FEATURE DOCUMENT
CENTREX SPEED CALLING
(CENTREX-CO)
NO. 2 ELECTRONIC SWITCHING SYSTEM

CONTENTS PAGE

FEATURE DEFINITION AND DESCRIPTION

1. DEFINITION

1.01 Speed calling is an arrangement that allows a customer to call frequently called numbers using fewer digits than normally required.

1.02 Centrex speed calling is available in two plans. Each centrex customer group may have either the "dedicated digits" plan or the "time-out" plan (but not a mixture) for extension speed calling and/or attendant speed calling. With either plan, each customer group may have up to 1023 six-code speed calling lists, and up to 64 thirty-code speed calling lists. Within these limits, each extension may have one 6-code list and one 30-code list.

- The dedicated digits plan employs 2-digit access for 6-code speed calling (e.g., 12-17) and 4-digit access for 30-code speed calling (e.g., 1120-1149 for extension speed calling and 1120-1179 for attendant speed calling).

- The time-out plan employs 1-digit access for 6-code speed calling (e.g., 2-7) and 2-digit access for 30-code speed calling (e.g., 20-49 for extension speed calling and 20-79 for attendant speed calling). The time-out plan further employs a 4-second time-out after dialing to resolve any possible conflicts between the speed calling access code and extension numbers which may begin with 2-7 or 20-79. The TOUCH-TONE® "#" may be substituted for this 4-second time-out.

1.03 Some customer groups may be allowed dial changeable speed calling. If so, entries in the dialing plan must be generated which will allow for dial-change—30-code and/or for dial-change—6-code. For these customer groups so allowed, all extensions with 6-code speed calling will be able to change their corresponding speed calling lists, certain designated extensions will be able to change their corresponding 30-code lists, and all attendants will be able to change their 30-code list(s). (Centrex attendants do not have 6-code lists, but may have up to two 30-code lists.)

1.04 The centrex speed calling feature is available in any No. 2 Electronic Switching System (ESS) office which has been equipped with an extended feature (EF-1) generic program.

2. DESCRIPTION

A. Customer (User) Perspective

2.01 To use speed calling the customer goes off-hook and dials an abbreviated code of one, two, or four digits as described in the following paragraphs. The central office then converts this abbreviated code into the entire telephone number represented by that code. The entire number which may consist of 3 to 14 digits is used by the No. 2 ESS machine to complete the call by normal call processing procedures.

2.02 The speed calling feature cannot be used to replace part of a dialed number where additional digits are required to complete the dialing information. It must represent the entire number required to complete the call. For example, speed calling cannot be used on a tandem tie trunk call where a second, third, etc., dial tone is required.

2.03 The contents of the speed calling lists associated with customers may be changeable from the customer's telephone as well as from the operating company via recent change procedures (see OFFICE DATA). However, the size of a speed calling list and the number of speed calling lists per customer are not changeable by recent change or from a customer's telephone.

2.04 To dial a change into the speed calling list, the customer goes off-hook and dials the speed call change access code for the customer group (e.g., "107") provided one exists. If this extension is allowed to change the speed calling list, second dial tone is received. After reception of second dial tone, the extension dials the abbreviated code to be changed, followed by the new number to be stored. After dialing is complete, a confirmation is returned consisting of two short bursts of tone. If the customer remains off-hook for an additional one second, the call is recycled to dial tone as a new origination.

B. System Implementation

Sizes of Speed Calling Lists a Customer May Select

2.05 There are two basic sizes of speed calling lists that can be used for speed calling. One is a 6-code list and the other is a 30-code list.

- ***Six-Code List:*** An extension with a 6-code list can call up to six different numbers using an abbreviated code of one or two digits, depending on the customer group dialing plan.

- ***Thirty-Code List:*** An extension with a 30-code list can call up to 30 different numbers using abbreviated codes of two or four digits, depending on the customer group dialing plan.

2.06 The exact makeup of these abbreviated codes is determined by whether the customer has selected the dedicated digits plan or the time-out dialing plan. The details of these plans are described in 2.13.

List Availability

2.07 Each station in the customer group may have either a 6-code list, a 30-code list, both lists, or neither list. Any customer group may have a maximum of 1023 six-code lists and/or 64 thirty-code lists.

2.08 The centrex attendants, using universal attendant consoles, may be assigned one or two 30-code lists. When two lists are assigned, one of these lists is totally dedicated to the attendant, and the other may be shared with extensions. The dialing plan for the attendant provides for 60 speed calling codes. However, the centrex attendants do not have 6-code speed calling capability.

2.09 For customer administration of 6-code speed calling, an access code is established (in the centrex group digit interpreter tables) for dial changeable 6-code speed calling. Each extension with 6-code speed calling has the capability to make changes to the 6-code list. If a number of extensions share a 6-code list, the administration can become unwieldly. For this reason, the number of extensions sharing a 6-code list should be kept small (1 or 2).

2.10 For telephone company administration of 6-code speed calling, no dial changeable access code is established, and any number of extensions may share a list.

2.11 For customer administration of 30-code speed calling, an access code is established for dial changeable 30-code speed calling. Unlike the 6-code case, selected extensions can be marked to have the ability to change the 30-code lists. This simplifies the administration of the 30-code lists, and allows sharing of the 30-code lists by many station users. Each centrex attendant has the ability to change the attendant speed calling list.

2.12 For telephone company administration of 30-code speed calling, no dial changeable access code is established, annd any number of extensions may share a list. The centrex attendants do not have the ability to change the attendant speed calling list.

Types of Dialing Plans a Customer May Select

2.13 There are two basic speed calling plans (dedicated digits and time-out) that may be selected for a customer group. These plans determine the makeup of abbreviated codes used by that customer group, and are defined as follows:

Dedicated Digits Plan

List	Digits	Example of Abbreviated Code
6-code	AE	12
30-code	BCUX	1147

where:

A,B,C = any nonambiguous digits chosen along with and not conflicting with access codes for foreign exchange (FX), wide area telephone service (WATS), common control switching arrangement (CCSA), tie trunks, extensions, and other special service codes.

E = any digit 2 through 7

U = any digit 2 through 4 (2 through 7 for attendant speed calling).

X = any digit 0 through 9

It is recommended that A=B=C=1 for this dialing plan to avoid possible conflicts with extension assignments and interference between the 6-code and 30-code lists. It may be the case that certain

centrex customers have special numbering constraints. For such cases, caution must be exercised in choosing these three digits (A, B, and C) so that conflicting assignments are not made between these two lists and the remaining numbering plan.

