

**PROCEDURES
FOR ADDING A CENTREX-CO
CUSTOMER
NO. 2 AND NO. 2B ELECTRONIC SWITCHING SYSTEMS**

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1. GENERAL

1.01 This section provides the overall procedures for adding a Centrex-CO customer to a No. 2 or No. 2B Electronic Switching System (ESS).

1.02 This section is reissued to include changes made for the Extended Features changes made to this section since last issue EF-2 and 2B EF-2 generic programs. In the remainder of this section when referring to the No. 2 ESS, the same conditions also apply to the No. 2B ESS.

1.03 *Centrex-CO* is an arrangement that provides standard business services and custom calling

features to stations and attendants located on a customer's premises with the switching performed in a No. 2 ESS central office. Any generic program later than LO-1 must be provided in the central office before a Centrex-CO customer can be added to the office. The same No. 2 ESS may be used for switching exchange network subscribers as well as stations that are part of the Centrex-CO customer group.

1.04 In the No. 2 ESS, Private Branch Exchange central office (PBX-CO) is implemented via application of Centrex-CO, with or without the centrex station features of Direct Inward Dialing (DID) and/or Identified Outward Dialing (IOD). The term "PBX-CO" is occasionally used to mean PBX service where the switching is performed at the central office. Hence, PBX-CO is a special application of Centrex-CO. The remainder of this section addresses procedures for adding a Centrex-CO customer group.

1.05 It is assumed in this section that all previous arrangements pertaining to the new customer have been made and that the information is known. This section only details how to get that information into translations using a manual translation modification procedure. Prior to performing this procedure, appropriate ESS input forms in TG-2H must be filled out for the new customer which are then used to guide the craft personnel through this procedure.

1.06 An Office Data Administration (ODA) run is required for implementing centrex *capability* in a No. 2 ESS. Refer to TG-2H and Sections 232-124-301 for the No. 2 ESS and 232-324-301 for the No. 2B ESS for ODA information. This ODA run establishes spare centrex groups, each having a number of 6-code and 30-code speed calling lists

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and an attendant list for universal console attendants or simplified console attendants. A centrex group cannot be defined to contain both simplified console and universal console attendants. The decision as to which type of attendants can be assigned must be made prior to executing the ODA program. This decision cannot be overwritten via recent change inputs. This ODA run further establishes spare trunk groups (both real and simulated), spare route index expansions, and other translation items necessary to fulfill the requirements for potential centrex customers. This ODA run may be a new run (in which case some of the specific centrex customer information may be supplied) or a previous run which established sufficient spare groups, speed calling lists, etc. Once the spare groups are established, the contents are filled in via recent changes according to the individual customer's needs. Refer to Section 232-118-103 "Recent Change Procedures (Central Office Changes) EF-1" or Section 232-118-104 Recent Change Procedures EF-2 for this information.

1.07 No switching equipment is installed at the customer premises. All customer subscriber lines are directly connected to a No. 2 ESS central office in the same manner as the regular telephone subscriber lines.

1.08 Centrex programs and translations at the No. 2 ESS, to which the customer group is connected, indicate which subscriber lines are part of a Centrex-CO customer group and determine the treatment the subscriber lines will receive.

1.09 The Centrex-CO service may be provided with 1B- or 2B-type attendant consoles (Fig. 1) and a centrex console control cabinet (Fig. 2) installed on the customer's premises. Centrex-CO service can also be provided without attendant consoles (using a call director, keyset, or simple telephones as attendant positions).

1.10 A complete flow chart procedure for adding a centrex customer to a No. 2 ESS is provided in Fig. 3. Accompanying the flow charts are explanatory notes that supplement the procedures, recent change message formats, and ESS forms that must be used to accomplish the flow chart tasks.

2. DESCRIPTION

Translations

2.01 Translations for providing Centrex-CO service are as follows:

(a) ***Centrex Data Link and Console Translations (if applicable):***

Centrex data link and console translations describe the data link and universal attendant console interface with the central office. The data link frame translator gives the addresses of central pulse distributor points and master scanner points for the control and supervision of the data link. The data link console translator contains data for the control and supervision of a specific console controlled by the data link unit.

