CENTREX CALL TRANSFER SERVICE (CALL TRANSFER—ATTENDANT, CALL TRANSFER—INDIVIDUAL, CALL TRANSFER—INDIVIDUAL—ALL CALLS, ADD-ON, CONSULTATION HOLD, CONSULTATION HOLD—ALL CALLS, AND THREEWAY CALLING) NO. 2 ELECTRONIC SWITCHING SYSTEM

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FEATURE DEFINITION AND DESCRIPTION

1. DEFINITION

1.01 Centrex call transfer service is a set of features which in general is arranged so that a person talking to another person can involve a third person in the call. The third person may converse with either of the original parties or with both of the original parties depending upon which individual feature or features the parties' telephones are equipped with and the parties choose to use.

1.02 The No. 2 Electronic Switching System (ESS) can provide any or all of the following Centrex-CO call transfer features which are covered in this document:

- Call Transfer—Attendant
- Call Transfer—Individual
- Call Transfer—Individual—All Calls
- Add-On
- Consultation Hold
- Consultation Hold—All Calls
- Threeway Calling.

1.03 No. 2 ESS offices require the EF-1 generic program in order to provide these features. Traffic engineered 3-way conference circuits are required for the call transfer features, and if the call transfer—attendant feature is to be provided, normal attendant console equipment must be available.

1.04 ***Call Transfer—Attendant***—Allows the called station user, while connected to an ***incoming call,*** the ability to add the attendant to the connection so that the attendant may transfer the call to another party.

Within this feature document, an ***incoming call*** is defined as any call where the originating party is any station not in the same customer group and is connected to a centrex station by one of the following means:

- Exchange network (Direct Inward Dialing) (Includes lines in the same No. 2 ESS but not in the same centrex group)
- Common Control Switching Arrangement (CCSA) Trunks
- Tie trunks or foreign exchange (FX) trunks in trunk groups so designated.

1.05 ***Call Transfer—Individual***—An arrangement which allows a station user to transfer an incoming call to another party without the assistance of the attendant.

In the No. 2 ESS, ***call transfer—individual*** allows a station user to transfer any incoming call to another station within the same centrex system. The transfer is accomplished by utilizing the consultation hold and/or the add-on features and then hanging up. Calls that do not meet the above criterion are disconnected when transfer is attempted.

1.06 ***Call Transfer—Individual—All Calls***—A station user can transfer ***any*** established call to another station within the centrex system without the assistance of the attendant. This is accomplished by hanging up after utilizing the consultation hold—all calls and/or the Threeway Calling feature.

1.07 ***Add-On***—A station user can ***add*** another party to an existing incoming call to establish a 3-party conference. This can be done without attendant assistance by flashing the switchhook after utilizing the consultation hold feature. A subsequent flash disconnects the third party. (Add-on is similar to Threeway Calling.)

1.08 ***Consultation Hold***—A station user can hold ***only incoming calls*** by flashing the switchhook and receiving a second dial tone, and, on the same line, originate a call to another party for private consultation. After consultation, the station user can (1) return to the original call after the second station user hangs up, or (2) add this station line to the original call (add-on) by flashing a second time. The station user can also transfer this party to the original call by hanging up after consulting with or adding on the second station line (call transfer—individual). Refer to Table A for treatment of call transfer—individual.

TABLE A

CALL TRANSFER—INDIVIDUAL
(WHEN CONTROLLING PARTY ON PORT 0 HANGS UP)

PARTY ON PORT 2 (OUTGOING FROM CONTROLLING PARTY)	CALLING PARTY ON PORT 1 (INCOMING TO CONTROLLING PARTY)								CALLING PARTY ON PORT 1 (OUTGOING FROM CONTROLLING PARTY)							
	CENTREX LINE ON SAME CENTREX AS CONTROLLING PARTY	CENTREX TIE TRUNK ON SAME CENTREX AS CONTROLLING PARTY	FX TRUNK ON SAME CENTREX AS CONTROLLING PARTY	CCSA TRUNK ON SAME CENTREX AS CONTROLLING PARTY	NONCENTREX LINE	INTEROFFICE TRUNK	CENTREX LINE NOT ON SAME CENTREX AS CONTROLLING PARTY	TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS CONTROLLING PARTY	CENTREX LINE ON SAME CENTREX AS CONTROLLING PARTY	CENTREX TIE TRUNK ON SAME CENTREX AS CONTROLLING PARTY	FX TRUNK ON SAME CENTREX AS CONTROLLING PARTY	CCSA TRUNK ON SAME CENTREX AS CONTROLLING PARTY	NONCENTREX LINE	INTEROFFICE TRUNK	CENTREX LINE NOT ON SAME CENTREX AS CONTROLLING PARTY	TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS CONTROLLING PARTY
CENTREX LINE ON SAME CENTREX AS CONTROLLING PARTY	NA	√	√	√	√	√	√	√	Not Applicable							
CENTREX TIE TRUNK ON SAME CENTREX AS CONTROLLING PARTY	NA	√	√	√	√	√	√	√								
FX TRUNK ON SAME CENTREX AS CONTROLLING PARTY	NA	√	√	√	√*	√	√*	√*								
CCSA TRUNK ON SAME CENTREX AS CONTROLLING PARTY	NA	√	√	√	√*	√	√*	√*								
NONCENTREX LINE	NA	√	√	√												
INTEROFFICE TRUNK	NA	√	√	√												
CENTREX LINE NOT ON SAME CENTREX AS CONTROLLING PARTY	NA	√	√	√												
TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS CONTROLLING PARTY	NA	√	√	√												

√ = When the controlling party hangs up, the two remaining parties are allowed to continue talking to each other as long as at least one of the two parties is not AMA-recorded or otherwise charged. (Those cases where charging on both legs may apply are indicated by "√*".)

(Blank) = When the controlling party hangs up, both parties are disconnected. (Lines are returned to dial tone.)

NA = Not applicable.

1.09 ***Consultation Hold—All Calls***—A station user can hold any existing call by flashing the switchhook and, on the same line, originate a call to another party for private consultation. After consultation, the station user can (1) return to the original call after the second party hangs up, or (2) add this party to the original call by flashing a second time. The station user can also transfer this party to the original call by hanging up after consulting with or adding on the second station line (call transfer—individual—all calls). Refer to Table B for treatment of call transfer—individual—all calls.

During consultation hold and consultation hold—all calls, transfer may take place when the transferring party hangs up during one of the following conditions:

- During a 3-party conference
- During private consultation
- During ringing of the third party.

Consultation hold—all calls differs from the call hold feature (not covered by this document) in that call hold requires the station user to dial a code in addition to flashing the switchhook to accomplish hold.