2.14 The time-out (#) plan reduces the number of digits required to access the list entry by adding a special digit to indicate the end of dialing. This digit (#) is the twelfth button on the TOUCH-TONE dialing unit. If the customer does not have a 12-button TOUCH-TONE dialing unit, a 4-second time-out may be substituted for this digit. A customer group that chooses this plan may use either the # or time-out interchangeably. The digits comprising the abbreviated code for this plan are outlined as follows:

Time-out (#) Plan

List		Digits	Example of Abbreviated Code
6-code	E#	(or E followed by a 4-second time-out)	3# (3 + time-out)
30-code	UX#	(or UX followed by a 4-second time-out)	47# (47 + time-out)

where:

E = any digit 2 through 7

U = any digit 2 through 4 (2 through 7 for attendant speed calling)

X = any digit 0 through 9

It should be noted that the conflict between E, U, and other access codes is much greater with the time-out plan than is the conflict between A, B, C, and other access codes with the dedicated digits plan.

List Contents

2.15 Entries in the 6-code list have the same format as entries in the 30-code list. The four basic digit storage formats are shown in Figure 1 through Figure 4 along with a brief description of each.

21						0
P (21)	0 (20)	D8 (19-16)	D0 (15-12)	D1 (11-8)	D2 (7-4)	D3 (3-0)
P (21)	0 (20)	D9 (19-16)	D4 (15-12)	D5 (11-8)	D6 (7-4)	D7 (3-0)

Fig. 1—Translation Arrangement for Storing Three to Ten Digits With No Prefix

21						0
P (21)	0 (20)	D8 (19-16)	D10 (15-12)	D1 (11-8)	D2 (7-4)	D3 (3-0)
P (21)	1 (20)	D9 (19-16)	D4 (15-12)	D5 (11-8)	D6 (7-4)	D7 (3-0)

Fig. 2—Translation Arrangement for Storing Ten Digits + a One-Digit Prefix for Central Office Access

21						0
P (21)	1 (20)	D8 (19-16)	D10 (15-12)	D11 (11-8)	D2 (7-4)	D3 (3-0)
P (21)	PF (20)	D9 (19-16)	D4 (15-12)	D5 (11-8)	D6 (7-4)	D7 (3-0)

PF = PREFIX DIGIT (1 OR 0)

Fig. 3—Translation Arrangement for Storing Ten Digits + a Two-Digit Prefix (Central Office Access + 1 Prefix)

2.16 The maximum number of digits that can be stored for each speed calling code is 14 (the minimum number is 3). A partial list of examples of numbers that might be stored in either speed calling list is described below.

- 641—a 3-digit centrex extension number
- 2301—a 4-digit centrex extension number

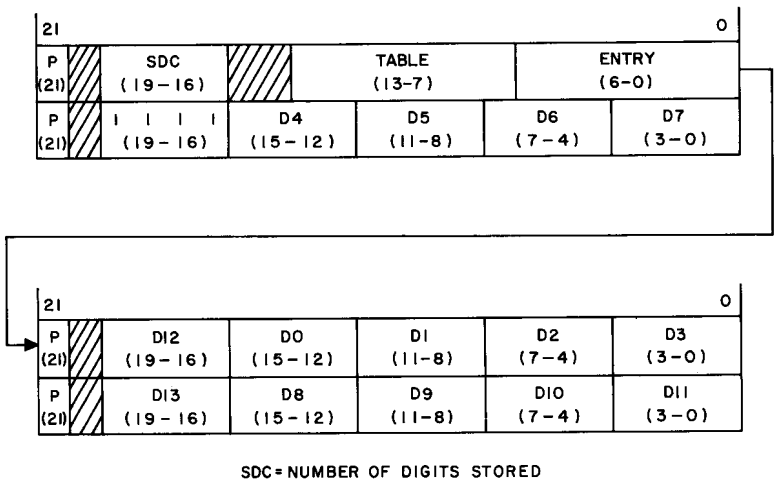


Fig. 4—Translation Arrangement for Storing Eleven to Fourteen Digits

- 53104—a 5-digit centrex extension number
- 9-231-1511—central office access + 7-digit DN
- 9-601-922-3735—central office access + area code + 7-digit DN
- 823-312-682-3975—CCSA access + area code + 7-digit DN
- 716-1-301-591-4404—FX + prefix + area code + 7-digit DN.

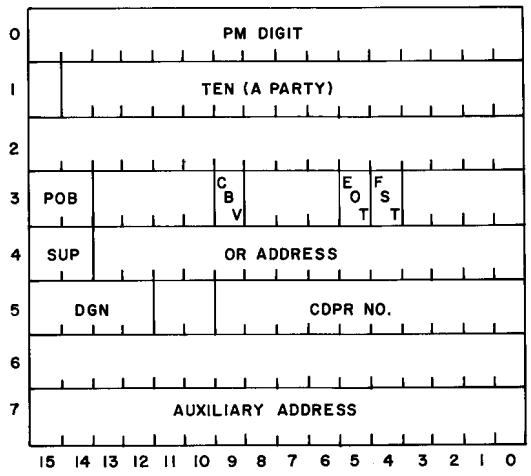


Fig. 5—TCR Entries Related to Speed Calling

Program Control Flow

2.17 The information in the Originating Register (OR) and Transient Call Record (TCR) which is related to speed calling is shown in Figure 5 and Figure 6.

2.18 When any centrex line originates, the Line Origination and Digit Reception Program (ORIG) sets the enter-on-time-out (EOT) bit equal to one (bit 5 of TCR word 3). This bit is used to detect the possibility of speed calling if a 4-second time-out occurs during the dialing phase of certain calls.

