

FEATURE DOCUMENT
COMBINED OPERATOR OFFICE TRUNK FEATURE
2-WIRE NO. 1 AND NO. 1A ELECTRONIC SWITCHING SYSTEMS

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INTRODUCTION

1. GENERAL INFORMATION

SCOPE

1.01 This section describes the *Combined Operator Office Trunk (COOT)* feature and its capabilities when used with the No. 1 or No. 1A Electronic Switching System (ESS).

REASON FOR REISSUE

1.02 When this document is reissued, the reason for reissue will be stated in this paragraph.

FEATURE AVAILABILITY

1.03 The COOT feature 2-wire arrangement is available in all active generic programs for the No. 1 and No. 1A ESSs. The HILO arrangement is initially available with the 1E4 (No. 1 ESS) and 1AE4 (No. 1A ESS) generic programs. The HILO 4-wire feature group is required when COOT is used in the HILO 4-wire arrangement.

2. DEFINITION

2.01 The *COOT* feature provides a single trunk facility for completion of calls from a toll switchboard to a step-by-step community dial office (CDO), from the CDO to the dial switchboard, and from the ESS to the CDO. This trunk may also be used for coin control of a coin line via the switched operator connection. Coin signals [multifrequency (MF) inband] are transmitted from the operator switchboard through the COOT to the remote CDO for coin control of the remote coin line. COOT is also used for the transmittal of office alarm indications from an unattended CDO to the operator switchboard. It is intended for use when an ESS is arranged for toll operation in conjunction with small step-by-step CDOs in a class 4 local/toll environment, and the step-by-step office is physically remote from the

ESS. In addition, when the toll switchboard is arranged for MF outpulsing only, this feature provides a tandem trunk arrangement to the ESS office where the MF pulses are converted to dial pulses and outpulsed over a trunk to the CDO.

DESCRIPTION

3. USER OPERATION

CUSTOMER

3.01 Not applicable.

TELEPHONE COMPANY

3.02 The COOT feature may be used in the following configurations:

- (a) Operator-to-CDO subscriber (dial pulse switchboard)
- (b) Operator-to-CDO subscriber via ESS (MF switchboard)
- (c) CDO subscriber-to-operator
- (d) Local/tandem direct to CDO via ESS.

This feature can be initiated on an operator-to-CDO call when the operator dials a CDO subscriber number. If the operator switchboard is equipped for dial pulse outpulsing, the call is routed directly to the CDO. If the operator switchboard is equipped for multifrequency outpulsing, the call is routed via the ESS for conversion of the multifrequency signals to dial pulse signals for outpulsing to the CDO.

3.03 The path between the dial pulse operator switchboard and the CDO exists with or without the COOT feature.

4. SYSTEM OPERATION

HARDWARE

A. 2-Wire COOT Trunk

4.01 The 2-wire COOT is established by modifying existing operator-to-CDO facilities. One SD-1A163-02 two-way trunk circuit is required per 2-wire combined operator office trunk arrangement and is interconnected to switchboard trunk circuit

SD-56525. (Refer to Fig. 1.) Trunk circuit SD-1A163-02 has been modified by the addition of a fourth scan point (SC03). This scan point allows the ESS to monitor the busy/idle status of switchboard trunk circuit SD-56525 so that the trunk will not be seized from the ESS when it is being used in the CDO subscriber-to-toll configuration.

4.02 SD-1A163-02 is equipped for type II or type III E&M signaling. A key on the trunk circuit may be operated to provide either type II or type III signaling as required. See Table A for ordering information.

B. HILO 4-Wire COOT Trunk

4.03 For the HILO 4-wire COOT arrangement, an outgoing auxiliary E&M combined operator office trunk SD-1A393 is required. This trunk circuit mounts on the miscellaneous trunk frame and interconnects to switchboard trunk circuit SD-56525. This trunk circuit is also equipped with type II E&M supervision. (Refer to Fig. 2.) The SD-1A393 consists of two transmission ports: a 2-wire port for connection to a toll switchboard and a 4-wire port for connection to a 4-wire transmission facility which connects to a CDO. See Table A for ordering information.

OFFICE DATA STRUCTURES

A. Translations

4.04 The *master scanner number (MSN) translation* shown in Fig. 3 and 4 identifies a trunk assigned to the master scanner point. One MSN primary translation word is used for each scan point of the SD-1A163-02 and SD-1A393 trunk circuit.

4.05 The *trunk group number (TGN) translator* contains trunk data used for COOT call processing (Fig. 5).

4.06 The signal distributor (SD), central pulse distributor (CPD), and MSN information associated with the COOT trunk is given in the *trunk network number (TNN)-to-peripheral equipment number (PEN) translation*. (See Fig. 6 and 7.)

4.07 The *TNN-to-TGN translation* for the 2-wire and 4-wire COOT trunk is shown in Fig.

8. The trunk class code (TCC) and TGN are two of the items contained in this translator.

4.08 The *TCC expansion table* for SD-1A163-02 and SD-1A393 is shown in Fig. 9 and 10.

B. Parameters/Call Store

4.09 Not applicable.

FEATURE OPERATION

4.10 The COOT feature is established by modifying existing operator-to-CDO facilities. An ESS two-way trunk circuit (SD-1A163-02) or HILO 4-wire outgoing combined operator office trunk (SD-1A393) is interconnected to switchboard trunk circuit SD-56525. (Refer to Fig. 1 and 2.)

Note: COOT feature operation in the HILO configuration uses SD-1A393 instead of SD-1A163-02.

4.11 The standard SD-1A163-02 trunk circuit has been modified by the addition of a fourth scan point (scan point 03). This scan point allows the ESS to monitor the busy/idle status of switchboard trunk circuit SD-56525 so that the trunk will not be seized from the ESS when it is being used in the CDO subscriber-to-toll operator configuration.

4.12 The actions described in paragraphs 4.13 through 4.15 represent standard treatment.

A. Operator-to-CDO Subscriber (Dial Pulse Switchboard)

4.13 On a call incoming to the ESS from an operator switchboard, as with normal outgoing (through switched) calls, the 3/6-digit and the route index (RI) expansion translations are used to determine the appropriate routing. A TGN is obtained from the RI expansion and is used as an input to the TGN translator. The TGN (through the trunk group number-to-trunk network number translator) identifies one or more trunks that terminate at the CDO. (All trunks in this trunk group are COOT trunks.)