1.10 ***Threeway Calling***—A station user can add a third party to any established call for a 3-party conference, without the assistance of the attendant, by flashing the switchhook after utilizing the consultation hold—all calls feature (Threeway Calling is similar to add-on). A subsequent flash disconnects the third party.

2. DESCRIPTION

2.01 Centrex call transfer is a service that is initiated from an existing call when the centrex station user flashes the switchhook, dials a third party and hangs up after the third party answers. The EF-1 generic program of the No. 2 ESS offers seven types of call transfer options. These options have been listed and defined in the DEFINITION paragraph of this document. The following paragraphs describe the functions of each of the call transfer features.

Call Transfer—Attendant

2.02 The call transfer—attendant feature (sometimes referred to as TW1) allows a centrex line that is the ***called party*** in a 2-party call to flash and become connected to an idle attendant within the same customer group. However, the flash will be processed only if the ***originating calling party*** is in one of the following categories:

(1) Noncentrex line or centrex line in a different centrex group from the called party.

(2) Any incoming interoffice trunk,

(3) Any incoming tie, foreign exchange (FX) or CCSA trunk in a ***different*** centrex customer group from the called party,

(4) Any incoming tie, FX, or CCSA trunk in the ***same*** centrex customer group as the called party provided that the trunk group is so designated (the TFR bit in the trunk group data is set = 1). Normally, the incoming CCSA trunk groups have this bit set while the incoming tie trunk groups do not.

If the above conditions are met, both the calling party and the called party are connected to an idle attendant. (The calling party is connected to the SOURCE, and the called party to the DESTINATION.)

The called party tells the attendant to whom the calling party should be transferred. Then the called party hangs up or is released by the attendant. The attendant then dials this third party on the "DESTINATION" port of the loop and attempts to release both the calling party and the third party from the attendant loop. If the calling party and the third party meet the requirements set forth in Table C, they will be taken off the attendant loop and a true 2-party call will be established. If the two parties do not meet the requirements of Table C, they will remain on the attendant loop until they terminate their call or are forced off by the attendant operating the release source (RLS SRC) or release destination (RLS DEST) key. The attendant, however, is disassociated with the call and therefore may handle others on different loops of the attendant console. (Table C represents the treatment given to any two parties connected to an attendant when the attendant releases from the connection regardless of how the call originated.)

TABLE B

CALL TRANSFER—INDIVIDUAL—ALL CALLS
(WHEN THE CONTROLLING PARTY ON PORT 0 HANGS UP)

	CALLING PARTY ON PORT 1 (INCOMING TO CONTROLLING PARTY)								CALLED PARTY ON PORT 1 (OUTGOING FROM CONTROLLING PARTY)							
PARTY ON PORT 2 (OUTGOING FROM CONTROLLING PARTY)	CENTREX LINE ON SAME CENTREX AS CONTROLLING PARTY	CENTREX TIE TRUNK ON SAME CENTREX AS CONTROLLING PARTY	FX TRUNK ON SAME CENTREX AS CONTROLLING PARTY	CCSA TRUNK ON SAME CENTREX AS CONTROLLING PARTY	NONCENTREX LINE	INTEROFFICE TRUNK	CENTREX LINE NOT ON SAME CENTREX AS CONTROLLING PARTY	TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS CONTROLLING PARTY	CENTREX LINE ON SAME CENTREX AS CONTROLLING PARTY	CENTREX TIE TRUNK ON SAME CENTREX AS CONTROLLING PARTY	FX TRUNK ON SAME CENTREX AS CONTROLLING PARTY	CCSA TRUNK ON SAME CENTREX AS CONTROLLING PARTY	NONCENTREX LINE	INTEROFFICE TRUNK	CENTREX LINE NOT ON SAME CENTREX AS CONTROLLING PARTY	TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS CONTROLLING PARTY
CENTREX LINE ON SAME CENTREX AS CONTROLLING PARTY	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CENTREX TIE TRUNK ON SAME CENTREX AS CONTROLLING PARTY	√	√	√	√	√*	√	√*	√*	√							
FX TRUNK ON SAME CENTREX AS CONTROLLING PARTY	√	√	√	√	√*	√	√*	√*	√							
CCSA TRUNK ON SAME CENTREX AS CONTROLLING PARTY	√	√	√	√	√*	√	√*	√*	√							
NONCENTREX LINE	√	√	√	√					√							
INTEROFFICE TRUNK	√	√	√	√					√							
CENTREX LINE NOT ON SAME CENTREX AS CONTROLLING PARTY	√	√	√	√					√							
TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS CONTROLLING PARTY	√	√	√	√					√							

√ = When the controlling party hangs up, the two remaining parties are allowed to continue talking to each other as long as at least one of the two parties is not AMA-recorded or otherwise charged. (Those cases where charging on both legs may apply are indicated by "√*".)

(Blank) = When the controlling party hangs up, both parties are disconnected. (Lines are returned to dial tone.)

TABLE C

CENTREX ATTENDANT SWITCHED LOOP OPERATION
(WHEN THE ATTENDANT RELEASES)

DESTINATION PARTY (OUTGOING FROM ATTENDANT)	SOURCE PARTY (INCOMING TO ATTENDANT)								SOURCE PARTY (OUTGOING FROM ATTENDANT)							
	CENTREX LINE ON SAME CENTREX AS ATTENDANT	CENTREX TIE TRUNK ON SAME CENTREX AS ATTENDANT	FX TRUNK ON SAME CENTREX AS ATTENDANT	CCSA TRUNK ON SAME CENTREX AS ATTENDANT	NONCENTREX LINE	INTEROFFICE TRUNK	CENTREX LINE NOT ON SAME CENTREX AS ATTENDANT	TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS ATTENDANT	CENTREX LINE ON SAME CENTREX AS ATTENDANT	CENTREX TIE TRUNK ON SAME CENTREX AS ATTENDANT	FX TRUNK ON SAME CENTREX AS ATTENDANT	CCSA TRUNK ON SAME CENTREX AS ATTENDANT	NONCENTREX LINE	INTEROFFICE TRUNK	CENTREX LINE NOT ON SAME CENTREX AS ATTENDANT	TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS ATTENDANT
CENTREX LINE ON SAME CENTREX AS ATTENDANT	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
CENTREX TIE TRUNK ON SAME CENTREX AS ATTENDANT	√	√	√	√	√*	√	√*	√*	√							
FX TRUNK ON SAME CENTREX AS ATTENDANT	√	√	√	√	√*	√	√*	√*	√							
CCSA TRUNK ON SAME CENTREX AS ATTENDANT	√	√	√	√	√*	√	√*	√*	√							
NONCENTREX LINE	√	√	√	√					√							
INTEROFFICE TRUNK	√	√	√	√					√							
CENTREX LINE NOT ON SAME CENTREX AS ATTENDANT	√	√	√	√					√							
TIE, FX, OR CCSA TRUNK NOT ON SAME CENTREX AS ATTENDANT	√	√	√	√					√							

√ = When the attendant releases, both parties are removed from the attendant loop and reconfigured in the No. 2 ESS network as a 2-party connection as long as at least one of the two parties is not AMA-recorded or otherwise charged. (Those cases where charging on both legs may apply are indicated by "√*".)