2.19 Progress Mark DIGIT (PM DIGIT) in ORIG receives digits as they are dialed. When one digit has been received, control is transferred to the auxiliary address stored in word 7 of the TCR where the digit is interpreted according to the information stored in the centrex group expansion table by the centrex digit interpretation program (CTXDGT). See Figure 7 for the digit interpreter translation layout associated with the dedicated digits plan. If this digit alone is not sufficient to completely determine the type of call being requested (another extension, attendant, WATS, FX, etc.), the desired number of digits count (DGN) located in word 5 of the TCR is incremented and control is returned to PM DIGIT. When another digit has been received, the DGN previously incremented is

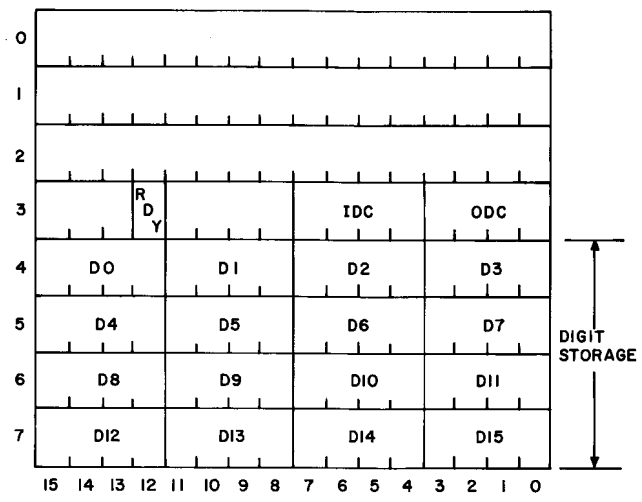


Fig. 6—OR Entries Related to Speed Calling

compared with the incoming digit count (IDC) in word 3 of the OR. If the IDC is equal to or greater than the DGN, control is passed back to the cenrex digit interpretation program via the AXA. If the type of call still is not completely determined, the DGN is once again incremented. This action is continued until enough digits have been received to determine exactly the type of call being placed. At this time, control is passed to the appropriate routine for the type of call. This is the normal entry into the speed calling routine located in the Centrex Custom Calling Program (CTXCC) for the dedicated digits dialing plan and the # option in the time-out dialing plan.

2.20 If a 4-second time-out occurs after at least one digit has been received, the possibility of speed calling is recognized. The EOT bit is checked and if set equal to one, control is passed to the AXA+1 which is the time-out entry into the speed calling routines. If the EOT bit is not set, the customer is given six additional seconds in order to dial another digit. If another digit is not received during this additional six seconds, the customer is given partial dial treatment.

2.21 CTXCC determines if the request for speed calling is valid. If the calling party does not have the associated speed calling feature or has dialed an invalid abbreviated code, reorder tone is returned. For a valid request, the entry corresponding to the abbreviated code is retrieved from translations as previously described. This entry is unpacked from the speed calling format and inserted into the digit reception area (words 4 through 7) of the originating register (OR) already associated with the call. The OR is initialized to look as if the customer had actually dialed the directory number unpacked from the speed calling list, and the call continues in the normal manner.

Changing of Lists—This section assumes that administration of speed calling is handled by the centrex customer.

2.22 Each extension accessing a 6-code list and certain extensions accessing a 30-code list have the ability to change the entries in these lists. The procedures for changing the 6-code and 30-code lists differ only in the "change speed calling access code" to be dialed. A typical change to a 30-code list where dedicated digits dialing plan is assumed is as follows:

- 107 DT 1123-9-323-5701 CT

  DT=Dial tone

  CT=Confirmation tone

  107=the 30-code speed calling change access code

  1123—the speed calling code to be changed

  9=prefix for central office access

  323-5701=the number to be used when the speed calling code (1123) is dialed by the station user

  The corresponding example for the time-out plan is 107 DT 23-9-323-5701 CT where neither # nor 4-second time-out is allowed.

The program functions necessary to process this example are separated into several time sequences. The sequences involve a back and forth transfer between PM DIGIT and the centrex digit interpretation program. The 107 is typical of a change speed calling access code which may be different for each centrex customer group. After receiving these three digits, control is passed from PM DIGIT to the centrex digit interpretation program. This configuration of digits is recognized as a request to change a 30-code speed calling list. Control is then transferred to the centrex custom calling