4.14 The busy/idle status bits of the trunks in the trunk group head cell are checked. A COOT trunk is idle when the SD-1A163-02 or SD-1A393 trunk circuit and the SD-56525 switchboard trunk circuit are idle. (The busy/idle status of the SD-56525

trunk circuit is determined by the interrogation of scan point 03 of the SD-1A163-02 or SD-1A393 trunk circuit.) If no trunk in the COOT trunk group is found to be idle, an alternate hunt occurs (via the next RI), or an overflow treatment is provided. When an idle trunk is found, its busy/idle status is marked busy, a trunk network number-to-peripheral equipment number translation is performed, and then an idle dial pulse transmitter is seized. A network path is completed between the transmitter and the trunk circuit. A network path is reserved between the incoming trunk and the outgoing trunk circuit.

4.15 Before outpulsing begins, scan point 03 of the SD-1A163-02 or SD-1A393 trunk circuit is rescanned to determine if the SD-56525 switchboard trunk circuit has been seized since the previous scan. (The SD-56525 switchboard trunk circuit could have been seized from the CDO while the network paths were being established.) If scan point 03 is not saturated, indicating that the SD-56525 switchboard trunk circuit has been seized, then the SD-1A163-02 or SD-1A393 trunk circuit is released, and the hunt for an idle trunk to the CDO is resumed. However, if scan point 03 is saturated, this verifies that the SD-56525 switchboard trunk circuit is idle. This is the reverse sense for busy/idle. Control of the trunk is via the ESS. The ESS then outpulses the appropriate digits. This establishes a transmission path from the operator, through the SD-1A163-02 or SD-1A393 trunk circuit and the SD-56525 switchboard trunk circuit, to the CDO.

Note: COOT feature operation in the HILO configuration uses SD-1A393 instead of SD-1A163-02.

B. Operator-to-CDO Subscriber Via ESS (Switchboard not Equipped With Dial Pulse)

4.16 When an operator-to-CDO call is required and the operator does not have dial pulse capability, the ESS receives the switchboard multifrequency pulses and outputs dial pulses to the CDO.

4.17 The operator seizes an outgoing trunk and selects a CDO trunk facility by dialing the directory number of the CDO subscriber. The ESS performs the required conversion of digits from multifrequency to dial pulse and routes the call to the CDO. (This routing procedure is the same as described in paragraphs 4.13 through 4.15.)

C. CDO Subscriber-to-Operator Call

4.18 All CDO subscriber-to-operator calls (dial "0") are routed directly to an operator position over a common systems switchboard trunk (SD-56525).

4.19 The CDO switching machine seizes an idle outgoing trunk to the operator position. This action unsaturates scan point 03 in the SD-1A163-02 trunk circuit which indicates that the SD-56525 trunk circuit is busy. Also, the trunk side ferrod (scan point 01) in the SD-1A163-02 or SD-1A393 trunk circuit is saturated. This is reported to the base level call program as a make-busy report. The trunk is removed from the idle list and put on the high and wet list and is unavailable for outgoing traffic. Scan points 01 and 03 indications are used to prevent both ends of the SD-1A163-02 or SD-1A393 trunk circuit from being seized simultaneously.

D. Local/Tandem Direct to CDO via ESS

4.20 In a local configuration, digits are received at the customer digit receiver. The ESS performs any necessary conversion of digits from multifrequency to dial pulse and routes the call to the CDO. In a tandem configuration, digits are received at the trunk digit receiver. The ESS performs any necessary conversion of these digits to dial pulses and routes the call to the CDO. (This routing procedure is the same as described in paragraphs 4.13 through 4.15.)