(b) ***Centrex Group and Digit Interpreter Table Translations:***

These translations define the customer's group features and dial access features. Features specified in the centrex group expansion table pertain to the entire customer group. Features specified in the digit interpreter tables require dial access by the customer stations and the attendant. Stations may be restricted from using many dial access features by specifying appropriate centrex access treatment codes in the individual station line translations and restriction codes in the digit interpreter table terminal entries.

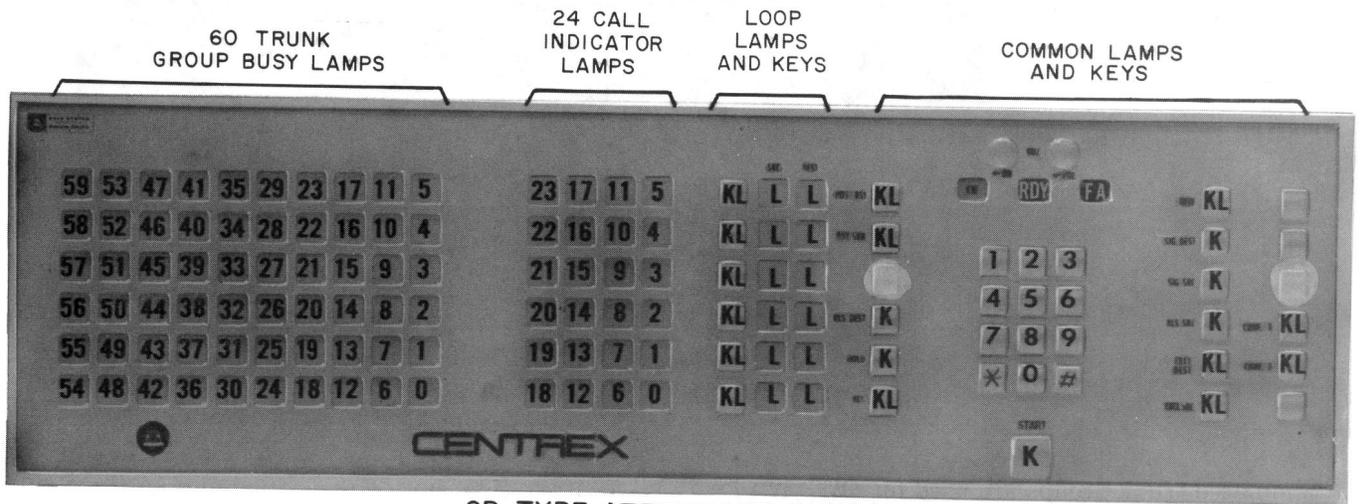
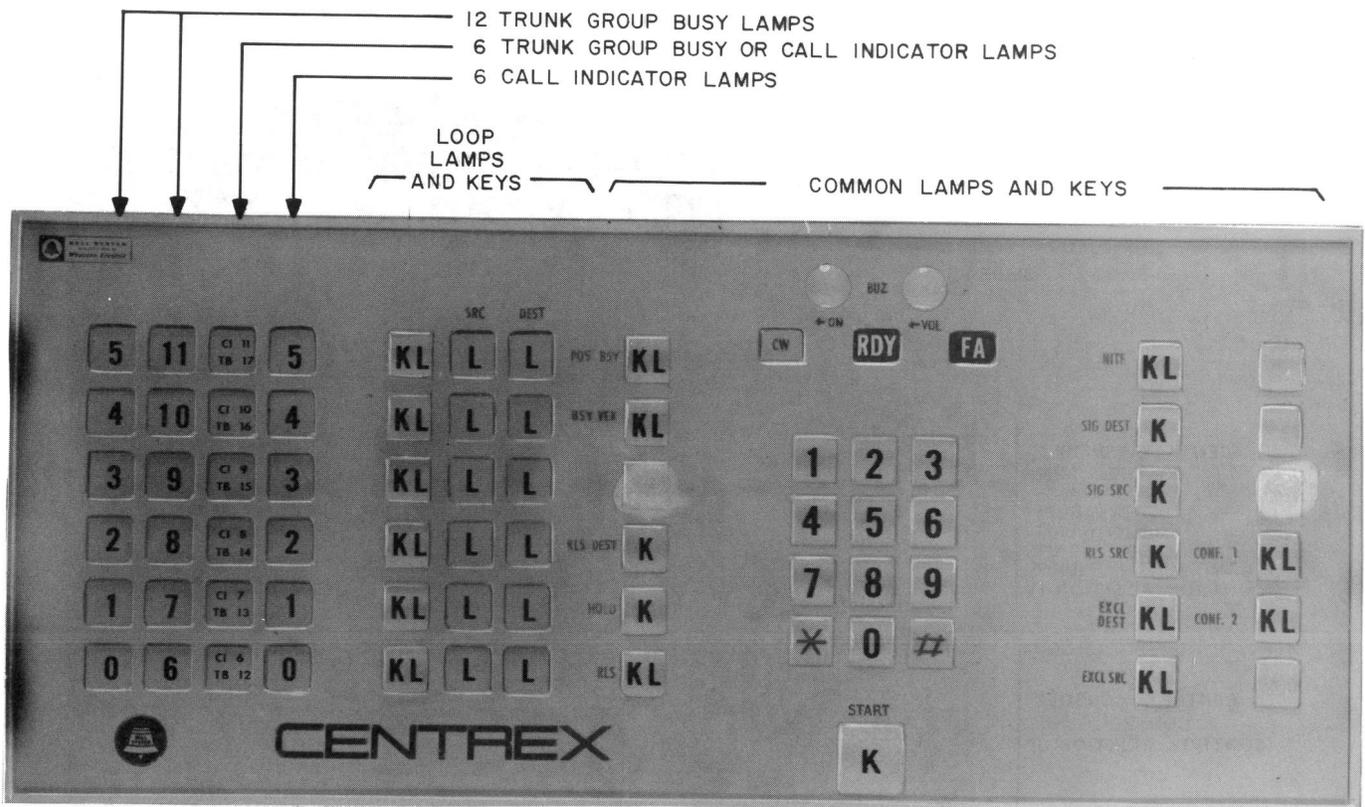
(c) ***Trunk Translations:*** Trunk translations are required for FX, CCSA, tie trunk, code call, paging and recorded telephone dictation.

