

**MANUAL TRANSLATION MODIFICATION PROCEDURE (2B-EF-1)  
ADDING ADDITIONAL TRUNKS/SERVICE CIRCUITS  
NO. 2B ELECTRONIC SWITCHING SYSTEM**

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1. Translation Tables Involved . . . . .	25	1.03 <i>The use of a manual translation change procedure is not intended to be a part of the day-to-day routine or course of action. Manual translation changes should be performed only when there is no practical alternative and normal</i>	
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**NOTICE**

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*scheduling of an office data administration (ODA) update is not feasible.*

**1.04** The ODA update procedures can be performed with greater accuracy due to the inherent error check in the ODA routine. The manual translation modification procedure contains a much greater probability of error due to hand manipulation and recording of the address numbers and memory contents. *When performing any manual translation change procedure, the process must be performed error free. The parity of the bits on any word that is changed must be even. In the event the parity is not even when the word is addressed by the ESS program, a system initialization will occur.*

**1.05** A letter a, b, c, etc, added to a step number in the procedure in this section indicates an action which may or may not be required depending upon local conditions. The conditions under which a lettered step or a series of lettered steps should be made is given in the procedure, and all steps governed by the same condition are designated by the same letter within a procedure. When a condition does not apply, all steps designated by that letter should be omitted.

**PURPOSE AND OBJECTIVE**

**1.06** The purpose of this manual translation modification procedure is to add a new trunk or service circuit to the office translation parameters without performing an ODA run. The circuit types which may be added by this method are limited to single port trunks and service circuits (except tones or announcements). In addition, SD-2H110 (2-way operator), SD-2H183 (remote office test line), 2H118 (tone or recorded announcement circuit), or 2H119 (audible ring and recorded announcement circuit) may not be added.

**1.07** Upon successful completion of this procedure, the forms will define the program store memory locations which are to be modified and the contents of those locations. The implementation of all CHIPS changes must be accomplished by use of the procedures in Section 232-327-303. See Section 232-127-101 for background information on manual translation modification.

**GENERAL DESCRIPTION OF PROCEDURE**

**1.08** The addition of a new trunk or service circuit is accomplished by inserting data, which describes the circuit, into the office translation tables. The trunk group, scan point, and terminal equipment translation areas contain the tables which must be modified to include a new circuit. The tables will identify the circuit type, characteristics of the circuit, associated scan points, terminal equipment number, peripheral decoder points, and central pulse distributor enable point.

**A. Translation Tables Involved**

**1.09** The scan point translation tables are essentially divided into two distinct parts. This corresponds to the physical differences in a universal trunk circuit and a miscellaneous trunk or service circuit. Therefore, two separate procedures are provided to deal with the scan point translation tables. One procedure provides for adding universal trunk circuits to scan point translations and the other provides for adding miscellaneous trunk and service circuits to scan point translations.

**1.10** Universal trunk circuits have two scan points per circuit which differ only in the value of the low bit. The basic function of the scan point translations is to provide a connection between the scan points and the other peripheral assignments associated with the circuit. This correlation is provided for each circuit by the establishment of a 2-word entry containing the individual circuit assignment within the universal subtranslator. The peripheral decoder (PD) point is algorithmically related to the scan point, given the base PD enable number for a Universal Trunk Frame.

**1.11** Miscellaneous trunk and service circuits may have more or less than two scan points. No order exists for the assignment of scan points and peripheral decoders in the case of miscellaneous trunk and service circuits. As in the universal trunk circuits, the basic function of the scan point translations is to provide a connection between the scan points and other peripheral assignments associated with the circuit. However, in the case of a miscellaneous trunk or service circuit, this connection is provided for each circuit by a 2-word entry in the miscellaneous or service circuit subtranslator.