CHARACTERISTICS

5. FEATURE ASSIGNMENT

5.01 The COOT feature is provided on a per central office basis and is implemented on a per trunk group basis.

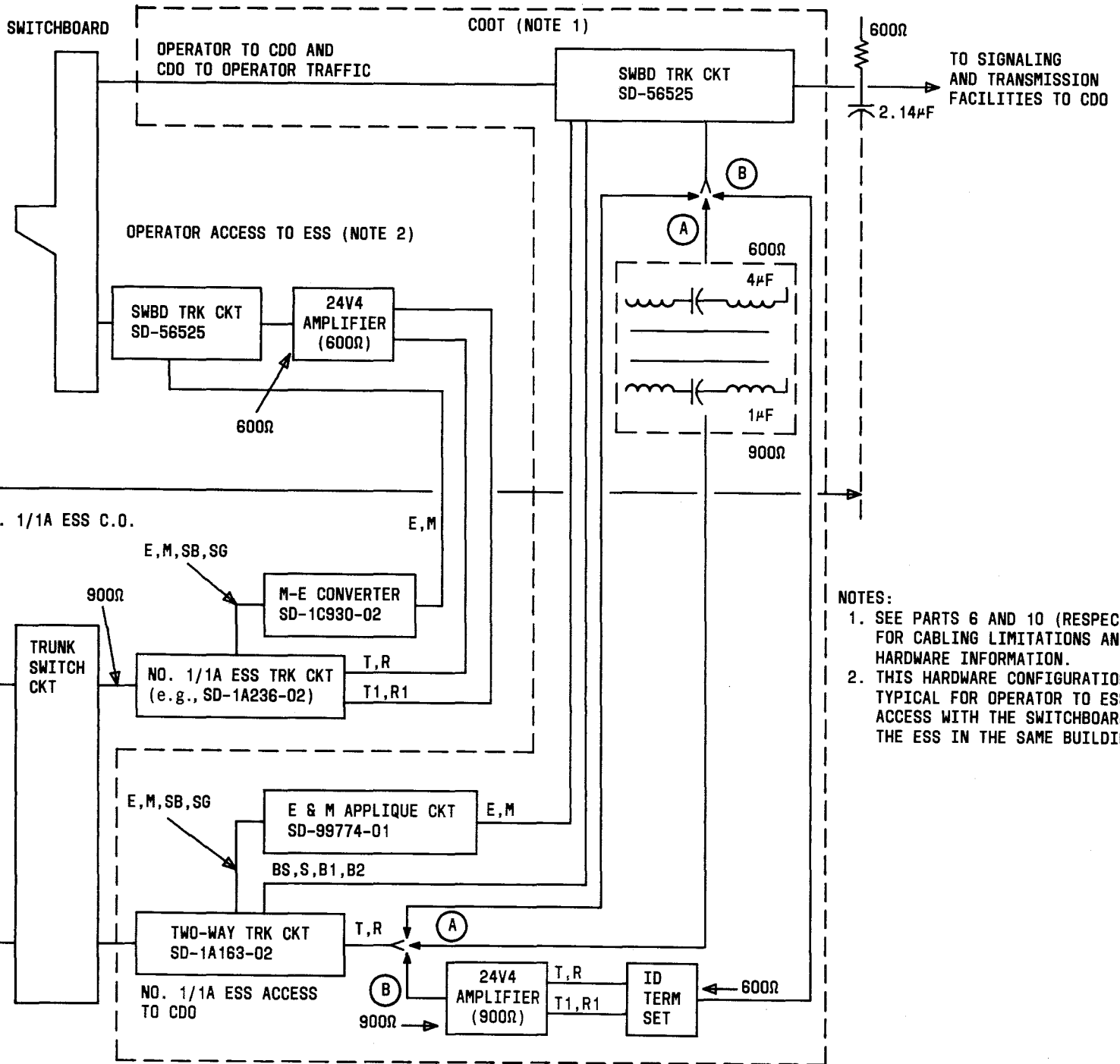
6. LIMITATIONS

OPERATIONAL

6.01 Not applicable.

ASSIGNMENT

6.02 The length of cable between the junctor grouping frame and a point of good impedance on the CDO side of the SD-56525 switchboard trunk circuit should be less than or equal to 800 feet but can



- NOTES:
1. SEE PARTS 6 AND 10 (RESPECTIVELY) FOR CABLING LIMITATIONS AND HARDWARE INFORMATION.
 2. THIS HARDWARE CONFIGURATION IS A TYPICAL FOR OPERATOR TO ESS ACCESS WITH THE SWITCHBOARD AND THE ESS IN THE SAME BUILDING.

Fig. 1—Layout of Combined Operator Office Trunk

TABLE A
ORDERING INFORMATION FOR COOT FEATURE

SD NUMBER	NAME	TOC (NOTE)	J-SPEC NUMBER	SCAN POINTS	SD POINTS
1A163-02	2-way trunk, DP	04905 04906 04907	1A033CA-2 1A033CA-2 1A033CA-2	4	5
1A393-01	Outgoing Auxiliary Combined Operator Office Trunk	14300	1A033BM-1	4	3

Note: Trunk order code (TOC) uses are as follows:

04905 — Provides wink (nontoll) service with “on-site interface switching” capability.

04906 — Provides tie line cut-through service with “on-site interface switching” capability.

04907 — Provides operator office service with “on-site interface switching” capability.

14300 — Provides HILO 4-wire switching capability for calls to a community dial office (CDO).

be extended to 1400 feet when the echo return loss is held between 22 dB and 30 dB.

6.03 If the cable run must exceed 1400 feet or echo return loss is less than 22 dB, a 24V4 amplifier, consisting of two 227F amplifiers and a 1N termset, must be used to provide the required range extension and the extra amplification. (See Table B.)

7. INTERACTIONS

7.01 Not applicable.

8. RESTRICTION CAPABILITY

8.01 Not applicable.

INCORPORATION INTO SYSTEM

9. INSTALLATION/ADDITION/DELETION

9.01 The procedure for adding the COOT feature is illustrated in Fig. 11. For more detailed infor-

mation on addition and deletion of the COOT feature, refer to references in Part 18A. Refer to Part 13 for testing information.

9.02 No special parameter set cards are required.

10. HARDWARE REQUIREMENTS

Note: This part contains cost factors and determination of quantities. Central Office Equipment Engineering System (COEES) Planning and Mechanized Ordering Modules are the recommended procedures for developing these requirements. However, for planning purposes or if COEES is not available, the following guidelines may be used.

2-WIRE COOT TRUNK

10.01 One scan point is required in addition to the three normally required for each ESS trunk circuit SD-1A163-02. The SD-56525 trunk, when used for the COOT feature, has modifications enabling it