(Blank) = When the attendant releases, both parties remain on the attendant loop for the duration of their call.

Call Transfer—Individual, Add-On, Consultation Hold

2.03 The call transfer—individual feature (sometimes referred to as TW2) allows the user of a centrex line to transfer an incoming call without attendant assistance. This user must be the called party of a 2-party call. When the called party flashes, the calling party must be one of the parties in the following listing, or the called party flash will be ignored.

(1) Noncentrex line or centrex line in a different centrex group from the called party,

(2) Any incoming interoffice trunk,

(3) Any incoming tie, FX, or CCSA trunk in a ***different*** centrex customer group from the called party.

(4) Any incoming tie, FX, or CCSA trunk in the ***same*** centrex customer group as the called party provided that the trunk group is so designated (the TFR bit in the trunk group data is set = 1). Normally, the incoming CCSA trunk groups have this bit set while the incoming tie trunk groups do not.

If these conditions are met, a 3-port conference circuit is selected. The calling party is connected to port 1 in the split (held) state, and a path is reserved from the called party to port 0. Next, the called party is connected to a digit receiver and given dial tone. The called party may now dial a third party to whom the calling party may be transferred. Once the third party has been dialed, the actual call transfer process can be initiated by one of several actions that may be taken by the called party. For description of these actions refer to 2.06 of this document. Thus far, no restrictions have been placed on who may be the recipient of the call transfer. That is, the called party can "add-on" and reach "consultation hold" with any third party. However, for a call transfer to take effect, the recipient of the transfer and the calling party must meet certain requirements outlined in 2.09 of this document.

Call Transfer—Individual—All Calls, Consultation Hold—All Calls, Threeway Calling

2.04 The call transfer—individual—all calls feature (sometimes referred to as TW3) is the most flexible type of call transfer. The party with such service (the controlling party) can be either the calling or called party of a 2-party call. The controlling party first flashes. No screening of the noncontrolling party is done at this time. After the flash, a conference circuit is selected, the noncontrolling party is connected to port 1 and a path is reserved from the controlling party to port 0. Then the controlling party is connected to a digit receiver and given dial tone. Now the controlling party can dial a third party to whom the call may be transferred. As in the case of call transfer—individual feature, there are no restrictions on the transfer recipient at this time.

2.05 In the following sections, the actual call transfer actions and procedures are discussed.

Actions Which Begin Call Transfer

2.06 The party performing the transfer (the controlling party) can do one of the following five things after dialing the transfer recipient (third party) all of which will ***begin*** the call transfer procedure.

(a) While the third party is receiving ringing tone, the controlling party can hang up without flashing to remove the party on port 1 from hold. The call transfer procedure will begin.

(b) While the third party is receiving ringing tone, the controlling party can flash. The party on port 1 will be removed from hold and allowed to hear audible tone. Both parties may now converse. Then the controlling party can hang up and the call transfer procedure will begin.

(c) While the third party is receiving ringing tone, the controlling party can flash. The party on port 1 will be removed from hold and allowed to hear audible tone. Both parties may now converse. Then the controlling party can wait for the third party to answer. Upon answering, a true 3-party call (Threeway Calling or add-on) is established. The controlling party

may hang up at any time and the call transfer procedure will begin.

(d) The controlling party can wait for the third party to answer, have a private consultation (consultation hold) with the third party and then hang up without flashing to remove the calling party from hold on port 1. Then the call transfer procedure will begin.

(e) The controlling party can wait for the third party to answer, have a private consultation with the transfer recipient, and then flash. This results in a 3-party connection (Threeway Calling or add-on). The controlling party may then hang up at any time and the call transfer procedure will begin.

2.07 The above actions may be summarized by saying that to begin the call transfer procedure, the controlling party may hang up any time after ringing has begun, with or without flashing. It should also be noted that after the third party is dialed, the controlling party may flash. This will remove the party on port 1 from hold and will result in 3-party connection, where port 2 may be connected to any of the following:

(a) The third party (if answered),

(b) Audible tone (if the third party has not answered),

(c) Busy, reorder or other tones,

(d) Recorded announcement, etc.

2.08 If any of the above conditions occur and the controlling party flashes a second time, the third party connection will be dropped immediately. After a 5-second delay, the conference bridge will be released, and the calling and called parties will be reconfigured into a 2-party connection.

Call Transfer Procedure

2.09 The call transfer procedure is initiated when the controlling party hangs up. At this point further screening must take place. The remaining two parties are screened according to the requirements shown in either Table A or Table B, depending on the controlling party's type of call transfer. If the transfer is not allowed to take place, the two remaining parties are removed from the conference circuit, their line ferrods (if lines) are restored and they are allowed to originate new calls.

2.10 If the transfer is allowed to take place, the parties are connected to each other without the controlling party. At this point, the remaining parties may be stable or transient with their respective ports. If both parties are stable with their respective ports, the parties are removed from the conference circuit and reconnected in a stable 2-party call and the conference circuit is released. Unless both parties are stable with their respective ports, both will remain connected to the conference circuit. At any point in the call when both parties go stable with their respective ports, they will be disconnected from the conference circuit, and connected in a stable 2-party call, and the conference circuit will be released.

Examples of Tables A, B, and C

2.11 The following examples of Tables A, B, and C are given to aid the reader in interpreting these tables.

(a) Table A—An incoming interoffice trunk call is completed to a centrex line with the ***call transfer—individual*** feature. The called party flashes and dials out on a tie trunk associated with the called party's centrex group to a third party. When the third party answers, the calling party remains connected to port 1 of the conference circuit and the third party is connected to port 2. The called party hangs up. Table A shows that the calling party is allowed to talk to the third party (calling party on port 1—incoming to controlling party = interoffice trunk; party on port 2—outgoing from controlling party = centrex tie trunk on same centrex group as the controlling party).

(b) Table A—(second example)—A line in centrex group 1 calls another line in centrex group 1. The called party has the ***call transfer—individual*** feature. When the called party flashes, the flash will be ignored because a centrex line with the call transfer—individual feature is not allowed to transfer another centrex line that is in the same centrex customer group. This is the reason for the vertical column marked NA in the left half of Table A.