**1.12** Because no order exists in the assignment of scan points, an additional level of control is needed within the scan point translation tables (Fig. 1). Each supervisory scan point is allocated a special half-word entry within an auxiliary subtranslator as shown in PA-2H203, Section 400. The half-word entries in the auxiliary subtranslator are used to link the scan points of the circuit which are contained within the miscellaneous or service circuit subtranslator. The half-word entry contains a pseudoscan point index (PSPI). A base pseudoscan point number (PSPN) and the PSPI are used in combination to provide the link between the scan point and its 4-word circuit entry. The 4-word circuit entry is located by adding the PSPI and base PSPN together to select the appropriate subtranslation table entry.

**1.13** The trunk group translation tables are also divided into two distinct parts as shown in PA-2H203, Section 610. The parts in the trunk group translation tables correspond to the difference in the way that service circuits are handled and the way trunk circuits are handled.

**1.14** Service circuits have an associated 10-bit number that must be entered in the service circuit list. The 10-bit number is one-half the remainder of the PSPN of the circuit minus 35400 or  $1/2$  (PSPN - 35400). The value of the largest member number contained within the group data block must be modified, if necessary, to ensure that the largest member number is as large as the member being added.

**1.15** Trunk circuits have a principal scan point number (SPN) that must be entered in the trunk circuit list. The principal scan point number is considered the base or reference SPN of the circuit. As in service circuits, the value of the largest member number must be modified, if necessary.

**1.16** The terminal equipment number translator tables (PA-2H203, Section 300) are used to perform two essential functions for trunk and service circuits. The entry first will identify the circuit as belonging to a class of service that is nonlinear terminal and having a direct scan point. The second function is identification of the associated directed scan point, if any exist.

## **B. Procedures Required**

**1.17** As shown in Fig. 1 and discussed in the preceding paragraphs, three translation tables require changes to add a circuit. They are the SPN, trunk group, and terminal equipment number (TEN) translations. Trunk and service circuit (TSCK) forms are provided in addition to procedures to determine the information needed to make these changes.

**1.18** The TSCK-6 form is used to obtain preliminary information which will be used throughout the procedures. The procedure to obtain the required information for the TSCK-6 form is provided in either Part 2 or Part 3. If a universal trunk circuit is being added, use Part 2 "Procedure for Adding Universal Trunk Circuits to Scan Point Translations." If a miscellaneous trunk or service circuit is being added, use Part 3 "Procedure for Adding Miscellaneous Trunk or Service Circuit to Scan Point Translations."

**1.19** One additional form is required for adding universal trunk circuits to scan point translations. This form (TSCK-7) deals with indexing through the SPN translations to the universal subtranslator. The information to be used in the TSCK-7 form is obtained by following the procedures in Part 2.

**1.20** An additional form is also required for adding miscellaneous trunk and service circuits to scan point translations. This form is TSCK-8 which is more involved than the TSCK-7 form in that it is necessary to determine a pseudoscan point index to be added to an auxiliary subtranslator. The PSPN is determined and will point to the service circuit subtranslator or miscellaneous trunk subtranslator where information which identifies the circuit will be placed.

**1.21** The TSCK-9 form is used to gather information to be added to the trunk group translator. Part 4, "Procedure for Updating Trunk Group Translations," must be followed when adding any circuit to the program as well as Part 5, "Procedure for Updating Directed Scan Point in TEN Translations." Using the procedure in Part 5 provides the information for the TSCK-10 form which will be added to the TEN translations.

**1.22** The ability to add and subtract in octal and add in binary is essential to the successful

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utilization of the procedures in this section. The size and address of each block will be read out of the No. 2B ESS main store in octal in response to a TTY input message. The standard CHIPS procedure required to change the main store information requires an octal input. All address calculation and indexing is done by octal addition and subtraction. The user must also be able to calculate parity by adding the binary bits that are the contents of the new translator words to be written. Refer to Section 232-127-101, Manual Translation Modification Procedure—General Description, for methods of addition and subtraction in octal, binary-to-octal conversions, and tables for decimal-to-octal conversion.