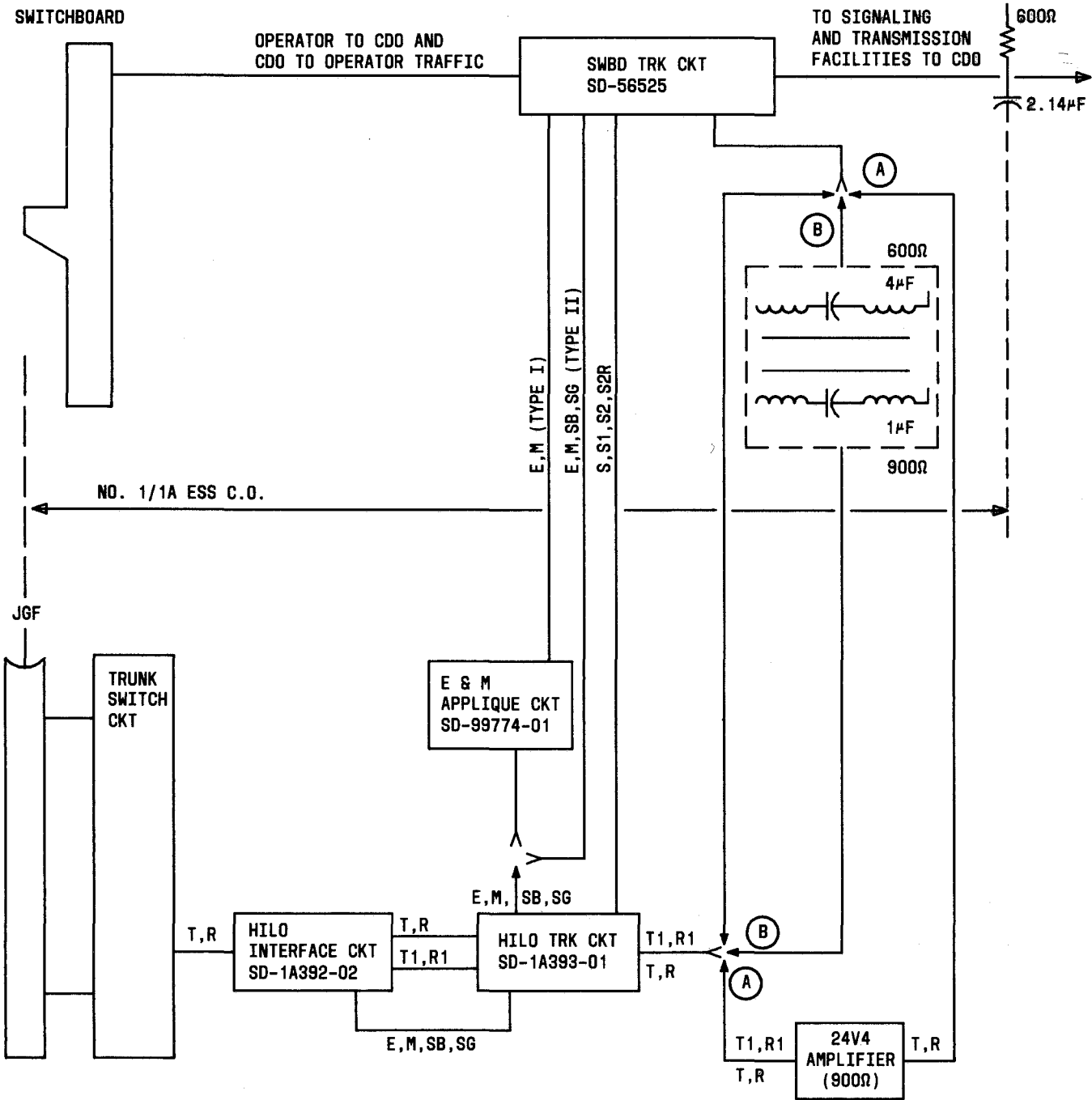
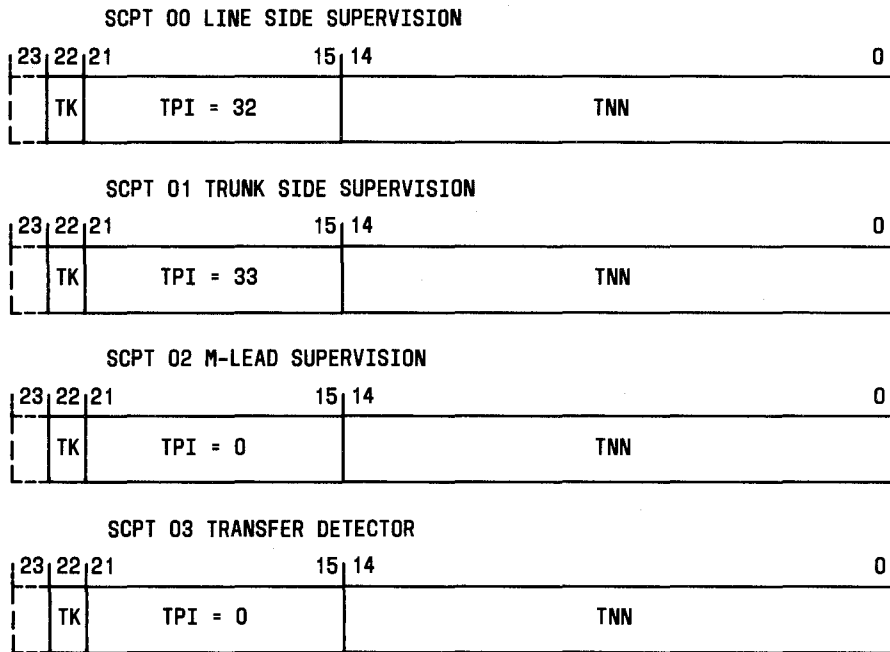


Fig. 2—Layout of HILO 4-Wire COOT Trunk

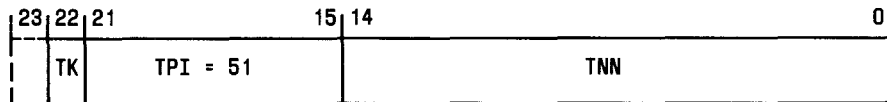


NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

LEGEND:

TK - TRUNK IDENTIFIER
 TNN - TRUNK NETWORK NUMBER
 TPI - TRUNK PROGRAM INDEX

Fig. 3—Master Scanner Number Primary Translation Words for SD-1A163-02



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

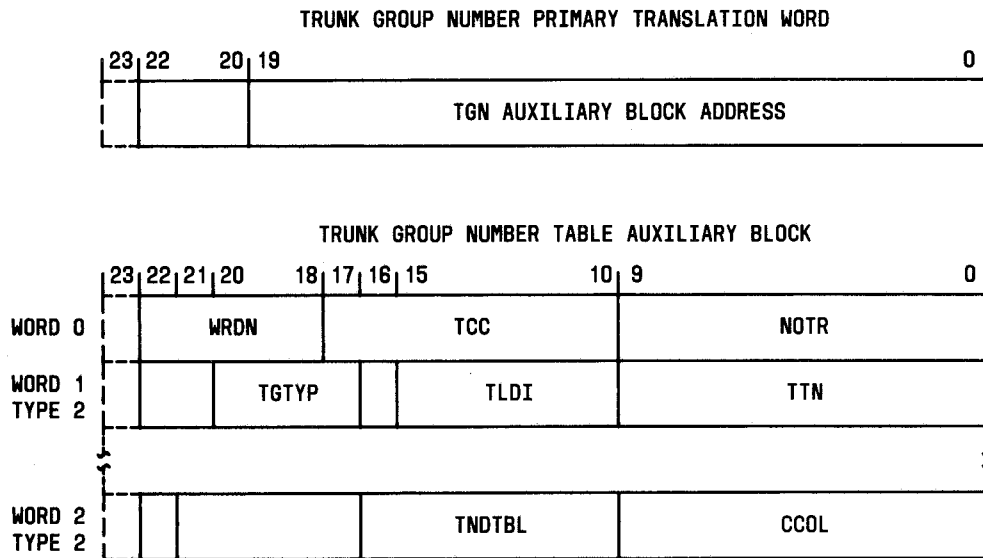
LEGEND:

TK - TRUNK IDENTIFIER
 TNN - TRUNK NETWORK NUMBER
 TPI - TRUNK PROGRAM INDEX

Fig. 4—Master Scanner Number Primary Translation Word for SD-1A393

to control scan point 01 on the SD-1A163-02 trunk. When the SD-56525 trunk is seized for a call from the CDO to the switchboard, or vice versa, the SD-56525 sends a relay controlled signal to scan point 01 on the SD-1A163-02 trunk (a make-busy signal). The ESS detects this make-busy signal and makes the SD-1A163-02 high and wet so that the SD-1A163-02 trunk cannot be seized by the ESS. Thus, the SD-

1A163-02 trunk must be a two-way trunk and cannot be used as an incoming trunk except for the make-busy indication from the SD-56525, as the COOT feature has no way of differentiating between an incoming seizure and the make-busy indication. (See Fig. 1.) The hardware required for the COOT feature is listed in Table B. See Table A for ordering information.