(d) ***Three-Digit, Four-Digit and Terminal Equipment Number Translations:***

The 3-digit translation defines the centrex customer group office code to the ESS. The 4-digit translation specifies the particular hundreds group(s) to which the customers' stations belong and the centrex originating/terminating 4- or 6-word expansion table defines the individual station capabilities and restrictions.

(e) ***Simulated Trunk Group Translations:***

Simulated trunk group translations restrict certain services sold on a limited access basis. The quantities of facilities purchased are stored in memory and used to identify and control the number of calls a particular customer has in service to a particular facility at a given time.



K-KEY
 L-LAMP
 KL-KEY AND LAMP COMBINATION

Fig. 1—Universal Console Lamp and Key Arrangements

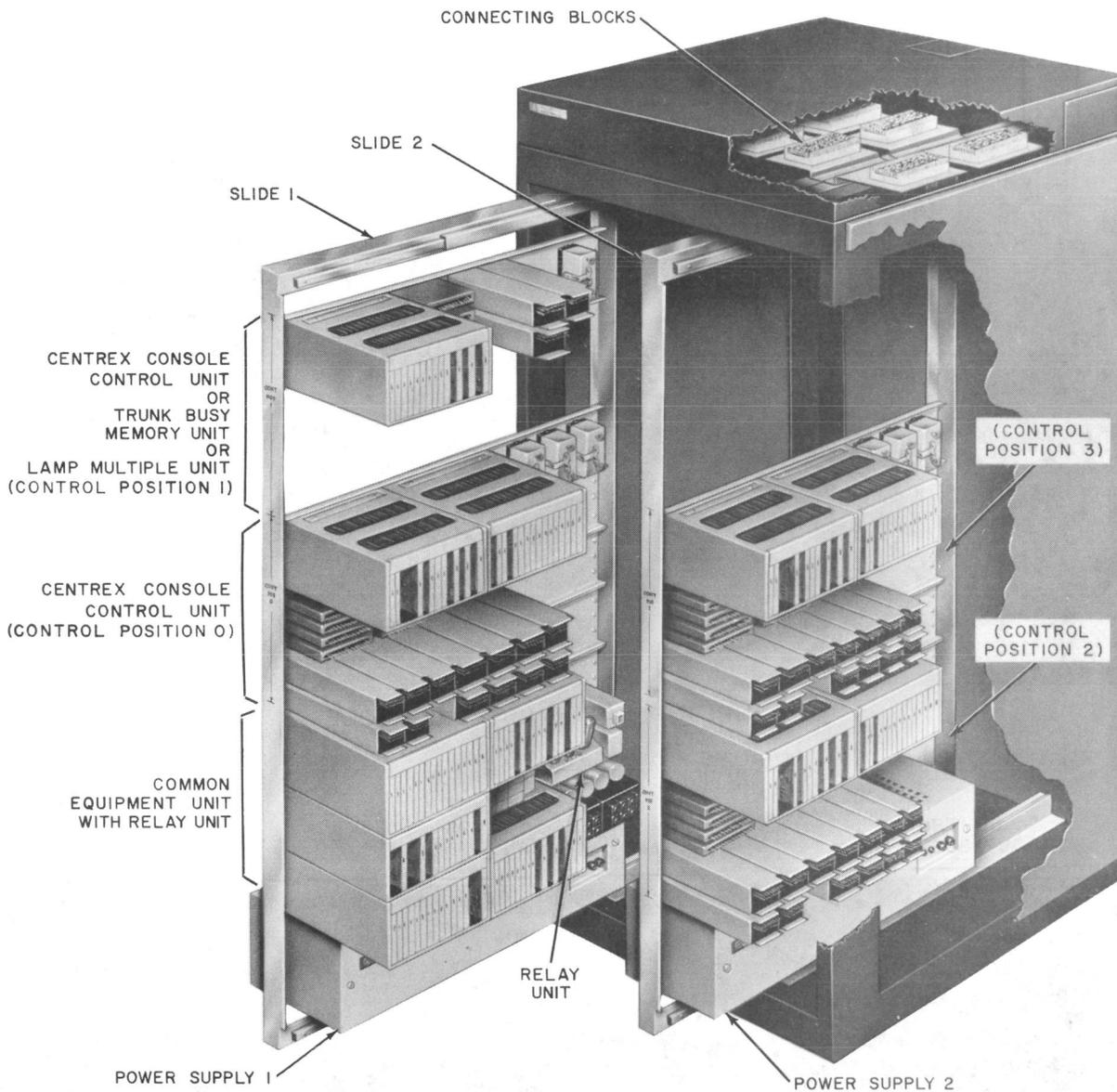


Fig. 2—Centrex Console Control Cabinet

Simulated trunk groups are used for OUT-WATS access. Simulated facilities may also be used to restrict Direct Inward Dial (DID) calls and outgoing dial 9 calls for the customer group. The EF-2 generic program provides additional simulated features that can restrict centrex intercom calls or centrex calls that use 3-port conference circuits (an intercom call is a call from a centrex line or centrex attendant to another

centrex line or centrex attendant in the same centrex group).

(f) **Centrex Speed Calling Translations:**

Centrex speed calling translations assign translation space for abbreviated codes to certain called numbers, which permit the station to dial the selected numbers using fewer digits than

normally required. Speed calling translations exist for both group and individual speed calling.

(g) **Most Economical Routing (MER)**

Translations: The MER translations are implemented via the route index expansion table. These translations direct outgoing station calls to preselected routing patterns. MER provides up to four private routes (FX, CCSA, full time and measured time WATS) over which a call may be attempted in a selected order. An optional Direct Distance Dialing (DDD) network overflow is provided if no private facility route is found.

3. FLOW CHART PROCEDURES FOR ADDING A CENTREX-CO CUSTOMER

3.01 In order for a centrex customer to be added to a No. 2 ESS, the office must first be equipped with the EF-1 or later generic program. After an office has been equipped with the appropriate generic program, procedures for adding a centrex customer to the office are outlined in flow chart form in Fig. 3. Notes are also included with Fig. 3 to aid in following the flow chart procedure.

3.02 Before starting the procedures for adding a centrex customer, TG-2H should be consulted and all necessary input forms filled out according to the specifications contained therein.