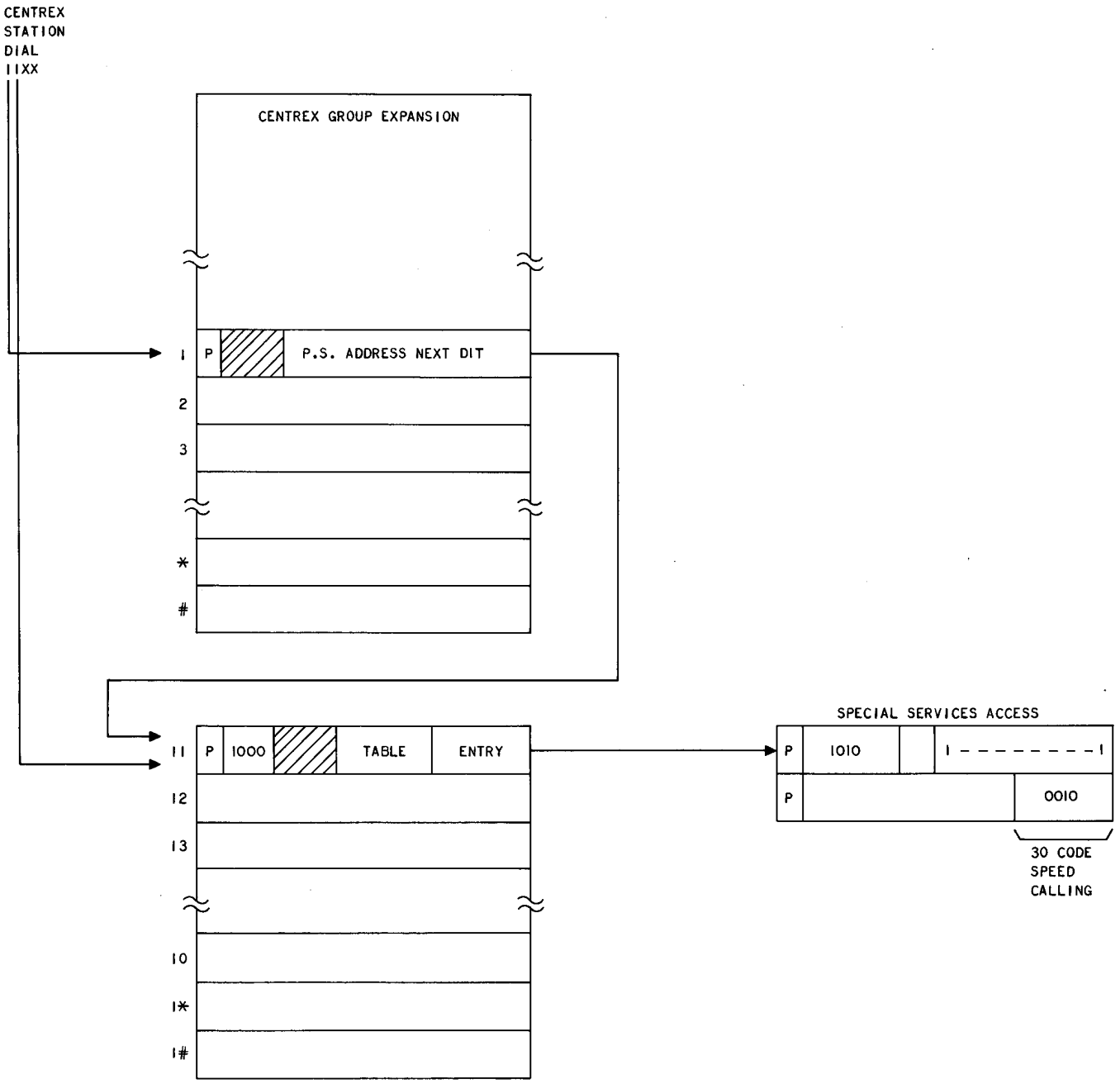


Fig. 7—Centrex Speed Calling Digit Interpretation Example

program. At this time, it is determined if the customer is allowed to change the 30-code list. If the customer is allowed to change the list, the OR associated with the call is initialized to receive digits in such a way that the abbreviated code (1123) will be deposited in OR word 7 and the subsequent digits stored in OR word 4 using the "wrap around" capability of the 4-bit counter for the incoming digit count. Second dial tone is initiated in the customer digit receiver and the TCR is flagged (by setting CBV=1 in word 3 of the TCR) to cause the centrex custom calling program to be reentered when dialing is complete. This bit allows the directory number being inserted in the list to be processed as if the customer were actually placing a call to this number, thereby

providing a partial verification on the legitimacy of the digits.

2.23 After reception of the second dial tone (DT), the customer dials the abbreviated code to be changed (entry "1123") followed (without interruption) by central office access (9) and the new directory number to which it is to correspond (323-5701). As mentioned, during the interval the customer is dialing 9-323-5701, the call is being processed as if the customer were actually calling this directory number. When PM DIGIT determines that the number is complete, control is transferred to the routine defined by the AXA. This may be in any one of a number of different processing paths (centrex extension, FX trunk, WATS, CCSA, etc.). At this point, normal call processing is interrupted and the CBV bit is checked. If this bit is set equal to one, control is tranferred to the centrex custom calling program.

2.24 The directory number is retrieved from the OR and transformed into the speed calling format. Using the appropriate speed calling index from the customer's line expansion and the abbreviated code in word 7 of the OR, the program store (PS) address of the entry is determined. With this information assembled, the recent change subroutines program (RCSUB) is called to place the change in the recent change buffer. The successful completion of this operation results in a confirmation tone (CT) being sent to the customer. The CT consists of a 100-ms burst of dial tone, followed by 100-ms silence, followed by a 300-ms burst of dial tone from the customer digit receiver still connected to the line. If the customer remains off-hook for one second, the call is recycled to dial tone as a new origination.

2.25 If the change attempt fails in the centrex custom calling program, reorder tone is returned. If the attempt fails in the digit reception routines because of an irregularity in dialing, the line receives the normal treatment for the type of error committed. Regardless of where the attempt fails, no change is made to the list.

2.26 It should be noted that this procedure applies to both dialing plans. However, with the time-out plan, it is not necessary to wait for the 4-second time-out after dialing the abbreviated code in the dialing procedure. The # digit is ***not allowed*** in the change abbreviated process, and if dialed will result in error treatment as previously described. There is no limitation on the number of changes that can be made to a list, and there is no additional billing associated with changing a list.

2.27 The program takes special precautions when a customer has dedicated digits dialing plan and is attempting to change an entry in the 30-code list. The OR has a maximum capacity of 16 digits that can be stored simultaneously during the dialing phase of a call. After the "change speed call access code" is recognized, this particular customer can dial up to 18 more digits. As an example, consider storing the number corresponding to the sample FX call given in 2.16 and restated as follows:

- 107 DT 1120-716-1-301-591-4404 CT

In this case, it is necessary to remove at least two digits from the OR during dialing in order to be able to receive the complete number. This is accomplished by setting the digits count for control to be transferred to a special AXA after the abbreviated code (1120) to be changed is received. This AXA removes the first two digits from the abbreviated code (11) in word 7 or the OR. At this point, these digits are no longer useful and are discarded. The digit count is reset, the digit interpretation AXA restored, and processing continues as described previously.

3. FEATURE FLOW DIAGRAM

3.01 The flow diagram illustrated in Figure 8 is a graphical representation of centrex speed calling.

4. INTERACTIONS

4.01 Speed calling cannot be used for calls requiring tandem tie trunk dialing (cut-through) since there is no provision in the No. 2 ESS to halt outpulsing and to wait for dial tone to be returned at subsequent switching points

4.02 Other than the above restrictions, speed calling can be used in lieu of any legitimate completely dialed directory number. (Speed calling cannot be used to replace part of a dialed number where additional digits are required to complete the dialing information. It must represent the entire number required to complete the call.)