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

LEGEND:

CCOL - CHART COLUMN NUMBER
 NOTR - NUMBER OF TRUNKS
 TCC - TRUNK CLASS CODE
 TG Typ - TRUNK GROUP TYPE
 TLDI - TANDEM TRUNK INDICATOR
 TNDTBL - TANDEM TABLE NUMBER
 TTN - TEST TABLE NUMBER
 WRDN - NUMBER OF WORDS IN THE AUXILIARY BLOCK

Fig. 5—Trunk Group Number Translation

HILO 4-WIRE COOT TRUNK

10.02 The SD-1A393 trunk, often referred to as the COOT trunk, is used to handle outgoing calls to a CDO while sharing the same trunk facility used for a two-way toll switchboard/CDO trunk. Refer to Table A for ordering information. The hardware required for the COOT feature is listed in Table B.

10.03 Circuit state 6 is provided with the addition of option U wiring. This circuit is placed in state 6—hold off-hook (out-of-service)—via a TTY message or via the manual trunk test position (MTTP) by operating relays B and C. Operation of these relays transfers the CDO trunk from the operator position to the ESS office in the event of a permanent seizure from the CDO.

10.04 The SD-1A393 is always connected to the trunk switching network via a HILO interface circuit, SD-1A392-01, which is used to properly

condition all electrical signals entering the trunk switching network for equivalent 4-wire switching.

11. SOFTWARE REQUIREMENTS

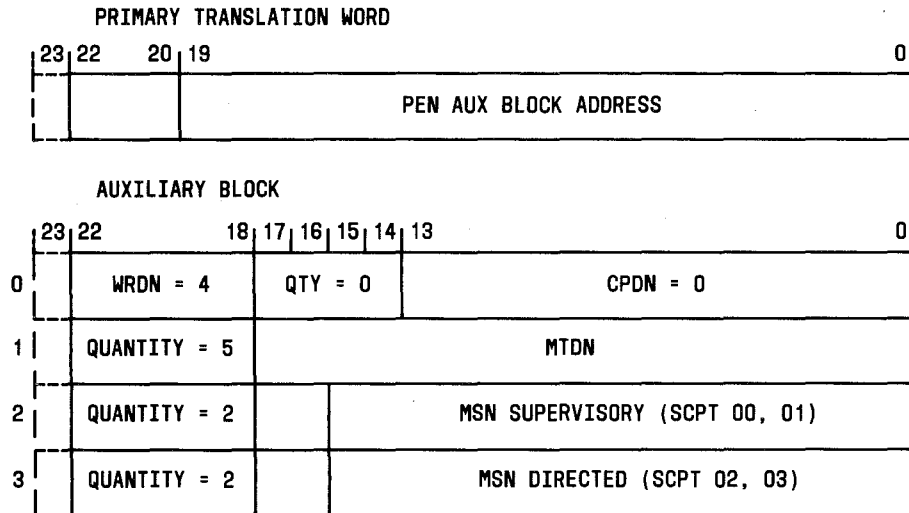
Note: This part contains cost factors and determination of quantities. Central Office Equipment Engineering System (COEES) Planning and Mechanized Ordering Modules are the recommended procedures for developing these requirements. However, for planning purposes or if COEES is not available, the following guidelines may be used.

MEMORY

A. No. 1 ESS

Fixed

11.01 The following memory is required whether or not the feature is used.



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

LEGEND:

WRDN - NUMBER OF WORDS IN THE AUXILIARY BLOCK
 CPDN - CENTRAL PULSE DISTRIBUTOR NUMBER
 QTY - QUANTITY OF CENTRAL PULSE DISTRIBUTOR POINTS
 (WORD 0). QUANTITY OF SIGNAL DISTRIBUTOR POINTS
 (WORD 1). QUANTITY OF SUPERVISORY MASTER
 SCANNER LEADS (WORD 2). QUANTITY OF DIRECTED
 MASTER SCANNER POINTS (WORD 3).
 MTDN - SIGNAL DISTRIBUTOR NUMBER
 MSN SUPERVISORY - MASTER SCANNER NUMBER (SUPERVISORY SCAN PTS)
 MSN DIRECTED - MASTER SCANNER NUMBER (DIRECTED SCAN PTS)

Fig. 6—Trunk Network Number-to-Peripheral Equipment Number Translation for SD-1A163-02

- **Base generic program (program store):** Approximately 130 generic program store words are required.

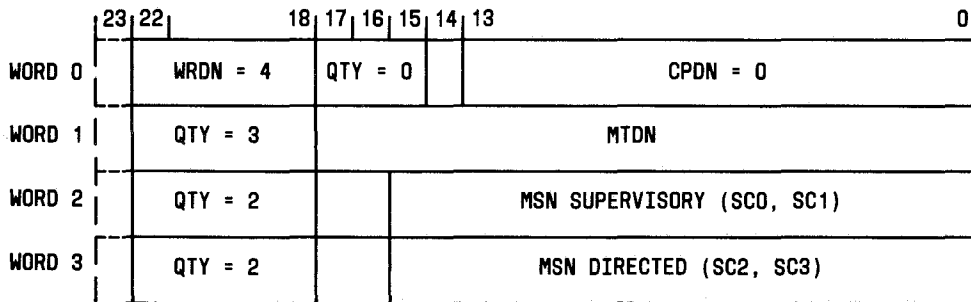
Conditional

- 11.02 The following memory is required when the feature is activated but not yet applied.
- **Call store:** Since trunks with the COOT feature are considered two-way trunks, a four-word call store head cell is required per trunk group. In addition, an activity table is required, and its size is determined by the greatest integer function of the size of the trunk group divided by 16. For example, a trunk group of 52 trunks would require a four-word activity table ($52/16 = 3 + R = 4$, R is a nonzero remainder). Set cards 9FHL4W

and 9SHL4W are required in order to use COOT in the HILO 4-wire arrangement.