**1.23** All the information gathered will be entered in the 2B Chips Table. This table will be used in performing Manual Translation Modification Procedure—Formatting Changes in Program Store, Section 232-327-303. Section 232-327-303 must be completed before performing Change in Program Store Words Procedures, Section 232-304-303.

**1.24** If the 2B Chips Table or necessary TSCK-6, TSCK-7, TSCK-8, TSCK-9 or TSCK-10 forms are not available to record the translator change information, reproducible forms may be obtained

from Appendix 1 of this section. Universal trunks require TSCK-6, TSCK-7, TSCK-9, TSCK-10, and 2B Chips Table forms. Miscellaneous trunks and service circuits require TSCK-6, TSCK-8, TSCK-9, TSCK-10, and 2B Chips Table forms.

**1.25** Parity will not be computed in this section.

Parity will only be carried when the octal contents of a word are initially entered into the TSCK table. Parity will be calculated when the procedures in Section 232-327-303 Manual Translation Procedure—Formatting Changes In Program Store are performed.

**1.26** The following defines nomenclature used in the procedure and TSCK forms:

A (X) = Address of X

C (X) = Content of address X

X (0) = Word X

X (1) = Next succeeding word after X.

## 2. PROCEDURE FOR ADDING UNIVERSAL TRUNK CIRCUITS TO SCAN POINT TRANSLATIONS

STEP	PROCEDURE
1	<p>Provide a complete description of the new circuit to be added to the system by filling out ODA form ESS 2201. A copy of the ESS 2201 form and complete instructions is contained within the TG-2H translation guide. An example of ESS 2201 is shown in Fig. 2. The only exception to the instructions is that ALL scan points are to be entered in sequential order starting with the SPN which has the lowest enable address within the assigned sequence.</p> <p>The information requested is as follows:</p> <ol style="list-style-type: none"><li>(1) Terminal equipment number</li><li>(2) Equipment location</li><li>(3) Auxiliary PD point—Trunk PD enable</li><li>(4) Supervisory scan points—Designate the line or trunk function of the SPN, line = L, trunk = T</li><li>(5) Directed scan points—SPN, line = L, trunk = T</li></ol>

STEP	PROCEDURE
	(6) Trunk order code
	(7) Group member
	(8) Member number.
	<b>Note:</b> Some of the items in TSCK-6 are not required for universal trunk circuits. Leave those items blank. The completed portion of TSCK-6 applicable to universal trunk circuits is found in Fig. 3. The completed TSCK-7 form is found in Fig. 4.
2	Refer to the circuit definition table contained within Section 610 of PA-2H203 drawings to determine the characteristics of the circuit shown in TSCK-6, Items 1 through 4.
3	Enter the direction of the trunk (TRK) in TSCK-6, Item 6. The values are shown in TSCK-6.
4	Enter the first scan point number (SPN) in TSCK-6, Item 12. The first scan point is the supervisory scan point which has the lowest enable address. This information was recorded on the ESS 2201 form.
5	Convert the first scan point (scanner, row, and column point) from decimal to binary and enter the binary numbers in the format shown in TSCK-6, Item 12.
6	Convert the $W_F$ , $X_F$ , and $L_B$ of the first SPN from binary to octal and enter the octal numbers in TSCK-6, Item 12.
7	The principal scan point is considered the base or reference SPN for the circuit. The principal SPN is obtained by adding the principal SPN (offset value) to the first scan point number. The principal SPN (offset value) was entered in TSCK-6, Item 4. Enter the principal scan point number in TSCK-6, Item 13.
	<b>Note:</b> A principal SPN value of 0 means the first SPN is also the principal SPN of the circuit. Concurrently, a value of 1 indicates the second SPN is the principal SPN, etc.
8	Convert the principal scan point (scanner, row, and column point) from decimal to binary and enter the binary number in the format shown in TSCK-6, Item 13.
9	Enter the network, concentrator group, concentrator, switch, and level obtained on ESS 2201 in TSCK-6, Item 14. Convert the decimal entries to binary.
10	Enter the binary digits in the TEN format shown in TSCK-6, Item 14.
11	Convert the TEN(9-14) field and TEN(0-8) field from binary to octal and enter the octal number of TEN(9-14) and TEN(0-8) in TSCK-6, Item 14.
12	Enter the trunk group and member number obtained on ESS 2201 in TSCK-6, Item 15 and 16. Convert the decimal entries to octal and binary.