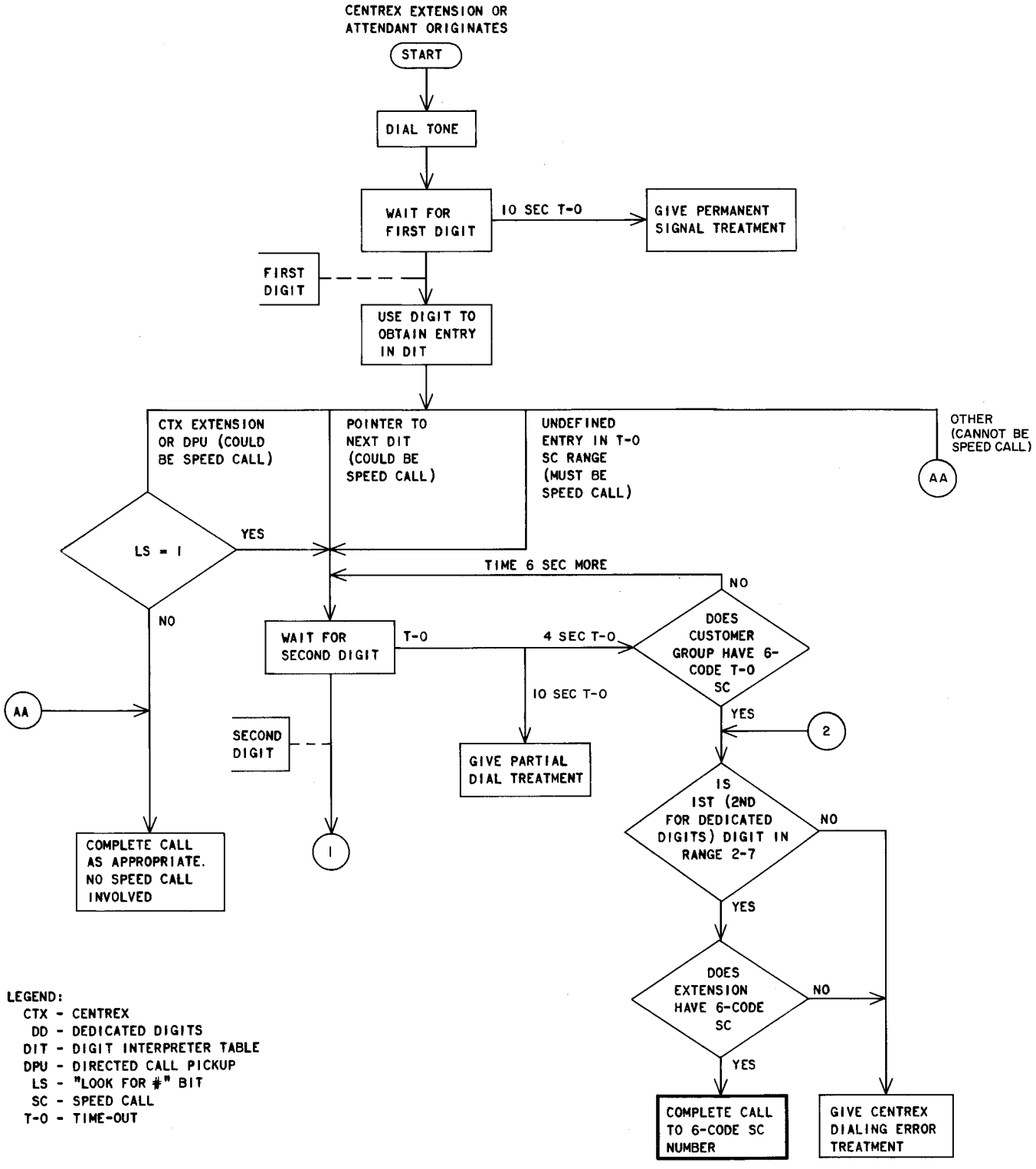


Fig. 8—Feature Flow Diagram Centrex Speed Calling (Sheet 1 of 2)

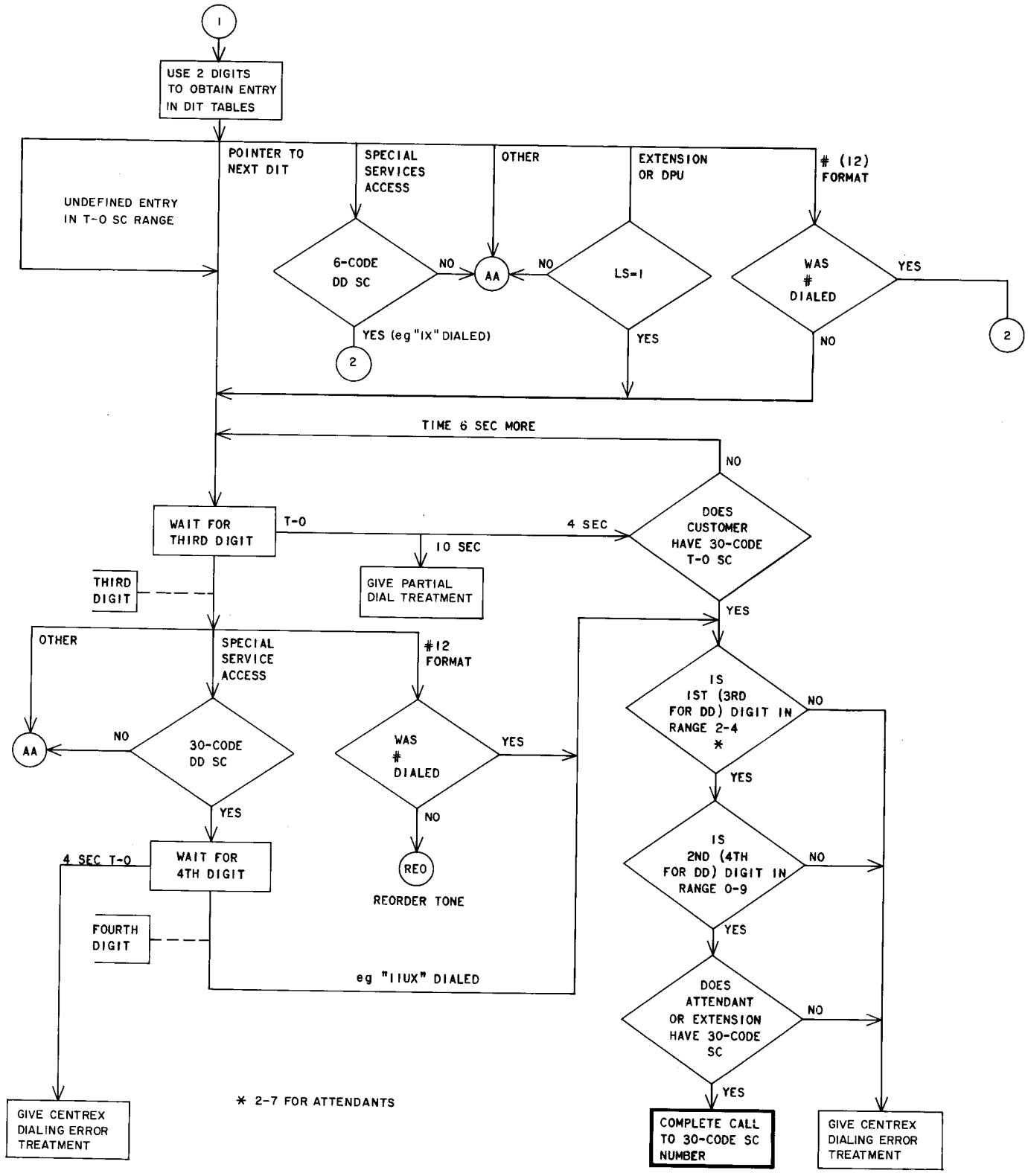


Fig. 8—Feature Flow Diagram Centrex Speed Calling (Sheet 2 of 2)

4.03 The attendant can be assigned to two 30-code speed calling lists. The dialing plan for the attendant, in this case, provides for 60 speed calling codes. List 00 is associated with codes 50 to 79 and List 01 is associated with codes 20 to 49. List 00 is provided for the attendant use only, while list 01 may be shared with other station users. (Lists 02-63 are for extension speed calling only.)