Variable

- 11.03 The following memory is required when the feature is applied.
- **Translations (program store):** On a per trunk group basis, a trunk class code expansion of four words per COOT group is required. This expansion may be shared by more than one trunk group if the groups have the identical set of circuit and translation options. On a per trunk group basis, a trunk group number translation of one primary translation word, plus an auxiliary block with a minimum of four words (for one trunk), is required. An additional auxiliary block word is needed for each additional



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

LEGEND:

WRDN - NUMBER OF WORDS IN THE AUXILIARY BLOCK
 CPDN - CENTRAL PULSE DISTRIBUTOR NUMBER
 QTY - QUANTITY OF CENTRAL PULSE DISTRIBUTOR POINTS (WORD 0). QUANTITY OF SIGNAL DISTRIBUTOR POINTS (WORD 1). QUANTITY OF SUPERVISORY MASTER SCANNER LEADS (WORD 2). QUANTITY OF DIRECTED MASTER SCANNER POINTS (WORD 3).
 MTDN - SIGNAL DISTRIBUTOR NUMBER
 MSN SUPERVISORY - MASTER SCANNER NUMBER (SUPERVISORY SCAN PTS)
 MSN DIRECTED - MASTER SCANNER NUMBER (DIRECTED SCAN PTS)

Fig. 7—TNN-to-PEN Auxiliary Block for SD-1A393

trunk in the trunk group, and additional space may be left in the auxiliary block for expansion. On a per trunk basis, a master scanner number translation of four words per trunk is required. On a per trunk basis, a trunk network number-to-peripheral equipment number translation of one primary translation word, plus four auxiliary block words, is required. Also required on a per trunk basis is a trunk network number-to-trunk group number translation of one primary translation word plus two auxiliary block words. If carrier facilities are used and the carrier system is equipped with a carrier group alarm compatible with ESS, an additional word is required in the auxiliary block.

11.04 However, there is only one extra word per trunk caused by the COOT feature (one master scanner number translation word for scan point 03 on the SD-1A163-02 or SD-1A393 trunk circuit). Otherwise, the translations are no larger than those for any other two-way trunk.

B. No. 1A ESS

Fixed

11.05 The following memory is required whether or not the feature is used.

- **Base generic program (program store):** Approximately 165 generic program store words are required.

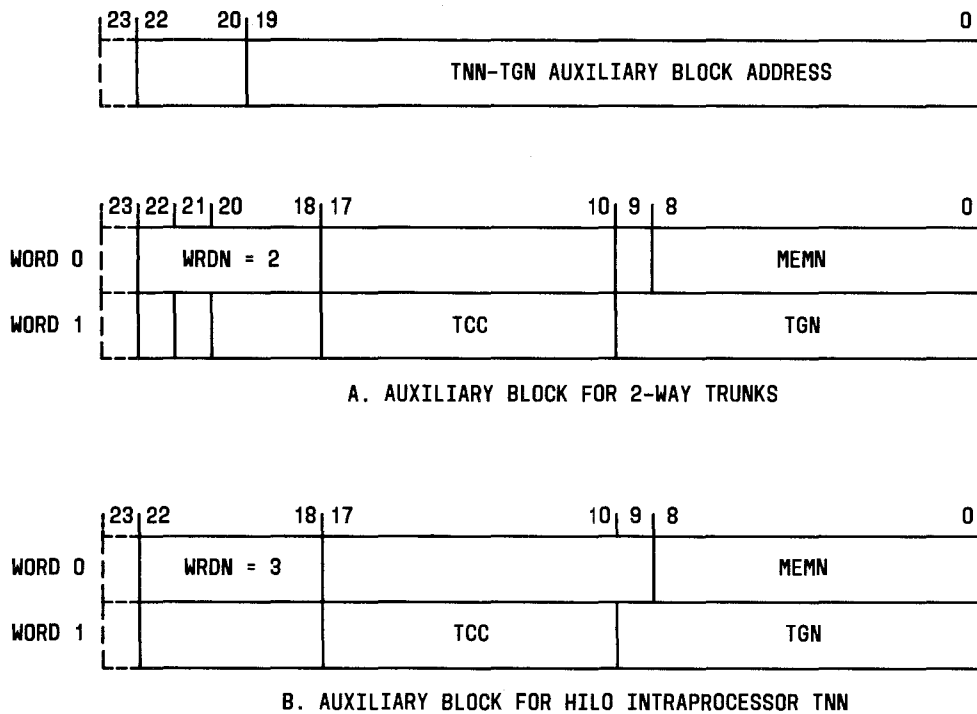
Conditional

11.06 The conditional memory requirements are the same as for the No. 1 ESS (paragraph 11.02). This information is located in duplicated call store.

Variable

11.07 The variable memory requirements are the same as for the No. 1 ESS (paragraph 11.03). Translations are located in unduplicated call store and file store.

TNN-TO-TGN PRIMARY TRANSLATION WORD



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

LEGEND:

- MEMN - MEMBER NUMBER FOR 2-WAY TRUNKS, OTHERWISE ZEROS
- TCC - TRUNK CLASS CODE
- TGN - TRUNK GROUP NUMBER
- WRDN - NUMBER OF WORDS IN THE AUXILIARY BLOCK

Fig. 8—TNN-to-TGN Translation

REAL TIME IMPACT

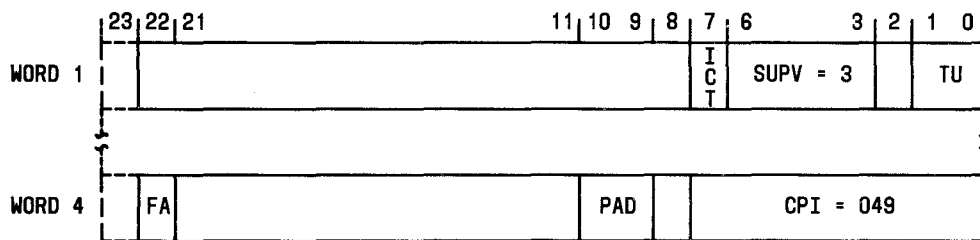
11.08 COOT calls use about the same amount of real time as the same calls would if the COOT feature was not implemented, except for the time involved in scanning the additional scan point on the modified SD-1A163-02 trunk circuit and in making the SD-56525 switchboard trunk busy or idle. This additional real time is negligible.

12. DATA ASSIGNMENTS AND RECORDS

TRANSLATION FORMS

12.01 Record keeping forms used for the COOT feature are as follows:

- (a) ESS 1201—Miscellaneous Trunk Frame Record: The trunk frame number, TNN, TGN, trunk class code, CPD, SD, and scan points are some of the items associated with this form for the COOT feature.
- (b) ESS 1204—Trunk Class Code Record: This form is used to associate a 3-digit TCC with the trunk class code expansion table in ESS memory.
- (c) ESS 1221—Miscellaneous Trunk Frame (HILO) Record: This form associates the same information as the ESS 1201 form but is for HILO application only.