(c) Table B—A centrex line with the call ***transfer—individual—all calls*** feature makes a call to a noncentrex line, then flashes and calls another noncentrex line. When the centrex line hangs up, the two noncentrex lines will not be allowed to talk to each other, but will be returned to dial tone. This is shown by Table B. (Called party on port 1—outgoing from the controlling party = noncentrex line; party on port 2—outgoing from controlling party = noncentrex line.)

(d) Table C—A noncentrex line calls a centrex line that has the ***call transfer—attendant*** feature. The called party flashes and the two parties become connected to an attendant loop. The calling party is on the SOURCE port and the called party is on the DESTINATION port. The called party tells the attendant he wishes to transfer the call to another centrex line in the same centrex group. The called party hangs up or is released by the attendant, and the attendant dials the third party. Upon answer, the third party is connected to the DESTINATION port. When the attendant disconnects from the loop, the calling party and the transfer recipient are placed in a 2-way connection, as shown in Table C. (SOURCE party—incoming to attendant noncentrex = line; DESTINATION party—outgoing from attendant = centrex line on same centrex as attendant.)

3. FEATURE FLOW DIAGRAM

3.01 A feature flow diagram giving the functional operation of the centrex call transfer service features is shown in Figure 1.

4. INTERACTIONS

4.01 The call transfer features are always provided in one of the following sets of options:

- call transfer—attendant (TW1)
- call transfer—individual (TW2)

  add-on

  consultation hold
- call transfer—individual—all calls (TW3)

  Threeway Calling

  consultation hold
- No transfer capabilities (TW0).

Each centrex station must have one and only one of the above four options.

4.02 Refer to Tables A, B, and C and paragraph 2.09 for interactions of the call transfer features and incoming, outgoing, and station-to-station calls. It is important to recognize that there are no restrictions on dialing after getting dial tone for TW2 and TW3. However, it is never permitted to leave only two outside calls, that may or may not be billed, after the controlling station goes on-hook. Therefore, a transfer is not always possible, even if the 3-way call is allowed.

4.03 The call transfer—attendant feature interfaces with the call hold feature. That is, if a station has both the call transfer—attendant and call hold feature, dial tone must be provided when the station user flashes the switchhook. When dial tone is received, if the station desires to transfer the call, the station user dials the attendant (usually "0"). This connects the station to an idle attendant as described in 2.02. After receiving dial tone, if the station wishes to hold the call, the station dials a call hold access code which places the existing call on hold. This permits the station to originate another call. Only one call per station can be held at a time and the held call cannot be added to the other call. If the station attempts to dial anything other than the call hold or the attendant, the station receives reorder tone.

4.04 Code call, paging, recorded telephone dictation interactions:

- If the original call is code call, paging, or recorded telephone dictation, the controlling party cannot add-on anyone. In this case the flash is essentially ignored.
- If the third party is a request for recorded telephone dictation, reorder tone is given. A centrex extension is not allowed to add-on (or even proceed to consultation hold with) a recorded telephone dictation call.
- If the third party is a request for voice paging without pickup, the call is allowed to proceed to consultation hold, but not to

a 3-party connection (add-on or 3-way call), and hence not to call transfer.

- If the third party is a request for code call (or paging with pickup), the call is allowed to proceed to consultation hold. When the third party answers (via code call pickup), the code call circuit (or paging circuit) is released, and the controlling party and the third party can talk with consultation hold in effect. Should the controlling party flash before the third party answers, the code call circuit (or paging circuit) is not released—audible ringing is returned. Now when the third party answers, all three parties are connected in a 3-way connection.

4.05 Tie trunk interactions:

- Incoming tie trunks may be transferred by appropriate stations if the TFR bit is set in the trunk group data (ESS 2202-3 form).
- Incoming CCSA trunk groups ***must*** have the TFR bit set to one.
- Outgoing tie trunks may flash and perform call transfer—attendant if the ATC bit is set in the trunk group.
- A centrex station with no call transfer (TW0) may flash when connected to an incoming tie trunk. This causes a 1.2-second flash to be sent back to the tie trunk as a recall signal.

4.06 Camp-on interactions:

- During camp-on to a 2-party call, the camped-on party receives a camp-on tone.
- During camp-on to a centrex extension involved in a 3-party call, the camped-on party receives a camp-on tone provided that this party is connected to either port 1 or port 2 of the 3-port conference circuit. If the call is camped-on to a party that appears on port 0, camp-on is performed but no camp-on tone is provided.

4.07 Additional interaction prevents the third leg of a call transfer call from being any one of the following:

- call pickup
- directed call pickup
- trunk answer from any station
- call forward activate code.

Such call attempts receive reorder tone.

4.08 ***Manual line***—A manual line marked with call transfer—attendant is treated the same as any other centrex extension as described in 2.02.

A manual line marked with call transfer—individual (or—all calls) may transfer calls as described in 2.03 (or 2.04) with the following exception: when the manual line flashes, this line does not receive conference dial tone. Instead, an idle attendant loop is selected, a conference bridge is selected, the manual line is connected to port 0 of the conference bridge, the other party is connected to port 1 of the conference bridge, and the SOURCE port of the attendant loop is connected to port 2 of the conference bridge. The attendant is alerted, and the "manual line" ICI lamp is lighted (if provided).

At this point, port 1 of the conference bridge is split, so that the manual line can talk to the attendant privately. The attendant may then dial a third party, whereupon this third party is connected to the DESTINATION port of the attendant loop. When the attendant releases, this third party is dropped off the loop, and connected directly to port 2 of the conference circuit.

If, at any time during the above description, the manual line flashes, the party on port 1 of the conference bridge is "unsplit," and hence able to talk to the manual line and the attendant. A second flash by the manual line drops the party on port 2, whether that party is the attendant or the third party. When this happens, the conference bridge is released, and the party that was on port 1 is reconnected to the manual line through the No. 2 ESS network as a 2-party call.

When the manual line disconnects (to allow the call to transfer), the call transfer rules apply, as described in 2.09 and 2.10.

