT 077	" " "
R	5	S-W	RL 077	RING-LINE CKT 077	" " "
6T	31	R-BI	DTL 077	DATA TIP-LINE CKT 077	" " "
R	6	BI-R	DRL 077	DATA RING-LINE CKT 077	" " "
7T	32	R-O	TL 078	TIP-LINE CKT 078	" " "
R	7	O-R	RL 078	RING-LINE CKT 078	" " "
8T	33	R-G	DTL 078	DATA TIP-LINE CKT 078	" " "
R	8	G-R	DRL 078	DATA RING-LINE CKT 078	" " "
9T	34	R-Br	TL 081	TIP-LINE CKT 081	DEKU/DSTU L08
R	9	Br-R	RL 081	RING-LINE CKT 081	" " "
10T	35	R-S	DTL 081	DATA TIP-LINE CKT 081	" " "
R	10	S-R	DRL 081	DATA RING-LINE CKT 081	" " "
11T	36	Bk-BI	TL 082	TIP-LINE CKT 082	" " "
R	11	BI-Bk	RL 082	RING-LINE CKT 082	" " "
12T	37	Bk-O	DTL 082	DATA TIP-LINE CKT 082	" " "
R	12	O-Bk	DRL 082	DATA RING-LINE CKT 082	" " "
13T	38	Bk-G	TL 083	TIP-LINE CKT 083	" " "
R	13	G-Bk	RL 083	RING-LINE CKT 083	" " "
14T	39	Bk-Br	DTL 083	DATA TIP-LINE CKT 083	" " "
R	14	Br-Bk	DRL 083	DATA RING-LINE CKT 083	" " "
15T	40	Bk-S	TL 084	TIP-LINE CKT 084	" " "
R	15	S-Bk	RL 084	RING-LINE CKT 084	" " "
16T	41	Y-BI	DTL 084	DATA TIP-LINE CKT 084	" " "
R	16	BI-Y	DRL 084	DATA RING-LINE CKT 084	" " "
17T	42	Y-O	TL 085	TIP-LINE CKT 085	" " "
R	17	O-Y	RL 085	RING-LINE CKT 085	" " "
18T	43	Y-G	DTL 085	DATA TIP-LINE CKT 085	" " "
R	18	G-Y	DRL 085	DATA RING-LINE CKT 085	" " "
19T	44	Y-Br	TL 086	TIP-LINE CKT 086	" " "
R	19	Br-Y	RL 086	RING-LINE CKT 086	" " "
20T	45	Y-S	DTL 086	DATA TIP-LINE CKT 086	" " "
R	20	S-Y	DRL 086	DATA RING-LINE CKT 086	" " "
21T	46	V-BI	TL 087	TIP-LINE CKT 087	" " "
R	21	BI-V	RL 087	RING-LINE CKT 087	" " "
22T	47	V-O	DTL 087	DATA TIP-LINE CKT 087	" " "
R	22	O-V	DRL 087	DATA RING-LINE CKT 087	" " "
23T	48	V-G	TL 088	TIP-LINE CKT 088	" " "
R	23	G-V	RL 088	RING-LINE CKT 088	" " "
24T	49	V-Br	DTL 088	DATA TIP-LINE CKT 088	" " "
R	24	Br-V	DRL 088	DATA RING-LINE CKT 088	" " "
25T	50	v-s	SPARE		
R	25	s-v	"		

TABLE H
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J07
DEKU/DSTU POSITIONS L09 ~ L10(1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 091	TIP-LINE CKT 091	DEKU/DSTU L09
R	1	BI-W	RL 091	RING-LINE CKT 091	" " "
2T	27	w-o	DTL 091	DATA TIP-LINE CKT 091	" " "
R	2	o-w	DRL 091	DATA RING-LINE CKT 091	" " "
3T	28	W-G	TL 092	TIP-LINE CKT 092	" " "
R	3	G-W	RL 092	RING-LINE CKT 092	" " "
4T	29	W-Br	DTL 092	DATA TIP-LINE CKT 092	" " "
R	4	Br-W	DRL 092	DATA RING-LINE CKT 092	" " "
5T	30	W-S	TL 093	TIP-LINE CKT 093	" " "
R	5	S-W	RL 093	RING-LINE CKT 093	" " "
6T	31	R-BI	DTL 093	DATA TIP-LINE CKT 093	" " "
R	6	BI-R	DRL 093	DATA RING-LINE CKT 093	" " "
7T	32	R-O	TL 094	TIP-LINE CKT 094	" " "
R	7	O-R	RL 094	RING-LINE CKT 094	" " "
8T	33	R-G	DTL 094	DATA TIP-LINE CKT 094	" " "
R	8	G-R	DRL 094	DATA RING-LINE CKT 094	" " "
9T	34	R-Br	TL 095	TIP-LINE CKT 095	" " "
R	9	Br-R	RL 095	RING-LINE CKT 095	" " "
10T	35	R-S	DTL 095	DATA TIP-LINE CKT 095	" " "
R	10	S-R	DRL 095	DATA RING-LINE CKT 095	" " "
11T	36	Bk-BI	TL 096	TIP-LINE CKT 096	" " "
R	11	BI-Bk	RL 096	RING-LINE CKT 096	" " "
12T	37	Bk-O	DTL 096	DATA TIP-LINE CKT 096	" " "
R	12	O-Bk	DRL 096	DATA RING-LINE CKT 096	" " "
13T	38	Bk-G	TL 097	TIP-LINE CKT 097	" " "
R	13	G-Bk	RL 097	RING-LINE CKT 097	" " "
14T	39	Bk-Br	DTL 097	DATA TIP-LINE CKT 097	" " "
R	14	Br-Bk	DRL 097	DATA RING-LINE CKT 097	" " "
15T	40	Bk-S	TL 098	TIP-LINE CKT 098	" " "
R	15	S-Bk	RL 098	RING-LINE CKT 098	" " "
16T	41	Y-BI	DTL 098	DATA TIP-LINE CKT 098	" " "
R	16	BI-Y	DRL 098	DATA RING-LINE CKT 098	" " "
17T	42	Y-O	TL 101	TIP-LINE CKT 101	DEKU/DSTU L10(1/2)
R	17	O-Y	RL 101	RING-LINE CKT 101	" " "
18T	43	Y-G	DTL 101	DATA TIP-LINE CKT 101	" " "
R	18	G-Y	DRL 101	DATA RING-LINE CKT 101	" " "
19T	44	Y-Br	TL 102	TIP-LINE RING-LINE CKT 101 102	" " "
R	19	Br-Y	RL 102	RING-LINE CKT 102	" " "
20T	45	Y-S	DTL 102	DATA TIP-LINE CKT 102	" " "
R	20	S-Y	DRL 102	DATA RING-LINE CKT 102	" " "
21T	46	V-BI	TL 103	TIP-LINE CKT 103	" " "
R	21	BI-V	RL 103	RING-LINE CKT 103	" " "
22T	47	v-o	DTL 103	DATA TIP-LINE CKT 103	" " "
R	22	o-v	DRL 103	DATA RING-LINE CKT 103	" " "
23T	48	V-G	TL 104	TIP-LINE CKT 104	" " "
R	23	G-V	RL 104	RING-LINE CKT 104	" " "
24T	49	V-Br	DTL 104	DATA TIP-LINE CKT 104	" " "
R	24	Br-V	DRL 104	DATA RING-LINE CKT 104	" " "
25T	50	v-s	SPARE		
R	25	s-v	"		

TABLE I
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J08
DEKU/DSTU POSITIONS L10(1/2)~L11

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 105	TIP-LINE CKT 105	DEKU/DSTU L10(1/2)
R	1	BI-W	RL 105	RING-LINE CKT 105	" " "
2T	27	w-o	DTL 105	DATA TIP-LINE CKT 105	" " "
R	2	o-w	DRL 105	DATA RING-LINE CKT 105	" " "
3T	28	W-G	TL 106	TIP-LINE CKT 106	" " "
R	3	G-W	RL 106	RING-LINE CKT 106	" " "
4T	29	W-Br	DTL 106	DATA TIP-LINE CKT 106	" " "
R	4	Br-W	DRL 106	DATA RING-LINE CKT 106	" " "
5T	30	w-s	TL 107	TIP-LINE CKT 107	" " "
R	5	s-w	RL 107	RING-LINE CKT 107	" " "
6T	31	R-BI	DTL 107	DATA TIP-LINE CKT 107	" " "
R	6	BI-R	DRL 107	DATA RING-LINE CKT 107	" " "
7T	32	R-O	TL 108	TIP-LINE CKT 108	" " "
R	7	O-R	RL 108	RING-LINE CKT 108	" " "
8T	33	R-G	DTL 108	DATA TIP-LINE CKT 108	" " "
R	8	G-R	DRL 108	DATA RING-LINE CKT 108	" " "
9T	34	R-Br	TL 111	TIP-LINE CKT 111	DEKU/DSTU L11
R	9	Br-R	RL 111	RING-LINE CKT 111	" " "
10T	35	R-S	DTL 111	DATA TIP-LINE CKT 111	" " "
R	10	S-R	DRL 111	DATA RING-LINE CKT 111	" " "
11T	36	Bk-BI	TL 112	TIP-LINE CKT 112	" " "
R	11	BI-Bk	RL 112	RING-LINE CKT 112	" " "
12T	37	Bk-O	DTL 112	DATA TIP-LINE CKT 112	" " "
R	12	O-Bk	DRL 112	DATA RING-LINE CKT 112	" " "
13T	38	Bk-G	TL 113	TIP-LINE CKT 113	" " "
R	13	G-Bk	RL 113	RING-LINE CKT 113	" " "
14T	39	Bk-Br	DTL 113	DATA TIP-LINE CKT 113	" " "
R	14	Br-Bk	DRL 113	DATA RING-LINE CKT 113	" " "
15T	40	Bk-S	TL 114	TIP-LINE CKT 114	" " "
R	15	S-Bk	RL 114	RING-LINE CKT 114	" " "
16T	41	Y-BI	DTL 114	DATA TIP-LINE CKT 114	" " "
R	16	BI-Y	DRL 114	DATA RING-LINE CKT 114	" " "
17T	42	Y-O	TL 115	TIP-LINE CKT 115	" " "
R	17	O-Y	RL 115	RING-LINE CKT 115	" " "
18T	43	Y-G	DTL 115	DATA TIP-LINE CKT 115	" " "
R	18	G-Y	DRL 115	DATA RING-LINE CKT 115	" " "
19T	44	Y-Br	TL 116	TIP-LINE CKT 116	" " "
R	19	Br-Y	RL 116	RING-LINE CKT 116	" " "
20T	45	Y-S	DTL 116	DATA TIP-LINE CKT 116	" " "
R	20	S-Y	DRL 116	DATA RING-LINE CKT 116	" " "
21T	46	V-BI	TL 117	TIP-LINE CKT 117	" " "
R	21	BI-V	RL 117	RING-LINE CKT 117	" " "
22T	47	V-O	DTL 117	DATA TIP-LINE CKT 117	" " "
R	22	o-v	DRL 117	DATA RING-LINE CKT 117	" " "
23T	48	V-G	TL 118	TIP-LINE CKT 118	" " "
R	23	G-V	RL 118	RING-LINE CKT 118	" " "
24T	49	V-Br	DTL 118	DATA TIP-LINE CKT 118	" " "
R	24	Br-V	DRL 118	DATA RING-LINE CKT 118	" " "
25T	50	v-s	SPARE		
R	25	S-V	"		

TABLE J
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J09
DEKU/DSTU POSITIONS L12 ~ L13(1/2)

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 121	TIP-LINE CKT 121	DEKU/DSTU L12
R	1	BI-W	RL 121	RING-LINE CKT 121	" " "
2T	27	W-O	DTL 121	DATA TIP-LINE CKT 121	" " "
R	2	O-W	DRL 121	DATA RING-LINE CKT 121	" " "
3T	28	W-G	TL 122	TIP-LINE CKT 122	" " "
R	3	G-W	RL 122	RING-LINE CKT 122	" " "
4T	29	W-Br	DTL 122	DATA TIP-LINE CKT 122	" " "
R	4	Br-W	DRL 122	DATA RING-LINE CKT 122	" " "
5T	30	W-S	TL 123	TIP-LINE CKT 123	" " "
R	5	S-W	RL 123	RING-LINE CKT 123	" " "
6T	31	R-BI	DTL 123	DATA TIP-LINE CKT 123	" " "
R	6	BI-R	DRL 123	DATA RING-LINE CKT 123	" " "
7T	32	R-O	TL 124	TIP-LINE CKT 124	" " "
R	7	O-R	RL 124	RING-LINE CKT 124	" " "
8T	33	R-G	DTL 124	DATA TIP-LINE CKT 124	" " "
R	8	G-R	DRL 124	DATA RING-LINE CKT 124	" " "
9T	34	R-Br	TL 125	TIP-LINE CKT 125	" " "
R	9	Br-R	RL 125	RING-LINE CKT 125	" " "
10T	35	R-S	DTL 125	DATA TIP-LINE CKT 125	" " "
R	10	S-R	DRL 125	DATA RING-LINE CKT 125	" " "
11T	36	Bk-BI	TL 126	TIP-LINE CKT 126	" " "
R	11	BI-Bk	RL 126	RING-LINE CKT 126	" " "
12T	37	Bk-O	DTL 126	DATA TIP-LINE CKT 126	" " "
R	12	O-Bk	DRL 126	DATA RING-LINE CKT 126	" " "
13T	38	Bk-G	TL 127	TIP-LINE CKT 127	" " "
R	13	G-Bk	RL 127	RING-LINE CKT 127	" " "
14T	39	Bk-Br	DTL 127	DATA TIP-LINE CKT 127	" " "
R	14	Br-Bk	DRL 127	DATA RING-LINE CKT 127	" " "
15T	40	Bk-S	TL 128	TIP-LINE CKT 128	" " "
R	15	S-Bk	RL 128	RING-LINE CKT 128	" " "
16T	41	Y-BI	DTL 128	DATA TIP-LINE CKT 128	" " "
R	16	BI-Y	DRL 128	DATA RING-LINE CKT 128	" " "
17T	42	Y-O	TL 131	TIP-LINE CKT 131	DEKU/DSTU L13(1/2)
R	17	O-Y	RL 131	RING-LINE CKT 131	" " "
18T	43	Y-G	DTL 131	DATA TIP-LINE CKT 131	" " "
R	18	G-Y	DRL 131	DATA RING-LINE CKT 131	" " "
19T	44	Y-Br	TL 132	TIP-LINE CKT 132	" " "
R	19	Br-Y	RL 132	RING-LINE CKT 132	" " "
20T	45	Y-S	DTL 132	DATA TIP-LINE CKT 132	" " "
R	20	S-Y	DRL 132	DATA RING-LINE CKT 132	" " "
21T	46	V-BI	TL 133	TIP-LINE CKT 133	" " "
R	21	BI-V	RL 133	RING-LINE CKT 133	" " "
22T	47	V-O	DTL 133	DATA TIP-LINE CKT 133	" " "
R	22	O-V	DRL 133	DATA RING-LINE CKT 133	" " "
23T	48	V-G	TL 134	TIP-LINE CKT 134	" " "
R	23	G-V	RL 134	RING-LINE CKT 134	" " "
24T	49	V-Br	DTL 134	DATA TIP-LINE CKT 134	" " "
R	24	Br-V	DRL 134	DATA RING-LINE CKT 134	" " "
25T	50	V-S	SPARE		
R	25	S-V	"		

TABLE K
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J10
DEKU/DSTU POSITIONS L13(1/2)~L14

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 135	TIP-LINE CKT 135	DEKU/DSTU L13(1/2)
R	1	BI-W	RL 135	RING-LINE CKT 135	" " "
2T	27	W-O	DTL 135	DATA TIP-LINE CKT 135	" " "
R	2	O-W	DRL 135	DATA RING-LINE CKT 135	" " "
3T	28	W-G	TL 136	TIP-LINE CKT 136	" " "
R	3	G-W	RL 136	RING-LINE CKT 136	" " "
4T	29	W-Br	DTL 136	DATA TIP-LINE CKT 136	" " "
R	4	Br-W	DRL 136	DATA RING-LINE CKT 136	" " "
5T	30	W-S	TL 137	TIP-LINE CKT 137	" " "
R	5	S-W	RL 137	RING-LINE CKT 137	" " "
6T	31	R-BI	DTL 137	DATA TIP-LINE CKT 137	" " "
R	6	BI-R	DRL 137	DATA RING-LINE CKT 137	" " "
7T	32	R-O	TL 138	TIP-LINE CKT 138	" " "
R	7	O-R	RL 138	RING-LINE CKT 138	" " "
8T	33	R-G	DTL 138	DATA TIP-LINE CKT 138	" " "
R	8	G-R	DRL 138	DATA RING-LINE CKT 138	" " "
9T	34	R-Br	TL 141	TIP-LINE CKT 141	DEKU/DSTU L14
R	9	Br-R	RL 141	RING-LINE CKT 141	" " "
10T	35	R-S	DTL 141	DATA TIP-LINE CKT 141	" " "
R	10	S-R	DRL 141	DATA RING-LINE CKT 141	" " "
11T	36	Bk-BI	TL 142	TIP-LINE CKT 142	" " "
R	11	BI-Bk	RL 142	RING-LINE CKT 142	" " "
12T	37	Bk-O	DTL 142	DATA TIP-LINE CKT 142	" " "
R	12	O-Bk	DRL 142	DATA RING-LINE CKT 142	" " "
13T	38	Bk-G	TL 143	TIP-LINE CKT 143	" " "
R	13	G-Bk	RL 143	RING-LINE CKT 143	" " "
14T	39	Bk-Br	DTL 143	DATA TIP-LINE CKT 143	" " "
R	14	Br-Bk	DRL 143	DATA RING-LINE CKT 143	" " "
15T	40	Bk-S	TL 144	TIP-LINE CKT 144	" " "
R	15	S-Bk	RL 144	RING-LINE CKT 144	" " "
16T	41	Y-BI	DTL 144	DATA TIP-LINE CKT 144	" " "
R	16	BI-Y	DRL 144	DATA RING-LINE CKT 144	" " "
17T	42	Y-O	TL 145	TIP-LINE CKT 145	" " "
R	17	O-Y	RL 145	RING-LINE CKT 145	" " "
18T	43	Y-G	DTL 145	DATA TIP-LINE CKT 145	" " "
R	18	G-Y	DRL 145	DATA RING-LINE CKT 145	" " "
19T	44	Y-Br	TL 146	TIP-LINE CKT 146	" " "
R	19	Br-Y	RL 146	RING-LINE CKT 146	" " "
20T	45	Y-S	DTL 146	DATA TIP-LINE CKT 146	" " "
R	20	S-Y	DRL 146	DATA RING-LINE CKT 146	" " "
21T	46	V-BI	TL 147	TIP-LINE CKT 147	" " "
R	21	BI-V	RL 147	RING-LINE CKT 147	" " "
22T	47	V-O	DTL 147	DATA TIP-LINE CKT 147	" " "
R	22	O-V	DRL 147	DATA RING-LINE CKT 147	" " "
23T	48	V-G	TL 148	TIP-LINE CKT 148	" " "
R	23	G-V	RL 148	RING-LINE CKT 148	" " "
24T	49	V-Br	DTL 148	DATA TIP-LINE CKT 148	" " "
R	24	Br-V	DRL 148	DATA RING-LINE CKT 148	" " "
25T	50	V-S	SPARE		
R	25	S-V	"		

TABLE I
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J11
ATTENDANT CONSOLE #0

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 001	TIP-LINE CKT 001	DEKU/DSTU L00
R	1	BI-W	RL 001	RING-LINE CKT 001	" " "
2T	27	W-O	DTL 001	DATA TIP-LINE CKT 001	" " "
R	2	O-W	DRL 001	DATA RING-LINE CKT 001	" " "
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	EMT 0	EMERGENCY TRANSFER SWT	DPMU
R	4	Br-W	INIT 0	INITIALIZE SWITCH	"
5T	30	W-S	SPARE		
R	5	S-W	MAJ IN 0	MAJOR ALARM	DPMU
6T	31	R-BI	SPARE		
R	6	BI-R	"		
7T	32	R-O	"		
R	7	O-R	"		
8T	33	R-G	"		
R	8	G-R	ATT 0 -24V	-24V	DPMU
9T	34	R-Br	SPARE		
R	9	Br-R	ATT 0 -24V	-24V	DPMU
10T	35	R-S	SPARE		
R	10	S-R	ATT 0 -24V	-24V	DPMU
11T	36	Bk-BI	SPARE		
R	11	BI-Bk	ATT 0 -24V	-24V	DPMU
12T	37	Bk-O	SPARE		
R	12	O-Bk	ATT 0 -24V	-24V	DPMU
13T	38	Bk-G	SPARE		
R	13	G-Bk	ATT 0 -24V	-24V	DPMU
14T	39	Bk-Br	SPARE		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-BI	"		
R	16	BI-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	ATT 0 EG	GROUND	DPMU
R	19	Br-Y	SPARE		
20T	45	Y-S	ATT 0 EG	GROUND	DPMU
R	20	S-Y	SPARE		
21T	46	V-BI	ATT 0 EG	GROUND	DPMU
R	21	BI-V	SPARE		
22T	47	V-O	ATT 0 EG	GROUND	DPMU
R	22	O-V	SPARE		
23T	48	V-G	ATT 0 EG	GROUND	DPMU
R	23	G-V	SPARE		
24T	49	V-Br	ATT 0 EG	GROUND	DPMU
R	24	Br-V	SPARE		
25T	50	V-S	"		
R	25	S-V	"		

TABLE M
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J12
ATTENDANT CONSOLE#1

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	TL 121	TIP-LINE CKT 121	DEKU/DSTU L12
R	1	BI-W	RL 121	RING-LINE CKT 121	" " "
2T	27	W-O	DTL 121	DATA TIP-LINE CKT 121	" " "
R	2	O-W	DRL 121	DATA RING-LINE CKT 121	" " "
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	EMT 1	EMERGENCY TRANSFER SWT	DPMU
R	4	Br-W	INIT 1	INITIALIZE SWITCH	"
5T	30	W-S	SPARE		
R	5	S-W	MAJ IN 1	MAJOR ALARM	DPMU
6T	31	R-BI	SPARE		
R	6	BI-R	"		
7T	32	R-O	"		
R	7	O-R	"		
8T	33	R-G	"		
R	8	G-R	ATT 1 -24V	-24V	DPMU
9T	34	R-Br	SPARE		
R	9	Br-R	ATT 1 -24V	-24V	DPMU
10T	35	R-S	SPARE		
R	10	S-R	ATT 1 -24V	-24V	DPMU
11T	36	Bk-BI	SPARE		
R	11	BI-Bk	ATT 1 -24V	-24V	DPMU
12T	37	Bk-O	SPARE		
R	12	O-Bk	ATT 1 -24V	-24V	DPMU
13T	38	Bk-G	SPARE		
R	13	G-Bk	ATT 1 -24V	-24V	DPMU
14T	39	Bk-Br	SPARE		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-BI	"		
R	16	BI-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	ATT 1 EG	GROUND	DPMU
R	19	Br-Y	SPARE		
20T	45	Y-S	ATT 1 EG	GROUND	DPMU
R	20	S-Y	SPARE		
21T	46	V-BI	ATT 1 EG	GROUND	DPMU
R	21	BI-V	SPARE		
22T	47	V-O	ATT 1 EG	GROUND	DPMU
R	22	O-V	SPARE		
23T	48	V-G	ATT 1 EG	GROUND	DPMU
R	23	G-V	SPARE		
24T	49	V-Br	ATT 1 EG	GROUND	DPMU
R	24	Br-V	SPARE		
25T	50	V-S	"		
R	25	S-V	"		

TABLE N
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J13
PAGING, MUSIC & UNA RINGING

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	PT 1	PAGING TIP	DPMU
R	1	BI-W	PR 1	PAGING RING	"
2T	27	W-O	PG 1	PAGING EQUIP. CONTROL	"
R	2	O-W	PG GND	PAGING EQUIP. COMMON	"
3T	28	W-G	SPARE		
R	3	G-W	"		
4T	29	W-Br	MT	MOH SOURCE TIP	DPMU
R	4	Br-W	MR	MOH SOURCE RING	"
5T	30	W-S	SPARE		
R	5	S-W	"		
6T	31	R-BI	PG IN 1	PAGING AMP #1 OUT	DPMU
R	6	BI-R	PG OUT 1	PAGE ZONE #1 OUT	"
7T	32	R-O	PG IN 2	PAGING AMP #2 OUT	"
R	7	O-R	PG OUT 2	PAGE ZONE #2 OUT	"
8T	33	R-G	PG IN 3	PAGING AMP #3 OUT	"
R	8	G-R	PG OUT 3	PAGE ZONE #3 OUT	"
9T	34	R-Br	PG IN 4	PAGING AMP #4 OUT	"
R	9	Br-R	PG OUT 4	PAGE ZONE #4 OUT	"
10T	35	R-S	PG IN 5	PAGING AMP #5 OUT	"
R	10	S-R	PG OUT 5	PAGE ZONE #5 OUT	"
11T	36	Bk-BI	SPARE		
R	11	BI-Bk	"		
12T	37	Bk-O	"		
R	12	O-Bk	"		
13T	38	Bk-G	"		
R	13	G-Bk	"		
14T	39	Bk-Br	"		
R	14	Br-Bk	"		
15T	40	Bk-S	"		
R	15	S-Bk	"		
16T	41	Y-BI	"		
R	16	BI-Y	"		
17T	42	Y-O	"		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-BI	"		
R	21	BI-V	"		
22T	47	V-O	UNA B	UNA RINGING GROUND	DPMU
R	22	O-V	UNA A	UNA RINGING 20 Hz	"
23T	48	V-G	SPARE		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	"		
R	25	S-V	"		

NOTE: For clarification of designation, see Figures 39, 40 and 41.

TABLE O
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J14
TRUNK CARD POSITIONS T00 ~ T02 & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	T 001	TIP-TRUNK CKT 001	DCOU/DEMU T00
R	1	BI-W	R 001	RING-TRUNK CKT 001	" " "
2T	27	W-O	M 001	M LEAD-TRUNK CKT 001	" " "
R	2	O-W	E 001	E LEAD-TRUNK CKT 001	" " "
3T	28	W-G	T 002	TIP-TRUNK CKT 002	" " "
R	3	G-W	R 002	RING-TRUNK CKT 002	" " "
4T	29	W-Br	M 002	M LEAD-TRUNK CKT 002	" " "
R	4	Br-W	E 002	E LEAD-TRUNK CKT 002	" " "
5T	30	W-S	T 003	TIP-TRUNK CKT 003	" " "
R	5	S-W	R 003	RING-TRUNK CKT 003	" " "
6T	31	R-BI	M 003	M LEAD-TRUNK CKT 003	" " "
R	6	BI-R	E 003	E LEAD-TRUNK CKT 003	" " "
7T	32	R-O	T 004	TIP-TRUNK CKT 004	" " "
R	7	O-R	R 004	RING-TRUNK CKT 004	" " "
8T	33	R-G	M 004	M LEAD-TRUNK CKT 004	" " "
R	8	G-R	E 004	E LEAD-TRUNK CKT 004	" " "
9T	34	R-Br	T 011	TIP-TRUNK CKT 011	DCOU/DEMU T01
R	9	Br-R	R 011	RING-TRUNK CKT 011	" " "
10T	35	R-S	M 011	M LEAD-TRUNK CKT 011	" " "
R	10	S-R	E 011	E LEAD-TRUNK CKT 011	" " "
11T	36	Bk-BI	T 012	TIP-TRUNK CKT 012	" " "
R	11	BI-Bk	R 012	RING-TRUNK CKT 012	" " "
12T	37	Bk-O	M 012	M LEAD-TRUNK CKT 012	" " "
R	12	O-Bk	E 012	E LEAD-TRUNK CKT 012	" " "
13T	38	Bk-G	T 013	TIP-TRUNK CKT 013	" " "
R	13	G-Bk	R 013	RING-TRUNK CKT 013	" " "
14T	39	Bk-Br	M 013	M LEAD-TRUNK CKT 013	" " "
R	14	Br-Bk	E 013	E LEAD-TRUNK CKT 013	" " "
15T	40	Bk-S	T 014	TIP-TRUNK CKT 014	" " "
R	15	S-Bk	R 014	RING-TRUNK CKT 014	" " "
16T	41	Y-BI	M 014	M LEAD-TRUNK CKT 014	" " "
R	16	BI-Y	E 014	E LEAD-TRUNK CKT 014	" " "
17T	42	Y-O	T 021	TIP-TRUNK CKT 021	DCOU/DEMU T02
R	17	O-Y	R 021	RING-TRUNK CKT 021	" " "
18T	43	Y-G	M 021	M LEAD-TRUNK CKT 021	" " "
R	18	G-Y	E 021	E LEAD-TRUNK CKT 021	" " "
19T	44	Y-Br	T 022	TIP-TRUNK CKT 022	" " "
R	19	Br-Y	R 022	RING-TRUNK CKT 022	" " "
20T	45	Y-S	M 022	M LEAD-TRUNK CKT 022	" " "
R	20	S-Y	E 022	E LEAD-TRUNK CKT 022	" " "
21T	46	V-BI	T 023	TIP-TRUNK CKT 023	" " "
R	21	BI-V	R 023	RING-TRUNK CKT 023	" " "
22T	47	V-O	M 023	M LEAD-TRUNK CKT 023	" " "
R	22	O-V	E 023	E LEAD-TRUNK CKT 023	" " "
23T	48	V-G	T 024	TIP-TRUNK CKT 024	" " "
R	23	G-V	R 024	RING-TRUNK CKT 024	" " "
24T	49	V-Br	M 024	M LEAD-TRUNK CKT 024	" " "
R	24	Br-V	E 024	E LEAD-TRUNK CKT 024	" " "
25T	50	V-S	PFT EG	PFT GROUND (OUTPUT)	DPMU
R	25	S-V	PFT -24V	PFT -24V (OUTPUT)	"

TABLE P
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J15
TRUNK CARD POSITIONS T03~T05 & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION		PCB POSITION
1T	26	W-BI	T 031	TIP-TRUNK	CKT 031	DCOU/DEMU T03
R	1	BI-W	R 031	RING-TRUNK	CKT 031	" " "
2T	27	W-O	M 031	M LEAD-TRUNK	CKT 031	" " "
R	2	O-W	E 031	E LEAD-TRUNK	CKT 031	" " "
3T	28	W-G	T 032	TIP-TRUNK	CKT 032	" " "
R	3	G-W	R 032	RING-TRUNK	CKT 032	" " "
4T	29	W-Br	M 032	M LEAD-TRUNK	CKT 032	" " "
R	4	Br-W	E 032	E LEAD-TRUNK	CKT 032	" " "
5T	30	W-S	T 033	TIP-TRUNK	CKT 033	" " "
R	5	S-W	R 033	RING-TRUNK	CKT 033	" " "
6T	31	R-BI	M 033	M LEAD-TRUNK	CKT 033	" " "
R	6	BI-R	E 033	E LEAD-TRUNK	CKT 033	" " "
7T	32	R-O	T 034	TIP-TRUNK	CKT 034	" " "
R	7	O-R	R 034	RING-TRUNK	CKT 034	" " "
8T	33	R-G	M 034	M LEAD-TRUNK	CKT 034	" " "
R	8	G-R	E 034	E LEAD-TRUNK	CKT 034	" " "
9T	34	R-Br	T 041	TIP-TRUNK	CKT 041	DCOU/DEMU T04
R	9	Br-R	R 041	RING-TRUNK	CKT 041	" " "
10T	35	R-S	M 041	M LEAD-TRUNK	CKT 041	" " "
R	10	S-R	E 041	E LEAD-TRUNK	CKT 041	" " "
11T	36	Bk-BI	T 042	TIP-TRUNK	CKT 042	" " "
R	11	BI-Bk	R 042	RING-TRUNK	CKT 042	" " "
12T	37	Bk-O	M 042	M LEAD-TRUNK	CKT 042	" " "
R	12	O-Bk	E 042	E LEAD-TRUNK	CKT 042	" " "
13T	38	Bk-G	T 043	TIP-TRUNK	CKT 043	" " "
R	13	G-Bk	R 043	RING-TRUNK	CKT 043	" " "
14T	39	Bk-Br	M 043	M LEAD-TRUNK	CKT 043	" " "
R	14	Br-Bk	E 043	E LEAD-TRUNK	CKT 043	" " "
15T	40	Bk-S	T 044	TIP-TRUNK	CKT 044	" " "
R	15	S-Bk	R 044	RING-TRUNK	CKT 044	" " "
16T	41	Y-BI	M 044	M LEAD-TRUNK	CKT 044	" " "
R	16	BI-Y	E 044	E LEAD-TRUNK	CKT 044	" " "
17T	42	Y-O	T 051	TIP-TRUNK	CKT 051	DCOU/DEMU T05
R	17	O-Y	R 051	RING-TRUNK	CKT 051	" " "
18T	43	Y-G	M 051	M LEAD-TRUNK	CKT 051	" " "
R	18	G-Y	E 051	E LEAD-TRUNK	CKT 051	" " "
19T	44	Y-Br	T 052	TIP-TRUNK	CKT 052	" " "
R	19	Br-Y	R 052	RING-TRUNK	CKT 052	" " "
20T	45	Y-S	M 052	M LEAD-TRUNK	CKT 052	" " "
R	20	S-Y	E 052	E LEAD-TRUNK	CKT 052	" " "
21T	46	V-BI	T 053	TIP-TRUNK	CKT 053	" " "
R	21	BI-V	R 053	RING-TRUNK	CKT 053	" " "
22T	47	V-O	M 053	M LEAD-TRUNK	CKT 053	" " "
R	22	O-V	E 053	E LEAD-TRUNK	CKT 053	" " "
23T	48	V-G	T 054	TIP-TRUNK	CKT 054	" " "
R	23	G-V	R 054	RING-TRUNK	CKT 054	" " "
24T	49	V-Br	M 054	M LEAD-TRUNK	CKT 054	" " "
R	24	Br-V	E 054	E LEAD-TRUNK	CKT 054	" " "
25T	50	V-S	PFT EG	PFT GROUND (OUTPUT)		DPMU
R	25	S-V	PFT -24V	PFT -24V (OUTPUT)		"

TABLE Q
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J16
TRUNK CARD POSITIONS T06 & T07, UNA RINGING & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	T 061	TIP-TRUNK CKT 061	DCOU/DEMU T06
R	1	BI-W	R 061	RING-TRUNK CKT 061	" " "
2T	27	W-O	M 061	M LEAD-TRUNK CKT 061	" " "
R	2	O-W	E 061	E LEAD-TRUNK CKT 061	" " "
3T	28	W-G	T 062	TIP-TRUNK CKT 062	" " "
R	3	G-W	R 062	RING-TRUNK CKT 062	" " "
4T	29	W-Br	M 062	M LEAD-TRUNK CKT 062	" " "
R	4	Br-W	E 062	E LEAD-TRUNK CKT 062	" " "
5T	30	W-S	T 063	TIP-TRUNK CKT 063	" " "
R	5	S-W	R 063	RING-TRUNK CKT 063	" " "
6T	31	R-BI	M 063	M LEAD-TRUNK CKT 063	" " "
R	6	BI-R	E 063	E LEAD-TRUNK CKT 063	" " "
7T	32	R-O	T 064	TIP-TRUNK CKT 064	" " "
R	7	O-R	R 064	RING-TRUNK CKT 064	" " "
8T	33	R-G	M 064	M LEAD-TRUNK CKT 064	" " "
R	8	G-R	E 064	E LEAD-TRUNK CKT 064	" " "
9T	34	R-Br	T 071	TIP-TRUNK CKT 071	DCOU/DEMU T07
R	9	Br-R	R 071	RING-TRUNK CKT 071	" " "
10T	35	R-S	M 071	M LEAD-TRUNK CKT 071	" " "
R	10	S-R	E 071	E LEAD-TRUNK CKT 071	" " "
11T	36	Bk-BI	T 072	TIP-TRUNK CKT 072	" " "
R	11	BI-Bk	R 072	RING-TRUNK CKT 072	" " "
12T	37	Bk-O	M 072	M LEAD-TRUNK CKT 072	" " "
R	12	O-Bk	E 072	E LEAD-TRUNK CKT 072	" " "
13T	38	Bk-G	T 073	TIP-TRUNK CKT 073	" " "
R	13	G-Bk	R 073	RING-TRUNK CKT 073	" " "
14T	39	Bk-Br	M 073	M LEAD-TRUNK CKT 073	" " "
R	14	Br-Bk	E 073	E LEAD-TRUNK CKT 073	" " "
15T	40	Bk-S	T 074	TIP-TRUNK CKT 074	" " "
R	15	S-Bk	R 074	RING-TRUNK CKT 074	" " "
16T	41	Y-BI	M 074	M LEAD-TRUNK CKT 074	" " "
R	16	BI-Y	E 074	E LEAD-TRUNK CKT 074	" " "
17T	42	Y-O	SPARE		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-BI	"		
R	21	BI-V	"		
22T	47	V-O	UNA B	UNA RINGING GROUND	DPMU
R	22	O-V	UNA A	UNA RINGING 20 Hz	"
23T	48	V-G	SPARE		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	PFT EG	PFT GROUND (OUTPUT)	DPMU
R	25	S-V	PFT -24V	PFT -24V (OUTPUT)	"

TABLE R
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J1
CENTRAL OFFICE LINE CONNECTION & PFT CONTROL

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	T	TIP-CO #1	
R	1	BI-W	R	RING-CO #1	
2T	27	W-O	T	TIP-DCOU #1	
R	2	O-W	R	RING-DCOU #1	
3T	28	W-G	T	TIP-CO #2	
R	3	G-W	R	RING-CO #2	
4T	29	W-Br	T	TIP-DCOU #2	
R	4	Br-W	R	RING-DCOU #2	
5T	30	W-S	T	TIP-CO #3	
R	5	S-W	R	RING-CO #3	
6T	31	R-BI	T	TIP-DCOU #3	
R	6	BI-R	R	RING-DCOU #3	
7T	32	R-O	T	TIP-CO #4	
R	7	O-R	R	RING-CO #4	
8T	33	R-G	T	TIP-DCOU #4	
R	8	G-R	R	RING-DCOU #4	
9T	34	R-Br	T	TIP-CO #5	
R	9	Br-R	R	RING-CO #5	
10T	35	R-S	T	TIP-DCOU #5	
R	10	S-R	R	RING-DCOU #5	
11T	36	Bk-BI	T	TIP-CO #6	
R	11	BI-Bk	R	RING-CO #6	
12T	37	Bk-O	T	TIP-DCOU #6	
R	12	O-Bk	R	RING-DCOU #6	
13T	38	Bk-G	T	TIP-CO #7	
R	13	G-Bk	R	RING-CO #7	
14T	39	Bk-Br	T	TIP-DCOU #7	
R	14	Br-Bk	R	RING-DCOU #7	
15T	40	Bk-S	T	TIP-CO #8	
R	15	S-Bk	R	RING-CO #8	
16T	41	Y-BI	T	TIP-DCOU #8	
R	16	BI-Y	R	RING-DCOU #8	
17T	42	Y-O	SPARE		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-BI	"		
R	21	BI-V	"		
22T	47	V-O	"		
R	22	O-V	"		
23T	48	V-G	"		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	PFT EG	PFT GROUND (INPUT)	DPMU
R	25	S-V	PFT -24V	PFT -24V (INPUT)	"

TABLE S
TERMINAL SEQUENCE & DESIGNATIONS
CONNECTOR NO. J2
STATION LINE CONNECTION

PAIR	PIN	COLOR CODE	LEAD DESIGNATION	FUNCTION	PCB POSITION
1T	26	W-BI	T	TIP-TEL #1	
R	1	BI-W	R	RING-TEL #1	
2T	27	W-O	T	TIP-DSTU #1	
R	2	O-W	R	RING-DSTU #1	
3T	28	W-G	T	TIP-TEL #2	
R	3	G-W	R	RING-TEL #2	
4T	29	W-Br	T	TIP-DSTU #2	
R	4	Br-W	R	RING-DSTU #2	
5T	30	W-S	T	TIP-TEL #3	
R	5	S-W	R	RING-TEL #3	
6T	31	R-BI	T	TIP-DSTU #3	
R	6	BI-R	R	RING-DSTU #3	
7T	32	R-O	T	TIP-TEL #4	
R	7	O-R	R	RING-TEL #4	
8T	33	R-G	T	TIP-DSTU #4	
R	8	G-R	R	RING-DSTU #4	
9T	34	R-Br	T	TIP-TEL #5	
R	9	Br-R	R	RING-TEL #5	
10T	35	R-S	T	TIP-DSTU #5	
R	10	S-R	R	RING-DSTU #5	
11T	36	Bk-BI	T	TIP-TEL #6	
R	11	BI-Bk	R	RING-TEL #6	
12T	37	Bk-O	T	TIP-DSTU #6	
R	12	O-Bk	R	RING-DSTU #6	
13T	38	Bk-G	T	TIP-TEL #7	
R	13	G-Bk	R	RING-TEL #7	
14T	39	Bk-Br	T	TIP-DSTU #7	
R	14	Br-Bk	R	RING-DSTU #7	
15T	40	Bk-S	T	TIP-TEL #8	
R	15	S-Bk	R	RING-TEL #8	
16T	41	Y-BI	T	TIP-DSTU #8	
R	16	BI-Y	R	RING-DSTU #8	
17T	42	Y-O	SPARE		
R	17	O-Y	"		
18T	43	Y-G	"		
R	18	G-Y	"		
19T	44	Y-Br	"		
R	19	Br-Y	"		
20T	45	Y-S	"		
R	20	S-Y	"		
21T	46	V-BI	"		
R	21	BI-V	"		
22T	47	V-O	"		
R	22	O-V	"		
23T	48	V-G	"		
R	23	G-V	"		
24T	49	V-Br	"		
R	24	Br-V	"		
25T	50	V-S	"		
R	25	S-V	"		

TOSHIBA SYSTEM PRACTICES
ELECTRONIC BUSINESS COMMUNICATIONS SYSTEM

PROGRAMMING PROCEDURES
SECTION 200-100-300
DECEMBER 1984

Perception[®]

SYSTEM PROGRAMMING

Software Version A-03

(Preliminary)

Perception
 SYSTEM PROGRAMMING
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Perception

SYSTEM PROGRAMMING

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01 INTRODUCTION

01.00 General

01.01 PERCEPTION is a stored program-controlled system utilizing an 8-bit microprocessor as the central processing unit (CPU). The system memory is made up of both Read Only Memory (ROM) and Dynamic Random Access Memory (DRAM) (the small amount of ROM that is provided contains the "Loader" program for the Floppy Disk Drive (DFDD)). When the system is first powered up or is reset manually, the remainder of the Operating System programs and Customer Data are loaded into DRAM from the diskette under the control of the Loader program.

01.02 Since Dynamic RAM is volatile; that is, its contents are lost when power is removed, the diskette remains in the system as non-volatile storage.

01.10 Customer Data

01.11 All PERCEPTION options are controlled by entries made in the Customer Data memory. Tables are provided for defining System Parameters and Trunking, as well as individual station features. The Customer Data is unique to each system and is usually entered on-site using a keyboard terminal. After the data has been entered into system memory a simple keyboard command causes it to be copied onto the diskette to remain as a permanent record.

01.20 Utility Programs

01.21 In addition to the Operating System programs and Customer Data, the diskette also contains many Utility Programs, which are divided into three groups:

- 1) Data Input Procedures--used when making changes to Customer Data.
- 2) Data Output Procedures--used for obtaining printouts of the contents of the Customer Data memory.
- 3) Maintenance Procedures--used when testing the system.

01.22 When required, a Utility Program is called up using a command entered via the keyboard terminal. The system responds by locating the proper Utility Program on the diskette and then loading it into the memory overlay area. When the loading is completed, a prompt will be output to the terminal. The overlay area can accommodate only one Utility Program at a time, therefore when another program is called up the previous one is erased.

NOTE:

Any diskette operational failure will cause an error code to be output to the terminal. See Table AG for the listing of the error codes.

01.30 Keyboard Terminal

01.31 The PERCEPTION system is designed to interface with standard asynchronous keyboard/printer data terminals (a Texas Instruments Model 743 or 745, or equivalent, is suitable). An Electronic Industry Association (EIA) RS 232C-type data transmission interface is provided and the system will support data speeds of 300 or 1200 bps. The terminal connects to the "TTY" connector at the DCEC connector panel (TTY port pin assignments are shown in Table A).

01.40 Remote Administration

01.41 Utilizing a locally-provided MODEM, the PERCEPTION system Utility Programs can be called up, and the system programmed and tested from a remote location via a telephone line. An EIA RS 232C interface is provided for the MODEM and a data speed of 300 or 1200 bps is supported.

01.42 The MODEM is connected to the MODEM connector on the DCEC connector panel (MODEM port pin assignments are shown in Table A).

**TABLE A
TTY and MODEM CONNECTIONS**

TTY:

Pin No.	Mnemonic	Designation
2	RXD	Receive Data (from TTY)
3	TXD	Transmit Data (to TTY)
5	CTS	Clear to Send*
6	DSR	Data Set Ready*
7	SG	Signal Ground
8	CD	Carrier Detect*
20	DTR	Data Terminal Ready (from TTY)

* Connect to +12 VDC internally

MODEM:

Pin No.	Mnemonic	Designation
2	TXD	Transmit Data (to MODEM)
3	RXD	Receive Data (from MODEM)
4	RTS	Request to Send (to MODEM)
5	CTS	Clear to Send (from MODEM)
6	DSR	Data Set Ready (from MODEM)
7	SG	Signal Ground

NOTE:

The MODEM and TTY connectors cannot be used simultaneously. One must be "open" at any given time.

01.50 Data Format

01.51 Utilizing one start bit, one stop bit and one parity bit, the system communicates via the standard 7-level ASCII code on the TTY and MODEM ports. The system transmits even parity and ignores parity on the receive side.

02 DATA INPUT/OUTPUT PROCEDURE

02.00 General

02.01 The Utility Programs are divided into three types:

- 1) Data Input Procedures - Ability to change customer data
- 2) Data Output Procedures - printout
- 3) Maintenance Procedures

02.02 Each Utility Program has a 4-letter mnemonic name that is used to identify it and to call it up from the diskette. An Authorization Procedure must be executed before a Utility Program can be called up.

02.03 The Utility Programs are listed in Table B, complete with their mnemonics and the title of the table that shows its format.

TABLE B
UTILITY PROGRAMS

DATA INPUT PROCEDURES

Name	Mnemonic	Table
Authorization Code Change	DCHG	C
System Data Block	DSYS	D
Access Code Data Block	DACD	E
EKT Data Block	DEKT	F
Standard Telephone Data Block	DSTT	G
Class of Service Data Block	DCOS	H
Toll Restriction Data Block	DTOL	I
Speed Dial Data Block	DSDL	J
SMDR Data Block	DMDR	K
Attendant Data Block	DATT	L
Traffic Measurement Data Block	DTRF	M
DIMF Receiver Data Block	DRCV	N
Trunk Group Data Block	DTGP	O
Trunk Data Block	DTRK	P
Least Cost Routing Data Block	DLC1,2	Q

DATA OUTPUT PROCEDURES

Print System Data Block	PSYS	R
Print Access Code Data Block	PACD	S
Print Station Data Block	PSDB	T
Print Class of Service Data Block	PCOS	U
Print Code Restriction Data Block	PCRD	V
Print Speed Dial Data Block	PSDL	W
Print SMDR Data Block	PMDR	X
Print Trunk Group Data Block	PTGP	Y
Print Trunk Data Block	PTRK	Z
Print Least Cost Routing Data Block	PLCR	AA
Print Call Pick-up Group	PCPG	AB
Print Hunting Arrangements	PHNT	AC

MAINTENANCE PROCEDURES

Data Memory Dump	DDMP	AD
EKT/Attendant Console Test	TTRM	AE
Peripheral Equipment Test	TPER	AF

03 SYSTEM DATA PREPARATION

03.01 Before the PERCEPTION system data can be input, option selections must be made and then listed on the System Record (shown in Appendix 1). The System Record will then serve as a programming guide and installation record.

03.02 The System Record contains a form for each Data Input Utility Program. The forms are identified by the Utility Program name and mnemonic requested by the system (for example: System Data Block-DSYS Program).

03.03 Inputting data via a Utility Program is a matter of responding to the prompts. These prompts are listed in their proper order in the System Record Forms and space is provided to record a response.

03.04 Using the System Record forms to record the various choices, make the option selections per the instructions in the following paragraphs.

03.05 System Data Block (Table D)

o The System Data Block (DSYS) Program contains many miscellaneous data entries that are meaningful to the system as a whole rather than any individual station or trunk.

o Data is entered as follows:

REQ (Request)--Indicates program has loaded. Since data is always present, only the CHG response is possible:

TOR (Time of Daily Routine)--Specifies the time of day that the daily routine task (listed after the next prompt) will run.

Enter: 24-hour clock time (for example: 1315 for 1:15 pm).

DRT (Daily Routine Task)--Specifies the maintenance tasks to be run at the time specified in response to TOR.

Enter: DDMP (Data dump) or NONE.

TEN (Tenant Service)--Specifies if tenant service is to be used. If "Y" is entered, incoming trunk calls, dial [0] calls, attendant recalls, intercepts, etc. will be routed to the proper attendant console (Att. #0 for Tenant #0 and Att. #1 for Tenant #1) according to the response to the TEN prompt in the EKT Data Block (DEKT Program), Standard Telephone Data Block (DSTT Program) and Trunk Group Data Block (DTGP Program). If "N" is entered, the attendant consoles will operate in the load sharing mode.

Enter: Y (yes) or N (no).

* ICP 1 (Intercept #1)--If the attendant takes control of a trunk group using the trunk group access control feature, stations calling that trunk group will be routed to Intercept #1. This entry defines ICP 1 as being overflow tone (OFL) or attendant (ATT).

Enter: ATT or OFL

Sys. Parameter

ICP 2 (Intercept #2)--An incoming call from a DID, TIE or CCSA trunk to a non-existing DN will be routed to Intercept #2 when the system is in day service and to overflow tone when night service is active. This entry defines ICP 2 as being overflow tone (OFL) or attendant (ATT).

Enter: ATT or OFL.

ICP 3 (Intercept #3)--A call that is violating trunk access restrictions will be routed to Intercept #3 when the system is in day service and to overflow tone when night service is active. This entry defines ICP 3 as being overflow tone (OFL) or Attendant (ATT).

Enter: ATT or OFL.

LCR (Least Cost Routing)--A "Y" response enables Least Cost Routing in the system. Refer to Least Cost Routing Data Block (DLC1 and DLC2 programs).

Enter: Y (yes) or N (no).

APG (All Page Access Code)--Defines the All Page access code (maximum: 3 digits).

Enter: 1, 2, or 3 digits.

AAT (Not Used):

Enter: [CR].

APX (Not Used):

Enter: [CR].

LN 1 (Listed Directory Number #1)--Defines the LDN #1 for use with DID feature (maximum: 3 digits).

Enter: 1, 2, or 3 digits.

LN 2 (Listed Directory Number #2)--Defines the LDN #2 for use with DID feature (maximum: 3 digits).

Enter: 1, 2, or 3 digits.

NT 1 (LDN #1 Night Number)--Defines the destination to which LDN #1 calls will be routed when the system is in night service (DN or Universal Night Answer).

Enter: 1, 2, or 3 digits or UNA.

NT 2 (LDN #2 Night Number)--This is prompted only if the response to TEN (above) was "Y". Defines the destination to which LDN #2 calls will be routed when the system is in night service (DN or Universal Night Answer).

Enter: 1, 2, or 3 digits or UNA.

BLF 1 (Busy Lamp Field #1)--Defines one of the hundreds groups to be displayed by the console BLF.

Enter: 1 digit (1-9).

BLF 2 (Busy Lamp Field #2)--Defines one of the hundreds groups to be displayed by the console BLF.

Enter: 1 digit (1-9).

MC 0 (Message Center - Tenant #0)--Defines the message center for stations assigned to Tenant #0 (all stations in a non-tenant system). The message center may be attendant console #0 or an EKT that is assigned to Tenant #0.

Enter: ATT0, DN (1, 2, or 3 digits), or NONE.

MC 1 (Message Center - Tenant #1)--Defines the message center for stations assigned to Tenant #1. The message center may be attendant console #1 or an EKT that is assigned to Tenant #1.

Enter: ATT0, DN (1, 2, or 3 digits), or NONE.

used if
Tenant service
enabled

the hundreds
identified on
console BLF

ATT 0

ATT 1

ATD

OFL 1 (Overflow DN - Attendant Console #0)--Defines the destination for calls rerouted from attendant console #0 due to the attendant overflow facility.

Enter: 1, 2, 3 digits or NONE (= UNA).

NOTE:

This data may also be changed by the attendant console.

ATI

OFL 2 (Overflow DN - Attendant Console #1)--Defines the destination for calls rerouted from attendant console #1 due to the attendant overflow facility.

Enter: 1, 2, 3 digits or NONE (= UNA)*.

*This data may also be changed by the attendant console.

NOTE:

OFL 2 does not print out when the system has no tenant.

MMP (Meet-me Page DN)--Defines the phantom DN used by the attendant to "park" a call for the Meet-me Page feature (maximum: 3 digits).

Enter: 1, 2, or 3 digits.

REM (Remote Access DN)--Defines the phantom DN used to assign a trunk for "Remote Access to Services" operation (maximum: 3 digits). The phantom DN must be the same as an assigned station DN. *any sta.*

Enter: 1, 2, or 3 digits.

RAC (Remote Access Change Code)--Defines the access code used by the attendant to change the authorization code that must be entered by outside callers using the remote access feature (maximum: 3 digits).

Enter: 1, 2, or 3 digits.

ACC * (* Access Code)--Defines the digit to be used by a rotary dial telephone in place of [*]

Enter: 1 digit.

NOTE:

Must not conflict with DN or other access codes--not checked by software.

ACC # (# Access Code)--Defines the digit to be used by a rotary dial telephone in place of [#]

Enter: 1 digit.

NOTE:

Must not conflict with DN or other access codes--not checked by software.

COT (Camp-on or Call Waiting Time-out)--Defines Camp-on and Call Waiting feature time-out.

Enter: Time in seconds (for example: 30).

*How long before going back to OPB.
1-255 seconds*

RNA (Ring-no-answer Time-out)--Defines the ring-no-answer time-out for attendant-handled calls.

Enter: Time in seconds (for example: 30).

1-255

AOF (Attendant Overflow Time-out)--Defines the time-out for the attendant overflow facility.

Enter: Time in seconds (for example: 30). 1-255

CFD (Call Forward No-answer Time-out)--Defines the Call Forward no-answer time-out.

Enter: Time in seconds (for example: 12).

NOTE:

Must be less then RNA time or RNA time will prevail.

HLD (Hold [500/2500] Time Out)--Defines the time-out for the recall of a held call to a single line telephone.

Enter: Time in seconds (e.g., 75) or NONE.

DPT (Dial Pause Time-out)--Defines the maximum pause allowed before the first digit is dialed or between other digits dialed from a DTMF or a rotary dial telephone. Stations released due to the DPT timer will hear overflow tone. Used with the line lockout feature.

Enter: Time in seconds (for example: 15).

NOTE:

Also controls the release of an idle attendant console LPK key.

PBT (Push-button Time-out)--Defines the maximum pause allowed between digits dialed on a trunk line from a DTMF telephone. The transmit voice path from a DTMF telephone to a CO line is broken during dialing. The PBT timer determines how quickly the path is restored and, therefore, should be as short as possible.

Enter: Time in seconds, e.g., 6.

LLO (Line Lockout Time)--Defines the length of time that overflow tone is applied to a station after having been released due to the DPT timer. After this time-out, the station will hear nothing.

Enter: Time in seconds, e.g., 15.

ACB (Automatic Callback Reserve Time)--Defines the length of time that the called station or trunk in an ACB call is reserved for the caller (maximum: 6 seconds).

Enter: Time in seconds, e.g., 3. *Don't exceed 6 seconds*

HFS (Handsfree Answerback Station)--A "Y" response allows calls from any station to a Handsfree Answerback-equipped EKT to voice announce and be replied to handsfree.

Enter: Y (yes) or N (no).

HFA (Handsfree Answerback Attendant)--A "Y" response allows calls from the attendant to a Handsfree Answerback-equipped EKT to voice announce and be replied to handsfree.

Enter: Y (yes) or N (no).

MDR (SMDR Equipped)--A "Y" response informs the system that SMDR is to be equipped and activates the MDR alarm on the console.

Enter: Y (yes) or N (no).

CFS (Call Forward DID Station)—A "Y" response enables a DID station ring no answer call to forward to the Attendant Console. The Ring-no-answer Time-out (RNA) will be used to set the time interval.

Enter: Y (yes) or N (no).

03.06 Access Code Data Block (Table E)

o The Access Code Data Block (DACD) Program assigns the access codes that will be used for feature execution.

o Data is entered as follows:

REQ (Request)—Indicates program has loaded. Since data is always present, only the CHG response is possible:

FIR:

Enter: 3-character feature name, a space, and then the desired access code. (See Table E-1 for feature names and standard code assignments.)

NOTE:

The access codes assigned at the factory are shown in Table E-1. Any feature not requiring change need not be entered. Features may be entered in any order.

03.07 EKT Data Block (Table F)

o The EKT Data Block (DEKT) Program defines all parameters of a given EKT. An EKT Data Block must be completed for each EKT in the system.

o Data is entered as follows:

REQ (Request)—Indicates program has loaded. Three responses are possible:

NEW - to create a new Data Block

CHG - to change an existing Data Block

OUT - to delete a complete existing Data Block

NOTE:

If OUT is entered, only port number (POR) need be given below. No other entry is necessary.

POR (Port Number)—Identifies the hardware location of the EKT circuit to be defined. The port number has two parts.

1. DEKU PCB location: L00--L14

2. Circuit number on that PCB: 1--8

For example: The port number of the 4th circuit on the DEKU in position L01 is L014

Enter: Port number of EKT (LXXX).

NOTE:

If OUT command was given above, the port just defined will be deleted and the next prompt will be REQ.

KS (Number of Key Strips)—Informs the system of the number of groups of 10 feature keys the EKT will have.

Enter: 1 (for 10-key EKT) or 2 (for 20-key EKT).

COS (Class of Group Services)—Assigns one of the 16 Classes of Service to the EKT. (The Classes of Service are defined using the DCOS program.)

Enter: COS Number (0—15).

TEN (Tenant Number)—Assigns EKT to one of the two possible system tenants.

Enter: 0 if tenant service is not selected in System Data Block (DSYS TEN = N).

0 or 1 if tenant service is selected in System Data Block (DSYS TEN = Y).

PUG (Call Pick-up Group)—Assigns the EKT to one of the 32 possible groups for use with the Call Pick-up Group feature.

Enter: Group number (0—31) or NONE.

WTA (Warning Tone Allowed?)—Defines an interruption-protected station. An "N" response will prevent warning tones from being applied to the station.

Enter: Y or N.

CFT (Call Forward to Trunk?)—A "Y" response allows calls to be forwarded outside the system using the Call Forward-All Calls feature

Enter: Y or N.

TOL (Toll Restricted Class)—Assigns one of the ten classes of Toll Restriction to the EKT. Classes 0—7 are defined in the Toll Restriction Data Block (DTOL program). Class 8 is simple toll restriction; restricting when 0 or 1 are dialed as the first or second digit. None defines the EKT as unrestricted.

Enter: 0—8 or None.

MTA (Not Used):

Enter: N.

HFA (Handsfree Answerback Equipped)—A "Y" response activates the Handsfree Answerback capabilities of the EKT.

Enter: Y or N.

DIS (Display EKT)—A "Y" response activates the LCD display on the EKT (maximum 30 display EKTs in system).

Enter: Y (yes) or N (no).

KEY (Key Assignments)—Assigns a DN or feature to one of the flexible keys.

Enter:

1) The number of the key to be defined followed by a space bar. Keys are numbered 0 through 9 (or 19 for 20-key EKT), starting from the bottom of the vertical keystack (the four keys under the dial pad have fixed assignments). Following the key number and space, any existing key data will be output.

2) Feature or DN assignments. The possible assignments are as follows:
Directory (Station) Number:

- SCR NNN XXX - Single Call Ring
 - o Incoming calls will ring EKT.
 - o NNN = Directory (Station) Number
 - o XXX = Hunt number = enter DN to which this DN will hunt or code for distributed hunt (see below)
- SCN NNN XXX - Single Call No Ring
 - o Incoming calls will not ring EKT
 - o NNN = Directory (Station) Number
 - o XXX = Hunt number = enter DN to which this DN will hunt or code for distributed hunt (see below)

Station Hunt - Distributed:

- o X = enter in place of the hunt number above. For example: SCR NNN #X (maximum: 8 stations per group)
 - X = Distributed Hunt Group Number (0—4)

Private CO Lines:

- PVR XXX - Private Line Ring
 - o Incoming call will ring EKT
 - o XXX = TDN assigned in Trunk Data Block
- PVN XXX - Private Line No Ring
 - o Incoming call will not ring EKT
 - o XXX = TDN assigned in Trunk Data Block

Features:

- ACB - Automatic Callback
- ADL - Automatic Dialing
- CFD - Call Forward-All Calls
- DIS - Display Date Time/Elapsed Time
- DND - Do Not Disturb
- FUD - Call Pick-up-Directed
- FUG - Call Pick-up-Group
- CWT - Call Waiting
- CRG - Charge Account (SMDR)
- SIG LNNX - Manual Signalling
 - (LNNX = port number of EKT to be signalled)
- MSG - Message Waiting
- OVR - Override
- PRS - Privacy Release
- SCF - Speaker Cutoff
- RND - Repeat Last Number Dialed
- SDS - Speed Dial-System
- SDC XX - Speed Dial-Station (controller of list XX)
- SDU XX - Speed Dial-Station (user of list XX)
- VCP XXX - Voice Page (XXX = DN to be paged)
- FLH - Flash (sends flash to CO line)
- RLS - Release

KEY—The prompt will be repeated until all entries have been made and DEL is entered.

03.08 Standard Telephone Data Block (Table G)

- o The Standard Telephone Data Block (DSTT) Program defines all parameters for a given conventional telephone. An STT Data Block must be completed for each conventional telephone in the system.

o Data is entered as follows:

REQ (Request)--Indicates program has loaded. Three responses are possible:
 NEW - To create a new STT Data Block.
 CHG - To alter an existing STT Data Block.
 OUT - To delete a complete existing Data Block.

NOTE:

If OUT is entered, only the port number (POR) need be given below. No other entry is necessary.

POR (Port Number)--Identifies the hardware location of the STT circuit to be defined. The port number has two parts:

1) DSTU PCB location: L00--L14

2) Circuit number on that PCB:1--8

For example: The port number of the 5th circuit on the DSTU in position L02 is L025

Enter: Port Number of STT (LXXX).

DN (Directory Number)--Defines the directory number (station number) of the station.

Enter: DN 1, 2 or 3 digits.

SMX (Station Mix)--When a station DN entered above also exists on an EKT that DN is shared and bridging is possible between the two sets.

Enter: "Y" bridging is allowed (no privacy).

"N" bridging is not allowed (privacy).

NOTE: When the DN does not exist on an EKT enter "N".

COS (Class of Group Services)--Assigns one of the 16 Classes of Service to the telephone. (The Classes of Services are defined using the DCOS program.)

Enter: COS Number (0--15).

TEN (Tenant Number)--Assigns the station to one of the two possible system tenants.

Enter: 0 if tenant service is not selected in System Data Block (DSYS TEN = N).

0 or 1 if tenant service is selected in System Data Block (DSYS TEN = Y).

PUG (Call Pick-up Group)--Assigns the station to one of the 32 possible groups for use with the Call Pick-up Group feature.

Enter: Group number (0--31) or NONE.

HNT (Hunt Number)--Defines the station to which this DN hunts. (Used with the Hunting and Call Forward-No Answer features.)

Enter: a) Next DN in hunt group.

b) For Station Hunt - Distributed: NX.

(N = Distributed hunt group number, 1--4).

(X = Member number, 1--8).

c) NONE

DLG (Dialing Type)--Defines the type of dialing, if any, to be used by the station.

Enter: DIP for dial pulse

TON for DTMF.

MNL 0 or 1 for manual line (off-hook rings operator 0 or 1).

HTL XXX for hot line (off-hook rings DNXXX).

SDL (Speed Dial List)--Assigns one of the 25 personal, 10-number speed dial lists for use at this station.

Enter: SDC XX - Makes the station a controller of list #XX.

SDU XX - Makes the station a user of list #XX.

NONE - No list assigned.

WTA (Warning Tone Allowed?)--Defines an interruption-protected station. An "N" response will prevent warning tones from being applied to the station.

Enter: Y or N.

CFT (Call Forward to Trunk?)--A "Y" response allows calls to be forwarded outside the system using the Call Forward-All Calls feature

Enter: Y or N.

TOL (Toll Restriction Class)--Assigns one of the ten classes of Toll Restriction to the station. Classes 0-7 are defined in the Toll Restriction Data Block (DTOL Program). Class 8 is simple toll restriction; restricting when 0 or 1 are dialed as the first or second digit. None defines the stations as unrestricted.

Enter: 0-8 or None.

03.09 Class of Service Data Block (Table H)

- o The Class of Service Data Block (DCOS) Program defines the 16 Classes of Service available in the system. All services controlled by the COS are allowed to all stations unless restricted in this Data Block.
- o The DCOS program assigns a number (0-15) to each group of restrictions to be used. The number defined here is then entered in response to the COS prompt in the DSTT, DEKT and DTGP programs.
- o Any numbers not entered or otherwise defined will have no restrictions.
- o Data is entered as follows:

REQ (Request)--Indicates program has loaded. The only response possible is CHG.

COS (Class of Service)--Defines the COS number (0-15) and the restrictions to be associated with it. The possible restrictions are listed in Table H-1.

Enter: COS number, followed by the restriction, in the following format: 0 T00 OVR ACO.

NOTE:

In this example, COS 0 will not allow trunk group 00, override and attendant control override.

COS:

Repeat for all COS entries.

03.10 Toll Restriction Data Block (Table I)

- o The Toll Restriction Data Block (DTOL) Program defines the office codes and area codes to be allowed or denied by the Toll Restriction feature.
- o There are eight classes of Toll Restriction that can be tailored to the customer's needs in defining a station's outward dialing privileges. Each class includes specific restrictions, one area code table, and one office code table. For convenience, the tables may be defined as allow or deny tables.
- o When specific office codes are to be allowed or denied within a specified area code, thirty two (32) area/office code exception tables are available as exception to area code tables.
- o Data is entered as follows:

REQ (Request)--Indicates program has loaded. The only response possible is CHG.

TYPE (Sub program type)--There are three Sub-Programs within the DTOL program. Three responses are possible:

PAR - Miscellaneous Parameters Table:
Identifies system operating parameters.

CLS - Restriction Class Table:
Defines the each class of Toll Restriction.

ADC - Area/Office Code Exception Table:
Defines an exception to the dialing privileges defined in the CLS area code table.

Since each sub-program can be entered independently for the TYPE prompt each will be separated by the following text:

The next prompt for PAR will be:

HAC (Home Area Code)--Defines the area code in which the system is operating. Also used when analyzing dialed number not containing an area code. Data entered here will appear in Least Cost Routing Data Block (DLC1 program PAR table, HAC prompt).

Enter: Area Code N 0/LX.

NOTE:

N = 2—9

0/l= 0 or 1

X = 0—9

ICC (Interchangeable Codes)--A "Y" informs the system that interchangeable codes are used. Interchangeable codes are office codes that have 0 or 1 as the second digit (N 0/LX format). Area codes will be identified as the three digits following the DDD prefix. Office codes will be identified as the first three digits when a DDD prefix is not dialed (See DDP prompt).

Enter: Y (yes) or N (no).

SPCC1 (Specialized Common Carrier #1)—Informs the system of the DN used to access a SPCC (MCI, SPC, etc.) or equal access carrier (10XXX). The system will recognize the DN and ignore it for Toll Restriction purposes. Data entered here will appear in DMDR program and DLC1 - PAR table.

Enter: SPCC Number NXXXXXX or None.

or

Equal Access Number 10XXX

SPCC2 (Specialized Common Carrier #2)—Same as SPCC #1, but for a second carrier.

Enter: SPCC NUMBER NXXXXXX or None.

or

Equal Access Number 10XXX.

DDP (Direct Distance Dialing Prefix)—Defines the Direct Distance Dialing (DDD) Prefix in the NPA (Numbering Plan Area). If ICC is "Y" the dialed DDP will identify the interchangeable code as an area code. If ICC is "N" the dialed DDP will be absorbed.

Enter: 1, 2, or 3 digits or None.

AUTH1 (Authorization Code #1)—Indicates the number of digits in the authorization code used with SPCC#1. These digits and the SPCC #1 DN entered will be ignored for Toll Restriction purposes. Toll analysis will be performed on the first 3 or 6 digits following the DN and authorization code.

Enter: 1—12 digits or None.

NOTE:

When using Equal access (10XXX) for SPCC #1 or #2 do not enter Authorization Code.

AUTH2 (Authorization Code #2)—Same as authorization code #1, but for SPCC#2.

Enter: 1—12 digits or None.

The next prompt for CLS will be:

CNO (Class Number)—Indicates the number of the Toll Restriction class being defined. This number is used in response to the "TOL" prompt in the DEKT, DSIT and DTGP programs.

Enter: class number 0—7

NOTE:

Enter OUT after the class number to remove that class from service.

OPR (Operator and Operator Assisted Calls)—A "Y" response allows operator and operator assisted calls to this toll restriction class.

Enter: Y (yes) or N (no).

INT (International Calls)—A "Y" response allows international calls (011, 01) to this toll restriction class.

Enter: Y (yes) or N (no).

LDA (Long Distance Directory Assistance)—A "Y" response allows long distance directory assistance calls to this toll restriction class. Any area code + 555+ XXXX will be allowed.

Enter: Y (yes) or N (no).

ACT (Area Code Table Type)—Defines the Area Code Table of this toll restriction class as an Allow (A) or Deny (D) type.

- o An "A" entry will allow all area codes except those deleted below in response to the ACD prompt.
- o A "D" entry will deny all area codes except those added below in response to the ACD prompt.

Enter: A (allow) or D (deny).

ACD (Area Code Table)—Indicates the area codes to be allowed or denied for this toll restriction class. Area codes may be added (A) or deleted (D) as described in above ACT prompt.

Enter: A NO/LX NO/LX etc.

to add area codes.

or

D NO/LX NO/LX etc.

to delete area codes.

NOTE:

N = 2—9

O/L = 0 or 1

X = 0—9

OCT (Office Code Table Type)—Defines the Office Code Table of this Toll Restriction Class as an Allow (A) or Deny (D) type.

- o An "A" entry will allow all office codes except those deleted below in response to the OCD prompt.
- o A "D" entry will deny all office codes except those added below in response to the OCD prompt.

Enter: A (allow) or D (deny)

OCD (Office Code Table)—Indicates the office codes to be allowed or denied for this Toll Restriction Class. Office codes may be added (A) or deleted (D) as single 3 digit codes or as a "range" covering up to 10 sequential 3 digit office codes. "Ranges" are entered using a 4 digit format; where the first 2 digits are common to all codes in this range; the third digit represents the start point of the range (from) for the last digit of the office code; the fourth digit represents the end point of the range (to) for the last digit of the office code. See Example "Ranges".

Enter: A NXXX NXX NXXX etc.

to add office codes.

or

D NXXX NXX NXX etc.

to delete office codes.

Note:

N = 2 - 9

X = 0 - 9

EXAMPLE "RANGES":

<u>4 digit format</u>	<u>office codes</u>
2209	220-229
2316	231-236
2478	247-248

Note:

Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.

The next prompt for AOC will be :

TNO (Table Number)--Selects one of the thirty two (32) area/office code exception (AOC) tables to be used.

Enter: Table Number (0-31).

ARC (Area Code)--Identifies the area code that this ADC table is assigned to. A maximum of eight (8) AOC tables can be assigned to any one area code and those table numbers (TNO) must be sequential.

Enter: Area Code NO/LX.

NOTE:

- N = 2—9
- O/I = 0 or 1
- X = 0—9

CNO (Class Number)--Defines the toll restriction class (CLS) numbers (0—7) that are subject to this exception table. Any number of classes, up to maximum of all 8 may be entered.

- o If a toll restriction class table (CLS) is allowed to dial an area code (ARC), all office codes within that specified area code will be allowed, except those specific office codes added below in the OFC prompt.
- o If a toll restriction class table (CLS) is not allowed to dial an area code (ARC), all office codes within that specified area code will not be allowed, except those specific office codes added below in the OFC prompt.