STEP	PROCEDURE
13	Enter the octal and binary digits in the trunk group and member format shown in TSCK-6, Items 15 and 16.
14	Obtain the address of SPTBL from the master table index contained within PA-2H203. Enter the address of SPTBL in TSCK-7, Item 1.
15	<p>At the maintenance TTY— Type in: DMP:PS aa!</p> <p>Where aa = Address of SPTBL.</p> <p>The system response will be: DMP PS aa bb dd dd dd dd dd dd dd</p> <p>Where aa = Address of SPTBL and bb = Contents of SPTBL and dd = Contents of additional PS words, ignore.</p>
16	Enter the contents of SPTBL in TSCK-7, Item 2. If C(SPTBL) is more than 3777777, subtract 4000000 from C(SPTBL) before entering it in TSCK-7, Item 2. Note that the parity bit (Bit 21) must also be deleted.
17	Obtain the octal value of W <sub>F</sub> from TSCK-6, Item 12. Enter the value of W <sub>F</sub> in TSCK-7, Item 3 beside the two places for W <sub>F</sub> .
18	Add the contents of TSCK-7, Item 2 and the two entries for W <sub>F</sub> to obtain the address of SPTEV (0). Enter A[SPTEV (0)] in TSCK-7, Item 3.
19	<p>At the maintenance TTY— Type in: DMP:PS aa!</p> <p>Where aa = Address SPTEV (0).</p> <p>The system response will be: DMP PS aa bb cc dd dd dd dd dd dd</p> <p>Where aa = Address of SPTEV (0) and bb = Contents of SPTEV (0) and cc = Contents of SPTEV (1) and dd = Contents of additional PS words, ignore.</p>
20	Enter the octal contents of SPTEV (0) and SPTEV (1) in TSCK-7, Item 4.
21	Convert C[SPTEV (0)] from octal to binary. Enter the binary contents in the format shown in TSCK-7, Item 4.

STEP	PROCEDURE
22	Ensure that the value of the STC portion of C[SPTEV (0)] is 011. If a value of STC is other than 011, an error has been made. Do not proceed before correcting the error.
23	Ensure that the value of bits 11 through 15 are all zeros. If the value is not all zeros, an error has been made. Recheck A[SPTEV (0)]. If A[SPTEV (0)] is correct, call translations contacts at Western Electric regional computation center.
24	Ensure that the contents of SPTEV (1) is no more than 3777777. If C[SPTEV (1)] is more than 3777777, subtract 4000000 from C[SPTEV (1)]. Enter the number that is no more than 4000000 in TSCK-7, Item 4 beside USTB. Note that the parity bit must also be deleted.
25	Obtain the octal value of $X_F$ from TSCK-6, Item 12 and enter that value in TSCK-7, Item 5 beside the two places for $X_F$ .
26	Calculate the sum $2X_F+2$ and enter this value in TSCK-7, Item 5. The numbers MUST be added in octal.
27	Obtain the octal value of USTB from TSCK-7, Item 4 and enter this value in TSCK-7, Item 6.
28	Use $2X_F+2$ calculated in TSCK-7, Item 5 as an entry in Item 6 and calculate the address of USTE (0) by adding USTB and $2X_F+2$ together.
29	<p>At the maintenance TTY—  Type in:  DMP:PS aa!</p> <p>Where aa = Address of USTE (0).</p> <p>The system response will be:  DMP PS aa  bb cc dd dd dd dd dd dd</p> <p>Where aa = Address of USTE (0)  and bb = Contents of USTE (0)  and cc = Contents of USTE (1)  and dd = Contents of additional PS words, ignore.</p>
30	Enter the address and contents of USTE (0) and USTE (1) in TSCK-7, Item 7. Ensure that the contents of USTE (0) and USTE (1) are all zeros. If the contents of both words are not all zeros, an error has been made.
31	Enter the following in the binary format shown in TSCK-7, Item 8: TRK from TSCK-6, Item 6 TEN from TSCK-6, Item 14 MEMBER from TSCK-6, Item 16 GROUP from TSCK-6, Item 15.