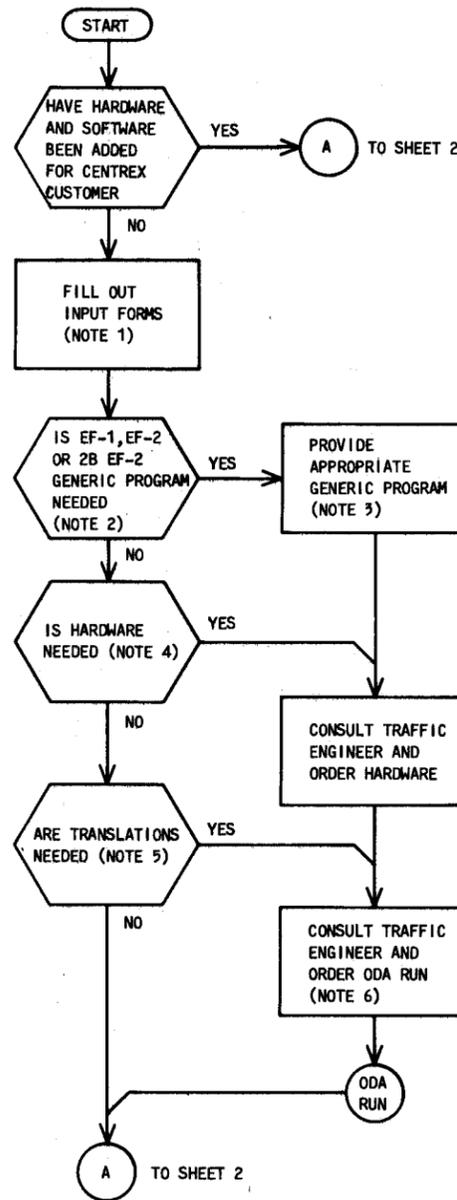
4. REFERENCES

4.01 Refer to the following sections for further information concerning centrex:

SECTION	TITLE
TG-2H	Translation Guide
232-002-514	Cutover Procedures (for No. 2 ESS)
232-302-514	Cutover Procedures (for No. 2B ESS)
232-004-301	Updating PSTranslation Information Using the SCW (for No. 2 ESS)
232-304-301	Updating PSTranslation Information Using the SCW (for No. 2B ESS)
232-103-101	Call Processing Description (Including Centrex System and No. 2B ESS)
232-118-101	Basic Translation Data—Description
232-118-103	Recent Change Procedures (Central Office Changes) EF-1
232-118-104	Recent Change Procedures (Central Office Changes) EF-2 and 2B EF-2
232-124-301	Office Update Procedures Using Regional ODA Program (for No. 2 ESS)
232-324-301	Office Update Procedures Using Regional ODA Program (for No. 2B ESS)
232-202-101	Centrex Data Link and Console Control Description
232-202-301	Centrex Data Link and Attendant Telephone Console Maintenance Procedures Using Maintenance TTY
232-202-302	Centrex Data Link and Console Demand Exercise Program Procedures
232-204-501	Centrex Attendant Loop and Trunk Circuit (SD-2H172, SD-2H173, and SD-2H182) Test
232-212-501	Six-port Conference Circuit (SD-2H176) Test
232-213-501	Six Port Conference Circuit (SD-2H212) Test
540-576-210	1B-Type and 2B-Type Telephone Consoles and Console Control Cabinet—Installations and Connections for Centrex-CO Service
540-576-302	Centrex Station Equipment and Attendant Equipment 1B- and 2B-Type Telephone Consoles With

SECTION 232-118-301

SECTION	TITLE	SECTION	TITLE
	Switched Loop Operation Method of Operations	IM-2H200	Input Message Manual
540-576-304	Centrex Data Link and Console Demand Exercise Fault Location Procedures	OM-2H200	Output Message Manual
		PA-2H200	Office Data Tables—Layout Specification (for LO-1 and EF-1)
540-576-306	Centrex Console Control Cabinet Equipment Trouble Location Procedure	PA-2H203	Office Data Tables—Layout Specification (for 2B-EF-1)
966-202-100	No. 2 ESS—Centrex Service—General Description	PA-2H204	◆Office Data Tables—Layout Specifications (EF-2 and 2B-EF-2)