4.03 When speed calling is offered, the local CO access code is limited to one digit (typically dial "9"). Refer to Figure 10.

ATTRIBUTES

5. STATION/SYSTEM

5.01 The speed calling feature covered by this document is provided on a per-station basis, and on a per-centrex customer basis.

6. LIMITATIONS

6.01 The speed calling feature is limited on a per-customer basis to a maximum of 64 thirty-code lists and/or 1023 six-code lists. The maximum number of lists is dictated by the quantity specified on the ESS 2109 input form.

6.02 From 3 to 14 digits can be stored in any speed calling entry associated with either of the two types of speed calling lists.

6.03 Tandem tie trunk calls cannot be made using the speed calling feature since outpulsing cannot be halted when a delay in outpulsing is required by subsequent switching points.

6.04 New speed calling lists cannot be generated by recent change. These must be set up on either an initial or update office data administration (ODA) run.

6.05 "Split" speed calling is not allowed. For example, 9 + 1123, where 9 is for central office access and 1123 corresponds to a 7-digit noncentrex directory number will not work. The speed calling entry must contain all access codes and prefix digits in addition to the telephone number desired.

6.06 Speed calling cannot be used in conjunction with attendant thru-dialing. That is, when an attendant dials a trunk access code, receives second dial tone, and passes this second dial tone to the SOURCE party by releasing the SOURCE party cannot complete dialing by using speed calling. If attempted, the call will not complete as intended.

6.07 The codes used to implement the following features cannot be stored in a speed calling list by dial change.

- Dial Change Speed Calling Access Code
- Call Forwarding (Activate and Deactivate)
- Call Hold
- Call Pickup
- Code Call
- Code Call Pickup
- Attendant Access (0)
- Directed Call Pickup
- Paging Access
- Recorded Telephone Dictation Access
- Trunk Answer Any Station
- Attendant Control of Trunk Group Access (Activate and Deactivate)
- Manual Tie Trunk Access
- TELCo Operator Access (9+0, 9+0+)

6.08 Even though the codes corresponding to the above features cannot be stored in a speed calling list by dial change, it may be possible to inadvertently store one or more of these codes in a list via recent change. Caution should be exercised when doing so, since call completion cannot be guaranteed.

7. RESTRICTION CAPABILITY

7.01 Speed calling is assigned on a per-station basis and each station may be assigned a 6-code list, a 30-code list, neither, or both.

7.02 Any station with 30-code speed calling may or may not be given the ability to change its 30-code list.

7.03 The attendants may be assigned either one or two 30-code lists. If the attendants have speed calling, the ability to change the list is also provided (assuming customer administration of speed calling applies).

7.04 List 00 can only be assigned to the attendant with speed calling codes 50 to 79; however, inasmuch as these codes conflict with potential access codes, they should not be used if the attendant has the time-out plan.

7.05 The attendant ***cannot*** be assigned a 6-code list.

7.06 Six-code speed calling lists are arranged in blocks of 16. This should be considered when estimating a customer's needs. Thirty-code lists are arranged individually.

8. COST DATA

8.01 Program store requirements for speed calling include:

(a) Generic Program—Approximately 850 words of program store are required for the speed calling feature.

(b) Translation Memory

- 6-code lists—64 words plus 192 words per 16 lists, plus 10 bits per line expansion (See Figures 9 and 11)
- 30-code lists—64 words plus 60 words per list, plus 6 bits per line expansion (See Figures 9 and 11)
- Terminal entries for access and for dial change, if applicable (2 or more words each) (See Figure 7)
- 2 attendant speed call bits (See Figure 10)
- 1 bit required per station to change 30-code list (See Figure 9)
- TOP bits in centrex group expansion to tell dedicated digit plan verses time-out plan (See Figure 10)
- 2-word expansions for some speed call entries, (see Figure 4).

8.02 Call store is required to store the recent change information resulting from a customer dialed or telephone company administered speed calling change. The call store is required until the next recent change update is performed by the plant personnel and can range from 4 to 8 words of call store for each change, depending on the number of digits in the new entry as well as the number of digits in the old entry.

INCORPORATION INTO SYSTEM

9. PLANNING

9.01 Normal schedules for ordering ODA changes must be observed. Since new speed calling lists cannot be added by recent change, they should be set up when setting up spare centrex groups. This takes considerable judgment on the part of the telephone company, since too many lists are expensive in terms of translation cost, and too few lists may not meet a prospective customer's needs.

10. HARDWARE ENGINEERING

10.01 There are no hardware engineering requirements for this feature.

11. SOFTWARE ENGINEERING

11.01 Provisions must be made for speed calling in the program store and call store. Refer to Traffic Facilities Practices, Division D, Section 12n, for details in engineerng the stores.

12. COMPATIBILITY

12.01 There are no compatibility or interface problems associated with the speed calling feature.

13. OFFICE DATA

A. Translations

13.01 Figure 9 shows the portion of the centrex 6-word line expansion used for speed calling.

Bit 16 (C) of word 4 is used to indicate if this line has the authority to make changes in the 30-code list (C=1 if changes are allowed). The 30-code list selector and the 6-code list selector are the indices into the 30-code and 6-code expansion tables, respectively. The pointers to these expansion tables are contained in words 12 and 13 of the per-centrex expansion area as shown in Figure 10. Bit 18 of these two words (TOP) indicates the type of dialing plan this customer group has: TOP=0 indicates dedicated digits plan; TOP=1 indicates time-out plan.

13.02 Figure 11 contains the complete layout used in accessing a particular entry in both the 6-code and 30-code lists. The 6-code expansion table is indexed by bits (9-4) of the 6-code speed calling list selector. The program store address of a block of sixteen 6-code lists is stored at this location. It should be noted in Figure 11 that this pointer actually addresses a word which is four words above the block of 6-code lists. This is necessary in order to use the abbreviated code directly to access the desired entry in the lists as described.

13.03 To determine the required list in the block of 16, a constant (12 times bits (3-0) of the 6-code list selector) is added to the address found in the 6-code expansion table. To obtain the address of the desired entry in this list, it is necessary to add two times the abbreviated code to the present address.