Enter: Class Numbers 0 1 2 etc.

OFC (Office Codes)--Indicates the office codes that are assigned to this area/office code exception (AOC) table. Office codes may be added (A) or deleted (D) as single 3 digit codes or as a "range" covering up to 10 sequential 3 digit office codes. "Ranges" are entered using a 4 digit format; where the first 2 digits are common to all codes in this range; the third digit represents the start point of the range (from) for the last digit of the office code; the fourth digit represents the end point of the range (to) for the last digit of the office code. See Example "RANGES".

Enter: A NXXX NXX NXXX etc.
to add office codes.
or
D NXXX NXX NXXX etc.
to delete office codes.

Note:

- N = 2 - 9
- X = 0 - 9

EXAMPLE "RANGES":

<u>4 digit format</u>	<u>office codes</u>
2209	220—229
2316	231—236
2478	247—248

NOTE:

Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.

03.11 Speed Dial Data Block (Table J)

- o The Speed Dial Data Block (DSDL) Program contains all numbers stored on the 90-number Speed Dial-System list and the 25 personal, 10-number Speed Dial-Station lists. All of these numbers can be stored by either the attendant console or by a controlling station.
- o The DSDL program allows changes to any speed dial list to be performed from the maintenance terminal.
- o Data is entered as follows:

REQ (Request)--Indicates program has loaded. Two responses are possible:

CHG - to change existing or enter new data

OUT - to clear all data

LNO (List Number)--The number of the list to be altered or cleared.

Enter: The list number (00 = System List)
(01--25 = Station List)

NOTE:

If the OUT command was entered in response to REQ above, no other data is required.

STR (Store Number)--This requests the number to be stored.

Enter: Address code, space and number in the following format:

Example: 1 9*NPANNXXXXX

2 9*NPANNXXXXX

NOTE:

In these examples, 9 is a trunk access code. Therefore, a "*" is entered to cause a 3-second pause for dial tone delay. The "*" is counted as one of the 16 digits allowed.

03.12 Station Message Detail Recording Data Block (Table K)

- o The Station Message Detail Recording Data Block (DMDR) Program defines the account code length and type of calls to be recorded for each trunk group for the SMDR feature.
- o Data is entered as follows:

REQ (Request)--Indicates program has loaded. Three responses are possible:

NEW - to create a new table

CHG - to alter existing data

OUT - to clear all existing data

ACL (Account Code Length)--Defines length of account code to be used or no account code.

Enter: Number of digits to be used (1--12).

SPCC 1 (Specialized Common Carrier #1)--Informs the system of the DN used to access an SPCC (MCI, SPC, etc.). The system will recognize the DN and enter a unique condition code in the SMDR output.

Enter: SPCC Number NXXXXXX

or

Equal Access Number 10XXX

SPCC 2 (Specialized Common Carrier #2):
Same as SPCC #1, but for a second carrier.

Enter: SPCC Number NXXXXXX

or

Equal Access Number 10XXX

NOTE:

Data entered here will also appear at the SPCC1 and SPCC2 entries in DTOL data block.

TGP (Trunk Group)--Defines the type of calls to be recorded by SMDR for a given trunk group.

Enter: XX YYY

(XX = trunk group number)

(YYY = NONE--No records

INC--Incoming only

OGT--Outgoing only

IAO--Incoming and outgoing

TOL--Toll calls only

INT--Incoming-all

Outgoing-toll only)

Repeat for each trunk group used in the system.

03.13 Attendant Data Block (Table L)

o The Attendant Data Block (DATT) Program defines the presence of two possible attendant consoles in the system and selects the attendant options.

o Data is entered as follows:

REQ (Request)--Indicates program has loaded. Three responses are possible:

NEW - to create a new data block

CHG - to alter existing data

OUT - to delete an existing data block

NO (Attendant Number)--Selects the console to be defined

Enter: 0 or 1

POR (Port Number)--Selects the port to be occupied by the console.

Enter:L001 for Attendant Console #0

L121 for Attendant Console #1

LKO (Lockout Allowed?)--A "Y" response will enable the lockout feature.

Enter:Y or N

PAG (Page Key)--Assigns the console PAGE key to a particular page zone or All Page.

Enter: Access code of the page zone, All Page or NONE.

03.14 Traffic Measurement Data Block (Table M)

- o The Traffic Measurement Data Block (DIRF) Program defines the parameters that control the Traffic Measurement feature.
- o Data is entered as follows:

REQ (Request)--Indicates program has loaded. Three responses are possible:

- RPT - Report Command: If record keeping has been started previously (STT command), a report will follow (see Table M-1 for format).
- STT - Start Command: Initializes the program and starts the record keeping and reporting activity. (Used for SCH = CMD. Must be entered after each RPT request.)
- CHG - Change Command: Alters reporting parameters.
- OUT - OUT Command: Stops reports.

The next prompt (for CHG input) will be:

SYST.DATE MMDDYY (System Date)--Reports the date currently in memory and gives an opportunity for a change.
Enter: New date: MMDDYY, or CR (no change)

SYST.TIME HHMMSS (System Time)--Reports the time currently in memory and gives an opportunity for a change.
Enter: New time: HHMMSS (24 hour clock), or CR (no change)

SCH XXX (Schedule of Reports)--Defines the schedule for reports. Outputs the current data and gives an opportunity for change.
Enter: 30 - Report every 30 minutes beginning at the time listed as STR (next prompt)
60 - Report every 60 minutes beginning at the time listed as STR (next prompt)
CMD - Report only when RPT command is given in response to REQ above
NONE - No report

STR DATE MMDDYY (Start Date)--Defines the start date for record keeping and reporting. Outputs current data and gives an opportunity for a change.
Enter: Start Date: MMDDYY, or CR (no change)

STR TIME HHMMSS (Start Time)--Defines the start time for record keeping and reporting. Outputs current data and gives an opportunity for a change.
Enter: Start Time: HHMMSS, or CR (no change)

RPT (Report Parameters):

SYST	(System Data)
ATT0	(Attendant 0)
ATT1	(Attendant 1)
TGP00	(Trunk Group 00)
TGP01	(Trunk Group 01)
TGP15	(Trunk Group 15)

Selects those parameters that are to be recorded (see Table M-2). The current data (Y or N) is output for each parameter and an opportunity is given for a change.

Enter: Y (yes) or N (no) followed by a CR for each parameter.

03.15 DIMF Receiver Data Block (Table M)

- o The DIMF Receiver Data Block (DRCV) Program identifies which DIMF receivers are to be equipped in the system
- o The system accommodates one DRCU PCB which can be equipped with 4 or 6 single chip DIMF receivers.
- o Data is entered as follows:

REQ (Request)--Indicates program has loaded. Three responses are possible:

- NEW - For original installation
- CHG - To add or delete receivers
- OUT - To remove PCB completely

NOTE:

If OUT is entered, no further input is necessary.

POR (Port Number)--Selects the port to be occupied by the DIMF receiver.

The port number has two parts:

- 1) DRCU PCB location (R00)
- 2) Circuit number on the DRCU PCB (1--6)

Enter: Port number to be used (R001--R006)

REQ (Repeat until all circuits are assigned)

03.16 Trunk Group Data Block (Table O)

- o The Trunk Group Data Block (DTGP) Program defines the parameters for each of the 16 possible trunk groups in the system. A Data Block must be completed for each trunk group in the system. Not all of the prompts listed below are used for all trunk types. The response given to the TKT (trunk type) prompt will determine which prompts will be given. Table O-1 shows the prompts that can be expected for each trunk type. (Use the proper system record form for the type of trunk being defined.)
- o Data is entered as follows:

REQ (Request)--Indicates program has loaded. Three responses are possible:

- NEW - To create a new trunk group
- CHG - To alter data in an existing Data Block
- OUT - To delete an entire existing Data Block

NOTES:

1. All trunks must be deleted from the group using the DTRK program before the OUT command will be accepted
2. If OUT is entered, only the Trunk Group Number (GRP) must be entered. No other data is necessary.

GRP (Trunk Group Number)--Identifies the trunk group number. Sixteen groups are available (0--15). If private lines are to be used, they all occupy one trunk group called PVL. The PVL group replaces group 15.

Enter: Trunk Group Number (0--15) or PVL

TEN (Tenant Number)--Identifies the tenant to which the trunk group belongs.

Enter: Tenant Number 0 or 1

TKT (Trunk Type)--Identifies the type of trunk to be used in group.

NOTE:

It is not possible to enter a change (CHG) for Trunk Type (TKT). The Data Block must be deleted (OUT) and a new (NEW) Data Block entered.

Enter: COT - Local CO trunk
FEX - Foreign Exchange line
DID - Direct Inward Dialing trunk
PVL - Private line
CSA - CCSA line
TIE - TIE Trunk
WAT - WATS Line

IAO (Incoming/Outgoing)--Determines if the trunks will give 2-way or 1-way service.

Enter: ICT - Incoming only
OGT - Outgoing only
IAO - 2-way

STP (Advance Step)--Identifies the next trunk group in a route advance sequence. If a station user attempts to access a trunk in this group and they are all busy, a trunk from the group identified in response to STP will be selected.

Enter: Next Trunk Group Number (0--15) or NONE

COD (Access Code)--Defines the access code for the trunk group. 1-, 2-, or 3-digit access codes are permitted if no conflict exists in the system. For example: 3 cannot be used if 30 or 300 is used as an access code or DN.

Enter: Access Code (1, 2 or 3 digits)

COS (Class of Service)--Defines system access permitted to inward dialing trunks, i.e., TIE, DID, CCSA. Use one of the 16 Classes of Service defined by the DCOS program.

Enter: COS number (0--15)

TRN (Transmission)--Defines the transmission arrangement required for the trunks in the group. The entry made here will determine the type of PAD switching done on trunk connections (see Table 0-2 for loss plan).

Enter: NTC: Non-transmission Compensated (2-wire circuit with < 2dB loss)
TRC: Transmission Compensated (4-wire circuit or 2-wire circuit with > 2 db loss)
VNL: Via Net Loss (4-wire VNL circuit)

STR (Start Arrangement)--Defines the start arrangement to be used by the trunk in the group.

Enter: IMM: Immediate start
WNK: Wink start
DDL: Delay dial

WTA (Warning Time Allowed?)—Defines an interruption-protected trunk group (for example: data line). An "N" response will prevent warning tones from being applied to this trunk group.

Enter: Y or N

OAB (Outgoing Absorb Digits)—Identifies the digits which are to be ignored for purposes of Toll or Code Restriction. These digits will be outputted but not counted as the first digit.

Enter: Digits to be absorbed or NONE (for example: 1)

IAB (Incoming Absorb Digits)—Defines the number of digits that are to be stripped from an incoming dialed number from a TIE/CCSA or DID trunk.

Enter: Number of digits or NONE

TRN1 (Translated Number 1)—Defines the absorbed digit (IAB) to be translated from one digit to another digit or digits (see example after TRN2).

Enter: X # Y or X # YY

X = the absorbed digit (IAB) to be translated. When two digits are absorbed only the second digit will be translated.

Y or YY = the translated digit (Y) or digits (YY) to be inserted.

TRN2 (Translated Number 2)—Defines the absorbed digit (IAB) to be translated from one digit to another digit or digits. The same as TRN1, used when over 100 digits are to be translated (see examples).

Enter: X # Y or X # YY

EXAMPLE A: IAB = 1
TRN1 = 9#2
TRN2 = 8#3

Digits Received from Central Office
900 through 999
800 through 819

Station DN to Ring
200 through 299
300 through 319

EXAMPLE B: IAB = 2
TRN1 = 9 # 2
TRN2 = 8 # 3

Digits Received from Central Office
5900 through 5999
5800 through 5819

Station DN to Ring
200 through 299
300 through 319

EXAMPLE C: IAB = 2
TRN1 = 9 # 21
TRN2 = 8 # 32

Digits Received from Central Office
590 through 599
580 through 589

Station DN to Ring
210 through 219
320 through 329

TOL (Toll Restriction Class)—Assigns one of the ten classes of toll restriction to outgoing TIE, CCSA, DID trunks. Classes 0--7 are defined in the Toll Restriction Data block (DTOL program). Class 8 is simple toll restriction; restricting when 0 or 1 are dialed as the first or second digit. None defines the trunk as unrestricted.

Enter: 0—8 or None

03.17 Trunk Data Block (Table P)

- o The Trunk Data Block (DIRK) Program defines the parameters for each of the trunk circuits within a trunk group. A Data Block must be completed for each trunk circuit in the system.
- o The trunk type (TKT) defined for the group will determine which entries must be made. Not all prompts are meaningful for all trunk types. Table P-1 shows the prompts to which responses should be made. (Use the proper system record form for the type of trunk being defined.)
- o Data is entered as follows:

REQ (Request):

- NEW - To create a new Data Block
- CHG - To alter existing Data Block
- OUT - To delete an entire existing Data Block

NOTE:

If OUT is entered, only the port (POR) need be specified. No other data is necessary.

POR (Port Number)—Identifies the hardware location of the trunk circuit to be defined. The port number has two parts.

- 1) DCOU PCB location (T00—T07)
- 2) Circuit number on the DCOU or DEMU (1—4)

For example: The port number of the 3rd circuit on the PCB in position T02 is T023.

Enter: Port number of trunk (TXXX)

Member Number)—The Group Member Number identifies the trunk position in the system. The GMN is composed of two parts:

NOTE:

1. GMN cannot be altered by CHG procedure. The GMN prompt will be followed by the existing GMN.
2. To change the GMN, the Data Block must be deleted (OUT) and a new Data Block (NEW) entered.

- 1) Group Number (defined in DTGP Program): Identifies the trunk as being a member of that group.
- 2) Member Number: a unique number (00—31) is given to each trunk in a group. The numerical order of the number will determine the order in which the trunks will be selected upon dial access. The highest member number will be selected first.

Enter: Group and Member Number (GGMM)

TDN (Trunk Directory Number)—For Private Lines Only (Trunk Group PVL); defines a phantom directory number that will be used to assign private lines to a station.

Enter: 3-digit number

RAD (Remote Access Day)—A "Y" response enables the Remote Access to Services trunk for both day and night service. "N" is night only.

Enter: Y (yes) or N (no).

NIT (Night Number)—Assigns the night station for the trunk. Incoming calls on the trunk will ring the night station when the system is in night service. If NONE is entered, the call will activate the UNA signal. This parameter can also be entered and changed by the attendant console.

Enter: Night station number or NONE

NOTE:

To assign a trunk to Remote Access to Services, enter the same DN used for REM entry in System Data Block (DSYS program) to NIT (Night Number).

SIG (Signalling)—Identifies the type of signalling to be used on the trunk circuit:

Enter: GRD - Ground Start
LOP - Loop Start
EAM - E & M
LDR - Loop Dial Repeating
OAD - Outgoing Automatic, Incoming Dial

DIS (Disconnect Supervision)—Informs the system whether or not supervision can be expected when the distant end disconnects (controls trunk-to-trunk connections).

Enter: Y or N

CTL (Control of Disconnect)—Defines the release control of TIE, DID or CCSA connection.

Enter: OPC: Originating Party Control, circuit is not released until the trunk that originated the call disconnects.

FPR: First Party Release, either trunk can release the connection.

DIN (Incoming Dialing)—Informs the system of what dialing type to expect on incoming call. For TIE, CCSA, DID trunks only.

Enter: DIP - Dial Pulse
TON - DTMF

DOT (Dialing Outgoing)—Selects the type of dialing to be used on outgoing calls.

Enter: P10 - Rotary Dial 10 pulses/sec.
P20 - Rotary Dial 20 pulses/sec.
TON - DTMF

ANS (Answer Supervision)—Determines if answer supervision will be provided to the distant trunk on incoming calls. If "N" is entered, the system will not return answer supervision.

Enter: Y or N

03.18 Least Cost Routing Data Block (TABLE Q)

- o The Least Cost Routing (LCR) data block defines the proper outgoing trunk based on the outside number dialed. LCR stores and examines the number dialed, checking the area and/or office codes. Based on this examination and the time of day, LCR chooses the proper trunk from a programmed route table.

- o The LCR data block has been divided between two utility programs DLC1 & DLC2. The first LCR program DLC1 defines the miscellaneous system parameters, the fifteen (15) area code tables and the sixteen (16) area/office tables to further modify the area code tables.

The second LCR program DLC2 defines the fifteen (15) route tables of six (6) routes each including three (3) schedules for time of day selection and twelve (12) modify digits tables.

- o Data is entered as follows (DLC1 or DLC2):

REQ (Request)--Indicates program has loaded. The only response possible in CHG.

TYPE (Sub Program Type)--There are three Sub-Programs within the DLC1 program and two Sub-Programs within the DLC2 program. The possible responses are:

PAR--Miscellaneous Parameters Table: Used in DLC1 program to identify system operating parameters.

ACT--Area Code Table: Used in DLC1 program to define each area code table.

AOC--Area/Office Code Table: Used in DLC1 program to modify an area code table.

RIB--Route Table: Used in DLC2 program to define the routes and selection sequence.

MDT--Modify Digits Table: Used in DLC2 program to define digit modification to the dialed number.

Since each sub-program can be entered independently for the TYPE prompt each will be separated by the following text.

The next prompt for PAR will be:

ICC (Interchangeable Codes)--A "Y" informs the system that interchangeable codes are used. Interchangeable codes are office codes that have 0 or 1 as the second digit (N 0/LX format). Area codes will be identified as the three digits following the DDD prefix. Office codes will be identified as the first three digits when a DDD prefix is not dialed (see DDP prompt).

Enter: Y (yes) or N (no)

OIO (Operator Call Time Out)--Defines the time, in seconds, that the system will wait for additional digits to be dialed following a "0".

Enter: Time in seconds (for example: 10)

RTD (Return Dial Tone)--A "Y" response returns system dial tone after the LCR access code has been dialed. A "N" returns silence.

Enter: Y (YES) or N (NO)

WTA (Warning Tone Allowed)--A "Y" response will cause the system to give a 3 second, 440 Hz warning tone when the last choice route is being selected.

HAC (Home Area Code)--Defines the area code in which the system is operating. Also used when analyzing dialed numbers not containing an area code. Data entered here will appear in Toll Restriction Data Block (DTOL program, PAR table, HAC prompt).

Enter: Area Code N 0/LX

Note: N = 2 - 9

0/1 = 0 or 1

X = 0 - 9

TFC (Toll Free Calls)--A "Y" response will route toll free calls (area code = 800) to the route table defined in the Local Call Route (LCR) prompt. A "N" informs the system to treat area code 800 as a normal area code.

Enter: Y (yes) or N (no)

LCR (Local Call Route)--Defines the route table to be selected for local calls (undefined numbers), area code 800 calls (TFC prompt) and Service Code Calls (SVC prompt).

Enter: Route Table (1 - 15)

SVC (Service Code Table)--Defines the local service codes (411, 611, 911, etc.) that are to be routed via the Route Table defined by LCR prompt (maximum 10-3 digit codes).

Enter: A NXX NXX etc.

to add service codes.

and/or

D NXX NXX etc.

to delete service codes.

DAC (Directory Assistance Calls Allowed)--A "Y" response will route long distance directory assistance calls (NPA + 555 +XXXX) to the route table defined in the Long distance Information Route (LDI) prompt. A "N" response will not allow long distance directory assistance calls using Least Cost Routing.

Enter: Y (yes) or N (no)

LDI (Long Distance Information Route)--Defines the route table to be selected for long distance directory assistance calls (NPA + 555 + XXXX) if permitted by DAC prompt.

Enter: Route Table (1 - 15)

DDP (Direct Distance Dialing Prefix)--Defines the Direct Distance Dialing (DDD) Prefix in the NPA (Numbering Plan Area). If ICC is "Y" the dialed DDP will identify the interchangeable code as an area code. If ICC is "N" the dialed DDP will be absorbed.

Enter: 1, 2, or 3 digits or None

The next prompt for ACT will be:

RNO (Route Table Number)--Identifies the number of the Route Table (RTB sub-program type used in DLC2 program) to which this Area Code Table is assigned. Entering "OUT" clears all area codes from Route Table Numbers (RNO) 1 - 14 and assigns all area codes to Route Table Number (RNO) 15. Entering a Route Table Number (RNO) 1 - 14 followed by "OUT" clears RNOXX only and assigns the area codes to Route Table Number (RNO) 15.

Enter: Route Table Number (1 - 15)

or

OUT

or

Route Table Number (1 - 14) OUT

ACA (Area Codes--Add)--Indicates the area codes to be added to this Route Table Number (RNO). A maximum of 160 area codes are permitted. Initially Route Table Number (RNO) 15 contains all possible 160 area codes. As codes are added to RNO 1 - 14, they are automatically deleted from RNO 15.

Enter: N 0/LX N 0/LX etc.

Note: N = 2 - 9
 0/1 = 0 or 1
 X = 0 - 9

ACD (Area Codes--Delete)--Indicates the area codes to be deleted from this Route Table Number (RNO). As codes are deleted from RNO 1 - 14 they are automatically added to RNO 15. Codes can only be deleted from RNO 15 by adding them to another RNO (1 - 14).

Enter: N 0/LX N 0/LX etc.

The next prompt for AOC will be:

TNO (Table Number)--Selects one of the sixteen (16) area/office code modification (AOC) tables to be used.

Enter: Table Number (1 - 16)

ARC (Area Code)--Identifies the area code that this AOC table is assigned to.

Enter: N 0/LX
 Note: N = 2 - 9
 0/1 = 0 or 1
 X = 0 - 9

RNO (Route Table Number)--Specifies the Route Table Number to be followed for calls meeting the area/office code criteria of this area/office code table (AOC)

Enter: Route Table Number (1 - 15)

OCA (Office Codes--Add)--Indicates the office codes that are assigned to the area/office code modification (AOC) table. Office codes may be added as single 3 digit codes or as a "range" covering up to 10 sequential 3 codes. "Ranges" are entered using a 4 digit format: where the first 2 digits are common to all codes in this range; the third digit represents the "start point" of the range (from) for the last digit of the office code; the fourth digit represents the "end point" of the range (to) for the last digit of the office code. See Example "Ranges".

Enter: NXXX NXX NXXXX etc.

OCD (Office Codes--Delete)--Indicates the office codes that are to be deleted from the area/office code modification (AOC) Table. Office codes may be deleted in the same manner as being added using single 3 digit codes or as a range of codes. See OCA prompt and Example "Ranges".

Enter: NXXX NXX NXXX etc.

EXAMPLE "RANGES"

<u>4 Digit Format</u>	<u>Office Codes</u>
2209	220 - 229
2316	231 - 236
2478	247 - 248

The next prompt for RTB will be:

RNO (Route Table Number)--Identifies the number of the Route Table to which an Area Code Table (ACT) and/or an Area/Office Code Table (AOC) is assigned. Entering "OUT" clears all Route Tables. Entering a Route Table Number (RNO) 1 - 15 followed by "OUT" clears RNO XX.

Enter: Route Table Number (1 - 15)

or

OUT

or

Route Table Number (1 - 15) OUT

RT 1 - 6 (Route Definition)--Defines the Trunk Group for each route in this Route Table. If a Trunk Group is entered a Modify Digits Table must also be entered.

Enter: XX MM

XX = Trunk Group Number (0 - 15)

MM = Modify Digits Table Number (1 - 12)

Note: The existing Route Schedule data is printed automatically after the response to RT 6 prompt is entered.

SCHA (Route Schedule - A)--Defines the time of day interval for the first of 3 possible routing schedules. A start time and end time are entered using a 24 hour clock format.

Enter: Start Time End Time (for example: 0900 1700)

IC3 (Class 3 Routing Priority)--Defines the routing choice sequence accessible to station classes IC3, IC2 and IC1 during schedule A time interval. Enter the routes (RT 1 - 6) in the order of selection priority.

Enter: Routing Choice (for example: RT6 RT1 etc.)

or

None (this entry for IC3 will also change IC2 & IC1 to none for this schedule.)

IC2 (Class 2 Routing Priority)--Defines the routing choice sequence accessible to station classes IC2 and IC1 during schedule A time interval. Enter the routes (RT 1 - 6) in the order of selection priority.

Enter: Routing Choice (for example: RT5 RT2 etc.)

or

None

IC1 (Class 1 Routing Priority)--Defines the routing choice sequence accessible to station classes IC1 during schedule A time interval. Enter the routes (RT 1 - 6) in the order of selection priority.

Enter: Routing Choice (for example: RT4 RT3 etc.)

or

None

NOTE: THE DCOS Data Block is used to define station class of service for Least Cost Routing (LCR) by using three classes of service for LCR. The access permitted to each LCR class of service is as follows:

IC1--allows routes defined for IC1, IC2 and IC3.

IC2--allows routes defined for IC2, and IC3.

IC3--allows routes defined for IC3 only.

SCHB (Route Schedule - B)—Defines the time of day interval for the second of 3 possible routing schedules. The start time which is the end time of Schedule A is automatically printed (24 hour clock format).

Enter: End Time (for example: 2300)

IC3 (Class 3 Routing Priority)—Same as IC3 in Schedule A but for Schedule B time interval.

Enter: Routing Choice (for example: RT5 RT4 etc.)

or

None (this entry for IC3 will also cause IC2 & IC1 to be more for this schedule).

IC2 (Class 2 Routing Priority)—Same as IC2 in Schedule A but for Schedule B time interval.

Enter: Routing Choice (for example: RT3 RT2 etc.)

or

None (this entry for IC3 will also cause IC2 and IC1 to be none for this schedule).

IC1 (Class 1 Routing Priority)—Same as IC1 in Schedule A but for Schedule B time interval.

Enter: Routing Choice (for example: RT1 RT6 etc.)

or

None

SCH C (Route Schedule C)—Defines the time of day interval for the last of 3 possible routing schedules. The start time which is the end time of Schedule B and the end time which is the start time of Schedule A are automatically printed (24 hour clock format). No entry is necessary.

IC3 (Class 3 Routing Priority)—Same as IC3 in Schedule A and B but for Schedule C time interval.

Enter: Routing Choice (for example: RT1 RT6 etc)

or

None (this entry for IC3 will also cause IC2 and IC1 to be none for this schedule).

IC2 (Class 2 Routing Priority)—Same as IC2 in Schedule A and B but for Schedule C time interval.

Enter: Routing Choice (for example: RT2 RT 3 etc)

or

None

IC1 (Class 1 Routing Priority)—Same as IC1 in Schedule A and B but for Schedule C time interval.

Enter: Routing Choice (for example: RT4 RT 5 etc)

or

None

The next prompt in response to MDT (modify digits table) sub-program will be:

TNO (Modify Digits Table Number)—Specifies the Modify Digits Table Number assigned when defining routes in the Route Table (RT1 - RT6). The same Modify Digits Table may be used for more than one route.

Enter: Table Number (1 - 12)

DLT (Digits to be Deleted)—Defines the number of digits to be deleted from the start of a dialed number. The system will remove these digits before prefixing any digits defined by the Digits to be Added (ADD) prompt. Maximum 10 digits.

Enter: Number of Digits to be Deleted.

ADD (Digits to be Added)—Defines the actual digits to be prefixed to a dialed number. The system will prefix these digits after removing the number of digits defined by the Digits to be Deleted (DLT) prompt. Maximum 20 digits.

Enter: Actual Digits to be Prefixed.

NOTE: The following codes are used in response to the Digits to be Added (ADD) prompt to insert pauses:

- * 1 = 1 second pause
- * 2 = 2 second pause
- * 3 = 5 second pause

(each pause code equals 1 digit)

04 DATA INPUT PROCEDURES

04.01 Once the system data has been recorded in the System Record, connect the data terminal and input the data to the system as explained in the following paragraphs.

04.10 Data Terminal Connection

04.11 A keyboard/printer terminal (Texas Instruments Model 743/745 or equivalent) is required to communicate with the PERCEPTION system. (See Section 100-100-300, Programming, for operating details.,

04.12 The terminal is connected to the system via a female-type RS232C connector (labeled TTY) located on the connector panel on the lower rear of the DCEC.

04.13 In addition to the TTY connector, a MODEM connector is provided. By attaching a customer-provided "answer only" modem, all functions normally performed by the local terminal can be performed from a remote location.

04.14 The TTY and MODEM ports can operate at a speed of 300 or 1200 bps, and utilize a standard 7-level ASCII code with one start bit, one stop bit and one parity bit. The system transmits even parity and ignores the parity bit on the receive side. The speed is selected by a push-on/push-off switch located on the front of the DPEU PCB (Figure 1). The associated LED is on when 1200 bps is selected.

04.15 The speed selection is made simultaneously for the TTY and MODEM ports. These two ports are wired in a logical "OR" fashion and cannot be used at the same time. One must be "open".

04.16 The pin assignments of the TTY and modem connectors are:

TTY:

<u>Pin No.</u>	<u>Designation</u>
2	RXD Received Data (from TTY)
3	TXD Transmit Data (to TTY)
5	CTS Clear to Send*
6	DSR Data Set Ready*
7	SG Signal Ground
8	CD Carrier Detect*
20	DTDR Data Terminal Ready (from TTY)

* Connect to +12VDC internally

MODEM:

<u>Pin No.</u>	<u>Designation</u>
2	TXD Transmit Data (to modem)
3	RXD Receive Data (from modem)
4	RTS Request to Send (to modem)
5	CTS Clear to Send (from modem)
6	DSR Data Set Ready (from modem)
7	SG Signal Ground

04.17 The data terminal connector is located in the rear (lower left) of the DCEC. Four female 25-pin EIA type connectors are provided in a vertical row. Looking from top to bottom the connectors are labeled:

- TTY
- MODEM
- SMDR
- DATA

Plug the terminal into the TTY connector.

04.18 The data terminal should be set for the proper speed and for full duplex operation before switching its power on.

04.20 Authorization Procedure

04.21 To prevent unauthorized tampering with the Customer Data base, the PERCEPTION system requires an authorization code to be entered before any Utility Program can be called up. This authorization must be entered prior to requesting each utility.

04.22 There are three levels of authorization (each of which has a unique 4-digit code that is assigned in the system memory). When shipped from the factory, all levels are assigned 0000. Codes are changed with the Authorization Code Change procedure (DCHG).

04.23 The activity granted to each level is as follows:

- Level 1: Can do all activities of Levels 2 and 3.
Can change the 4-digit codes of Levels 1, 2, and 3.

Level 2: Can do all Level 1 activities except change Levels 1 or 2 codes or read out Level 1 code.
Can change Level 3 code.

Level 3: Normally assigned for end user use.
Can change: Station Data
Class of Service Data
Speed Dial Data
SMDR Data
Can request printouts of above data, plus:
Call Pickup Groups
Hunt Lists
Can request data dump.

04.24 To execute the Authorization Procedure, proceed as follows:

- 1) Plug in and power up data terminal.
- 2) Depress the carriage return key.
 - o The system will respond by printing "COD" and will print several characters on the spaces to be occupied by your next entry (this is done to mask the authorization code).

IMPORTANT:

This measure is not effective when a CRT is used. Take care not to leave the authorization code displayed on the screen.

- 3) Enter the 4-digit code, followed by a carriage return.
 - o The system will print:
 - "ERROR" if invalid code is entered (return to Step 2).
 - "OK" if valid code is entered (proceed to request Utility Program).

04.30 Utility Program Use

04.31 Execute the Authorization Procedure and then enter the mnemonic of the required Utility Program after the system responds with "OK".

04.32 After the Utility Program name is entered, the program is loaded from the diskette. When the loading is complete, the system will prompt "REQ".

04.33 Inputting data via a Utility Program is a matter of responding to the prompts given by the system via the data terminal. The prompts and the required responses are mnemonics that are usually abbreviations of the actual English word required.

04.34 If an improper response is made to a prompt, the system will respond with an error message. The error message will be a "?" when the error is obvious but in most cases it will be an alphanumeric code. The alphanumeric code consists of four letters indentifying the program in use and two numbers indentifying the error.

04.35 The following control codes are available when using a Utility Program:
Control X [CR]-Ignore line entered--same prompt will be repeated.
Control H [CR]-Backspace--will allow you to overwrite the previous character.

- DEL [CR] -May be entered anytime—system will stop execution and return to "REQ" prompt.
- DEL DEL [CR] -Abort program—used to end use of one utility, system will respond with "SAVE". A "Y" entry will cause the system to copy all present data onto the diskette. If more changes are to be made, enter "N".

NOTE:

[CR] = Carriage Return

04.36 When data already exists for a given prompt and a change is not required, entering a [CR] will advance to the next prompt without changing existing data.

04.37 Tables D through AF show the format of each Utility Program. If applicable, each table is followed by a list explaining the error codes pertaining to that program. Using the appropriate tables as guides, enter data previously recorded in the System Record.

04.40 Authorization Codes Change (Table C)

04.41 The DCHG Program changes the authorization codes used in the Authorization Procedure.

04.42 To use the DCHG Program:

- o Complete the Authorization Procedure (Level 1 or 2).
Enter: DCHG [CR] (in response to OK prompt)
- o The next prompt will be:
L1 XXXX (Level 1 authorization code) (XXXX = present code)

NOTES:

1. If Level 2 authorization code was given above, L1 will not be output—go to next prompt (L2).
2. If Level 3 authorization code was entered above, an error message will be given—Level 3 cannot change the authorization codes.

Enter: New L1 code (4 digits) [CR]
L2 XXXX (Level 2 authorization code) (XXXX = present code)
Enter: New L2 code (4 digits) [CR]
L3 XXXX (Level 3 authorization code) (XXXX = present code)
Enter: New L3 code (4 digits) [CR]
L1 or L2 Program repeats
Enter: DEL, DEL (to abort program)

05 DATA OUTPUT PROCEDURES

05.00 General

05.01 The data output procedures allow the maintenance terminal to request a printout of the data contained in the various system Data Blocks.

05.02 The Authorization Procedure must be performed before requesting a printout procedure. The following Data Blocks may be output for Level 1, 2 or 3:

- Station Data Block
- Class of Service Data Block
- Speed Dial Data Block
- SMDR Data Block
- Call Pick-up Groups
- Hunting Arrangements

The following Data Blocks may be output for Level 1 or 2 only:

- System Data Block
- Access Code Data Block
- Trunk Group Data Block
- Trunk Data Block
- Toll Restriction Data Block
- Least Cost Routing Data Block

05.03 Print System Data Block (Table R)

To use the Print System Data Block (PSYS) Program:

- o Perform Authorization Procedure (Level 1 or 2)
Enter: PSYS (in response to OK prompt)
- o When REQ prompt is received after program is loaded.
Enter: PRT
- o System Data Block will be output in the same format as input in the DSYS program.
Example: REQ PRT
TOR2359
DRIDDMP
TENY
ICP1 OFL
ICP2 OFL
ICP3 OFL
APGNONE
etc.
- o REQ will be prompted when printout is complete.
Enter: DEL DEL [CR] (to abort program)

05.04 Print Access Code Data Block (Table S)

To use the Print Access Code Data Block (PACD) Program:

- o Perform Authorization Procedure (Level 1 or 2).
Enter: PACD (in response to OK prompt)
- o When REQ prompt is received after program is loaded.
Enter: PRT
- o Access Code Data Block will be output in the same format as input in DACD program.

Example: REQPRT
ACB*7
CBR**7
CFD*9
CFR**9
PUD*6
etc.

- o REQ will be prompted when the printout is complete.
Enter: DEL DEL [CR] (to abort program)

05.05 Print Station Data Block (Table T)

To use Print Station Data Block (PSDB) Program:

- o Perform Authorization Procedure (Level 1, 2 or 3)
Enter: PSDB (in response to OK prompt)
- o When REQ prompt is received after the programs are loaded:
Enter one of the following commands:
 - PORALL: All station data blocks, EKT and STT, will be output by numerical order of port numbers (lowest number first).
 - PORNXX: Data Block for port NNX will be output (NNX = port number without L).
 - PORVAC: A list of all unassigned ports will be output.
 - DNALL: All station Data Blocks, EKT and STT, will be output by numerical order of DN (lowest to highest). For EKTs, PDN will be used.
 - DNNNN: Data Block for DN NNN will be output. If it is a multiple appearance DN, all data blocks it appears in will output.
 - EKTALL: All EKT Data Blocks will be output in order of prime DN (lowest first).
 - STTALL: All STT Data Blocks will be output in order of DN (lowest first).
- o The output format will be the same as input format in DEKT and DSTT data input programs.

05.06 Print Class of Service Data Block (Table U)

To use the Print Class of Service Data Block (PCOS) Program:

- o Perform Authorization Procedure (Level 1, 2 or 3)
Enter: PCOS (in response to OK prompt)
- o When REQ response is received after program is loaded
Enter: PRT

o COS Data Block will be printed out in the following format (see Table H1 for explanation of feature codes):

COS NO.
COS0 AAA BBB CCC DDD EEE FFF GGG HHH III JJJ KKK LLL
COS1 (etc., up to 15)
REQ (this prompt will be given at end of printout)
Enter: DEL DEL [CR] (to abort program)

05.07 Print Toll Restriction Data Block (Table V)

To use the Print Toll Restriction Data Block (PTOL) Program:

- o Perform Authorization Procedure (Level 1, or 2)
Enter: PTOL (in response to OK prompt)

- o When REQ prompt is received after program is loaded:
Enter: one of the following commands:
 - TRDALL: All Toll Restriction Data Blocks will be output.
 - PAR: Miscellaneous Parameters Table will be output.
 - CLSALL: All code tables; area, office and area/office will be output for all 8 classes.
 - CLSCNX: All code tables; area, office and area/office will be output for class X.
 - AOCALL: All area/office code tables will be output.
 - AOCNOXX: The area code and all office codes for area/office code table No. XX will be output.
 - CODXXX: The Area/Office code table relating to Area Code XXX will be output.

05.08 Print Speed Dial Data Block (Table W)

To use the Print Speed Dial Data Block (PSDL) Program:

- o Perform Authorization Procedure (Level 1, 2 or 3).
Enter: PSDL (in response to OK prompt)

- o When REQ prompt is received after program is loaded.
Enter: ~~ALL~~—all Speed Dial lists will be output
SYST—System Speed Dial list will be output
LSTN—Speed Dial list N will be output

The output format will be as in the following example:

```
REQ1ST06  
STR01 9*7147305000  
02 9*9142731750  
03  
05 9*2135551212  
06  
07  
08  
09  
10
```

05.09 SMDR Data Block (Table X)

To use the SMDR Data Block (PMDR) Program:

- o Perform Authorization Procedure (Level 1, 2 or 3)
- o When REQ response is received after program is loaded.
Enter: PRT
- o SMDR Data Block will be printed out in the following format:
REQ PRT
ACL XX (1 — 12).
SPCC 1NXXXXXX or 10XXX
SPCC 2NXXXXXX or 10XXX
TGP XX XXX
TGP XX XXX
etc.
- o REQ prompt will be given when printout is complete.
Enter:DEL DEL [CR] (to abort program)

05.10 Print Trunk Group Data Block (Table Y)

To use the Print Trunk Group Data Block (PTGP) Program:

- o Perform Authorization Procedure (Level 1 or 2)
Enter:PTGP (in response to OK prompt)
- o When REQ prompt is received after the program is loaded:
Enter one of the following commands:
ALL—all Trunk Group Data Blocks will be output
GRPXX—Trunk Group XX Data Block will be output
COT—All CO-type Trunk Group Data Blocks will be output
FX—All FX-type Trunk Group Data Blocks will be output
WAT—All WATS-type Trunk Group Data Blocks will be output
TIE—All TIE-type Trunk Group Data Blocks will be output
DID—All DID-type Trunk Group Data Blocks will be output
CSA—All CCSA-type Trunk Group Data Blocks will be output
PVL—All Private Line Trunk Group Data Block will be output

NOTE:

The output format will be the same as the input format used in the DTGP Program.

- o REQ will be prompted when the printout is complete.
Enter:DEL DEL [CR] (to abort program)

05.11 Print Trunk Data Block (Table Z)

To use the Print Trunk Data Block (PTRK) Program:

- o Perform Authorization Procedure (Level 1 or 2)
Enter:PTRK (in response to OK prompt)

- o When REQ prompt is received after program is loaded:
Enter one of the following commands:
 - POR ALL—All Trunk Data Blocks will be output in order of Port Number (lowest first)
 - POR NN—Trunk Data Block of Port NN will be output
 - POR VAC—All unassigned trunk ports will be listed
 - TGP NN—All Trunk Data Blocks assigned to Trunk Group NN will be output
 - COT—All CO Trunk Data Blocks will be output

 - FEX—All FX Trunk Data Blocks will be output
 - TIE—All TIE Trunk Data Blocks will be output
 - DID—All DID Trunk Data Blocks will be output
 - WAT—All WATS Trunk Data Blocks will be output
 - CSA—All CCSA Trunk Data Blocks will be output
 - PVL—All Private Line Trunk Data Block will be output
 - NIT—Nite Station assignments for all CO/FX/WATS trunks will be output

NOTE:

The output format will be the same as that used for data input in DTRK Program.

05.12 Print Least Cost Routing Data Block (TABLE AA)

To use the Print Least Cost Routing Data Block (PLCR) Program:

- o Perform Authorization Procedure (Level 1 or 2)
Enter: PLCR (in response to OK prompt)

- o When REQ prompt is received after program is loaded:
Enter one of the following commands:
 - LCRALL: All Least Cost Routing data blocks will be output.
 - PAR: Miscellaneous Parameters Table will be output.
 - ACTALL: All area code tables will be output.
 - ACTRNXX: All area code tables that point to route number (RNO) XX will be output.
 - AOCALL: All area/office code tables will be output.
 - OACNOXX: Area/office Code Table XX will be output.
 - AOCRNX: All Area/Office Code Tables that point to route number (RNO) XX will be output.
 - RTALL: All Route Tables will be output.
 - RTEX: Route Table XX will be output.
 - TGPXX: All Route Tables using Trunk Group XX will be output.
 - RTMDXX: All Route Tables using Modify Digits Table XX will be output.
 - MDTEX: Modify Digits Table XX will be output.

05.13 Print Call Pick-up Groups (Table AB)

To use the Print Call Pick-up Groups (PCPG) Program:

- o Perform Authorization Procedure (Level 1, 2 or 3)
Enter:PCPG (in response to OK prompt)

- o When REQ prompt is received after program is loaded:
 Enter: ALL—all GPU groups will be output listed by DN
 DNXXX—the number of all Call Pick-up groups containing DNXXX will be output

Example:

```
#1 REQDN 205
  GRP00
#2 REQALL
  GRP00 XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX
      XXX XXX etc.
  GPP01 XXX XXX XXX
  GPP02 XXX XXX XXX XXX
```

05.14 Print Hunting Arrangements (Table AC)

To use the Print Hunting Arrangements (PHNT) Program:

- o Perform Authorization Procedure (Level 1, 2 or 3)
 Enter: PHNT (in response to OK prompt)
- o When REQ prompt is received after the program is loaded:
 Enter: ALL—all hunting sequences will be output
 DNXX—all hunting sequences containing DNXX will be output

o The output format will be as in the following examples:

```
REQ DN224
HNT 223-224-225
REQ ALL
HNT 223-224-225
HNT 242-243
HNT 250-251-252
etc.
```

06 MAINTENANCE PROCEDURES

06.01 The Maintenance Procedures assist with the administration and maintenance of the system.

06.02 Three programs are provided:

- o Data Dump—DDMP
- o EKT/Attendant Console Test—TTRM
- o Peripheral Equipment Test—TPER

06.03 The DDMP and TTRM Programs are available to Levels 1, 2 and 3 users, while the TPER Program requires Level 1 or 2 authorization.

06.10 Data Dump (DDMP) Program (Table AD)

best way to create customer back up disk

06.11 The DDMP Program transfers the contents of the system data memory to the diskette for permanent storage.

06.12 Using this program has the same effect as responding "Y" to the "SAV" prompt that is given when a Data Input program is aborted. The current data then residing in system memory will be written on the diskette, thereby replacing any previously recorded data.

06.13 It is possible, via the System Data Block, to specify the DDMP Program as a daily routine and cause the data to be recorded daily. This enables speed dialing information that has been entered by the attendant console or station user to be captured on the diskette.

06.14 This program is also useful for updating spare diskettes.

06.15 To use the DDMP Program manually (refer to Table AD):

- o Perform Authorization Procedure (Level 1, 2, or 3).
Enter:DDMP (in response to OK prompt)
- o System will respond with "DFG" and the process will begin.
- o System will print "DUN" when data transfer is complete.
- o No other input is required.

06.20 EKT/Attendant Console Test (TIRM) Program (Table AE)

06.21 When the TIRM Program has been loaded, a test sequence can be performed at the Attendant Consoles and EKTs. The test is designed to check all functions of the terminals in a time efficient manner.

06.22 To use the TIRM Program (refer to Tables AE-1 and AE-2):

- o Perform the Authorization Procedure (Level 1, 2 or 3).
Enter:TIRM (in response to OK prompt)
- o REQ will be printed when the program has loaded.

06.23 Proceed to the console or EKT to be tested. The test is performed as follows:

a) EKT:

- o Depress DN to obtain dial tone.
- o Dial *TEK (*835) on the dial pad.
- o The system will respond by lighting all EKT LEDs.
- o Operate the keys and observe the responses in sequence shown in Table AE-1.

b) Attendant Console:

- o Depress an LPK key.
- o Dial *TAT (*828) on the dial pad.
- o The system will respond by lighting all BLF LEDs.
- o Operate the keys and observe the responses in sequence shown in Table AE-2.

c) When all consoles and EKTs have been tested, abort the program by:

Enter:DEL DEL [CR]

06.30 Peripheral Equipment Test (Table AF):

06.31 The Peripheral Equipment Test (TPER) Program is designed to aid in fault location by disabling and enabling various PCBs and circuits. When a faulty circuit or PCB has been located, it is left disabled until it can be replaced to prevent it from interfering with normal system operation.

06.32 Using the TPER Program, it is also possible to determine the busy/idle status of any station, trunk or DTMF receiver port. To use the TPER Program:

- o Perform Authorization Procedure (Level 1 or 2).
Enter:TPER (in response to OK prompt)

- o REQ will be printed when the program has loaded.
Enter one of the following commands:

DSCDXXX (Disable PCB XXX immediately)--Disables PCB XXX regardless of busy/idle status (XXX = TXX, LXX or R00); lights PCB FALT LEDs and returns REQ prompt.

DSTKNNX (Disable trunk #NNX)--Disables trunk if it is idle (NN = trunk PCB number, i.e. T01 = 01, X = circuit number on that PCB, i.e. 1--4), lights FALT LED relating to that circuit (FALT #1 for circuits 1 & 2 and FALT #2 for circuits 3 & 4) and returns REQ prompt.

DSLCCNX (Disable Line Circuit NNX)--Disables station circuit if it is idle (NN = station PCB number, i.e. L04 = 04, X = circuit number on that PCB, i.e. 1--8), lights FALT LED relating to that circuit (FALT #1 for circuits 1--4 and FALT #2 for circuits 5--8) and returns REQ prompt.

ENCDXXX (Enable PCB XXX)--Enables PCB XXX (XXX = TXX, LXX, or R00), turns FALT LEDs off, and returns REQ prompt.

ENTKNNK (Enable Trunk NNX)--Enables trunk NNX (NN = trunk PCB number, X = circuit number on that PCB), turns FALT LEDs off unless other circuit is still disabled, and returns REQ prompt.

ENLCCNX (Enable Line Circuit NNX)--Enables station line circuit NNX (NN = station line PCB number, X = circuit number on that PCB), turns FALT LEDs off unless other circuits are still disabled, and returns (REQ) prompt.

DSRC00X (Disable Receiver Circuit 00X)--Disables DTMF receiver circuit 00X if it is idle (00 = PCB number R00, X = circuit number on that PCB (1--6)), lights the FALT LED relating to that circuit (FALT #1 for circuits 1 & 2; FALT #2 for circuits 3 & 4; FALT #3 for circuits 5 & 6) and returns REQ prompt.

ENRC00X (Enable Receiver Circuit 00X)--Enables DTMF receiver 00X (00 = PCB number R00, X = circuit number on that PCB), turns FALT LED off unless other circuit is still disabled, and returns REQ prompt.

DSCIXXX (Disable PCB XXX when it becomes idle)--Disables each circuit on the PCB as it becomes idle, lights the appropriate FALT LED as circuits are disabled, and returns REQ prompt.

LIPS (List All Idle Ports)—Prints out a list of all system ports (DTMF receivers, stations and trunks) that are idle at the time that the command is entered. Returns REQ prompt when printout is complete.

LBPS (List All Busy Ports)—Prints out a list of all system ports (DTMF receivers, stations and trunks) that are busy at the time that the command is entered. Returns REQ prompt when printout is complete.

LDPS (List All Disabled Ports)—Prints out a list of all system ports (DTMF receivers, stations and trunks) that are in a disabled state at the time that the command is entered. Returns REQ prompt when printout is complete.

STLCNNX (Status of Line Circuit NNX)—Gives the status of station line circuit NNX (NN = station line PCB number, X = circuit number on that PCB). The output format will be a combination of two items. (See Notes 1 and 2.)

<u>Station Type</u> ¹	<u>Status</u> ²
500/2500	IDL
EKT	BSY
ATT	DIS TTY
UNEQ	DIS CBL
UNAS	DIS TLD

Example:
 REQ STLC002
 CKT 2 EKT IDL

Returns REQ prompt when printout is complete.

STTKNNX (Status of Trunk Circuit NNX)—Gives the status of trunk circuit NNX (NN = trunk PCB number, X = circuit number on that PCB). The output format will be a combination of two items. (See Notes 1 and 2.)

<u>Trunk Type</u> ¹	<u>Status</u> ²
CO	IDL
FX	BSY
WAT	DIS TTY
TIE	DIS TLD
CCSA	
UNEQ	
UNAS	

Example:
 REQ STTK001
 CKT 1 TIE IDL

Returns REQ prompt when printout is complete.

STRC00X (Status of Receiver 00X)—Gives the status of DTMF receiver 00X (00 = Receiver PCB number R00, X = circuit number on that PCB). The output format will be IDL, BSY, DIS TTY, DIS TLD, UNEQ, UNAS. (See Notes 1 and 2.)

Example:

```
REQSTRC00
      CKT 1 IDL
```

Returns REQ prompt when printout is complete.

STCDXXX (Status of PCB XXX)—Gives the status of all circuits on PCB XXX (XXX = PCB location LXX, TXX or R00). Printout will be the same as for STLC, STTK, and STRC command, but will list all circuits on that PCB in order of circuit number.

Returns REQ prompt when printout is complete.

CALL TNNX (Set up a monitor link from Trunk NNK to the remote test center.)—This command is used at a remote test center to establish an audio link between the system and the test center. The object is to command the system to select a particular trunk (A) and to dial the number of a telephone at the test center. When the call is answered, a 440 Hz tone will be heard.

Once a monitor link has been established other trunks can be tested. The trunk to be tested (B) is siezed by a keyboard terminal command and then the test number that is to be dialed is entered via the terminal. The audio responses are monitored at the test center.

The set-up sequence includes several steps that are led by system prompts. Following the entry, "CALL TNNX", the system prompts are:

WAIT—Indicates that the first command was received. A carriage return [CR] must be entered to advance the program.

Enter: [CR]

STS TLK, WAIT, or OVR (Status)—Gives the status of the trunk that was requested.

- o STS TLK will be output if the trunk was idle and has now been siezed. Program will automatically advance to the next prompt (DN).
- o STS WAIT indicates that the requested trunk is busy. Enter [CR] (to try again) or [DEL] [CR] (to return to REQ prompt).
- o STS OVR indicates that the requested trunk does not exist in the system.

Enter: [DEL][CR] to return to the REQ prompt

DN (Directory Number)—System is requesting the number of the telephone to be called at the test center.

Enter: DN followed by a [CR]

DDL (Dialing)—System is dialing. Allow sufficient time for the number to be dialed and then enter a [CR] to advance the program.

Enter: [CR]

STS TLK, DDL, or RLSA (Status)—Gives the status of the connection.

- o STS TLK will be output if the dialing is complete, and the program will automatically advance to the next prompt (TRK).
- o STS DDL indicates that the trunk was still dialing when [CR] was entered.

Enter: [CR] to advance the program

- o STS RLSA indicates that the trunk (A) was disconnected due to a malfunction or some outside influence, such as the distant end going on-hook or a ground start trunk. After printing STS RLSA, the program will return to the REQ prompt automatically.

TRK (Trunk)—At this point the monitor link to the test center using Trunk A has been established and the system is requesting the identity of a trunk to be tested.

Enter: CALL TNNX (TNNX = port number of the trunk to be tested)

WAIT—Indicates that the command was received. A carriage return [CR] must be entered to advance the program.

Enter: [CR]

STS TLK, BSY, OVR, or RLSA (Status)—Gives status of the connection.

- o STS TLK will be output if the trunk that was requested was idle and has now been siezed. Program will automatically advance to the next prompt (DN).
- o STS BSY indicates that the requested trunk is busy. The program will automatically return to the TRK prompt above to allow another trunk to be selected.
- o STS OVR indicates that the requested trunk does not exist in the system. The program will automatically return to the TRK prompt above to allow another trunk to be selected.
- o STS RLSA is output if the monitor link trunk (A) was disconnected due to a malfunction or some outside influence, such as the distant end going on-hook. After printing STS RLSA, the program will return to the REQ prompt automatically.

DN (Directory Number)—The trunk under test (B) has been siezed and the system is requesting the number to be dialed (time, weather, tone, etc.).

Enter: DN followed by a [CR]

DDL (Dialing)—System is dialing via Trunk B. When dialing is complete, progress tones (ringing, etc.) will be heard over Trunk B via the monitor link (Trunk A). When the test is complete, enter a [CR] to release Trunk B and return to the TRK prompt.

Enter: [CR] when test is complete

STS TLK, DDL, RLSA, or RLSB (Status)—Gives status of the connection.

- o STS TLK will be printed in response to a [CR] entered following the dialing prompt above. The [CR] released the trunk under test (B), therefore the output indicates the status of the monitor link (A). The program will automatically return to the TRK prompt to allow another trunk to be selected.
- o STS DDL will be printed if a [CR] was entered before dialing was complete. This state is the same as DDL above.
- o STS RLSA will be printed if the monitor link (Trunk A) is released due to a malfunction or some outside influence. The trunk under test (B) will also be released and the program will return to the REQ prompt automatically.
- o STS RLSB will be printed if the trunk under test (Trunk B) is released due to a malfunction or some outside influence. The program will automatically return to the TRK prompt to allow another trunk to be selected.

Example: Monitor link trunk (A) = T014
 Test center DN = 730-5000
 Test DN = 730-0002
 Trunk under test (B) = T021

PROMPT	USER ENTRY
OK	TPER
— DISK LOADING —	
REQ	CALL T014
WAIT	[CR]
STS TLK	
DN	7305000
DDL	[CR]
STS TLK	
TRK	CALL T021
WAIT	[CR]
STS TLK	
DN	7300002
DDL	[CR](end of test)
STS TLK	
TRK (new test)	

NOTES:

- Type: UNEQ=No PCB in that position
 UNAS=PCB is equipped but no data is assigned
- Status: IDL=Idle
 BSY=Busy
 DIS TTY=Manually disabled via TTY
 DIS CBL=EKT port disabled by software due to open cable
 DIS TLD=Software disabled due to traffic load (indicates faulty PCB)

TABLE C

Procedure - Authorization Code Change

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

System	User	Note No.
OK	DCHG	
L1=XXXX		1 & 2
L2=XXXX		2
L3=XXXX		2
OK		3

*Keep backup disk
 better (B)*

NOTES:

- If Level 3 was given in the Authorization Procedure, an error message is given.
 If Level 2 was given in the Authorization Procedure, L1 is omitted and the response to CHG is L2=XXXX. XXXX=present code of that level
- The possible responses are:
 YYYY- This new access code will replace the existing XXXX.
 C.R.- CR = Carriage Return-Code is not changed and system gives the next prompt.

Ctl X=Ignore line entered
Ctl H=Backspace
DEL= Stop printing and return to REQ
DEL DEL= Abort program

3. Program repeats

TABLE D

Procedure - System Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSYS	
— DISK LOADING —			
	REQ	CHG <i>only possible entry</i>	
Time Of Daily Routine	TOR	Time (eg., 1315) <i>military time</i>	
Daily Routine Tasks	DRT	List programs-DDMP or NONE	
Tenant Service?	TEN	Y or N	
Intercept #1	ICP 1	ATT or OFL	
Intercept #2	ICP 2	ATT or OFL	
Intercept #3	ICP 3	ATT or OFL	
Least Cost Routing	LRC	Y or N	
All Page Access Code	APG	"ALL PAGE" access code	1
Not Used	AAT	Carriage Return	
Not Used	APX	Carriage Return	
Listed Directory Number #1	LN 1	LDN (3 digits)	
Listed Directory Number #2	LN 2	LDN (3 digits)	
LDN #1 Night Number	NT 1	Nite DN (3 dts) or NONE(UNA)	
LDN #2 Night Number	NT 2	Nite DN (3 dts) or NONE(UNA)	
Busy Lamp Field #1	BLF 1		
Busy Lamp Field #2	BLF 2		
Message Center - Tenant #0	MC 0	ATT 0 or DN or NONE	
Message Center - Tenant #1	MC 1	ATT 1 or DN or NONE	
Overflow DN Att Console #0	OFL 1	1-3 digits or NONE (UNA)	
Overflow DN Att Console #1	OFL 2	1-3 digits or NONE (UNA)	
Meet-Me Page DN	MMP	MMP phantom DN (3 digits)	
Remote Access DN	REM	RA phantom DN (3 digits)	
Remote Access Change Code	RAC	3-digit authorization code	
"*" Access Code	ACC *	"N" or NONE	2 & 3
"#" Access Code	ACC #	"N" or NONE	2 & 3
Camp-on (or CWT) Time Out	COT	Time (in seconds)	
Ring No Answer Time Out	RNA	Time (in seconds)	
Attendant Overflow Time Out	AOF	Time (in seconds)	
Call Fwd No Answer Time Out	CFD	Time (in seconds)	4
Hold (500/2500) Time Out	HLD	Time (in seconds) or NONE	
Dial Pulse Time Out	DPT	Time (in seconds)	5
Push-button Time Out	PBT	Time (in seconds)	
Line Lock-out Time Out	LLO	Time (in seconds)	
Auto Callback Reserve Time	ACB	Time (in seconds)	
Handsfree Answerback-station	HFS	Y or N	6
Handsfree Answerback-att.	HFA	Y or N	7
SMDR Equipped	MDR	Y or N	
Call Forward DID Station	CFS	Y or N	

NOTES:

1. All Page access code = 1, 2, or 3 digits.
2. N = number dialed in place of "*" or "#".
3. Beware of conflicts with the numbering plan and access codes--system will not always check.

4. CFDNA TIMER must be > RNA or RNA will prevail.
5. DPT timer also controls ATT LPK release.
6. A "Y" response allows calls from any station to a Handsfree Answerback equipped EKT to be answered Handsfree.
7. A "Y" response allows calls from the Attendant to a Handsfree Answerback equipped EKT to be answered Handsfree.
8. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

Default Error Code

Error Codes

Program Name: System Data Block (DSYS)	
Error Code	Meaning
ERSYS 00	Access code conflicts with an existing number.
ERSYS 01	Entered DN does not exist in the system.
ERSYS 02	Entered DN is trunk DN.
ERSYS 03	
ERSYS 04	No PCB equipped in that location.
ERSYS 05	

TABLE E

Procedure-Access Code Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DACD	
— DISK LOADING —			
	REQ	CHG	
Feature?	FTR	Feature + "space" + code	1

NOTES:

1. a) The 3-character feature name followed by a space and its access code is entered in response to FTR.
- b) The features may be entered in any order and the new access code overwrites the existing one.
- c) Any feature code which is to be unchanged need not be entered.
- d) The feature abbreviations and factory assigned codes are:

Default list of Access Codes

TABLE E-1

Feature	Abb.	Std. Code
Automatic Callback	ACB	*7
Automatic Callback Cancel	CBR	**7
Call Forward	CFD	*9
Call Forward Cancel	CFR	**9
Call Pick-up Directed	PUD	*6
Call Pick-up Group	PUG	*4
Hold-All Calls	HLD	*3
Hold-All Calls Retrieve	RTV	**3
Message Waiting All-Clear	MAL	##5
Message Waiting Cancel	MCC	#5
Do Not Disturb	DND	#2
Do Not Disturb Cancel	DNC	##2
Meet-me Page Att Console #0	MMP1	11
Meet-me Page Att Console #1	MMP2	12
Override	OVR	*0
Repeat Last Number Dialed	RND	#7
Call Waiting	CWT	#4
Speed Dial-Station-Call	SDU	#3
Speed Dial-Station-Program	SDC	##3
Speed Dial-System-Call	SDS	#6
Universal Night Answer	UNA	*1
Charge Account	CRG	#9
Flash	FLH	*5
Paging Zone 0	PAG0	15
Paging Zone 1	PAG1	16
Paging Zone 2	PAG2	17
Paging Zone 3	PAG3	18
Paging Zone 4	PAG4	19
Hold-All Calls Retrieve	RTV	**3
Message Waiting All Clear	MAL	##5
Message Waiting Cancel	MCC	#5
Do Not Disturb	DND	#2
Do Not Disturb Cancel	DNC	##2
Remote Access to Srv. Code	RAC	**5
Least Cost Routing Access Cd	LCR	##6

2. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

Error Codes

Program Name: Access Code Data Block (DACD)	
Error Code	Meaning
ERACC 00	Access code conflicts with an existing access code.
ERACC 01	Invalid response (1--3 digits are allowed).
ERACC 02	Invalid response (7*5, 8# etc. are not allowed).

TABLE F

Procedure - EKT Set Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DEKT	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Port Number	POR	LNNK	1&2
Number of Key Strips	KS	1, 2	3
Class Of Service Group	COS	0—15	4
Tenant Number	TEN	0, 1	
Call Pick-up Group	PUG	0—31 or NONE	5
Waiting Tone Allowed?	WTA	Y or N	
Call Forward to Trunk?	CFT	Y or N	
Toll Restriction Class	TOL	0 — 8 or NONE	6
Not Used	MTA	N	
Handsfree A'back Equipped?	HFA	Y or N	
Display EKT?	DIS	Y or N	7
Key Assignments	KEY	Key Number (0—9) + space	8

NOTES:

1. NN = PCB location
2. X = Circuit number
3. A maximum of two key strips are possible: 10-key EKT = 1; 20-key EKT = 2.
4. There are 16 different COS groups which are defined in the COS Data Block.
5. There are maximum of 32 Call Pick-up Groups.
6. Classes 0 — 7 are defined in the Toll Restriction Data Block (DTOL) *10 COS possible*
Program. Class 8 is 0, 1 restriction. None is no Toll Restriction.
7. Maximum of 30 Display EKTs assigned.
8. Enter key number followed by a space and then the entry. See Table F1 for possible entry.
9. Key numbers may be entered in any order and the "KEY" prompt will be repeated until "DEL" is entered.
10. If KS was 2, 0—19 is allowed.
11. Ctl X= Ignore line entered
Ctl H = Backspace
DEL = Stop printing and return to REQ
DEL DEL= Abort program

CLASS of SERVICE = features not allowed

TABLE F-1
EKT KEY ASSIGNMENTS

DIRECTORY NUMBER	ENTRY	NOTE
Single Call Ring	SCR NNN XXX	1
Single Call No Ring	SCN NNN XXX	1
Station Hunt - Distributed	NX	2

PRIVATE CO LINE	ENTRY	NOTE
Private Line Ring	PVR XXX	3
Private Line No Ring	PVN XXX	3

FEATURE	ENTRY	NOTE
Account Number (SMDR)	CRG	
Automatic Callback	ACB	
Automatic Dialing	ADL	4
Call Forward - All Calls	CFD	
Call Pick-up Directed	PUD	
Call Pick-up Group	PUG	
Call Waiting	CWT	
Display Date Time/Elapsed Time	DIS	
Do Not Disturb	DND	
Flash	FLH	5
Manual Signalling	SIG LNNX	6
Message Waiting	MSG	
Override	OVR	
Privacy Release	PRS	
Release	RLS	
Repeat Last Number Dialed	RND	
Speaker Cut-off	SCF	
Speed Dial - System	SDS	
Speed Dial - Station (Controller)	SDC XX	7
Speed Dial - Station (User)	SDU XX	7
Voice Page	VCP XXX	8

NOTES:

1. NNN = Directory Number.
XXX = Hunt DN—enter NONE to remove present DN. Also see Station Hunt - Distributed.
2. NX is entered in place of the usual hunt DN following the EKT DN assignment. For example: N = Distributed Hunt Group Number (0 -- 3)
X = Member Number (1 -- 8)
3. XXX = TDN assigned in Trunk Data Block.
4. Maximum ADL keys for entire system is 250.
5. Flash key causes a _____ m.sec. flash (line open) to CO line.
6. LNNX = Port number of EKT to be signalled.
7. SDC XX makes the station a controller of list #XX.
SDU XX makes the station a user of list #XX.
Maximum: 25 personal, 10-number Speed Dial-Station lists (XX = 1 -- 25).
8. XXX = DN of station receiving Voice Page. If the DN has multiple appearances, the station having the DN as Prime (key 0) will be called.

*not not be
w numbers
-1AW*

Error Codes

Program Name: EKT Set Data Block (DEKT)	
Error Code	Meaning
EREKT 00	No PCB is equipped in that location.
EREKT 01	PCB is a DSTU type (not EKT).
EREKT 02	Port is busy (REQ = CHG or OUT).
EREKT 03	Port is already assigned (REQ = NEW).
EREKT 04	#1 was entered but tenant service not enabled in System Data Block.
EREKT 05	#1 was entered but Att #1 not programmed (no Attendant Data Block).
EREKT 06	Wrong key number (over permitted key strip number).
EREKT 07	No port (destination of the key feature) is assigned (manual signalling) or port type is not a station.
EREKT 08	Maximum number of ADL keys already assigned (max. is 250).
EREKT 09	PUG is entered but Call Pick-up Group number is not assigned yet.
EREKT 10	DN conflicts with existing DN.
EREKT 11	120 DNs are already assigned in the system.
EREKT 12	DN already assigned to max. appearances (Prime is 1, Not Prime is 7).
EREKT 13	PUG number=NONE (was entered but PUG key already assigned).
EREKT 14	Next hunt DN is not assigned.
EREKT 15	Maximum number of 20-key EKTs are already assigned (max. is 80).
EREKT 16	Input DN is already assigned to the port.
EREKT 17	Input Data erased because program aborted during "NEW" data entry.
EREKT 18	Port is not assigned.
EREKT 19	Other type data (500/2500, etc.) is assigned to the input port.
EREKT 20	SDC is already assigned to the input list.
EREKT 21	The input port is not an EKT (SIG LNNX).
EREKT 22	PVR NNN, PVN NNN is entered but trunk DN NNN is not yet assigned.
EREKT 23	The input DN is trunk DN (VCP NNN Hunt DN).

Maximum number of Display EKTs already assigned (maximum in 30).

TABLE G

Procedure - Standard Telephone Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSTT	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Port Number	POR	LNNX	1&2
Directory Number	DN	NNN (NN, N)	3
Station Mix	SMX	Y or N	
Class Of Service	COS	0-15	4
Tenant Number	TEN	0 or 1	
Call Pick-up Group	PUG	0-31 or NONE	5
Hunt Number	HNT	XXX, NX or NONE	6
Dialing Type	DLG	DIP, TON, MNL, 0 or 1, HTL XXX	7
Speed Dial List	SDL	SDC XX, SDU XX, NONE	8
Warning Tone Allowed?	WTA	Y or N	
Call Forward to Trunk?	CFT	Y or N	
Toll Restriction Class	TOL	0 - 8 or NONE	10
	REQ	Repeat program if necessary	

3, 2, 1 digit
Bridges

NOT IN THIS
SOFTWARE →

NOTES:

1. NN = PCB location.
2. X = Circuit number.
3. 3, 2, or 1 digit DNs are allowed if there is no conflict; i.e., 300 and 30 are not allowed together.
4. There are 16 different COS groups which are defined in the COS Data Block.
5. There are a maximum of 32 Call Pick-up Groups.
6. XXX = the number to which this DN hunts.
 NX = Station Hunt - Distributed
 N = Distributed hunt group number (0 - 4)
 X = Member number (1 - 8)
 NONE = No hunt
7. DIP = Dial Pulse; TON = DTMF; MNL 0 or MNL 1 = Direct Line to ATT 0 or 1; HTL = Hot Line to DN XXX.
8. SDC XX makes the station a controller of list #XX
 SDU XX makes the station a user of list #XX
 Maximum: 25 personal 10-number Speed Dial-Station lists (XX = 1 - 25)
9. Y = Call Waiting feature activated
 N = Camp-on feature activated
10. Classes 0 - 7 are defined in the Toll Restriction Data Block (DTOL) Program. Class 8 is 0, 1 restriction. None is no Toll Restriction.
11. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

Error Codes

Program Name: Standard Telephone Data Block (DSTT)	
Error Code	Meaning
ERSTA 00	No PCB is equipped in that location.
ERSTA 01	PCB is not STLC type.
ERSTA 02	Port is busy (REQ = CHG, OUT).
ERSTA 03	Port is already assigned (REQ = NEW).
ERSTA 04	
ERSTA 05	#1 was entered but tenant service not enabled in System Data Block.
ERSTA 06	#1 was entered but ATT #1 not programmed (no Attendant Data Block).
ERSTA 07	
ERSTA 08	
ERSTA 09	Unknown input.
ERSTA 10	DN conflicts with existing DN.
ERSTA 11	120 DNs are already assigned in the system.
ERSTA 12	DN is already assigned to the maximum appearances (8).
ERSTA 13	Hot Line DN does not exist.
ERSTA 14	Next Hunt DN does not exist.
ERSTA 15	
ERSTA 16	
ERSTA 17	MNL 0 was entered but ATT 0 is not equipped.
ERSTA 18	MNL 1 was entered but ATT 1 is not equipped.
ERSTA 19	MNL 0 was entered but this station is in tenant group #1.
ERSTA 20	MNL 1 was entered but this station is in tenant group #0.
ERSTA 21	Input Data erased because program aborted during "NEW" data entry.
ERSTA 22	The port is not assigned.
ERSTA 23	Other type data (EKT, etc.) is assigned to the input port.
ERSTA 24	SDC is already assigned to input list.
ERSTA 25	The next input Hunt DN is trunk DN.

Maximum number of Display EKTs already assigned (maximum is 30).

TABLE H

Procedure - Class of Service Data Block

COS = Features NOT Allowed

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DCOS	
	— DISK LOADING —		
	REQ	CHG	
	COS	0 AAA BBB etc.	1&2
	COS	1 AAA BBB etc.	3
	COS	DEL	4
	REQ	Repeat program if necessary	

NOTES:

1. Enter a list of all features which are **not** allowed to this group. See Table H-1, it is a list of features and codes.
2. Default = all features allowed.
3. A maximum of 16 COS Groups (0—15) are allowed.
4. The COS prompt will be repeated until DEL is entered and then a REQ prompt will be given.
5. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

TABLE H-1—CLASS OF SERVICE DATA BLOCK

FEATURE	CODE
Trunk Group 0	T00
Trunk Group 1	T01
Trunk Group 2	T02
Trunk Group 3	T03
Trunk Group 4	T04
Trunk Group 5	T05
Trunk Group 6	T06
Trunk Group 7	T07
Trunk Group 8	T08
Trunk Group 9	T09
Trunk Group 10	T10
Trunk Group 11	T11
Trunk Group 12	T12
Trunk Group 13	T13
Trunk Group 14	T14
Trunk Group 15	T15
Automatic Callback	ACB
Call Forward (All Calls)	CFD
Call Forward (Busy)	CFB
Call Forward (No Answer)	CFN
Call Pick-up Directed	PUD
Call Pick-up Group	PUG
Call Waiting	CWT
Override	OVR
Speed Dialing-System	SDS
Attendant Control Override	ACO
All Zone Paging	APG
Paging Zone 0	PG0
Paging Zone 1	PG1
Paging Zone 2	PG2
Paging Zone 3	PG3
Paging Zone 4	PG4
Direct Trunk Access	DTA
LCR Class 1	LC1
LCR Class 2	LC2
LCR Class 3	LC3

← if this is enter LCR totally denied - unable to dial out if all trks in this gr busy.

Error Codes

Program Name: Class of Service Data Block (DCOS)	
Error Code	Meaning
ERCOS 01	Invalid response (0-15 is allowed).