STEP	PROCEDURE
32	Convert from binary to octal and enter the constructed program store words USTE (0) and USTE (1) in TSCK-7, Item 8 and in the Chips Table, Item B1 under new contents. Obtain the address of USTE (0) and USTE (1) from TSCK-7, Item 7. Enter these addresses in TSCK-7, Item 8 and in the Chips Table, Item B1. All zeros should be entered under old contents.

### 3. PROCEDURE FOR ADDING MISCELLANEOUS TRUNK AND SERVICE CIRCUITS TO SCAN POINT TRANSLATIONS

STEP	PROCEDURE
1	<p>Provide a complete description of the new circuit to be added to the system by filling out ODA form ESS 2201. A copy of the ESS 2201 form and complete instructions is contained within the TG-2H translation guide. An example of ESS 2201 is shown in Fig. 2. The only exception to the instructions is that ALL scan points are to be entered in sequential order starting with the SPN which has the lowest enable address within the assigned sequence.</p> <p>The information requested is as follows:</p> <ol style="list-style-type: none"> <li>(1) Terminal equipment number</li> <li>(2) Equipment location</li> <li>(3) Auxiliary PD point—Trunk PD enable</li> <li>(4) Supervisory scan points—Designate the line or trunk function of the SPN, line = L, trunk = t</li> <li>(5) Directed scan points—SPN, line = L, trunk = T</li> <li>(6) Trunk order code</li> <li>(7) Group member</li> <li>(8) Member number.</li> </ol> <p><b>Note:</b> Some of the items in TSCK-6 and TSCK-8 are not required for miscellaneous trunk circuits or service circuits. Leave those items blank. The completed portion of TSCK-6 applicable to miscellaneous trunk and service circuits is found in Fig. 5. The completed TSCK-8 form is found in Fig. 6.</p> <p>2 Refer to the circuit definition table contained within Section 610 of PA-2H203 drawings to determine the characteristics of the circuit shown in TSCK-6, Items 1 through 5.</p>

STEP	PROCEDURE
3a	If the circuit is a miscellaneous trunk— Enter the direction of the trunk (TRK) in TSCK-6, Item 6. The values are shown in TSCK-6.
4	Enter the circuit type (CKT) in TSCK-6, Item 7. The values are shown in TSCK-6.
5	Subtract 1 from the number of PD buffers entered in TSCK-6, Item 5. Convert from decimal to binary and enter this binary number for BUF - 1 in TSCK-6, Item 8.
6a	If the circuit is a miscellaneous trunk— Enter the BY number in TSCK-6, Item 9. The values are shown in TSCK-6.
7	Obtain the frame number entered on ESS 2201 and enter this number in TSCK-6, Item 10. Convert the number from decimal to binary and enter the binary number in TSCK-6, Item 10 also. If the frame number is greater than 64 <sub>8</sub> , only the low 6 binary bits will be used to identify the frame.
8	Obtain the number of the CPD FR, nest, card, point, and buffer entered on ESS 2201 and enter these numbers in TSCK-6, Item 11. Convert the decimal numbers to binary.
9	Enter the binary numbers in the PD buffer format shown in TSCK-6, Item 11. Convert the binary format to octal and enter the octal number beside PD buffer address in TSCK-6, Item 11.
10	Enter the first scan point number in TSCK-6, Item 12. The first scan point is the supervisory scan point which has the lowest address. If the circuit has no supervisory scan point, the first scan point is the directed scan point with the lowest address. This information was recorded on the ESS 2201 form.
11	Convert the first scan point (scanner, row, and column point) from decimal to binary and enter the binary numbers in the format shown in TSCK-6, Item 12.
12	Convert the W <sub>F</sub> , X <sub>F</sub> and LB <sub>F</sub> of the first SPN from binary to octal and enter the octal number in TSCK-6, Item 12.
13	The principal scan point is considered the base or reference SPN for the circuit. The principal SPN is obtained by adding the principal SPN (offset value) to the first scan point number. The principal SPN (offset value) was entered in TSCK-6, Item 4. Enter the principal scan point number in TSCK-6, Item 13.
	<b>Note:</b> A principal SPN value of 0 means the first SPN is also the principal SPN of the circuit. Concurrently, a value of 1 indicates the second SPN is the principal SPN, etc.
14	Convert the principal scan point (scanner, row, and column point) from decimal to binary and enter the binary number in the format shown in TSCK-6, Item 13.
15	Enter the network, concentrator group, concentrator, switch, and level obtained on ESS 2201 in TSCK-6, Item 14. Convert the decimal entries to binary.