13.04 The address of the desired 30-code list is obtained by using the 30-code list selector as an index into the 30-code expansion table. Once again, this pointer does not locate the 30-code list directly. It actually points to a location 40 words above the desired list. To obtain the address of the desired entry in this list, it is necessary to add two times the abbreviated code to the address found in the 30-code expansion table.

13.05 Figure 7 shows the digit interpretation tables used to translate the dialed digits when the dedicated digits plan is implemented.

13.06 Translation space must be provided by an ODA run. Access is provided via the centrex group table. Recent change capability is provided for adding or removing speed calling to any station within the centrex group, or for entering or removing entries into or from the lists.

13.07 All of the ODA output forms which result from initiating the speed calling feature are retained as part of the office records.

13.08 After the ODA run to activate speed calling is completed, the translation data associated with speed calling becomes a part of the office data base stored in the translation area of program store.

13.09 In order to activate the feature discussed in this document in a No. 2 ESS office, an ODA run may be made. This is accomplished by

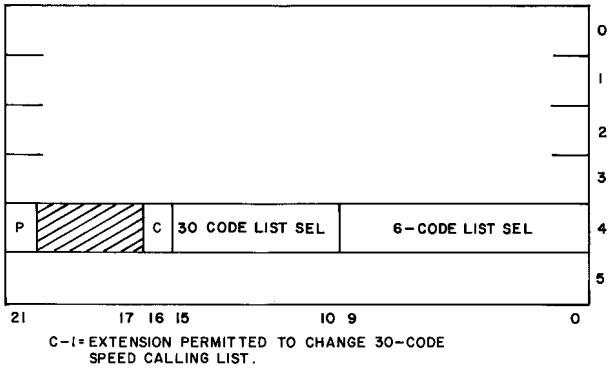
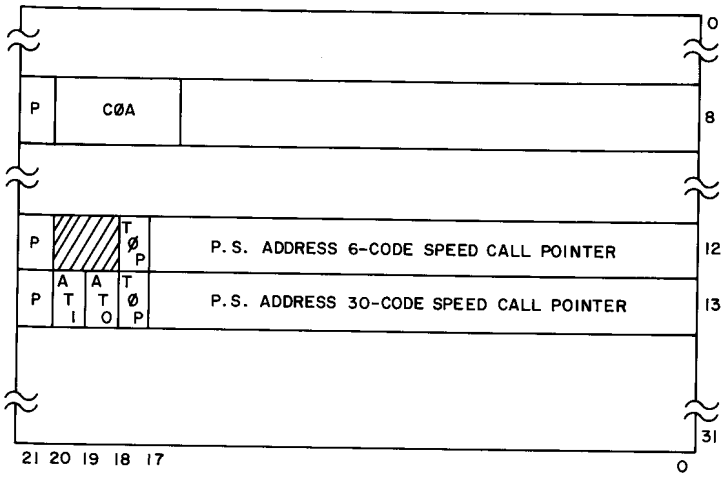


Fig. 9—Centrex Line 6-Word Expansion Showing Portion Used for Speed Calling



TØP – 0 = DEDICATED DIGITS PLAN
1 = TIMEOUT PLAN

ATO – 1 = ATTENDANTS HAVE 30-CODE SPEED CALLING-RANGE 50-79

ATI – 1 = ATTENDANTS HAVE 30-CODE SPEED CALLING-RANGE 20-49

CØA – LOCAL CO ACCESS DIGIT.

Fig. 10—Centrex Group Expansion Showing Portion Used for Speed Calling

appropriately completing the following ODA input forms:

- ***ESS 2101***—Centrex Directory Number Table. This form is used to define the Directory Numbers (DNs) associated with centrex groups that have centrex speed calling. Division 4, Section 1 of the Translation Guide, TG-2H, specifies the appropriate column numbers and associated feature abbreviations and numerical values assigned to the speed calling feature.

- ***ESS 2107***—Supplementary Information Table. This form is used to supplement the entries made on the ESS 2101 form of directory numbers associated with the centrex group having the centrex speed calling feature. This form must be completed for all initial and update ODA runs to incorporate the feature discussed herein.

- ***ESS 2109***—Centrex Group Table. This form is used to build portions of the centrex number translators which identifies the feature options for all lines associated with a specific centrex group. There are three sections of the ESS 2109 form which must be filled out for each centrex group that has the centrex feature covered by this document.

13.10 The above forms must be completed by the Telephone Company Dial Administrator and submitted to WECo Regional Center for processing. Normal scheduling procedures should be observed. The reproducible input forms are in Divison 11, Section 1 of the Translation Guide, TG-2H.

B. Recent Change (RC) Messages

13.11 EF-1 generic program recent change message formats affected by the speed calling feature are as follows. Refer to IM-2H200 for details of the recent change messages.

RC MESSAGE	FUNCTION
A RC:L	Used to assign the speed calling feature to a centrex line. The key word SC is used to add or delete the speed calling feature. In addtion, the keyword CH

and either ADD or DLT is used to provide the customer with the ability to dial in changes to the 30-code speed calling list.

A RC:CTX — Used to assign the dedicated digits or time-out plan to both the 6-code or 30-code speed calling feature. The keyword TOP and either ADD or DLT are used to add or delete either plan.

A RC:SC — Used to assign a number to a code on a customer speed calling list, or to change the number associated with a code.

A RC:PUN 1! — Used to cause a paper tape TTY record of all customer inputted changes to be created as the changes are dialed.

A RC:PUN 0! — Used to instruct the machine to no longer produce tapes from extension dialed changes.

A VY:SC — Used to verify the contents of both speed calling lists of a centrex station, given the telephone number or TEN.

A VY:SCL — Used to find all telephone numbers in a given centrex group which have access to the indicated speed calling list.

14. GROWTH/RETROFIT PROCEDURES

14.01 To incorporate this feature into an existing system for which translator space has not been provided in the centrex group table, an ODA run is necessary. After the ESS input forms have been submitted and the update is ready to be incoprorated, insert the new information in accordance with Section 232-124-301 ***Office Update Procedures Using Regional ODA Program.***

15. TESTING

15.01 Testing of the speed calling feature may be done by making test calls from stations to verify the feature is operating.

ADMINISTRATION

16. MEASUREMENTS

16.01 Centrex speed calling peg counts are shared with noncentrex speed calling peg counts, OFT41 and OFT42.

17. RECORD KEEPING

17.01 ODA forms are retained as part of the office records. In addition, the punch tapes and verify messages generated by recent change messages (13.11) are also retained as part of the office records.