TABLE I

Procedure - Toll Restriction Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

TOLL RESTRICTION DATA BLOCK

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTOL	
	- DISK LOADING -		
	REQ	CHG	
	TYPE	PAR, CLS, AOC	1

NOTE:

- Possible entries are:
 PAR - Misc. Parameters Table
 CLS - Restriction Class Table
 AOC - Area/Office Code Exception Table

MISC. PARAMETERS TABLE

Load DTOL utility program. When TYPE prompt is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	PAR	
Home Area Code	HAC	N 0/LX	1
Interchangeable Codes	ICC	Y or N	2
Specialized Common Carrier #1DN	SPCC1	NXXXXXXX or 10XXX or NONE	3
Specialized Common Carrier #2DN	SPCC2	NXXXXXXX or 10XXX or NONE	3
DDD Prefix	DDP	XXX (1,2,or 3 digits) or NONE	
Number of digits for SPCC1 Authorization Code	AUTH1	1 12 or NONE	4
Number of digits for SPCC2 Authorization Code	AUTH2	1 12 or NONE	4

see table where sys. is located

equal Access Number

NOTES:

- Coupled with HAC entry in Least Cost Routing (DLC1) PAR Table. Data entered here will appear in that table also.
- Informs the system if interchangeable codes are used. (Office codes with NO/LX format).
- SPCC 1 & 2 entries are the DN of any specialized common carrier (SPCC) used (MCI, SPC, etc.) or Equal Access Number (10XXX). Data entered here also appears in SMDR ((DMDR) program. Data entered here will not appear in SMDR output.
- Number of digits in the authorization code used with SPCC1, SPCC2. Data entered here will not appear in SMDR output.

RESTRICTION CLASS TABLE

Load DTOL utility program. When TYPE prompt is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
Class Number	CNO	0 7, NCUT	1
"O" & "O" + Calls Allowed	OPR	Y or N	
International Calls (011, 01) Allowed	INT	Y or N	
L.D. Directory Assistance NPA-555-XXXX Allowed	LDA	Y or N	
Area Code Table=Allow or Deny	ACT	A or D	2
Area Code List Add or Delete	ACD	A NPA NPA etc. - or - D NPA NPA etc.	3
Office Code Table=Allow or Deny	OCT	A or D	4
Office Code List Add or Delete	OCD	A NXX NXXX etc. - or - D NXX NXXX etc.	5

only for
some areas
NONE

Notes:

1. Enter the number of toll restriction class (0 7) being defined. This number will be used in the DEKT, DSTT and DTGP data block to respond to the "TOL" prompt.
2. Defines the Area Code Table of this class as an Allow (A) or Deny (D) type.
 - o If Allow (A) is entered, the system will allow all area codes except those deleted in response to the ACD prompt. (Note 3).
 - o If Deny (D) is entered, the system will deny all area codes except those added in response to the ACD prompt (Note 3).
3. Used to Add (A) or Delete (D) area codes from the table (See Note 2).
4. Defines the Office Code Table for this class as an Allow (A) or Deny (D) type.
 - o If Allow (A) is entered, the system will allow all office codes except those deleted in response to the "OCD" prompt (Note 5).
 - o If Deny (D) is entered, the system will deny all office codes except those added in response to the "OCD" prompt (Note 5).
5. Used to Add (A) or Delete (D) office codes from the table (See Note 4). "Ranges" are possible (7309 = 730 - 739).

AREA/OFFICE CODE EXCEPTION TABLE

Load DTOL utility program. When TYPE prompt is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
Table Number	TNO	0 31	
Area Code	ARC	N 0/1X, NONE	1
Class Number	CNO	0 1 etc., NONE	
Office Codes	OFC	A NXXX NXX etc. - or - D NXXX NXX etc.	2,3

NOTES:

1. ARC identifies the area code that this AOC is assigned to. Format is N 0/LX (N=2 9, X=0 9). A maximum of eight (8) AOC tables can be assigned to any one area code and those table numbers (TNO, Note 1) must be sequential.
2. Used to add (A) or delete (D) office codes from the table. Office codes entered will be an exception to the area code and class listed. Ranges are possible (7309 = 730 - 739).
3. Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.

Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.

ERROR CODES

Program Name: Toll Restriction Data Block (DTOL)

<u>Error Code</u>	<u>Meaning</u>
ERTRD00	Area Code (N 0/LX) is out of range.
ERTRD01	Numeric error. (0 9)
ERTRD02	Authorization Code is out of range. (0 12)
ERTRD03	Class No. is out of range (0 7)
ERTRD04	Number of area code is over (max 20)
ERTRD05	Number of office code is over (max 20)
ERTRD06	Table No. is out of range. (0 31)
ERTRD07	Class No. is over. (max 8)

TABLE J

Procedure - Speed Dialing Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSDL	
— DISK LOADING —			
	REQ	CHG, OUT	
List Number	LNO	XX	1
Store Number	STR	1 9*NPANNXXXXX	2,3,4
	STR	2 9*NPANNXXXXX	
	STR	3 9*NPANNXXXXX--etc.	
		DEL	5
	REQ	Repeat program if necessary	

NOTES:

1. XX = List Number.
 00 = System List (90 numbers maximum).
 01-25 = Station Lists (10 numbers each maximum).
2. Input procedure is:
 Address Code-Space-Access Code-Pause-Dn
 For example: 01 9*NPANNXXXX
3. Stored numbers may be any length between 1 and 16 digits; "*" enters a 3-second pause and is counted as one of the 16 digits.
4. If the List Number (LNO) was 00 (System List), 2-digit address codes will be used (10-99).
5. No further prompt will be given until DEL is entered.
6. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

Error Codes

Program Name: Speed Dialing Data Block (DSDL)	
Error Code	Meaning
ERSDL 00	Input list number is out of range (0-25 is allowed).
ERSDL 01	Address code of system list is out of range (10-99 is allowed).
ERSDL 02	Address code of station list is out of range (0-9 is allowed).
ERSDL 03	Invalid DN (1-16 digits are allowed).

TABLE K

Procedure - SMDR Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DMDR	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Account Code Length	ACL	1 - 12	
Special Common Carrier #1 DN	SPCC 1	NXXXXXX or 10XXX or NONE	1
Special Common Carrier #2 DN	SPCC 2	NNXXXXX or 10XXX or NONE	1
Trunk Group	TGP	XX XXX	2
	TGP		3

NOTES:

1. SPCC 1 & SPCC 2 entries are the DN of any Specialized Common Carrier (SPCC) used (MCI, SPC, etc.) or Equal Access Number (10XXX). Data entered here also appears in Toll Restriction (DTOL) PAR table. (Data entered here will not appear in SMDR output).
2. Enter the trunk group number and type of calls to be recorded on this Trunk Group: NONE
 - INC - Incoming Only
 - OGT - Outgoing Only
 - IAO - Incoming and Outgoing
 - TOL - Toll Only
 - INT - Incoming - all
 - Outgoing - toll only

- 3. TGP continues to be prompted until DEL is entered.
- 4. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

TABLE L

Procedure - Attendant Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DATT	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Attendant Number	ANO	0 or 1	
Port Number	POR	L001 (Att 0) or L121 (Att 1)	
Lockout Allowed?	LKO	Y or N	
Page Key	PAG	XX or NONE	1

NOTES:

- 1. XX = Access Code of the Page Zone or All Page.
- 2. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

Error Codes

Program Name: Attendant Data Block (DATT)	
Error Code	Meaning
ERATT 00	No PCB is equipped in that location.
ERATT 01	PCB is not EKLC type.
ERATT 02	Port is busy.
ERATT 03	Port is already assigned (REQ = NEW).
ERATT 04	Port is not assigned yet (REQ = CHG, OUT).
ERATT 05	Invalid port number (ATT 0 is L001, ATT 1 is L121).
ERATT 06	Access code entered not assigned to an All Page or Page Zone.
ERATT 07	
ERATT 08	Input data erased because program aborted during NEW data entry.
ERATT 09	Attendant data not assigned to input port (REQ = CHG, OUT).

No printout possible for this block

TABLE M

Procedure - Traffic Measurement

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTRF	
— DISK LOADING —			
	REQ	RPT, STT, CHG, OUT	1
	SYST.DATE MMDDYY	MMDDYY or CR	2
	SYST.TIME HHMMSS	HHMMSS or CR	3
	SCH "XXX"	30, 60, CMD, NONE or CR	4
	STR.DATE MMDDYY	MMDDYY or CR	5
	STR.TIME HHMM	HHMM or CR	6
	RPT		
	SYST	Y or N	7
	ATTO	Y or N	
	ATT1	Y or N	
	TGP00—TGP15	Y or N	

NOTES:

1. RPT = Report Command—if the program had been started previously, a report would follow. See Table M-1 for format.
 STT = Start Command—used to initialize the program and start the record keeping reporting activity. (Used for SCH = CMD only. Must be entered after each RPT request.)
 CHG = Change Command—used to alter reporting parameters.
 OUT = Out Command—used to stop reports.
2. System outputs the date in its memory (Month, Day, Year). An entry (MMDDYY) will overwrite the existing data. A carriage return (CR) = no change.
3. System outputs the time in its memory (Hours, Minutes, Seconds). An entry (HHMMSS) will overwrite the existing data. A carriage return (CR) = no change.
4. Schedule of Reports:
 30 = Report every 30 minutes beginning at the time listed as STR.DATE (Note 5) and STR.TIME (Note 6).
 60 = Report every 60 minutes beginning at the time listed as STR.DATE (Note 5) and STR.TIME (Note 6).
 CMD= Report only when the RPT command is given (Note 1).
5. Date that record keeping and reporting should start. The system outputs the date in its memory (Month, Day, Year). An entry (MMDDYY) will overwrite the existing data. A carriage return (CR) = no change.
6. Time that record keeping and reporting should start. The system the time in its memory (Hours, Minutes, Seconds). An entry (HHMMSS) will overwrite the existing data. A carriage return (CR) = no change.
7. Enter Y (yes) or N (no) followed by a carriage return to select the parameters to be reported (see Table M-2).
8. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

TRAFFIC MEASUREMENT

TABLE M-1—REPORT FORMAT

ITEM	PROMPT	USER ENTRY
Authorization Procedure	OK	TRF
— DISK LOADING —		
	REQ	RPT
	RPT FROM	MM DD YY
		HH MM SS
	TO	MM DD YY
		HH MM SS
	SYST	RCVR DLY 0000
	ATT 0	IN SVC 0000
		WK TIM 0000
		INC TRK 0000
		INC TIM 0000
		0 CALL 0000
		LPS BSY 0000
		TTA 0000
		OVFL 0000
	ATT 1	(SAME AS ATT 0)
	TRUNKS	TGP 00*
		INC USE 0000
		INC CALL 0000
		O.G. USE 0000
		O.G. CALL 0000
		ATB 0000

*Trunk Groups 01--15 are reported in the same way as Group 00.

TABLE M-2—TRAFFIC MEASUREMENT PARAMETERS

GROUP	ITEM MEASURED	TYPE OF MEASUREMENT
System	DTMF RCVR Delay (3 sec.)	Peg Count
Attendant #0	Time in Service	CCS
	Work Time	CCS
	Incoming (Trunk) Calls	Peg Count
	Time Servicing Incoming Calls	CCS
	Dial "0" Calls	Peg Count
	All Loops Busy	Peg Count
	Average Time to Answer	SEC
	Overflow	Peg Count
Attendant #1	(Same as Attendant #0)	
Trunks	Group 00* Incoming Usage	CCS
	Incoming Calls	Peg Count
	Outgoing Usage	CCS
	Outgoing Calls	Peg Count
	All Trunks Busy	Peg Count

*Trunk Groups 01--15 are reported in the same way as Group 00.

Error Codes

Program Name: Traffic Measurement (DIRF)	
Error Code	Meaning
ERTRF 01	Program has already been started. Either the START TIME has been reached or STT was entered previously. (REQ = STT)
ERTRF 02	Invalid response. STT or RPT was entered in response to REQ but the SCH entry is 30, 60, or NONE.
ERTRF 03	RPT was entered in response to REQ but the program has not been started. (Correct START TIME & DATE, enter = STT)

TABLE N

Procedure - DIMF Receiver Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DRCV	
— DISK LOADING —			
	REQ	NEW, OUT	
Port Number	POR	R00X	1
	REQ		

NOTES:

1. Enter the RCVR port number (ROO = PCB number, X = Circuit number).
2. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

Error Codes

Program Name: DIMF Receiver Data Block (DRCV)	
Error Code	Meaning
ERREC 00	No PCB is equipped in that location.
ERREC 01	PCB type is not DIMF Receiver.
ERREC 02	Port is busy (REQ = OUT).
ERREC 03	Port is already assigned (REQ = NEW).
ERREC 04	Port is not assigned (REQ = OUT).
ERREC 05	Receivers are all assigned (maximum is 6).

TABLE O

Procedure - Trunk Group Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTGP	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Trunk Group Number	GRP	0—15 or PVL	1
Tenant Number	TEN	0 or 1	
Trunk Type	TKT	COT, FEX, DID, PVL, CSA, TIE, WAT	2
Incoming/Outgoing	IAO	ICT, OGT, IAO	
Advance Step	STP	XX or NONE	3
Access Code	COD	N (NN or NNN)	
Class Of Service	COS	0—15	4
Transmission	TRN	NTC, TRC, VNL	
Start Arrangement	STR	IMM, WNK, DDL	
Warning Tone Allowed?	WTA	Y or N	
Outgoing Absorb Digits	OAB		5
Incoming Absorb Digits	IAB		6
Translated Number 1	TRN1	X # Y or YY	7
Translated Number 2	TRN2	X # Y or YY	7
Toll Restriction Class	TOL	0—8 or NONE	8

must use double digit ABRMAT

used by DID TRNs

NOTES:

1. A maximum of 16 Trunk Groups (normally 0—15) are possible. If Private Lines are to be equipped, the code "PVL" is used in place of 15.
2. TKT cannot be changed, Data Block must be removed (OUT) and NEW data entered.
3. XX = Trunk Group to be stepped to if this group is busy.
4. COS is meaningful only for TIE/CCSA/DID Trunks. 16 COS groups are provided and are defined in the Class of Service Data Block.
5. List the digits which are to be ignored for the purpose of Toll/Code Restriction. These digits will be outpulsed but not counted as the first digit.
6. Enter the number of digits which are to be stripped from an incoming dialed DN (TIE, DID, or CCSA Trunk).
 Example: IAB = 1
 Incoming DN = 8249
 Recognized DN = 249
7. Enter the absorbed digit (IAB) to be translated from one digit to another digit or digits. X = the absorbed digit (IAB) to be translated. Y or YY = the translated digit (Y) or digits (YY) to be inserted.
 Example: IAB = 1
 TRN1 = 9#2 Incoming DN = 949 Recognized DN = 249
 TRN2 = 8#3 Incoming DN = 849 recognized DN = 349
8. Classes 0 — 7 are defined in the Toll Restriction Data Block (DTOL) Program. Class 8 is 0, 1 restriction. None is no restriction.
9. Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = Stop printing and return to REQ
 DEL DEL = Abort program

TABLE O-1—TRUNK GROUP DATA BLOCK ENTRIES
 TRUNK TYPES

	COT	FEX	WAT	PVL	DID	CSA	TIE
GRP	X	X	X	X	X	X	X
TEN	X	X	X	O	X	X	X
TKT	X	X	X	O	X	X	X
IAO	X	X	X	X	X	X	X
STP	X	X	X	O	X	X	X
COD	X	X	X	O	X	X	X
COS	O	O	O	O	X	X	X
TRN	X	X	X	X	X	X	X
STR	X	X	X	X	X	X	X
WTA	X	X	X	X	X	X	X
OAB	X	X	O	O	X	O	O
IAB	O	O	O	O	X	X	X
INS	O	O	O	O	X	X	X
TOL	O	O	O	O	O	X	X
CRL	X	X	O	O	X	O	O

not used in A-03 software

LEGEND: X = Used, O = Not Used

Error Codes

Program Name: Trunk Group Data Block (DTGP)	
Error Code	Meaning
ERTRG 00	
ERTRG 01	GRP still has trunk assigned (REQ=OUT).
ERTRG 02	The entered GRP number is already assigned (REQ=NEW).
ERTRG 03	One or more trunks are busy (REQ=CHG).
ERTRG 04	The entered GRP number does not exist (REQ=CHG).
ERTRG 05	Entered advance step GRP is the same as this GRP number.
ERTRG 06	AIOD is not equipped in this system.
ERTRG 07	The trunk group number given is not assigned to an AIOD trunk.
ERTRG 08	#1 entered but tenant service not enabled in System Data Block.
ERTRG 09	#1 entered but Attendant Console #1 does not exist.
ERTRG 10	Start arrangement conflicts with trunk type.
ERTRG 11	WTA=Y was entered but trunk type is PAG.
ERTRG 12	IAC=ICT was entered but trunk type is PAG.
ERTRG 13	The entered GRP number does not exist (REQ=OUT).
ERTRG 14	Access code conflicts with an existing number.
ERTRG 15	Input data erased because program aborted during new mode.

TABLE O-2
PERCEPTION LOSS PLAN

		Through Connection	Terminal Balance			Through Balance
			Station Lines/ Attendant Lines	Non-VNL		VNL
Terminal Balance	FROM \ TO			Non-transmission Compensated (2-wire facility < 2dB loss and not impedance compensated)	Transmission Compensated (2-wire facility > 2dB loss or impedance compensated, or 4-wire facility)	4-wire
			Non-VNL	Station Lines/ Attendant Lines	5	
Non-transmission Compensated (2-wire facility < 2dB loss and not impedance compensated)	1	1		1	3	
Transmission Compensated (2-wire facility > 2dB loss or impedance compensated or 4-wire facility)	1	1		1	1	
VNL	4-wire	3	3	1	1	

NOTE:
The numbers in the boxes represent actual through connection loss in dB.

TABLE P

Procedure - Trunk Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DIGP	
— DISK LOADING —			
	REQ	NEW, CHG, OUT	
Port Number	POR	TNNK	1
Group/Member Number	GMN	YYZZ	2&3
Trunk DN	TDN	BBB	4
Remote Access Day & Ngt	RAD	Y or N	
Night Number	NIT	NNN, NONE (UNA)	5
Signalling	SIG	GRD, LOP, EAM, LDR, OAD	
Disconnect Supervision?	DIS	Y or N	6
Control of Disconnect	CTL	OPC, FPR	7
Incoming Dialing	DIN	DIP, TON	8
Dialing Outgoing	DOT	P10, P20, TON	9
Answer Supervision	ANS	Y or N	10

is changed, do not
 may be

NOTE:

1. NN = Trunk PCB number, X = Circuit number.
2. YY = Trunk Group Number (0—15 or PVL).
3. GMN cannot be changed, Data Block must be removed (OUT) and NEW data entered.
4. This prompt is valid only for TGP PVL. TDN is the DN assigned to a private trunk line. *phantom DN*
5. NNN is the trunk's Night station. This number can also be changed by the Attendant when making night assignments (no meaning for TIE/CCSA/DID trunks). Must match Rem prompt in DSYS program to activate Remote Access to Services.
6. Y or N tells the system if Disconnect Supervision can be expected from the distant end.
7. OPC = Originating Party Control, FPR = First Party Release.
8. Has meaning only for TIE/CCSA/DID Trunks.
9. Outgoing dialing method:
 - P10 = Rotary Dial 10 PPS
 - P20 = Rotary Dial 20 PPS
 - TON = DTMF
10. Is Answer Supervision required to the calling party?
11. Ctl X = Ignore line entered
 - Ctl H = Backspace
 - DEL = Stop printing and return to REQ
 - DEL DEL = Abort program

TABLE P-1—TRUNK DATA BLOCK ENTRIES
TRUNK TYPES

	COT	FEX	WAT	PVL	DID	CSA	TIE
FOR	X	X	X	X	X	X	X
GMN	X	X	X	X	X	X	X
TDN	O	O	O	X	O	O	O
NIT	X	X	X	O	O	O	O
SIG	X	X	X	X	X	X	X
DIS	X	X	X	X	X	X	X
CTL	O	O	O	O	X	X	X
DIN	O	O	O	O	X	X	X
DOT	X	X	X	X	X	X	X
ANS	O	O	O	O	X	X	X

LEGEND: X = Used, O = Not Used

Error Codes

Program Name: Trunk Data Block (DIRK)	
Error Code	Meaning
ERTRK 00	No PCB is equipped in that location.
ERTRK 01	PCB is not trunk type.
ERTRK 02	Port is busy (REQ = OUT).
ERTRK 03	Port is already assigned (REQ = NEW).
ERTRK 04	Trunk Group Data Block does not exist.
ERTRK 05	Member number already assigned.
ERTRK 06	Entry conflicts with existing DN or TDN.
ERTRK 07	Entered night number does not yet exist.
ERTRK 08	
ERTRK 09	Type of signalling entered conflicts with the trunk type.
ERTRK 10	
ERTRK 11	Input data erased because program aborted during NEW mode.
ERTRK 12	The port is not assigned.
ERTRK 13	Another type of data is already assigned to the input port.
ERTRK 14	
ERTRK 15	Entered DN already assigned to station (EKT or SIT).
ERTRK 16	Entered DN already assigned to another trunk.

LEAST COST ROUTING DATA BLOCK

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
LCR Utility #1 or #2	OK	DLC1, DLC2	1
	— DISK LOADING —		
	REQ	CHG	
Data Table Type	TYPE	PAR, ACT, AOC (DLC1)	2
		- or -	
		RTB, MDT (DLC2)	2

NOTES:

- LCR Utilities are divided between two programs:
 Enter: DLC1 for PAR (Misc. Parameters)
 ACT (Area Code Table)
 AOC (Area/Office Code Table)
 DLC2 for RTB (Route Table)
 MDT (Modify Digits Table)

2. If DLC1 was entered, possible responses are PAR, ACT or AOC.
 If DLC2 was entered, possible response are RTB or MDT.

MISC. PARAMETERS TABLE

Load DLC1 utility program, when TYPE is prompted, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	PAR	
Interchangeable Codes	ICC	Y or N	1
"O" Call Time Out	OTO	XX (Time in seconds 0-99)	
Return Dial Tone after LCR Access Code	RTD	Y or N	
Warning Tone to Caller When Last Route is Selected	WTA	Y or N	
Home Area Code	HAC	N 0/1 X (Home Area Code)	2
Toll Free (800) Calls Permitted via Local Call Route (ICR)	TFC	Y or N	
Local Call Route	ICR	XX (Local Call Route Table No. 1-15)	
Service Code Table	SVC	A NNN NNN (Add Codes) - or - D NNN NNN (Delete Codes)	3
Directory Assistance (555) Call Allow	DAC	Y or N	
Directory Assistance (555) Call Route	LDL	XX (Route Table to be used for 555 calls)(1-15)	
DDD Prefix	DDP	XXX (DDD prefix, 1,2, or 3 digits)	

*H Y 545 look
 BIC 1 XXX-XXX
 WTA NO 545 546
 JHP 1 XXX-XX*

NOTES:

1. Informs the system if interchangeable codes are used (Office codes with NO/LX format).
2. Defines the area code in which the system is located. Used for routing dialed numbers not containing an area code. Coupled with HAC entry in Toll Restriction (DTOL) PAR table. Data entered here will appear in that table also.
3. Codes cannot be added and deleted in the same pass through the table. A separate pass is required for each step.

AREA CODE TABLE

Load DLC1 utility program, when TYPE is prompted proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	ACT	
Route Table Number	RNO	XX (Route Table No. 1-15), OUT or NN OUT	1
Area Codes--Add	ACA	N 0/LX N 0/LX etc	2
Area Codes--Delete	ACD	N 0/LX N 0/LX etc	3

system automatically list all area codes in Table 15

NOTES:

1. OUT clears RNO 1 14 and assigns all area codes to table RNO 15.
 NN OUT clears RNO NN and assigns area codes from table NN to RNO 15.
2. Input area codes to be added to this RNO. A maximum of 160 codes in the format N 0/1X are permitted (N=2 9, X=0 9). At start-up RNO15 contains all possible area codes. As codes are added to RNO 1 14, they are automatically deleted from RNO 15.
3. Input codes to be deleted from this RNO. As codes are deleted from RNO 1 14 they are automatically added to RNO 15. Codes can only be deleted from RNO 15 by adding them to another RNO.

AREA/OFFICE CODE TABLE

Load DLC1 utility program, when TYPE is prompted, proceed as follows:

ITEM	PROMPT TYPE	USER ENTRY AOC	NOTE
Table Number	TNO	XX Table No. (1 16)	
Area Code	ARC	N 0/1X or NONE	
Route Table Number	RNO	XX (1 15)	
Office Codes—Add	OCA	NXX NXX etc	1
Office Codes—Delete	OCD	NXX NXX etc	1

NOTE:

A maximum of 800, 3 digit numbers in the format NXX (N=2 9, X=0 9) are permitted. Ranges are possible (7309 = 730 - 739).

ROUTE TABLE

Load DLC2 utility program, when TYPE is prompted, proceed as follows:

ITEM	PROMPT TYPE	USER ENTRY RTB	NOTE
Route Table Number	RNO	XX (1 15), OUT, NNOUT	1
Route #1 Definition	RT1	XX MM or NONE	2
Route #2 Definition	RT2	XX MM or NONE	2
Route #3 Definition	RT3	XX MM or NONE	2
Route #4 Definition	RT4	XX MM or NONE	2
Route #5 Definition	RT5	XX MM or NONE	2
Route #6 Definition	RT6	XX MM or NONE	2
- Printout of Existing Route Schedule -			3
Route Schedule A	SCHA	HHMM HHMM	4
Class 3 Routing Priority	LC3	R1X R1X etc RT1 RT2	5,6
Class 2 Routing Priority	LC2	R1X R1X etc RT3	5,6
Class 1 Routing Priority	LC1	R1X R1X etc	5,6
Route Schedule B	SCHB	HHMM HHMM	4
	LC3	R1X R1X etc	5,6
	LC2	R1X R1X etc	5,6
	LC1	R1X R1X etc	5,6
Route Schedule C	SCHC	HHMM HHMM	4
	LC3	R1X R1X etc	5,6
	LC2	R1X R1X etc	5,6
	LC1	R1X R1X etc	5,6

*order of
st. cheapest
costliest*

RT6 modified digits table

RTS 7MINS - RTS 8MINS

*MILITARY
TIME*

*sys. comes All
sta's ARE ACI*

NOTES:

1. OUT — Will clear all Route Tables
 NNOUT — Will clear Route Table NN.
2. Route definition — maximum 6 routes, Format is:
 XX = Trunk Group number MM = Modify Digits Table to be applied (M.D. Table must be entered).
3. Existing Route Schedule data is printed automatically after the response to RT6 prompt is entered.
4. Time of day interval for this routing schedule:
5. Maximum combined entrees for IC3, IC2, IC1 is 6 routes. Do not assign the same route to more than one class.
6. IC3, IC2, IC1 are used in DCOS data block to define station class of service. Access permitted to each class is as follows:
 IC1 — All routes defined for IC1, IC2, IC3
 IC2 — Routes defined for IC2, IC3
 IC3 — Routes defined for IC3 only.

MODIFY DIGITS TABLE

Load DLC2 utility program, when TYPE is prompted, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	TYPE	MDT	
Table Number	TNO	XX (1 12)	
Number of Digits to be deleted from the dialed number	DLT	XX (max 10), NONE	
Digits to be prefixed to the dialed number	ADD	XXXX etc (max 20), NONE <i>7305000 + Auth. Code</i>	1

NOTE:

The following codes are used in response to ADD to insert pauses:

- * 1 = 1 digit = 1 sec pause
- * 2 = 1 digit = 2 sec pause
- * 3 = 1 digit = 6 sec pause

ERROR CODES

Program Name: Least Cost Routing Data Block (DLC1 & DLC2)

Error Code	Meaning
ERLCR00	Input time in seconds is out of range. (0 99)
ERLCR01	Area Code (N 0/1X) is out of range. (N=2-9, X=0 9)
ERLCR02	Route No. is out of range. (1 15)
ERLCR03	Service Code Error.
ERLCR04	Service Code Over. (Maximum 10)
ERLCR05	Table No. is out of range. (1 16)
ERLCR06	Office Code is out of range.
ERLCR07	Trunk Group No. is out of range.
ERLCR08	Modify Digits Table No. is out of range. (1 12)
ERLCR09	Route No. Error. (RT1-RT6)
ERLCR10	No. of Digits to be deleted is out of range. (0 10)
ERLCR11	Digit to be added is over (Maximum 20)
ERLCR12	Digit to be added is incorrect.
ERLCR13	Numeric Error. (0 9)

ERLCR14 Number of Area Code is over (Maximum 160)
 ERLCR15 Number of Office Code is over (Maximum 800)
 ERLCR16 Schedule time is out of range. (HH=0 23, MM=0 59)
 ERLCR17 Schedule time error.
 ERLCR18 Route No. is double assigned.

TABLE R

Procedure - Print System Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSYS	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following responses are possible:

- PRT = Output System Data Block
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

TABLE S

Procedure - Print Access Code Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PACD	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following responses are possible:

- PRT = Output System Data Block
- Ctl X = Ignore line entered
- Ctl H = Backspace.
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

TABLE T

Procedure - Print Station Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSDB	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following responses are possible:

- PORALL = All SDBs will be output in numerical order of ports (lowest first)
- PORNXX = Port NXX data will be output
- PORVAC = A list of all unassigned ports will be output
- DNALL = All SDBs will be output in numerical order (lowest first) by DN (PDN for EKTs)
- DNNNN = DN NNN data will be output; if it is a multiple appearance DN, all Data Blocks it appears in will be output
- EKTALL = All EKT SDBs will be output in order of PDN (lowest first)
- STTALL = All standard telephone Data Blocks will be output in order of DN (lowest first)
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

Error Codes

Program Name: Print Station Data Block (PSDB)	
Error Code	Meaning
ERPST 00	Input PCB number or CKT number is out of range.
ERPST 01	Input DN does not exist.
ERPST 02	Input port is not assigned to EKT or 500/2500.
ERPST 03	Manual signalling port does not exist.

TABLE U

Procedure - Print Class of Service Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PCOS	
	— DISK LOADING —		
	REQ		1
	— EXECUTE —		
	REQ		1

NOTE 1—The following responses are possible:

- PRT = COS Data Block will be output
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

TABLE V

Procedure - Print Toll Restriction Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PTOL	
	— DISK LOADING —		
	REQ		1
	— EXECUTE —		
	REQ		1

NOTE 1—The following responses are possible:

- TRDALL: All Toll restriction—data blocks will be output.
- PAR: Miscellaneous Parameters Table will be output.
- CLSALL: All code tables; area, office and area/office will be output for all 8 classes.
- CLSCNX: All code tables; area, office and area/office will be output for Class X.
- AOCALL: All area/office code tables will be output.
- AOCNOXX: The area code and all office codes for Area/Office Code Table no. XX will be output.
- CODXXX: The Area/Office Code Table relating to area code XXX will be output.
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

TABLE W

Procedure - Print Speed Dial List Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSDL	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following responses are possible:

- ALL = Output all Speed Dial List Data Blocks
- SYST = Output System Speed Dial List Data Block
- LSTN = Output List #N Data Block
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

Error Codes

Program Name: Print Speed Dial List (PSDL)	
Error Code	Meaning
ERPSD 00	List number is out of range (0—25 is available).

TABLE X

Procedure - Print SMDR Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSDL (SMDR)	
— DISK LOADING —			
	REQ		1

NOTE 1—The following responses are possible:

- PRT = Output SMDR Data Block
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

TABLE Y

Procedure - Print Trunk Group Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PTGP	
	—— DISK LOADING ——		
	REQ		1
	—— EXECUTE ——		
	REQ		1

NOTE 1—The following responses are possible:

ALL = All TGP Data Blocks will be output

GRPXX = TGP XX Data Block will be output

COT = All CO Trunk Data Blocks will be output

FEX = All FX Trunk Data Blocks will be output

WAT = All WATS Trunk Data Blocks will be output

TIE = All TIE Trunk Data Blocks will be output

DID = All DID Trunk Data Blocks will be output

CSA = All CCSA Trunk Data Blocks will be output

PVL = All PVL Trunk Data Blocks will be output

Ctl X = Ignore line entered

Ctl H = Backspace

DEL = Stop printing and return to REQ

DEL DEL = Abort program

Error Codes

Program Name: Print Trunk Group Data Block (PTGP)	
Error Code	Meaning
ERPTG 00	Invalid Response.
ERPTG 01	Input trunk group number is out of range (REQ=GRPXX).

TABLE Z

Procedure - Print Trunk Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PTRK	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following responses are possible:

- PORALL = All TDBs will be output in numerical order of ports (lowest first)
- PORNXX = TDB of Port NXX data will be output
- PORVAC = All unassigned trunk ports will be output
- TGPNN = All TDBs assigned to trunk group NN will be output
- COT = All CO Trunk Data Blocks will be output
- FEX = All FX Trunk Data Blocks will be output
- WAT = All WATS Trunk Data Blocks will be output
- TIE = All TIE Trunk Data Blocks will be output
- DID = All DID Trunk Data Blocks will be output
- CSA = All CCSA Trunk Data Blocks will be output
- NIT = Output the Night Station Assignments for all CO, FX, and WATS trunks
- FVL = All FVL Trunk Data Blocks will be output
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

Error Codes

Program Name: Print Trunk Data Block (PTRK)	
Error Code	Meaning
ERPTR 00	Invalid response.
ERPTR 01	PCB number or CKT number is out of range (REQ=PORNXX).
ERPTR 02	Input trunk group is out of range (REQ=IGPXX).
ERPTR 03	Input port is not assigned to trunk (REQ=PORNXX).

TABLE AA

Procedure—Print Least Cost Routing Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PCPG	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		

NOTE 1—The following responses are possible:

- LCRALL: All Least Cost Routing data blocks will be output.
- PAR: Miscellaneous Parameters Table will be output.
- ACTALL: All area code tables will be output.
- ACTRNXX: All area code tables that point to route number (RNO) XX will be output.
- AOCALL: All area/office code tables will be output.
- OACNOXX: Area/Office Code Table XX will be output.
- AOCRNXX: All Area/Office Code Tables that point to route number (RNO) XX will be output.
- CODXXX: All area code and area/office code tables relating to area code XXX will be output.
- RTALL: All Route Tables will be output.
- TGPXX: All Route Tables using Trunk Group XX will be output.
- RTMDXX: All Route Tables using Modify Digit Table XX will be output.
- MDTXX: Modify Digits Table XX will be output.
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

TABLE AB

Procedure - Print Call Pick-up Groups

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	FPCG	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following responses are possible:

- ALL = Output all Call Pick-up Groups listed by DN
- DNXXX = List the numbers of all Call Pick-up Groups containing DN XXX
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

Error Codes

Program Name: Print Call Pick-up Groups (PCPG)	
Error Code	Meaning
ERPCP 00	Invalid response.
ERPCP 01	Input DN does not exist.

TABLE AC

Procedure - Print Hunting Arrangements

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PHNT	
	—— DISK LOADING ——		
	REQ		1
	—— EXECUTE ——		
	REQ		1

NOTE 1—The following responses are possible:

- ALL = Output all Hunting sequences
- DNXXX = Output all Hunts containing DN XXX
- Ctl X = Ignore line entered
- Ctl H = Backspace
- DEL = Stop printing and return to REQ
- DEL DEL = Abort program

Error Codes

Program Name: Print Hunting List (PHNT)	
Error Code	Meaning
ERPCP 00	Input DN does not exist.

TABLE AD

Procedure - Data Dump Program

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DDMP	
	DFG		1
	DUN		2&3

NOTES:

1. Program is loaded and dump is proceeding.
2. Dump is complete.
3. Program aborts automatically.

TABLE AE-1

Procedure - EKT Test Procedure

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TTRM	
— DISK LOADING —			
	REQ		1

NOTES:

1. Program is now active; proceed to the EKT to be tested, and enter *TEK (*835) and the following commands in sequence:

ENTRY	EKT RESPONSE
Access Code * TEK	All LEDs = ON
Handset off-hook	All LEDs = Flash (60Hz)
Handset on-hook	All LEDs = Wink (120Hz)
SPKR key on	All LEDs = Off
SPKR key off	All LEDs = I-hold
MUTE key on	All LEDs = Off
MUTE key off	All LEDs = I-use
CONF key on	All LEDs = Off
CONF key off	SPKR LED = On
HOLD key on/off	SPKR LED = Off
Dial key 1	LED 0 = On
Dial key 2	LED 1 = On (0 = Off)
Dial key 3	LED 2 = On (1 = Off)
Dial key 4	LED 3 = On (2 = Off)
Dial key 5	LED 4 = On (3 = Off)
Dial key 6	LED 5 = On (4 = Off)
Dial key 7	LED 6 = On (5 = Off)
Dial key 8	LED 7 = On (6 = Off)
Dial key 9	LED 8 = On (7 = Off)
Dial key 0	LED 9 = On (8 = Off)
Dial key *	All LEDs = On
Dial key #	All LEDs = Off
Key Strip 0	LED 0 = On
Key Strip 1	LED 1 = On (0 = Off)
Key Strip 2	LED 2 = On (1 = Off)
Key Strip 3	LED 3 = On (2 = Off)
Key Strip 4	LED 4 = On (3 = Off)
Key Strip 5	LED 5 = On (4 = Off)
Key Strip 6	LED 6 = On (5 = Off)
Key Strip 7	LED 7 = On (6 = Off)
Key Strip 8	LED 8 = On (7 = Off)
Key Strip 9	LED 9 = On (8 = Off)
Key Strip 10	LED 10 = On (9 = Off)
Key Strip 11	LED 11 = On (10 = Off)
Key Strip 12	LED 12 = On (11 = Off)
Key Strip 13	LED 13 = On (12 = Off)
Key Strip 14	LED 14 = On (13 = Off)
Key Strip 15	LED 15 = On (14 = Off)
Key Strip 16	LED 16 = On (15 = Off)
Key Strip 17	LED 17 = On (16 = Off)
Key Strip 18	LED 18 = On (17 = Off)
Key Strip 19	LED 19 = On (18 = Off)

Handset off-hook	Dial tone on handset (19 = Off)
Handset on-hook	Dial tone thru speaker (check right volume control)
SPKR key	Ringng thru speaker (check left volume control)
SPKR key	Override tone through speaker
SPKR key	End of Test, EKT idle

TABLE AE-2

Procedure - Attendant Console Test Procedure

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TTRM	
— DISK LOADING —			
	REQ		1

NOTES:

1. Program is now active; proceed to the Attendant Console to be tested, and enter *TAT and the following commands in sequence:

ENTRY	CONSOLE RESPONSE
Access Code *TAT	All BLF LEDs = on
BLF key	All BLF LEDs = off
Dial key 1	ICI TIE= on, STAT RNG = on
Dial key 2	ICI CO = on, STAT BSY = on, Others = off
Dial key 3	ICI WAT= on, STAT FWD = on, Others = off
Dial key 4	ICI FX = on, STAT HLD = on, Others = off
Dial key 5	ICI INT= on, STAT RST = on, Others = off
Dial key 6	ICI RCL= on, STAT HNT = on, Others = off
Dial key 7	ICI OPR= on, STAT VCT = on, Others = off
Dial key 8	ICI TIM= on, STAT TLK = on, Others = off
Dial key 9	ICI SER= on, STAT — = on, Others = off
Dial key 0	ICI HLD= on, STAT — = on, Others = off
Dial key *	ICI IN1= on, STAT — = on, Others = off
Dial key #	ICI IN2= on, STAT — = on, Others = off
Key Strip 1 RLS	Associated LED = on, Others = off
Key Strip 1 LPK 1	Associated LED = on, Others = off
Key Strip 1 LPK 2	Associated LED = on, Others = off
Key Strip 1 LPK 3	Associated LED = on, Others = off
Key Strip 1 LPK 4	Associated LED = on, Others = off
Key Strip 1 PAGE	Associated LED = on, Others = off
Key Strip 1 JOIN	Associated LED = on, Others = off
Key Strip 1 SP CALL	Associated LED = on, Others = off
Key Strip 1 SER CALL	Associated LED = on, Others = off
Key Strip 1 MSG	Associated LED = on, Others = off
Key Strip 2 HOLD	All LEDs = off
Key Strip 2 EXCL SRC	Associated LED = on, Others = off
Key Strip 2 EXCL DEST	Associated LED = on, Others = off
Key Strip 2 VER/CRG	Associated LED = on, Others = off
Key Strip 2 OVERFLOW	Associated LED = on, Others = off
Key Strip 2 CONF	Associated LED = on, Others = off
Key Strip 2 BUZZ	Associated LED = on, Others = off

Key Strip 2 SPARE	Associated LED = on, Others = off				
Key Strip 2 POS BSY	Associated LED = on, Others = off				
Key Strip 2 NITE	Associated LED = on, Others = off				
Dial key 1	TGB 0=on	SRC	COS	DEST=1	BLF 7-segment 1
Dial key 2	TGB 1=on	-	-	12	" " 2
Dial key 3	TGB 2=on	-	-	123	" " 3
Dial key 4	TGB 3=on	-	1	234	" " 4
Dial key 5	TGB 4=on	-	12	345	" " 5
Dial key 6	TGB 5=on	1	23	456	" " 6
Dial key 7	TGB 6=on	12	34	567	" " 7
Dial key 8	TGB 7=on	123	45	678	" " 8
Dial key 9	TGB 8=on	888	88	888	" " 9
Dial key 0	TGB 9=on, Others = off				
Dial key *	All LEDs = off, Busy tone via handset				
Dial key #	Buzzer via speaker (check volume control)				
RLS SRD key	MIN ALM = on, Others = off				
RLS DEST key	MDR LED = on, Others = off				
DIS TOD key	CW LED = on, Others = off				
RLS key	End of Test, RLS LED = on, Console = Nite				

NOTE:

Ctl X = Ignore line entered
 Ctl H = Backspace
 DEL = TTY = REQ
 DEL DEL = Abort program

TABLE AF

Procedure - Peripheral Equipment Diagnostic Procedure

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TPER	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following User Entries are inputted as required after each REQ prompt.

ENTRY	DESCRIPTION	RESPONSE																
CMNA	Clear Minor Alarm	MIN LED = off																
CDIS	Clear CPU Display	CPU Display = clear																
DSCDXXX	Disable PCB XXX immediately	PCB disabled, FALT LEDs on																
DSTKNNX	Disable Trunk NNX*	TRK disabled, FALT LED on, REQ prompted																
DSLNNX	Disable Line Circuit NNX*	Line disabled, FALT LED on, REQ prompted																
ENCDXXX	Enable PCB XXX	PCB enabled, FALT LEDs off, REQ prompted																
ENIKNNX	Enable Trunk NNX*	Trunk enabled, FALT LED off if all circuits are enabled, REQ prompted																
ENLNNX	Enable Line NNX*	Station line enabled, FALT LED off if all circuits enabled, REQ prompted																
DSRCNNX	Disable RCVR NNX*	RCVR disabled, FALT LED on, REQ prompted																
ENRC00X	Enable RCVR Circuit 00X*	RCVR enabled, FALT LED off if all circuits are enabled, REQ prompted																
DSCIXXXX	Disable PCB XXXX when idle	Each port disabled when idle, FALT LEDs on																
LIPS	List all idle ports	Idle ports=LNNX, TNNX, etc, REQ prompted																
LBPS	List all busy ports	Busy ports=LNNX, TNNX, etc, REQ prompted																
LDPS	List all disabled ports	Disabled ports=LNNX, TNNX, etc, REQ prompted																
STLCNNX	Status of Line Ckt NNX*(1&2)	<table border="1"> <thead> <tr> <th>Type</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>500</td> <td>IDL</td> </tr> <tr> <td>2500</td> <td>BSY</td> </tr> <tr> <td>EKT</td> <td>DIS TTY</td> </tr> <tr> <td>UNEQ</td> <td>DIS TLD</td> </tr> <tr> <td>UNAS</td> <td>REQ prompted</td> </tr> </tbody> </table>	Type	Status	500	IDL	2500	BSY	EKT	DIS TTY	UNEQ	DIS TLD	UNAS	REQ prompted				
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2500	BSY																	
EKT	DIS TTY																	
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STTKNNX	Status of TRK Ckt NNX*(1&2)	<table border="1"> <thead> <tr> <th>Type</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>WAT</td> <td>IDL</td> </tr> <tr> <td>FX</td> <td>BSY</td> </tr> <tr> <td>TIE</td> <td>DIS TTY</td> </tr> <tr> <td>CO</td> <td>DIS CBL</td> </tr> <tr> <td>CCSA</td> <td>DIS TLD</td> </tr> <tr> <td>UNEQ</td> <td></td> </tr> <tr> <td>UNAS</td> <td>REQ prompted</td> </tr> </tbody> </table>	Type	Status	WAT	IDL	FX	BSY	TIE	DIS TTY	CO	DIS CBL	CCSA	DIS TLD	UNEQ		UNAS	REQ prompted
Type	Status																	
WAT	IDL																	
FX	BSY																	
TIE	DIS TTY																	
CO	DIS CBL																	
CCSA	DIS TLD																	
UNEQ																		
UNAS	REQ prompted																	
STRCNNX	Status of RCVR 00X*(1&2)	Status=IDL,BSY,DIS,ENEQ,UNAS, REQ prompted																
STCDXXX	Status of PCB XXX(1&2)	Circuit #1=same as STLC, STTK, STRC																
		Circuit #2=same as STLC, STTK, STRC																
		Circuit #3=same as STLC																
		Circuit #4=same as STLC, REQ prompted																

* NN = PCB number, X = Circuit number.

TABLE AF-1

ENTRY	DESCRIPTION	RESPONSE		
		SYSTEM	USER	NOTE
CALL TNNX	Set up monitor link using TNNX.	WAIT	[CR]	4
		STS TLK	Auto advance to DN prompt	
		...or...		
		STS WAIT	[DEL] [CR]	5
		...or...		
		STS OVR	[DEL] [CR]	6
		DN	DN [CR]	7
		DDL	[CR]	8
		STS TLK	Auto advance to TRK prompt	9
		...or...		
		STS RLSA	Auto return to REQ prompt	10
		...or...		
		STS DDL	[CR]	11
		TRK	CALL TNNX	12
		WAIT	[CR]	4
		STS TLK	Auto advance to DN prompt	13
		...or...		
		STS RLSA	Auto return to REQ prompt	10
		...or...		
		STS BSY	Auto return to TRK prompt	14
...or...				
STS OVR	Auto return to TRK prompt	15		
DN	DN [CR]	16		
DDL	[CR] when test is complete	17		
STS TLK	Auto return to TRK prompt	18		
...or...				
STS RLSA	Auto return to REQ prompt	10		
...or...				
STS RLSB	Auto return to TRK prompt	19		
...or...				
STS DDL	[CR]	20		

NOTES:

1. Type: UNEQ=No PCB in that position
UNAS=PCB is equipped but no data is assigned
2. Status: IDL=Idle
BSY=Busy
DIS TTY=Manually disabled via TTY
DIS CBL=EKT port disabled by software due to open cable
DIS TLD=Software disabled due to traffic load (indicates faulty PCB)
3. Ctl X = Ignore Line Entered
Ctl H = Backspace
DEL = Stop printing and return to REQ
DEL DEL = Abort program
4. [CR] is required to advance program.
5. Requested trunk (A) is busy. Enter [CR] to try again or [DEL] [CR] to return to REQ prompt.
6. Requested trunk (A) does not exist in the system. Enter [DEL] [CR] to return to REQ prompt.

7. Enter the test center DN followed by [CR].
8. Allow time for completion of dialing and then enter [CR].
9. Requested trunk was idle and has been siezed.
10. Trunk A (monitor link) has been released due to a malfunction or an outside influence, such as the distant end going on-hook (Ground Start).
11. Dialing was not complete when [CR] was entered. A second [CR] is required.
12. Enter the port number (TNNX) of the trunk (B) to be tested.
13. Requested trunk was idle and has been siezed.
14. Requested trunk (B) is busy.
15. Requested trunk (B) does not exist in the system.
16. Enter the DN that should be dialed by the trunk under test followed by a [CR].
17. After the dialing is complete, the audio from the trunk under test will be heard via the monitor link. Enter [CR] when the test is complete.
18. Test has ended. Program automatically returns to TRK prompt to permit another trunk to be selected.
19. The trunk under test (B) was released due to a malfunction or outside influence, such as the distant end going on-hook (Ground Start).
20. [CR] was entered while Trunk B was still dialing. See note 17.

Error Codes

Program Name: Peripheral Diagnostic Procedure (TPER)	
Error Code	Meaning
ERTPE 00	PCB type conflicts with customer data.
ERTPE 01	No PCB is equipped in that location (enable).
ERTPE 02	Cable is open or port is inhibited by heavy traffic (enable).
ERTPE 03	
ERTPE 04	No PCB is equipped in that location (disable).
ERTPE 05	Port is busy (disable).
ERTPE 06	PCB number or circuit number is out of range.
ERTPE 07	PCB type is not DSTU or DEKU.
ERTPE 08	PCB type is not trunk.
ERTPE 09	PCB type is not DTMF receiver.
ERTPE 10	
ERTPE 11	No PCB is equipped in that location (inhibit).

TABLE AG

DISK DRIVE OPERATION ERROR CODES

Error Codes

Program Name: Floppy Disk Drive Error	
Error Code	Meaning
ERFD 01	File is closed.
ERFD 02	Read error.
ERFD 03	Write error.
ERFD 04	Directory is full.
ERFD 05	Disk is full.
ERFD 06	End of file error.
ERFD 07	Disk drive is not ready.
ERFD 08	Incorrect version number.
ERFD 09	File is write protected.
ERFD 10	File not found.
ERFD 11	Volume not initialized.
ERFD 12	File already exists.
ERFD FF	Other hardware causing the error. !

Perception

SYSTEM PROGRAMMING

Perception

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SYSTEM PROGRAMMING

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01 INTRODUCTION

01.00 General

01.01 PERCEPTION is a stored program-controlled system utilizing an 8-bit microprocessor as the central processing unit (CPU). The system memory is made up of both Read Only Memory (ROM) and Dynamic Random Access Memory (DRAM) (the small amount of ROM that is provided contains the "Loader" program for the Floppy Disk Drive (DFDD)). When the system is first powered up or is reset manually, the remainder of the Operating System programs and Customer Data are loaded into DRAM from the diskette under the control of the Loader program.

01.02 Since Dynamic RAM is volatile; that is, its contents are lost when power is removed, the diskette remains in the system as non-volatile storage.

01.10 Customer Data

01.11 All PERCEPTION options are controlled by entries made in the Customer Data memory. Tables are provided for defining System Parameters and Trunking, as well as individual station features. The Customer Data is unique to each system and is usually entered on-site using a keyboard terminal. After the data has been entered into system memory, a simple keyboard command causes it to be copied onto the diskette to remain as a permanent record.

01.20 Utility Programs

01.21 In addition to the Operating System programs and Customer Data, the diskette also contains many Utility Programs, which are divided into three groups:

- 1) Data Input Procedures—used when making changes to Customer Data.
- 2) Data Output Procedures—used for obtaining printouts of the contents of the Customer Data memory.
- 3) Maintenance Procedures—used when testing the system.

01.22 When required, a Utility Program is called up using a command entered via the keyboard terminal. The system responds by locating the proper Utility Program on the diskette and then loading it into the memory overlay area. When the

loading is completed, a prompt will be output to the terminal. The overlay area can accommodate only one Utility Program at a time, therefore when another program is called up the previous one is erased.

NOTE:

Any diskette operational failure will cause an error code to be output to the terminal. See Table AE for the listing of the error codes.

01.30 Keyboard Terminal

01.31 The PERCEPTION system is designed to interface with standard asynchronous keyboard/printer data terminals (a Texas Instruments Model 743 or 745, or equivalent, is suitable). An Electronic Industry Association (EIA) RS 232C-type data transmission interface is provided and the system will support data speeds of 300 or 1200 bps. The terminal connects to the "TTY" connector at the DCEC connector panel (TTY port pin assignments are shown in Table A).

01.40 Remote Administration

01.41 Utilizing a locally-provided MODEM, the PERCEPTION system Utility Programs can be called up, and the system programmed and tested from a remote location via a telephone line. An EIA RS 232C interface is provided for the MODEM and a data speed of 300 or 1200 bps is supported.

01.42 The MODEM is connected to the MODEM connector on the DCEC connector panel (MODEM port pin assignments are shown in Table A).

01.50 Data Format

01.51 Utilizing one start bit, one stop bit and one parity bit, the system communicates via the standard 7-level ASCII code on the TTY and MODEM ports. The system transmits even parity and ignores parity on the receive side.

02 DATA INPUT/OUTPUT PROCEDURE

02.00 General

02.01 The Utility Programs are divided into three types:

- 1) Data Input Procedures
- 2) Data Output Procedures
- 3) Maintenance Procedures

02.02 Each Utility Program has a 4-letter

**TABLE A
TTY and MODEM CONNECTIONS**

TTY:

Pin No.	Mnemonic	Designation
2	RXD	Receive Data (from TTY)
3	TXD	Transmit Data (to TTY)
5	CTS	Clear to Send*
6	DSR	Data Set Ready*
7	SG	Signal Ground
8	CD	Carrier Detect*
20	DTR	Data Terminal Ready (from TTY)

*Connect to +12 VDC internally

MODEM:

Pin No.	Mnemonic	Designation
2	TXD	Transmit Data (to MODEM)
3	RXD	Receive Data (from MODEM)
4	RTS	Request to Send (to MODEM)
5	CTS	Clear to Send (from MODEM)
6	DSR	Data Set Ready (from MODEM)
7	SG	Signal Ground

NOTE:

The MODEM and TTY connectors cannot be used simultaneously. One must be "open" at any given time.

mnemonic name that is used to identify it and to call it up from the diskette. An Authorization Procedure must be executed before a Utility Program can be called up.

02.03 The Utility Programs are listed in Table B, complete with their mnemonics and the title of the table that shows its format.

**TABLE B
UTILITY PROGRAMS**

DATA INPUT PROCEDURES

Name	Mnemonic	Table
Authorization Code Change	DCHG	C
System Data Block	DSYS	D
Access Code Data Block	DACD	E
EKT Data Block	DEKT	F
Standard Telephone Data Block	DSTT	G
Class of Service Data Block	DCOS	H
Code Restriction Data Block	DCRD	I
Speed Dial Data Block	DSDL	J
SMDR Data Block	DMDR	K
Attendant Data Block	DATT	L
Traffic Measurement Data Block	DTRF	M
DTMF Receiver Data Block	DRCV	N
Trunk Group Data Block	DTGP	O
Trunk Data Block	DTRK	P

DATA OUTPUT PROCEDURES

Print System Data Block	PSYS	Q
Print Access Code Data Block	PACD	R
Print Station Data Block	PSDB	S
Print Class of Service Data Block	PCOS	T
Print Code Restriction Data Block	PCRD	U
Print Speed Dial Data Block	PSDL	V
Print SMDR Data Block	PMDR	W
Print Trunk Group Data Block	PTGP	X
Print Trunk Data Block	PTRK	Y
Print Call Pick-up Group	PCPG	Z
Print Hunting Arrangements	PHNT	AA

MAINTENANCE PROCEDURES

Data Memory Dump	DDMP	AB
EKT/Attendant Console Test	TTRM	AC
Peripheral Equipment Test	TPER	AD

03 SYSTEM DATA PREPARATION

03.01 Before the PERCEPTION system data can be input, option selections must be made and then listed on the System Record (shown in Appendix 1). The System Record will then serve as a programming guide and installation record.

03.02 The System Record contains a form for each Data Input Utility Program. The forms are identified by the Utility Program name and mnemonic requested by the system (for example: System Data Block-DSYS Program).

03.03 Inputting data via a Utility Program is a matter of responding to the prompts. These prompts are listed in their proper order in the System Record Forms and space is provided to record a response.

03.04 Using the System Record forms to record the various choices, make the option selections per the instructions in the following paragraphs.

03.05 System Data Block (Table D)

- The System Data Block (DSYS) Program contains many miscellaneous data entries that are meaningful to the system as a whole rather than any individual station or trunk.

- Data is entered as follows:

REQ (Request)—Indicates program has loaded.

Since data is always present, only the CHG response is possible:

TOR (Time of Daily Routine)—Specifies the time of day that the daily routine task (listed after the next prompt) will run.

Enter: 24-hour clock time (for example: 1315 for 1:15 pm).

DRT (Daily Routine Task)—Specifies the maintenance tasks to be run at the time specified in response to TOR.

Enter: DDMP (Data dump) or NONE.

TEN (Tenant Service)—Specifies if tenant service is to be used. If "Y" is entered, incoming trunk calls, dial calls, attendant recalls, intercepts, etc. will be routed to the proper attendant console (Att. #0 for Tenant #0 and Att. #1 for Tenant #1) according to the response to the TEN prompt in the EKT Data Block (DEKT Program), Standard Telephone Data Block (DSTT Program) and Trunk Group Data Block (DTGP Program). If "N" is entered, the attendant consoles will operate in the load sharing mode.

Enter: Y (yes) or N (no).

ICP1 (Intercept #1)—If the attendant takes control of a trunk group using the trunk group access control feature, stations calling that trunk group will be routed to Intercept #1. This entry defines ICP1 as being overflow tone (OFL) or attendant (ATT).

Enter: ATT or OFL

ICP2 (Intercept #2)—An incoming call from a DID, TIE or CCSA trunk to a non-existing DN will be routed to Intercept #2 when the system is in day service and to overflow tone when night service is active. This entry defines ICP2 as being overflow tone (OFL) or attendant (ATT).

Enter: ATT or OFL.

ICP3 (Intercept #3)—A call that is violating trunk access restrictions will be routed to Intercept #3 when the system is in day service and to overflow tone when night service is active. This entry defines ICP3 as being overflow tone (OFL) or Attendant (ATT).

Enter: ATT or OFL.

APG (All Page Access Code)—Defines the All Page access code (maximum: 3 digits).

Enter: 1, 2, or 3 digits.

AAT (Not Used):

Enter: [CR].

APX (Not Used):

Enter: [CR].

LN1 (Listed Directory Number #1)—Defines the LDN #1 for use with DID feature (maximum: 3 digits).

Enter: 1, 2, or 3 digits.

LN2 (Listed Directory Number #2)—Defines the LDN #2 for use with DID feature (maximum: 3 digits).

Enter: 1, 2, or 3 digits.

NT1 (LDN #1 Night Number)—Defines the destination to which LDN #1 calls will be routed when the system is in night service (DN or Universal Night Answer).

Enter: 1, 2, or 3 digits or UNA.

NT2 (LDN #2 Night Number)—This is prompted only if the response to TEN (above) was "Y". Defines the destination to which LDN #2 calls will be routed when the system is in night service (DN or Universal Night Answer).

Enter: 1, 2, or 3 digits or UNA.

BLF1 (Busy Lamp Field #1)—Defines one of the hundreds groups to be displayed by the console BLF.

Enter: 1 digit (1~9).

BLF2 (Busy Lamp Field #2)—Defines one of the hundreds groups to be displayed by the console BLF.

Enter: 1 digit (1~9).

OFL1 (Overflow DN-Attendant Console #0)—Defines the destination for calls rerouted from attendant console #0 due to the attendant overflow facility.

Enter: 1, 2, 3 digits or NONE (= UNA).

NOTE:

This data may also be changed by the attendant console.

OFL2 (Overflow DN-Attendant Console #1)—Defines the destination for calls rerouted from attendant console #1 due to the attendant overflow facility.

Enter: 1, 2, 3 digits or NONE (= UNA).

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NOTES:

1. *This data may also be changed by the attendant console.*
2. *OFL2 does not print out when the system has no tenant service.*

MCO (Message Center - Tenant #0)—Defines the message center for stations assigned to Tenant #0 (all stations in a non-tenant system). The message center may be attendant console #0 or an EKT that is assigned to Tenant #0.
Enter: ATTO, DN (1, 2, or 3 digits), or NONE.

MC1 (Message Center - Tenant #1)—Defines the message center for stations assigned to Tenant #1. The message center may be attendant console #1 or an EKT that is assigned to Tenant #1.
Enter: ATT1, DN (1, 2, or 3 digits), or NONE.

NOTE:

MC1 does not print out when the system has no tenant service.

MMP (Meet-me Page DN)—Defines the phantom DN used by the attendant to "park" a call for the Meet-me Page feature (maximum: 3 digits).
Enter: 1, 2, or 3 digits.

REM (Remote Access DN)—Defines the phantom DN used by the attendant to assign a trunk for "Remote Access to Services" operation (maximum: 3 digits).
Enter: 1, 2, or 3 digits.

RAC (Remote Access Change Code)—Defines the access code used by the attendant to change the authorization code that must be entered by outside callers using the remote access feature (maximum: 3 digits).
Enter: 1, 2, or 3 digits.

ACC * (* Access Code)—Defines the digit to be used by a rotary dial telephone in place of *.
Enter: 1 digit.

NOTE:

Must not conflict with DN or other access codes—not checked by software.

ACC # (# Access Code)—Defines the digit to

be used by a rotary dial telephone in place of #.
Enter: 1 digit.

NOTE:

Must not conflict with DN or other access codes—not checked by software.

COT (Camp-on or Call Waiting Time-out)—Defines Camp-on and Call Waiting feature time-out.
Enter: Time in seconds (for example: 30).

RNA (Ring-no-answer Time-out)—Defines the ring-no-answer time-out for attendant-handled calls.
Enter: Time in seconds (for example: 30).

AOF (Attendant Overflow Time-out)—Defines the time-out for the attendant overflow facility.
Enter: Time in seconds (for example: 30).

CFD (Call Forward No-answer Time-out)—Defines the Call Forward no-answer time-out.
Enter: Time in seconds (for example: 12).

NOTE:

Must be less than RNA time or RNA time will prevail.

HLD (Hold [500/2500] Time-out)—Defines the time-out for the recall of a held call to a single line telephone.
Enter: Time in seconds (e.g., 75) or NONE.

DPT (Dial Pause Time-out)—Defines the maximum pause allowed before the first digit is dialed or between other digits dialed from a DTMF or a rotary dial telephone. Stations released due to the DPT timer will hear overflow tone. Used with the line lockout feature.
Enter: Time in seconds (for example: 15).

NOTE:

Also controls the release of an idle attendant console LPK key.

PBT (Push-button Time-out)—Defines the maximum pause allowed between digits dialed on a trunk line from a DTMF telephone. The transmit voice path from a DTMF telephone to a CO line is broken during dialing. The PBT timer determines how quickly the path is restored and, therefore, should be as short as possible.
Enter: Time in seconds, e.g., 6.

LLO (Line Lockout Time)—Defines the length of time that overflow tone is applied to a station after having been released due to the DPT timer. After this time-out, the station will hear nothing.

Enter: Time in seconds, e.g., 15.

ACB (Automatic Callback Reserve Time)—Defines the length of time that the called station or trunk in an ACB call is reserved for the caller (maximum: 6 seconds).

Enter: Time in seconds, e.g., 3.

HFS (Handsfree Answerback Station)—A "Y" response allows calls from any station to a Handsfree Answerback-equipped EKT to voice announce and be replied to handsfree.

Enter: Y (yes) or N (no).

HFA (Handsfree Answerback Attendant)—A "Y" response allows calls from the attendant to a Handsfree Answerback-equipped EKT to voice announce and be replied to handsfree.

Enter: Y (yes) or N (no).

MDR (SMDR Equipped)—A "Y" response informs the system that SMDR is to be equipped and activates the MDR alarm on the console.

Enter: Y (yes) or N (no).

03.06 Access Code Data Block (Table E)

- The Access Code Data Block (DACD) Program assigns the access codes that will be used for feature execution.

- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Since data is always present, only the CHG response is possible:

FTR:

Enter: 3-character feature name, a space, and then the desired access code. (See Table E-1 for feature names and standard code assignments.)

NOTE:

The access codes assigned at the factory are shown in Table E-1. Any feature not requiring change need not be entered. Features may be entered in any order.

03.07 EKT Data Block (Table F)

- The EKT Data Block (DEKT) Program defines all parameters of a given EKT. An EKT Data Block must be completed for each EKT in the system.

- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Three responses are possible:

NEW - to create a new Data Block

CHG - to change an existing Data Block

OUT - to delete a complete existing Data Block

NOTE:

If OUT is entered, only port number (POR) need be given below. No other entry is necessary.

POR (Port Number)—Identifies the hardware location of the EKT circuit to be defined. The port number has two parts.

1. DEKU PCB location: L00~L14

2. Circuit number on that PCB: 1~8

For example: The port number of the 4th circuit on the DEKU in position L01 is L014

Enter: Port number of EKT (LXXX).

NOTE:

If OUT command was given above, the port just defined will be deleted and the next prompt will be REQ.

KS (Number of Key Strips)—Informs the system of the number of groups of 10 feature keys the EKT will have.

Enter: 1 (for 10-key EKT) or 2 (for 20-key EKT).

COS (Class of Group Services)—Assigns one of the 16 Classes of Service to the EKT. (The Classes of Service are defined using the DCOS program.)

Enter: COS Number (0~15).

TEN (Tenant Number)—Assigns EKT to one of the two possible system tenants.

Enter: 0 if tenant service is not selected in System Data Block (DSYS TEN = N).

0 or 1 if tenant service is selected in System Data Block (DSYS TEN = Y).

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PUG (Call Pick-up Group)—Assigns the EKT to one of the 32 possible groups for use with the Call Pick-up Group feature.

Enter: Group number (0~31) or NONE.

WTA (Warning Tone Allowed?)—Defines an interruption-protected station. An "N" response will prevent warning tones from being applied to the station.

Enter: Y or N.

CFT (Call Forward to Trunk?)—A "Y" response allows calls to be forwarded outside the system using the Call Forward-All Calls feature.

Enter: Y or N.

TOL (Toll Allowed?)—An "N" response subjects the station to Toll or Code Restriction. A "Y" response permits Toll Calls.

Enter: Y or N.

MTA (Not Used):

Enter: N.

HFA (Handsfree Answerback Equipped)—A "Y" response activates the Handsfree Answerback capabilities of the EKT.

Enter: Y or N.

DIS (Not Used):

Enter: N.

KEY (Key Assignments)—Assigns a DN or feature to one of the flexible keys.

Enter:

1) The number of the key to be defined followed by a space bar. Keys are numbered 0 through 9 (or 19 for 20-key EKT), starting from the bottom of the vertical keystack (the four keys under the dial pad have fixed assignments). Key number 0 is always assigned as the prime DN for that station.

2) Feature or DN assignments. The possible assignments are as follows:

Directory (Station) Number (1, 2 or 3 digits):

SCR NNN XXX - Single Call Ring

Incoming calls will ring EKT.

NNN = Directory (Station) Number

XXX = Hunt number = enter DN to which this DN will hunt or code for distributed hunt (see below)

SCN NNN XXX - Single Call No Ring
Incoming calls will not ring EKT.

NNN = Directory (Station) Number

XXX = Hunt number = enter DN to which this DN will hunt or code for distributed hunt (see below)

Station Hunt - Distributed:

#X = enter in place of the hunt number above. For example: SCR NNN #X (maximum: 8 stations per group)

X = Distributed Hunt Group Number (0~4)

Private CO Lines:

PVR XXX - Private Line Ring

Incoming call will ring EKT.

XXX = TDN assigned in Trunk Data Block

PVN XXX - Private Line No Ring

Incoming call will not ring EKT.

XXX = TDN assigned in Trunk Data Block

Features:

ACB - Automatic Callback

ADL - Automatic Dialing

CFD - Call Forward-All Calls

DND - Do Not Disturb

PUD - Call Pick-up-Directed

PUG - Call Pick-up-Group

CWT - Call Waiting

CRG - Charge Account (SMDR)

SIG LNNX - Manual Signalling

(LNNX = port number of EKT to be signalled)

MSG - Message Waiting

OVR - Override

PRS - Privacy Release

SCF - Speaker Cutoff

RND - Repeat Last Number Dialed

SDS - Speed Dial-System

SDC XX - Speed Dial-Station (controller of list XX)(XX = 1~25)

SDU XX - Speed Dial-Station (user of list XX)(XX = 1~25)

VCP XXX - Voice Page (XXX = DN to be paged)

FLH - Flash (sends flash to CO line)

RLS - Release

KEY—The prompt will be repeated until all entries have been made and [DEL] is entered.

03.08 Standard Telephone Data Block (Table G)

- The Standard Telephone Data Block (DSTT) Program defines all parameters for a given conventional telephone. An STT Data Block must be completed for each conventional telephone in the system.

- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Three responses are possible:

- NEW - To create a new STT Data Block.
- CHG - To alter an existing STT Data Block.
- OUT - To delete a complete existing Data Block.

NOTE:

If *OUT* is entered, only the port number (*POR*) need be given below. No other entry is necessary.

POR (Port Number)—Identifies the hardware location of the STT circuit to be defined. The port number has two parts:

- 1) DSTU PCB location: L00 ~ L14
 - 2) Circuit number on the PCB: 1 ~ 8
- For example: The port number of the 5th circuit on the DSTU in position L02 is L025

Enter: Port Number of STT (LXXX).

DN (Directory Number)—Defines the directory number (station number) of the station.

Enter: DN 1, 2 or 3 digits.

SMX (Station Mix)—A "Y" response informs the system that the DN entered above also exists on an EKT:

Enter: Y or N.

COS (Class of Group Services)—Assigns one of the 16 Classes of Service to the telephone. (The Classes of Services are defined using the DCOS program.)

Enter: COS Number (0 ~ 15).

TEN (Tenant Number)—Assigns the station to one of the two possible system tenants.

Enter: 0 if tenant service is not selected in System Data Block (DSYS TEN = N).

0 or 1 if tenant service is selected in System Data Block (DSYS TEN = Y).

PUG (Call Pick-up Group)—Assigns the station to one of the 32 possible groups for use with the Call Pick-up Group feature.

Enter: Group number (0 ~ 31) or NONE.

HNT (Hunt Number)—Defines the station to which this DN hunts. (Used with the Hunting and Call Forward-No Answer features.)

Enter: a) Next DN in hunt group.

b) For Station Hunt - Distributed: #X = enter in place of hunt number above.

(Maximum: 8 stations per group.)

(X = Distributed Hunt Group, 0 ~ 4.)

c) NONE

DLG (Dialing Type)—Defines the type of dialing, if any, to be used by the station.

Enter: DIP for dial pulse.

TON for DTMF.

MNL 0 or 1 for manual line (off-hook rings operator 0 or 1).

HTL XXX for hot line (off-hook rings DNXXX).

SDL (Speed Dial List)—Assigns one of the 25 personal, 10-number speed dial lists for use at this station.

Enter: SDC XX - Makes the station a controller of list XX (XX = 1 ~ 25).

SDU XX - Makes the station a user of list XX (XX = 1 ~ 25).

NONE - No list assigned.

WTA (Warning Tone Allowed?)—Defines an interruption-protected station. An "N" response will prevent warning tones from being applied to the station.

Enter: Y or N.

CFT (Call Forward to Trunk?)—A "Y" response allows calls to be forwarded outside the system using the Call Forward-All Calls feature.

Enter: Y or N.

TOL (Toll Allowed?)—An "N" response subjects the station to Toll or Code Restriction. A "Y" response permits Toll Calls.

Enter: Y or N.

03.09 Class of Service Data Block (Table H)

- The Class of Service Data Block (DCOS) Program defines the 16 Classes of Service

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available in the system. All services controlled by the COS are allowed to all stations unless restricted in this Data Block.

- The DCOS program assigns a number (0~15) to each group of restrictions to be used. The number defined here is then entered in response to the COS prompt in the DSTT, DEKT and DTGP programs.

- Any numbers not entered or otherwise defined will have **no** restrictions.

- Data is entered as follows:

REQ (Request)—Indicates program has loaded. The only response possible is CHG.

COS (Class of Service)—Defines the COS number (0~15) and the restrictions to be associated with it. The possible restrictions are listed in Table H-1.

Enter: COS number, followed by the restriction, in the following format:
0 T00 OVR ACO.

Note:

In this example, COS 0 will not allow trunk group 00, override and attendant control override.

COS:

Repeat for all COS entries.

03.10 Code Restriction Data Block (Table I)

- The Code Restriction Data Block (DCRD) Program defines the office codes and area codes to be allowed or denied by the Code Restriction feature.
- Up to eight lists of up to 1,000 numbers each can be defined in the Data Block and assigned numbers (0~7). The list numbers defined here are entered in the Trunk Group Data Block in response to the CRL prompt in the DTGB program. Any toll restricted station using a trunk in that group will be limited to dialing the numbers permitted by the assigned lists.
- For convenience, the lists may be defined as ALLOW or DENY lists. When an ALLOW list is used, only the numbers listed will be permitted. When a DENY list is used, only the

numbers listed will be denied. If both types of lists are used for one trunk group, one will be an exception to the other unless a conflict exists (in which case, the DENY will have priority).

- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Three responses are possible:

- NEW - To create a new list
- CHG - To alter an existing list
- OUT - To delete a complete existing list

CRL (Code Restriction List Number)—The number (0~7) of the list to be created, changed or deleted.

Enter: List number (0~7).

NOTE:

If the OUT command was entered in response to REQ above, no other data is required.

CLR (Clear)—For NEW and CHG, the next prompt will be CLR (Clear). An entry for this prompt is possible **only** when a NEW list is being defined. The entry here clears the memory and defines the list as an allow or deny type.

- An "A" entry clears the list of all allow codes and defines the list as DENY.
- A "D" entry clears the list of all deny codes and defines the list as ALLOW.
- If CHG was entered in response to request, the CLR prompt, along with the original response, will be output and the next prompt will be given.

ALLOW (If "D" was entered for NEW or if CHG):

Enter codes to be allowed:
NNN NNN NNN etc., to 1,000 codes.

DENY—Follows CLR for an "A" entry or ALLOW for CHG.

Enter deny codes:
NNN NNN NNN NNN NNN

03.11 Speed Dial Data Block (Table J)

- The Speed Dial Data Block (DSDL) Program contains all numbers stored on the 90-number

Speed Dial-System list and the 25 personal, 10-number Speed Dial-Station lists. All of these numbers can be stored by either the attendant console or by a controlling station.

- The DSDL program allows changes to any speed dial list to be performed from the maintenance terminal.
- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Two responses are possible:

- CHG - To change existing or enter new data
- OUT - To clear all data

LNO (List Number)—The number of the list to be altered or cleared.

- Enter: The list number (00 = System List)
(01 ~ 25 = Station List)

NOTE:

If the OUT command was entered in response to REQ above, no other data is required.

STR (Store Number)—This requests the number to be stored.

- Enter: Address code, space and number in the following format:

Example: 1 9*NPANNXXXXX
2 9*NPANNXXXXX

NOTE:

In these examples, 9 is a trunk access code. Therefore, a "" is entered to cause a 3-second pause for dial tone delay. The "*" is counted as one of the 16 digits allowed.*

03.12 Station Message Detail Recording Data Block (Table K)

- The Station Message Detail Recording Data Block (DMDR) Program defines the account code length and type of calls to be recorded for each trunk group for the SMDR feature.
- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Three responses are possible:

- NEW - To create a new table
- CHG - To alter existing data
- OUT - To clear all existing data

ACL (Account Code Length)—Defines length of account code to be used or no account code.

- Enter: Number of digits to be used (1 ~ 12) or NONE.

SPCC1 (Specialized Common Carrier #1)—Informs the system of the DN used to access an SPCC (MCI, SPC, etc.). The system will recognize the DN and enter a unique condition code in the SMDR output.

- Enter: SPCC Number NNXXXXX or NONE

SPCC2 (Specialized Common Carrier #2): Same as SPCC #1, but for a second carrier.

- Enter: SPCC Number NNXXXXX or NONE

TGP (Trunk Group)—Defines the type of calls to be recorded by SMDR for a given trunk group.

- Enter: XX YYY

(XX = trunk group number)

(YYY = NONE—No records

INC—Incoming only

OGT—Outgoing only

IAO—Incoming and outgoing

TOL—Toll calls only

INT—Incoming-all

Outgoing-toll only)

- Repeat for each trunk group used in the system

03.13 Attendant Data Block (Table L)

- The Attendant Data Block (DATT) Program defines the presence of two possible attendant consoles in the system and selects the attendant options.

- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Three responses are possible:

NEW - To create a new data block

CHG - To alter existing data

OUT - To delete an existing data block

ANO (Attendant Number)—Selects the console to be defined.

- Enter: 0 or 1

POR (Port Number)—Selects the port to be occupied by the console.

Enter: L001 for Attendant Console #0

L121 for Attendant Console #1

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LKO (Lockout Allowed?)—A "Y" response will enable the lockout feature.
 Enter: Y or N

PAG (Page Key)—Assigns the console PAGE key to a particular page zone or All Page.
 Enter: Access code of the page zone, All Page or NONE

03.14 Traffic Measurement Data Block (Table M)

- The Traffic Measurement Data Block (DTRF) Program defines the parameters that control the Traffic Measurement feature.
- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Four responses are possible:

RPT - Report Command: If record keeping has been started previously (STT command or STR DATE/STR TIME), a report will follow (see Table M-1 for format).

STT - Start Command: Initializes the program and starts the record keeping and reporting activity. (Used for SCH = CMD. Must be entered after each RPT request.)

CHG - Change Command: Alters reporting parameters.

OUT - OUT Command: Stops reports.

The next prompt (for CHG input) will be:

SYST.DATE MMDDYY (System Date)—Reports the date currently in memory and gives an opportunity for a change.

Enter: New date: MMDDYY, or [CR] (no change)

SYST.TIME HHMMSS (System Time)—Reports the time currently in memory and gives an opportunity for a change.

Enter: New time: HHMMSS (24 hour clock), or [CR] (no change)

SCH XX (Schedule of Reports)—Defines the schedule for reports. Outputs the current data and gives an opportunity for change.

Enter: 30 - Report every 30 minutes beginning at the time and date listed as STR DATE &

STR TIME (next prompts)
 60 - Report every 60 minutes beginning at the time and date listed as STR DATE & STR TIME (next prompts)
 CMD - Report only when RPT command is given in response to REQ above
 NONE - No report

STR DATE MMDDYY (Start Date)—Defines the start date for record keeping and reporting. Outputs current data and gives an opportunity for a change.

Enter: Start Date: MMDDYY, or [CR] (no change)

STR TIME HHMM (Start Time)—Defines the start time for record keeping and reporting. Outputs current data and gives an opportunity for a change.

Enter: Start Time: HHMM, or [CR] (no change)

RPT (Report Parameters):

SYST	(System Data)
ATT0	(Attendant 0)
ATT1	(Attendant 1)
TGP00	(Trunk Group 00)
TGP01	(Trunk Group 01)
?	?
TGP15	(Trunk Group 15)

Selects those parameters that are to be recorded (see Table M-2). The current data (Y or N) is output for each parameter and an opportunity is given for a change.

Enter: Y (yes) or N (no) followed by a [CR] for each parameter.

03.15 DTMF Receiver Data Block (Table N)

- The DTMF Receiver Data Block (DRCV) Program identifies which DTMF receivers are to be equipped in the system.
- The system accommodates one DRCU PCB which can be equipped with 4 or 6 single chip DTMF receivers.
- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Two responses are possible:

NEW - To install a DTMF receiver.

OUT - To remove a DTMF receiver.

POR (Port Number)—Selects the port to be occupied by the DTMF receiver. The port number has two parts:

- 1) DRCU PCB location (R00)
 - 2) Circuit number on the DRCU PCB (1~6)
- Enter: Port number to be used (R001~R006)

03.16 Trunk Group Data Block (Table O)

- The Trunk Group Data Block (DTGP) Program defines the parameters for each of the 16 possible trunk groups in the system. A Data Block must be completed for each trunk group in the system. Not all of the prompts listed below are used for all trunk types. The response given to the TKT (trunk type) prompt will determine which prompts will be given. Table O-1 shows the prompts that can be expected for each trunk type. (Use the proper system record form for the type of trunk being defined.)

- Data is entered as follows:

REQ (Request)—Indicates program has loaded. Three responses are possible:

- NEW** - To create a new trunk group
- CHG** - To alter data in an existing Data Block
- OUT** - To delete an entire existing Data Block

NOTES:

1. All trunks must be deleted from the group using the DTRK program before the OUT command will be accepted.
2. If OUT is entered, only the Trunk Group Number (GRP) must be entered. No other data is necessary.

GRP (Trunk Group Number)—Identifies the trunk group number. Sixteen groups are available (0~15). If private lines are to be used, they all occupy one trunk group called PVL. The PVL group replaces group 15.

Enter: Trunk Group Number (0~15) or PVL

TEN (Tenant Number)—Identifies the tenant to which the trunk group belongs.

Enter: Tenant Number 0 or 1

TKT (Trunk Type)—Identifies the type of trunk to be used in group.

NOTE:

It is not possible to enter a change (CHG) for Trunk Type (TKT). The Data Block must be deleted (OUT) and a new (NEW) Data Block entered.

Enter: COT - Local CO trunk
FEX - Foreign Exchange line
DID - Direct Inward Dialing trunk
PVL - Private line
CSA - CCSA line
TIE - TIE trunk
WAT - WATS line

IAO (Incoming/Outgoing)—Determines if the trunks will give 2-way or 1-way service.

Enter: ICT - Incoming only
OGT - Outgoing only
IAO - 2-way

STP (Advance Step)—Identifies the next trunk group in a route advance sequence. If a station user attempts to access a trunk in this group and they are all busy, a trunk from the group identified in response to STP will be selected.

Enter: Next Trunk Group Number (0~15) or NONE

COD (Access Code)—Defines the access code for the trunk group. 1-, 2-, or 3-digit access codes are permitted if no conflict exists in the system. For example: 3 cannot be used if 30 or 300 is used as an access code or DN.

Enter: Access Code (1, 2 or 3 digits)

COS (Class of Service)—Defines system access permitted to inward dialing trunks, i.e., TIE, DID, CCSA. Use one of the 16 Classes of Service defined by the DCOS program.

Enter: COS number (0~15)

TRN (Transmission)—Defines the transmission arrangement required for the trunks in the group. The entry made here will determine the type of PAD switching done on trunk connections (see Table O-2 for loss plan).

Enter: NTC: Non-transmission Compensated (2-wire circuit with <2dB loss)

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TRC: Transmission Compensated
(4-wire circuit or 2-wire circuit with > 2dB loss)
VNL: Via Net Loss (4-wire VNL circuit)

STR (Start Arrangement)—Defines the start arrangement to be used by the trunks in the group.

Enter: IMM: Immediate start
WNK: Wink start
DDL: Delay start

WTA (Warning Tone Allowed?)—Defines an interruption-protected trunk group (for example: data line). An "N" response will prevent warning tones from being applied to this trunk group.

Enter: Y or N

OAB (Outgoing Absorb Digit)—Identifies the digit which is to be ignored for purposes of Toll or Code Restriction. This digit will be outpulsed but not counted as the first digit.

Enter: Digit to be absorbed or NONE
(for example: 1)

IAB (Incoming Absorb Digits)—Defines the number of digits that are to be stripped from an incoming dialed number from a TIE/CCSA or DID trunk.

Enter: Number of digits or NONE

INS (Digits Inserted Incoming)—Defines the actual digits to be prefixed to an incoming dial number. A maximum of 2 digits are allowed. These digits will be prefixed after the number of digits defined in IAB above are removed.
Example: Incoming DN = 927

IAB = 1
INS = 2
Recognized DN = 227

Enter: Prefix digits (maximum: 2) or NONE

TOL (Toll Allowed?)—An "N" entry will toll restrict TIE, CCSA, DID trunks.

Enter: Y or N

CRL (Code Restriction List)—Defines the code restriction lists that are to be consulted when a toll restricted station or TIE trunk is making a call using a trunk in this group. The Code Restriction list numbers are defined in the DCRD Program.

Enter: Code Restriction List Numbers
For example: 0 4 5

03.17 Trunk Data Block (Table P)

- The Trunk Data Block (DTRK) Program defines the parameters for each of the trunk circuits within a trunk group. A Data Block must be completed for each trunk circuit in the system.
- The trunk type (TKT) defined for the group will determine which entries must be made. Not all prompts are meaningful for all trunk types. Table P-1 shows the prompts to which responses should be made. (Use the proper system record form for the type of trunk being defined.)

- Data is entered as follows:

REQ (Request):

NEW - To create a new Data Block
CHG - To alter existing Data Block
OUT - To delete an entire existing Data Block

NOTE:

If OUT is entered, only the port (POR) need be specified. No other data is necessary.

POR (Port Number)—Identifies the hardware location of the trunk circuit to be defined. The port number has two parts.

- 1) DCOU PCB location (T00 ~ T07)
- 2) Circuit number on the DCOU or DEMU (1 ~ 4)

For example: The port number of the 3rd circuit on the PCB in position T02 is T023.

Enter: Port number of trunk (TXXX)

GMN (Group/Member Number)—The Group Member Number identifies the trunk position in the system. The GMN is composed of two parts:

- 1) Group Number (defined in DTGP Program): Identifies the trunk as being a member of that group (00 ~ 15).
- 2) Member Number: a unique number (00 ~ 31) is given to each trunk in a group. The numerical order of the number will determine the order in which the trunks will be selected upon dial access. The highest

member number will be selected first.
Enter: Group and Member Number
(GMM)

NOTE:

1. *GMN cannot be altered by CHG procedure. The GMN prompt will be followed by the existing GMN.*
2. *To change the GMN, the Data Block must be deleted (OUT) and a new Data Block (NEW) entered.*

TDN (Trunk Directory Number)—For Private Lines Only (Trunk Group PVL); defines a phantom directory number that will be used to assign private lines to a station.
Enter: 3-digit number

NIT (Night Number)—Assigns the night station for the trunk. Incoming calls on the trunk will ring the night station when the system is in night service. If NONE is entered, the call will activate the UNA signal. This parameter can also be entered and changed by the attendant console.

Enter: Night station number or NONE

SIG (Signalling)—Identifies the type of signalling to be used on the trunk circuit:

Enter: GRD - Ground Start
LOP - Loop Start
EAM - E & M
LDR - Loop Dial Repeating
OAD - Outgoing Automatic, Incoming Dial

DIS (Disconnect Supervision)—Informs the system whether or not supervision can be expected when the distant end disconnects (controls trunk-to-trunk connections).

Enter: Y or N

CTL (Control of Disconnect)—Defines the release control of TIE, DID or CCSA connection.

Enter: OPC: Origination Party Control, circuit is not released until the trunk that originated the call disconnects.

FPR: First Party Release, either trunk can release the connection.

DIN (Incoming Dialing)—Informs the system of what dialing type to expect on incoming

calls. For TIE, CCSA, DID trunks only.

Enter: DIP - Dial Pulse
TON - DTMF

DOT (Dialing Outgoing)—Selects the type of dialing to be used on outgoing calls.

Enter: P10 - Rotary Dial 10 pulses/sec.
P20 - Rotary Dial 20 pulses/sec.
TON - DTMF

ANS (Answer Supervision for TIE, CCSA, DID trunks only)—Determines if answer supervision will be provided to the distant trunk on incoming calls. If "N" is entered, the system will **not** return answer supervision.

Enter: Y or N

04 DATA INPUT PROCEDURES

04.01 Once the system data has been recorded in the System Record, connect the data terminal and input the data to the system as explained in the following paragraphs.

04.10 Data Terminal Connection

04.11 A keyboard/printer terminal (Texas Instruments Model 743/745 or equivalent) is required to communicate with the PERCEPTION system.

04.12 The terminal is connected to the system via a female-type RS232C connector (labeled TTY) located on the connector panel on the lower rear of the DCEC.

04.13 In addition to the TTY connector, a MODEM connector is provided. By attaching a customer-provided "answer only" modem, all functions normally performed by the local terminal can be performed from a remote location.

04.14 The TTY and MODEM ports can operate at a speed of 300 or 1200 bps, and utilize a standard 7-level ASCII code with one start bit, one stop bit and one parity bit. The system transmits *even* parity and ignores the parity bit on the receive side. The speed is selected by a push-on/push-off switch located on the front of the DPEU PCB. The associated LED is on when 1200 bps is selected.

04.15 The speed selection is made simultaneously for the TTY and MODEM ports. These two ports are wired in a logical "OR" fashion and

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cannot be used at the same time. One must be "open".

04.16 The pin assignments of the TTY and MODEM connectors are:

TTY:

Pin No.	Designation	
2	RXD	Received Data (from TTY)
3	TXD	Transmit Data (to TTY)
5	CTS	Clear to Send*
6	DSR	Data Set Ready*
7	SG	Signal Ground
8	CD	Carrier Detect*
20	DTR	Data Terminal Ready (from TTY)

*Connect to +12 VDC internally

MODEM:

Pin No.	Designation	
2	TXD	Transmit Data (to modem)
3	RXD	Receive Data (from modem)
4	RTS	Request to Send (to modem)
5	CTS	Clear to Send (from modem)
6	DSR	Data Set Ready (from modem)
7	SG	Signal Ground

04.17 The data terminal connector is located in the rear (lower left) of the DCEC. Four female 25-pin EIA type connectors are provided in a vertical row. Looking from top to bottom the connectors are labeled:

- TTY
- MODEM
- SMDR
- DATA

Plug the terminal into the TTY connector.

04.18 The data terminal should be set for the proper speed and for full duplex operation before switching its power on.

04.20 Authorization Procedure

04.21 To prevent unauthorized tampering with the Customer Data base, the PERCEPTION system requires an authorization code to be entered before any Utility Program can be called up. This authorization must be entered prior to requesting each utility.

04.22 There are three levels of authorization (each of which has a unique 4-digit code that is assigned in the system memory). When shipped

from the factory, all levels are assigned 0000. Codes are changed with the Authorization Code Change procedure (DCHG).

04.23 The activity granted to each level is as follows:

Level 1: Can do all activities of Levels 2 and 3. Can change the 4-digit codes of Levels 1, 2, and 3.

Level 2: Can do all Level 1 activities except change Levels 1 or 2 codes or read out Level 1 code. Can change Level 3 code.

Level 3: Normally assigned for end user use. Can change: Station Data
Class of Service Data
Speed Dial Data
SMDR Data
Code Restriction Data
Can request printouts of above data, plus:
Call Pickup Groups
Hunt Lists
Can request data dump.

04.24 To execute the Authorization Procedure, proceed as follows:

- 1) Plug in and power up data terminal.
- 2) Depress the carriage return key.
 - The system will respond by printing "COD" and will print several characters on the spaces to be occupied by your next entry (this is done to mask the authorization code).

IMPORTANT:

This measure is not effective when a CRT is used. Take care not to leave the authorization code displayed on the screen.

- 3) Enter the 4-digit code, followed by a carriage return.
 - The system will print:
"ERROR" if invalid code is entered (return to step 2).
"OK" if valid code is entered (proceed to request Utility Program).

04.30 Utility Program Use

04.31 Execute the Authorization Procedure and

then enter the mnemonic of the required Utility Program after the system responds with "OK".

04.32 After the Utility Program name is entered, the program is loaded from the diskette. When the loading is complete, the system will prompt "REQ".

04.33 Inputting data via a Utility Program is a matter of responding to the prompts given by the system via the data terminal. The prompts and the required responses are mnemonics that are usually abbreviations of the actual English word required.

04.34 If an improper response is made to a prompt, the system will respond with an error message. The error message will be a "?" when the error is obvious but in most cases it will be an alphanumeric code. The alphanumeric code consists of four letters identifying the program in use and two numbers identifying the error.

04.35 Brackets are used to indicate control code keys on the programming terminal. The [CTRL] (control) key must be held down while simultaneously depressing [X] or [H]. Depress the carriage return key whenever [CR] appears. The following control codes are available when using Utility Programs (depress [CR] after each code):

[CTRL] [X] - Ignore line entered—same prompt will be repeated.

[CTRL] [H] - Backspace—will allow you to overwrite the previous character(s).

[DEL] - May be entered anytime—system will stop execution and return to "REQ" prompt.

[DEL][DEL]-Abort program—ends use of one utility, system will respond with "SAVE". A "Y" entry will cause the system to copy all present data onto the diskette. If more changes are to be made, enter "N".

04.36 When data already exists for a given prompt and a change is not required, entering a [CR] will advance to the next prompt without changing existing data.

04.37 Tables D through AC show the format of each Utility Program. If applicable, each table is followed by a list explaining the error codes pertaining to that program. Using the appropriate tables as guides, enter data previously recorded

in the System Record.

04.40 Authorization Codes Change (Table C)

04.41 The DCHG Program changes the authorization codes used in the Authorization Procedure.

04.42 To use the DCHG Program:

- Complete the Authorization Procedure (Level 1 or 2).
Enter: DCHG [CR] (in response to OK prompt)
- The next prompt will be:
L1 XXXX (Level 1 authorization code)
(XXXX = present code)

NOTES:

1. If Level 2 authorization code was given above, L1 will not be output—go to next prompt (L2).
2. If Level 3 authorization code was entered above, an error message will be given—Level 3 cannot change the authorization codes.

Enter: New L1 code (4 digits) [CR]
L2 XXXX (Level 2 authorization code)
(XXXX = present code)

Enter: New L2 code (4 digits) [CR]
L3 XXXX (Level 3 authorization code)
(XXXX = present code)

Enter: New L3 code (4 digits) [CR]
L1 or L2 Program repeats

Enter: [DEL] [DEL] (to abort program)

05 DATA OUTPUT PROCEDURES

05.00 General

05.01 The data output procedures allow the maintenance terminal to request a printout of the data contained in the various system Data Blocks.

05.02 The Authorization Procedure must be performed before requesting a printout procedure. The following Data Blocks may be output for Level 1, 2 or 3:

- Station Data Block
- Class of Service Data Block
- Code Restriction Data Block

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- Speed Dial Data Block
- SMDR Data Block
- Call Pick-up Groups
- Hunting Arrangements

ACB *7
 CBR **7
 CFD *9
 CFR **9
 PUD *6
 etc.

The following Data Blocks may be output for Level 1 or 2 only:

- System Data Block
- Access Code Data Block
- Trunk Group Data Block
- Trunk Data Block

- REQ will be prompted when the printout is complete.
 Enter:[DEL][DEL][CR](to abort program)

05.03 Print System Data Block (Table Q)

To use the Print System Data Block (PSYS) Program:

- Perform Authorization Procedure (Level 1 or 2)
 Enter: PSYS (in response to OK prompt)
- When REQ prompt is received after program is loaded.
 Enter: PRT

- System Data Block will be output in the same format as input in the DSYS program.

Example: REQ PRT
 TOR 2359
 DRT DDMP
 TEN Y
 ICP1 OFL
 ICP2 OFL
 ICP3 OFL
 APG NONE
 etc.

- REQ will be prompted when printout is complete.
 Enter: [DEL][DEL][CR](to abort program)

05.04 Print Access Code Data Block (Table R)

To use the Print Access Code Data Block (PACD) Program:

- Perform Authorization Procedure (Level 1 or 2).
 Enter: PACD (in response to OK prompt)
- When REQ prompt is received after program is loaded.
 Enter: PRT

- Access Code Data Block will be output in the same format as input in DACD program.
 Example: REQ PRT

05.05 Print Station Data Block (Table S)

To use Print Station Data Block (PSDB) Program:

- Perform Authorization Procedure (Level 1, 2 or 3)
 Enter: PSDB (in response to OK prompt)
- When REQ prompt is received after the programs are loaded:
 Enter one of the following commands:

PORALL: All station data blocks, EKT and STT, will be output by numerical order of port numbers (lowest number first).

PORNNX: Data Block for port NNX will be output (NNX = port number without L).

PORVAC: A list of all unassigned ports will be output.

DNALL: All station Data Blocks, EKT and STT, will be output by numerical order of DN (lowest to highest). For EKTs, PDN will be used.

DNNNN: Data Block for DN NNN will be output. If it is a multiple appearance DN, all data blocks it appears in will output.

EKTALL: All EKT Data Blocks will be output in order of prime DN (lowest first).

STTALL: All STT Data Blocks will be output in order of DN (lowest first).

- The output format will be the same as input

format in DEKT and DSTT data input programs.

05.06 Print Class of Service Data Block (Table T)

To use the Print Class of Service Data Block (PCOS) Program:

- Perform Authorization Procedure (Level 1, 2 or 3)
Enter: PCOS (in response to OK prompt)
- When REQ response is received after program is loaded
Enter: PRT
- COS Data Block will be printed out in the following format (see Table H-1 for explanation of feature codes):
COS NO.
COS 0 AAA BBB CCC DDD EEE FFF
GGG HHH III JJJ KKK LLL
COS 1 (etc., up to 15)
REQ (this prompt will be given at end of printout)
Enter: [DEL][DEL][CR](to abort program)

05.07 Print Code Restriction Data Block (Table U)

To use the Print Code Restriction Data Block (PCRD) Program:

- Perform Authorization Procedure (Level 1, 2 or 3)
Enter: PCRD (in response to OK prompt)
- When REQ prompt is received after program is loaded:
Enter: ALL —All Code Restriction Data Blocks will be output
CRLX—Code Restriction list X will be output

The output format is as follows:

Allow List

```

REQ    CRL0
CRL    0
CLR    D
ALLOW  XXX XXX XXX XXX
        XXX XXX XXX XXX
        XXX XXX XXX XXX
        XXX etc.
```

Deny List

```

REQ    CLR1
```

```

CRL    1
CLR    A
DENY   XXX XXX XXX XXX
        XXX XXX XXX XXX
        XXX XXX XXX XXX
        XXX XXX XXX etc.
REQ    (the REQ prompt will be
        given at the end of each
        printout)
Enter: [DEL][DEL][CR](to abort program)
```

05.08 Print Speed Dial Data Block (Table V)

To use the Print Speed Dial Data Block (PSDL) Program:

- Perform Authorization Procedure (Level 1, 2 or 3).
Enter: PSDL (in response to OK prompt)
- When REQ prompt is received after program is loaded.
Enter: ALL —All Speed Dial lists will be output
SYST—System Speed Dial list will be output
LSTN—Speed Dial list N will be output

NOTE:

There are 25 speed dial (LST01~LST25) lists.

The output format is as follows:

```

REQ    LST06

LNO    06
SDC    L002
SDU    L003 L010
STR    00 9*7147305000
        01 9*9142731750
        02 NONE
        03 "
        ?
        09 "
```

05.09 SMDR Data Block (Table W)

To use the SMDR Data Block (PMDR) Program:

- Perform Authorization Procedure (Level 1, 2 or 3)
- When REQ response is received after program is loaded.
Enter: PRT
- SMDR Data Block will be printed out in the following format:

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REQ PRT
ACL XXXX (1~12).
SPCC 1 NNXXXXX
SPCC 2 NNXXXXX
TGP XX XXX
TGP XX XXX
etc.

- REQ prompt will be given when printout is complete.

Enter: [DEL][DEL][CR](to abort program)

05.10 Print Trunk Group Data Block (Table X)

To use the Print Trunk Group Data Block (PTGP) Program:

- Perform Authorization Procedure (Level 1 or 2)
Enter: PTGP (in response to OK prompt)
- When REQ prompt is received after the program is loaded:

Enter one of the following commands:

ALL — All Trunk Group Data Blocks will be output
GRPXX - Trunk Group XX Data Block will be output
COT — All CO-type Trunk Group Data Blocks will be output
FX — All FX-type Trunk Group Data Blocks will be output.
WAT — All WATS-type Trunk Group Data Blocks will be output
TIE — All TIE-type Trunk Group Data Group Blocks will be output
DID — All DID-type Trunk Group Data Blocks will be output
CSA — All CCSA-type Trunk Group Data Blocks will be output
PVL — All Private Line Trunk Group Data Blocks will be output

NOTE:

The output format will be the same as the input format used in the DTGP Program.

- REQ will be prompted when the printout is complete.

Enter: [DEL][DEL][CR](to abort program)

05.11 Print Trunk Data Block (Table Y)

To use the Print Trunk Data Block (PTRK) Program:

- Perform Authorization Procedure (Level 1 or 2)

Enter: PTRK (in response to OK prompt)

- When REQ prompt is received after program is loaded:

Enter one of the following commands:

PORALL — All Trunk Data Blocks will be output in order of Port Number (lowest first)
PORNNX — Trunk Data Block of Port NNX will be output
PORVAC — All unassigned trunk ports will be listed
TGPNN — All Trunk Data Blocks assigned to Trunk Group NN will be output
COT — All CO Trunk Data Blocks will be output
FEX — All FX Trunk Data Blocks will be output
TIE — All TIE Trunk Data Blocks will be output
DID — All DID Trunk Data Blocks will be output
WAT — All WATS Trunk Data Blocks will be output
CSA — All CCSA Trunk Data Blocks will be output
PVL — All Private Line Trunk Data Blocks will be output
NIT — Nite Station assignments for all CO/FX/WATS trunks will be output

NOTE:

The output format will be the same as that used for data input in DTRK Program.

05.12 Print Call Pick-up Groups (Table Z)

To use the Print Call Pick-up Groups (PCPG) Program:

- Perform Authorization Procedure (Level 1, 2 or 3)
Enter: PCPG (in response to OK prompt)
- When REQ prompt is received after the program is loaded:

Enter: ALL —all Call Pick-up groups will be output listed by DN
DNXXX—the number of the Call Pick-up group containing DNXXX will be output

Example:

```
#1 REQ  DN205
   GRP00
#2 REQ  ALL
   GRP00 XXX  XXX  XXX  XXX
        XXX  XXX  XXX  XXX
        XXX  XXX  XXX  XXX
        XXX  etc.
   GRP01 XXX  XXX  XXX
   GRP02 XXX  XXX  XXX  XXX
```

05.13 Print Hunting Arrangements (Table AA)

To use the Print Hunting Arrangements (PHNT) Program:

- Perform Authorization Procedure (Level 1, 2 or 3)
 Enter: PHNT (in response to OK prompt)
- When REQ prompt is received after the program is loaded:
 Enter: ALL —all hunting sequences will be output
- The output format will be as in the following examples:
 REQ ALL
 HNT 223-224-225
 HNT 242-243
 HNT 250-251-252
 etc.

06 MAINTENANCE PROCEDURES

06.01 The Maintenance Procedures assist with the administration and maintenance of the system.

06.02 Three programs are provided:

- Data Dump—DDMP
- EKT/Attendant Console Test—TTRM
- Peripheral Equipment Test—TPER

06.03 The DDMP and TTRM Programs are available to Levels 1, 2 and 3 users, while the TPER Program requires Level 1 or 2 authorization.

06.10 Data Dump (DDMP) Program (Table AB)

06.11 The DDMP Program transfers the con-

tents of the system data memory to the diskette for permanent storage.

06.12 Using this program has the same effect as responding "Y" to the "SAV" prompt that is given when a Data Input program is aborted. The current data then residing in system memory will be written on the diskette, thereby replacing any previously recorded data.

06.13 It is possible, via the System Data Block, to specify the DDMP Program as a daily routine and cause the data to be recorded daily. This enables speed dialing information that has been entered by the attendant console or station user to be captured on the diskette.

06.14 This program is also useful for updating spare diskettes.

06.15 To use the DDMP Program manually (refer to Table AB):

- Perform Authorization in Procedure (Level 1, 2 or 3).
 Enter: DDMP (in response to OK prompt)
- System will respond with "DPG" and the process will begin.
- System will print "DUN" when data transfer is complete.
- No other input is required.

06.20 EKT/Attendant Console Test (TTRM) Program (Table AC)

06.21 When the TTRM Program has been loaded, a test sequence can be performed at the Attendant Consoles and EKTs. The test is designed to check all functions of the terminals in a time efficient manner.

06.22 To use the TTRM Program (refer to Tables AC-1 and AC-2):

- Perform the Authorization Procedure (Level 1, 2 or 3).
 Enter: TTRM (in response to OK prompt)
- REQ will be printed when the program has loaded.

06.23 Proceed to the console or EKT to be

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tested. The test is performed as follows:

- a) EKT:
- Depress DN to obtain dial tone.
 - Dial *TEK (* 835) on the dial pad.
 - The system will respond by lighting all EKT LEDs.
 - Operate the keys and observe the responses in sequence shown in Table AC-1.
- b) Attendant Console:
- Depress an LPK key.
 - Dial *TAT (* 828) on the dial pad.
 - The system will respond by lighting all BLF LEDs.
 - Operate the keys and observe the responses in sequence shown in Table AC-2.
- c) When all consoles and EKTs have been tested, abort the program by:
Enter: [DEL] [DEL] [CR]

06.30 Peripheral Equipment Test (TPER) Program (Table AD)

06.31 The TPER Program is designed to aid in fault location by disabling and enabling various PCBs and circuits. When a faulty circuit or PCB has been located, it is left disabled until it can be replaced to prevent it from interfering with normal system operation.

06.32 Using the TPER Program, it is also possible to determine the busy/idle status of any station, trunk or DTMF receiver port. To use the TPER Program (refer to Table AD):

- Perform Authorization Procedure (Level 1 or 2).
Enter: TPER (in response to OK prompt)

- REQ will be printed when the program has loaded.

Enter one of the following commands:

DSCDXXX (Disable PCB XXX immediately)—Disables PCB XXX regardless of busy/idle status (XXX = TXX, LXX or R00); lights PCB FALT LEDs and returns REQ prompt.

DSTKNNX (Disable trunk #NNX)—Disables trunk if it is idle (NN = trunk PCB number, i.e. T01 = 01, X = circuit number on that PCB, i.e. 1~4), lights FALT LED relating to that circuit (FALT #1 for cir-

cuits 1 & 2 and FALT #2 for circuits 3 & 4) and returns REQ prompt.

DSLNNX (Disable Line Circuit NNX)—Disables station circuit if it is idle (NN = station PCB number, i.e. L04 = 04, X = circuit number on that PCB, i.e. 1~8), lights FALT LED relating to that circuit (FALT #1 for circuits 1~4 and FALT #2 for circuits 5~8) and returns REQ prompt.

ENCXXX (Enable PCB XXX)—Enables PCB XXX (XXX = TXX, LXX, or R00), turns FALT LEDs off, and returns REQ prompt.

ENTKNNX (Enable Trunk NNX)—Enables trunk NNX (NN = trunk PCB number, X = circuit number on that PCB), turns FALT LEDs off unless other circuit is still disabled, and returns REQ prompt.

ENLNNX (Enable Line Circuit NNX)—Enables station line circuit NNX (NN = station line PCB number, X = circuit number on that PCB), turns FALT LEDs off unless other circuits are still disabled, and returns REQ prompt.

DSRC00X (Disable Receiver Circuit 00X)—Disables DTMF receiver circuit 00X if it is idle (00 = PCB number R00, X = circuit number on that PCB (1~6)), lights the FALT LED relating to that circuit (FALT #1 for circuits 1 & 2; FALT #2 for circuits 3 & 4; FALT #3 for circuits 5 & 6) and returns REQ prompt.

ENRC00X (Enable Receiver Circuit 00X)—Enables DTMF receiver 00X (00 = PCB number R00, X = circuit number on that PCB), turns FALT LED off unless other circuit is still disabled, and returns REQ prompt.

DSCIXXX (Disable PCB XXX when it becomes idle)—Disables each circuit on the PCB as it becomes idle, lights the appropriate FALT LED as circuits are disabled, and returns REQ prompt.

LIPS (List All Idle Ports)—Prints out a list of all system ports (DTMF receivers, stations and trunks) that are idle at the time that the command is entered. Returns

REQ prompt when printout is complete.

LBPS (List All Busy Ports)—Prints out a list of all system ports (DTMF receivers, stations and trunks) that are busy at the time that the command is entered. Returns REQ prompt when printout is complete.

LDPS (List All Disabled Ports)—Prints out a list of all system ports (DTMF receivers, stations and trunks) that are in a disabled state at the time that the command is entered. Returns REQ prompt when printout is complete.

STLCNXX (Status of Line Circuit NNX)—Gives the status of station line circuit NNX (NN = station line PCB number, X = circuit number on that PCB). The output format will be a combination of two items. (See Notes 1 and 2.)

<u>Station Type¹</u>	<u>Status²</u>
500/2500	IDL
EKT	BSY
ATT	DIS TTY
UNEQ	DIS CBL
UNAS	DIS TLD

Example:
REQ STLC002
 CKT 2 EKT IDL

- Returns REQ prompt when printout is complete.

STTKNNX (Status of Trunk Circuit NNX)—Gives the status of trunk circuit NNX (NN = trunk PCB number, X = circuit number on that PCB). The output format will be a combination of two items. (See Notes 1 and 2.)

<u>Trunk Type¹</u>	<u>Status²</u>
CO	IDL
FX	BSY
WAT	DIS TTY
TIE	DIS TLD
CCSA	
UNEQ	
UNAS	

Example:
REQ STTK001
 CKT 1 TIE IDL

- Returns REQ prompt when printout is complete.

STRC00X (Status of Receiver 00X)—Gives the status of DTMF receiver 00X (00 = receiver PCB number R00, X = circuit number on that PCB). The output format will be IDL, BSY, DIS TTY, DIS TLD, UNEQ, UNAS. (See Notes 1 and 2.)

Example:
REQ STRC001
 CKT 1 IDL

- Returns REQ prompt when printout is complete.

STCDXXX (Status of PCB XXX)—Gives the status of all circuits on PCB XXX (XXX = PCB location LXX, TXX or R00). Printout will be the same as for STLC, STTK, and STRC command, but will list all circuits on that PCB in order of circuit number.

- Returns REQ prompt when printout is complete.

NOTES:

1. Type: *UNEQ=No PCB in that position
UNAS=PCB is equipped but no data is assigned*
2. Status: *IDL=Idle
BSY=Busy
DIS TTY=Manually disabled via TTY
DIS CBL=EKT port disabled by software due to open cable
DIS TLD=Software disabled due to traffic load (indicates faulty PCB)*

CALL TNNX (Set up a monitor link from Trunk NNX to the remote test center.):

This command is used at a remote test center to establish an audio link between the system and the test center. The object is to command the system to select a particular trunk (A) and to dial the number of a telephone at the test center. When the call is answered, a 440 Hz tone will be heard.

Once a monitor link has been established

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other trunks can be tested. The trunk to be tested (B) is seized by the keyboard terminal command and then a test number to be dialed is entered via the terminal. The audio responses are monitored at the test center.

The set-up sequence includes several steps that are led by system prompts. Following the entry "CALL TNNX", the system prompts are:

WAIT:

- Indicates that the first command was received. A carriage return [CR] must be entered to advance the program.
Enter: [CR]

STS TLK, WAIT or OVR (Status):

- Gives the status of the trunk that was requested.
- STS TLK will be output if the trunk was idle and has now been seized. Program will *automatically* advance to the next prompt (DN).
- STS WAIT indicates that the requested trunk is busy. Program will return to the WAIT prompt automatically. Enter [CR] to access the same trunk again or [DEL] [CR] to return to REQ prompt.
- STS OVR indicates that the requested trunk does not exist in the system.
Enter: [DEL] [CR] to return to the REQ prompt

DN (Directory Number):

- System is requesting the number of the telephone to be called at the test center.
Enter: DN followed by a [CR]

DDL (Dialing):

- System is dialing. Allow sufficient time for the number to be dialed and then enter a [CR] to advance the program.
Enter: [CR]

STS TLK, DDL or RLSA (Status):

- Gives the status of the connection.
- STS TLK will be output if the dialing is complete, and the program will *automatically* advance to the

next prompt (TRK).

- STS DDL indicates that the trunk was still dialing when [CR] was entered.
Enter: [CR] to advance the program
- STS RLSA indicates that the trunk (A) was disconnected due to a malfunction or some outside influence, such as the distant end going on-hook on a ground start trunk. After printing STS RLSA, the program will return to the REQ prompt *automatically*.

TRK (Trunk):

- At this point the monitor link to the test center using Trunk A has been established and the system is requesting the identity of a trunk to be tested.
Enter: CALL TNNX (TNNX = port number of the trunk to be tested)

WAIT:

- Indicates that the command was received. A carriage return [CR] must be entered to advance the program.
Enter: [CR]

STS TLK, BSY, OVR, or RLSA (Status):

- Gives the status of the connection.
- STS TLK will be output if the trunk that was requested was idle and has now been seized. Program will *automatically* advance to the next prompt (DN).
- STS BSY indicates that the requested trunk is busy. The program will *automatically* return to the TRK prompt above to allow another trunk to be selected.
- STS OVR indicates that the requested trunk does not exist in the system. The program will *automatically* return to the TRK prompt above to allow another trunk to be selected.
- STS RLSA is output if the monitor link trunk (A) was disconnected due to a malfunction or some outside influence, such as the distant end going on-hook. After printing STS RLSA, the program will return to the REQ prompt *automatically*.

DN (Directory Number):

- The trunk under test (B) has been seized and the system is requesting the number to be dialed (time, weather, tone, etc.).

DDL (Dialing):

- System is dialing via Trunk B. When dialing is complete, progress tones (ringing, etc.) will be heard over Trunk B via the monitor link (Trunk A). When the test is complete, enter a [CR] to release Trunk B and return to the TRK prompt.

Enter: [CR] when test is complete

STS TLK, DDL, RLSA or RLSB (Status):

- Gives the status of the connection.
- STS TLK will be printed in response to a [CR] entered following the dialing prompt above. The [CR] released the trunk under test (B), therefore the output indicates the status of the monitor link (A). The program will automatically return to the TRK prompt to allow another trunk to be selected.
- STS DDL will be printed if a [CR] was entered before dialing was complete. This state is the same as DDL above.
- STS RLSA will be printed if the monitor link (Trunk A) is released due to a malfunction or some outside influence. The trunk under test (B) will also be released and the program will return to the REQ prompt *automatically*.
- STS RLSB will be printed if the trunk under test (Trunk B) is released due to a malfunction or some outside influence. The program will automatically return to the TRK prompt to allow another trunk to be selected.

Example: Monitor line trunk (A) = T014
 Test center DN = 730-5000
 Test DN = 730-0002
 Trunk under test (B) = T021

PROMPT	USER ENTRY
OK	TPER
- DISK LOADING -	
REQ	CALL T014
WAIT	[CR]
STS TLK	
DN	7305000
DDL	[CR]
STS TLK	
TRK	CALL T021
WAIT	[CR]
STS TLK	
DN	7300002
DDL	[CR] (end of test)
STS TLK	
TRK	(new test)

TABLE C

Procedure – Authorization Code Change

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

SYSTEM	USER	NOTE NO.
OK	DCHG	
L1=XXXX		1 & 2
L2=XXXX		2
L3=XXXX		2
OK		3

NOTES:

1. If Level 3 was given in the Authorization Procedure, an error message is given. If Level 2 was given in the Authorization Procedure, L1 is omitted and the response to CHG is L2=XXXX. XXXX=present code of that level.
2. The possible responses are:
 - YYYY - This new access code will replace the existing XXXX.
 - [CR] = Carriage Return-Code is not changed and system gives the next prompt.
 - [CTRL] [X] = Ignore line entered
 - [CTRL] [H] = Backspace
 - [DEL] = Stop printing and return to REQ
 - [DEL] [DEL] = Abort program
3. Program repeats

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TABLE D

Procedure – System Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSYS	
– DISK LOADING –			
	REQ	CHG	
Time Of Daily Routine	TOR	Time (eg., 1315)	
Daily Routine Tasks	DRT	List programs-DDMP or NONE	
Tenant Service?	TEN	Y or N	
Intercept #1	ICP1	ATT or OFL	
Intercept #2	ICP2	ATT or OFL	
Intercept #3	ICP3	ATT or OFL	
All Page Access Code	APG	"ALL PAGE" access code	1
Not Used	AAT	Carriage Return	
Not Used	APX	Carriage Return	
Listed Directory Number #1	LN1	LDN (3 digits)	
Listed Directory Number #2	LN2	LDN (3 digits)	
LDN #1 Night Number	NT1	Nite DN (3 digits) or UNA	
LDN #2 Night Number	NT2	Nite DN (3 digits) or UNA	
Busy Lamp Field #1	BLF1	1 digit (1~9)	
Busy Lamp Field #2	BLF2	1 digit (1~9)	
Overflow DN Attendant Console #0	OFL1	1~3 digits or NONE (UNA)	
Overflow DN Attendant Console #1	OFL2	1~3 digits or NONE (UNA)	2
Message Center - Tenant #0	MC0	ATT 0 or DN or NONE	
Message Center - Tenant #1	MC1	ATT 1 or DN or NONE	2
Meet-Me Page DN	MMP	MMP phantom DN (3 digits)	
Remote Access DN	REM	RA phantom DN (3 digits)	
Remote Access Change Code	RAC	3-digit access code	
"*" Access Code	ACC *	"N" or NONE	3 & 4
"#" Access Code	ACC #	"N" or NONE	3 & 4
Camp-on (or CWT) Time-out	COT	Time (in seconds)	
Ring No Answer Time-out	RNA	Time (in seconds)	
Attendant Overflow Time-out	AOF	Time (in seconds)	
Call Forward No Answer Time-out	CFD	Time (in seconds)	5
Hold (500/2500) Time-out	HLD	Time (in seconds) or NONE	
Dial Pulse Time-out	DPT	Time (in seconds)	6
Push-button Time-out	PBT	Time (in seconds)	
Line Lock-out Time-out	LLO	Time (in seconds)	
Automatic Callback Reserve Time	ACB	Time (in seconds)	
Handsfree Answerback-station	HFS	Y or N	7
Handsfree Answerback-attendant	HFA	Y or N	8
SMDR Equipped	MDR	Y or N	

NOTES:

1. All Page access code = 1, 2, or 3 digits.
2. Not printed if tenant service is not used. (TEN = N)
3. N = number dialed in place of "*" or "#".
4. Beware of conflicts with the numbering plan and access codes—system will not always check.
5. CFD TIMER must be less than RNA or RNA will prevail.
6. DPT timer also controls ATT LPK release.
7. A "Y" response allows calls from *any station* to a Handsfree Answerback equipped EKT to be answered Handsfree.

8. A "Y" response allows calls from the Attendant to a Handsfree Answerback equipped EKT to be answered Handsfree.
9. [CTRL][X] = Ignore line entered
[CTRL][H] = Backspace
[DEL] = Stop printing and return to REQ
[DEL][DEL] = Abort program

Error Codes

Program Name: System Data Block (DSYS)	
Error Code	Meaning
ERSYS 00	Access code conflicts with an existing number.
ERSYS 01	Entered DN does not exist in the system.
ERSYS 02	Entered DN is trunk DN

TABLE E

Procedure-Access Code Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DACD	
- DISK LOADING -			
	REQ	CHG	
Feature?	FTR	Feature + [space] + code	1

NOTES:

1. a) The 3-character feature name followed by a space and its access code is entered in response to FTR.
b) The features may be entered in any order and the new access code overwrites the existing one.
c) Any feature code which is to be unchanged need not be entered.
d) The feature abbreviations and factory assigned codes are listed in Table E-1.
2. [CTRL][X] = Ignore line entered
[CTRL][H] = Backspace
[DEL] = Stop printing and return to REQ
[DEL][DEL] = Abort program

TABLE E-1

Feature	Abb.	Std. Code
Automatic Callback	ACB	*7
Automatic Callback Cancel	CBR	**7
Call Forward	CFD	*9
Call Forward Cancel	CFR	**9
Call Pick-up Directed	PUD	*6
Call Pick-up Group	PUG	*4
Hold-All Calls	HLD	*3
Meet-me Page Attendant Console #0	MMP1	11
Meet-me Page Attendant Console #1	MMP2	12
Override	OVR	*0
Repeat Last Number Dialed	RND	#7
Call Waiting	CWT	#4
Speed Dial-Station-Call	SDU	#3
Speed Dial-Station-Program	SDC	##3
Speed Dial-System-Call	SDS	#6
Universal Night Answer	UNA	*1
Charge Account	CRG	#9
Flash	FLH	*5
Paging Zone 0	PAG0	15
Paging Zone 1	PAG1	16
Paging Zone 2	PAG2	17
Paging Zone 3	PAG3	18
Paging Zone 4	PAG4	19
Hold-All Calls Retrieve	RTV	**3
Message Waiting All Clear	MAL	##5
Message Waiting Cancel	MCC	#5
Do Not Disturb	DND	#2
Do Not Disturb Cancel	DNC	##2

Error Codes

Program Name: Access Code Data Block (DACD)	
Error Code	Meaning
ERACC 00	Access code conflicts with an existing access code.
ERACC 01	Invalid response (1~3) digits are allowed).
ERACC 02	Invalid response (7*5, 8# etc. are not allowed).

TABLE F

Procedure – EKT Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DEKT	
– DISK LOADING –			
	REQ	NEW, CHG, OUT	
Port Number	POR	LNNX	1 & 2
Number of Key Strips	KS	1, 2	3
Class Of Service Group	COS	0~15	4
Tenant Number	TEN	0, 1	
Call Pick-up Group	PUG	0~31 or NONE	5
Waiting Tone Allowed?	WTA	Y or N	
Call Forward to Trunk?	CFT	Y or N	
Toll Allowed?	TOL	Y or N	
Not Used	MTA	N	
Handsfree Answerback Equipped?	HFA	Y or N	
Not Used	DIS	N	
Key Assignments	KEY	Key Number (0~9) + [space] + FTR	6~8

NOTES:

1. NN = PCB location
2. X = Circuit number
3. A maximum of two key strips are possible: 10-key EKT = 1; 20-key EKT = 2.
4. There are 16 different COS groups which are defined in the COS Data Block.
5. There are maximum of 32 Call Pick-up Groups.
6. Enter key number followed by a space and then the entry. Key 0 must be station prime DN. See Table F1 for possible entry.
7. Key numbers may be entered in any order and the "KEY" prompt will be repeated until [DEL] is entered.
8. If KS was 2, 0~19 is allowed.
9. [CTRL][X] = Ignore line entered
 [CTRL][H] = Backspace
 [DEL] = Stop printing and return to REQ
 [DEL][DEL] = Abort program

TABLE F-1

DIRECTORY NUMBER	ENTRY	NOTE
Single Call Ring	SCR NNN XXX	1
Single Call No Ring	SCN NNN XXX	1
Station Hunt - Distributed	#X	2

PRIVATE CO LINE	ENTRY	NOTE
Private Line Ring	PVR XXX	3
Private Line No Ring	PVN XXX	3

FEATURE	ENTRY	NOTE
Account Number (SMDR)	CRG	
Automatic Callback	ACB	
Automatic Dialing	ADL	4
Call Forward - All Calls	CFD	
Call Pick-up Directed	PUD	
Call Pick-up Group	PUG	
Call Waiting	CWT	
Do Not Disturb	DND	
Flash	FLH	5
Manual Signalling	SIG LNNX	6
Message Waiting	MSG	
Override	OVR	
Privacy Release	PRS	
Release	RLS	
Repeat Last Number Dialed	RND	
Speaker Cut-off	SCF	
Speed Dial - System	SDS	
Speed Dial - Station (Controller)	SDC XX	7
Speed Dial - Station (User)	SDU XX	7
Voice Page	VCP XXX	8

NOTES:

1. NNN(NN,N) = Directory Number. 1, 2 or 3 digit DNs are allowed if there is no conflict.
i.e.: 30X is not allowed if 30 is used.
XXX = Hunt DN—enter NONE to remove present DN. Also see Station Hunt-Distributed.
2. #X is entered in place of the usual hunt DN following the EKT DN assignment (maximum: 8 stations per group). X = Distributed Hunt Group Number (0~4)
3. XXX = TDN assigned in Trunk Data Block.
4. Maximum ADL keys for entire system is 250.
5. Flash key causes a 300mS flash (line open) to CO line.
6. LNNX = Port number of EKT to be signalled.
7. SDC XX makes the station a controller of list #XX.
SDU XX makes the station a user of list #XX.
Maximum: 25 personal 10-number Speed Dial-Station lists (XX = 1~25).
8. XXX = DN of station receiving Voice Page. If the DN has multiple appearances, the station having the DN as Prime (key 0) will be called.

Error Codes

Program Name: EKT Data Block (DEKT)	
Error Code	Meaning
EREKT 00	No PCB is equipped in that location.
EREKT 01	PCB is a DSTU type (not EKT).
EREKT 02	Port is busy (REQ = CHG or OUT).
EREKT 03	Port is already assigned (REQ = NEW).
EREKT 04	#1 was entered but tenant service not enabled in System Data Block.
EREKT 05	#1 was entered but Attendant #1 not programmed (no Attendant Data Block).
EREKT 06	Wrong key number (over permitted key strip number).
EREKT 07	No port (destination of the key feature) is assigned (manual signalling) or port type is not a station.
EREKT 08	Maximum number of ADL keys already assigned (maximum is 250).
EREKT 09	PUG is entered but Call Pick-up Group number is not assigned yet.
EREKT 10	DN conflicts with existing DN.
EREKT 11	120 DNs are already assigned in the system.
EREKT 12	DN already assigned to maximum appearances (Prime is 1, Not Prime is 7).
EREKT 13	PUG number = NONE (was entered but PUG key already assigned).
EREKT 14	Next hunt DN is not assigned.
EREKT 15	Maximum number of 20-key EKTs are already assigned (maximum is 80).
EREKT 16	Input DN is already assigned to the port.
EREKT 17	Input data erased because program aborted during "NEW" data entry.
EREKT 18	Port is not assigned.
EREKT 19	Other type data (500/2500, etc.) is assigned to the input port.
EREKT 20	SDC is already assigned to the input list.
EREKT 21	The input port is not an EKT (SIG LNNX).
EREKT 22	PVR NNN, PVN NNN is entered but trunk DN NNN is not yet assigned.
EREKT 23	The input DN is trunk DN (VCP NNN Hunt DN).

TABLE G

Procedure – Standard Telephone Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSTT	
– DISK LOADING –			
	REQ	NEW, CHG, OUT	
Port Number	POR	LNNX	1 & 2
Directory Number	DN	NNN (NN, N)	3
Station Mix	SMX	Y or N	
Class Of Service	COS	0~15	4
Tenant Number	TEN	0 or 1	
Call Pick-up Group	PUG	0~31 or NONE	5
Hunt Number	HNT	XXX, #X or NONE	6
Dialing Type	DLG	DIP, TON, MNL, 0 or 1, HTL XXX	7
Speed Dial List	SDL	SDC XX, SDU XX, NONE	8
Warning Tone Allowed?	WTA	Y or N	9
Call Forward to Trunk?	CFT	Y or N	
Toll Allowed?	TOL	Y or N	
	REQ	Repeat program if necessary	

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NOTES:

1. NN = PCB location.
2. X = Circuit number.
3. 3, 2, or 1 digit DNs are allowed if there is no conflict; e.g. 30X is not allowed if 30 is used.
4. There are 16 different COS groups which are defined in the COS Data Block.
5. There are a maximum of 32 Call Pick-up Groups.
6. XXX = the number to which this DN hunts.
 #X = Station Hunt-Distributed
 X = Distributed hunt group number (0~4)
 (maximum: 8 stations per group)
- NONE = No hunt
7. DIP = Dial Pulse; TON = DTMF; MNL 0 or MNL 1 = Direct Line to ATT 0 or 1; HTL = Hot Line to DN XXX.
8. SDC XX makes the station a controller of list #XX
 SDU XX makes the station a user of list #XX
 Maximum: 25 personal 10-number Speed Dial-Station lists (XX = 1~25)
9. Y = Call waiting feature activated
 N = Camp-on feature activated
10. [CTRL] [X] = Ignore line entered
 [CTRL] [H] = Backspace
 [DEL] = Stop printing and return to REQ
 [DEL] [DEL] = Abort program

Error Codes

Program Name: Standard Telephone Data Block (DSTT)	
Error Code	Meaning
ERSTA 00	No PCB is equipped in that location.
ERSTA 01	PCB is not DSTU type.
ERSTA 02	Port is busy (REQ = CHG, OUT).
ERSTA 03	Port is already assigned (REQ = NEW).
ERSTA 04	
ERSTA 05	#1 was entered but tenant service not enabled in System Data Block.
ERSTA 06	#1 was entered but ATT #1 not programmed (no Attendant Data Block).
ERSTA 07	
ERSTA 08	
ERSTA 09	Unknown input.
ERSTA 10	DN conflicts with existing DN.
ERSTA 11	120 DNs are already assigned in the system.
ERSTA 12	DN is already assigned to the maximum appearances (8).
ERSTA 13	Hot Line DN does not exist.
ERSTA 14	Next Hunt DN does not exist.
ERSTA 15	
ERSTA 16	
ERSTA 17	MNL 0 was entered but ATT 0 is not equipped.
ERSTA 18	MNL 1 was entered but ATT 1 is not equipped.
ERSTA 19	MNL 0 was entered but this station is in tenant group #1.
ERSTA 20	MNL 1 was entered but this station is in tenant group #0.
ERSTA 21	Input Data erased because program aborted during "NEW" data entry.
ERSTA 22	The port is not assigned.
ERSTA 23	Other type data (EKT, etc.) is assigned to the input port.
ERSTA 24	SDC is already assigned to input list.
ERSTA 25	The next input Hunt DN is trunk DN.

TABLE H

Procedure – Class of Service Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DCOS	
– DISK LOADING –			
	REQ	CHG	
	COS	0 AAA BBB etc.	1 & 2
	COS	1 AAA BBB etc.	3
	COS	DEL	4
	REQ	Repeat program if necessary	

NOTES:

1. Enter a list of all features which are **not** allowed to this group. See Table H-1, it is a list of features and codes.
2. Default = all features allowed.
3. A maximum of 16 COS Groups (0~15) are allowed.
4. The COS prompt will be repeated until [DEL] is entered and then a REQ prompt will be given.
5. [CTRL] [X] = Ignore line entered
 [CTRL] [H] = Backspace
 [DEL] = Stop printing and return to REQ
 [DEL] [DEL] = Abort program

TABLE H-1 – CLASS OF SERVICE DATA BLOCK

FEATURE	CODE
Trunk Group 0	T00
Trunk Group 1	T01
Trunk Group 2	T02
Trunk Group 3	T03
Trunk Group 4	T04
Trunk Group 5	T05
Trunk Group 6	T06
Trunk Group 7	T07
Trunk Group 8	T08
Trunk Group 9	T09
Trunk Group 10	T10
Trunk Group 11	T11
Trunk Group 12	T12
Trunk Group 13	T13
Trunk Group 14	T14
Trunk Group 15	T15

FEATURE	CODE
Automatic Callback	ACB
Call Forward (All Calls)	CFD
Call Forward (Busy)	CFB
Call Forward (No Answer)	CFN
Call Pick-up Directed	PUD
Call Pick-up Group	PUG
Call Waiting	CWT
Override	OVR
Speed Dialing - System	SDS
Attendant Control Override	ACO
All Zone Paging	APG
Paging Zone 0	PG0
Paging Zone 1	PG1
Paging Zone 2	PG2
Paging Zone 3	PG3
Paging Zone 4	PG4

Error Codes

Program: Class of Service Data Block (DCOS)	
Error Code	Meaning
ERCOS 01	Invalid response (0~15 is allowed).

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TABLE I

Procedure – Code Restriction Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DCRD	
– DISK LOADING –			
	REQ	NEW, CHG, OUT	
Code Restriction List Number	CRL	X	1
Clear List	CLR	A or D	2
Allowed Code	ALOW	XXX XXX XXX XXX XXX XXX	3 & 4
Denied Code	DENY	XXX XXX XXX XXX XXX	5
	REQ	Repeat program if necessary	

NOTES:

1. X = number (0~7) used to assign the list in the Trunk Group Data Block(s).
2. A = clear all codes to be allowed – (form a DENY list).
D = clear all codes to be denied – (form an ALLOW list).
3. List all codes which are to be allowed.
4. Next prompt will be given when [CR] is entered.
5. List all codes which are to be denied.
6. [CTRL] [X] = Ignore line entered
[CTRL] [H] = Backspace
[DEL] = Stop printing and return to REQ
[DEL] [DEL] = Abort program

Error Codes

Program Name: Code Restriction Data Block (DCRD)	
Error Code	Meaning
ERCRD 00	Input list number is out of range. (0 ~ 7).
ERCRD 01	
ERCRD 02	Input list does not exist. (REQ = CHG, OUT).
ERCRD 03	Input list already exists. (REQ = NEW).

TABLE J

Procedure – Speed Dialing Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DSDL	
– DISK LOADING –			
	REQ	CHG, OUT	
List Number	LNO	XX	1
Store Number	STR	1 9*NPANNXXXXX	2, 3, 4
	STR	2 9*NPANNXXXXX	
	STR	3 9*NPANNXXXXX–etc.	
		[DEL]	5
	REQ	Repeat program if necessary	

NOTES:

1. *XX* = List Number.
 00 = System List (90 numbers maximum).
 01 ~ 25 = Station Lists (10 numbers each maximum).
2. Input procedure is:
 Address Code-Space-Access Code-Pause-DN
 For example: 01 9*NPANNXXXX
3. Stored numbers may be any length between 1 and 16 digits; "*" enters a 3-second pause and is counted as one of the 16 digits.
4. If the List Number (LNO) was 00 (System List), 2-digit address codes will be used (10 ~ 99).
5. No further prompt will be given until [DEL] is entered.
6. [CTRL] [X] = Ignore line entered
 [CTRL] [H] = Backspace
 [DEL] = Stop printing and return to REQ
 [DEL] [DEL] = Abort program

Error Codes

Program Name: Speed Dialing Data Block (DSDL)	
Error Code	Meaning
ERSDL 00	Input list number is out of range (1 ~ 25 is allowed).
ERSDL 01	Address code of system list is out of range (10 ~ 99 is allowed).
ERSDL 02	Address code of station list is out of range (0 ~ 9 is allowed).
ERSDL 03	Invalid DN (1 ~ 16 digits are allowed).

TABLE K

Procedure – SMDR Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DMDR	
- DISK LOADING -			
	REQ	NEW, CHG, OUT	
Account Code Length	ACL	1 ~ 12 or NONE	
Special Common Carrier #1 DN	SPCC 1	NNX XXXX or NONE	1
Special Common Carrier #2 DN	SPCC 2	NNX XXXX or NONE	1
Trunk Group	TGP	XX XXX	2
	TGP		3

NOTES:

1. SPCC 1 & SPCC 2 entries are the DN of any Specialized Common Carrier (SPCC) used (MCI, SPC, etc.).
2. Enter the trunk group number and type of calls to be recorded on this Trunk Group:
 NONE
 INC - Incoming Only
 OGT - Outgoing Only
 IAO - Incoming and Outgoing
 TOL - Toll Only
 INT - Incoming - all
 - Outgoing - toll only
3. TGP continues to be prompted until [DEL] is entered.
4. [CTRL] [X] = Ignore line entered
 [CTRL] [H] = Backspace
 [DEL] = Stop printing and return to REQ
 [DEL] [DEL] = Abort program

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Error Codes

Program Name: SMDR Data Block (DMDR)	
Error Code	Meaning
ERMDR 00	SMDR Customer data already exists (REQ=NEW).
ERMDR 01	SMDR Customer data does not exist (REQ=CHG. OUT).

TABLE L

Procedure – Attendant Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DATT	
– DISK LOADING –			
	REQ	NEW, CHG, OUT	
Attendant Number	ANO	0 or 1	
Port Number	POR	L001 (Att 0) or L121 (Att 1)	
Lockout Allowed?	LKO	Y or N	
Page Key	PAG	XX or NONE	1

NOTES:

1. XX = Access Code of the Page Zone or All Page.
2. [CTRL][X] = Ignore line entered
 [CTRL][H] = Backspace
 [DEL] = Stop printing and return to REQ
 [DEL][DEL] = Abort program

Error Codes

Program Name: Attendant Data Block (DATT)	
Error Code	Meaning
ERATT 00	No PCB is equipped in that location.
ERATT 01	PCB is not DEKU type.
ERATT 02	Port is busy.
ERATT 03	Port is already assigned (REQ = NEW).
ERATT 04	Port is not assigned yet (REQ = CHG, OUT).
ERATT 05	Invalid port number (ATT 0 is L001, ATT 1 is L121).
ERATT 06	Access code entered not assigned to an All Page or Page Zone.
ERATT 07	
ERATT 08	Input data erased because program aborted during NEW data entry.
ERATT 09	Attendant data not assigned to input port (REQ = CHG, OUT).

TABLE M

Procedure — Traffic Measurement

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTRF	
— DISK LOADING —			
	REQ	RPT, STT, CHG, OUT	1
	SYST.DATE MMDDYY	MMDDYY or [CR]	2
	SYST.TIME HHMMSS	HHMMSS or [CR]	3
	SCH "XXX"	30, 60, CMD, NONE or [CR]	4
	STR.DATE MMDDYY	MMDDYY or [CR]	5
	STR.TIME HHMM	HHMM or [CR]	6
	RPT		
	SYST	Y or N	7
	ATT0	Y or N	
	ATT1	Y or N	
	TGP00~TGP15	Y or N	

NOTES:

1. RPT = Report Command—if the program had been started previously, a report would follow. See Table M-1 for format.
- STT = Start Command—used to initialize the program and start the record keeping reporting activity.
- CHG = Change Command—used to alter reporting parameters.
- OUT = Out Command—used to stop reports.
2. System outputs the date in its memory (Month, Day, Year). An entry (MMDDYY) will overwrite the existing data. A [CR] = no change.
3. System outputs the time in its memory (Hours, Minutes, Seconds). An entry (HHMMSS) will overwrite the existing data. A [CR] = no change.
4. Schedule of Reports:
 - 30 = Report every 30 minutes beginning at the time listed as STR.DATE (Note 5) and STR.TIME (Note 6).
 - 60 = Report every 60 minutes beginning at the time listed as STR.DATE (Note 5) and STR.TIME (Note 6).
5. Date that record keeping and reporting should start. The system outputs the date in its memory (Month, Day, Year). An entry (MMDDYY) will overwrite the existing data. A [CR] = no change.
6. Time that record keeping and reporting should start. The system outputs the time in its memory (Hours & Minutes). An entry (HHMM) will overwrite the existing data. A [CR] = no change.
7. Enter Y (yes) or N (no) followed by a [CR] to select the parameters to be reported (see Table M-2).
8. [CTRL] [X] = Ignore line entered
 [CTRL] [H] = Backspace
 [DEL] = Stop printing and return to REQ
 [DEL] [DEL] = Abort program

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TABLE M-1 — TRAFFIC MEASUREMENT REPORT FORMAT

ITEM	PROMPT	USER ENTRY
Authorization Procedure	OK	TRF
— DISK LOADING —		
	REQ	RPT
	RPT FROM	MM DD YY
		HH MM SS
	TO	MM DD YY
		HH MM SS
	SYST	RCVR DLY 0000
	ATT 0	IN SVC 0000
		WK TIM 0000
		INC TRK 0000
		INC TIM 0000
		O CALL 0000
		LPS BSY 0000
		TTA 0000
		OVFL 0000
	ATT 1	(SAME AS ATT 0)
	TRUNKS	TGP 00*
		INC USE 0000
		INC CALL 0000
		O.G. USE 0000
		O.G. CALL 0000
		ATB 0000

*Trunk Groups 01~15 are reported in the same way as Group 00.

TABLE M-2 — TRAFFIC MEASUREMENT PARAMETERS

GROUP	ITEM MEASURED	TYPE OF MEASUREMENT
System	DTMF RCVR Delay (3 sec.)	Peg Count
Attendant #0	Time in Service	CCS
	Work Time	CCS
	Incoming (Trunk) Calls	Peg Count
	Time Servicing Incoming Calls	CCS
	Dial "0" Calls	Peg Count
	All Loops Busy	Peg Count
	Average Time to Answer	SEC
	Overflow	Peg Count
	Attendant #1	(Same as Attendant #0)
Trunks	Group 00* Incoming Usage	CCS
	Incoming Calls	Peg Count
	Outgoing Usage	CCS
	Outgoing Calls	Peg Count
	All Trunks Busy	Peg Count

*Trunk Groups 01~15 are reported in the same way as Group 00.

Error Codes

Program Name: Traffic Measurement (DTRF)	
Error Code	Meaning
ERTRF 01	Program has already been started. Either the START TIME has been reached or STT was entered previously. (REQ = STT)
ERTRF 02	Invalid response. STT or RPT was entered in response to REQ but the SCH entry is 30, 60 or NONE.
ERTRF 03	RPT was entered in response to REQ but the program has not been started. (Correct START TIME & DATE, or enter: STT)

TABLE N

Procedure – DTMF Receiver Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DRCV	
– DISK LOADING –			
	REQ	NEW, OUT	
Port Number	POR	R00X	1
	REQ		

NOTES:

1. Enter the RCVR port number (R00 = PCB number, X = Circuit number).
2. [CTRL][X] = Ignore line entered
[CTRL][H] = Backspace
[DEL] = Stop printing and return to REQ
[DEL][DEL] = Abort program

Error Codes

Program Name: DTMF Receiver Data Block (DRCV)	
Error Code	Meaning
ERREC 00	No PCB is equipped in that location.
ERREC 01	PCB type is not DRCU.
ERREC 02	Port is busy (REQ = OUT).
ERREC 03	Port is already assigned (REQ = NEW).
ERREC 04	Port is not assigned (REQ = OUT).
ERREC 05	Receivers are all assigned (maximum is 6).

TABLE O

Procedure – Trunk Group Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTGP	
– DISK LOADING –			
	REQ	NEW, CHG, OUT	
Trunk Group Number	GRP	0 ~ 15 or PVL	1
Tenant Number	TEN	0 or 1	
Trunk Type	TKT	COT, FEX, DID, PVL, CSA, TIE, WAT	2
Incoming/Outgoing	IAO	ICT, OGT, IAO	
Advance Step	STP	XX or NONE	3
Access Code	COD	N (NN or NNN)	
Class of Service	COS	0 ~ 15	4
Transmission	TRN	NTC, TRC, VNL	
Start Arrangement	STR	IMM, WNK, DDL	
Warning Tone Allowed?	WTA	Y or N	
Outgoing Absorb Digits	OAB		5
Incoming Absorb Digits	IAB		6
Digits Inserted Incoming	INS		7
Toll Allowed?	TOL	Y or N	
Code Restriction Lists	CRL	0 ~ 7 or NONE	8

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NOTES:

1. A maximum of 16 Trunk Groups (normally 0 ~ 15) are possible. If Private Lines are to be equipped, the code "PVL" is used in place of 15.
2. TKT cannot be changed, Data Block must be removed (OUT) and NEW data entered.
3. XX = Trunk Group to be stepped to if this group is busy.
4. COS is meaningful only for TIE/CCSA/DID Trunks. 16 COS groups are provided and are defined in the Class of Service Data Block.
5. List the digit which is to be ignored for the purpose of Toll/Code Restriction. This digit will be outputted but not counted as the first digit.
6. Enter the number of digits which are to be stripped from an incoming dialed DN (TIE, DID, or CCSA Trunk).
Example: IAB = 1
Incoming DN = 8249
Recognized DN = 249
7. Enter the digits (maximum 2) which must be prefixed to an incoming dialed DN after Incoming Absorb Digit.
Example: INS = 52 IAB = 1
Incoming DN = 327
Recognized DN = 5227
8. Enter the CRL (Code Restriction List) number of each list that must be checked when a Toll Denied station is making a call. System maximum is 8 (lists 0 ~ 7).
9. [CTRL] [X] = Ignore line entered
[CTRL] [H] = Backspace
[DEL] = Stop printing and return to REQ
[DEL] [DEL] = Abort program

TABLE O-1 — TRUNK GROUP DATA BLOCK ENTRIES

TRUNK TYPES

	COT	FEX	WAT	PVL	DID	CSA	TIE
GRP	X	X	X	X	X	X	X
TEN	X	X	X	O	X	X	X
TKT	X	X	X	O	X	X	X
IAO	X	X	X	X	X	X	X
STP	X	X	X	O	X	X	X
COD	X	X	X	O	X	X	X
COS	O	O	O	O	X	X	X
TRN	X	X	X	X	X	X	X
STR	X	X	X	X	X	X	X
WTA	X	X	X	X	X	X	X
OAB	X	X	O	O	X	O	O
IAB	O	O	O	O	X	X	X
INS	O	O	O	O	X	X	X
TOL	O	O	O	O	O	X	X
CRL	X	X	O	O	X	O	O

LEGEND: X = Used, O = Not Used

Error Codes

Program Name: Trunk Group Data Block (DTGP)	
Error Code	Meaning
ERTRG 00	
ERTRG 01	GRP still has trunk assigned (REQ = OUT).
ERTRG 02	The entered GRP number is already assigned (REQ = NEW).
ERTRG 03	One or more trunks are busy (REQ = CHG).
ERTRG 04	The entered GRP number does not exist (REQ = CHG).
ERTRG 05	Entered advance step GRP is the same as this GRP number.
ERTRG 06	
ERTRG 07	
ERTRG 08	#1 entered but tenant service not enabled in System Data Block.
ERTRG 09	#1 entered but Attendant Console #1 does not exist.
ERTRG 10	Start arrangement conflicts with trunk type.
ERTRG 11	WTA = Y was entered but trunk type is PAG.
ERTRG 12	IAO = ICT was entered but trunk type is PAG.
ERTRG 13	The entered GRP number does not exist (REQ = OUT).
ERTRG 14	Access code conflicts with an existing number.
ERTRG 15	Input data erased because program aborted during new mode.