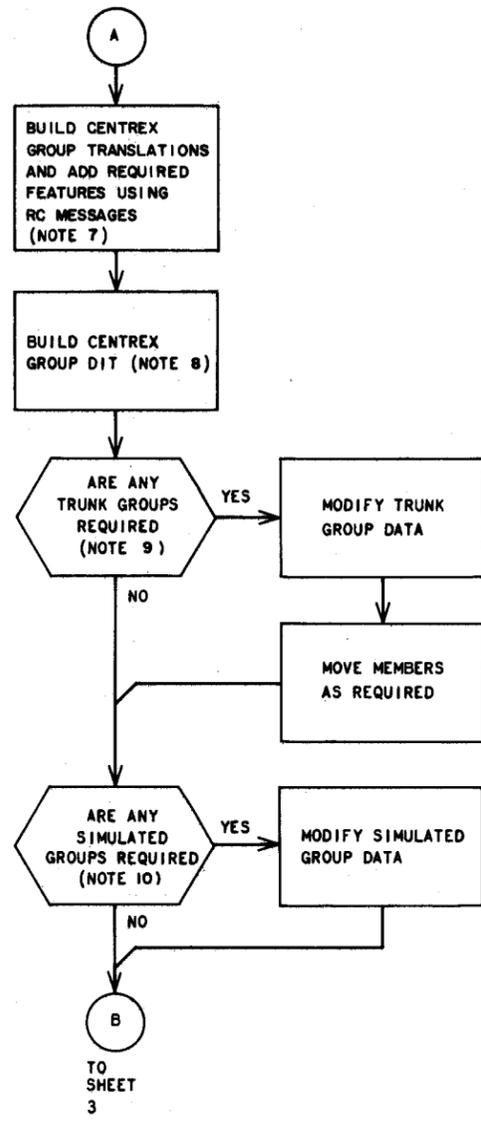


NOTES:	INPUT MESSAGES	ESS FORMS
<p>(1) Consult TG-2H and fill out all necessary input forms according to the specifications contained therein.</p> <p>(2) It is possible for an existing No. 2 ESS office to have the EF-1, or later generic program arranged for centrex without actually having a centrex customer.</p> <p>(3) If a centrex customer is to be added to a No. 2 ESS, the office must be provided with the EF-1 or later generic program arranged for centrex.</p> <p>(4) A No. 2 ESS may or may not have the necessary hardware to add a centrex customer to the office. The hardware to be considered for centrex is as follows:</p> <ul style="list-style-type: none"> • New Program Store • New Call Store • Centrex Data Link • Attendant Trunks and Loops • Trunks and Service Circuits • Recorded Announcements • Automatic Message Accounting • 50A Consoles • Other Hardware Installation* <p>(5) A No. 2 or No. 2B ESS may or may not have the necessary translations to add a centrex customer to the office. Translations to be considered for centrex are as follows:</p> <ul style="list-style-type: none"> • Additional 2, 4, 6 or 8 Word Expansion (TG-2H) 2500 • Dummy CTX Group (With Attendant List and Speed Call List if Required)** 2109 • Additional Trunk Groups (Real and Simulated) 2202 • Additional Route Index Capacity 2500 • Additional Digit Interpreter Tables 2500 • Key Control ACOF List 2217 • New Screening and/or Charging (Including WATS or Rate Center) 2300,2301 • New MER 2302,2304 • New Code Conversion 2303 • New Line Class Code (Station, Attendant, MER and WATS) 2303 • Additional Hundreds Route Index (HRI) for Cut/Precut. Routing or for CTX Fully Restricted (FR) Terminating 2306,2307 • Cutover by Cut Program 2501 • New Trunk Groups on Carrier Group Alarms 2216 • New TOTANI Entries 2505 • MTD/GBI Entries (EF-1 only) 2215 • New Office Code (Including Station Ringer Code) 2303 • New Hundreds Group (Including Pseudo Office Codes) 2501 • CCSA Charge Index (CI) 2500 <p>(6) Additional translations and dummy centrex groups should be considered for future growth.</p>		

* Traffic facilities practice, all output records (ESS 2xxx-R) plus the listed input records are an aid in helping to determine if more hardware is needed.