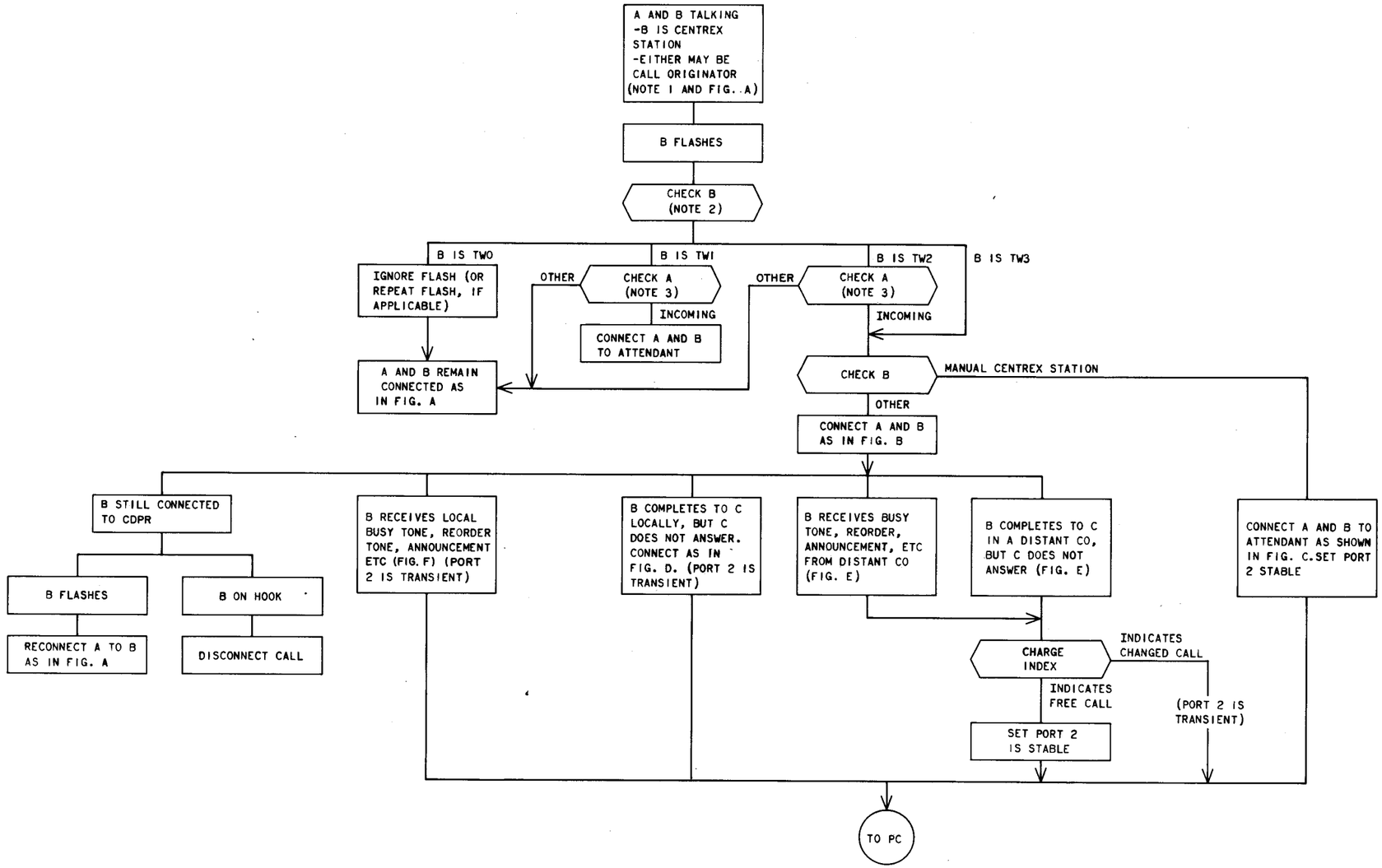


Fig. 1—Centrex Call Transfer Feature Flow Diagram (Sheet 1 of 4)