**TABLE O-2
PERCEPTION LOSS PLAN**

		Through Connection	Terminal Balance		Through Balance	
			Station Lines/ Attendant Lines	Non-VNL		VNL
TO FROM				Non-transmission Compensated (2-wire facility < 2dB loss and not impedance compensated)	Transmission Compensated (2-wire facility > 2dB loss or impedance compensated, or 4-wire facility)	4-wire
			Terminal Balance	Non-VNL	Station Lines/ Attendant Lines	
Non-transmission Compensated (2-wire facility < 2dB loss and not impedance compensated)	1	1			1	3
Transmission Compensated (2-wire facility > 2dB loss or impedance compensated or 4-wire facility)	1	1			1	1
Through Balance	VNL	4-wire	3	3	1	1

NOTE:

The numbers in the boxes represent actual through connection loss in dB.

TABLE P

Procedure – Trunk Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DTRK	
– DISK LOADING –			
	REQ	NEW, CHG, OUT	
Port Number	POR	TNNX	1
Group/Member Number	GMN	YYZZ	2 & 3
Trunk DN	TDN	BBB	4
Night Number	NIT	NNN, NONE (UNA)	5
Signalling	SIG	GRD, LOP, EAM, LDR, OAD	
Disconnect Supervision?	DIS	Y or N	6
Control of Disconnect	CTL	OPC, FPR	7
Incoming Dialing	DIN	DIP, TON	8
Dialing Outgoing	DOT	P10, P20, TON	9
Answer Supervision	ANS	Y or N	8 & 10

NOTES:

1. NN = Trunk PCB number, X = Circuit number.
2. YY = Trunk Group Number (0 ~ 15 or PVL).
3. GMN cannot be changed, Data Block must be removed (OUT) and NEW data entered.
4. This prompt is valid for TGP PVL. TDN is the DN assigned to a private trunk line.
5. NNN is the trunk's Night station. This number can also be changed by the Attendant when making night assignments (no meaning for TIE/CCSA/DID trunks).
6. Y or N tells the system if Disconnect Supervision can be expected from the distant end.
7. OPC = Originating Party Control, FPR = First Party Release.
8. Has meaning only for TIE/CCSA/DID Trunks.
9. Outgoing dialing method:
P10 = Rotary Dial 10 PPS
P20 = Rotary Dial 20 PPS
TON = DTMF
10. Is Answer Supervision required to the calling party?
11. [CTRL][X] = Ignore line entered
[CTRL][H] = Backspace
[DEL] = Stop printing and return to REQ
[DEL][DEL] = Abort program

TABLE P-1 – TRUNK DATA BLOCK ENTRIES

TRUNK TYPES

	COT	FEX	WAT	PVL	DID	CSA	TIE
POR	X	X	X	X	X	X	X
GMN	X	X	X	X	X	X	X
TDN	O	O	O	X	O	O	O
NIT	X	X	X	O	O	O	O
SIG	X	X	X	X	X	X	X
DIS	X	X	X	X	X	X	X
CTL	O	O	O	O	X	X	X
DIN	O	O	O	O	X	X	X
DOT	X	X	X	X	X	X	X
ANS	O	O	O	O	X	X	X

LEGEND: X = Used, O = Not Used

Error Codes

Program Name: Trunk Data Block (DTRK)	
Error Code	Meaning
ERTRK 00	No PCB is equipped in that location.
ERTRK 01	PCB is not trunk type.
ERTRK 02	Port is busy (REQ = OUT).
ERTRK 03	Port is already assigned (REQ = NEW).
ERTRK 04	Trunk Group Data Block does not exist.
ERTRK 05	Member number already assigned.
ERTRK 06	Entry conflicts with existing DN or TDN
ERTRK 07	Entered night number does not yet exist.
ERTRK 08	
ERTRK 09	Type of signalling entered conflicts with the trunk type.
ERTRK 10	
ERTRK 11	Input data erased because program aborted during NEW mode.
ERTRK 12	The port is not assigned.
ERTRK 13	Another type of data is already assigned to the input port.
ERTRK 14	
ERTRK 15	Entered DN already assigned to station (EKT or STT).
ERTRK 16	Entered DN already assigned to another trunk.

TABLE Q

Procedure – Print System Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSYS	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

NOTE 1—The following responses are possible:

- PRT = Output System Data Block*
- [CTRL] [X] = Ignore line entered*
- [CTRL] [H] = Backspace*
- [DEL] = Stop printing and return to REQ*
- [DEL] [DEL] = Abort program*

TABLE R

Procedure – Print Access Code Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PACD	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

NOTE 1—The following responses are possible:

- PRT = Output System Data Block*
- [CTRL] [X] = Ignore line entered*
- [CTRL] [H] = Backspace*
- [DEL] = Stop printing and return to REQ*
- [DEL] [DEL] = Abort program*

TABLE S

Procedure – Print Station Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSDB	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

NOTE 1—The following responses are possible:

PORALL = All SDBs will be output in numerical order of ports (lowest first)

PORNNX = Port NNX data will be output

PORVAC = A list of all unassigned ports will be output

DNALL = All SDBs will be output in numerical order (lowest first) by DN (PDN for EKTs)

DNNN = DN NNN data will be output; if it is a multiple appearance DN, all Data Blocks it appears in will be output

EKTALL = All EKT SDBs will be output in order of PDN (lowest first)

STTALL = All standard telephone Data Blocks will be output in order of DN (lowest first)

[CTRL] [X] = Ignore line entered

[CTRL] [H] = Backspace

[DEL] = Stop printing and return to REQ

[DEL] [DEL] = Abort program

Error Codes

Program Name: Print Station Data Block (PSDB)	
Error Code	Meaning
ERPST 00	Input PCB number or Circuit number is out of range.
ERPST 01	Input DN does not exist.
ERPST 02	Input port is not assigned to EKT or 500/2500.
ERPST 03	Manual signalling port does not exist.

TABLE T

Procedure – Print Class of Service Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PCOS	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

NOTE 1—The following responses are possible:

PRT = COS Data Block will be output

[CTRL] [X] = Ignore line entered

[CTRL] [H] = Backspace

[DEL] = Stop printing and return to REQ

[DEL] [DEL] = Abort program

TABLE U

Procedure – Print Code Restriction Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PCRD	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

NOTE 1—The following responses are possible:

ALL = Output Code Restriction Data Block

CRLX = Print Code Restriction List #X

[CTRL][X] = Ignore line entered

[CTRL][H] = Backspace

[DEL] = Stop printing and return to REQ

[DEL][DEL] = Abort program

Error Codes

Program Name: Print Code Restriction List (PCRD)	
Error Code	Meaning
ERPCR 00	
ERPCR 01	Input list number does not exist.

TABLE V

Procedure – Print Speed Dial List Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PSDL	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

NOTE 1—The following responses are possible:

ALL = Output all Speed Dial List Data Blocks

SYST = Output System Speed Dial List Data Block

LSTN = Output List #N Data Block

[CTRL][X] = Ignore line entered

[CTRL][H] = Backspace

[DEL] = Stop printing and return to REQ

[DEL][DEL] = Abort program

Error Codes

Program Name: Print Speed Dial List (PSDL)	
Error Code	Meaning
ERPSD 00	List number is out of range (0 ~ 25 is available).

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TABLE W

Procedure – Print SMDR Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PMDR	
– DISK LOADING –			
	REQ		1

NOTE 1—The following responses are possible:

- PRT = Output SMDR Data Block*
- [CTRL][X] = Ignore line entered*
- [CTRL][H] = Backspace*
- [DEL] = Stop printing and return to REQ*
- [DEL][DEL] = Abort program*

TABLE X

Procedure – Print Trunk Group Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PTGP	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

NOTE 1—The following responses are possible:

- ALL = All TGP Data Blocks will be output*
- GRPXX= TGP XX Data Block will be output*
- COT = All CO Trunk Data Blocks will be output*
- FEX = All FX Trunk Data Blocks will be output*
- WAT = All WATS Trunk Data Blocks will be output*
- TIE = All TIE Trunk Data Blocks will be output*
- DID = All DID Trunk Data Blocks will be output*
- CSA = All CCSA Trunk Data Blocks will be output*
- PVL = All PVL Trunk Data Blocks will be output*
- [CTRL][X] = Ignore line entered*
- [CTRL][H] = Backspace*
- [DEL] = Stop printing and return to REQ*
- [DEL][DEL] = Abort program*

Error Codes

Program Name: Print Trunk Group Data Block (PTGP)	
Error Code	Meaning
ERPTG 00	Invalid Response.
ERPTG 01	Input trunk group number is out of range (REQ=GRPXX).

TABLE Y

Procedure – Print Trunk Data Block

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PTRK	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

NOTE 1—The following responses are possible:

- PORALL = All TDBs will be output in numerical order of ports (lowest first)
- PORNNX = TDB of Port NNX data will be output
- PORVAC = All unassigned trunk ports will be output
- TGPNN = All TDBs assigned to trunk group NN will be output
- COT = All CO Trunk Data Blocks will be output
- FEX = All FX Trunk Data Blocks will be output
- WAT = All WATS Trunk Data Blocks will be output
- TIE = All TIE Trunk Data Blocks will be output
- DID = All DID Trunk Data Blocks will be output
- CSA = All CCSA Trunk Data Blocks will be output
- NIT = Output the Night Station Assignments for all CO, FX, and WATS trunks
- PVL = All PVL Trunk Data Blocks will be output
- [CTRL][X] = Ignore line entered
- [CTRL][H] = Backspace
- [DEL] = Stop printing and return to REQ
- [DEL][DEL] = Abort program

Error Codes

Program Name: Print Trunk Data Block (PTRK)	
Error Code	Meaning
ERPTR 00	Invalid response.
ERPTR 01	PCB Number or Circuit number is out of range (REQ = PORNNX).
ERPTR 02	Input trunk group is out of range (REQ = TGPXX).
ERPTR 03	Input port is not assigned to trunk (REQ = PORNNX).

TABLE Z

Procedure – Print Call Pick-up Groups

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PCPG	
– DISK LOADING –			
	REQ		1
– EXECUTE –			
	REQ		1

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NOTE 1—The following responses are possible:

- ALL = Output all Call Pick-up Groups listed by DN
- DNXXX = List the numbers of all Call Pick-up Groups containing DN XXX
- [CTRL] [X] = Ignore line entered
- [CTRL] [H] = Backspace
- [DEL] = Stop printing and return to REQ
- [DEL] [DEL] = Abort program

Error Codes

Program Name: Print Call Pick-up Groups (PCPG)	
Error Code	Meaning
ERPCP 00	Invalid response.
ERPCP 01	Input DN does not exist.

TABLE AA

Procedure — Print Hunting Arrangements

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	PHNT	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following responses are possible:

- ALL = Output all Hunting sequences
- [CTRL] [X] = Ignore line entered
- [CTRL] [H] = Backspace
- [DEL] = Stop printing and return to REQ
- [DEL] [DEL] = Abort program

Error Codes

Program Name: Print Hunting List (PHNT)	
Error Code	Meaning
ERPHT 00	Input DN does not exist.

TABLE AB

Procedure — Data Dump Program

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	DDMP	
	DPG		1
	DUN		2 & 3

NOTES:

1. Program is loaded and dump is proceeding.
2. Dump is complete.
3. Program aborts automatically.

TABLE AC-1

Procedure – EKT Test Procedure

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TTRM	
– DISK LOADING –			
	REQ		1

NOTES:

1. Program is now active; proceed to the EKT to be tested, and enter *TEK (* 835) and the following commands **in sequence**:

ENTRY	EKT RESPONSE	ENTRY	EKT RESPONSE
Access Code *TEK	All LEDs = On	Key Strip 3	LED 3 = On (2 = Off)
Handset off-hook	All LEDs = Flash (60Hz)	Key Strip 4	LED 4 = On (3 = Off)
Handset on-hook	All LEDs = Wink (120 Hz)	Key Strip 5	LED 5 = On (4 = Off)
SPKR key on	All LEDs = Off	Key Strip 6	LED 6 = On (5 = Off)
SPKR key off	All LEDs = l-hold	Key Strip 7	LED 7 = On (6 = Off)
MUTE key on	All LEDs = Off	Key Strip 8	LED 8 = On (7 = Off)
MUTE key off	All LEDs = l-use	Key Strip 9	LED 9 = On (8 = Off)
CONF key on	All LEDs = Off	Key Strip 10	LED 10 = On (9 = Off)
CONF key off	SPKR LED = On	Key Strip 11	LED 11 = On (10 = Off)
HOLD key on/off	SPKR LED = Off	Key Strip 12	LED 12 = On (11 = Off)
Dial key 1	LED 0 = On	Key Strip 13	LED 13 = On (12 = Off)
Dial key 2	LED 1 = On (0 = Off)	Key Strip 14	LED 14 = On (13 = Off)
Dial key 3	LED 2 = On (1 = Off)	Key Strip 15	LED 15 = On (14 = Off)
Dial key 4	LED 3 = On (2 = Off)	Key Strip 16	LED 16 = On (15 = Off)
Dial key 5	LED 4 = On (3 = Off)	Key Strip 17	LED 17 = On (16 = Off)
Dial key 6	LED 5 = On (4 = Off)	Key Strip 18	LED 18 = On (17 = Off)
Dial key 7	LED 6 = On (5 = Off)	Key Strip 19	LED 19 = On (18 = Off)
Dial key 8	LED 7 = On (6 = Off)	Handset off-hook	Dial tone on handset (19 = Off)
Dial key 9	LED 8 = On (7 = Off)		
Dial key 0	LED 9 = On (8 = Off)	Handset on-hook	Dial tone through speaker (check right volume control)
Dial key *	All LEDs = On		
Dial key #	All LEDs = Off	SPKR key	Ringing through speaker (check left volume control)
Key Strip 0	LED 0 = On		
Key Strip 1	LED 1 = On (0 = Off)	SPKR key	Override tone through speaker
Key Strip 2	LED 2 = On (1 = Off)	SPKR key	End of Test, EKT idle

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TABLE AC-2

Procedure – Attendant Console Test Procedure

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TTRM	
– DISK LOADING –			
	REQ		1

NOTE:

1. Program is now active. Proceed to the Attendant Console to be tested, depress an LPK key, and enter *TAT and the following commands **in sequence**:

ENTRY	CONSOLE RESPONSE	ENTRY	CONSOLE RESPONSE
Access Code *TAT	All BLF LEDs=on	Key Strip 2 EXCL SRC	Associated LED=on, Others=off
BLF key	All BLF LEDs=off	Key Strip 2 EXCL DEST	Associated LED=on, Others=off
Dial key 1	ICI TIE=on, STAT RNG=on	Key Strip 2 VER/CRG	Associated LED=on, Others=off
Dial key 2	ICI CO =on, STAT BSY =on, Others=off	Key Strip 2 OVERFLOW	Associated LED=on, Others=off
Dial key 3	ICI WAT=on, STAT FWD=on, Others=off	Key Strip 2 CONF	Associated LED=on, Others=off
Dial key 4	ICI FX =on, STAT DND =on, Others =off	Key Strip 2 BUZZ	Associated LED=on, Others=off
Dial key 5	ICI INT=on, STAT RST =on, Others =off	Key Strip 2 SPARE	Associated LED=on, Others=off
Dial key 6	ICI RCL=on, STAT HNT=on, Others=off	Key Strip 2 POS BSY	Associated LED=on, Others=off
Dial key 7	ICI OPR=on, STAT VCT=on, Others=off	Key Strip 2 NITE	Associated LED=on, Others=off
Dial key 8	ICI TIM =on, STAT TLK=on, Others=off	Dial key 1	TGB 0=on SRC COS DEST=1 BLF indication 1
Dial key 9	ICI SER=on, Others =off	Dial key 2	TGB 1=on – – 12 " " 2
Dial key 0	ICI HLD=on, Others =off	Dial key 3	TGB 2=on – – 123 " " 3
Dial key *	ICI LN1=on, Others =off	Dial key 4	TGB 3=on – 1 234 " " 4
Dial key #	ICI LN2=on, Others =off	Dial key 5	TGB 4=on – 12 345 " " 5
Key Strip 1 RLS	Associated LED=on, Others=off	Dial key 6	TGB 5=on 1 23 456 " " 6
Key Strip 1 LPK 1	Associated LED=on, Others=off	Dial key 7	TGB 6=on 12 34 567 " " 7
Key Strip 1 LPK 2	Associated LED=on, Others=off	Dial key 8	TGB 7=on 123 45 678 " " 8
Key Strip 1 LPK 3	Associated LED=on, Others=off	Dial key 9	TGB 8=on 888 88 888 " " 9
Key Strip 1 LPK 4	Associated LED=on, Others=off	Dial key 0	TGB 9=on off off off " " 0
Key Strip 1 PAGE	Associated LED=on, Others=off	Dial key *	All LEDs=off, Busy tone via handset
Key Strip 1 JOIN	Associated LED=on, Others=off	Dial key #	Buzzer via speaker (check volume control)
Key Strip 1 SP DIAL	Associated LED=on, Others=off	RLS SRC key	MIN ALM=on, Others=off
Key Strip 1 SER CALL	Associated LED=on, Others=off	RLS DEST key	MDR LED=on, Others=off
Key Strip 1 MSG	Associated LED=on, Others=off	DIS TOD key	CW LED=on, Others=off
Key Strip 2 HOLD	All LEDs=off	RLS key	End of Test, Console = Nite

NOTE:

- [CTRL] [X] = Ignore line entered
- [CTRL] [H] = Backspace
- [DEL] = TTY = REQ
- [DEL] [DEL] = Abort program

TABLE AD

Procedure — Peripheral Equipment Diagnostic Procedure

Authorization Procedure must be completed. If an "OK" response is received, proceed as follows:

ITEM	PROMPT	USER ENTRY	NOTE
	OK	TPER	
— DISK LOADING —			
	REQ		1
— EXECUTE —			
	REQ		1

NOTE 1—The following User Entries are inputted as required after each REQ prompt.

TABLE AD-1 TRUNK STATUS ENTRIES

ENTRY	DESCRIPTION	RESPONSE	
DSCDXXX	Disable PCB XXX immediately	PCB disabled, FALT LEDs on	
DSTKNNX	Disable Trunk NNX*	TRK disabled, FALT LED on, REQ prompted	
DSLNNX	Disable Line Circuit NNX*	Line disabled, FALT LED on, REQ prompted	
ENCDXXX	Enable PCB XXX	PCB enabled, FALT LEDs off, REQ prompted	
ENTKNNX	Enable Trunk NNX*	Trunk enabled, FALT LED off if all circuits are enabled, REQ prompted	
ENLNNX	Enable Line NNX*	Station line enabled, FALT LED off if all circuits are enabled, REQ prompted	
DSRCNNX	Disable RCVR NNX*	RCVR disabled, FALT LED on, REQ prompted	
ENRC00X	Enable RCVR Circuit 00X*	RCVR enabled, FALT LED off if all circuits are enabled, REQ prompted	
DSCIXXXX	Disable PCB XXXX when idle	Each port disabled when idle, FALT LEDs on	
LIPS	List all idle ports	Idle ports = LNNX, TNNX, etc, REQ prompted	
LBPS	List all busy ports	Busy ports = LNNX, TNNX, etc, REQ prompted	
LDPS	List all disabled ports	Disabled ports = LNNX, TNNX, etc, REQ prompted	
STLCNNX	Status of Line Ckt NNX*	Type (Note 1) 500/2500 EKT UNEQ UNAS	Status (Note 2) IDL BSY, DIS CBL DIS TTY DIS TLD REQ prompted
STTKNNX	Status of TRK Ckt NNX*	Type (Note 1) WAT FX TIE CO CCSA UNEQ UNAS	Status (Note 2) IDL BSY DIS TTY DIS TLD REQ prompted
STRCNNX	Status of RCVR 00X*	Status = IDL, BSY, DIS, ENEQ, UNAS, REQ prompted	
STCDXXX	Status of PCB XXX	Circuit #1 = same as STLC, STTK, STRC	
		Circuit #2 = same as STLC, STTK, STRC	
		Circuit #3 = same as STLC	
		Circuit #4 = same as STLC, REQ prompted	

*NN = PCB number, X = Circuit number.

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TABLE AD-1 (con't)

ENTRY	DESCRIPTION	RESPONSE		
		System	User	Note
CALL TNNX	Set up monitor link using TNNX.	WAIT	[CR]	4
		STS TLK . . . or STS WAIT . . . or STS OVR	Auto advance to DN prompt [CR] [DEL] [CR]	5 6
		DN	DN [CR]	7
		DDL	[CR]	8
		STS TLK . . . or STS RLSA . . . or STS DDL	Auto advance to TRK prompt Auto return to REQ prompt [CR]	9 10 11
		TRK	CALL TNNX	12
		WAIT	[CR]	4
		STS TLK . . . or STS RLSA . . . or STS BSY . . . or STS OVR	Auto advance to DN prompt Auto return to REQ prompt Auto return to TRK prompt Auto return to TRK prompt	13 10 14 15
		DN	DN [CR]	16
		DDL	[CR] when test is complete	17
		STS TLK . . . or STS RLSA . . . or STS RLSB . . . or STS DDL	Auto return to TRK prompt Auto return to REQ prompt Auto return to TRK prompt [CR]	18 10 19 20

NOTES:

1. Type: UNEQ = No PCB in that position
UNAS = PCB is equipped but no data is assigned
2. Status: IDL = Idle
BSY = Busy
DIS TTY = Manually disabled via TTY
DIS CBL = EKT port disabled by software due to open cable
DIS TLD = Software disabled due to traffic load (indicates faulty PCB)
3. [CTRL] [X] = Ignore line entered
[CTRL] [H] = Backspace
[DEL] = Stop printing and return to REQ
[DEL] [DEL] = Abort program
4. [CR] is required to advance program.
5. Requested trunk (A) is busy. Enter [CR] to try again.
6. Requested trunk (A) does not exist in the system. Enter [DEL] [CR] to return to REQ prompt.
7. Enter the test center DN followed by [CR].
8. Allow time for completion of dialing and then enter [CR].
9. Dialing is complete, program advances to TRK prompt.
10. Trunk A (monitor link) has been released due to a malfunction or an outside influence, such as the distant end going on-hook (Ground Start).
11. Dialing was not complete when [CR] was entered. A second [CR] is required.
12. Enter the port number (TNNX) of the trunk (B) to be tested.
13. Requested trunk was idle and has been siezed.
14. Requested trunk (B) is busy.
15. Requested trunk (B) does not exist in the system.
16. Enter the DN that should be dialed by the trunk under test followed by a [CR].
17. After the dialing is complete, the audio from the trunk under test will be heard via the monitor link. Enter [CR] when the test is complete.
18. Test has ended. Program automatically returns to TRK prompt to permit another trunk to be selected.
19. The trunk under test (B) was released due to a malfunction or outside influence, such as the distant end going on-hook (Ground Start).
20. [CR] was entered while Trunk B was still dialing. See note 17.

TABLE AE
DISK DRIVE OPERATION ERROR CODES

Error Codes

Program Name: Floppy Disk Drive Error	
Error Code	Meaning
ERFD 01	File is closed.
ERFD 02	Read error.
ERFD 03	Write error.
ERFD 04	Directory is full.
ERFD 05	Disk is full.
ERFD 06	End of file error.
ERFD 07	Disk drive is not ready.
ERFD 08	Incorrect version number.
ERFD 09	File is write protected.
ERFD 10	File not found.
ERFD 11	Volume not initialized.
ERFD 12	File already exists.
ERFD FF	Other hardware causing the error.

APPENDIX #1

SYSTEM RECORD

SYSTEM DATA BLOCK (DSYS PROGRAM)

ITEM	PROMPT	ENTRY
	REQ	CHG
Time of Daily Routine	TOR	
Daily Routine Tasks	DRT	
Tenant Service?	TEN	
Intercept #1	ICP1	
Intercept #2	ICP2	
Intercept #3	ICP3	
All Page Access Code	APG	
Not Used	AAT	[CR] *
Not Used	APX	[CR] *
Listed Directory Number #1	LN1	
Listed Directory Number #2	LN2	
LDN #1 Night Number	NT1	
LDN #2 Night Number	NT2	
Busy Lamp Field #1	BLF1	
Busy Lamp Field #2	BLF2	
Overflow DN - Attendant Console #0	OFL1	
Overflow DN - Attendant Console #1	OFL2	
Message Center - Tenant #0	MC0	
Message Center - Tenant #1	MC1	
Meet-me Page DN	MMP	
Remote Access DN	REM	
Remote Access Change Code	RAC	
" * " Access Code	ACC *	
" # " Access Code	ACC #	
Camp-on (or CWT) Time-out	COT	
Ring No Answer Time-out	RNA	
Attendant Overflow Time-out	AOF	
Call Forward No Answer Time-out	CFD	
Hold (500/2500) Time-out	HLD	
Dial Pulse Time-out	DPT	
Push-button Time-out	PBT	
Line Lock-out Time-out	LLO	
Automatic Callback Reserve Time	ACB	
Handsfree Answerback-station	HFS	
Handsfree Answerback-attendant	HFA	
SMDR Equipped	MDR	

*[CR] = Depress Carriage Return

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EKT DATA BLOCK (DEKT Program) PCB Location (L)

ITEM	PROMPT	ENTRY							
	REQ								
Port Number	POR								
Number of Key Strips	KS								
Class Of Service	COS								
Tenant Number	TEN								
Call Pick-up Group	PUG								
Warning Tone Allowed?	WTA								
Call Forward to Trunk?	CFT								
Toll Allowed?	TOL								
Not Used	MTA	N	N	N	N	N	N	N	N
HFA Equipped?	HFA								
Not Used	DIS	N	N	N	N	N	N	N	N
Prime DN only!	KEY 0								
	KEY 1								
	KEY 2								
	KEY 3								
	KEY 4								
	KEY 5								
	KEY 6								
	KEY 7								
	KEY 8								
	KEY 9								
	KEY 10								
	KEY 11								
	KEY 12								
	KEY 13								
	KEY 14								
	KEY 15								
	KEY 16								
	KEY 17								
	KEY 18								
	KEY 19								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY							
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class Of Service	COS								
Tenant Number	TEN								
Call Pick-up Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk?	CFT								
Toll Allowed?	TOL								

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY							
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class Of Service	COS								
Tenant Number	TEN								
Call Pick-up Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk?	CFT								
Toll Allowed?	TOL								

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY							
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class Of Service	COS								
Tenant Number	TEN								
Call Pick-up Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk?	CFT								
Toll Allowed?	TOL								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

- NOTES:**
1. Use one column for each station list.
 2. Use multiple columns for system list.
 3. Use multiple sheets as required.

Sheet _____ of _____

SMDR DATA BLOCK (DMDR Program)

ITEM	PROMPT	ENTRY
	REQ	
Account Code Length	ACL	
Special Common Carrier	SPCC1	
Special Common Carrier	SPCC2	
Trunk Group	TGP	

**TRAFFIC MEASUREMENT DATA BLOCK
(DTRF Program)**

ITEM	PROMPT	ENTRY
	REQ	
System Date	SYST. DATE MMDDYY	
System Time	SYST. TIME HHMMSS	
Schedule	SCH	
Start Date	STR DATE MMDDYY	
Start Time	STR TIME HHMM	
Report	RPT	
	SYST	
	ATT0	
	ATT1	
	TGP00	
	TGP01	
	TGP02	
	TGP03	
	TGP04	
	TGP05	
	TGP06	
	TGP07	
	TGP08	
	TGP09	
	TGP10	
	TGP11	
	TGP12	
	TGP13	
	TGP14	
	TGP15	

ATTENDANT DATA BLOCK (DATT Program)

ITEM	PROMPT	ENTRY	
		ATT 0	ATT 1
	REQ		
Attendant Number	ANO	0	1
Port Number	POR	L001	L121
Lockout Allowed?	LKO		
Page Key	PAG		

DTMF RECEIVER DATA BLOCK (DRCV Program)

ITEM	PROMPT	ENTRY					
	REQ						
Port Number	POR						

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: CO/FX									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								
Code Restriction List	CRL								

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: CO/FX									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								
Code Restriction List	CRL								

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: WATS									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: TIE/CCSA									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Class Of Service	COS								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Incoming Absorb Digits	IAB								
Digits Inserted Incoming	INS								
Toll Allowed?	TOL								

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: PVL (Private Line)									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Incoming/Outgoing	IAO								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								

TRUNK GROUP DATA BLOCK (DTGP Program)

TRUNK TYPE: DID									
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Class Of Service	COS								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								
Incoming Absorb Digits	IAB								
Digits Inserted Incoming	INS								
Code Restriction List	CRL								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: CO/FX/WATS		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Night Number	NIT								
Signalling	SIG								
Disconnect Supervision	DIS								
Dialing Outgoing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: TIE/CCSA		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Signalling	SIG								
Disconnect Supervision	DIS								
Control of Disconnect	CTL								
Incoming Dialing	DIN								
Dialing Outgoing	DOT								
Answer Supervision	ANS								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: PVL (Private Line)		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Trunk DN	TDN								
Signalling	SIG								
Disconnect Supervision	DIS								
Dialing Outgoing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: DID		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Signalling	SIG								
Disconnect Supervision	DIS								
Control of Disconnect	CTL								
Incoming Dialing	DIN								
Dialing Outgoing	DOT								
Answer Supervision	ANS								

NOTE: Use multiple sheets as required.

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Perception

OPERATING PROCEDURES

Perception

OPERATING PROCEDURES

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01 GENERAL

01.00.0 Summary Description

01.00.1 *Perception* employs stored program control, digital switching and custom LSI circuitry.

01.00.2 Utilizing the same electronic key telephone as the latest Toshiba *Strata* Electronic Key Telephone systems, *Perception* combines the functions of conventional private branch exchange (EPABX) systems and electronic key telephone systems (EKTS) into a single design while remaining compatible with existing switching and station equipment.

01.00.3 *Perception* has a capacity of 120 stations and 32 trunks. The system provides a wide variety of basic and optional features to users of either conventional rotary dial or touch-tone telephones, as well as to users of Toshiba electronic key telephones.

01.00.4 Three different electronic key telephones (EKTs) are available with this system. See Paragraph 03, Electronic Key Telephone Operations, for details on the EKTs.

01.00.5 The *Perception* Attendant Console's digital display provides the operator with all the information required for easy operation. Two attendant consoles may be equipped in the system.

TABLE A TELEPHONE TONES Call Progress Tones

Dial	Standard tone—continuous, proceed to dial.
Recall Dial	Standard tone—three short pulses followed by a continuous tone, proceed with feature execution.
Busy	Standard tone—60 pulses per minute; the connection or trunk line you've dialed is busy.
Overflow	Same as busy tone—120 pulses per minute; call is blocked due to dialing error or service restrictions.
Ringing	Standard tone—1 second on, 3 seconds off, your call is ringing.

Special Signal Tones (while the EKT/telephone is in use)

Camp-on*	A single muted warning tone during conversation indicates a call is waiting.
Call Waiting*	Two short warning tones during conversation indicates a call is waiting.
Attendant Verification-Executive Override	A short tone burst (repeated every 15 seconds) is applied whenever the attendant enters the conversation, and when a station user enters your conversation using the Executive Override feature.

Ringing Signals**

Internal Call	A single ring every 4 seconds.
External Call	A double ring at 4-second intervals.

*On an EKT these special signal tones are heard via the speaker.

**On an EKT these ringing signals are heard via the speaker.

**OPERATING PROCEDURES
SECTION 100-100-400
MAY 1984**

02

STANDARD TELEPHONE OPERATION

02.00.0 General Information

02.00.1 Dial tone must be heard before selecting a particular feature. If you have just lifted the handset, you will hear dial tone. If you are engaged in a conversation, however, you must obtain "Recall Dial Tone" before activating another feature, such as transfer, etc.

02.00.2 During a conversation, Recall Dial Tone is obtained by "flashing" the hookswitch (plunger) located in the cradle that holds your handset. To flash, momentarily depress the hookswitch (for about 1/2 second). In response, you will hear Recall Dial Tone, which is three short bursts of dial tone, followed by continuous dial tone.

02.10.0 Making Calls

02.10.1 To call another station:

- 1) Lift the handset.
 - You will hear dial tone.
- 2) Dial the station's number.
 - You will hear the call progress tones.
- 3) Hang up when the call is completed.

02.10.2 To make an outgoing call:

- 1) Obtain dial tone.
- 2) Dial the required trunk access code.

Trunk Access Codes: _____

- You will hear outside dial tone.

- 3) Dial the desired telephone number.

02.11.0 Holding Calls

02.11.1 To hold a call:

- 1) Flash the hookswitch.
 - You will hear recall dial tone.
 - Connection on hold.
- 2) Dial *3.
 - Hear dial tone.
- 3) Hang up or dial another call.

02.11.2 To reconnect the call:

- 1) Lift the handset.
- 2) Dial *3.

NOTE:

If you do not return to the call within a programmed time period, your telephone will ring to recall you.

02.12.0 Consultation Call

02.12.1 This feature enables you to consult with either an inside or outside line while you hold another call.

02.12.2 To consult:

- 1) Flash the hookswitch.
 - Original connection goes on hold.
 - You will hear recall dial tone.
- 2) Dial the desired number*.

02.12.3 To return to original connection:

- 1) Flash the hookswitch **twice**.
 - The first flash will actually conference all three lines.
- 2) Resume conversation.

***NOTES:**

1. *If you hear a busy tone after dialing the station number or trunk access code, flash the hookswitch **once** to return to the original call.*
2. *To return to the original call after accessing a trunk, flash the hookswitch **twice**.*

02.13.0 Call Transfer

02.13.1 To transfer a call:

- 1) Request the party to wait.
- 2) Flash the hookswitch.
 - Original connection goes on hold.
 - You will hear recall dial tone.
- 3) Dial the desired number*.
- 4) When the called party answers, announce the call.
- 5) Hang up to transfer the call.

***NOTES:**

1. *If you hear a busy tone after dialing the station number or trunk access code, flash the hookswitch **once** to return to*

the original call.

2. *To return to the original call after accessing a trunk, flash the hookswitch twice.*

02.14.0 Conferencing

02.14.1 It is possible to add a third party to an existing two-party conversation, and the added party can be on either a station or an outside line. Any of the three parties may disconnect at any time, leaving the remaining two parties connected. (The system will refuse to connect certain types of trunk lines.)

02.14.2 To initiate a conference:

- 1) Flash the hookswitch.
 - Original connection on hold.
 - You will hear recall dial tone.
- 2) Dial the desired number*.
- 3) Flash the hookswitch when the new party answers.
 - 3-party conference commences.

02.14.3 To return to the original connection:

- 1) Flash the hookswitch.
 - The third party will be released and the original connection will remain.

***NOTES:**

1. *If you hear a busy tone after dialing the station number or trunk access code, flash the hookswitch once to return to the original call.*
2. *To return to the original call after accessing a trunk, flash the hookswitch twice.*

02.15.0 Camp-on Calls

02.15.1 A short warning tone while you are talking with someone advises you that an incoming call has been parked at your station by the attendant.

02.15.2 To accept a camp-on call:

- 1) Complete the original call and hang up.
 - Your telephone will ring.
- 2) Answer the new call.

NOTE:

Camp-on and Call Waiting are mutually exclusive.

02.16.0 Call Waiting

02.16.1 Two short warning tones while you are talking with someone advise you that your attendant has an outside call waiting. You have three choices:

- 1) Ignore the call—it will be returned to the attendant.
- 2) Terminate your existing call, and accept the new call.
- 3) Hold the existing call, and accept the new call. In this mode, it is possible to alternate between the two calls until the conversations are terminated.

02.16.2 To accept the waiting call and terminate the existing call:

- 1) Hang up.
 - Your telephone will ring in the usual manner.
- 2) Answer the new call.

02.16.3 To accept the waiting call while holding the existing call:

- 1) Flash the hookswitch.
 - Original connection goes on hold.
 - You will hear recall dial tone.
- 2) Dial .
- You will be connected to the waiting call.

02.16.4 To return to the original call:

- 1) Flash the hookswitch.
 - New call goes on hold.
- 2) Talk to the original call.

NOTE:

It is possible to alternate between the two calls indefinitely by successive hookswitch flashes.

02.16.5 To disconnect one call and remain connected to the other call:

- 1) Hang up while connected to the call you wish to terminate.
 - Your telephone will ring.
- 2) Answer the remaining call.

NOTE:

Camp-on and Call Waiting are mutually exclusive.

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02.17.0 Automatic Callback

02.17.1 If you attempt to call another station or access a trunk and receive a busy tone, you can request to be signalled when the desired station or trunk is idle. You may continue to use your telephone in the usual manner while awaiting a callback.

02.17.2 To activate Automatic Callback:

- 1) Flash the hookswitch.
- 2) Dial *7.
 - You will hear recall dial tone.
- 3) Hang up and wait for callback, or dial another call.

02.17.3 When the desired connection becomes idle your telephone will ring in short bursts. You must pick up the call within six seconds or your request will be cancelled.

02.17.4 To answer Automatic Callback:

Lift the handset.

- a) If the called party is a trunk, you will hear an outside dial tone (proceed to dial).

NOTE:

If the call was made using Least Cost Routing, the called number will be dialed automatically at this point.

- b) If the called party is a station, that station will ring and you will hear the ringback tone.
- c) If you hear overflow tone, the station or trunk you called has been previously called, hang up and wait to be called again.

02.17.5 To cancel Automatic Callback:

- 1) Lift the handset.
- 2) Dial *7.
 - You will hear recall dial tone.
 - Callback is cancelled.

02.18.0 Call Pick-up Directed

02.18.1 Call Pick-up Directed allows you to answer a call which is ringing or on hold at a station other than your own.

02.18.2 To use Call Pick-up Directed:

- 1) Obtain dial tone.

- 2) Dial *6.

- 3) You will hear recall dial tone.

- 4) Dial the station number that is ringing/on hold.

- You will be connected to that call.

02.19.0 Call Pick-up Group

02.19.1 Call Pick-up Group allows you to answer a call that is ringing at a station within your designated group without knowing exactly which station number is ringing.

02.19.2 To use Call Pick-up Group:

- 1) Obtain dial tone.

- 2) Dial *4.

- You will be connected to any call that is ringing at any station in your group.

02.20.0 Call Forwarding

02.20.1 Call Forwarding enables you to direct all of your station's incoming calls to another station.

02.20.2 To use Call Forwarding:

- 1) Obtain dial tone.

- 2) Dial *9.

- You will hear recall dial tone.

- 3) Dial the number to which calls are to be forwarded.

- 4) Dial #.

- You will hear dial tone.
- The number is stored.

NOTE:

You may continue to place outgoing calls from your telephone while Call Forwarding is in effect.

02.20.3 To cancel Call Forwarding:

- 1) Obtain dial tone.

- 2) Dial *9.

- Call Forwarding is cancelled.

02.21.0 Universal Night Answer

02.21.1 To answer an incoming call when the night bell is heard:

- 1) Obtain dial tone.

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- 2) Dial [*]1.
 - You will be connected to the incoming call.
- 3) Speak to the caller.
- 4) Use Call Transfer to connect the call with the desired station.

02.22.0 Paging

02.22.1 To page:

- 1) Obtain dial tone.
- 2) Dial the access code (see below) for the desired zone.

Paging Access Codes

(location)

ZONE 1	_____	_____
ZONE 2	_____	_____
ZONE 3	_____	_____
ZONE 4	_____	_____
ZONE 5	_____	_____
ALL ZONE	_____	_____

- 3) Speak slowly and distinctly, and repeat your message.

02.23.0 Meet-me Page

02.23.1 This feature will automatically connect you to a call that has been "parked" for you by the operator. If you are away from your telephone, the operator may park the call and direct you via the page system to dial an access code.

02.23.2 To answer a Meet-me Page:

- 1) Obtain dial tone at any telephone.
- 2) Dial the access code given by the operator.
 - You will be connected to the caller immediately.

02.24.0 Speed Dial-System

02.24.1 As many as 90 telephone numbers can be stored in your Speed Dial-System directory.

02.24.2 To use Speed Dial-System:

- 1) Obtain dial tone.
- 2) Dial [#]6.
- 3) Dial the SDS address code (10 ~ 99).
 - The system will dial the stored number.

02.24.3 To store or change a telephone number:

Notify the attendant (the Speed Dial-System directory is controlled by the attendant console).

02.25.0 Speed Dial-Station

02.25.1 If your telephone is equipped with Speed Dial-Station, you can establish a personal directory of up to 10 telephone numbers.

02.25.2 To use Speed Dial-Station:

- 1) Obtain dial tone.
- 2) Dial [#]3.
- 3) Dial the Speed Dial address code (0 ~ 9).
 - The system will dial the stored number.

02.25.3 To store or change address codes:

NOTE:

A Speed Dial-Station directory may be shared by several stations. However, only one of these stations is designated as the controller, and only the controller can store or change numbers.

- 1) Obtain dial tone.
- 2) Dial [#] [#]3.
 - You will hear recall dial tone.
- 3) Dial the assigned single-digit code (0 ~ 9).
- 4) Dial the number to be stored (16 digits maximum).

NOTE:

It may be necessary to insert a pause to allow for dial tone delay. If so, depress the [] key after the trunk access code.*

- 5) Dial [#].
 - You will hear recall dial tone.
 - Number is stored.

02.26.0 Repeat Last Number Dialed

02.26.1 The system automatically stores the last number you dialed. Therefore, if you reach a busy number or no answer, and wish to try again, simply request the system to redial the number.

02.26.2 To redial the last number:

- 1) Obtain dial tone.

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- 2) Dial **#7**.
- The system will automatically redial the number.

02.27.0 Executive Override

02.27.1 Executive Override allows you to enter an established conversation. The original parties receive a warning tone prior to you being conferenced.

02.27.2 To override a busy station:

- 1) After reaching the busy line, flash the hook-switch.
 - Busy tone changes to recall dial tone.
- 2) Dial ***0**.
 - A warning tone is given to the existing connection.
 - A 3-way conference now exists (any one of the parties can leave the conference and the other two will remain connected).

NOTE:

A short tone will be heard every 15 seconds by all parties during the override condition.

02.28.0 Least-Cost Routing

02.28.1 *Perception* will automatically select the least costly route (trunk group) for the call that you wish to make. If that route is busy, the next best route will be selected (if permitted by your class of service).

02.28.2 To use Least-Cost Routing:

- 1) Obtain dial tone.
- 2) Dial the LCR access code _____.
- 3) Dial the number you wish to call.
 - a) If a trunk allowed by your Class of Service is available:
 - i) Your call will be dialed automatically over the proper trunk.
 - ii) You will hear call progress tones.
 - iii) Proceed with conversation when the party answers.

NOTE:

As a programmable option you will receive a 1-sec. duration warning tone just prior to the system advancing to the last choice routing.

- b) If no trunks are available:

- i) You will hear busy tone.
- ii) Activate the Automatic Callback feature.

02.29.0 Account Number Recording

02.29.1 Your system automatically records the details of some or all of the calls you make to or receive from outside the system. Recorded calls may be assigned account numbers for billing purposes (_____ digits).

02.29.2 To record an account number before dialing a call:

- 1) Obtain dial tone.
- 2) Dial **#9**.
- 3) Dial the account number on the dial pad (_____ digits).
 - When the number is completed, you will hear dial tone again.
- 4) Dial the call in the usual manner.

02.29.3 To record an account number during a call (incoming or outgoing)—At any time before disconnect...

- 1) Ask your party to wait.
- 2) Flash the hookswitch.
 - Connection on hold.
 - You will hear recall dial tone.
- 3) Dial **#9**.
 - You will hear recall dial tone.
- 4) Dial the account number on the dial pad (_____ digits).
 - When the number is completed, you will hear recall dial tone again.

- 5) Flash the hookswitch.
- 6) Resume conversation.

02.30.0 Do Not Disturb

02.30.1 This feature allows a station to give a busy indication whenever the user does not wish to be disturbed.

02.30.2 To activate DND:

- 1) Obtain dial tone.
- 2) Dial **#2**.

3) Hang up.

02.30.3 To cancel DND:

- 1) Obtain dial tone.
- 2) Dial .
- 3) Hang up.
 - Do Not Disturb feature is no longer active.

NOTE:

Outgoing calls and features will still function while telephone is in the DND mode. To all incoming features the telephone will appear to be busy.

02.31.0 Message Waiting

02.31.1 This feature allows the attendant or other Message Center to inform a station user that there is a message waiting. Your station will receive a double ring every 20 minutes.

02.31.2 To cancel Message Waiting:

- 1A) Obtain dial tone.
- 2A) Dial the Message Center.
- 3A) Collect message(s).
- 4A) Hang up.
... or ...
- 1B) Obtain dial tone.
- 2B) Dial .
- Message waiting cancelled.
- 3B) Hang up.

NOTE:

If you go off-hook while your station is being signalled by the message waiting feature, you will be connected automatically to the Message Center.

03 EKT OPERATION

03.00.0 General Information

03.00.1 All *Perception* electronic key telephones (EKT) have been designed to provide easy access to the wide range of features offered by the Toshiba telephone system. Each is equipped with a push-button dial pad, speaker, three or four fixed feature keys (depending on equip-

ped model), and either 10 or 20 flexible assignment keys (hence the identification of 10-key "S" model, 10-key and 20-key).

03.00.2 All the feature keys are plainly marked as to their purpose: the three or four keys (depending on model) positioned horizontally have fixed assignments: turns speaker on and off in speakerphone mode (if equipped); * (if equipped) mutes the microphone during the speakerphone mode; is used to transfer and conference calls; and the key holds calls (the remaining 10 or 20 keys are assigned flexibly).

*See Paragraph 03.00.6.

- The basic *Perception* EKT (identified herein as an "S" model) is not a Speakerphone, as it is not equipped with a microphone. Paging, however, may be heard via its speaker, and on-hooking dialing is still in effect. It is equipped with 10 keys that may be assigned as directory number (DN) pickups or as access keys to any of the station custom calling features.
- The basic *Perception* Speakerphone EKT is a 10-key, with 10 keys that may be assigned as directory number (DN) pickups or as access keys to any of the station custom calling features.
- The expanded 20-key Speakerphone EKT has an additional 10 keys that may be flexibly assigned as DN pickups or feature access keys.

03.00.3 All EKTs feature modular handset cords and are connected to the system via 4-conductor modular line cords.

03.00.4 The dial tone level on the "S" model EKT is controlled by a sliding volume control located on the face of the telephone. A 3-position switch on the bottom of the EKT adjusts ring tone and voice-announcement volume. On the Speakerphone EKTs, the voice and ring tone volume levels are controlled by separate volume controls located on the rear of the telephone. The control on the right-hand side adjusts speaker volume for dial tone and voice level; the left-hand side control adjusts ring tone and voice-announcement volume.

**TABLE B
EKT DN LED INDICATIONS**

*NOTE:
Several LED illumination states are used to indicate the status of a DN.*

LED Indication	DN Status
Flash	0.5-sec. on, 0.5-sec. off—indicates incoming call.
I-Use	2.0-sec. on, 0.125-sec. off, 0.125-sec. on, 0.125-sec. off—indicates a DN in use at your EKT.
On	Steady on—indicates a DN in use at another station.
I-Hold	0.05-sec. on, 0.05-sec. off—indicates a call on hold at your EKT.
Wink	0.375-sec. on, 0.125-sec. off—indicates a call on hold at another station.
Off	DN idle.

03.00.5 Dial tone must be heard before selecting a particular feature. If you have just lifted the handset (or depressed the [SPKR] key), you will hear dial tone. If you are engaged in a conversation, however, you must obtain "Recall Dial Tone" before activating another feature. During a conversation, Recall Dial Tone is obtained by either depressing the appropriate feature key or following the directions listed herein.

03.00.6 Your *Perception* EKT (depending upon model used) may be equipped with one or two LEDs on the horizontal key strip. All EKTs have an LED associated with the [SPKR] key, but some models also have an LED associated with the [MIC(MUTE)] key. Typically, this key is labeled "MIC" if it has an LED and "MUTE" if it does not. (For convenience, we shall use "MIC".)

- The [MIC] key cuts off the speakerphone's microphone for private conversations. The MIC LED indicates the status of the microphone:

LED	MICROPHONE
ON	ON
OFF	OFF

- The microphone and accompanying LED are always ON when the speakerphone is activated unless the [MIC] key is held down. The key is held down. The MIC LED and microphone will be OFF while the [MIC] key is depressed and return to ON when the key is released.

03.01.0 Making Calls

03.01.1 To call another station:

- 1) Obtain dial tone in one of the following ways:
 - a) Lift the handset—your prime DN line is selected automatically if it is idle (your prime DN line is on the bottom key in the row positioned vertically).
...or...
 - b) Lift the handset and depress a DN key.
...or...
 - c) For on-hook dialing, just depress a DN key—dial tone will be heard via the speaker. It is not necessary to lift the handset unless you wish to use it.
- 2) Dial the station's number.
 - You will hear the call progress tones.
- 3) Hang up when the call is completed.

03.01.2 To make an outgoing call:

- 1) Obtain dial tone.
- 2) Dial the required trunk access code.

Trunk Access Codes: _____

- You will hear outside dial tone.

3) Dial the desired telephone number.

03.02.0 Holding Calls

03.02.1 To hold a call:

- 1) Depress the **[HOLD]** key.
 - DN LED indication goes from I-use to I-hold.
 - Connection on hold.
- 2) Hang up.

03.02.2 To reconnect the call:

- 1A) Lift the handset.
 - If the on-hold call was on your prime DN key, you will be reconnected immediately.
 - DN LED indication goes from I-hold to I-use.
- 1B) Depress the DN key (this is necessary only for on-hold calls not on the prime DN key).
 - DN LED indication goes from I-hold to I-use.

03.03.0 Consultation Call

03.03.1 This feature enables you to consult with either an inside or outside line while you hold another call.

03.03.2 To consult:

- 1) Depress the **[CONF]** key.
 - Original connection on hold.
 - You will hear recall dial tone.
 - DN LED indication goes from I-use to I-hold.
- 2) Dial the desired number.

03.03.3 To return to original connection:

- 1) Depress the appropriate DN key.
 - DN LED indication goes from I-hold to I-use.
 - Third party is disconnected.
- 2) Resume conversation.

03.04.0 Call Transfer

03.04.1 To transfer a call:

- 1) Request the party to wait.
- 2) Depress the **[CONF]** key.
 - Original connection goes on hold.

- You will hear recall dial tone.
- The DN LED indication goes from I-use to I-hold.

3) Dial the desired number.*

4) When the called party answers, announce the call.

5) Hang up to transfer the call.

**If you hear a busy tone, return to the original party by depressing the DN key.*

03.05.0 Conferencing

3.05.1 Using the Conference **[CONF]** key, it is possible to add a third party to an existing two-party conversation. The added party can be on either a station or an outside line. It is possible for any of the three parties to disconnect at anytime, leaving the remaining two parties connected. (The system will refuse to connect certain types of trunk lines.)

03.05.2 To initiate a conference:

- 1) Depress the **[CONF]** key.
 - Original connection goes on hold.
 - You will hear recall dial tone.
 - The DN LED indication changes from I-use to I-hold.
- 2) Dial the desired number.
- 3) Depress the **[CONF]** key when the new party answers.
 - The DN LED indication changes from I-hold to I-use.
 - A 3-party conference commences.

03.05.3 To return to the original connection:

- 1) Depress the appropriate DN key.
 - The third connection will be released and the original connection will remain.

03.06.0 Privacy Release

03.06.1 By operating the Privacy Release **[PRS]** key, if equipped, you can allow another station user, who shares your DN appearance, to join an established conversation. A maximum of five conferees (station or trunk), including your own station, can be included in the conversation.

03.06.2 To release privacy:

- 1) Depress the **[PRS]** key.
 - The DN LED will begin to wink wherever it appears.

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- 2) The second station user depresses the appropriate DN key.
 - The DN LED will change to I-use rate at both stations.
 - The conference begins.
- 3) Repeat to add other stations.

NOTES:

1. *Anytime you release privacy, you can re-engage it immediately by depressing the DN key.*
2. *Any station that is a party to the conversation can release the privacy.*

03.07.0 Camp-on Calls

03.07.1 A short warning tone from your EKT speaker (while you are talking with someone) advises you that an incoming call has been parked at your station by the attendant.

03.07.2 To accept a camp-on call:

- 1) Complete the original call and hang up.
 - Your telephone will ring.
 - DN LED will flash.
- 2) Answer the new call.

NOTE:

Camp-on and Call Waiting are mutually exclusive.

03.08.0 Call Waiting

03.08.1 Two short warning tones from your EKT speaker and a flashing CWT LED advise you that your attendant has an outside call waiting. You have three choices:

- 1) Ignore the call—it will be returned to the attendant.
- 2) Terminate your existing call, and accept the new call.
- 3) Hold the existing call, and accept the new call. In this mode, it is possible to alternate between the two calls until the conversation(s) are terminated.

03.08.2 To accept the waiting call and terminate the existing call:

Hang up.

- The CWT LED will go off, and the new call will ring at your EKT in the usual manner.

03.08.3 To accept the waiting call while holding the existing call:

Depress the **CWT** key.

- The CWT LED lights steadily.
- The DN LED indicates I-hold.
- You will be connected to the waiting call.

03.08.4 To return to the original call:

Depress the appropriate DN key.

- The CWT LED starts to flash.
- The DN LED indicates I-use.

NOTE:

*It is possible to alternate between the two calls indefinitely by selecting either the **CWT** key or DN key.*

03.08.5 To disconnect one call and remain connected to the other call:

- 1) Hang up while connected to the call you wish to terminate.
 - The remaining call will appear, in the hold condition, at the DN key.
- 2) Depress the DN key.
 - You will be connected to the remaining call.

NOTE:

Camp-on and Call Waiting are mutually exclusive.

03.09.0 Automatic Callback

03.09.1 If you attempt to call another station or access a trunk and receive a busy tone, you can request to be signalled when the desired station or trunk is idle. You may continue to use your telephone in the usual manner while awaiting a callback.

03.09.2 To activate Automatic Callback:

- 1) Depress the **ACB** key.
 - You will hear recall dial tone.
 - The ACB LED lights.
- 2) Hang up and wait for callback, or dial another call.

03.09.3 When the desired connection becomes idle your telephone will signal once, the ACB LED will wink and the DN LED will flash. You must pick up the call within six seconds or your request will be cancelled.

03.09.4 To answer Automatic Callback:

Lift the handset.

- a) If the called party is a trunk, you will hear an outside dial tone (proceed to dial).

NOTE:

If the call was made using Least Cost Routing, the called number will be dialed automatically at this point.

- b) If the called party is a station, that station will ring and you will hear the ringback tone.
- c) If you hear overflow tone, the station or trunk you called has been previously called, hang up and wait to be called again.

03.09.5 To cancel Automatic Callback:

Depress the **[ACB]** key.

- ACB LED goes off.
- Callback is cancelled.

03.10.0 Call Pick-up Directed

03.10.1 The Call Pick-up Directed feature (**[CPD]** key or access code) allows you to answer a call which is ringing or on hold at a station other than your own.

03.10.2 To use Call Pick-up Directed:

- 1) Obtain dial tone.
- 2) Depress the **[CPD]** key or dial ***[6]**.
 - You will hear recall dial tone.
- 3) Dial the station number that is ringing/on hold.
 - You will be connected to that call.

03.11.0 Call Pick-up Group

03.11.1 The Call Pick-up-Group feature (**[CPG]** key or access code) allows you to answer a call that is ringing at a station within your designated group without knowing exactly which station number is ringing.

03.11.2 To use Call Pick-up Group:

- 1) Obtain dial tone.
- 2) Depress the **[CPG]** key or dial ***[4]**.
 - You will be connected to any call that is ringing at any station in your group.

03.12.0 Call Forwarding

03.12.1 The Call Forwarding feature (**[CFD]** key

or access code) enables you to direct all of your station's incoming calls to another station.

03.12.2 To utilize Call Forwarding:

- 1A) Depress the **[CFD]** key.
 - CFD LED will wink.
- 2A) Dial the number to which calls are to be forwarded.
- 3A) Depress the **[CFD]** key.
 - CFD LED will light steadily.

...or (if a **[CFD]** key is not provided)...
- 1B) Obtain dial tone.
- 2B) Dial ***[9]**.
 - You will hear recall dial tone.
- 3B) Dial the number to which calls are to be forwarded.
- 4B) Dial **#**.
 - You will hear dial tone.
 - The number is stored.

NOTE:

You may continue to place outgoing calls from your telephone while Call Forwarding is in effect.

03.12.3 To cancel Call Forwarding:

- 1A) Depress the **[CFD]** key.
 - The CFD LED will go off.
 - Call Forwarding is cancelled.

...or (if a **[CFD]** key is not provided)...
- 1B) Obtain dial tone and dial ***[*][9]**.
 - Call Forwarding is cancelled.

03.13.0 Universal Night Answer

03.13.1 To answer an incoming call when the night bell is heard:

- 1) Obtain dial tone.
- 2) Dial ***[1]**.
 - You will be connected to the incoming call.
- 3) Speak to the caller.
- 4) Use Call Transfer to connect the call with the desired station.

03.14.0 Paging

03.14.1 To page:

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- 1) Obtain dial tone.
- 2) Dial the access code (see below) for the desired zone.

Paging Access Codes
(location)

ZONE 1	_____	_____
ZONE 2	_____	_____
ZONE 3	_____	_____
ZONE 4	_____	_____
ZONE 5	_____	_____
ALL ZONE	_____	_____

- 3) Speak slowly and distinctly, and repeat your message.

03.15.0 Meet-me Page

03.15.1 This feature will automatically connect you to a call that has been "parked" for you by the operator. If you are away from your telephone, the operator may park the call and direct you via the page system to dial an access code.

NOTE:

You may continue to place outgoing calls from your telephone while Call Forwarding is in effect.

03.15.2 To answer a Meet-me Page:

- 1) Obtain dial tone at any telephone.
- 2) Dial the access code given by the operator.
 - You will be connected to the caller immediately.

03.16.0 Speakerphone (for EKTs so equipped)

03.16.1 To make an outside call with Speakerphone (on-hook dialing):

- 1) Leave the handset on-hook.
- 2) Depress your DN key or a private line key (if available).
 - The LED will flash at the I-use rate.
- 3) You will hear dial tone.
- 4) Dial the desired telephone number.
- 5) Speak at a normal voice level in the direction of the telephone.
- 6) Depress the **[SPKR]** key when the call is completed.

03.16.2 To receive an incoming call (on Speakerphone):

- 1) You will hear a ringing tone.
- 2) Leave the handset on-hook.
- 3) Depress the key of the DN or private line that is flashing.
 - The LED will flash at the I-use rate.
- 4) Speak at a normal voice level in the direction of the telephone.
- 5) Depress the **[SPKR]** key when the call is completed.

NOTES:

1. *To change from Speakerphone to handset, lift the handset.*
2. *To change from handset to Speakerphone:*
 - Depress and hold the **[SPKR]** key.
 - Return the handset to on-hook.
 - Release **[SPKR]** key.

03.17.0 Handsfree Answerback-/Speaker Cut-off

03.17.1 This programmable (depending upon EKT model) feature allows you to reply handsfree on voice page calls and (optionally) on the following types of calls:

- Station-to-station on standard DN keys
- Calls from the attendant console

NOTE:

If the Speaker Cut-off (SCO) feature is activated (SCO LED on), the Handsfree Answerback feature is disabled and all calls ring your telephone in the usual way.

03.17.2 To answer a call handsfree:

- 1) You will hear a single tone.
 - DN LED will indicate I-use.
 - SCO LED will flash.
 - SPKR LED will light.
- 2) Speak in the direction of the telephone.
- 3) Lift the handset if you wish to speak privately.

NOTE:

If the attendant is announcing an outside call and you do not pick up the handset, the handsfree connection will be broken when the attendant releases and the outside call will ring the DN key in the usual manner.

03.17.3 To activate Speaker Cut-off:

Depress the **[SCO]** key.

- SCO LED will go on.
- Call will now ring at your EKT.

03.17.4 To release Speaker Cut-off:

Depress the **[SCO]** key.

- SCO LED will go off.
- Handsfree Answerback is active

03.18.0 Voice Page

03.18.1 This feature allows you to be connected automatically to the speaker of a specific EKT.

03.18.2 To voice page:

- 1) Obtain dial tone.
- 2) Depress the appropriate voice page key.
 - You will hear one ring tone.
 - VP LED will flash once.
- 3) Make announcement.

NOTE:

If that person is busy on another DN or has SCO engaged, you will hear ring tone until answered. If that DN is busy, you will hear busy tone.

03.19.0 Speed Dial-System

03.19.1 As many as 90 telephone numbers can be stored in your Speed Dial-System directory.

03.19.2 To use Speed Dial-System:

- 1) Obtain dial tone.
- 2) Depress the **[SDS]** key or dial ***[6]**.
- 3) Dial the SDS address code (10 ~ 99).
 - The system will dial the stored number.

03.19.3 To store or change a telephone number:

Notify the attendant (the Speed Dial-System directory is controlled by the attendant console).

03.20.0 Speed Dial-Station

03.20.1 If your telephone is equipped with Speed Dial-Station, you can establish a personal directory of up to 10 telephone numbers.

03.20.2 To use Speed Dial-Station:

- 1) Obtain dial tone.
- 2) Depress the **[SDC]** or **[SDU]** key.

- 3) Dial the SD address code (0 ~ 9).
 - The system will dial the stored number.

03.20.3 To store numbers or change address codes:

NOTE:

A Speed Dial-Station directory may be shared by several stations. However, only one of these stations is designated as the controller, and only the controller can store or change numbers.

- 1) Leave the handset on-hook.
- 2) Depress the **[SDC]** key.
 - The SDC LED begins winking.
- 3) Dial the assigned single-digit code (0 ~ 9).
- 4) Dial the number to be stored (16 digits maximum).

NOTE:

*It may be necessary to insert a pause to allow for dial tone delay. If so, depress the **[*]** key after the trunk access code.*

- 5) Depress the **[SDC]** key.
 - The SDC LED goes off.
 - Number is stored.

03.21.0 Repeat Last Number Dialed

03.21.1 The system automatically stores the last number you dialed. Therefore, if you reach a busy number or no answer, and wish to try again, simply request the system to redial the number.

03.21.2 To redial the last number:

- 1) Obtain dial tone.
- 2) Depress the **[RND]** key or dial **#[7]**.
 - The system will automatically redial the number.

03.22.0 Automatic Dialing

03.22.1 The Automatic Dialing **[ADL]** key allows you to store and automatically dial any telephone number (up to 16 digits) by depressing a single key. The stored number can be a station number, access code, or outside number.

03.22.2 To dial a stored telephone number:

- 1) Obtain dial tone.
- 2) Depress the **[ADL]** key.
 - The telephone number will be dialed.

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03.22.3 To store a telephone number:

- 1) Leave the handset on-hook.
- 2) Depress the **[ADL]** key.
 - The ADL LED will wink.
- 3) Dial the telephone number to be stored (16 digits maximum).

NOTE:

*It may be necessary to insert a pause to allow for dial tone delay. If so, depress the **[*]** key after the trunk access code.*

- 4) Depress the **[ADL]** key.
 - ADL LED goes off and the telephone number is stored.

03.23.0 Manual Signalling

03.23.1 This feature allows you to signal a specific station.

03.23.2 To signal the station:

Depress the **[SIG]** key.

- The SIG LED will flash once.
- A single tone will be heard via the speaker of the called EKT.

03.24.0 Private Line

03.24.1 This feature allows an outside line to appear directly at a key on your telephone, thereby bypassing the attendant console.

03.24.2 To make a call on a private line:

- 1) Depress the **[PL]** key.
 - The PL LED lights.
 - You will hear outside dial tone.

2) Proceed to dial.

03.24.3 To receive a call on a private line:

- 1) The line will ring at your telephone.
 - The LED will flash.

2) Depress the **[PL]** key.

03.25.0 Executive Override

03.25.1 Executive Override allows you to enter an established conversation. The original connection receives a warning tone prior to you being conferenced.

03.25.2 To override a busy condition:

- 1) Depress the **[OVR]** key.

- The OVR LED will flash.
- A warning tone is given to the existing connection.

- 2) A 3-way conference now exists (any one of the parties can leave the conference and the other two will remain connected).

NOTE:

A short tone will be heard every 15 seconds by all parties during the override condition.

03.26.0 Least-Cost Routing

03.26.1 Perception will automatically select the least costly route (trunk group) for the call that you wish to make. If that route is busy, the next best route will be selected (if permitted by your class of service).

03.26.2 To use Least-Cost Routing:

- 1) Obtain dial tone.
- 2) Dial the LCR access code _____.
- 3) Dial the number you wish to call.
 - a) If a trunk allowed by your Class of Service is available:
 - i) Your call will be dialed automatically over the proper trunk.
 - ii) You will hear call progress tones.
 - iii) Proceed with conversation when the party answers.

NOTE:

As a programmable option you will receive a 1-sec. duration warning tone just prior to the system advancing to the last choice routing.

- b) If no trunks are available:
 - i) You will hear busy tone.
 - ii) Activate the Automatic Callback feature.

03.27.0 Account Number Recording

03.27.1 Your system automatically records the details of some or all of the calls you make to or receive from outside the system. Recorded calls may be assigned account numbers for billing purposes (_____ digits).

03.27.2 To record an account number before dialing a call:

- 1) Obtain dial tone.
- 2) Depress the **[CRG]** key or dial **#99**.

- 3) Dial the account number on the dial pad (____ digits).
 - When the number is completed, you will hear dial tone again.

- 4) Dial the call in the usual manner.

03.27.3 To record an account number during a call (incoming or outgoing without a **[CRG]** key)—At any time before disconnect...

- 1) Ask your party to wait.
- 2) Depress the **[CONF]** key.
 - Connection on hold.
 - You will hear recall dial tone.
- 3) Dial **[#][9]**.
 - You will hear dial tone.
- 4) Dial the account number (____ digits).
 - When the number is completed, you will hear recall dial tone again.
- 5) Depress the appropriate DN key.
- 6) Resume conversation.

03.27.4 To record an account number during a call (incoming or outgoing on an EKT with a **[CRG]** key)—At any time before disconnect...

- 1) Ask your party to wait.
- 2) Depress the **[CRG]** key.
 - Connection on hold.
 - DN LED indicates I-hold.
 - CRG LED illuminates.
- 3) Dial the account number (____ digits).
 - When number is completed, the call is reconnected automatically.
- 4) Resume conversation.

03.28.0 Do Not Disturb

03.28.1 This feature allows a station to give a busy indication whenever the user does not wish to be disturbed.

03.28.2 To activate DND:

- 1A) Depress the **[DND]** key.
 - DND LED illuminates.

...or...

- 1B) Obtain dial tone.

- 2B) Dial **[#][2]**.

- 3B) Hang up.

03.28.3 To cancel DND:

- 1A) Depress the **[DND]** key.
 - DND LED goes off.
 - Do Not Disturb feature is no longer active.

... or ...

- 1B) Obtain dial tone.

- 2B) Dial **[#][#][2]**.

- 3B) Hang up.
 - Do Not Disturb feature is no longer active.

NOTE:

Outgoing calls and features will still function while telephone is in the DND mode. To all incoming calls the telephone will appear to be busy.

03.29.0 Message Waiting

03.29.1 This feature allows the attendant or other Message Center to inform a station user that there is a message waiting. Your station will show the Message Waiting LED on or will receive a double ring every 20 minutes.

03.29.2 To obtain messages and cancel Message Waiting at the station:

- 1) Obtain dial tone.
- 2A) Depress the **[MSG]** key.
 - Automatically rings the Message Center.

... or ...

- 2B) Dial Message Center number.
 - Rings the Message Center.

- 3) Collect message(s).

- 4) Hang up.

03.29.3 To cancel Message Waiting at the station:

- 1A) While the EKT is idle depress the **[MSG]** key.
 - MSG LED goes off.
 - Message waiting is cancelled.

... or ...

- 1B) Obtain dial tone.

- 2B) Dial **[#][5]**.
 - Message waiting cancelled.

- 3B) Hang up.

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NOTE:

If you go off-hook while your station is being signalled by the Message Waiting feature, you will be connected automatically to the Message Center.

03.30.0 Message Center Operation

03.30.1 The following applies only if your EKT is designated as the Message Center.

03.30.2 To leave a message waiting signal:

- 1) Dial the appropriate station number.
- 2) If busy or no answer, depress **MSG** key.
 - MSG LED on (both stations).
 - The Message Center MSG LED goes off when the connection is broken.

03.30.3 To cancel message waiting by message center:

- 1A) Dial the appropriate station number.
- 2A) Depress **MSG** key.
 - MSG LED goes off (on both stations).

... or ...
- 1B) Dial **# # 5**.
 - All Message Waiting conditions are clear.

04 ATTENDANT CONSOLE

04.00.0 General Information

04.00.1 Your *Perception* attendant console has been designed to provide easy access to the wide range of features offered by your Toshiba telephone system. The console is equipped with a Display Panel, Keyboard, Volume Control, and either a handset or headset. A detailed description of the console features and operations is found in the following text.

04.10.0 Console Display Panel

04.10.1 The console display panel includes a Busy Lamp Field and the following displays: Incoming Call Identification, Calling Source Number, Class of Service, Call Destination Number, and Call Destination Status.

04.11.0 Busy Lamp Field

04.11.1 The Busy Lamp Field (BLF) displays 100 2-digit numbers (00 ~ 99), and is equipped with a "hundreds group" identifier that shows which group is currently being displayed. The display alternates between groups in response to

operations of the **BLF** key (located on the face of the console).

04.12.0 Incoming Call Identification

04.12.1 The Incoming Call Identification (ICI) display is a backlighted panel that indicates the type of call that is currently connected to a console Loop **LPK** key. Twelve different displays are possible:

TIE:	Tie trunk
CO:	CO trunk
WAT:	WATS trunk
FX:	Foreign exchange trunk
OPR:	Dial "O" call
RCL:	Recall
SER:	Serial call
HLD:	Held call recall
TIM:	Timed reminder (Camp-on, RNA, etc)
LN1:	DID call to listed directory number 1
LN2:	DID call to listed directory number 2
INT:	Intercept

04.13.0 Calling Source Number

04.13.1 The Source (SRC) display is a 3-character, 7-segment LED display that gives the attendant the number of the calling station or trunk.

04.14.0 Class of Service

04.14.1 Class of Service (COS) is displayed as a 2-character, 7-segment LED display, giving the attendant the Class of Service of the calling station or trunk.

04.15.0 Call Destination Number

04.15.1 The Destination (DEST) display is a 3-character, 7-segment LED display showing the station or trunk number called by the attendant.

04.16.0 Call Destination Status

04.16.1 The Status (STATUS) display is a back-lighted panel which indicates the status of the called station or trunk. Eight different displays are possible:

RNG:	Called station is ringing.
BSY:	Called station is busy.
DND:	Called station is in Do Not Disturb mode.
FWD:	Called station is forwarded to the number now displayed as DEST.

RST: Attempted connection is not allowed.
HNT: Called station was busy and hunting has occurred to the number now displayed as DEST.
VCT: Called number does not exist or is disabled.
TLK: Attendant is in a voice connection with the called party.

04.20.0 Console Keyboard

04.20.1 The console keyboard design includes a display window, two horizontal rows of 10 keys each, a 12-key dial pad, and a vertical row of four keys.

04.20.2 The faceplate display window houses the following displays:

a) Trunk Group Busy (TGB) provides 10 numbered LEDs to indicate the status of trunk groups 0 ~ 9.

b) ALARM LEDs for MAJOR, MINOR and MDR:

MAJOR: Alarm occurs when the system is not functional and is accompanied by an emergency transfer.

MINOR: Alarm indicates that either the system clock is not set or that there is a ringing power failure.

MDR: Alarm indicates a problem with external SMDR equipment.

c) Call Waiting (CW) LED indicates that an unanswered call is waiting for the attendant.

04.20.3 The lower horizontal row of keys are all equipped with LEDs and (reading from left to right) are labeled:

MSG: Activates Message Waiting feature if console is designated as the Message Center.

SER CALL: Activates Serial Call feature.

SP DIAL: Activates the Speed Dial-System feature.

JOIN: Connects two parties which have reached the attendant on two different **LPK** keys.

PAGE: Provides the attendant with a direct, push-to-talk access to one paging zone or All Page.

LPK 1 ~ 4: The four Loop Keys are used for answering and originating calls.

RLS: Releases the console from any type of connection.

04.20.4 The upper horizontal row of keys, with the exception of the **HOLD** key, are all equipped with LEDs and (reading from left to right) are labeled:

NITE: Activates the fixed, flexible and universal night answering features.

POS BSY: Used to "busy out" one position of a 2-console system.

SPARE: Reserved for future use.

BUZZ: Allows the attendant to select whether or not a signal tone will be heard during a Call Waiting condition.

CONF: Activates an attendant conference (up to 6 parties, including the attendant console).

OVERFLOW: Transfers waiting calls to an alternate answering point.