STEP	PROCEDURE
16	Enter the binary digits in the TEN format shown in TSCK-6, Item 14.
17	Convert the TEN(9-14) field and TEN(0-8) field from binary to octal and enter the octal numbers of TEN(9-14) and TEN(0-8) in TSCK-6, Item 14.
18	Enter the trunk group and member number obtained on ESS 2201 in TSCK-6, Items 15 and 16. Convert the decimal entries to octal and binary.
19	Enter the octal and binary digits in the trunk group and member format shown in TSCK-6, Items 15 and 16.
20	Obtain the address of SPTBL from the master table index contained within PA-2H203. Enter the address of SPTBL in TSCK-8, Item 1.
21	<p>At the maintenance TTY— Type in: DMP:PS aa!</p> <p>Where aa = Address of SPTBL.</p> <p>The system response will be: DMP PS aa bb dd dd dd dd dd dd dd</p> <p>Where aa = Address of SPTBL and bb = Contents of SPTBL and dd = Contents of additional PS words, ignore.</p>
22	Enter the contents of SPTBL in TSCK-8, Item 2. If C(SPTBL) is more than 3777777, subtract 4000000 from C(SPTBL) before entering it in TSCK-8, Item 2. Note that the parity bit must also be deleted.
23	Obtain the octal value of $W_F$ from TSCK-6, Item 12. Enter the value of $W_F$ in TSCK-8, Item 3 beside the two places for $W_F$ .
24	Add the contents of TSCK-8, Item 2 and the two entries for $W_F$ to obtain the address of SPTEV (0). Enter A[SPTEV (0)] in TSCK-8, Item 3.
25	<p>At the maintenance TTY— Type in: DMP:PS aa!</p> <p>Where aa = Address of SPTEV (0).</p> <p>The system response will be: DMP PS aa bb cc dd dd dd dd dd dd</p>