18. CHARGING

18.01 Speed calls outside the free calling area will be billed to the extension placing the call just as if the customer had dialed the entire number stored in the list associated with the abbreviated code dialed.

AVAILABILITY

19. NEW INSTALLATIONS

19.01 The speed calling feature for centrex is available with the EF-1 generic program.

20. GROWTH/RETROFIT

20.01 The speed calling feature may be retrofitted into any office with the EF-1 generic program.

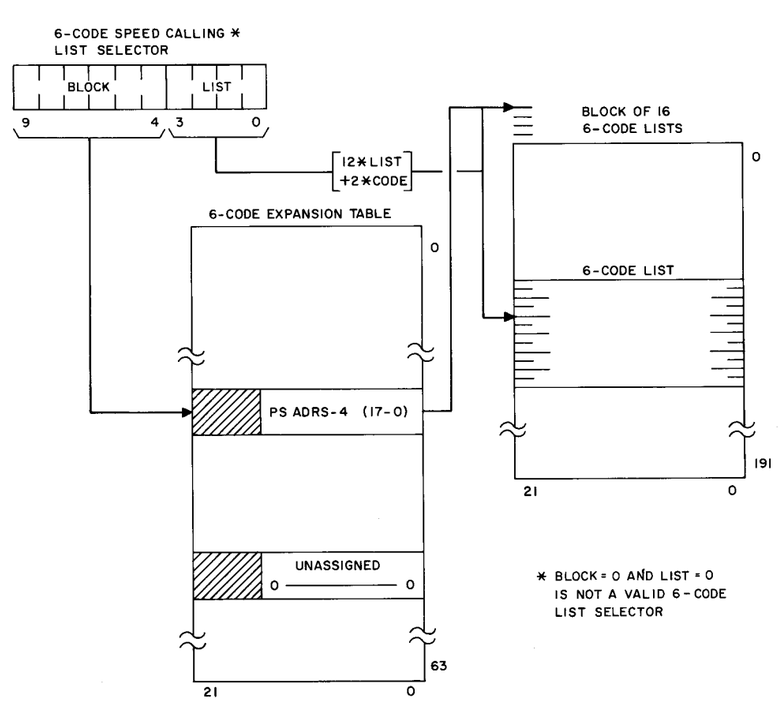
SUPPLEMENTARY INFORMATION

21. GLOSSARY

21.01 The glossary is as follows:

- ***Common Control Switching Arrangement (CCSA):*** A switched services network which provides private line facilities between customer locations via common control switching machines which are shared with other users.

- ***Centrex:*** The provision of centrex service by switching equipment located on telephone company owned or leased premises;



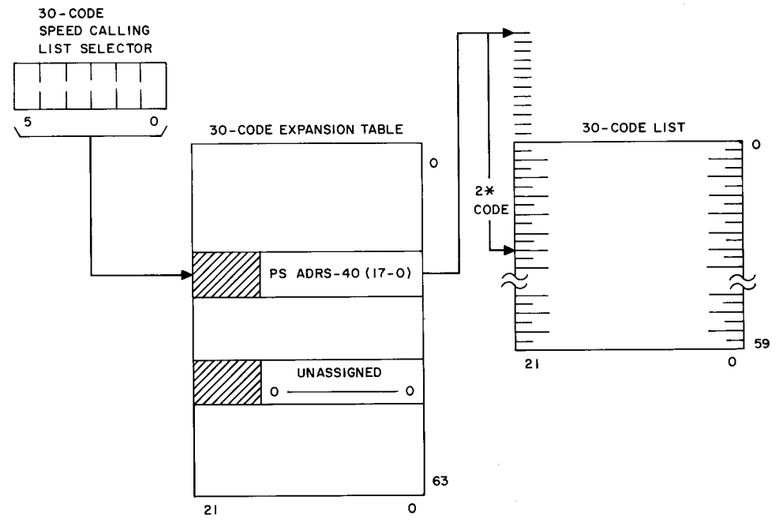


Fig. 11—Translation Layout of Six-Code and Thirty-Code Speed Calling Lists

the station equipment and attendant facilities are located on the customer's premises.

- ***Confirmation Tone (CT):*** The CT consists of a 100-ms burst of dial tone followed by 100-ms silence, followed by a 300-ms burst of dial tone from the digit receiver still connected to the line.

- ***Dial Tone (DT)***

- ***Foreign Exchange (FX) Service:*** An exchange service furnished under tariff provisions by means of a circuit connecting a subscriber's main station or PBX with a central office of an exchange other than that which regularly serves the exchange area in which the subscriber is located.

- ***Local Office Generic Program (LO-1):*** Does not provide centrex features.

- ***Originating Register (OR):*** Eight words of call store used for control and digit storage during the receiving and outpulsing phases of a call.

- ***Transient Call Record (TCR):*** Consists of eight call store words and controls the progress of the call from origination until an answer signal has been received and the connection is placed in a talking state. It also controls the action taken to disconnect a call.

- ***Wide Area Telephone Service (WATS):*** Permits a customer to have special access to the toll switching network for long distance calls on a dial basis.

- ***Abbreviated Code:*** A 1-, 2-, or 4-digit number that is dialed to access a number that is stored in a speed calling list.

- ***Access Code:*** Those digits dialed to activate the change speed calling function.

- ***List Entry:*** Refers to the contents of a speed calling list associated with a particular abbreviated code.

- ***Time-Out:*** Time-out occurs if no action is taken by the customer for a period of four seconds after dialing one or two digits. It is used to signify the completion of dialing. It is an alternative to Sharp (#) on a TOUCH-TONE telephone.

- ***Sharp*** (#): The # is the twelfth digit on a TOUCH-TONE telephone and is used in the same way that time-out is used.

- ***Program Store (PS):*** The equipment unit of No. 2 ESS that stores the program and the translation information regarding lines and trunks.

- ***Recent Change (RC):*** The ability to change certain translations within No. 2 ESS via teletypewriter input.

22. REASONS FOR REISSUE

22.01 This is the initial issue of this document.

23. REFERENCES

23.01 The following documents provide supplementary information concerning the speed calling feature:

- Section 232-124-301 ***Office Update Procedures using Regional ODA Program.***

- Section 232-118-103 ***Recent Change Procedures (Central Office Changes) EF-1***

- Section 680-536-011 ***ESS Service Order Procedures***

- No. 2 ESS Translation Guide, TG-2H.