VER/CHG: Overrides a busy station, trunk or DND condition. It is also used to record an account number when extending a call.

EXCL DEST: Excludes destination party from a 3-way conversation.

EXCL SRC: Excludes the source party from a 3-way conversation.

HOLD: Holds calls connected to Loop keys.

04.20.5 The dial pad is of the standard 12-key alpha-numeric configuration and is used to dial both internal and outgoing calls from the console.

04.20.6 The four keys in the vertical row on the right of the console are not equipped with LEDs, and are labeled (from top to bottom):

DIS TOD: Displays the time and date from the system clock. While being displayed the clock can be corrected.

BLF: Used to alternate between the "hundreds groups" displayed on the console.

RLS SRC: Disconnects source party from a Loop key.

RLS DEST: Disconnects the destination party from a Loop key.

04.21.0 Volume Control

04.21.1 A volume control for the console tone signal is located on the rear of the console below the Busy Lamp Field housing.

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04.22.0 Handset/Headset

04.22.1 Your console may be used with either a handset or headset (whichever is the most comfortable and convenient for you to use), which may be plugged in on either side of the unit. Also, the handset cradle may be mounted on either side of the console.

04.23.0 Emergency Switches

04.23.1 Two switches are located on the underside of the console. These switches are for emergency use only and are labeled as follows:

- EMT: The Emergency Transfer switch allows the attendant to set the EMT circuits manually in the event of a system malfunction.
- INT: The Initialize switch is used to reset the system logic in the event of a system malfunction.

04.30.0 Console Operation

04.31.0 Incoming Call Handling

04.31.1 To answer an incoming call:

- 1) You will hear an incoming call signal.
 - ICI lights and SRC is displayed.
 - The LPK LED flashes.
- 2) Depress the appropriate [LPK] key.
 - The LPK LED lights and signalling stops.
- 3) You are connected to the call.
 - Make an appropriate response.

04.31.2 To extend a call to an idle directory number:

- 1) Dial the directory number.
 - The EXCL SRC LED lights steadily when the first digit is dialed.
 - The voice path to caller is broken.
 - DEST is displayed as digits are dialed.
 - STATUS displays RNG.
 - You will hear ring tone.
- 2) Depress the [RLS] key.
 - The LPK LED and all displays go off.
 - The RLS LED lights.
 - Console becomes idle.
 - Caller hears ring tone.

NOTES:

1. If you wish to announce the call, wait

for the called party to answer before depressing the [RLS] key.

2. *If the call remains unanswered after (_____) seconds, the call will be returned to your console as a Timed Recall.*

04.31.3 To extend a call to a busy directory number (with Camp-on/Call Waiting):

- 1) Dial the directory number.
 - The EXCL SRC LED lights steadily when the first digit is dialed.
 - The voice path to caller is broken.
 - DEST is displayed as digits are dialed.
 - STATUS displays BSY.
 - a) If you hear nothing (Camp-on), go to step 2.
 - b) If you hear ring tone (Call Waiting), go to step 4A.
 - c) If you hear busy tone, go to step 3B (it indicates that Camp-on/Call Waiting is not possible for one of the following reasons:
 - i) Another call is previously in Camp-on/Call Waiting (only one is allowed per station).
 - ii) Camp-on/Call Waiting is not permitted due to system restrictions (called station is dialing or in a conference call).
- 2) Depress the [EXCL DEST] key.
 - The EXCL DEST LED lights.
 - The EXCL SRC LED goes off.
 - You have a voice connection with the caller.

3A) If the caller wishes to wait:

- 4A) Depress the [RLS] key.
 - The LPK LED and all displays go off.
 - The RLS LED lights.
 - Console becomes idle.

NOTE:

If the call remains unanswered for (_____) seconds, the call will be returned to your console as a Timed Recall.

3B) If the caller does not wish to wait or if no Camp-on is allowed:

- 4B) Depress the [RLS DEST] key.
 - Called party is released from console.
 - DEST display is cleared.

- Another DN may be dialed, if requested.

5B) Depress the **[RLS]** key.

- The LPK LED and all displays go off.
- The RLS LED lights.
- Console becomes idle.

04.32.0 Timed Recall

04.32.1 If an extended call remains unanswered for (_____) seconds, the call will be returned to your console.

1) You will hear an incoming call signal.

- The ICI lights (TIM).
- SRC and DEST are displayed.
- The LPK LED flashes.
- STATUS is displayed:
RNG for ring—no answer.
BSY for Camp-on, Call Waiting.

2) Depress the appropriate **[LPK]** key.

- The LPK LED lights and signalling stops.

3) You are connected to the call.

- Make an appropriate response.

4A) If the calling party (SRC) wishes to wait:

5A) Depress the **[RLS]** key.

- The LPK LED and all displays go off.
- The RLS LED lights.
- Console becomes idle.

4B) If the calling party (SRC) does not wish to wait:

5B) Depress the **[RLS DEST]** key.

- The DEST and STATUS displays go off.
- Called station is released.
- Another DN may be dialed, if requested.

6B) Depress the **[RLS]** key.

- The LPK LED and all displays go off.
- The RLS LED lights.
- Console becomes idle.

04.33.0 Attendant Recall

04.33.1 A station user, while talking to another party, may recall the console for the purpose of asking the attendant to take a message or to "park" the call on a busy station.

1) You will hear an incoming call signal.

- ICI lights (RCL).
- SRC, COS, DEST are displayed.
- The LPK LED flashes.

2) Depress the appropriate **[LPK]** key.

- The LPK LED lights steadily.
- The EXCL SRC LED lights.
- Signal stops.
- STATUS displays TLK.
- You have a voice connection with the DEST party.
- SRC party is separated from the conversation.

3) Depress the **[RLS DEST]** key.

- The DEST party (recalling party) is disconnected.
- You have voice connection with the SRC party.

4) Process the call in the same manner as a newly answered call.

04.34.0 Originating a Call

04.34.1 To call a directory number:

1) Depress an idle **[LPK]** key.

- The RLS LED goes off.
- The LPK LED lights.

2) Dial the directory number.

- DEST is displayed as the digits are dialed.

3A) If the directory number is busy:

- STATUS displays BSY.
- You will hear busy tone.

3B) If the directory number is idle:

- STATUS displays RNG.
- You will hear ring tone.
- Party answers, STATUS changes to TLK.
- You have a voice connection with called party.

4) Depress the **[RLS]** key to terminate the call.

- The LPK LED and all displays go off.
- The RLS LED lights.
- Console becomes idle.

04.34.2 To call an outside number:

1) Depress an idle **[LPK]** key.

- The RLS LED goes off.
- The LPK LED lights.

2) Dial the desired trunk access code.

- DEST displays trunk number.

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- STATUS displays TLK.
 - You will hear trunk dial tone.
- 3) Dial the desired number.
- 4A) If the call is to be transferred to a directory number:
- a) Depress the **[LPK]** key.
 - b) Proceed as in Paragraph **04.31.2** or **04.31.3**.
- 4B) Depress the **[RLS]** key to terminate the call.
- The LPK LED and all displays go off.
 - The RLS LED lights.
 - Console becomes idle.

04.35.0 Holding a Call on a **[LPK] Key.**

04.35.1 In some cases you may wish to hold a call on an **[LPK]** key while you gather more information or page someone.

04.35.2 To hold a call:

Depress the **[HOLD]** key.

- LPK LED winks.
- RLS LED lights.
- All displays go off.
- Calling/called party on hold will hear MOH, if equipped.
- You are free to originate or answer calls on other **[LPK]** keys.

04.35.3 To reconnect:

Depress the appropriate **[LPK]** key.

- The LPK LED lights.
- The RLS LED goes off.
- ICI, SRC, COS, DEST, STATUS displays go on.
- You have a voice connection with the SRC (DEST) party.

04.36.0 Through Dialing

04.36.1 Requests may be received from stations or TIE line users for dialing access to numbers or trunks from which they are restricted.

- 1) You will hear an incoming call signal.
 - ICI lights (OPR).
 - SRC, COS are displayed.
 - The LPK LED flashes.
- 2) Depress the appropriate **[LPK]** key.
 - The LPK LED lights steadily.
 - Signal stops.
 - You have a voice connection with the

calling (SRC) party.

- 3) Dial the desired trunk access code.
 - The EXCL SRC LED lights steadily.
 - The outgoing trunk number is displayed as DEST.
 - STATUS displays TLK.
 - The voice connection with the calling party is broken.
 - You will hear trunk dial tone.
- 4) Depress the **[RLS]** key to terminate the call.
 - The RLS LED lights.
 - The calling (SRC) station may dial on the selected trunk

04.37.0 Trunk-to-trunk Call

04.37.1 A call from outside the system that has been answered at your console can be connected to an outgoing line.

04.37.2 To make a trunk-to-trunk call:

- 1) Dial the desired trunk access code.
 - The EXCL SRC LED lights.
 - Outgoing trunk number is displayed as DEST.
 - STATUS displays TLK.
 - You will hear trunk dial tone.
- 2) Dial the directory number.
- 3) Depress the **[RLS]** key.
 - RLS LED lights.
 - All displays go off.
 - The LPK LED goes off or winks (LPK on hold), depending on the type of trunk involved in the connection.

NOTE:

Some types of trunk lines give no signal when the distant party disconnects, and this makes automatic release of a trunk-to-trunk connection impossible. If you attempt to establish a connection between two such trunks, the connection will be made but the call will remain on the LPK in a "hold" condition. You will be required to enter the call periodically to verify its status and, ultimately, to disconnect it.

04.37.3 To re-enter a trunk-to-trunk call:

- 1) Depress the **[LPK]** key.
 - The LPK LED lights steadily.
 - ICI, SRC, DEST, STATUS displays go on.
 - A 3-way conversation is established.

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2A) If the conversation is still in progress:

- 3A) Depress the [RLS] key.
- The RLS LED lights.
 - All displays go off.
 - The LPK LED winks (LPK on hold).

2B) If the call has been completed:

- 3B) Depress the [RLS DEST] key.
- DEST is disconnected.
 - DEST, STATUS displays go off.

- 4B) Depress the [RLS] key to terminate the call.
- The LPK LED and all displays go off.
 - The RLS LED lights.
 - Console becomes idle.

04.38.0 Serial Call

04.38.1 For an incoming call that requests two or more stations:

- 1) Depress the [SER] key.
- 2) Dial the first station number and extend the call using standard procedures.

04.38.2 When the call is completed and the station user hangs up, the call will be returned to your console with an ICI display of SER. Repeat above steps if a third station is required, otherwise process as a standard call.

04.39.0 Exclusion Keys (Splitting)

04.39.1 Use of the Exclusion ([EXCL SRC] and [EXCL DEST]) keys enables you to split a 3-way connection and allows you to converse privately with either the "source" or "destination" party. When you are involved in a 3-way connection it is possible to:

- 1) Talk privately with the **called** party (DEST).
- 2) Talk privately with the **calling** party (SRC).
- 3) Form a 3-way voice connection consisting of yourself, and both the calling and called parties.

04.39.2 To talk to the called party privately:

- Depress the [EXCL SRC] (Exclude Source) key.
- The EXCL SRC LED lights.
 - You may talk to the **called** party privately, the **calling** party cannot hear you.

NOTE:

The Exclude Source condition activates automatically when you start dialing to extend a

call.

04.39.3 To talk to the calling party privately:

- Depress the [EXCL DEST] (Exclude Destination) key.
- The EXCL DEST LED lights.
 - You may talk to the **calling** party privately, the **called** party cannot hear you.

04.39.4 To form a 3-way conversation from either an EXCL SRC or EXCEL DEST condition:

- Depress the appropriate [LPK] key.
- The EXCL SRC or EXCL DEST LED will go off.
 - You and the other two parties may converse freely.

04.39.5 To release a call while in any of the above conditions (connecting the calling and called parties):

- Depress the [RLS] key.
- The LPK LED and all displays go off.
 - The RLS LED lights.
 - SRC and DEST parties and connected.

04.40.0 Verify

04.40.1 The Verify feature enables you to ascertain the status of an station or trunk to determine if a problem exists or to interrupt a call in an emergency situation.

04.40.2 To verify station status:

- 1) Depress an idle [LPK] key.
 - The LPK LED lights.
- 2) Depress the [VER/CHG] key.
 - The VER/CHG LED lights.
- 3) Dial the station number.
 - DEST displays the station number.
- 4A) If the station is busy:
 - A 2-second warning tone is injected into the conversation on the called station.
 - A 3-way conversation is established at the end of the warning tone.
 - A ½-second warning tone is repeated every 15 seconds for the duration of the 3-way connection.

NOTE:

At this point it is possible to release either party from the conversation by depressing either the [RLS DEST] or [RLS SRC] key.

- 5A) Depress the [RLS] key.
- VER/CHG & LPK LEDs, all displays go off.

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- RLS LED lights.
- Console is idle.
- Existing conversation continues.

- 4B) If the station is idle:
- The station rings.
 - The VER/CHG LED goes off.
 - STATUS displays RNG.

5B) Proceed as in a usual call.

04.40.3 To verify a trunk status:

- 1) Depress an idle **[LPK]** key.
 - The LPK LED lights.
- 2) Depress the **[VER/CHG]** key.
 - The VER/CHG LED lights.
- 3) Dial the trunk access code followed by the trunk number.
 - DEST displays the trunk code and number.

- 4A) If the trunk is busy:
- A 2-second warning tone is injected into the conversation.
 - A 3-way conversation is established at the end of the warning tone.
 - A 1/2-second warning tone is repeated every 15 seconds for the duration of the 3-way connection.

NOTE:

*At this point it is possible to release either party from the conversation by depressing either the **[RLS DEST]** or **[RLS SRC]** key.*

- 5A) Depress the **[RLS]** key.
- The VER/CHG and LPK LEDs, all displays go off.
 - The RLS LED lights.
 - Console is idle.
 - Existing conversation continues.

- 4B) If the trunk is idle:
- The trunk is seized.
 - The VER/CHG LED goes dark.
 - STATUS displays TLK.
 - You will hear trunk dial tone.

5B) Proceed as with a usual call.

04.41.0 Paging

04.41.1 Your console provides for direct push-to-talk access to one paging zone (or All Page) via the **[PAGE]** key. Additional paging zones (if equipped) can be accessed by depressing an idle **[LPK]** key and dialing the proper access code.

NOTE:

*The PAGE LED lights steadily when the page zone (or All Page) is being used by you or a station user. Your **[PAGE]** key gives you preemption capability. Any page in progress when you operate the **[PAGE]** key will be cut off and you will be connected. It is important, therefore, to observe the LED status when you cannot hear that paging is in progress.*

04.41.2 To page from an idle console:

- 1) Depress and hold the **[PAGE]** key.
 - The PAGE LED lights.
 - The RLS LED goes off.
 - The idle LPK LED lights.
 - Page access code is displayed as DEST.
 - STATUS displays TLK.
- 2) Make your announcement.
- 3) Release the **[PAGE]** key.
 - PAGE and LPK LEDs go off.
 - The RLS LED lights.
 - DEST, STATUS go off.

04.41.3 To page from an active **[LPK] key:**

- 1) Depress and hold the **[PAGE]** key.
 - The PAGE LED lights.
 - The EXCL SRC LED lights.
- 2) Make your announcement.
- 3) Release the **[PAGE]** key.
 - PAGE LED goes off.
 - The EXCL SRC LED goes off.
 - The LPK LED winks.
 - The RLS LED lights.

04.41.4 The paging assignments in your system are:

Paging Access Codes

	(location)
ZONE 1 _____	_____
ZONE 2 _____	_____
ZONE 3 _____	_____
ZONE 4 _____	_____
ZONE 5 _____	_____
ALL ZONE _____	_____
[PAGE] key _____	_____

04.42.0 Meet-me Page

04.42.1 This feature will allow you to "park" a call while you page the called party. The called party can then pick up the call automatically by

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dialing the access code from any station in the system.

04.42.2 To park a call:

- 1) Dial the meet-me page access code _____.
- 2) Depress the RLS key.
- 3) Using the PAGE system, instruct the called party to dial access code _____.

04.43.0 Attendant Conference

04.43.1 You can set up a conference call for as many as five people (including a maximum of two trunk lines) plus yourself, at the request of either a station user or an outside caller. The starting point for a conference can be any of the following conditions:

- a) Console has answered an incoming call from a station or trunk and that party is to be the first member of the conference.
- b) Console dials the first conference member on an LPK key in the usual manner.
- c) Due to an Attendant Recall, the console has a 3-way connection on an LPK key. The attendant must establish a 3-way voice connection through a second operation of the LPK key prior to proceeding to step 1.

04.43.2 To conference:

- 1) Depress the CONF key.
 - The CONF LED winks.
 - The voice connection between the console and existing connection(s) continues.
 - COS displays number of conferees.
- 2) Dial the next conference member.
 - The console voice connection is split when the first digit is dialed, but the voice connection between any existing conference members continues.
 - The CONF LED indication changes to steady.
 - The dialed number appears in DEST.
 - STATUS displays RNG.
 - You will hear ringing tone.
- 3) Called party answers.
 - Console has a voice connection with the called party.
- 4) Depress the CONF key.
 - The CONF LED indication changes to

wink.

- Console and new party are conferenced with existing connection(s).
- COS displays number of conferees, not including the console.

- 5) Repeat steps 2 through 4 to add another party.

04.43.3 To release from conference:

Depress the RLS key.

- The CONF LED indication changes to steady.
- The LPK LED goes off.
- The RLS LED lights.
- Console is idle.
- Conference continues.

04.43.4 To recall the console by a conferee (station user):

- 1) Station user flashes hookswitch, or depresses the CONF key on an EKT.
 - Console signals.
 - The LPK and CONF LEDs flash.
- 2) Depress the appropriate LPK key.
 - Signal stops.
 - The LPK and CONF LED indications change to steady.
 - Console and recalling party have a voice connection.
 - Remaining conferees continue to conference.

- 3) Proceed from step 4, Paragraph **04.43.2**.

04.43.5 To reenter the conference:

04.43.6 You can reenter the existing conference, if required. A warning tone will be inserted into the conference before you are connected.

- 1) Depress an idle LPK key.
 - The RLS LED goes off.
 - The LPK LED lights.

- 2) Proceed from step 1, Paragraph **04.43.2**.

04.44.0 Overflow

04.44.1 When your console becomes very busy, it is possible to divert calls that have been waiting unanswered for over (_____) seconds to an alternate answering point. Substituting 0 for the trunk access code and equipment number, use the Night Answering connection instructions (Paragraph **04.48.0**) to designate the alternate answering point.

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04.44.2 To engage overflow:

Depress the **[OVFL]** key.

- The OVFL LED lights.
- Overflow is engaged.

04.44.3 To disengage overflow:

Depress the **[OVFL]** key.

- The OVFL LED lights.
- Overflow is disengaged.

04.45.0 Join Key

04.45.1 The **[JOIN]** key allows you to connect one LPK line with another LPK line. In a typical operation; a call has returned to your console unanswered on LPK #1, and the called party must be paged.

- 1) Depress the **[HOLD]** key.
 - The LED for LPK #1 winks.
 - Caller is put on hold.
 - The RLS LED lights.
- 2) Page the called party.
- 3) Called party calls attendant.
 - The LED for LPK #2 flashes.
 - The RLS LED goes off.
 - ICI, STATUS, COS are displayed.
- 4) Depress **[LPK]** key #2 to answer the call.
 - The LED for LPK #2 lights.
- 5) Inform party #2 of the call on LPK #1.
- 6) Depress the **[JOIN]** key.
 - ICI, STATUS, COS displays go off.
 - LPK #2 goes on hold.
- 7) Depress **[LPK]** key #1.
 - The LED for LPK #2 goes off.
 - The LED indication for LPK #1 changes from wink to steady.
 - ICI, SRC, COS LEDs light and identify the original call on LPK #1.
 - DEST displays DN from LPK #2.
 - STATUS displays TLK.
 - A 3-way conversation is established.
- 8) Depress the **[RLS]** key.
 - The LPK #1 LED and all displays go off.
 - The RLS LED lights.
 - The two parties remain connected.

04.46.0 Position Busy

04.46.1 The **[POS BSY]** key allows you to make your console "busy," preventing additional incom-

ing calls from being assigned to your console. Calls will be diverted to the second console in the system.

NOTE:

*If your system is equipped with just one console, the **[POS BSY]** key will have the same effect as the **[NITE]** key.*

04.46.2 To use Position Busy:

Depress the **[POS BSY]** key.

- If only one console is in the system (or the other console is in POS BSY), the POS BSY and NITE LEDs light (system is in Night Service).
- If the other console is active in the system, POS BSY LED lights.

04.46.3 To release Position Busy:

Depress the **[POS BSY]** key.

- The POS BSY LED goes off.
- The NITE LED goes off (if it was on).
- Your console is now active.

04.47.0 Activating Night Service

04.47.1 All LPK keys must be idle before activating this feature; use single or multiple console instructions (depending upon your system's design).

04.47.2 Single console:

1) To activate Night Service:

- a) Depress either the **[NITE]** or **[POS BSY]** key.
 - The NITE and POS BSY LEDs light.
 - All existing Night Service selections are activated.
 - The RLS LED goes off.
- b) Unplug the handset/headset.
 - Console keyboard is removed from service.

2) To cancel Night Service:

Plug in the handset/headset.

- Console keyboard is activated.
- The NITE and POS BSY LEDs go off.
- The RLS LED lights.
- System is in Day Service.

04.47.3 Multiple Consoles:

1) To activate Night Service:

- a) Depress either the **[NITE]** or **[POS BSY]** key.

- i) If the other console is still active:
 - POS BSY LED lights.
 - Your console is removed from service.
 - ii) If the other console is already in POS BSY:
 - NITE and POS BSY LEDs light.
 - System is in Night Service, all existing Night Service selections are activated.
- b) Unplug the handset/headset.
- Console keyboard is removed from service.

2) To cancel Night Service:

Plug in the handset/headset.

- Console keyboard is activated.
- The NITE and POS BSY LEDs go off.
- The RLS LED lights.
- System is in Day Service.

04.48.0 Night Answering Connections

04.48.1 Night connection assignments are stored in system memory. *Set-up is required only upon initial installation or when changes are required.* Flexible night answering allows any number of trunks to be assigned to the same station. Any trunks not assigned a night station will cause the Universal Night Answer (UNA) signal to be activated.

04.48.2 Flexible Night Answer:

- 1) Depress an idle [LPK] key.
 - The LPK LED lights.
 - The RLS LED goes off.
- 2) Depress the [NITE] key.
 - The NITE LED flashes.
 - You will hear dial tone.
- 3) Dial the trunk access code followed by its equipment number.
 - Dial tone stops when the first digit is dialed.
 - The first two digits are displayed as DEST, but shift to SRC when the number is completed.
 - The LPK LED goes off and dial tone returns when the number is completed.

NOTE:

If a non-existent access code or trunk number is dialed, you will hear the overflow tone. Depress the [RLS SRC] key and redial.

- 4) Dial the directory number (DN).
 - Dial tone stops after the first digit is dialed.
 - DN is displayed as DEST.
 - The LPK LED lights.
 - You will hear dial tone.
- 5) Repeat steps 3 and 4 to make additional assignments.
- 6) Depress the [RLS] key.
 - The RLS LED lights.
 - The NITE and LPK LEDs go off.

NOTE:

If a non-existent DN is dialed, you will hear the overflow tone. Depress the [RLS DEST] key and redial.

04.48.3 Universal Night Answer

- 1) Depress an idle [LPK] key.
 - The LPK LED lights.
 - The RLS LED goes off.
- 2) Depress the [NITE] key.
 - The NITE LED flashes.
 - You will hear dial tone.
- 3) Dial the trunk access code followed by its equipment number.
 - Dial tone stops when the first digit is dialed.
 - The first two digits are displayed as DEST, but shift to SRC when the number is completed.
 - The LPK LED goes off and dial tone returns when the number is completed.

NOTE:

If a non-existent access code or trunk number is dialed, you will hear the overflow tone. Depress the [RLS SRC] key and redial.

- 4) Depress the [RLS] key.
 - The RLS LED lights.
 - The NITE and LPK LEDs go off.

NOTE:

Repeat above steps to make additional assignments.

04.49.0 Remote Access to System Services*

04.49.1 This feature allows a user outside of your system to access the system services via an exchange network connection. The user dials a preselected exchange number to connect to your system and then dials a 3-digit authorization code.

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The user may then make a call just as it is done from inside the system normally.

04.49.2 The authorization code used by the outside user is controlled by the Attendant Console and may be changed anytime.

04.49.3 The trunk(s) used for this service (and, therefore, the exchange number dialed by the outside user) may be permanently fixed or may be assigned by your console each time it is needed (it is a programmable option). In addition, the trunks may be arranged to operate in the Remote Access mode in both Day and Nite Service or Nite Service only.

04.49.4 To assign or change the authorization code:

- 1) Depress an idle [LPK] key.
 - The LPK LED lights.
 - The RLS LED goes off.
- 2) Dial the feature access code _____.
- 3) Dial the authorization code _____.
- 4) Depress the [RLS] key.
 - The RLS LED lights.
 - The LPK LED goes off.
 - Console becomes idle.

04.49.5 To select trunk(s) to be used with remote access to system in both Day and Nite service:

04.49.6 Process as in Night Answer Connections using the number _____ as the station number. All trunks assigned to this number will function in the Remote Access to System mode during both Day and Nite Service.

04.49.7 To select trunk(s) to be used with remote access to system in Nite service only:

04.49.8 Process as in Night Answer Connections using the number _____ as the station number. All trunks assigned to this number will function in the Remote Access to System mode during Nite Service only.

04.50.0 Speed Dialing-System

04.50.1 Speed dialing allows you and other station users to use a 2-digit code in place of a full telephone number when making calls. The Speed Dial-System list of telephone numbers must be stored via the attendant console, but, once stored, all numbers are accessible to all stations. A maximum of 90 telephone numbers may be stored.

04.50.2 To make a call with Speed Dial-System:

- 1) Depress an idle [LPK] key.
 - The LPK LED lights.
 - The RLS LED goes off.
- 2) Depress the [SP DIAL] key.
- 3) Dial the 2-digit address code for the telephone number you wish to call.
 - The system will dial the number for you.

04.50.3 To store a number:

- 1) Depress the [SP DIAL] key (*do not* depress an [LPK] key).
 - The SP DIAL LED flashes.
- 2) Dial:
 - a) The 2-digit address code (10 ~ 99) you wish to associate with the telephone number.
 - b) The trunk access code.
 - c) The [*] key (this inserts a 3-second pause to allow time for trunk dial tone to appear).
 - d) The telephone number.
- 3) Depress the [SP DIAL] key again.
 - The SP DIAL LED goes off.
 - The code and telephone number are stored.

04.51.0 Trunk Control

04.51.1 Your console allows you to control access to any trunk group for the purpose of allocating special facilities. When you have taken control of a trunk group, a station user trying to access that group will be routed to your console (ICI displays OPR). (In some systems a few executive stations will be allowed to override your control.) The caller's name should be listed to be called when a trunk is available.

04.51.2 To take control of a trunk group:

- 1) Depress an idle [LPK] key.
 - The LPK LED lights.
 - The RLS LED goes off.
- 2) Dial [*][*][*], followed by the trunk access code.
 - The TGB (trunk group busy) LED lights.
 - Trunk control is in effect.
- 3) Depress the [RLS] key.
 - The RLS LED lights.
 - The LPK LED and all displays go off.

04.51.3 If a station user calls a controlled trunk:

- 1) User dials the access code.
 - Console signals.
 - The LPK LED flashes.
 - ICI lights and SRC and COS are displayed.
- 2) Depress the appropriate **[LPK]** key.
 - The LPK LED lights.
 - A voice connection is established with caller.

NOTE:

If a trunk is available, proceed as in "Through Dialing". If no trunk is available, take the caller's name and station for a callback and then release.

04.51.4 To pass a trunk to a station:

- 1) Depress an idle **[LPK]** key.
 - The LPK LED lights.
 - The RLS LED goes off.
- 2) Dial the station number.
 - DEST displays station number.
 - STATUS displays RNG.
- 3) Station answers.
 - STATUS changes to TLK.
- 4) Dial the trunk access code.
 - SRC displays station number.
 - COS displays station COS.
 - DEST displays trunk access code and number.
 - EXCL SRC lights.
 - You will hear trunk dial tone.
- 5) Depress the **[RLS]** key.
 - The RLS LED lights.
 - The LPK & EXCL SRC LEDs and all displays go off.
 - Station is free to dial on trunk.

04.51.5 To release trunk control (TGB LED is on):

- 1) Depress an idle **[LPK]** key.
 - The LPK LED lights.
 - The RLS LED goes off.
- 2) Dial **###[#]**, followed by the trunk access code.
 - The TGB (trunk group busy) LED goes off.
 - Trunk control is released.
- 3) Depress the **[RLS]** key.
 - The RLS LED lights.
 - The LPK LED goes off.

04.52.0 Interposition Call/Transfer*

04.52.1 If your system is equipped with more than one console serving the same customer, it is possible for the consoles to call each other and to transfer calls from one to the other.

04.52.2 To call console-to-console:

- 1) Depress an idle **[LPK]** key on the **calling console**.
 - The LPK LED lights.
 - The RLS LED goes off.
- 2) Dial **[0][2]** on console #1 (or **[0][1]** on console #2).
 - DEST displays 02 (01).
 - STATUS displays RNG.
 - You will hear ring tone.
- 3) **Called console** answers.
 - The STATUS changes to TLK.
 - You have a voice connection between consoles.
- 4) Depress the **[RLS]** key.
 - The RLS LED lights.
 - The LPK & EXCL SRC LEDs and all displays go off.

04.52.3 To transfer a call console-to-console:

NOTE:

Console #2 can be interchanged freely with console #1 in the following instructions.

- 1) Console #1 answers an incoming call (starting condition).
 - The LPK LED goes on.
 - ICI and SRC displays on.
- 2) Console #1 dials **[0][2]**.
 - DEST displays 02.
 - STATUS displays RNG.
 - EXCL and SRC LEDs light.
- 3) Console #2 answers.
 - STATUS changes to TLK on console #1.
 - A voice connection is established between consoles.

04.52.4 To return to start condition:

Depress the **[RLS DEST]** key.

- Call returns to console #1.

04.52.5 To transfer:

Depress the **[RLS]** key.

- The RLS LED lights.

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04.53.0 Account Number Recording

04.53.1 Your system automatically records the details of some or all of the calls you make to or receive from outside the system. Recorded calls may be assigned account numbers for billing purposes (_____ digits).

04.53.2 Perform the following before extending the call:

04.53.3 To record an account number:

- 1) Start from a standard voice connection.
 - The LPK LED is on.
 - ICI and SRC displays are on.
- 2) Depress the **VER/CHG** key.
 - Connection goes on hold.
 - The VER/CHG LED lights.
- 3) Dial account number on the dial pad (_____ digits).
 - a) When number is complete:
 - VER/CHG LED goes off.
 - b) The talking connection is reestablished.
- 4) Process the call in the usual manner.

04.54.0 Message Waiting

04.54.1 If your console is designated as the Message Center, you indicate to the called station that a message is waiting

04.54.2 To leave a message waiting signal:

- 1) Process the call in the usual manner.
- 2) If busy or no answer:
 - 3A) Depress the **MSG** key.
 - MSG LED lights.
 - MW indication is set.
 - 3B) Depress the **RLS DEST** key.
 - DEST & STATUS displays go off.
- 4) Proceed as with a standard call.

04.54.3 To cancel Message Waiting:

- 1) Depress an idle **LPK** key.
 - The RLS LED goes off.
 - The LPK LED lights.
- 2) Dial the station's directory number.
 - DEST is displayed as the digits are dialed.
 - MSG LED shows status of the MW LED of the called station (i.e., if Message Waiting is active on that station, the LED will be on).

- 3) Depress the **MSG** key.
 - The MSG LED goes off (if it was on).
 - The Message Waiting condition is cleared at called station.

04.54.4 To cancel all Message Waiting signals:

- 1) Depress an idle **LPK** key.
 - The RLS LED goes off.
 - The LPK LED lights.
- 2) Dial the "all clear" access code _____.
 - All Message Waiting conditions in the system are cancelled.
- 3) Depress the **RLS** key.
 - The LPK LED goes off.
 - The RLS LED lights.
 - Console becomes idle.

04.55.0 Display and Set Date/Time

04.55.1 Your telephone system has an internal clock that must be set to the correct date and time in order for features such as Traffic Measurement and Station Message Detail Recording to be effective.

04.55.2 To display date:

- Depress the **DISTOD** key.
- The date is then displayed:

SRC	COS	DEST
Month	Day	Year

04.55.3 To set date:

Enter the 6-digit date (via the dial pad) in the following format:

MMDDYY

For example: For January 1, 1983, enter 010183.

- The new date will appear in the display.

04.55.4 To display time:

- Depress the **DISTOD** key.
- The date is then displayed:

SRC	COS	DEST
Hours	Minutes	Seconds

04.55.5 To set time:

Enter the 6-digit time (via the dial pad) in the following format:

HHMMSS

For example: For 9:30 AM, enter 093000.

- The new time will appear in the display.

NOTE:

The time is displayed and entered in the 24-hour "military" form (for any hour after 12 noon, add 12).

e.g. 9:30 AM is 093000

9:30 PM is 213000

04.55.6 To start the clock and clear the display:

Depress the **[DISTOD]** key a third time.

- Display clears

04.56.0 Cancelling All Call Forwarding

04.56.1 It is possible for the Attendant Console to cancel all Call Forwarding arrangements set up by station users.

04.56.2 To cancel all call forwarding:

- 1) Depress and idle **[LPK]** key.
 - The RLS LED goes off.
 - The LPK LED lights.
- 2) Dial the call forwarding cancel code _____.
 - All CFD arrangements are cancelled.
- 3) Depress the **[RLS]** key.
 - The LPK LED goes off.
 - The RLS LED lights.
 - Console becomes idle.

04.57.0 System Initialize

04.57.1 The Initialize (INT) switch located on the underside of the console is used to reset system logic in the event of a system malfunction. This switch should be used prior to resorting to the Emergency Transfer switch.

WARNING:

This switch should be used only in extreme situations as it will cause all calls in the system to be dropped.

04.57.2 To initialize the system:

- 1) Depress the **INT** switch.
 - The MAJ LED lights momentarily.
 - The RLS LED goes off.
 - NITE & POS BSY LEDs light after MAJ LED goes off.
 - MIN LED lights.
- 2) Depress the **[NITE]** key.
 - System switches to **DAY** operation.
- 3) Set the system time and date.
 - MIN LED goes off.
- 4) Proceed with usual system operations.

04.58.0 Emergency Transfer

04.58.1 If the system goes completely out of service and the MAJOR ALARM lamp is not on, the Emergency Transfer switch (located on the underside of the console on the side nearest the dial pad) can be used to manually set the system into Emergency Transfer operation. Operating the switch will disconnect all existing calls and connect the designated stations directly to the outside lines.

04.58.2 To operate the Emergency Transfer:

Depress the **[EMT]** button:

- The MAJOR ALARM LED lights.

04.58.3 To restore normal operation:

Depress the **[EMT]** button:

- The MAJOR ALARM LED goes off.

Perception

FAULT FINDING PROCEDURES

Perception

FAULT FINDING PROCEDURES

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01 GENERAL

01.01 This section describes the maintenance procedures used for the diagnosis of faults in the PERCEPTION Electronic Business Communication systems. Faults are classified and then cleared by replacing apparatus and performing operational tests in the sequences prescribed by the fault clearing flow charts in Paragraph 05.

02 FAULT CLASSIFICATION

02.01 A fault classification flow chart is provided to ensure that fault clearing is pursued in a logical sequence (Chart No. 1).

02.02 In the flow charts an assumption is made that the fault was discovered and reported by a station user. All faults, therefore, are classified according to the way they would appear at the EKT, STT, Attendant Console or DCEC.

02.03 Faults and associated flow charts are organized into the following categories:

Flow Chart	Title
1	Fault Classification
2	Loading Faults
3	Power Faults
4	Ringling Power Fault
5	Time Switch Clock Fault
6	DPMU Faults
7	DRCU Faults
8	DCOU/DEMU Faults
9	DEKU/DSTU Faults
10	SMDR, TTY or MODEM Faults
11	Station Faults
12	INIT/LOAD Key Faults
13	MAJOR ALARM Faults
14	CO/TIE Trunk Faults
15	Attendant Console Faults
16	Common Station Feature Faults
17	Speech Path or Dial Tone Faults
18	Data/Speech Path or Dial Tone Faults
19	Dialing Faults
20	Ringling/Ring Back Tone Faults
21	Miscellaneous Faults

03 FAULT CLEARING PROCEDURES

03.01 Before attempting to clear any fault, ensure that it is in the PERCEPTION system and not caused by associated external equipment such as wiring, MOH source, etc.

IMPORTANT:

Many features of PERCEPTION are assigned, enabled or disabled using software entries as described in Section 100-100-300, System Programming. It is important to verify that the system programming is correct and functional before troubleshooting the hardware.

03.02 Faults in PERCEPTION are cleared by replacing PCBs, EKTs, STTs, Attendant Consoles, power supply or DFRA, as instructed in the flow charts.

03.03 Five symbols are used in the flow charts. These symbols are identified in Figure 1.

03.04 The flow charts are sequentially arranged to permit rapid fault localization within PERCEPTION. *All fault clearing must begin with the Fault Classification Flow Chart, which is arranged in the correct fault locating sequence.*

03.05 If more than one station appears faulty, but these faults are still classified as station faults (as outlined in the flow charts), one station at a time can be corrected.

03.06 Alarm and fault indicators, if failing, may not be corrected with these flow charts. However, when an indication does appear, it is used as an aid in finding that particular fault. If a fault occurs and the fault indicator does not function, the PCB on which the indicator is located is to be replaced at the first opportunity.

03.07 The following precautions must be observed when handling PCBs.

DO NOT:

- Drop a PCB.
- Stack one PCB on top of another.
- Handle a PCB without discharging any static electricity from your person by touching the grounded DCEC.
- Touch PCB contacts with your fingers.

IMPORTANT:

If the fault is not cleared by substituting a PCB, the original PCB must be reinstalled in the DCEC BEFORE proceeding to the next flow chart instruction.

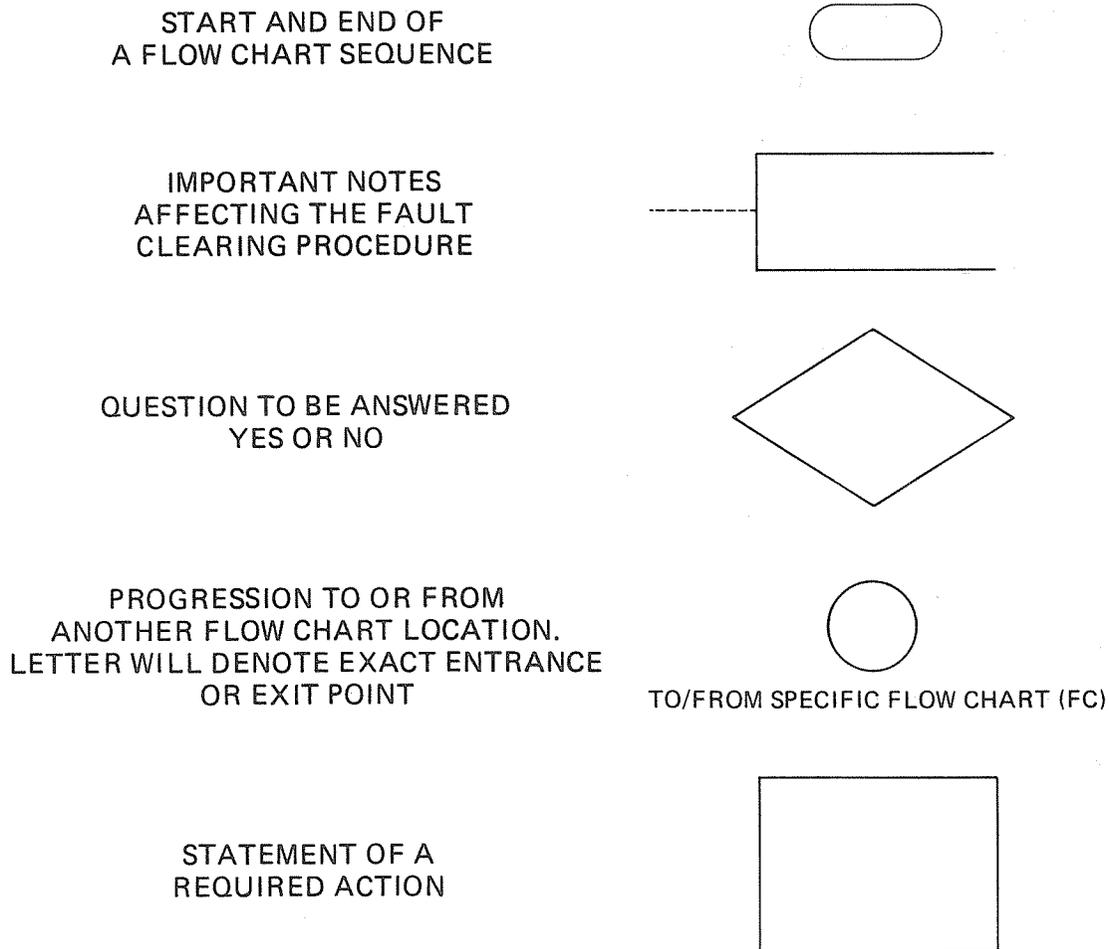


FIGURE 1 – FLOW CHART SYMBOLS

04 DEFECTIVE APPARATUS RETURNS

04.01 When defective PERCEPTION apparatus is shipped for repair, the apparatus must be packed in a suitable container (an original type box is highly recommended).

- a) Anti-static containers for all PCBs.
- b) Plastic bags for EKTs, Attendant Consoles, etc.

04.02 NEVER WRITE ON THE APPARATUS ITSELF! Describe the nature of the defect on an information tag, and attach the tag to the front of the unit with string (not wire) so that the

tag can remain attached during the testing and repair process.

04.03 If different and/or additional faults are created in the system by substituting a PCB, tag and return the substitute PCB as a defective unit.

05 FAULT IDENTIFICATION AND ELIMINATION PROCEDURES

05.01 In the following flow charts two different terms are used when referring to single line telephones. If "2500" is used, a DTMF standard telephone with "Touch-tone" dial pad is being referenced. If "STT" is used, DTMF and rotary dial sets are being referenced.

**TABLE A
EKT STATION CABLE CONTINUITY CHECK
USING VOLTMETER**

NOTE:
Perform the following at the locations indicated:
1. Modular block: Check all station cables.
2. MDF: Check cables from DEKU to MDF.

- 1) Disconnect the EKT.
- 2) Using a DC voltmeter, measure between the wires of the two pairs to verify the presence of the following readings:

FROM			TO			VOLTAGE*
Pair	Wire	Color	Pair	Wire	Color	
1	T	Green	2	T	Black	24
1	R	Red	2	T	Black	24
1	T	Green	2	R	Yellow	24
1	R	Red	2	R	Yellow	24
1	T	Green	1	R	Red	0
2	T	Black	2	R	Yellow	0

- 3) An improper reading indicates an open, crossed or shorted wire.
- 4) For the MDF-to-EKT cable, a more precise check is made using an ohmmeter per Table B.

**Nominal voltage—within the power supply limits of 23.2~28.2 VDC while under AC power.*

**TABLE B
EKT STATION CABLE CONTINUITY CHECK
USING OHMMETER**

- 1) Disconnect the EKT at the wall.
- 2) At the MDF, remove the bridging clips.
- 3) Using an ohmmeter, measure the resistance between all combinations of the four wires at the modular block. All measurements should exceed 1 MOhm.
- 4) At the MDF, place shorting jumper wires between the T and R of pair #1 (green-red) and the T and R of pair #2 (black-yellow).

- 5) At the modular block, measure the resistance between all wire combinations. The proper readings are as follows:

FROM			TO			RESISTANCE
Pair	Wire	Color	Pair	Wire	Color	
1	T	Green	2	T	Black	1 MOhm
1	R	Red	2	T	Black	1 MOhm
1	T	Green	2	R	Yellow	1 MOhm
1	R	Red	2	R	Yellow	1 MOhm
1	T	Green	1	R	Red	≤ 55 Ohm*
2	T	Black	2	R	Yellow	≤ 55 Ohm*

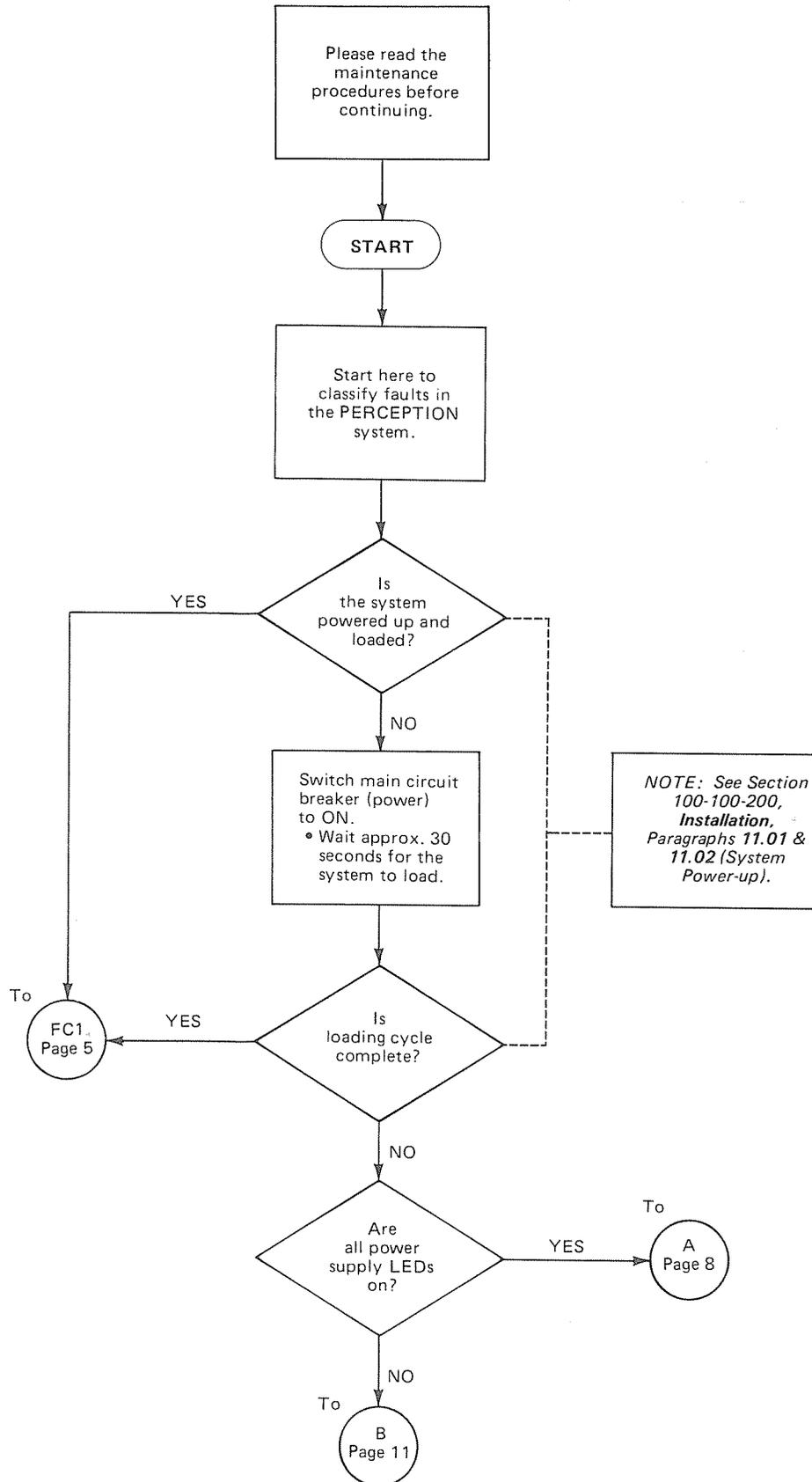
- *NOTES:*
1. The green-red and black-yellow measurements could be within 10% of each other.
 2. 55 ohm is a maximum reading.

**TABLE C
STT STATION CABLE CONTINUITY CHECK
USING OHMMETER**

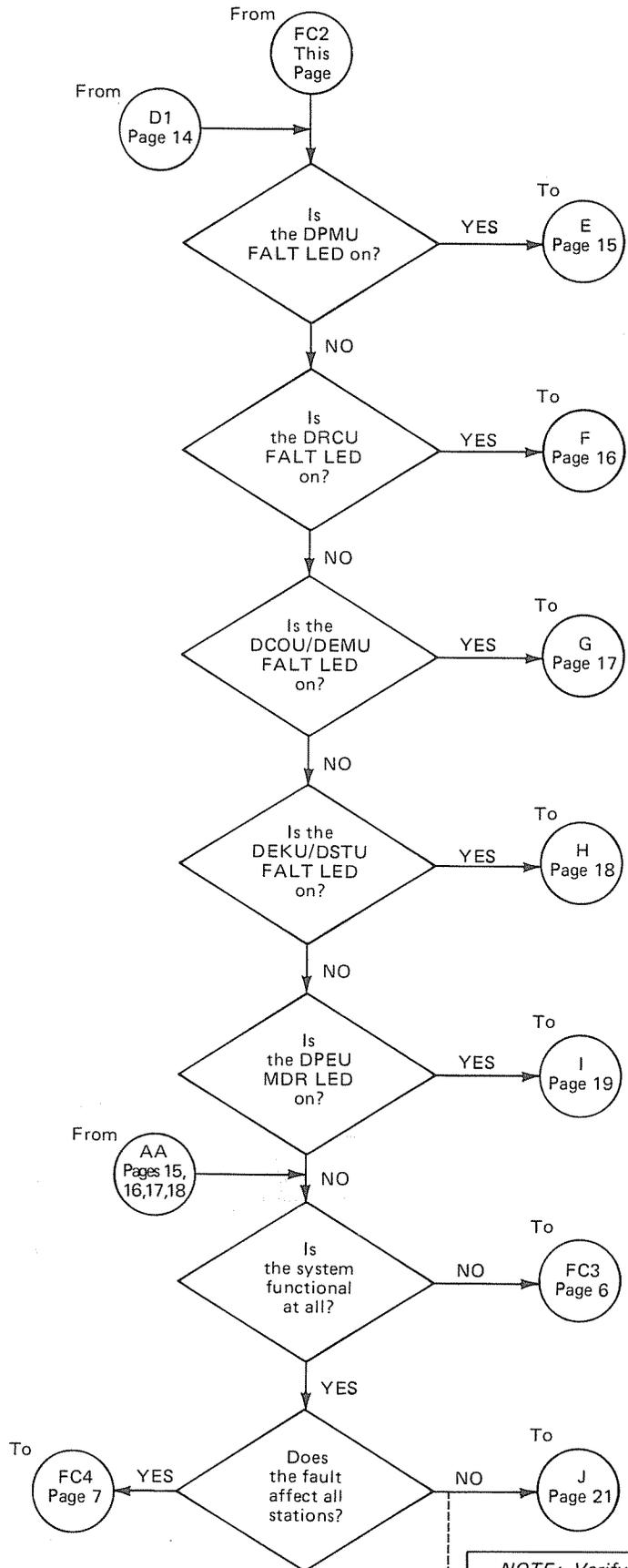
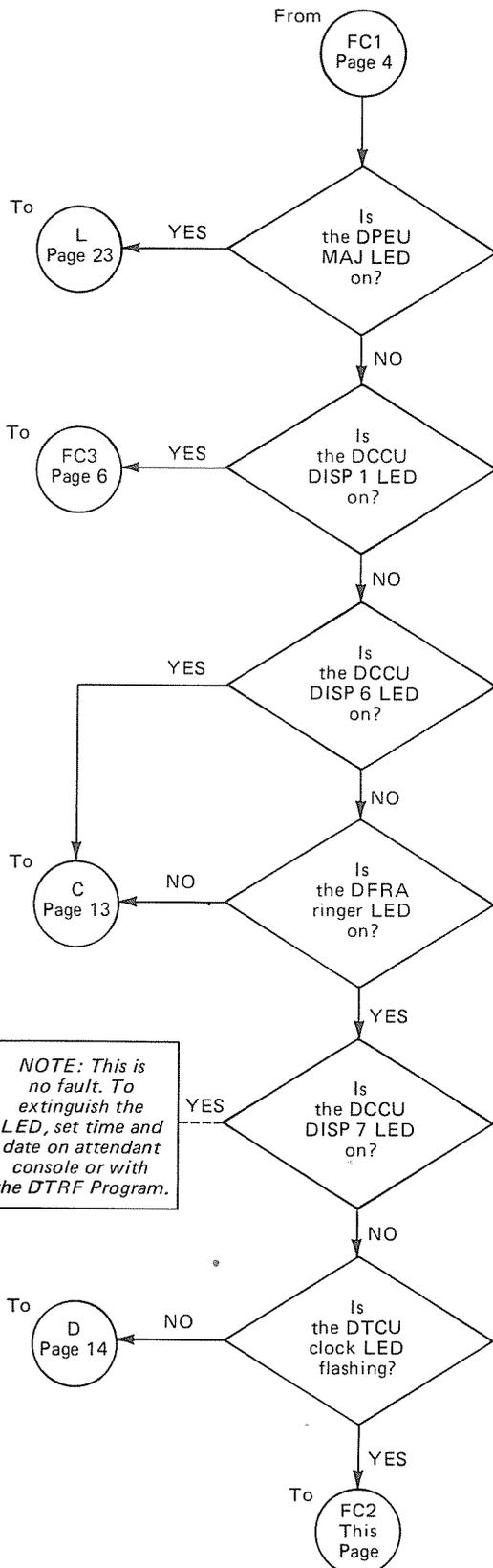
NOTE:
Perform the following at the locations indicated:
1. Modular block: Check all station cables.
2. MDF: Check cables from DSTUs to MDF.

- 1) Disconnect the STT at the wall.
- 2) At the MDF remove the bridging clips.
- 3) Using an ohmmeter, measure the resistance between the two wires at the modular block. The measurement should exceed 1 MOhm.
- 4) At the MDF, place shorting jumper wires between the two wires (T and R).
- 5) At the modular block, measure the resistance between T and R. Verify maximum 300 ohm.

CHART NO. 1 FAULT CLASSIFICATION

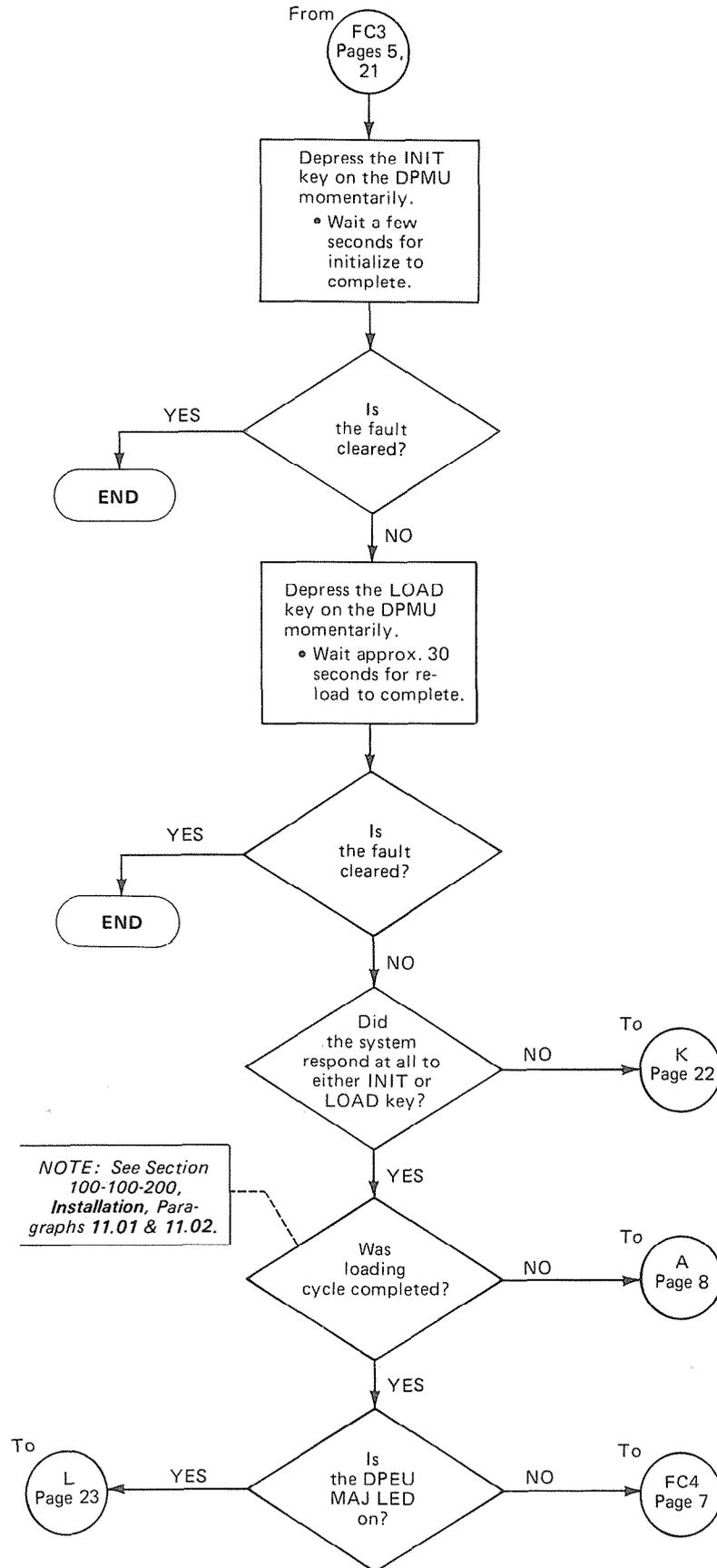


**CHART NO. 1
FAULT CLASSIFICATION (con't)**



NOTE: Verify programming and external equipment.

CHART NO. 1
FAULT CLASSIFICATION (con't)



**CHART NO. 1
FAULT CLASSIFICATION (con't)**

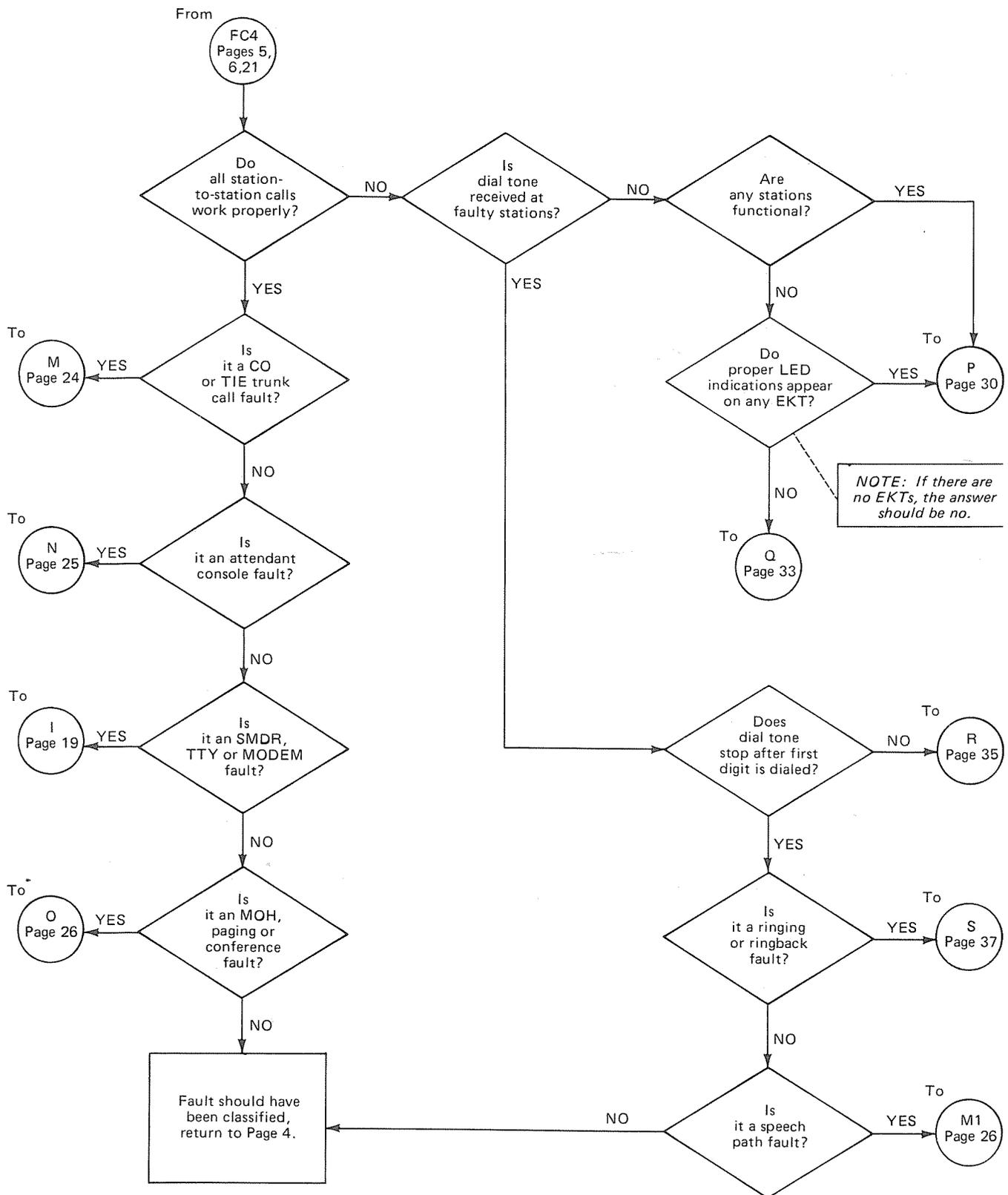
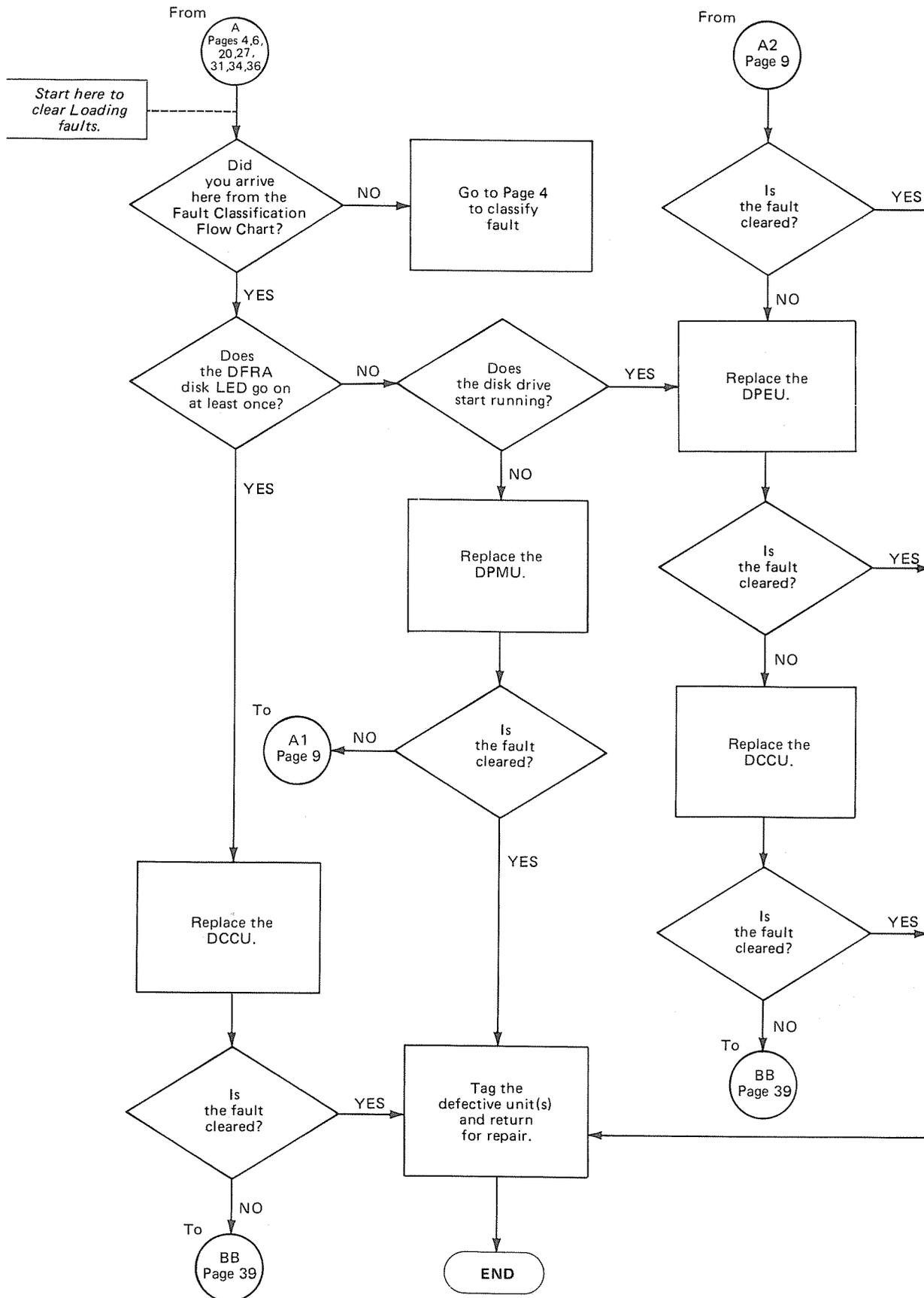


CHART NO. 2
LOADING FAULTS



**CHART NO. 2
LOADING FAULTS (con't)**

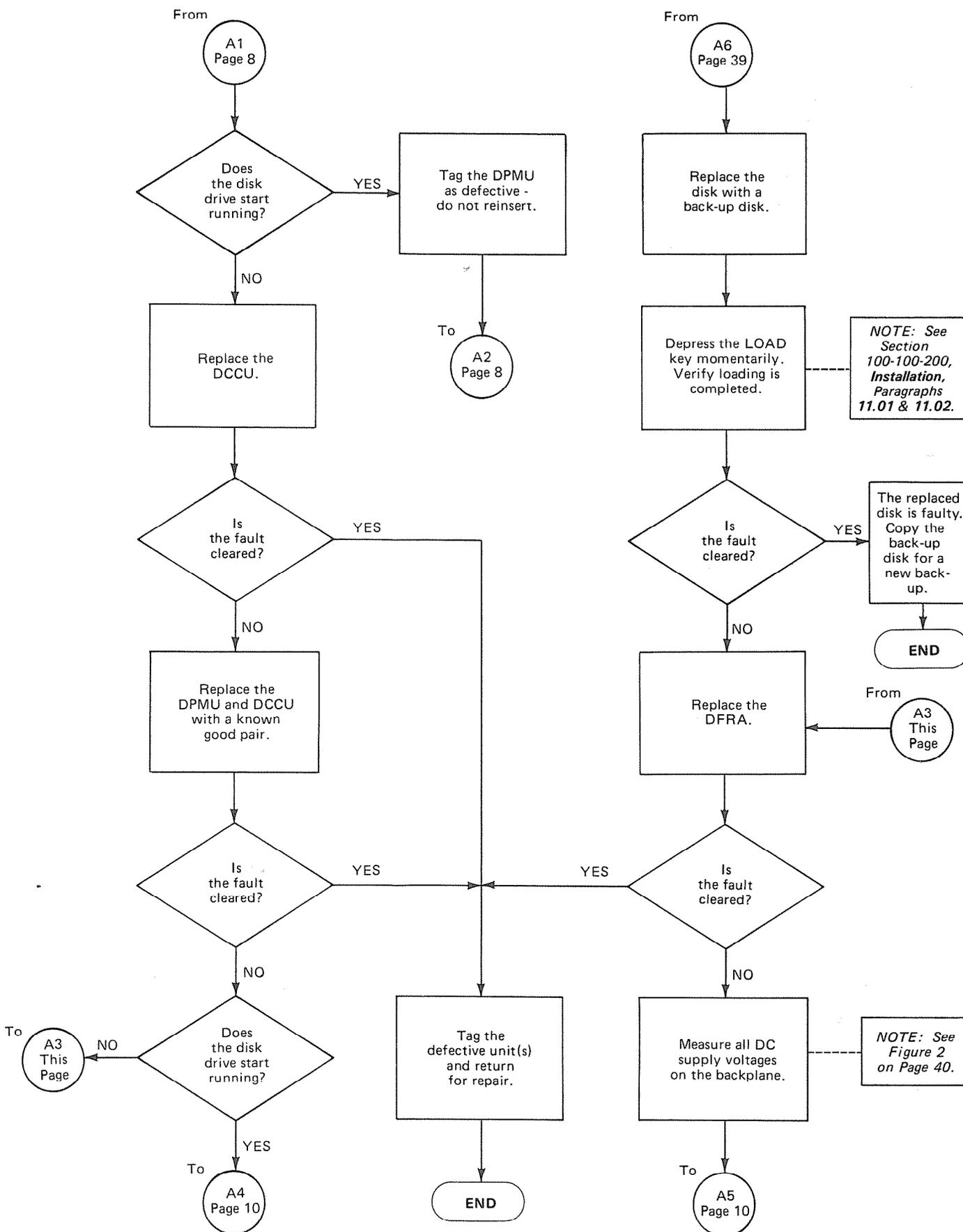


CHART NO. 2
LOADING FAULTS (con't)