STEP	PROCEDURE
	<p>Where aa = Address of SPTEV (0)            and bb = Contents of SPTEV (0)            and cc = Contents of SPTEV (1)            and dd = Contents of additional PS words, ignore.</p>
26	Enter the octal contents of SPTEV (0) and SPTEV (1) in TSCK-8, Item 4.
27	Convert C[SPTEV (0)] from octal to binary. Enter the binary contents in the format shown in TSCK-8, Item 4.
28	Ensure that the value of the STC portion of C[SPTEV (0)] is 001. If a value of STC is other than 001, an error has been made. Do not proceed before correcting the error.
29	Ensure that the value of bits 11 through 15 are all zeros. If the value is not all zeros, an error has been made. Recheck A[SPTEV (0)]. If A[SPTEV (0)] is correct, call translations contacts at Western Electric regional computation center.
30	Ensure that the contents of SPTEV (1) is no more than 3777777. If C[SPTEV (1)] is more than 3777777, subtract 4000000 from C[SPTEV (1)]. Enter the number that is not more than 4000000 in TSCK-8, Item 4 beside A[AXSTB (0)]. Note that the parity bit must also be deleted.
31	<p>At the maintenance TTY—            Type in:            DMP:PS aa!</p>
	Where aa = Address of AXSTB.
	<p>The system response will be:            DMP PS aa            bb cc dd dd dd dd dd dd</p>
	<p>Where aa = Address of AXSTB (0)            and bb = Contents of AXSTB (0)            and cc = Contents of AXSTB (1)            and dd = Contents of additional PS words, ignore.</p>
32	Enter the octal contents of AXSTB (0) and AXSTB (1) in TSCK-8, Item 5. Part of the contents of AXSTB (0) will be identified as BPSNT and part of AXSTB (1) will be identified as BPSNSC.
33	Calculate the sum $[A[AXSTB (0)] + X_F + 2]$ and enter this value in TSCK-8, Item 6 beside A[AXSTB (0)]. These numbers MUST be added in octal. A[AXSTB (0)] was obtained in TSCK-8, Item 4 and $X_F$ was obtained in TSCK-6, Item 12.
34	<p>At the maintenance TTY—            Type in:            DMP:PS aa!</p>

STEP	PROCEDURE
	Where aa = Address of AXSTE (0).  The system response will be: DMP PS aa bb cc dd dd dd dd dd dd
	Where aa = Address of AXSTE (0) and bb = Contents of AXSTE (0) and cc = Contents of AXSTE (1) and dd = Contents of additional PS words, ignore.
35	Enter the octal contents of AXSTE (0) in TSCK-8, Item 7. Convert the octal value obtained into the binary format indicated in Item 7.
36	Obtain the LB <sub>F</sub> of the scan point, number from TSCK-6, Item 12. If the LB <sub>F</sub> = 0, the PSPI will go in the right half of the word. If the LB <sub>F</sub> = 1, the PSPI will go in the left half of the word.
37	Ensure that all zeros are located in the half word in which the new PSPI will be entered. If this half word is not all zeros, an error has been made (ie, the new circuit was assigned scan points currently in use). Do not proceed until the error is corrected.
38b	If the circuit uses dc operator signaling— The LB <sub>F</sub> in Step 36 must be 0. In addition, AXSTE (1) must be all zeros so the word in Item 8 can be written.
39b	Ensure that AXSTE (0) and AXSTE (1) are all zeros using the last TTY response.
40a	If the circuit is a miscellaneous trunk— Obtain the BPSPNT from TSCK-8, Item 5. Calculate the initial PSPN (IPSPN) and maximum PSPN (MAXPSPN) in TSCK-8, Item 9 by adding 2 <sub>s</sub> and 1000 <sub>s</sub> , respectively to the BPSPNT.
41c	If the circuit is a service circuit— Obtain the BPSPNSC from TSCK-8, Item 5. Calculate the IPSPN and MAXPSPN in TSCK-8, Item 10 by adding 28 and 10008, respectively, to the BPSPNSC.
42	The IPSPN obtained in the previous step will be used as the current PSPN. Enter the current PSPN in TSCK-8, Item 11.
43	Convert the current PSPN from octal to the binary format in TSCK-8, Item 11.
44	Enter the binary value of Y <sub>c</sub> in the binary format shown for 2Y <sub>c</sub> . Calculate the value of 2Y <sub>c</sub> by shifting the binary number one place to the left as shown in TSCK-8, Item 11. Convert the binary number to octal and enter the value obtained for 2Y <sub>c</sub> in TSCK-8, Item 11.
45	Enter the binary value of Z <sub>c</sub> in the binary format shown for 4Z <sub>c</sub> . Calculate the value of 4Z <sub>c</sub> by shifting the binary number two places to the left as shown in TSCK-8, Item 11.