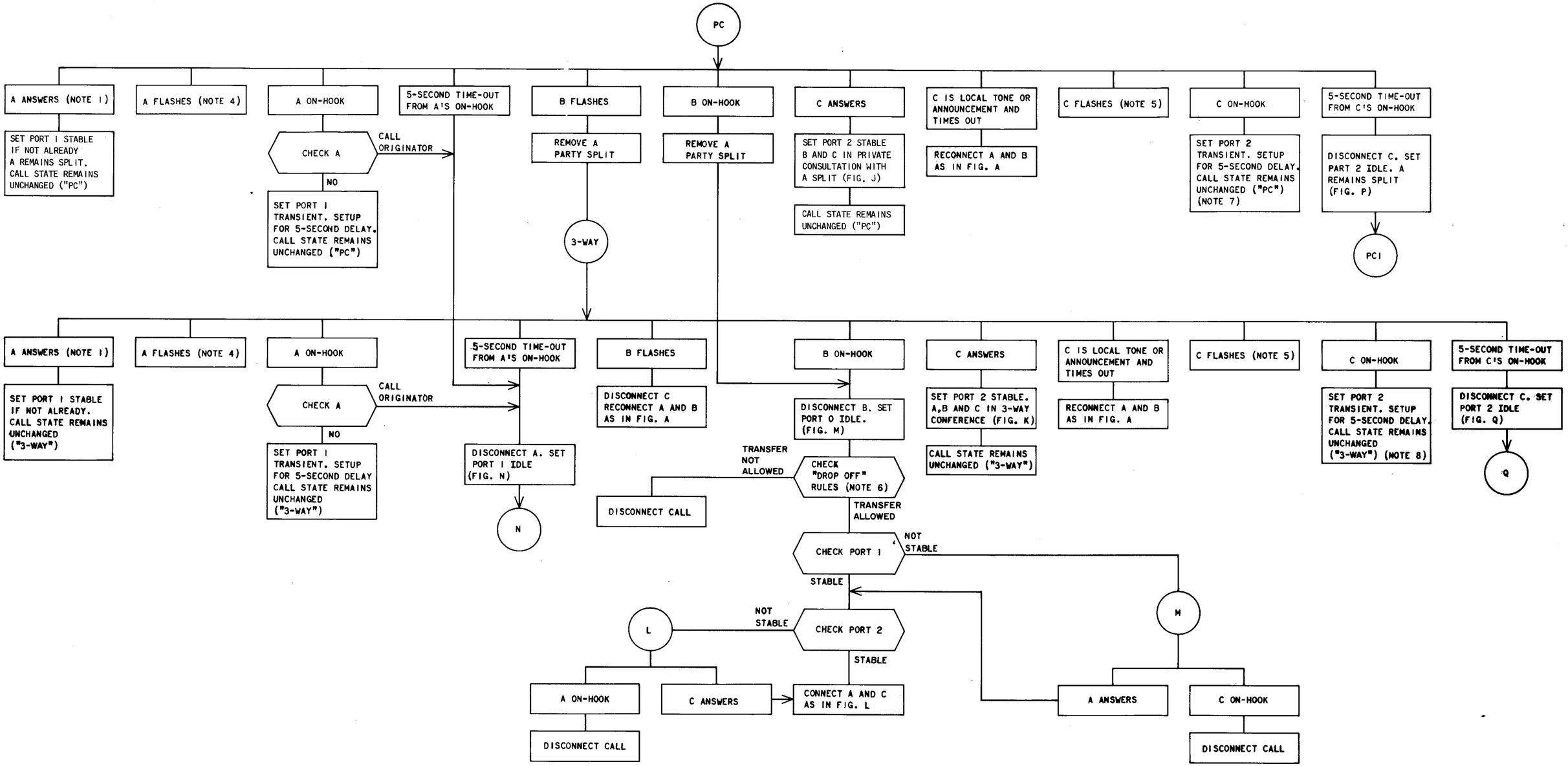
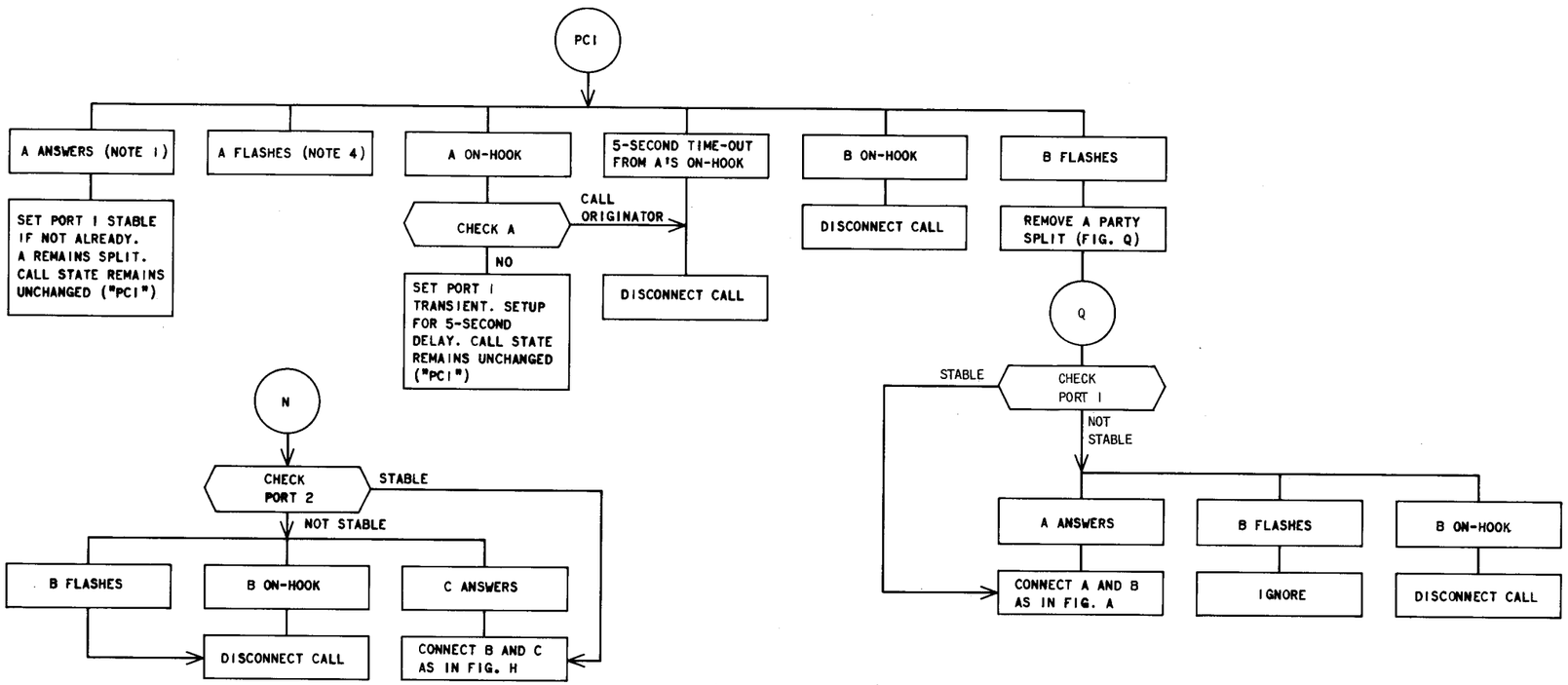


Fig. 1—Centrex Call Transfer Feature Flow Diagram (Sheet 2 of 4)

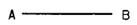


NOTES:
1. "A" MAY BE AN UNANSWERED OUTGOING TRUNK CALL.
2. TWO - NO CALL TRANSFER
   TW1 - CALL TRANSFER - ATTENDANT
   TW2 - CALL TRANSFER - INDIVIDUAL
   TW3 - CALL TRANSFER - INDIVIDUAL - ALL CALLS
3. CHECK A FOR INCOMING DID CALL, INCOMING CCSA CALL, OR INCOMING TIE TRUNK CALL WITH TFR BIT = 1.
4. A MAY BE ALLOWED TO CHAIN CONFERENCE BRIDGES TOGETHER. IF NOT, THE FLASH IS IGNORED. IF SO, THE NEW CALL IS COMPLETELY INDEPENDENT FROM THE EXISTING CALL, EXCEPT THAT PORT 1 OF THIS CONFERENCE BRIDGE IS CONNECTED TO PORT 1 OF A NEW CONFERENCE BRIDGE RATHER THAN TO A. THE EXISTING CALL REMAINS IN THE SAME STATE. SEE FIGURE G. AT SOME FUTURE TIME, A MAY ELECT TO DISPOSE OF THE NEW CALL, AND RETURN TO THE EXISTING CALL.
5. C MAY BE ALLOWED TO CHAIN CONFERENCE BRIDGES TOGETHER, IN A SIMILAR FASHION TO NOTE 4 ABOVE.
6. IF THE VARIOUS PARTIES MEET THE REQUIREMENTS SET FORTH IN TABLE A (TABLE B FOR TW3), THEN PARTY A IS ALLOWED TO BE TRANSFERRED TO PARTY C. IF NOT, THE CALL WILL BE TORN DOWN, AND BOTH A AND C WILL BE IDLED (AND RECYCLED TO DIAL TONE IF LINES).
7. DURING THIS 5-SECOND DELAY, B MAY WANT TO FLASH TWICE (ONCE TO REMOVE THE SPLIT, AND ONCE TO DISCONNECT C) TO GUARANTEE THAT C HAS DISCONNECTED, AND NOT MERELY FLASHED.
8. IF B FLASHES DURING THIS 5-SECOND DELAY, C WILL BE DISCONNECTED IMMEDIATELY.