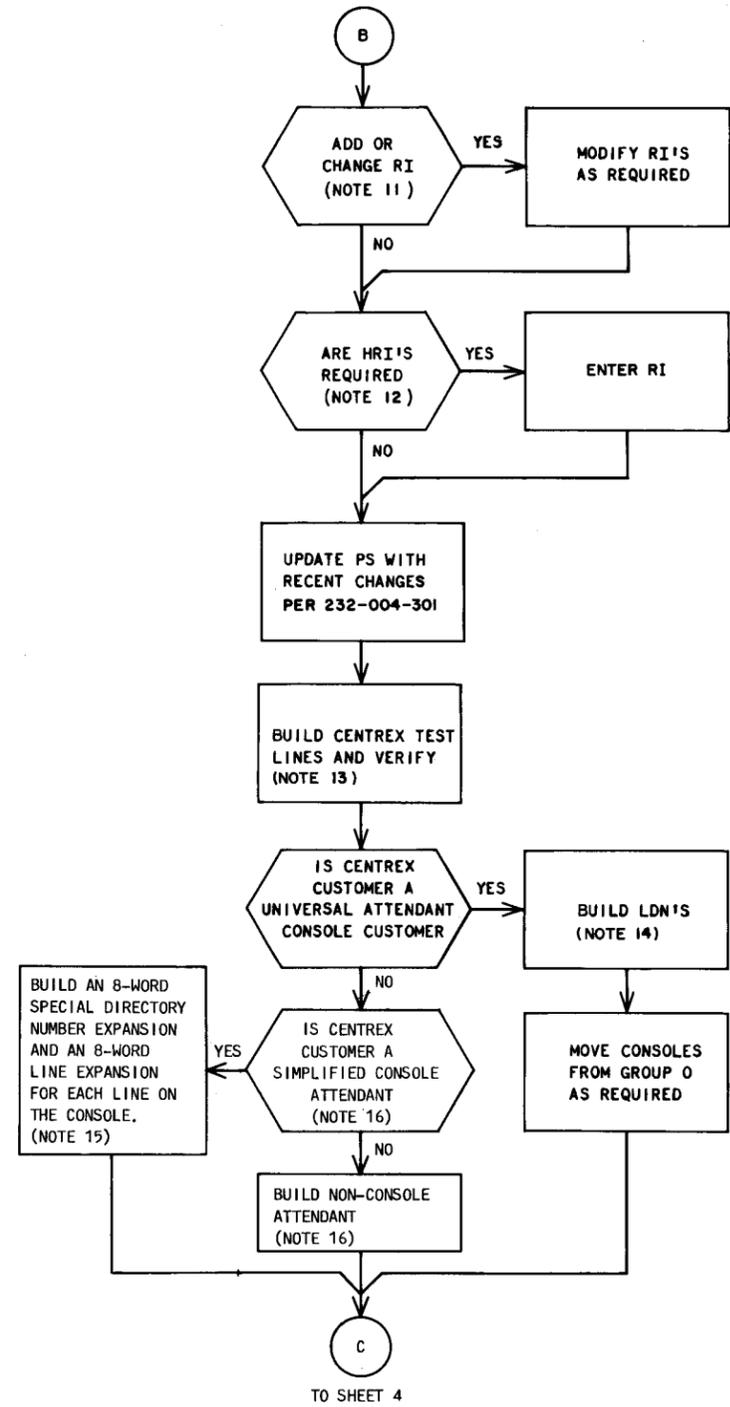
** A spare centrex group which has more speed calling lists and a larger attendant list than necessary may be used.