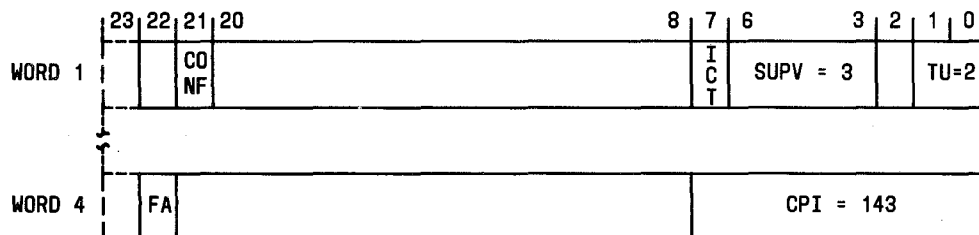


NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

LEGEND:

CPI - CIRCUIT PROGRAM INDEX
 FA - FAST ANSWER
 ICT - IDLE CIRCUIT TERMINATION
 PAD - MESSAGE TRUNK. MEETS VNL REQUIREMENTS
 SUPV - SUPERVISION
 TU - TRUNK USAGE

Fig. 9—Trunk Class Code Expansion Table for SD-1A163-02



NOTE: BIT 23 EXISTS IN NO. 1A ESS ONLY.

LEGEND:

CONF - CONFERENCE RESTRICTED. SET TO "1" IF INDICATED
 CPI - CIRCUIT PROGRAM INDEX
 FA - FAST ANSWER
 ICT - IDLE CIRCUIT TERMINATION
 SUPV - SUPERVISION
 TU - TRUNK USAGE

Fig. 10—TCC Expansion Table for SD-1A393

RECENT CHANGES

12.02 There are no unique recent change (RC) messages or keywords associated with this feature.

13. TESTING

13.01 TTY input and output messages given in Part 18B can be used to verify the COOT feature. These messages are:

(a) VFY-MSN input message is used to verify the master scanner number translation words. System response is a TR12 output message.

(b) VFY-TKGN input message is used to verify the trunk group number auxiliary blocks. System response is a TR10 output message.

(c) VFY-TNN input message is used to verify the trunk network number translation words. System response is a TR14 output message.

(d) TAG-TNN-PEN input message is used to specify the address of the primary translation word of the TNN-to-PEN translation. System response is a TR21 output message.

TABLE B
HARDWARE FOR COOT FEATURE

CABLE LENGTH BETWEEN JUNCTOR GROUPING FRAME AND POINT OF GOOD IMPEDANCE (NOTE)	HARDWARE
0 to 800 feet and up to 1400 feet if return loss is between 22 db and 30 db	(a) 2-Way trunk circuit SD-1A163-02 (b) Switchboard trunk circuit SD-56525 (wired per Note 102) (c) E and M applique circuit SD-99774-01* (d) Repeater coil SD-96452 with Fig. 1 and options E and T [should be located as close to item (b) as possible]†
≥1400 feet or return loss ≤22 db	(a) Same as (a) above. (b) Same as (b) above. (c) Same as (c) above. (d) 24V4 amplifier

Note: Point of good impedance is, for example, a 2-db pad or a D-type channel unit on the transmission side of the SD-56525 circuit.

*E and M applique circuit SD-99774-01 is not needed if E&M type II signaling (E-type signaling) is used.

†Repeater coil SD-96452 is not needed if point of good impedance is 900 oms.

(e) TAG-TNN-TCL input message is used to specify the address to the TNN trunk group number trunk class code expansion table. System response is a TR21 output message.

13.02 Test calls may be made to assure that appropriate records are being made and that these records contain the appropriate data.

13.03 The TRK-LIST-THW input message may be used to verify that the COOT trunks (SD-1A163-02 and SD-1A393) have gone high and wet after a call is made from the CDO to the operator switchboard.

13.04 Refer to A(11) in Part 18 for further testing information.

14. OTHER PLANNING TOPICS

14.01 Not applicable.

ADMINISTRATION

15. MEASUREMENTS

15.01 No special plant or traffic measurements on the COOT feature are provided. Combined operator office trunk groups will have the usual ESS traffic administrative measurements.