Fig. 1—Centrex Call Transfer Feature Flow Diagram (Sheet 3 of 4)

NETWORK CONNECTION FIGURES

A.



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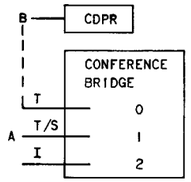

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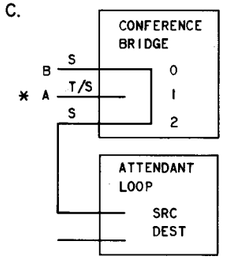

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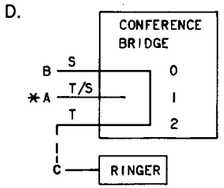

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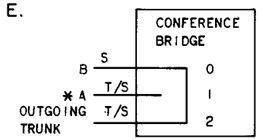

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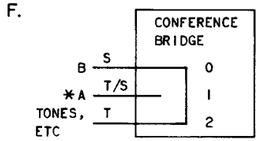

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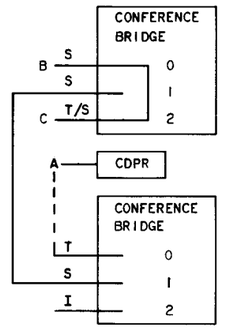

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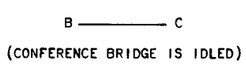

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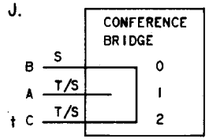

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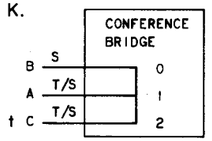

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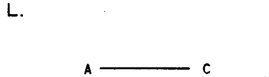

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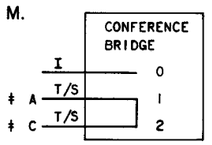

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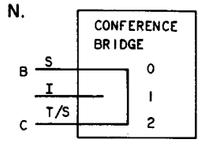

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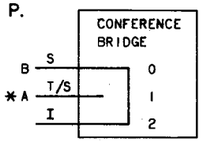

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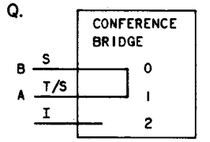

---- INDICATES RESERVED PATH
I - IDLE
S - STABLE
T - TRANSIENT

* - A IS "SPLIT"
† - C MAY BE UNANSWED TRUNK AUDIBLE RINGING TONE, BUSY TONE, ANNOUNCEMENT, UNANSWERED ATTENDANT, ETC, OR AN ANSWERED CALL
‡ - EITHER A AND/OR C IS UNANSWERED

Fig. 1—Centrex Call Transfer Feature Flow Diagram (Sheet 4 of 4)

ATTRIBUTES

5. STATION/SYSTEM

5.01 The centrex call transfer features discussed herein are provided on a per-station basis in No. 2 ESS offices as part of EF-1 generic program.

6. LIMITATIONS

6.01 Since the No. 2 ESS generic program does not concern itself with the concept of "Centrex I, II, III," every centrex station must have one and only one of the four centrex call transfer features (TW0, TW1, TW2, TW3).

7. RESTRICTION CAPABILITY

7.01 Each individual station in the centrex customer group is provided with one of the four combinations of call transfer features by translations.

8. COST DATA

8.01 The program cost for implementing centrex call transfer features is about 300 program store words. Additional costs include 3-port conference circuits SD-2H137, J2H018DN. These circuits can be used in common with noncentrex. The number of circuits depends upon usage of the features in the No. 2 ESS office.

INCORPORATION INTO SYSTEM

9. PLANNING

9.01 The features are automatically provided as part of the EF-1 generic program in No. 2 ESS offices.

9.02 In planning for these features, completion of certain translation input forms is required to indicate whether or not each line is allowed call transfer.

9.03 An appropriate number of SD-2H137 circuits must be planned for to incorporate the call transfer features.

10. HARDWARE ENGINEERING

10.01 Ordering of SD-2H137, J2H018DN circuits, to accommodate the anticipated number of call transfer calls, is required. The circuit trunk order code is 63300. The procedures for engineering the SD-2H137 circuit are included in Traffic Facilities Practices, Division D, Section 12.

11. SOFTWARE ENGINEERING

11.01 The procedures for the engineering of the software for the call transfer features covered in this feature document are outlined in the Traffic Facilities Practices, Division D, Section 12.

12. COMPATIBILITY

12.01 There are no compatibility or equipment interface problems associated with the centrex call transfer service features except for the open switching interval (OSI) problem associated with certain keysets, data sets, PBXs, etc. For further details refer to GL 73-07-039, dated July 12, 1973.

13. OFFICE DATA

A. Translations

13.01 The translators affected by the addition of the centrex features covered by this document include the centrex number translator and the centrex originating/terminating 4- or 6-word expansion translator. Figures 2 and 3 depict these translator layouts.

13.02 In order to activate the centrex call transfer features in a No. 2 ESS office, an Office Data Administration (ODA) System run may be made. This is accomplished by 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 may have any one of the special features described by this document. Division 4, Section 1 of the Translation Guide, TG-2H specifies the appropriate column numbers and associated feature abbreviations and numerical values assigned to each call transfer feature.

- ***ESS 2109***—Centrex Group Table. This form is used to build portions of the centrex number translators which identifies the