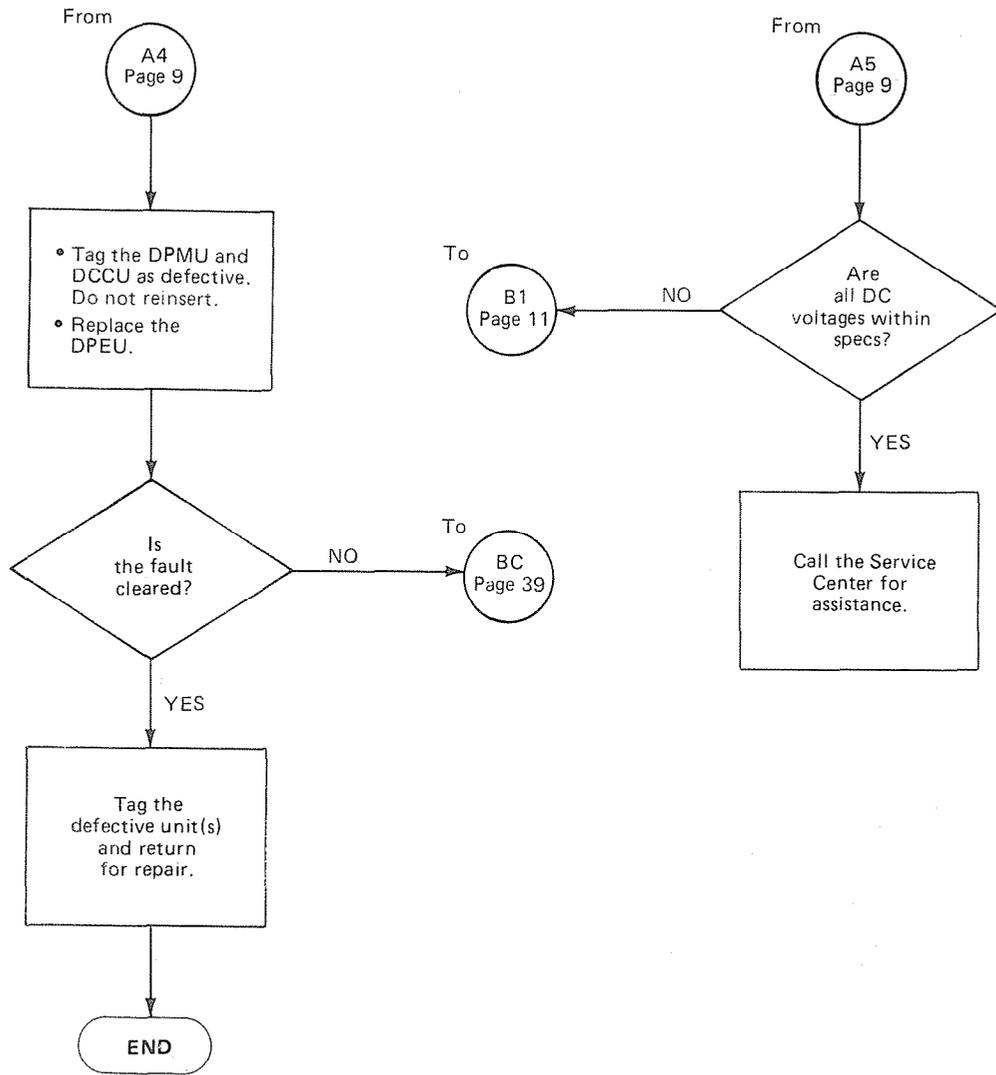


CHART NO. 3
POWER FAULTS

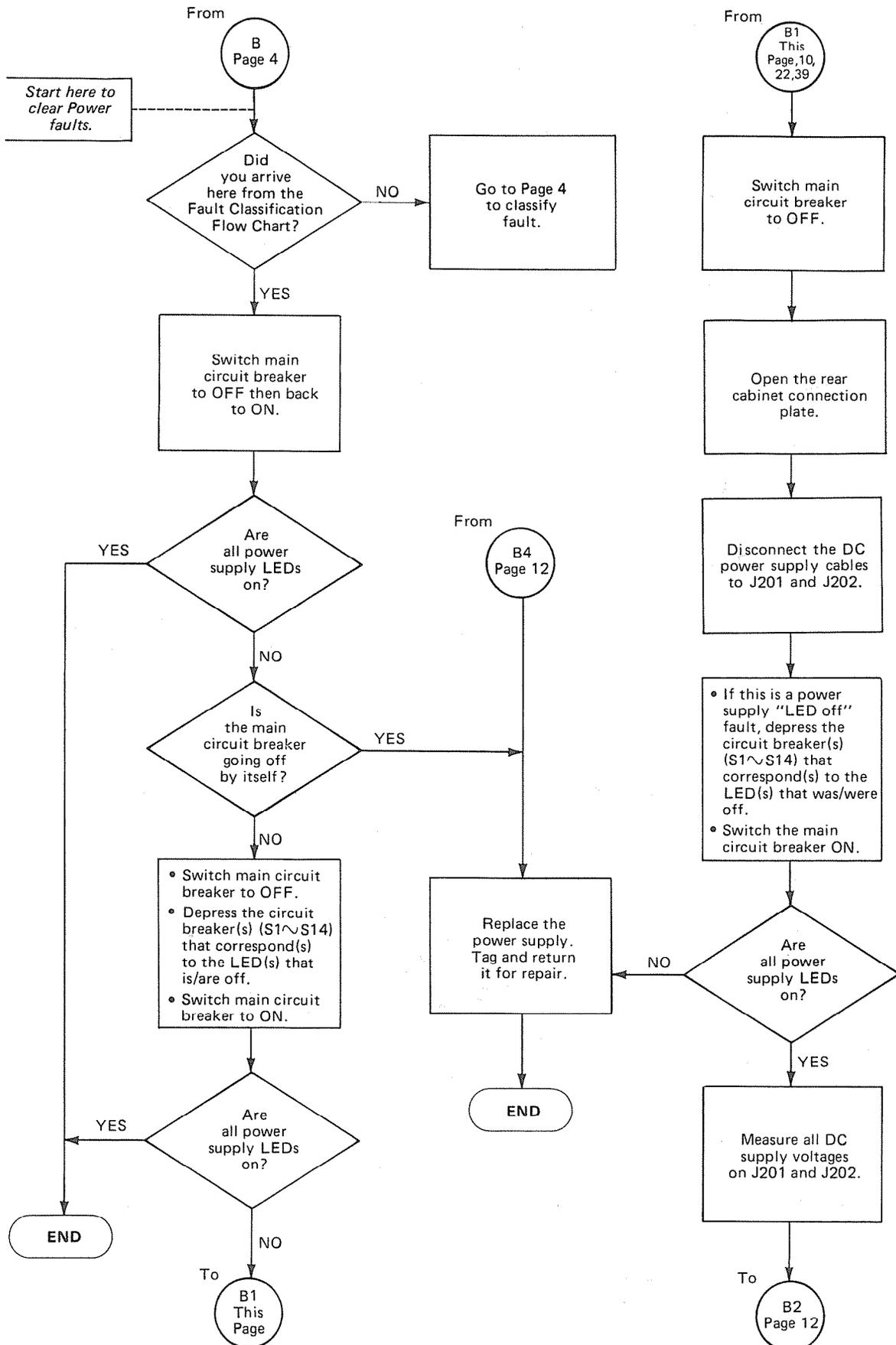


CHART NO. 3
POWER FAULTS (con't)

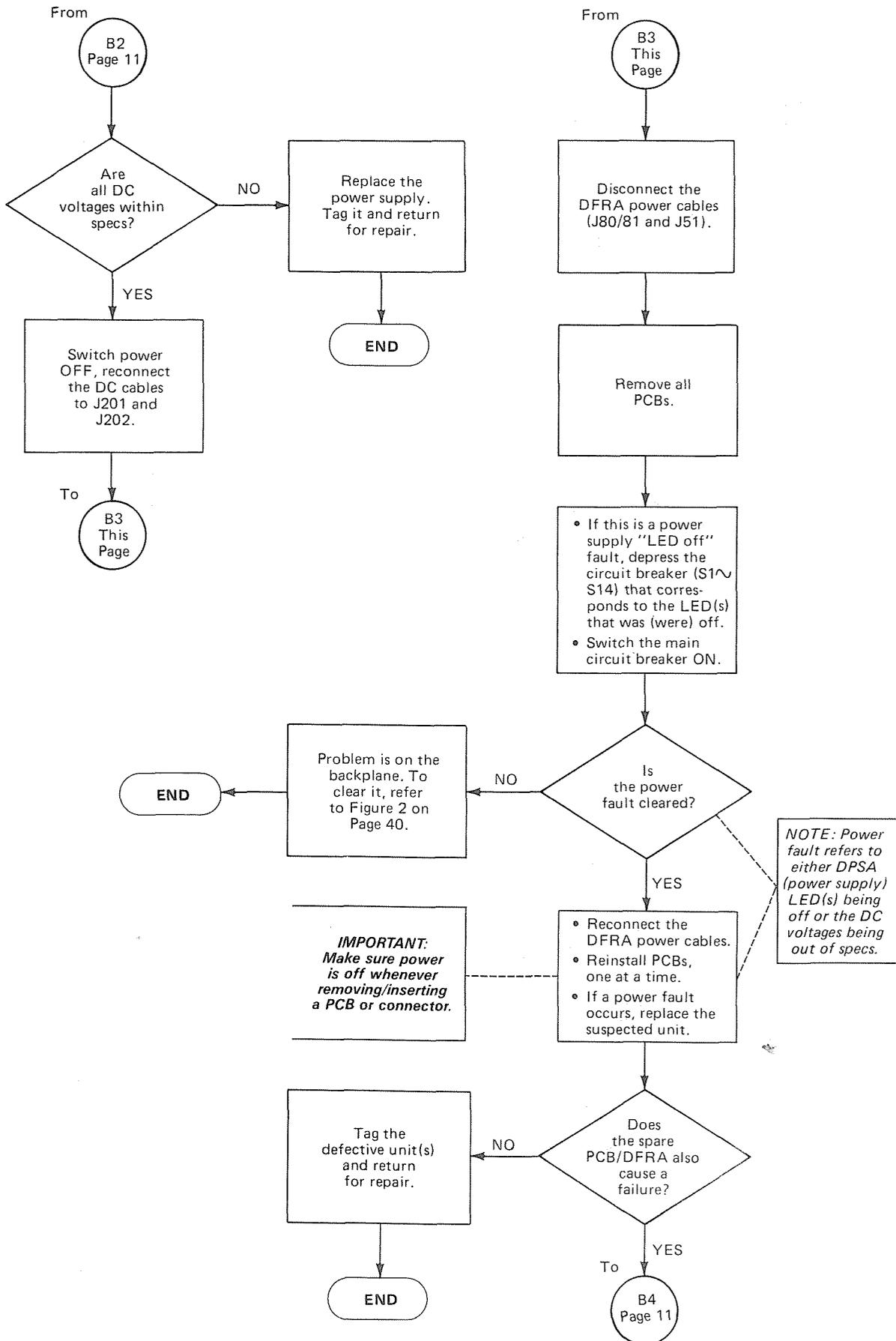


CHART NO. 4
RINGING POWER FAULT

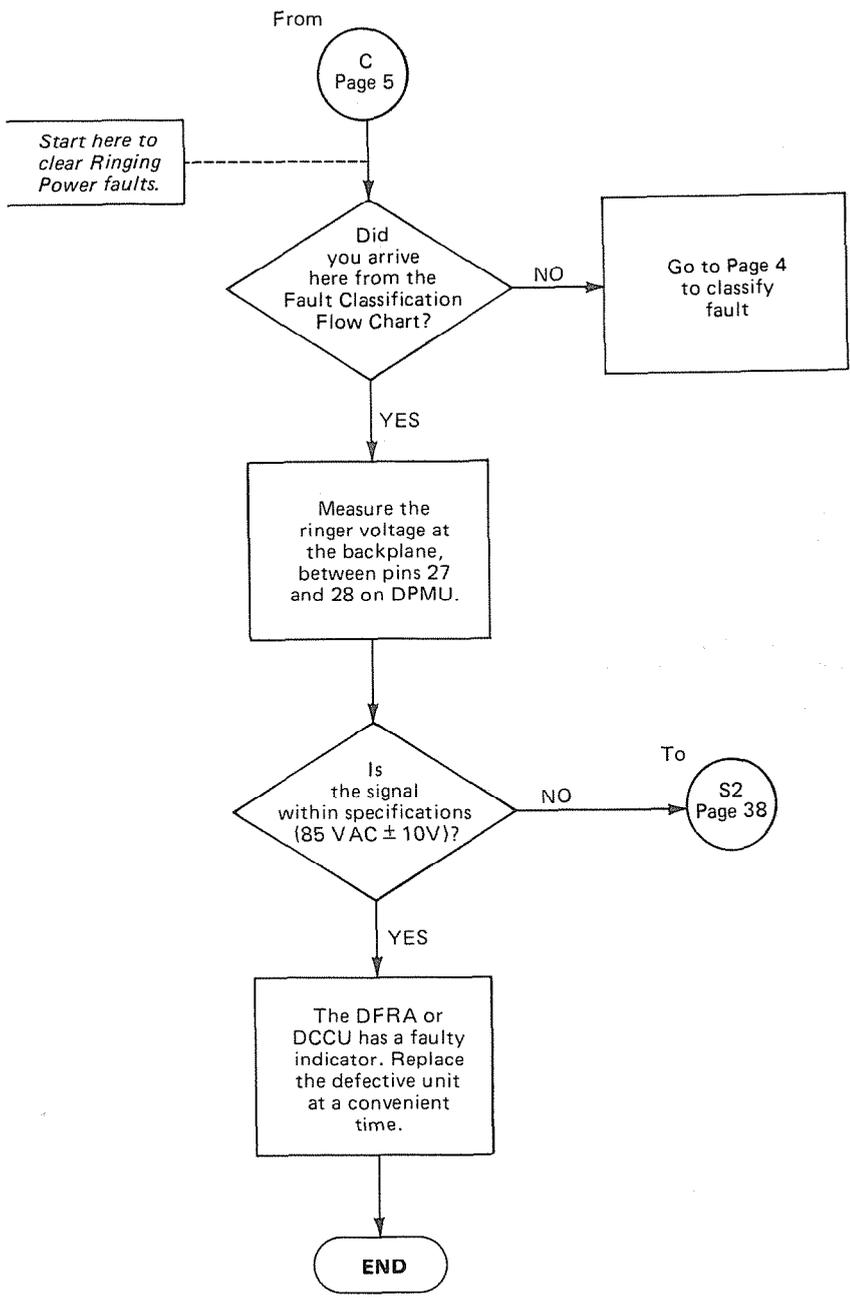


CHART NO. 5
TIME SWITCH CLOCK FAULT

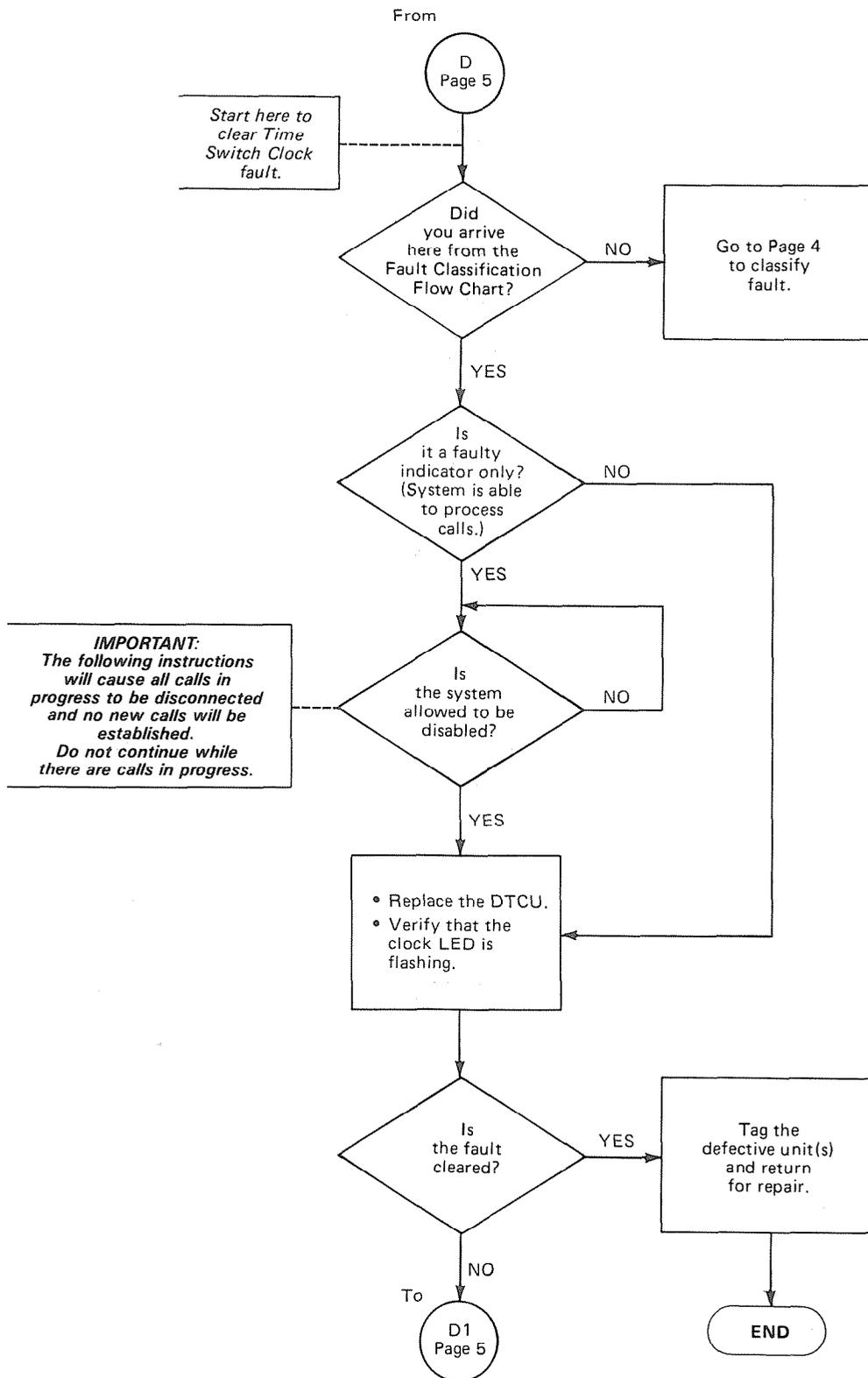


CHART NO. 6
DPMU FAULTS

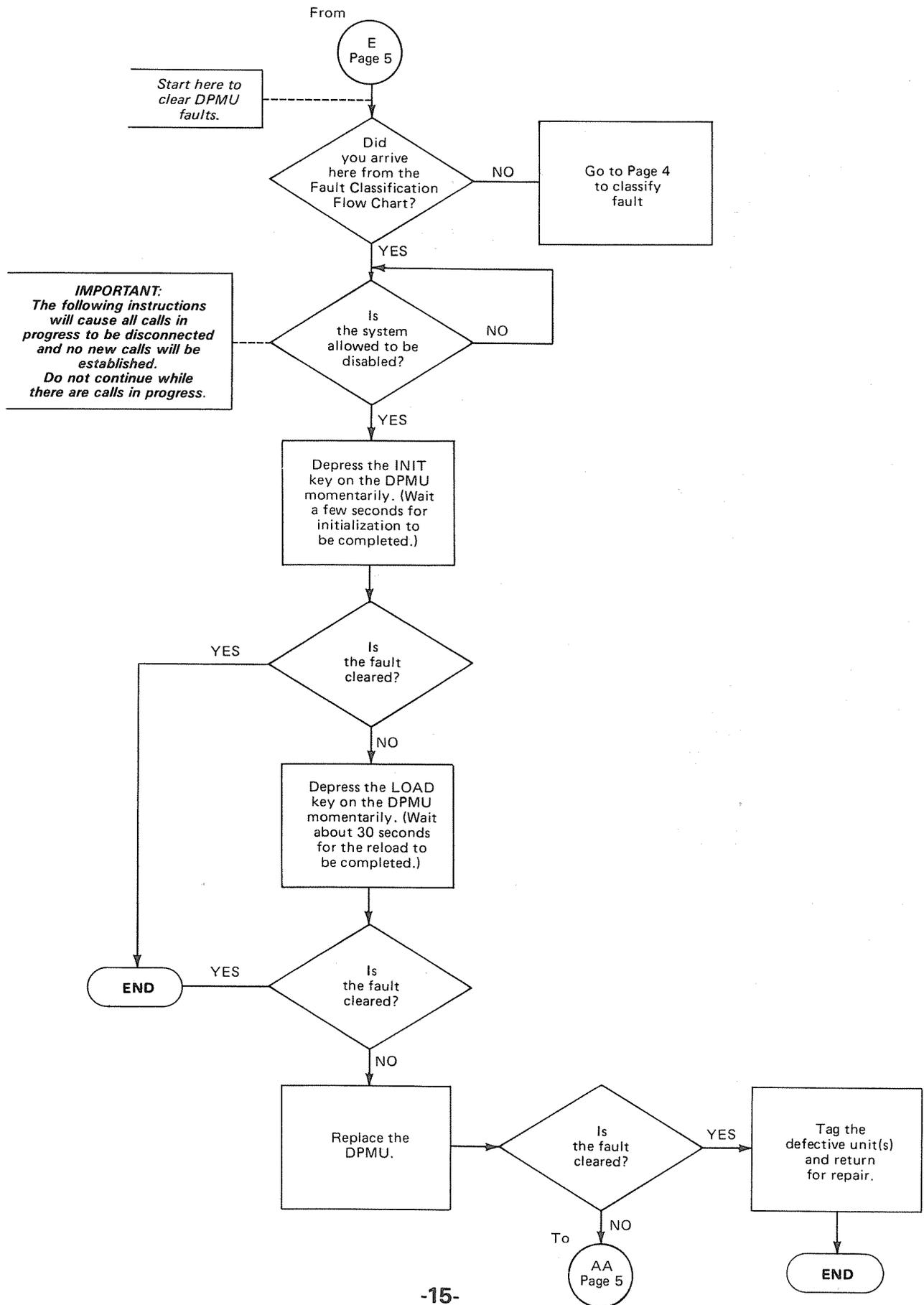


CHART NO. 7
DRCU FAULTS

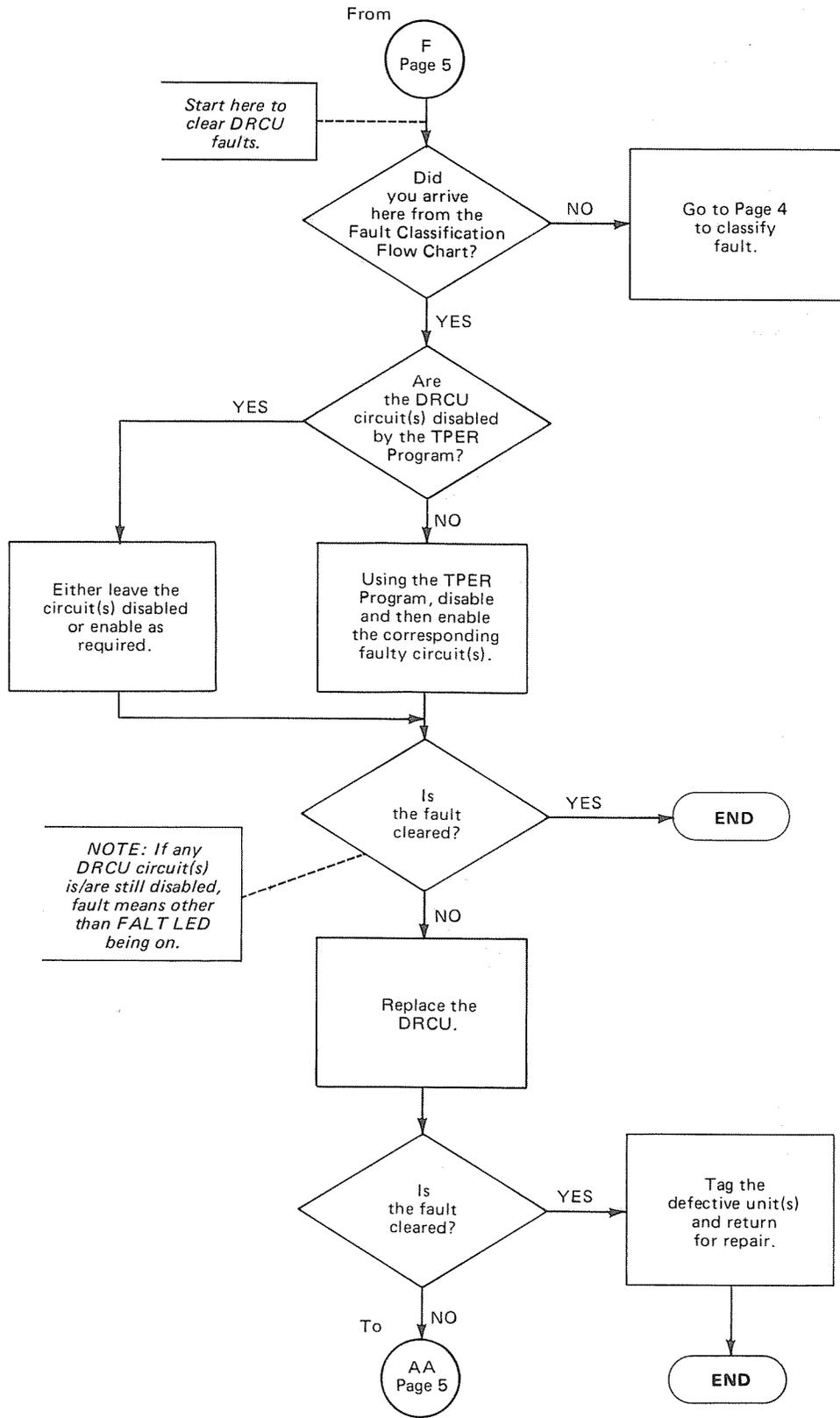


CHART NO. 8
DCOU/DEMU FAULTS

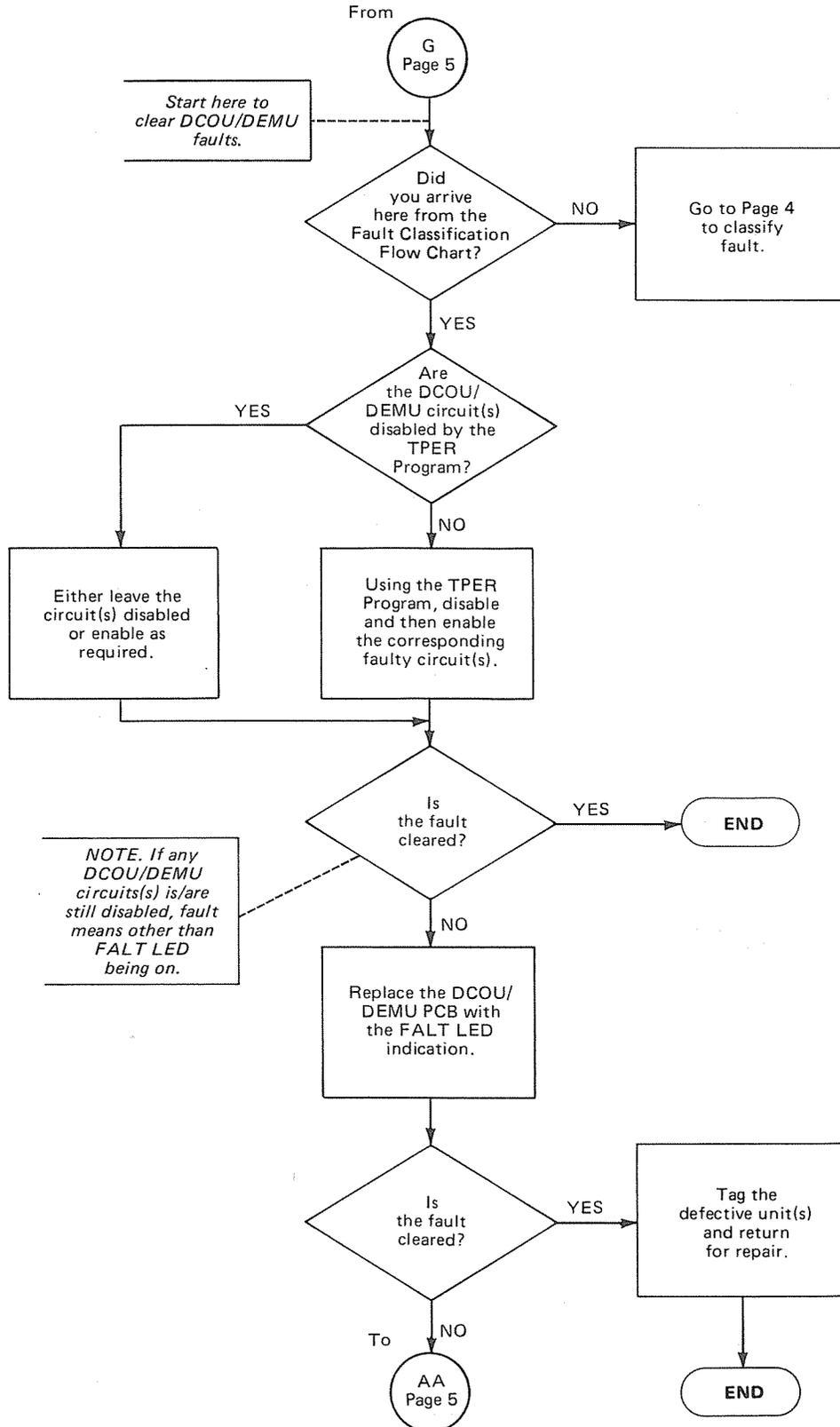


CHART NO. 9
DEKU/DSTU FAULTS

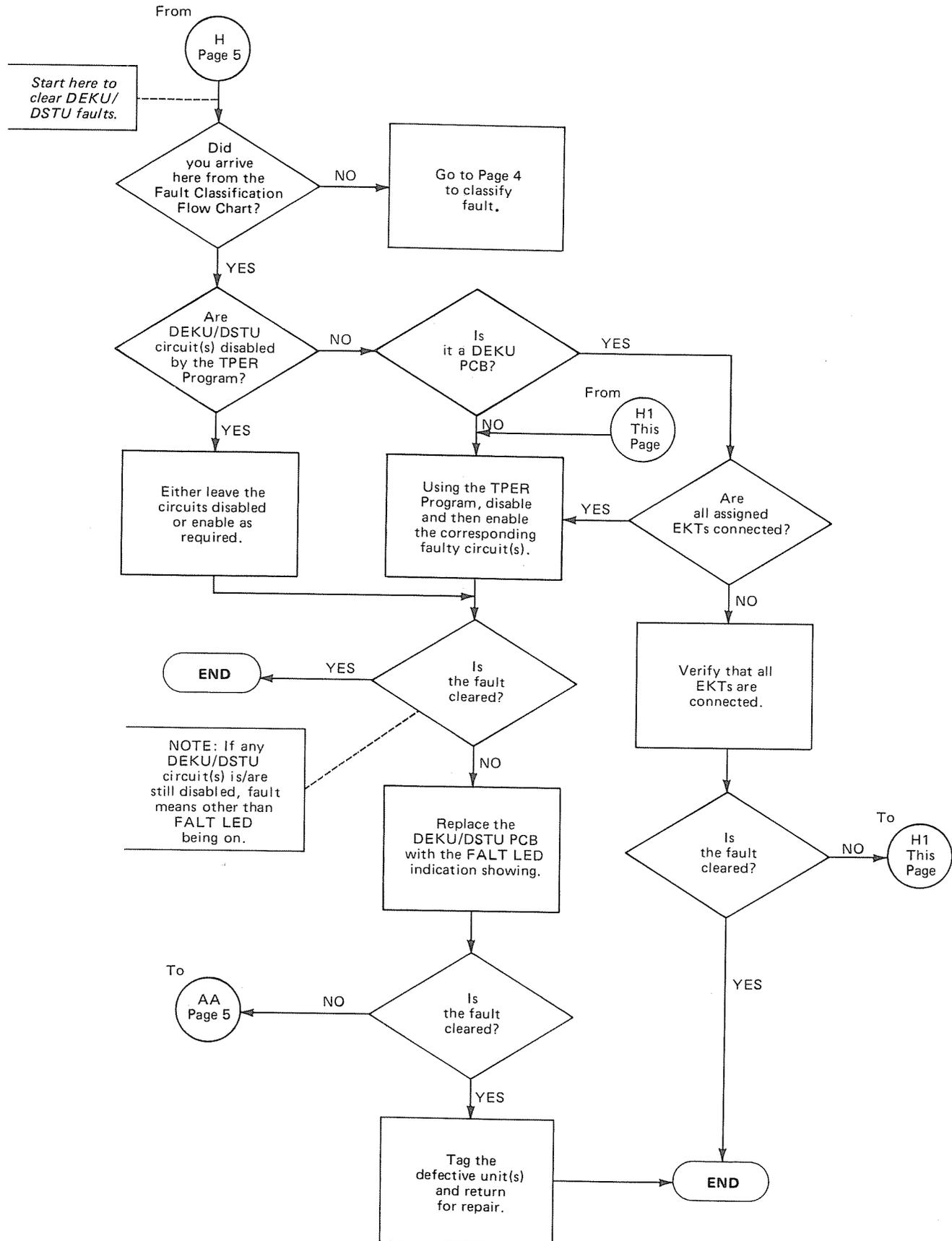


CHART NO. 10
SMDR, TTY OR MODEM FAULTS

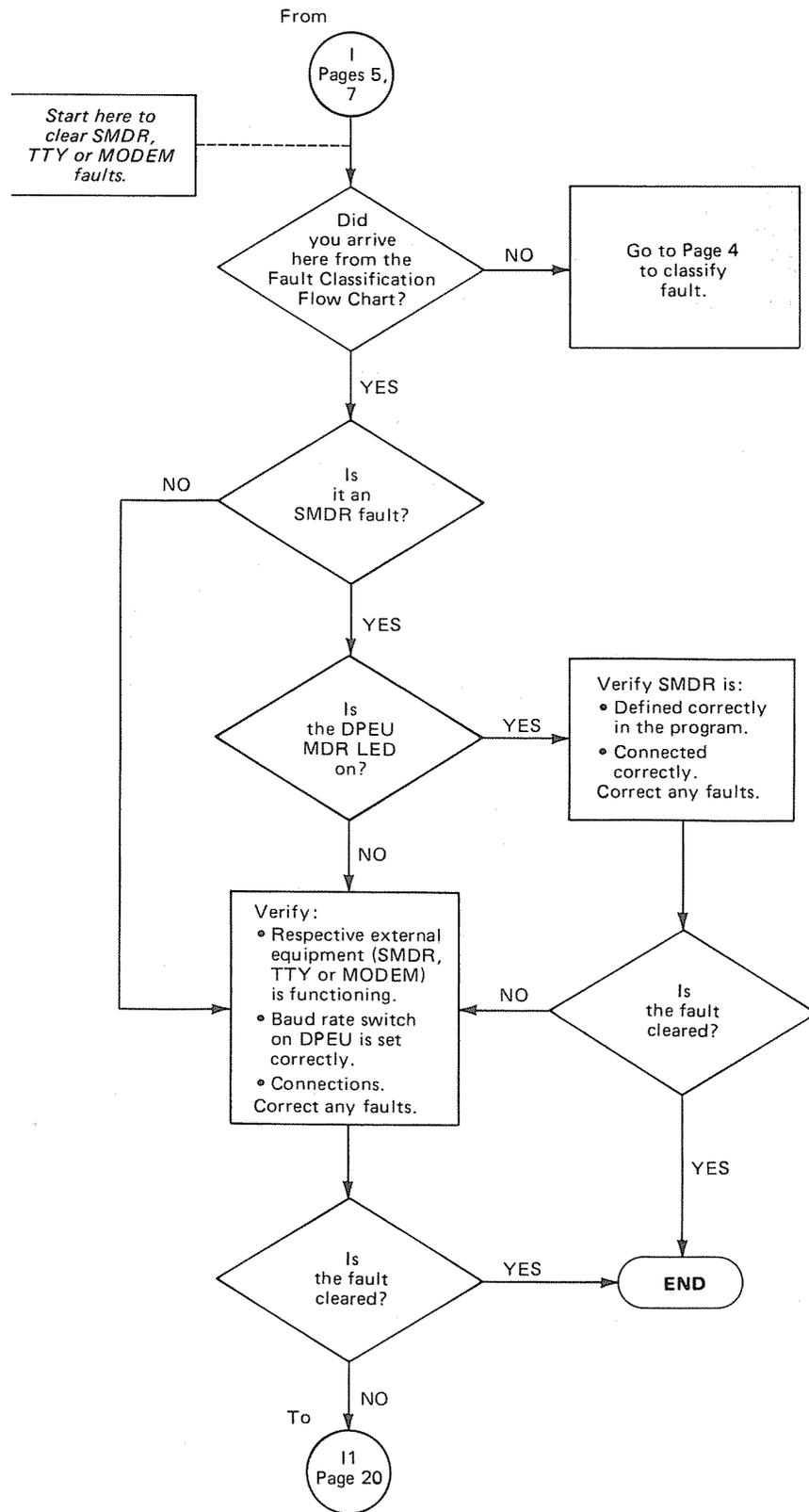
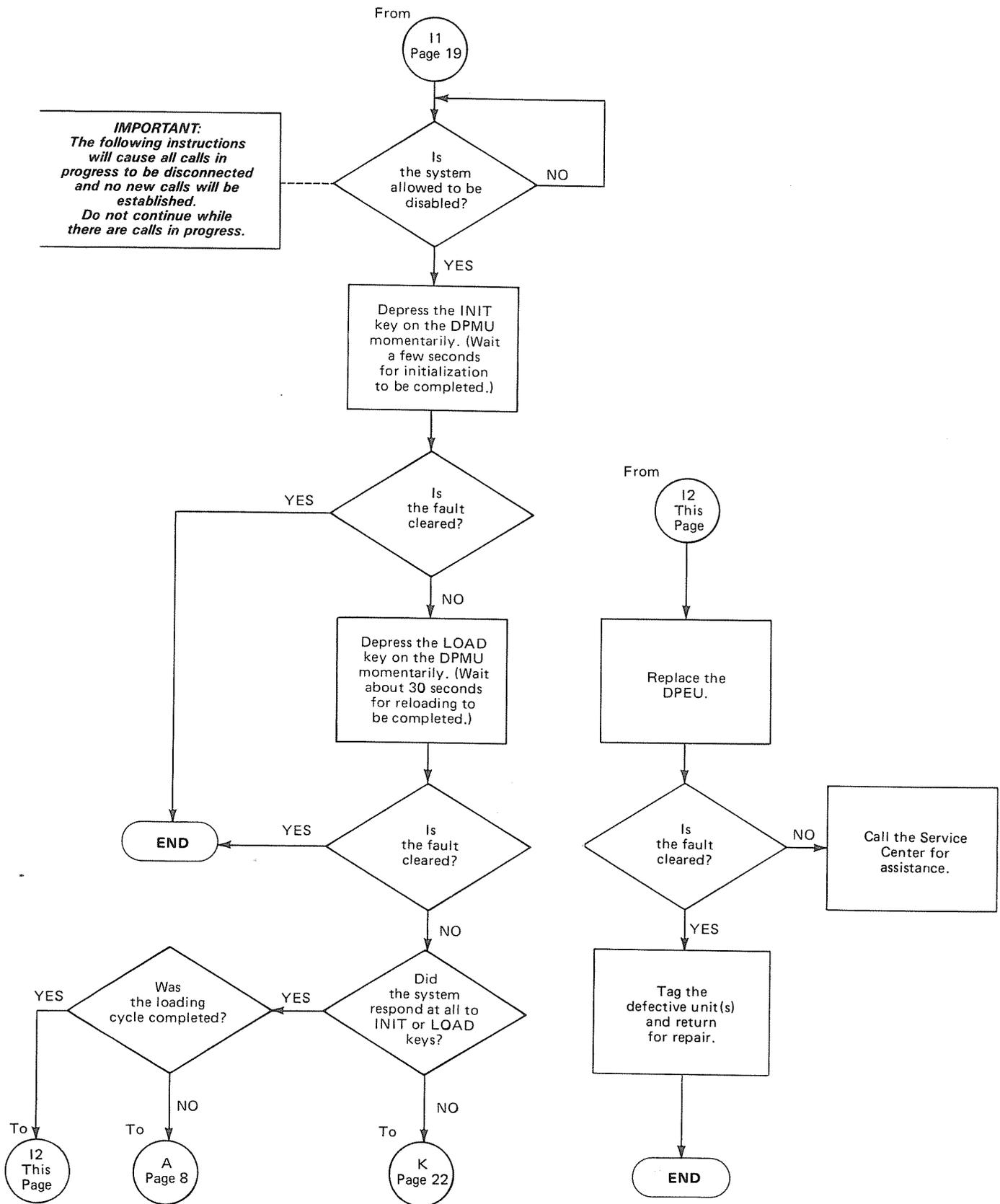


CHART NO. 10
SMDR, TTY OR MODEM FAULTS (con't)



**CHART NO. 11
STATION FAULTS**

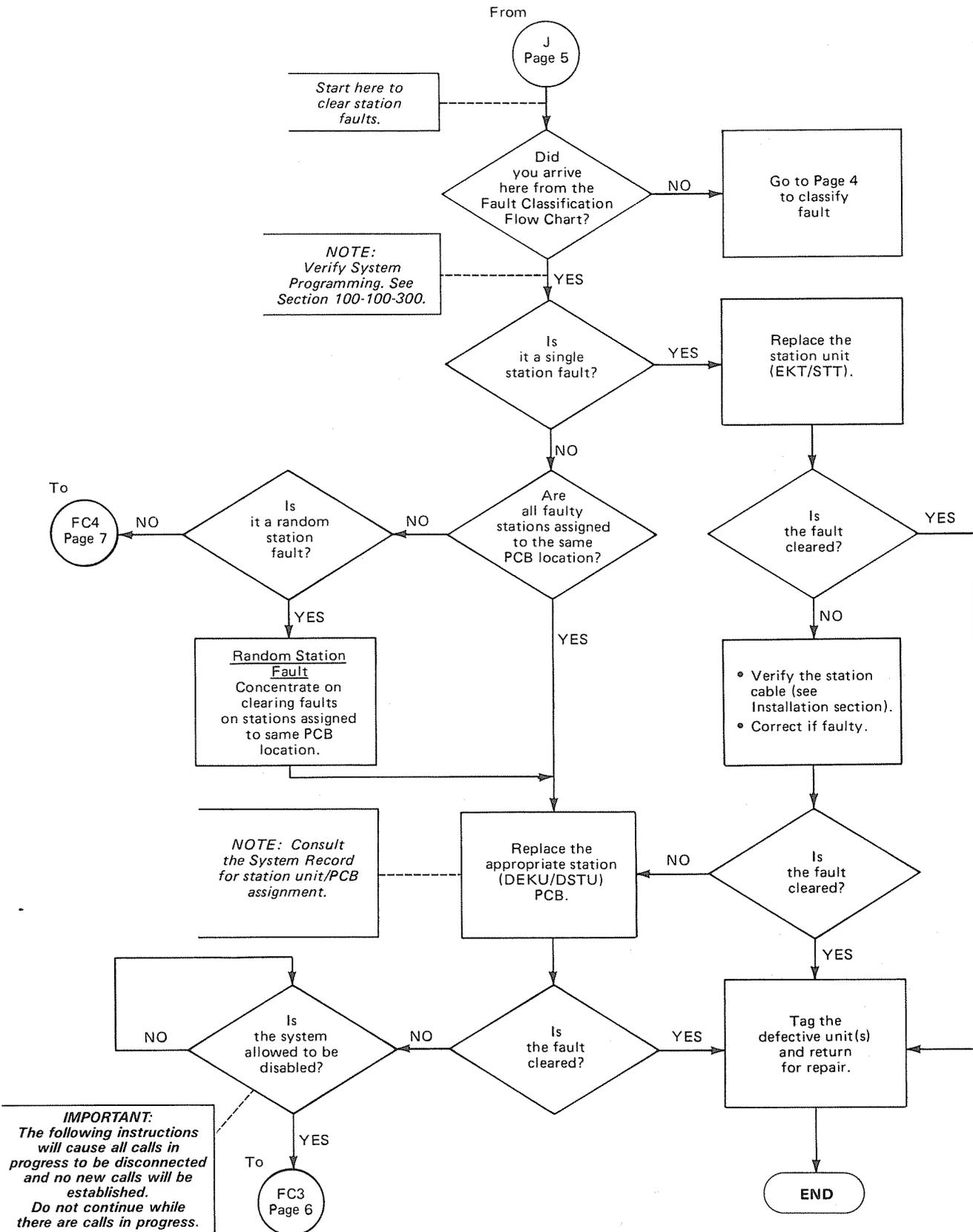


CHART NO. 12
INIT/LOAD KEY FAULTS

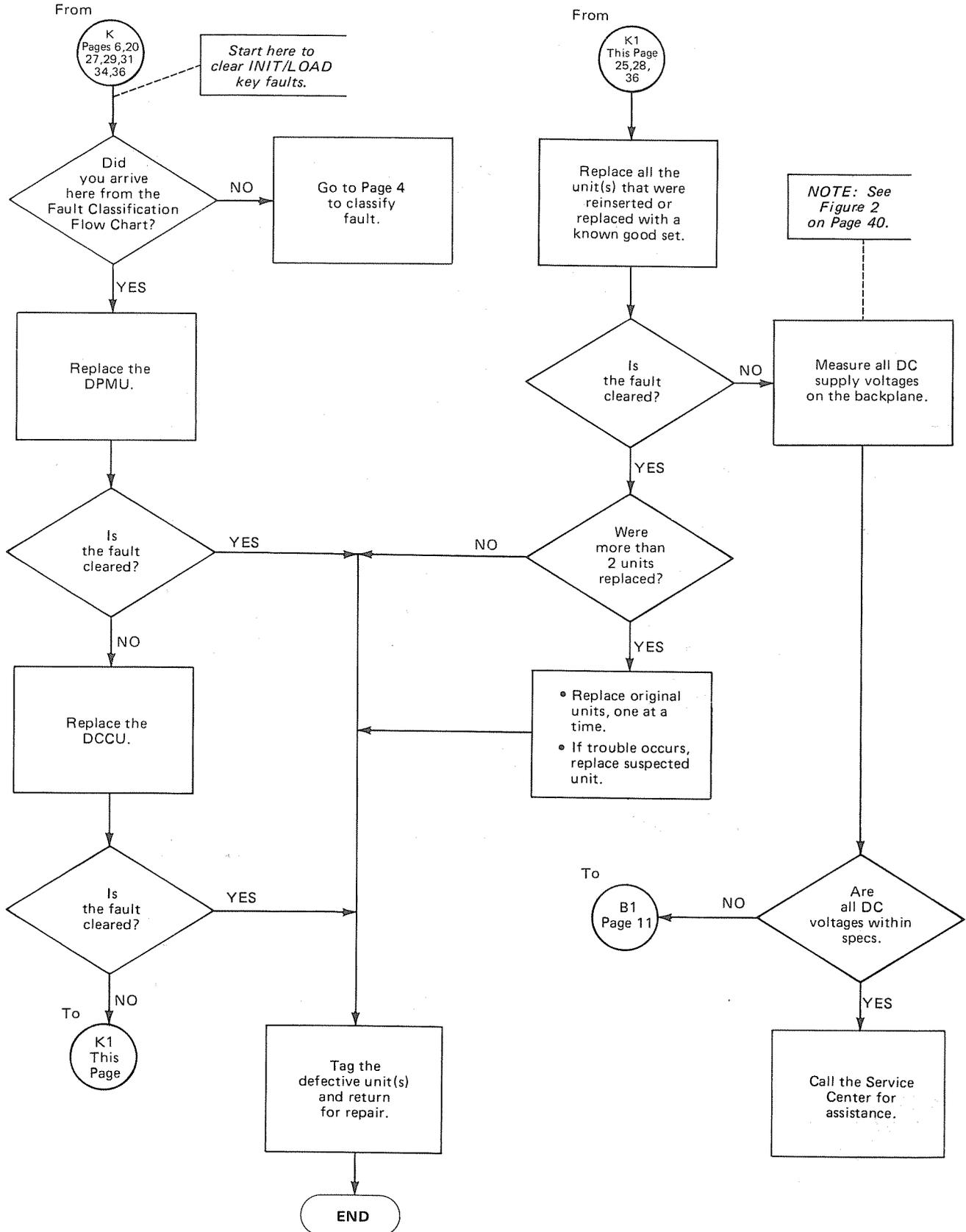


CHART NO. 13
MAJOR ALARM FAULTS
(MAJ LED ON)

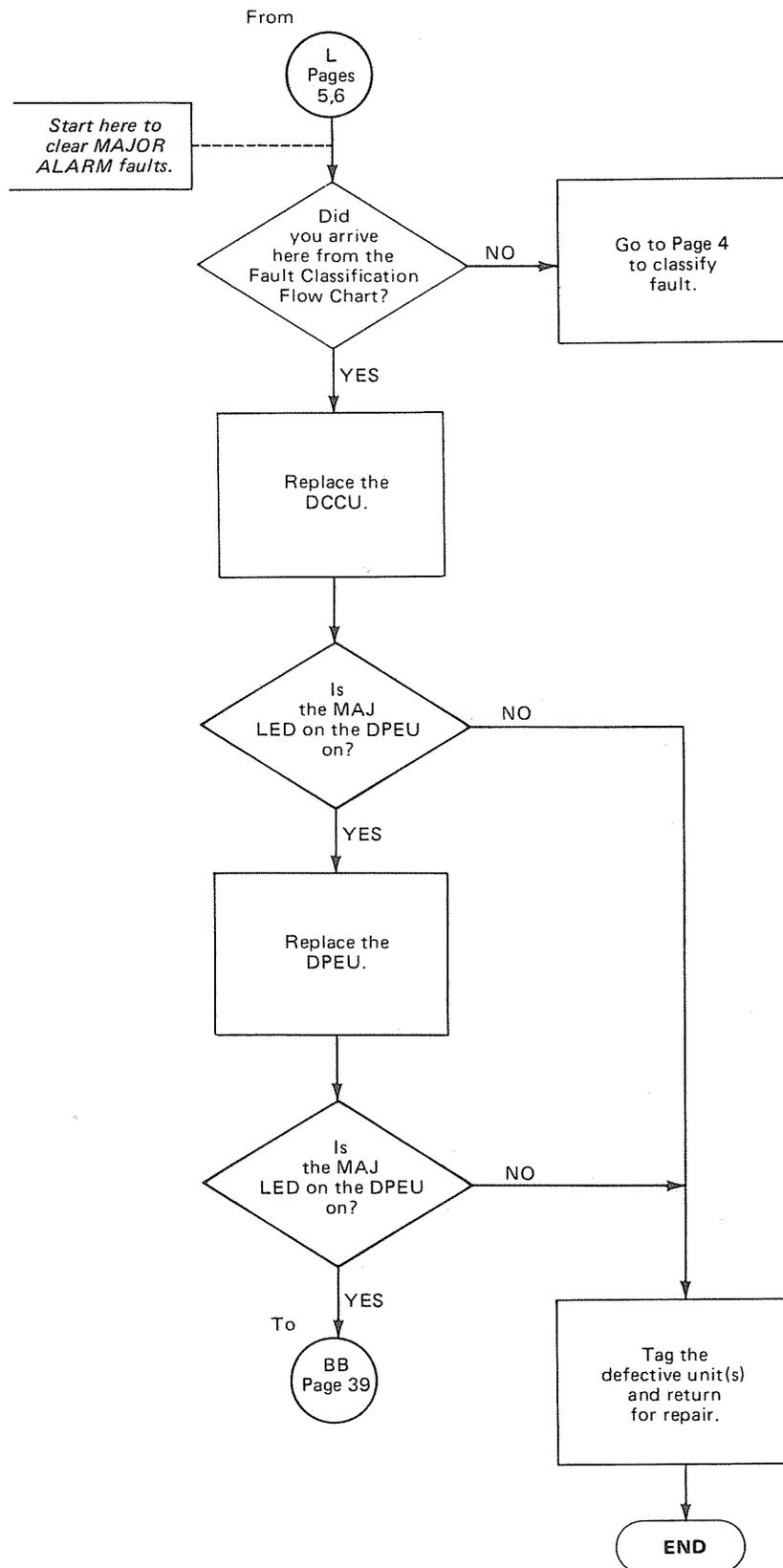


CHART NO. 14
CO/TIE TRUNK FAULTS

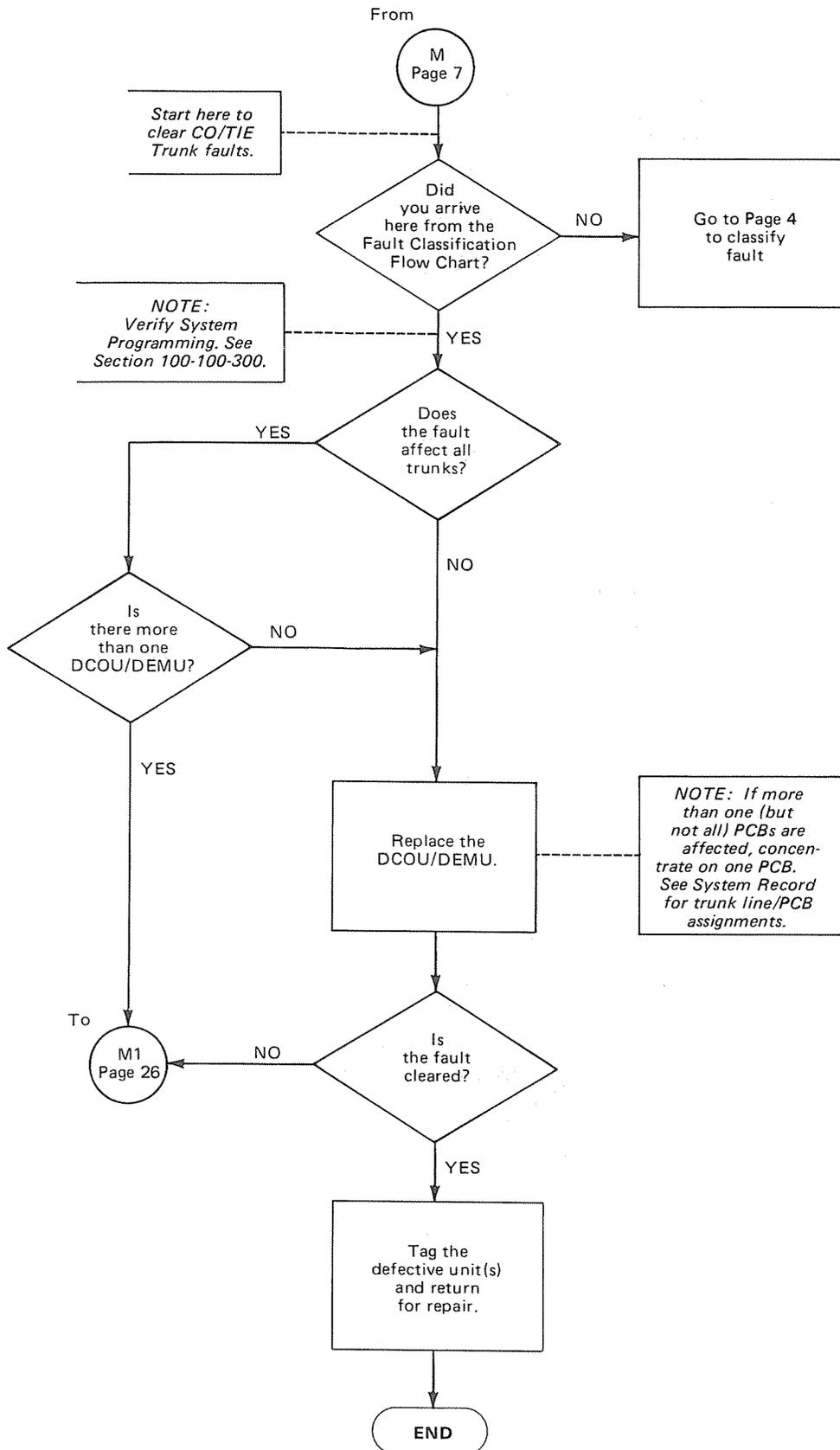


CHART NO. 15
ATTENDANT CONSOLE FAULTS

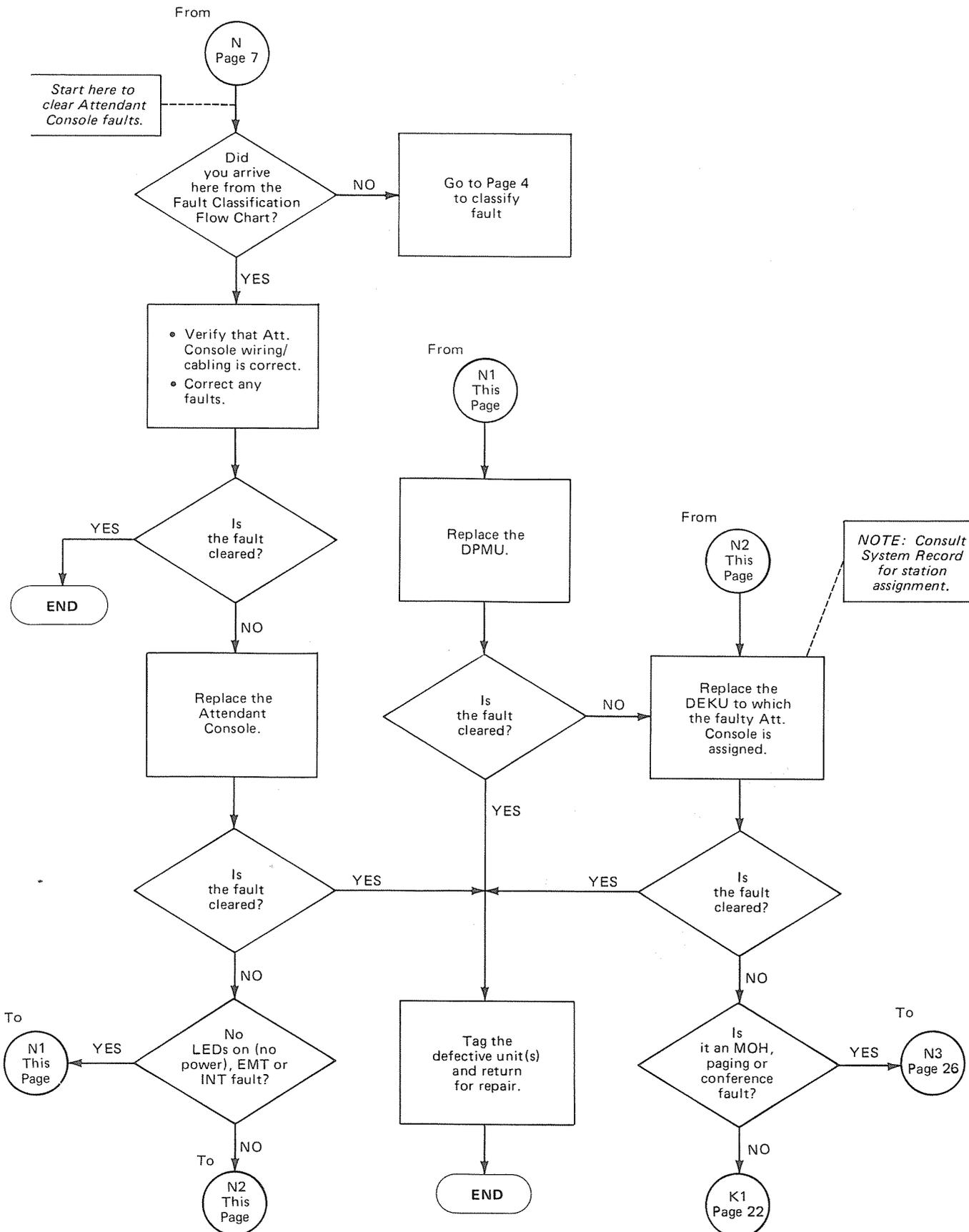


CHART NO. 16
COMMON STATION FEATURE FAULTS

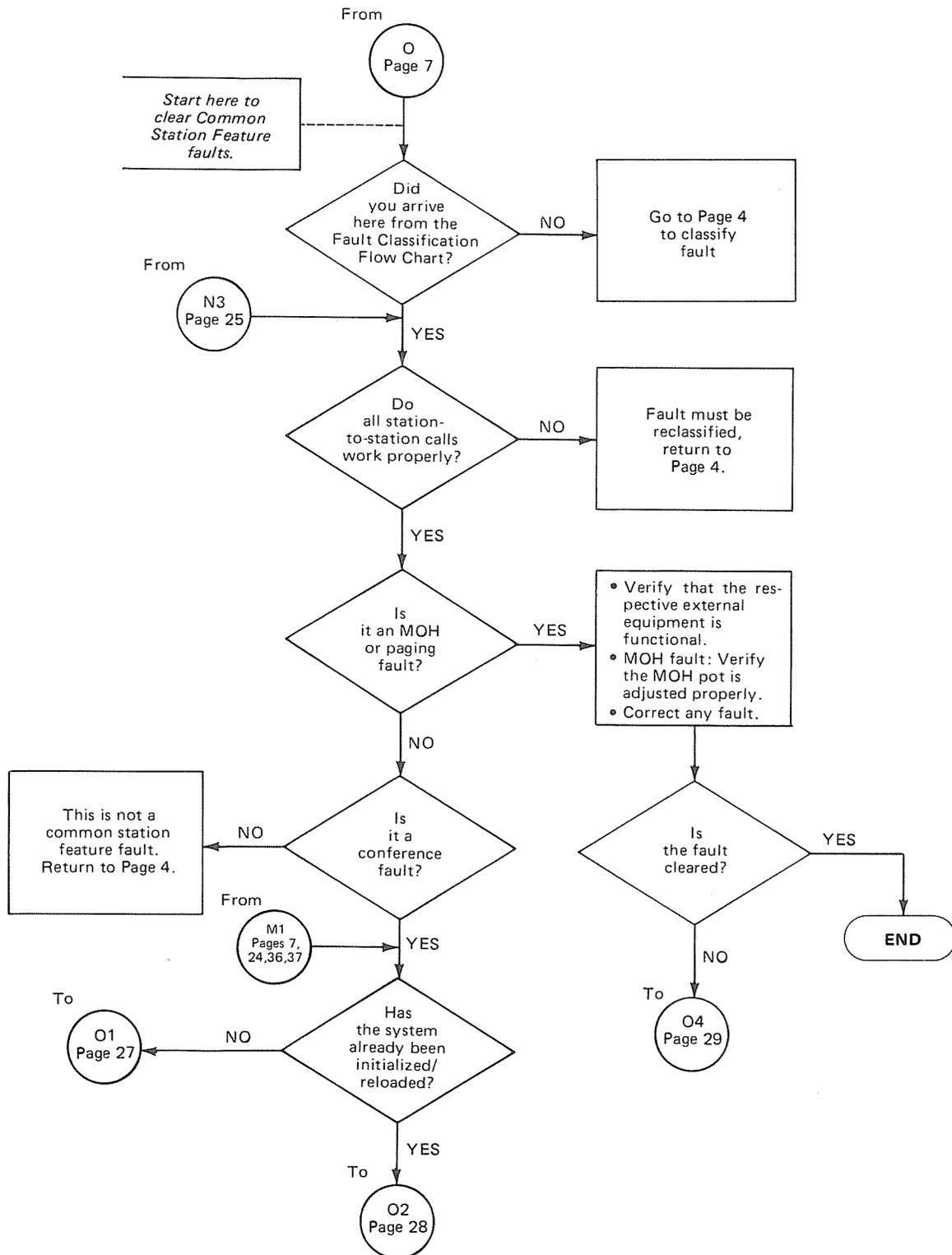


CHART NO. 16
COMMON STATION FEATURE FAULTS (con't)

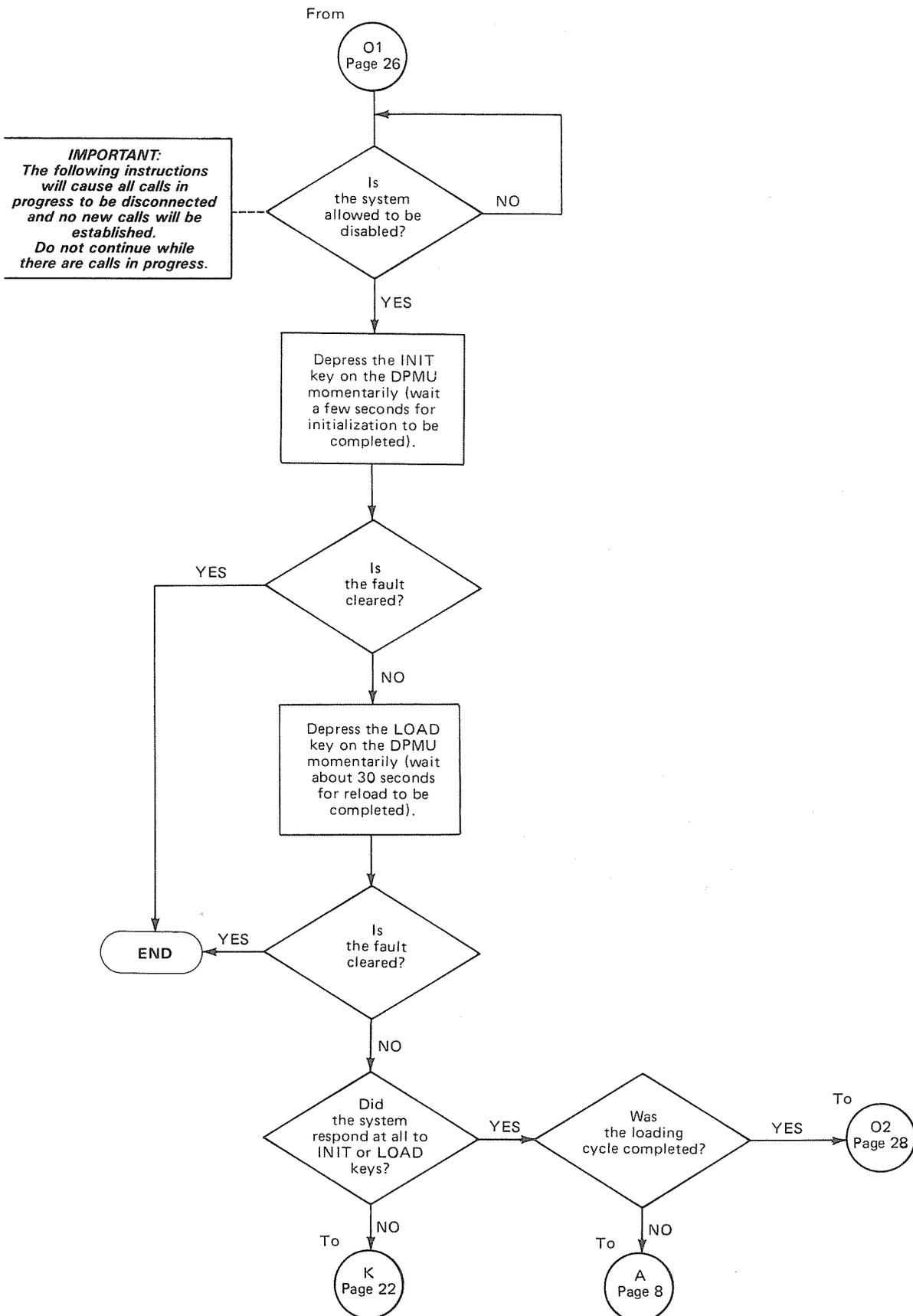


CHART NO. 16
COMMON STATION FEATURE FAULTS (con't)

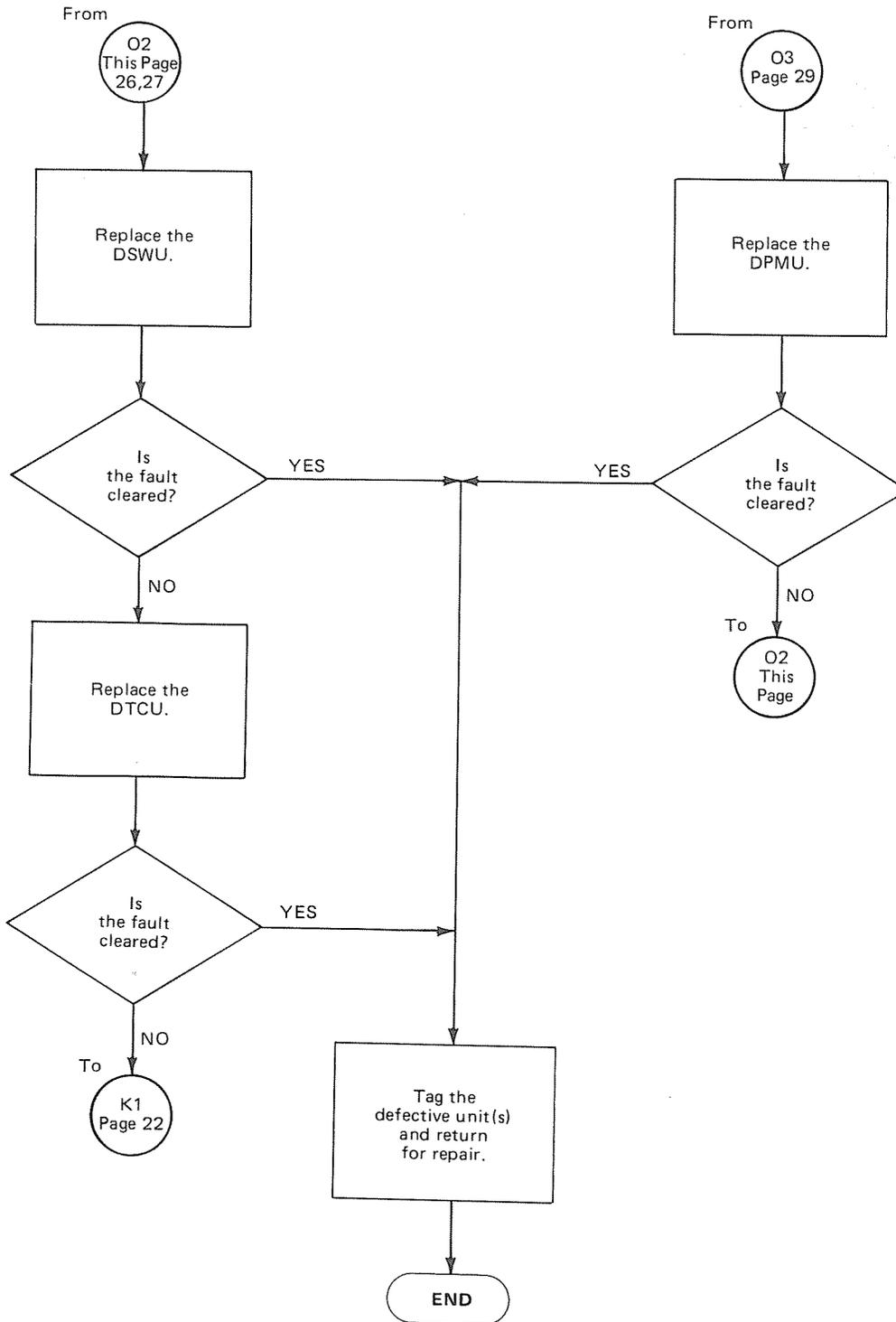


CHART NO. 16
COMMON STATION FEATURE FAULTS (con't)

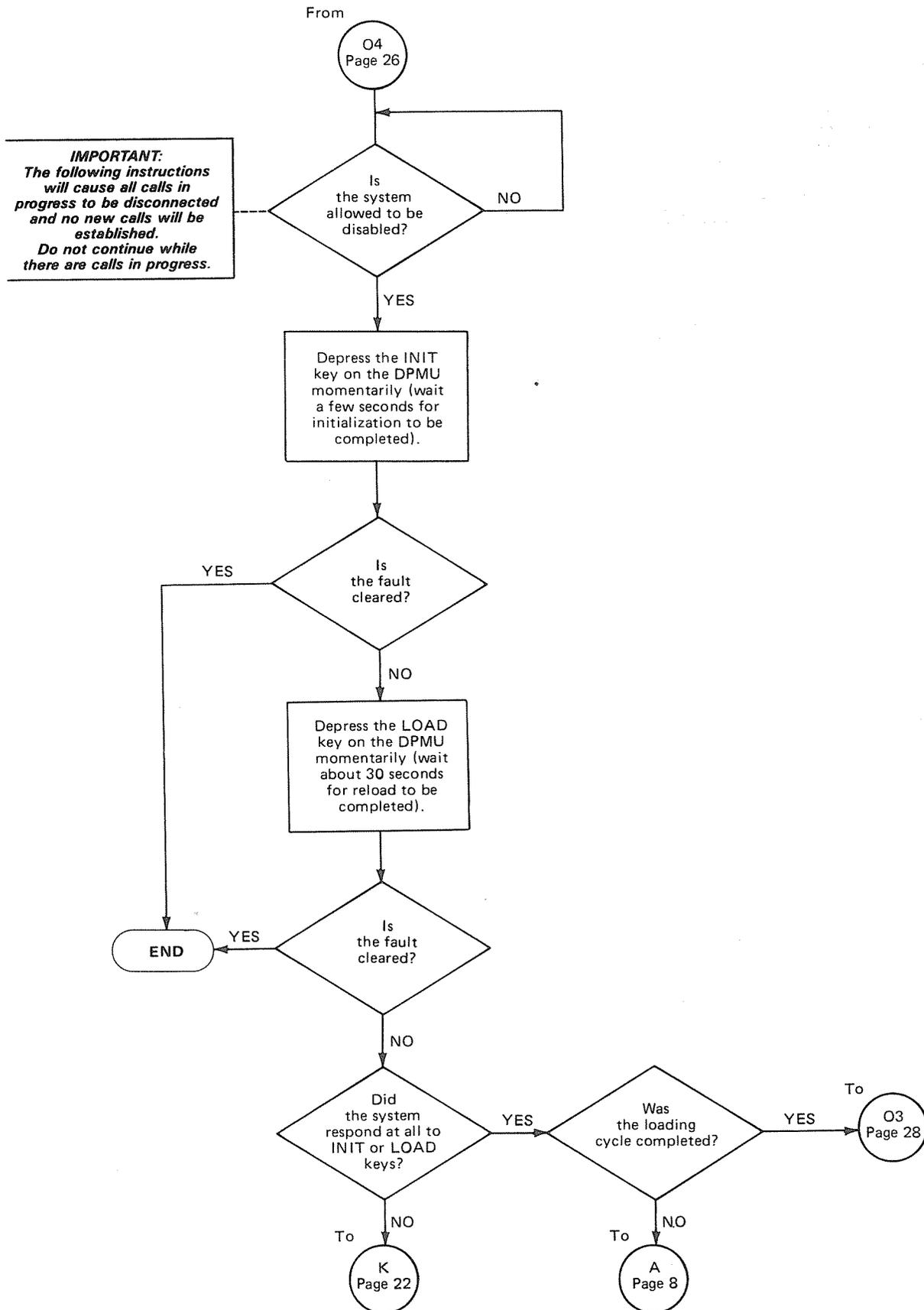


CHART NO. 17
SPEECH PATH OR DIAL TONE FAULTS

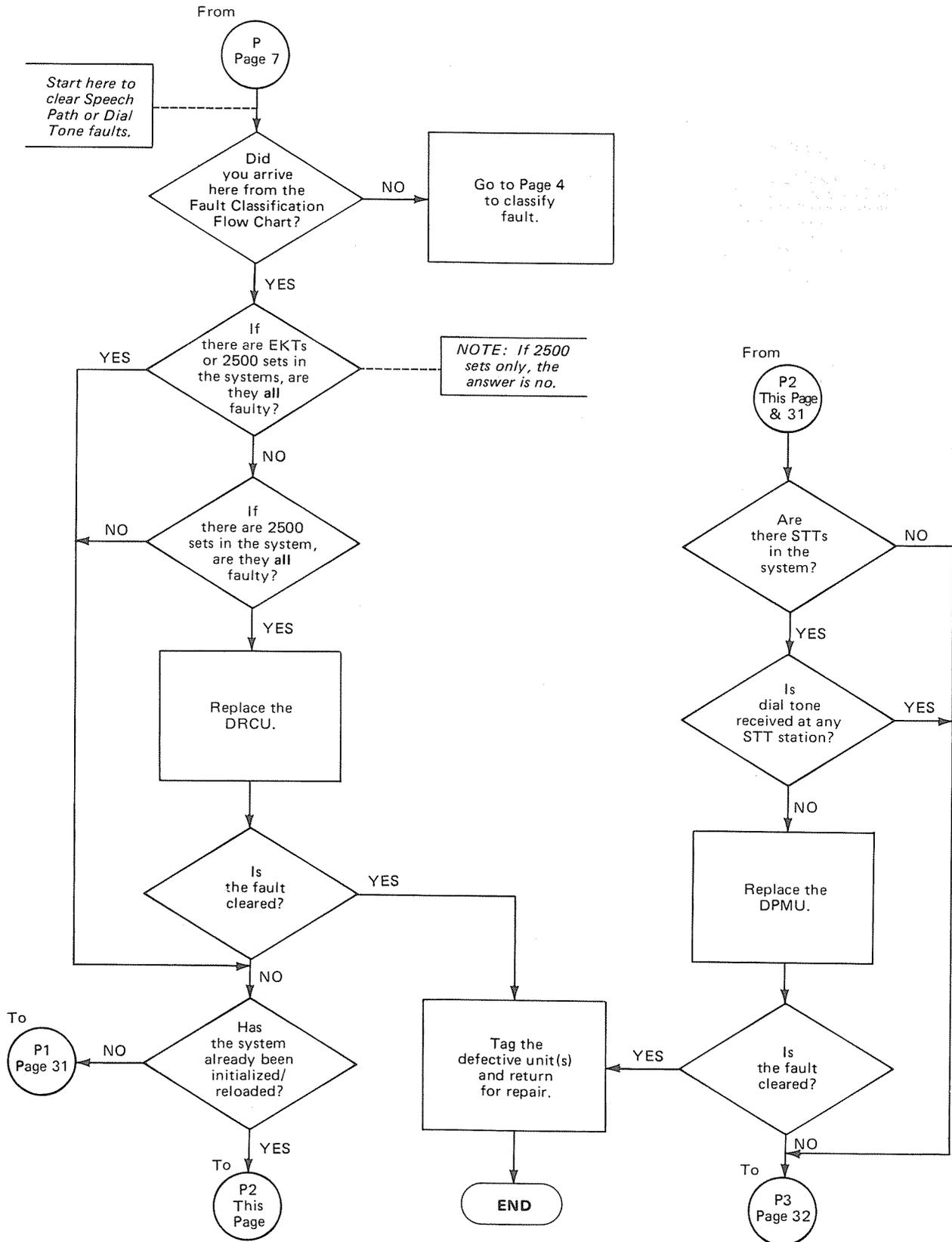


CHART NO. 17
SPEECH PATH OR DIAL TONE FAULTS (con't)