16. CHARGING

AUTOMATIC MESSAGE ACCOUNTING

16.01 Charging will be handled by toll operators in the usual manner.

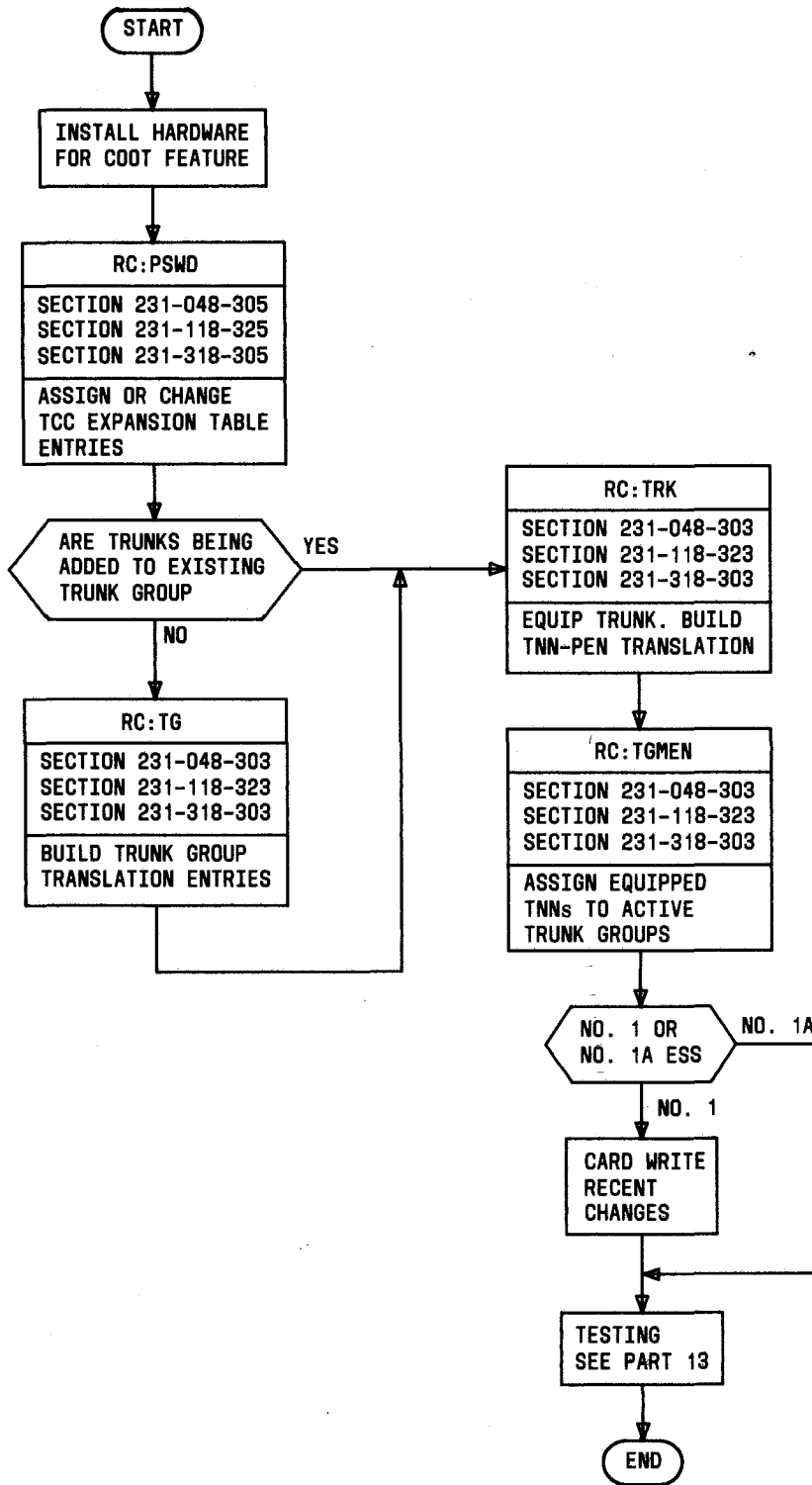


Fig. 11—Procedure for Adding the COOT Feature

UNIFORM SERVICE ORDER CODES

16.02 Not applicable.

SUPPLEMENTARY INFORMATION**17. GLOSSARY**

CDO—Community Dial Office: A small, unmanned, automatic switching system that serves a separate exchange area with its own numbering plan.

Local/Toll Office: An office that has class 5 combined with class 4 or higher switching functions.

Combined Local/Toll HILO Office: An office in which the local (2-wire) and toll (HILO) functions are combined using one processor for both functions.

HILO Switching: A switching scheme that provides the equivalent of 4-wire switching over two switched conductors and a common unswitched return path. A current modulator (high impedance) is used at the sending end, and a demodulator is used at the receiving end (low impedance).

18. REFERENCES

18.01 The following documentation contains information related to or affected by the COOT feature.

A. Bell System Practices

- (1) Section 231-048-303—Trunk Translation Recent Change Formats for TG, TGBVT, TRK, CFTRK, TGMEM, CCIS, and TKCONV (1E6 and 1AE6 Generic Programs)—2-Wire No. 1 and No. 1A Electronic Switching Systems
- (2) Section 231-060-210—Service Circuits—Network Switching Engineering—2-Wire No. 1 and No. 1A Electronic Switching Systems
- (3) Section 231-061-450—Program Store—Network Switching Engineering—2-Wire No. 1 Electronic Switching System
- (4) Section 231-061-460—Call Stores—Network Switching Engineering—2-Wire No. 1 Electronic Switching System
- (5) Section 231-062-460—Processor Community Engineering—Program Store Memory—Net-

work Switching Engineering—2-Wire No. 1A Electronic Switching System

- (6) Section 231-062-465—Processor Community Engineering—Call Store Memory—Duplicated Software—Network Switching Engineering—2-Wire No. 1A Electronic Switching System (when published)
 - (7) Section 231-062-470—Processor Community Engineering—Call Store Memory—Unduplicated Software—Network Switching Engineering—2-Wire No. 1A Electronic Switching System
 - (8) Section 231-062-473—Processor Community Engineering—Call Store/Program Store Hardware—Network Switching Engineering—2-Wire No. 1A Electronic Switching System
 - (9) Section 231-062-475—Processor Community Engineering—File Stores—Network Switching Engineering—2-Wire No. 1A Electronic Switching System
 - (10) Section 231-118-323—Trunk Translation Recent Change Procedures for TG, TGBVT, TRK, CFTRK, and TGMEM (CTX-6 Through 1E5 Generic Programs)—2-Wire No. 1 Electronic Switching System
 - (11) Section 231-128-571—Outgoing Combined Operator Office Trunk Circuit SD-1A393-01—Operational and Alignment Test—2-Wire No. 1 Electronic Switching System
 - (12) Section 231-318-303—Trunk Translation Recent Change Procedures for TG, TGBVT, TRK, CFTRK, TGMEM, CCIS, and TKCONV (Through 1AE5 Generic Program)—2-Wire No. 1A Electronic Switching System
 - (13) Section 759-100-000—Subject Index—Central Office Equipment Engineering (COEES)—Business Information System Programs
 - (14) Section 759-100-100—General Description—Central Office Equipment Engineering (COEES)—Business Information System Programs.
- B. TTY Input and Output Manuals**
- (1) Output Message Manual OM-1A001—2-Wire No. 1 Electronic Switching System

SECTION 231-090-294

- (2) Output Message Manual OM-6A001—2-Wire No. 1A Electronic Switching System
- (3) Input Message Manual IM-1A001—2-Wire No. 1 Electronic Switching System
- (4) Input Message Manual IM-6A001—2-Wire No. 1A Electronic Switching System.
- (3) Translation Output Configuration PA-6A002, No. 1A Electronic Switching System—2-Wire
- (4) Office Parameter Specification PA-591001, No. 1 Electronic Switching System—2-Wire
- (5) Office Parameter Specification PA-6A001, No. 1A Electronic Switching System—2-Wire

C. Other Documentation

- (1) Translation Guide TG-1A—2-Wire No. 1 and No. 1A Electronic Switching Systems
- (2) Translation Output Configuration PA-591003, No. 1 Electronic Switching System—2-Wire
- (6) Parameter Guide PG-1—No. 1 Electronic Switching System—2-Wire
- (7) Parameter Guide PG-1A—No. 1A Electronic Switching System—2-Wire.