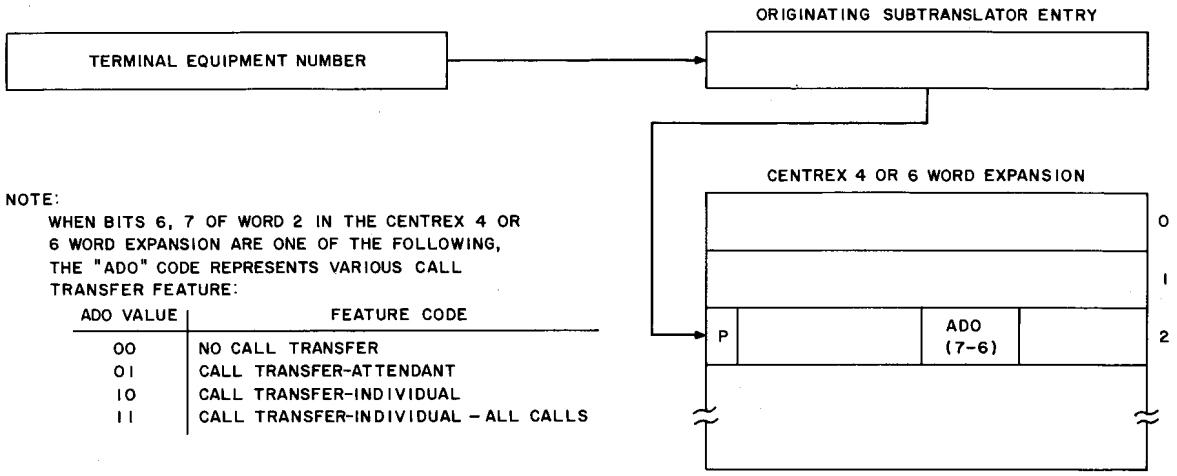

Fig. 2—Originating/Terminating 4- or 6-Word Translator

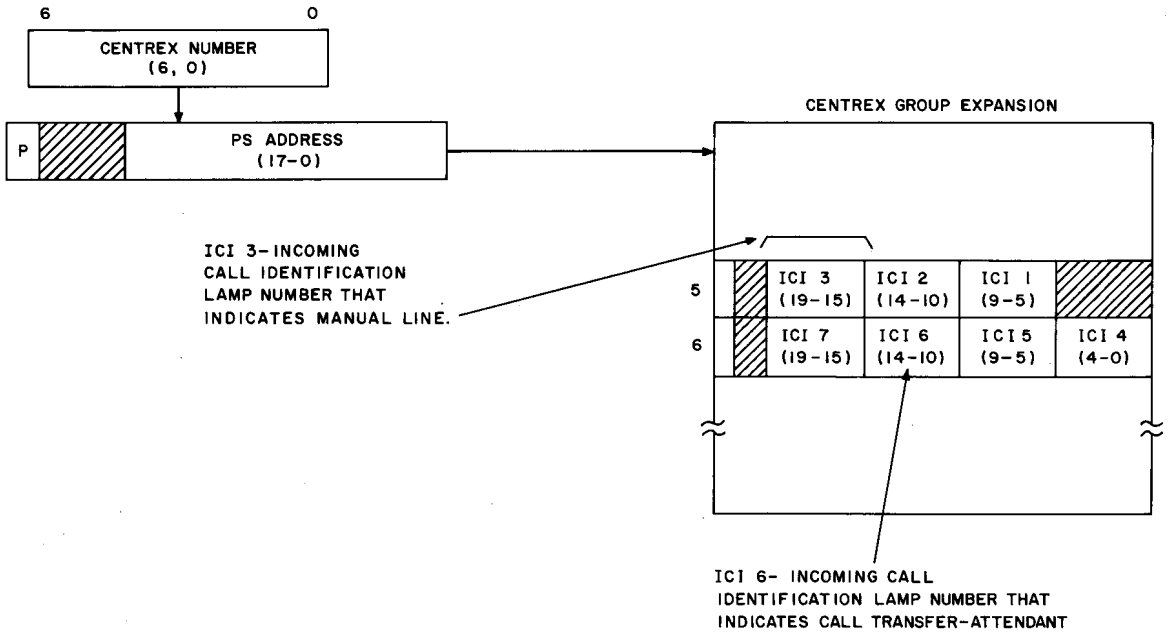

Fig. 3—Centrex Number Translator

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 any one of the centrex features covered by this document.

13.03 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 Division 11, Section 1 of the Translation Guide, TG-2H.

B. Recent Change (RC) Messages

13.04 The A RC:L/ message is used to assign any of the call transfer features to any line assigned to a centrex group. The keyword TW is

used to define (or change) the call transfer features. Refer to IM-2H200 for details of the recent change message.

The variable in the keyword TW may be 0 to 3 and is used in the following manner:

0 or blank = Delete TW or customer does not subscribe to call transfer

1 = call transfer—attendant

2 = call transfer—individual

3 = call transfer—individual—all calls.

13.05 The A VY:L/ message is the verify message for customer line originating and terminating translations. Use of this message and the keyword TW as defined under the message A RC:L verifies whether or not a line has access to any of the call transfer features. Refer to OM-2H200 for information on interpreting the verify message.

14. GROWTH/RETROFIT PROCEDURES

14.01 The call transfer features may be added to any centrex station by either an ODA run or RC message. Refer to OFFICE DATA for the proper input forms required and the RC messages.

15. TESTING

15.01 The call transfer features do not require special tests in order to incorporate them into the No. 2 ESS office. A test call from a station may be placed to another station to determine whether the station is defined properly in translations. The verify message is used to determine that the station has the proper features defined.

ADMINISTRATION

16. MEASUREMENTS

16.01 Traffic measurements for the call transfer features are outlined in Section 232-120-301—Traffic and Plant Measurements.

- Register CTX10 provides a peg count of the number of calls transferred to an attendant by stations with the call transfer—attendant feature.

- Register CTX11 provides a peg count of the number of calls transferred by stations with the call transfer—individual or call transfer—individual—all calls features.

17. RECORD KEEPING

17.01 Output records of information provided in translations are provided with each ODA run. Generally the output forms have the same number as the input forms but are suffixed with an "R". For information regarding the output records, refer to the TG-2H.

18. CHARGING

18.01 Charging for the features described in this document are made per local tariff regulations. Toll calls that are added to an existing connection are charged to the controlling station number.

AVAILABILITY

19. NEW INSTALLATIONS

19.01 The centrex call transfer features described in this document are available with the EF-1 (extended feature) generic program as part of the Centrex-CO offering.

20. GROWTH/RETROFIT

20.01 The call transfer features may be implemented into any No. 2 ESS office having the EF-1 generic program. Refer to OFFICE DATA for the proper RC messages for the various features.

SUPPLEMENTARY INFORMATION

21. GLOSSARY

21.01 The following list defines acronyms and abbreviations used in this document.

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

- Centrex—A type of service similar to PBX where the stations have Direct Inward Dialing (DID) and station identification on outgoing calls.

- EF-1—Extended feature generic program.

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

- Noncentrex Service—Voice communication telephone service provided via switched facilities between two main telephones.

- Private Branch Exchange (PBX)—A switching system which provides internal telephone communications between stations located on a customer's premises as well as between these stations and exterior networks.

22. REASONS FOR REISSUE

22.01 This is the initial issue of this document.

23. REFERENCES

23.01 Major references to the supporting documentation of this feature are listed as follows:

- SD and CD-2H137

- J2H018DN

- PD-2H211-01 Custom Calling Services Program

- PF-2H211-01 Custom Calling Services Program

- PD-2H302-01 Centrex Conference Program

- PF-2H302-01 Centrex Conference Program

- Section 232-120-301 Traffic and Plant Measurements

- Translation Guide, TG-2H

- Traffic Facilities Practices—TFP Division D, Section 12

- IM-2H200 Input Message Manual No. 2 ESS

- OM-2H200 Output Message Manual No. 2 ESS