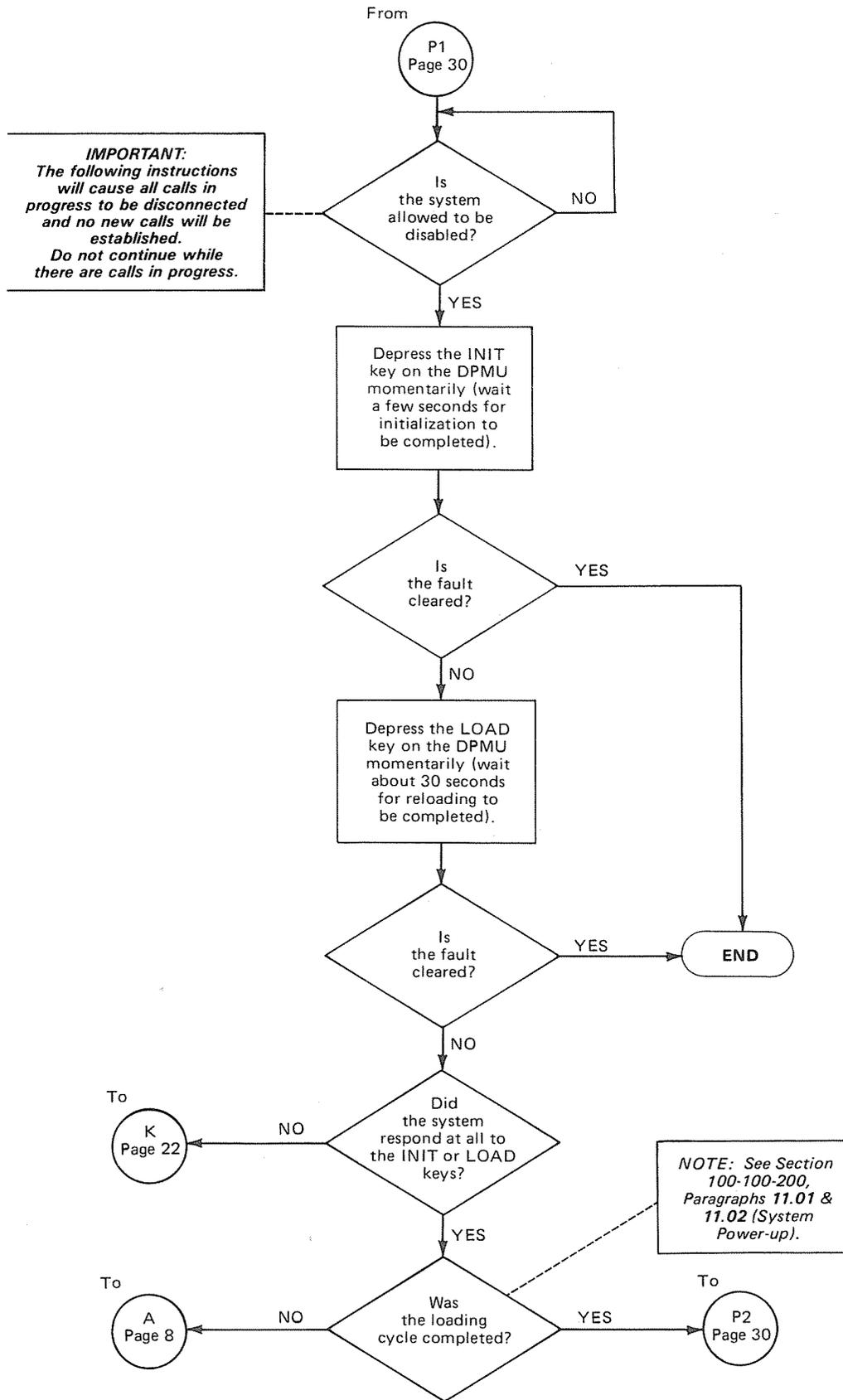


CHART NO. 17
SPEECH PATH OR DIAL TONE FAULTS (con't)

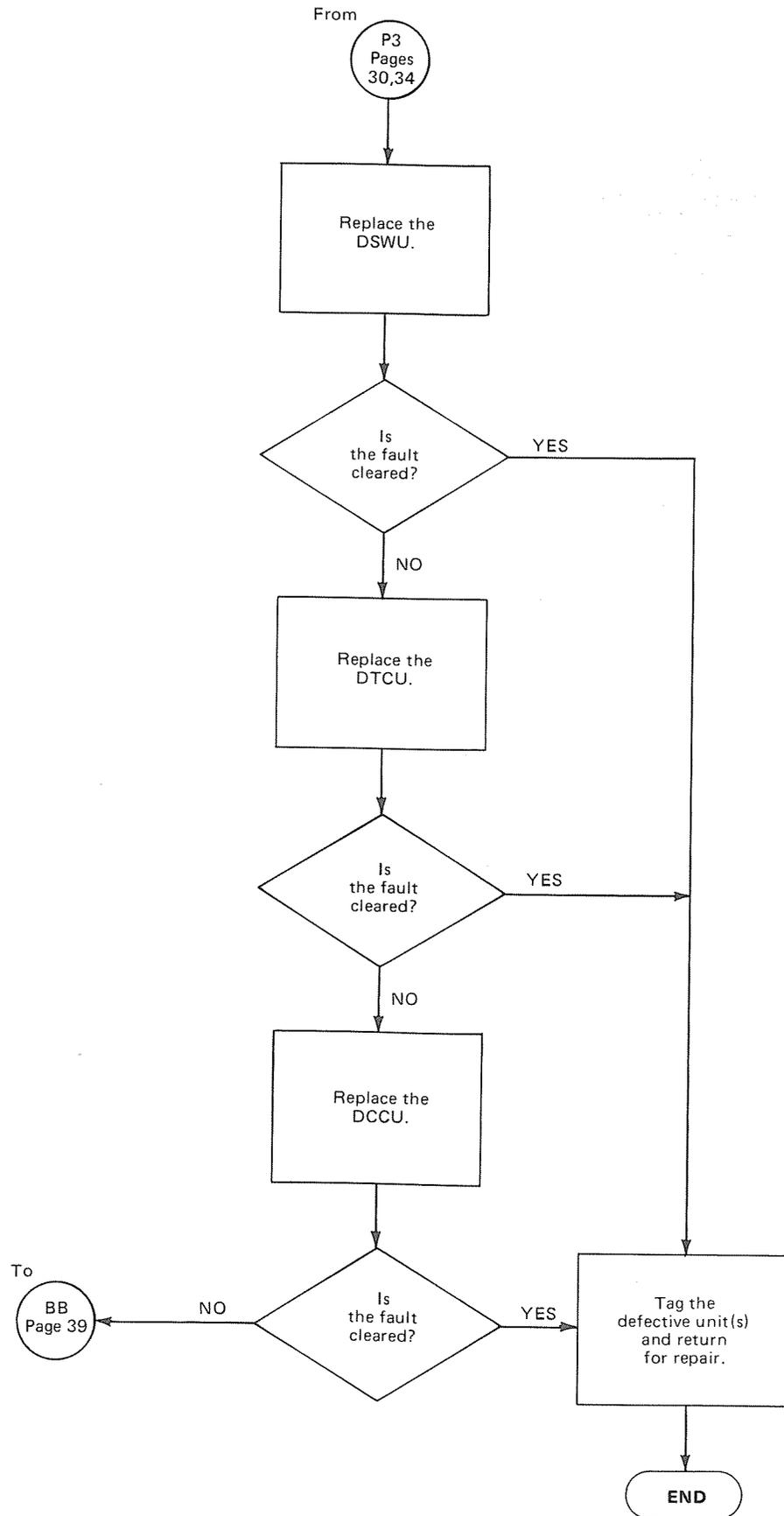


CHART NO. 18
DATA/SPEECH PATH OR DIAL TONE FAULTS

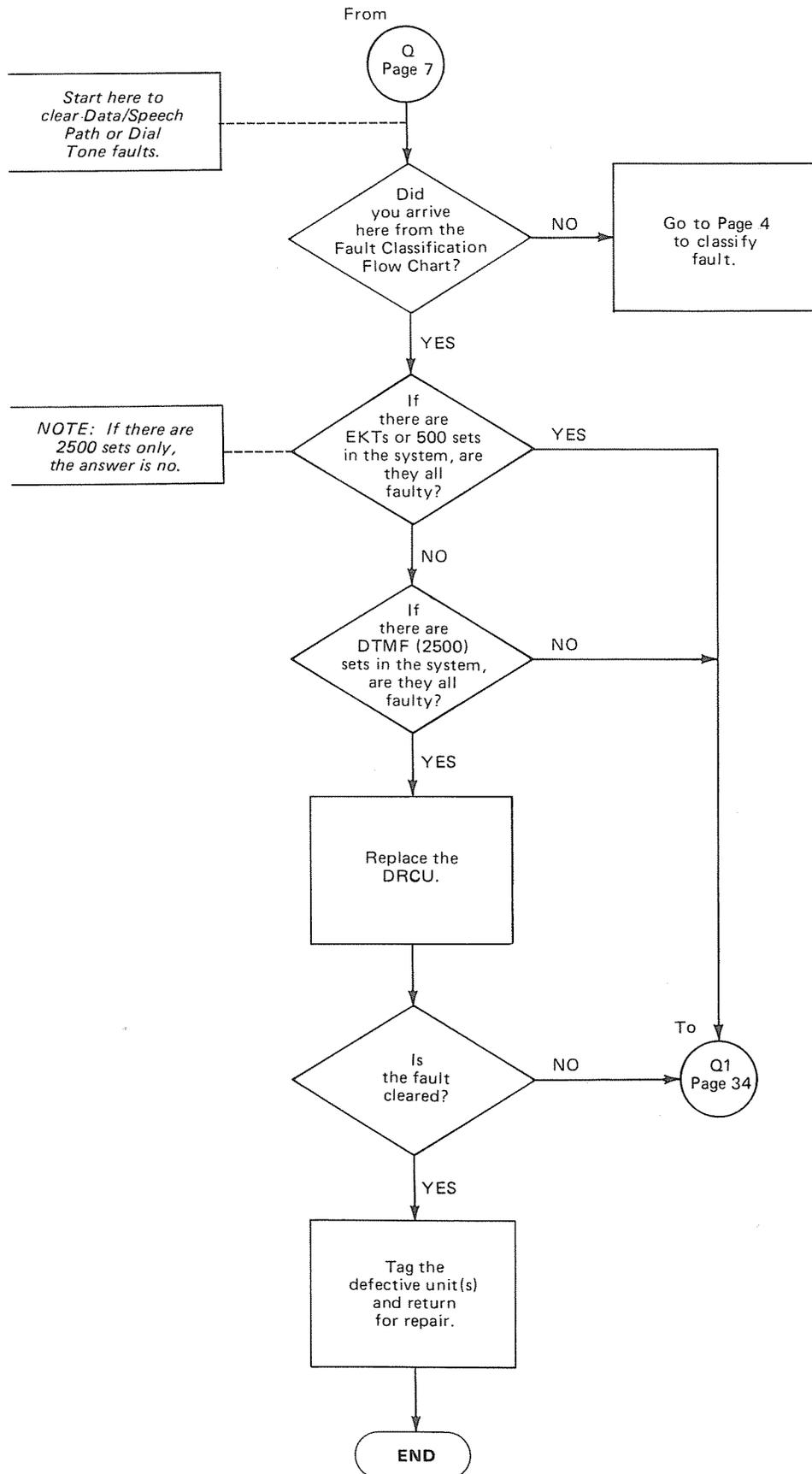


CHART NO. 18
DATA/SPEECH PATH OR DIAL TONE FAULTS (con't)

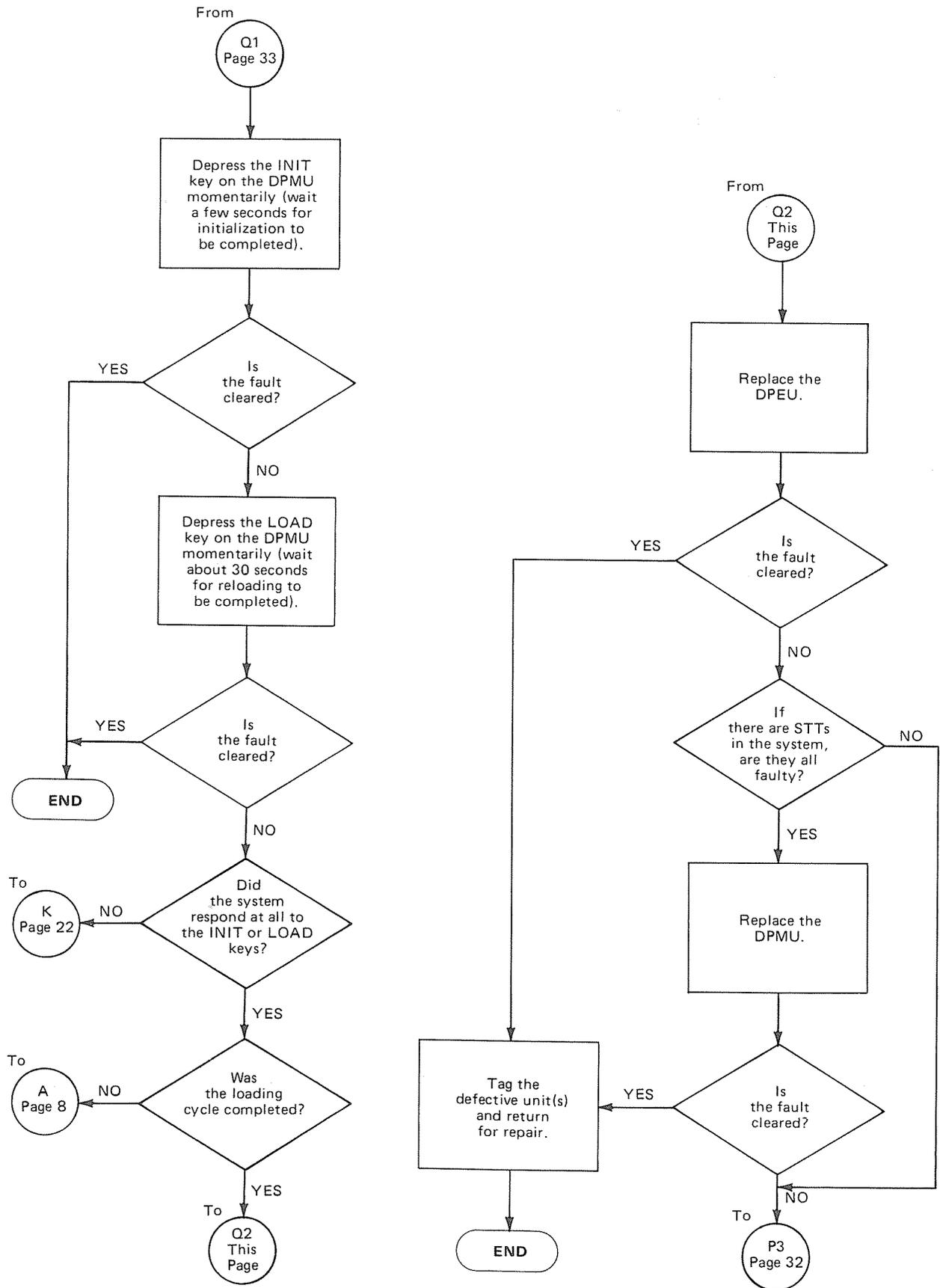
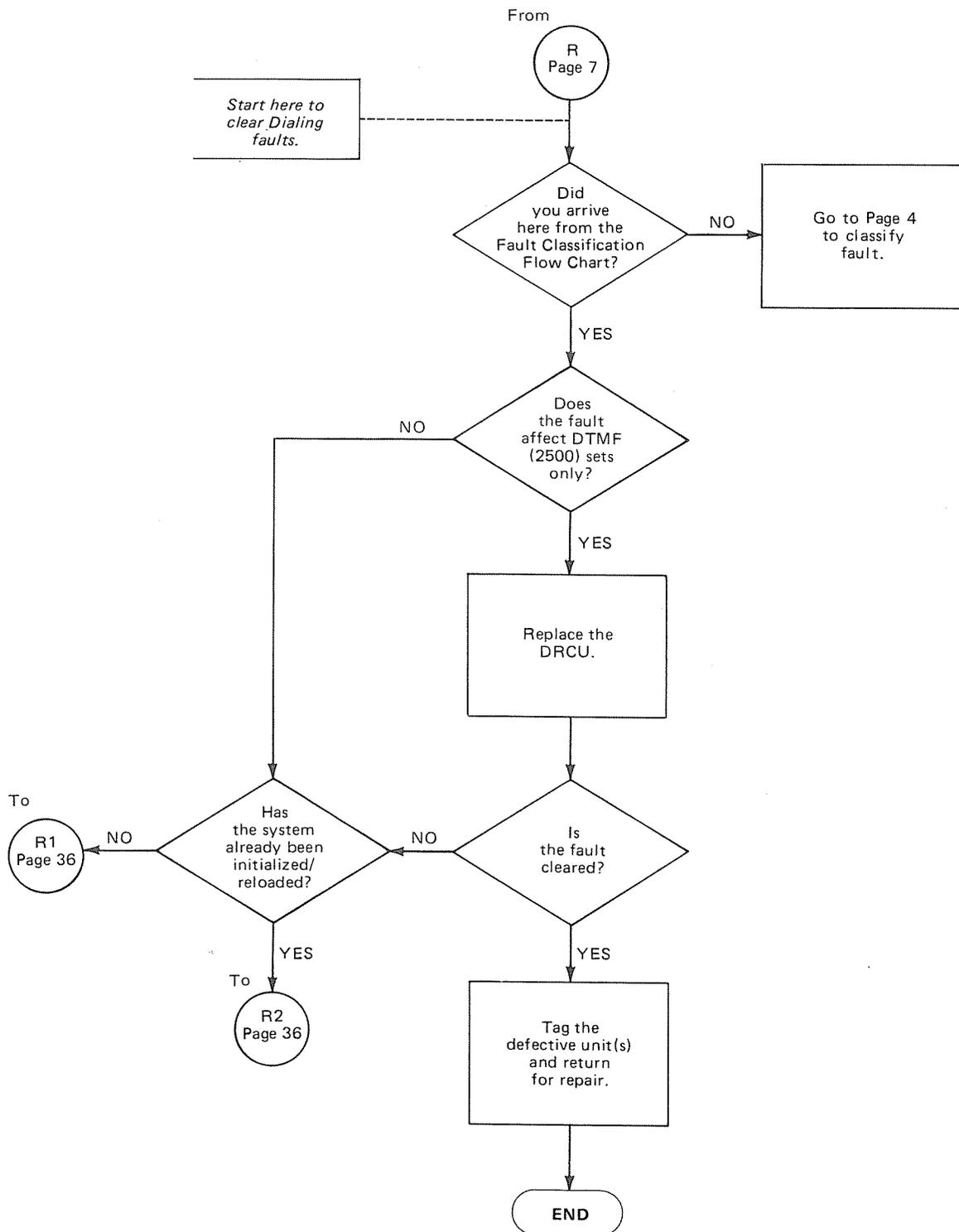


CHART NO. 19
DIALING FAULTS



**CHART NO. 19
DIALING FAULTS (con't)**

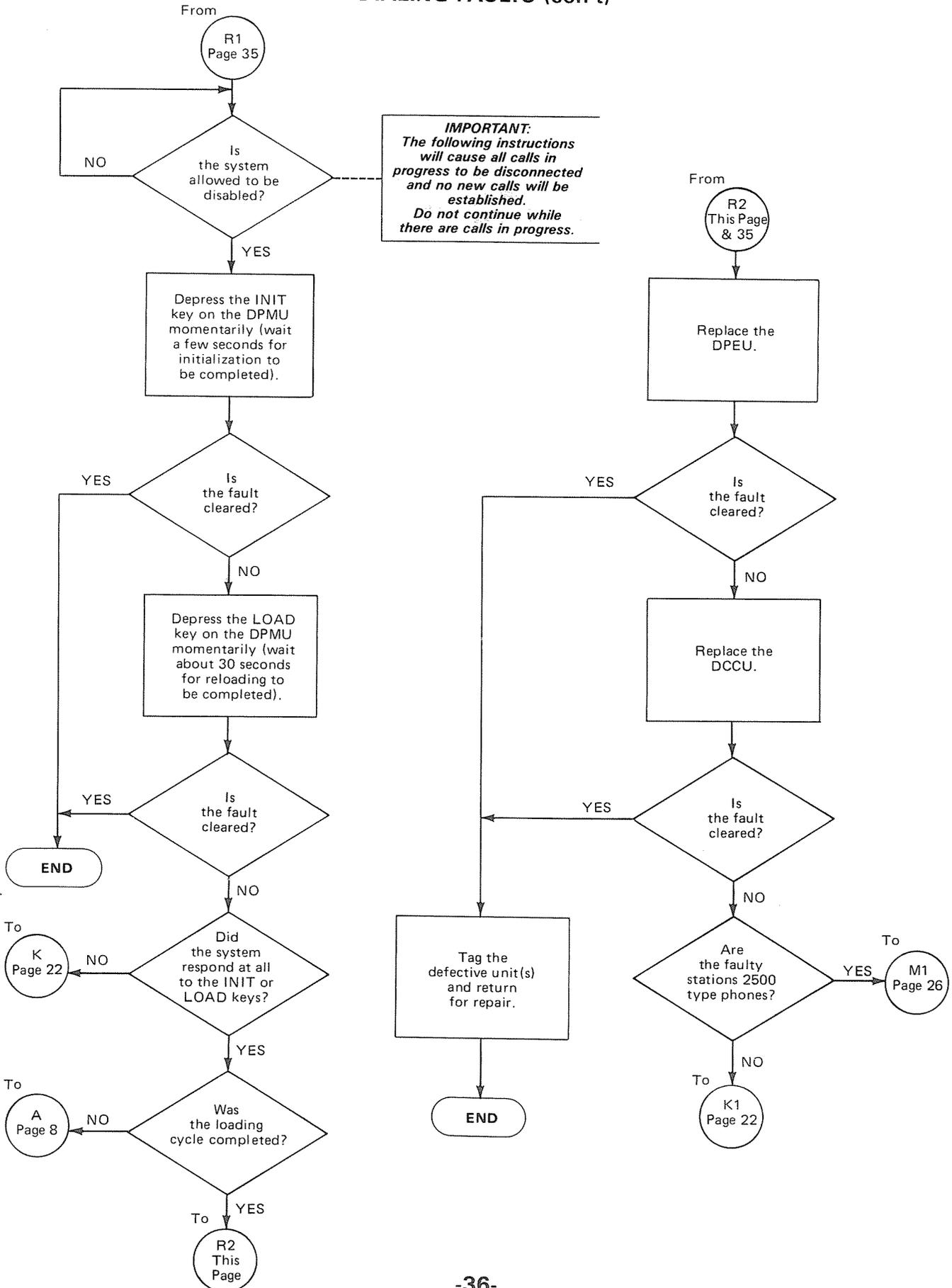


CHART NO. 20
RINGING/RINGBACK TONE FAULTS

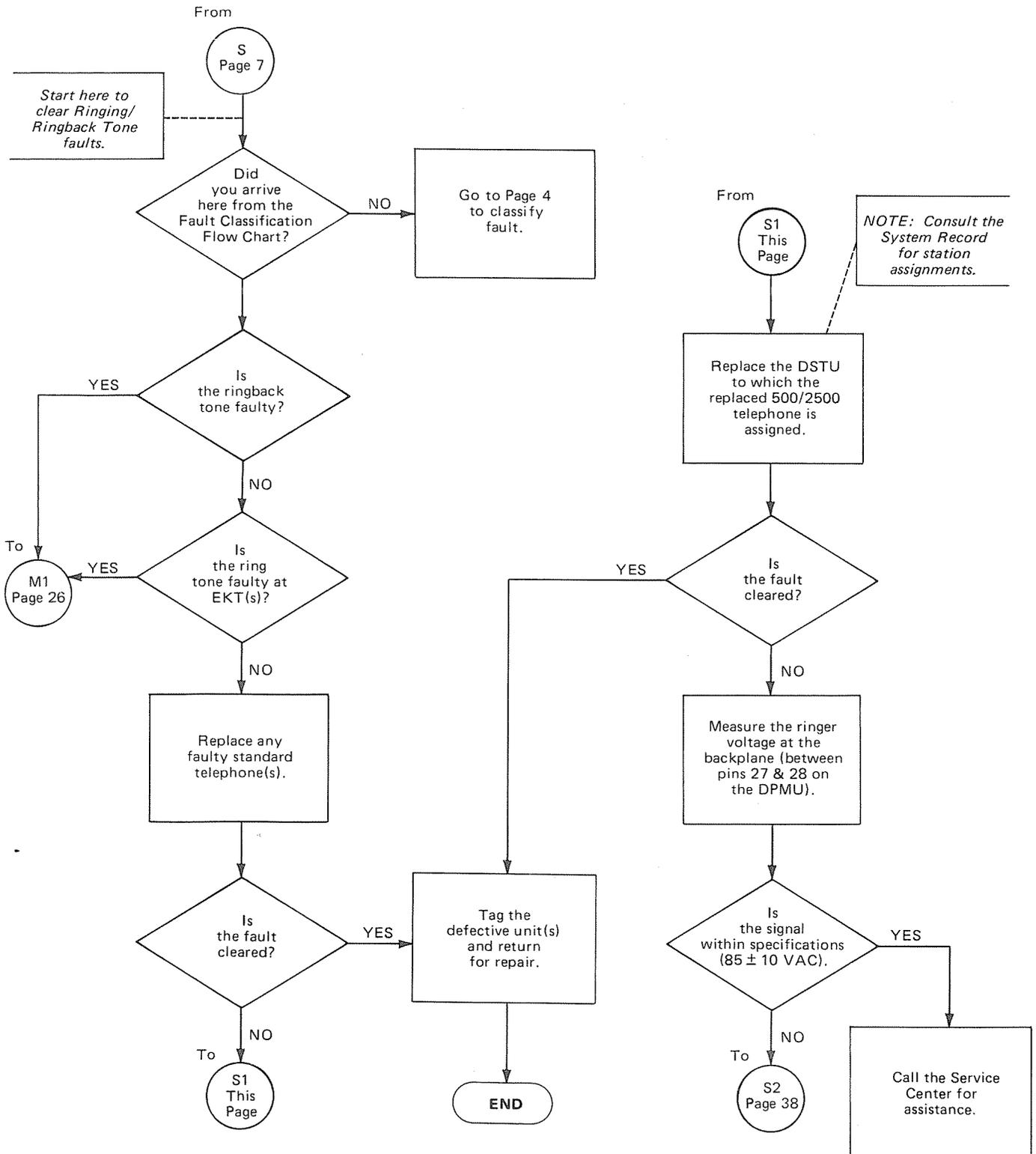


CHART NO. 20
RINGING/RINGBACK TONE FAULTS (con't)

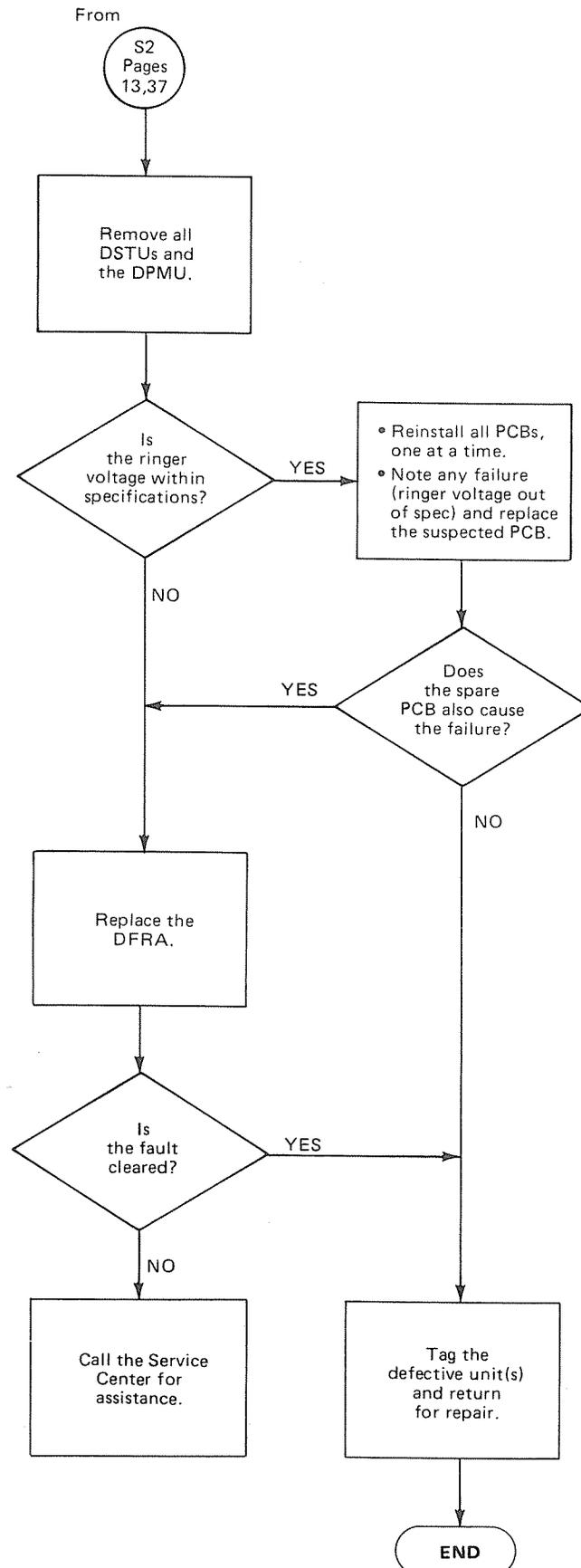
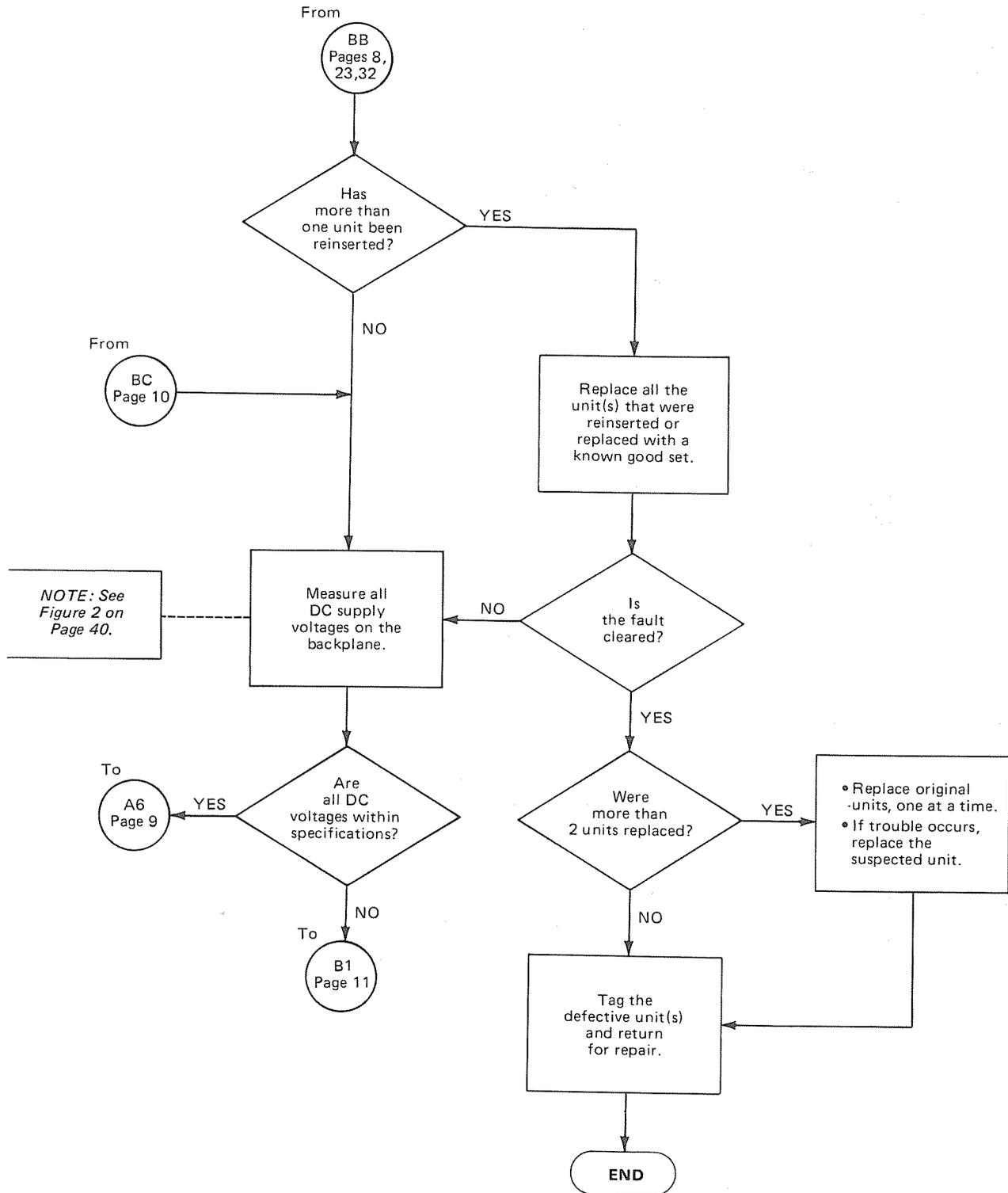


CHART NO. 21
MISCELLANEOUS FAULTS



TB 100-8504
March 25, 1985

Page 1 of 1

Liquid Crystal Display (LCD) EKT Assignment

Both the LCD EKT and attendant console require a high volume of control data from the central control. If LCD EKTs and an attendant console are connected to the first half of a DEKU PCB, one or the other might malfunction during high traffic conditions.

Therefore, LCD EKTs should not be installed at the following ports:

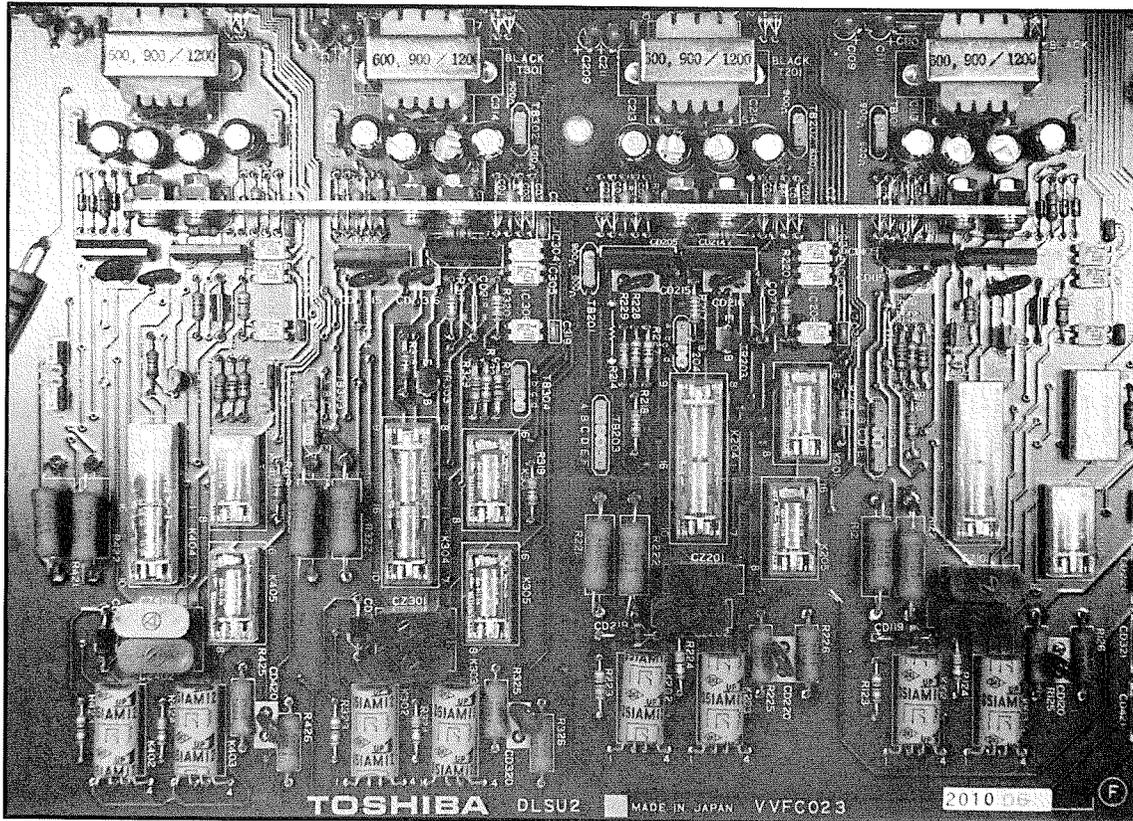
- 1) If the attendant console is assigned to port number L001, do not assign an LCD EKT to port numbers L002, L003 or L004.
- 2) If the attendant console is assigned to port number L121, do not assign an LCD EKT to port numbers L122, L123 or L124.

TB 100-8503
March 1, 1985

Page 1 of 3

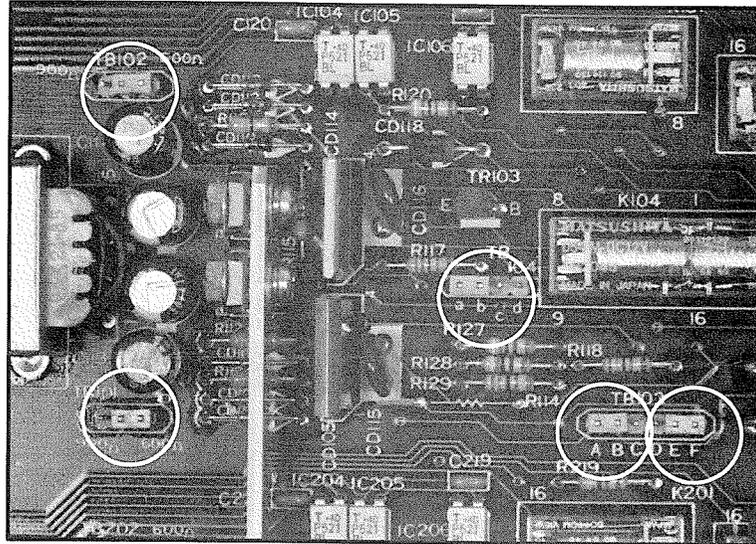
DLSU Strapping Requirements

The new DLSU PCB interfaces four Direct Inward Dialing (DID) trunk circuits to *Perception*. Refer to Figure 1, DLSU PCBs have strapping options that must be selected before they are installed. Three different selections may be made on each of the four individual circuits on the PCB, using the strapping terminals as follows:



(continued)

DLSU Strapping Requirements (continued)



1) CO line termination 600/900Ω:

- a) The strapping terminals consist of three pins and an insulated shorting bar, capable of connecting two adjacent pins (Figure 2). There are two strapping terminals for each circuit.

TB 101	>Circuit #1	TB 301	>Circuit #3
TB 102	>Circuit #1	TB 302	>Circuit #3
TB 201	>Circuit #2	TB 401	>Circuit #4
TB 202	>Circuit #2	TB 402	>Circuit #4

- b) Determine the proper impedance for the trunk line to be used. Make the selection with the shorting bar.

- Connect the center pin to the outer pin labeled either **600** or **900** for both strapping terminals.

2) Loop/Battery Ground Dial Pulsing:

- a) When the CO distance exceeds a 2,000Ω loop resistance, Battery to Ground Dial Pulsing should be used. For a distance of less than 2,000Ω loop resistance, use Loop Dial Pulsing. Selections are made using the strapping terminals, see Figure 2.

TB 103—Circuit #1	TB 303—Circuit #3
TB 203—Circuit #2	TB 403—Circuit #4

DLSU Strapping Requirements (continued)

- b) The strapping terminal consists of six pins labeled **A B C D E F** and a pair of insulated shorting bars. The bars can connect two pairs of adjacent pins. Select the desired option according to the following table. (Note: The table is printed on each DLSU PCB for reference.)

Battery to Ground Dial Pulse: A-B & E-F
Loop Dial Pulse: B-C & D-E

3) Loop Current Detection Level:

- a) For proper detection of incoming digits, adjustments are required based upon the CO line loop resistance. Selections are made using the strapping terminals, see Figure 2.

TB 104—Circuit #1	TB 304—Circuit #3
TB 204—Circuit #2	TB 404—Circuit #4

- b) The strapping terminal consists of four pins labeled **a b c d** and an insulated shorting bar. The bar can connect any pair of adjacent pins. Select the desired option according to the following table.

0 ~ 800 Ω	c-d (least sensitive)
800 ~ 1.5K Ω	b-c (mid sensitive)
1.5K Ω and above	a-b (most sensitive)

NOTE:

The CO line loop resistance values are arbitrary and are used as an initial strapping guide. If the incoming digits are not being detected properly, move the strapping terminal to a different sensitivity position and test for proper operation.

- c) Install the DLSU PCB(s)—one for each group of four circuits—in the slots designated T00 ~ T07 in the DCEC.

M E M O R A N D U M

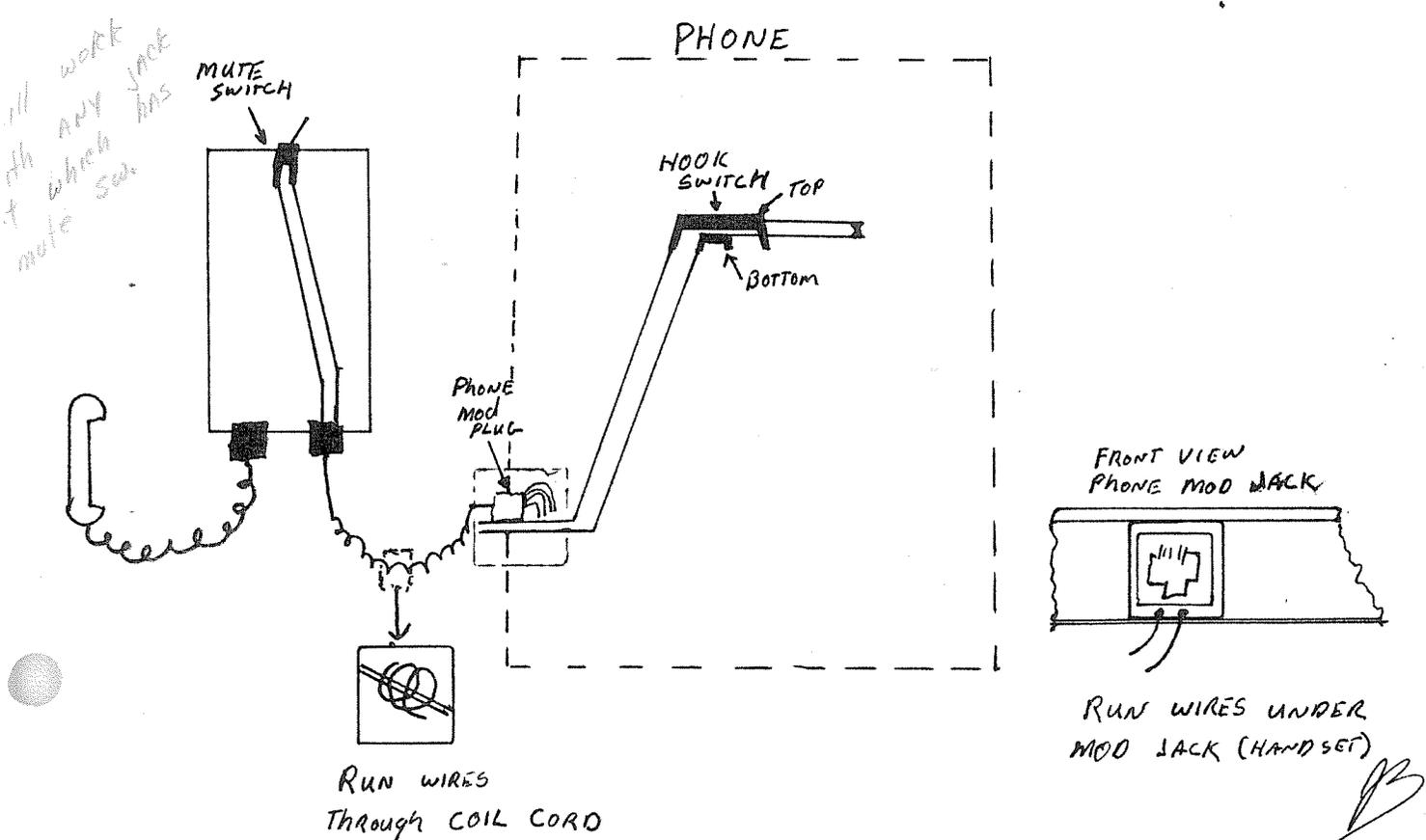
To: Tech Tips
From: John Brady
Date: March 6, 1985
Subject: Headset Hook Switch Control

Open jack set box. Remove mute switch wires from switch. Solder them together, tape and store.

Solder two lengths of wire to the switch about 1 foot long. Route these wires along the coil cord to the phone. Lift mod jack and lay the wires at bottom of slot. Replace mod jack.

Route the wires along the left side of EKT. Solder to top and bottom of hook switch.

JB:sh



TB 100-8502
February 10, 1985

Page 1 of 2

Version A-03A Software Errors

Some software errors have been discovered in the **Perception Version A-03A** software that could cause difficulty in some applications.

Least Cost Routing (LCR):

- LCR will not advance to the **most** expensive route more than 15 times if the Warning Tone Allowed (WTA) prompt in the PAR sub-program of the **DLC1 Program** is set to N. To correct this problem, set WTA prompt to Y.
- End-to-end signalling is not possible from an EKT when using LCR, and the most expensive route is selected when Warning Tone Allowed (WTA) prompt in DLC1-PAR is set to Y. When WTA is set to N end-to-end signalling is possible.
- It is not possible, using LCR, to dial a Direct Distance Dialing Prefix (DDP) before a service code (such as **1411**) and still have the ability to dial a service code without a prefix (such as **911**) in a non-interchangeable area code (ICC = N in the PAR sub-program of the **DLC1 Program**). If ICC must be N, a direct trunk access for a **1411** call is suggested.

Attendant Console Operation:

- The Attendant Console, with a call on a loop key (LPK), cannot use the System Speed Dial feature to conference or provide a trunk-to-trunk connection.
- The Attendant Console cannot use LCR to add calls to an attendant conference—the attendant must use direct trunk access.
- Toll restricted stations (TOL = 0 ~ 8) that require the attendant console to access a trunk or LCR and dial a number (through dialing) will cause the trunk to disconnect after the DPT (**DSYS Program**) has timed out, unless the attendant depresses the loop key **[LPK]** before the release key **[RLS]**.
- Attendant Overflow:
 - 1) The Call Waiting (CW) LED on the attendant console does not extinguish when the incoming call is sent to the overflow facility. Also, if the overflow call returns to the console there is no tone burst.
 - 2) During an overflow call, the ring no answer timeout (RNA) does not agree with the programmed RNA prompt.
Example: **DSYS Program RNA = 12**, but actual RNA timeout for the overflow station is 22 seconds.

Version A-03A Software Errors (continued)

Traffic Measurement (DTRF Program):

The trunk group outgoing usage (CCS) is calculated incorrectly. The value indicated must be divided by a factor of 2.

Peripheral Equipment Test (TPER Program):

When using the remote trunk test (CALL TNNX) portion of this program, the system will not dial some directory numbers (DN) properly. When a directory number with the digit "0" is entered, the system will pause instead of outputting the digit "0".

EKT Conference Key:

After an outgoing trunk call has been made via direct trunk access, the CONF key cannot be used until the Dial Pause Timer (DPT) has timed out. When using LCR to place an outgoing call, the CONF key can be used immediately.

Remote Access to Services:

If LCR is accessed to make an outgoing call and it selects a Specialized Common Carrier (SPCC) when using Remote Access to Services (incoming), only the first seven digits are dialed (the SPCC Authorization Code and dialed number are not output).

Direct Inward Dialing (DID) Station:

The call forward busy (CFB) feature for a DID station, even though removed from the station class of service (DCOS Program), still forwards to the console when the DID station is busy.

Standard 2500 set (DTMF) Station:

If the DTRK Program answer supervision (ANS) prompt is set to Y, and a 2500 set station accesses an outgoing TIE trunk, then accesses an outgoing CO trunk through a second PBX, the DTMF receiver will remain connected to the station. Therefore, the CO trunk's terminating end cannot hear the 2500 set station. Changing the ANS prompt to N allows the DTMF receiver to disconnect after the push-button timer (DSYS Program) has timed out.

TB 100-8410
December 1, 1984

NEW SOFTWARE INTRODUCTION

Page 1 of 2

All **Perception** systems shipped after December 1, 1984 will be equipped with **Version A-03** software.

Version A-03 offers all of the features available in the present **Version A-02D** plus the following:

- **Least Cost Routing**—Provides automatic routing over alternate trunk facilities based on the dialed number and a customer-specified selection algorithm. Stated briefly, the LCR capabilities are as follows:

Routing Tables	—	15
Routes (choices) per Route Table	—	6
Time of Day changes	—	3
Area Code Tables	—	15
Area/Office Code Tables	—	16
Modify Digit Tables	—	12

- **Enhanced Toll Restriction**—provides toll restriction with 10 station classes. The 6-digit restriction has 32 area/office code tables and can also deal with two Specialized Common Carriers (MCI, SPRINT, etc.) in either the present "Access Number and I.D. Code" method or the Equal Access (10XXX) method.
- **LCD Display EKT**—with **Version A-03** software, **Perception** is compatible with the soon to be released EKT 2205 LCD telephone. A maximum of thirty (30) of these 20-key LCD Display EKTs can be equipped. The features of the display include:
 - Time and date
 - Dialed number (manual or speed dial)
 - Speed dial verification
 - Calling trunk group
 - Calling station
 - Elapsed time on trunk call

Availability of the EKT 2205 LCD will be announced via a separate bulletin.

- **Direct Inward Dialing (DID)**—requires a new Loop Trunk PCB called the DLSU. The DLSU occupies one DCOU position; serves four DID trunk lines and has a list price of \$600. Availability of the DLSU will be announced via separate bulletin.
- **CCSA Access***
- **Remote Access to Services***
- **DN Increase**—**Perception** will accept up to **200** directory numbers.

**See General Description*

INTRODUCTION OF NEW *Perception* SOFTWARE (continued)

- **Station Set Mix**—automatic bridging (no privacy) is provided when a DN is shared by an EKT and a standard telephone.
- **Chain Dialing From Standard Telephone**—prior to the dialing timeout, multiple speed dial codes can be used from a 500/2500-type telephone.
- **Call Waiting**—changed to give the calling party MOH or silence instead of ringback tone.
- **SMDR Date Output**—the date is printed once every hour.
- **SMDR/SPCC**—the SMDR feature is enhanced to deal with SPCC (MCI, SPRINT, etc.) calls by absorbing the access number and authorization code and printing only the final DDD number.
- **SMDR**—the following condition codes are added:
 - P = Date/Time Change
 - Q = System Initialize
 - S = Date Printed (occurs at 60-minute intervals)

Toshiba Telecom intends to update all existing *Perception* systems with **Version A-03** software, and is presently formulating a program that will accomplish this plan. Shortly, via a separate bulletin, all dealers will be informed of the specific details.

Version A-03 Installation Procedure—if the system is operating with **Version A-02D** software, proceed as follows:

- 1) Remove **Version A-02D** from disk drive and insert **Version A-03**.
- 2) Perform data dump (DDMP) procedure.
- 3) Customer data is now on **Version A-03**.
- 4) Load **Version A-03** by depressing load switch. (System down for approximately 30 seconds.)

IMPORTANT NOTE:

The TOL prompt in the DEKT, DSTT, and DTGP Programs will equal None—which means No Toll Restriction.

- 5) Program customer data to include new features as required.

*Programming Procedures, Section 200-100-300, of the **Perception Installation & Maintenance Manual** is being revised to include the new software. A preliminary version of the revised manual section is attached, and will be replaced with a finalized version as quickly as possible.*

IMPORTANT NOTE:

Do not dump data (DDMP) from Version A-03 to Version A-02D diskette.

Perception
SYSTEM RECORD
DECEMBER 1984

Perception[®]

SYSTEM RECORD

Software Version A-03

SYSTEM DATA BLOCK (DSYS PROGRAM)

ITEM	PROMPT	ENTRY
	REQ	CHG
Time of Daily Routine	TDR	
Daily Routine Tasks	DRT	
Tenant Service?	TEN	
Intercept #1	ICP1	
Intercept #2	ICP2	
Intercept #3	ICP3	
Least Cost Routing	LCR	
All Page Access Code	APG	
Not Used	AAT	CR ¹
Not Used	AAX	CR ¹
Listed Directory Number #1	LN1	
Listed Directory Number #2	LN2	
LDN #1 Night Number	NT1	
LDN #2 Night Number	NT2	
Busy Lamp Field #1	BLF1	
Busy Lamp Field #2	BLF2	
Overflow DN—Attendant Console #0	OFL1	
Overflow DN—Attendant Console #1	OFL2	
Message Center—Tenant #0	MCO	
Message Center—Tenant #1	MC1	
Meet-me Page DN	MMP	
Remote Access DN	REM	
Remote Access Change Code	RAC	
"*" Access Code	ACC*	
"#" Access Code	ACC#	
Camp-on (or CWT) Timeout	COT	
Ring No Answer Timeout	RNA	
Attendant Overflow Timeout	AOF	
Call Forward No Answer Timeout	CFD	
Hold (500/2500) Timeout	HLD	
Dial Pulse Timeout	DPT	
Push-button Timeout	PBT	
Line Lockout Timeout	LLD	
Automatic Callback Reserve Time	ACB	
Handsfree Answerback-Station	HFS	
Handsfree Answerback-Attendant	HFA	
SMDR Equipped	MDR	
Call Forward DID Station	CFS	

¹ [CR] = Depress Carriage Return.

Perception
SYSTEM RECORD
DECEMBER 1984

EKT DATA BLOCK (DEKT Program) PCB Location (L)

ITEM	PROMPT	ENTRY							
	REQ								
Port Number	POR								
Number of Key Strips	KS								
Class of Service	COS								
Tenant Number	TEN								
Call Pick-up Group	PUG								
Warning Tone Allowed?	WTA								
Call Forward to Trunk?	CFT								
Toll Restriction Class	TOL								
Not Used	MTA	N	N	N	N	N	N	N	N
HFA Equipped?	HFA								
Display EKT?	DIS								
Prime DN only!	KEY 0								
	KEY 1								
	KEY 2								
	KEY 3								
	KEY 4								
	KEY 5								
	KEY 6								
	KEY 7								
	KEY 8								
	KEY 9								
	KEY 10								
	KEY 11								
	KEY 12								
	KEY 13								
	KEY 14								
	KEY 15								
	KEY 16								
	KEY 17								
	KEY 18								
	KEY 19								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY							
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class of Service	COS								
Tenant Number	TEN								
Call Pick-up Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk?	CFT								
Toll Restriction Class	TOL								

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY							
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class of Service	COS								
Tenant Number	TEN								
Call Pick-up Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk?	CFT								
Toll Restriction Class	TOL								

STANDARD TELEPHONE DATA BLOCK (DSTT Program) PCB Location (L)

ITEM	PROMPT	ENTRY							
	REQ								
Port Number	POR								
Directory Number	DN								
Station Mix	SMX								
Class of Service	COS								
Tenant Number	TEN								
Call Pick-up Group	PUG								
Hunt Number	HNT								
Dialing Type	DLG								
Speed Dial List	SDL								
Warning Tone Allowed?	WTA								
Call Forward to Trunk?	CFT								
Toll Restriction Class	TOL								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

SPEED DIAL DATA BLOCK (DSDL Program)

ITEM	PROMPT	ENTRY	ENTRY	ENTRY
	REQ			
List Number	LNO			
Store Number	STR			

NOTES:

1. Use multiple sheets as required.
2. Use one column for each station list.
3. Use multiple columns for system list.

Sheet _____ of _____

Perception
SYSTEM RECORD
DECEMBER 1984

SMDR DATA BLOCK
(DMDR Program)

ITEM	PROMPT	ENTRY
	REQ	
Account Code Length	ACL	
Special Common Carrier	SPCC1	
Special Common Carrier	SPCC2	
Trunk Group	TGP	

TRAFFIC MEASUREMENT DATA BLOCK
(DTRF Program)

ITEM	PROMPT	ENTRY
	REQ	
System Date	SYST.DATE MMDDYY	
System Time	SYST.TIME HHMMSS	
Schedule	SCH	
Start Date	STR DATE MMDDYY	
Start Time	STR TIME HHMM	
Report	RPT	
	SYST	
	ATT0	
	ATT1	
	TGP00	
	TGP01	
	TGP02	
	TGP03	
	TGP04	
	TGP05	
	TGP06	
	TGP07	
	TGP08	
	TGP09	
	TGP10	
	TGP11	
	TGP12	
	TGP13	
	TGP14	
	TGP15	

ATTENDANT DATA BLOCK (DATT Program)

ITEM	PROMPT	ENTRY	
		ATT 0	ATT 1
	REQ		
Attendant Number	AND	0	1
Port Number	POR	L001	L121
Lockout Allowed?	LKO		
Page Key	PAG		

DTMF RECEIVER DATA BLOCK (DRCV Program)

ITEM	PROMPT	ENTRY					
	REQ						
Port Number	POR						

TRUNK GROUP DATA BLOCK (DTGP Program)

		TRUNK TYPE: CO/FX							
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								

TRUNK GROUP DATA BLOCK (DTGP Program)

		TRUNK TYPE: CO/FX							
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								

TRUNK GROUP DATA BLOCK (DTGP Program)

		TRUNK TYPE: WATS							
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

TRUNK GROUP DATA BLOCK (DTGP Program)

		TRUNK TYPE: TIE/CCSA							
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Class of Service	COS								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Incoming Absorb Digits	IAB								
Translated Number 1	TRN1								
Translated Number 2	TRN2								
Toll Restriction Class	TOL								

TRUNK GROUP DATA BLOCK (DTGP Program)

		TRUNK TYPE: PVL (Private Line)							
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Incoming/Outgoing	IAO								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								

TRUNK GROUP DATA BLOCK (DTGP Program)

		TRUNK TYPE: DID							
ITEM	PROMPT	ENTRY							
	REQ								
Trunk Group Number	GRP								
Tenant Number	TEN								
Trunk Type	TKT								
Incoming/Outgoing	IAO								
Advance Step	STP								
Access Code	COD								
Class Of Service	COS								
Transmission	TRN								
Start Arrangement	STR								
Warning Tone Allowed?	WTA								
Outgoing Absorb Digits	OAB								
Incoming Absorb Digits	IAB								
Translated Number 1	TRN1								
Translated Number 2	TRN2								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: CO/FX/WATS		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Remote Access DAY	RAD								
Night Number	NIT								
Signalling	SIG								
Disconnect Supervision	DIS								
Dialing Outgoing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: CO/FX/WATS		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Remote Access DAY	RAD								
Night Number	NIT								
Signalling	SIG								
Disconnect Supervision	DIS								
Dialing Outgoing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: CO/FX/WATS		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Remote Access DAY	RAD								
Night Number	NIT								
Signalling	SIG								
Disconnect Supervision	DIS								
Dialing Outgoing	DOT								

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: TIE/CCSA		PCB (T)				PCB (T)			
ITEM	PROMPT	ENTRY				ENTRY			
	REQ								
Port Number	POR								
Group/Member Number	GMN								
Signalling	SIG								
Disconnect Supervision	DIS								
Control Of Disconnect	CTL								
Dialing Incoming	DIN								
Dialing Outgoing	DOT								
Answer Supervision	ANS								

NOTE: Use multiple sheets as required.

Sheet _____ of _____

Perception
SYSTEM RECORD
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TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: PVL (Private Line)		PCB (T)			PCB (T)		
ITEM	PROMPT	ENTRY			ENTRY		
	REQ						
Port Number	POR						
Group/Member Number	GMN						
Trunk DN	TDN						
Signalling	SIG						
Disconnect Supervision	DIS						
Dialing Outgoing	DOT						

TRUNK DATA BLOCK (DTRK Program)

TRUNK TYPE: DID		PCB (T)			PCB (T)		
ITEM	PROMPT	ENTRY			ENTRY		
	REQ						
Port Number	POR						
Group/Member Number	GMN						
Signalling	SIG						
Disconnect Supervision	DIS						
Control Of Disconnect	CTL						
Dialing Incoming	DIN						
Dialing Outgoing	DOT						
Answer Supervision	ANS						

LEAST COST ROUTING DATA BLOCK (DLC1 Program)
Miscellaneous Parameters (PAR Subprogram)

ITEM	PROMPT	ENTRY					
	REQ						CHG
Subprogram Type	TYPE						PAR
Interchangable Codes	ICC						
Operator Call Timeout	OTO						
Return Dial Tone	RTD						
Warning Tone Allowed?	WTA						
Home Area Code	HAC						
Toll Free Calls	TFC						
Local Call Route	LCR						
Service Code Table	SVC						
Directory Assistance Calls Allowed	DAC						
Long Distance Information Route	LDI						
DDD Prefix	DDP						

NOTE: Use multiple sheets as required.

Sheet _____ of _____

**LEAST COST ROUTING DATA BLOCK (DLC2 Program)
 Modify Digits Table (MDT Subprogram)**

ITEM	PROMPT	ENTRY
	REQ	CHG
Subprogram Type	TYPE	MDT
Table Number	TNO	
Number of Digits To Be Deleted	DLT	
Digits To Be Added (Prefixed)	ADD	

**LEAST COST ROUTING DATA BLOCK (DLC2 Program)
 Modify Digits Table (MDT Subprogram)**

ITEM	PROMPT	ENTRY
	REQ	CHG
Subprogram Type	TYPE	MDT
Table Number	TNO	
Number of Digits To Be Deleted	DLT	
Digits To Be Added (Prefixed)	ADD	

**LEAST COST ROUTING DATA BLOCK (DLC2 Program)
 Modify Digits Table (MDT Subprogram)**

ITEM	PROMPT	ENTRY
	REQ	CHG
Subprogram Type	TYPE	MDT
Table Number	TNO	
Number of Digits To Be Deleted	DLT	
Digits To Be Added (Prefixed)	ADD	

**LEAST COST ROUTING DATA BLOCK (DLC2 Program)
 Modify Digits Table (MDT Subprogram)**

ITEM	PROMPT	ENTRY
	REQ	CHG
Subprogram Type	TYPE	MDT
Table Number	TNO	
Number of Digits To Be Deleted	DLT	
Digits To Be Added (Prefixed)	ADD	

**LEAST COST ROUTING DATA BLOCK (DLC2 Program)
 Modify Digits Table (MDT Subprogram)**

ITEM	PROMPT	ENTRY
	REQ	CHG
Subprogram Type	TYPE	MDT
Table Number	TNO	
Number of Digits To Be Deleted	DLT	
Digits To Be Added (Prefixed)	ADD	

NOTE: Use multiple sheets as required. Sheet _____ of _____



TB-100-8407
May 15, 1984

ATTENDANT CONTROL OVERRIDE INFORMATION

A limited amount of information on the Attendant Control Override (ACO) feature exists in the *Perception Installation and Maintenance Manual*. The following is a more complete description of the ACO feature and its operation.

The attendant can restrict dial-access to a trunk group (Trunk Group Access Control feature). If the attendant takes control of a trunk group, a station attempting to dial-access that trunk group will be routed to the attendant or receive overflow tone (DSYS Program, Intercept 1).

The ACO feature (DCOS Program) overrides the Trunk Group Access Control, thereby permitting selected stations direct dial-access. The ACO operation is transparent to the station user.

TB 100-8409
October 1, 1984

EKT 3101 WARNING TONE INFORMATION

A minor operational problem exists when an early model 10-key S EKT (EKT 3101) is used with a **Perception** system or with a **Strata XII & XX** system equipped with **Release 2** (MCAU-3) software.

The warning tone is not heard when a call is "camped on" a busy station using the following features:

- Strata XII & XX** —Call Transfer with Camp-on
- Perception** —Attendant Camp-on
- Call Waiting

The EKT 3101 operates normally when used with **Strata S**, **Strata VI** or **Strata XII & XX** equipped with **Release 1** (MCAU-2) software.

This problem is eliminated with the use of the later model 10-key S EKT (EKT 3101A). To verify the EKT model, check the label on the bottom of the EKT.

All model 3101 EKTs will be updated to version 3101A free of charge if they are returned via the usual repair process.

TB 100-8501
January 15, 1985

Page 1 of 1

Version A-03A Installation Procedure

This shipment contains the required number of **Version A-03A** diskettes for updating all **Perception** systems containing **Versions A-02D** or **A-03** software. In addition to the two diskettes per system, a System Record Sheet is included for each system.

Version A-03A Installation Procedure—if the system is operating with **Version A-02D** or **A-03** software, proceed as follows:

- 1) Remove the present disk from the disk drive and insert **Version A-03A** disk.
- 2) Perform the Data Dump (DDMP) Procedure as outlined in the **Perception Installation & Maintenance Manual**.
- 3) Customer data is now on the **Version A-03A** disk.
- 4) Load **Version A-03A** by depressing the **LOAD** switch. (The system will be down for approximately 30 seconds.)

IMPORTANT NOTES FOR VERSION A-02D

1. The TOL prompt in the **DEKT**, **DSST**, and **DTGP** Programs will equal **NONE**—which means No Toll Restriction.
 2. The OAB prompt in the **DTGP** Program effects Toll Restriction (DTOL) and Least Cost Routing (LCR)—in most cases this prompt should be **NONE**.
 3. All speed dial access codes (SDU, SDC, and SDS) in the **DACD** Program must start with either a * or # as the first digit of the access code.
- 5) Program the customer data to include any new features, as required.

Programming Procedures, Section 200-100-300, of the **Perception Installation & Maintenance Manual** is being revised to include the new software. A preliminary version of the revised manual section has been mailed, and will be replaced with a finalized version as quickly as possible.

IMPORTANT NOTE:

Do not dump data (DDMP) from Version A-03A to Version A-02D or A-03 diskette.

Return all **Version A-02D** and **A-03** diskettes to Toshiba Telecommunication Systems Division, attention: EBCS Software Update (RA numbers **are not** necessary).

If any discrepancy arises between the number diskettes received and the number of systems in service, please contact the appropriate Inside Sales Representative.

ANNOUNCING LCD DISPLAY EKT (continued)

The LCD display **cannot** be used in **Strata S** systems and will only function in other systems that are equipped with compatible software, as follows:

System	Software Version	Limitations
Perception	Version A-03 (LCR version)	30
Strata VI	Release 3 (MCDU PCB)	None
Strata XII & XX	Release 3 (MCAU-4/MCBU-4 PCBs)	None

The **Version A-03** software will be equipped in **Perception** systems shipped after December 1, 1984. A program to equip existing systems will be announced shortly (see Sales Bulletin SB 84-10-22).

Availability of the **Release 3** software for **Strata VI, XII & XX** will be announced via a separate bulletin. It is important to be aware, however, that existing **Strata** control PCBs (MCCU-2/3, MCAU-2/3 & MCBU-2) **cannot** be converted to the new software. A changeout of these PCBs will be required to upgrade an existing system.

A summary of the display features:

Feature	Strata VI, XII & XX	Perception
Date/Time (Idle State)	Yes	Yes
Elapsed Time (Outside Call)*	Yes	Yes
Calling CO Line Number	Yes	No
Calling Trunk Access Code	No	Yes
Calling Station Number	Yes	Yes
Dialed Number	Yes	Yes
Speed Dial Verification	Yes	Yes
Callback Station/Line	Yes	Yes

*One-second increments for **Strata**; 10-second increments for **Perception**.

All display functions occur automatically as call processing proceeds. Only one manual operation is possible; that is, during an active CO line call the display can be shifted between the Dialed Number and the Elapsed Time display by depressing the **#** or the **[RDL]** key within **Strata** or the **[DIS]** key in **Perception**.

TB 100-8411
December 1, 1984

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ANNOUNCING AVAILABILITY OF DID TRUNK PCB

Effective immediately, orders are being accepted for the *Perception* DID Trunk Interface (DLSU) PCB. Each one of these Loop Trunk PCBs serves four DID trunk lines and occupies one trunk card slot. The list price per PCB is \$600.00.

For the DLSU and, therefore, the DID feature, to function, the *Perception* system must be equipped with **Version A-03** software.

All *Perception* systems shipped after December 1, 1984 will be equipped with **Version A-03** software and a program to equip existing systems will be announced shortly (see Sales Bulletin SB 84-10-22).

TB 100-8408
August 1, 1984

ADDITIONAL APPLICATIONS FOR THE DRCU

The DRCU PCB provides the required DTMF receivers for receiving dialing from 2500-type telephones. In addition, the DRCU is also required for receiving dialing from DTMF-signalling TIE trunks, or when the Remote Access to Services feature is used.

Two types of DRCU PCBs are offered: The DRCU 2-4, which contains four circuits and is suitable for most systems, and the DRCU 2-6, for systems with extremely high traffic in the following areas: amount of 2500-type telephone dialing, and usage of TIE trunk and the Remote Access feature.

Only one DRCU per system is permitted.