Fig. 3—Procedures for Adding Centrex Co Customer to a No. 2 or No. 2B ESS (Sheet 1 of 4)



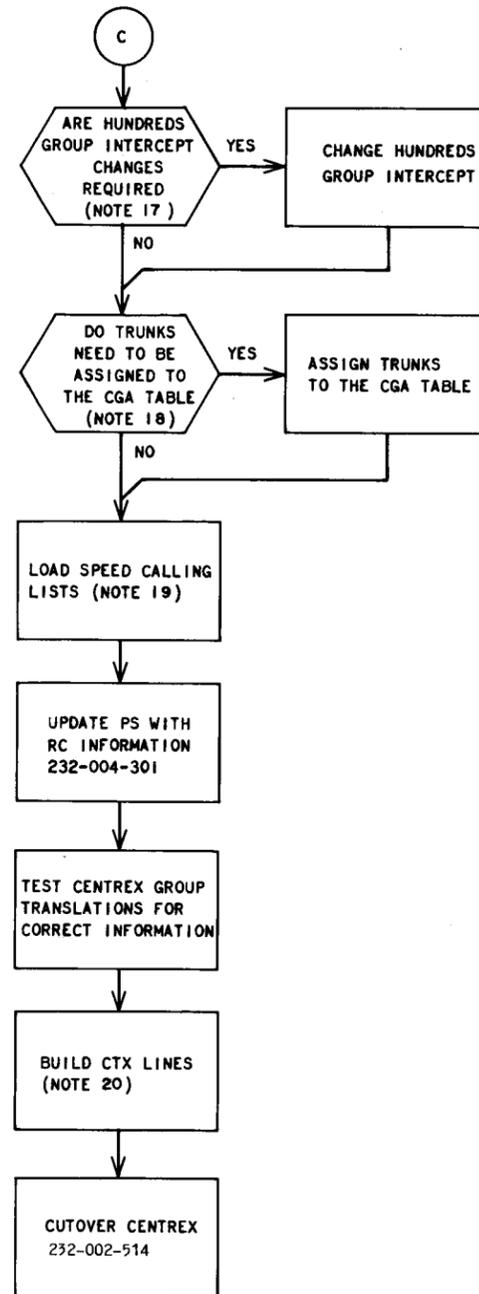
NOTES:	INPUT MESSAGES	ESS FORMS
(7) In order to add a centrex customer to a No. 2 ESS, all the customer group features must be defined in translations. Refer to the input message manual (IM-2H200) for message format.	A RC:CTX	2109 2202 2303 2307
(8) After the customer has been defined, the customer dialing plan must be defined. This is accomplished in the digit interpreter tables (DIT).	A RC:DIT A RC:DTB	2109
(9) If any trunks or service circuits are required, the trunk group must be modified; i.e., the contents of the program store word to be changed, as well as the new information to be entered, must be given.	A RC:GRP	2202 2204
The terminal equipment number of a given member of a group must be moved in or out of the group as required.	A RC:TRK	2202 2204
(10) If any simulated groups are required, the contents of the program store word to be changed, as well as the new information to be entered, must be given.	A RC:SIM	2202

Fig. 3—Procedures for Adding Centrex Co Customer to a No. 2 or No. 2B ESS (Sheet 2 of 4)



NOTES	INPUT MESSAGES	ESS FORMS
(11) If additional route indexes are required, or need to be changed, make the necessary modifications.	A RC:RI	2303
(12) If hundreds group route indexes are to be used for cut/precut routing, enter the route index into the already existing HRI format.	A RC:HRI	2501
(13) As required.	A RC:L	2101
(14) If centrex customer is to have a universal attendant console, build listed directory numbers and move attendant blocks from group 0 as appropriate.	A RC:L A RC:ATT	2101 2108-1
(15) If centrex customer is to have a simplified console attendant, build the 8-word special directory number expansion and an 8-word expansion for each line on the console. In addition, build the necessary subgroup information.	A RC:L A RC:SCA	2101 2108-2
(16) If centrex customer does not have an attendant console, build nonconsole attendant lines as required.	A RC:L	2101

Fig. 3—Procedures for Adding Centrex Co Customer to a No. 2 or No. 2B ESS (Sheet 3 of 4)



NOTES:	INPUT MESSAGES	ESS FORMS
(17) Make changes in hundreds group intercept.	A RC:VTN	2501
(18) Assign trunks to the carrier group alarm (CGA) table.	A RC:CGA	2216
(19) Load the speed calling lists in translations as required, including speed calling lists for the attendant.	A RC:SC	2101 2109
(20) Build centrex lines for new customer added to the No. 2 or No. 2B ESS office.	A RC:L	2101

Fig. 3—Procedures for Adding Centrex Co Customer to a No. 2 or No. 2B ESS (Sheet 4 of 4)