STEP	PROCEDURE
	Convert the binary number to octal and enter the value obtained beside 4Zc in TSCK-8, Item 11.
46	Calculate the sum of [C(SPTBL) + 2YC] and enter this value in TSCK-8, Item 12. The sum calculated is the address of SPTBLPSPN (0). C(SPTBL) was entered in TSCK-8, Item 2 and 2Yc was entered in TSCK-8, Item 11.
47	At the maintenance TTY— Type in: DMP:PS aa!  Where aa = Address of SPTBLPSPN (0).  The system response will be: DMP PS aa bb cc dd dd dd dd dd dd  Where aa = Address of SPTBLPSPN (0) and bb = Contents of SPTBLPSPN (0) and cc = Contents of SPTBLPSPN (1) and dd = Contents of other PS words, ignore.
48	Enter the octal contents of SPTBLPSPN (0) and SPTBLPSPN (1) in TSCK-8, Item 13. Convert the octal number of SPTBLPSPN (0) to the binary format in Item 13.
49a	If the circuit is a miscellaneous trunk— Ensure that the value in Item 13 of the STC portion of C[SPTBLPSPN (0)] is 101. If a value of STC is other than 101, an error has been made. Do <b>NOT</b> proceed before correcting the error.
50c	If the circuit is a service circuit— Ensure that the value in Item 13 of the STC portion of C[SPTBLPSPN (0)] is 010. If a value of STC is other than 010, an error has been made. Do <b>NOT</b> proceed before correcting the error.
51	Ensure that the value of bits 11 through 15 of C[SPTBLPSPN (0)] are all zeros. If the value is not all zeros, an error has been made. Recheck A[SPTBLPSPN (0)]. If A[SPTBLPSPN (0)] is correct, call translations contacts at Western Electric regional computation center.
52	Ensure that the contents of SPTBLPSPN (1) is no more than 3777777. If C[SPTBLPSPN (1)] is more than 3777777, subtract 4000000 from C[SPTBLPSPN (1)]. Enter the number that is no more than 4000000 in TSCK-8, Item 14 beside MT/SCSTB. Note that the parity bit must also be deleted.
53	Calculate the sum of (MT/SCSTB + 4Zc + 1) and enter this value in TSCK-8, Item 14. The sum calculated is the address of SUBTRANE (0). 4Zc was entered in TSCK-8, Item 11.

STEP	PROCEDURE
54	<p>At the maintenance TTY— Type in: DMP:PS aa!</p> <p>Where aa = Address of SUBTRANE (0).</p> <p>The system response will be: DMP PS aa bb cc dd ee ff ff ff ff</p> <p>Where aa = Address of SUBTRANE (0) and bb = Contents of SUBTRANE (0) and cc = Contents of SUBTRANE (1) and dd = Contents of SUBTRANE (2) and ee = Contents of SUBTRANE (3) and ff = Contents of additional PS words, ignore.</p>
55d	<p>If the contents of SUBTRANE (0) through SUBTRANE (3) are not all zeros, increase the current PSPN by 2. The current PSPN is entered by TSCK-8, Item 11.</p>
56d	<p>Ensure that the current PSPN is less than MAXPSPN entered in TSCK-8, Item 10 for service circuits and Item 9 for miscellaneous trunks. If PSPN is not less than MAXPSPN, the circuit cannot be added without an ODA run.</p>
57d	<p>Convert the current PSPN from octal to the binary format in TSCK-8, Item 11.</p>
58d	<p>Calculate the new values for 2Yc and 4Zc and enter these values in TSCK-8, Item 11.</p>
59d	<p>Compare the new value of 2Yc with the value obtained from the last PSPN. If the values are the same, repeat Steps 53 through 59d using the new value for 4Zc. If the values for Yc are different, repeat Steps 46 through 49d using the new values of 2Yc and 4Zc.</p>
60	<p>Enter the address of SUBTRANE (0) through SUBTRANE (3) in TSCK-8, Item 15. SUBTRANE (0) was entered in TSCK-8, Item 14 and SUBTRANE (1) through SUBTRANE (3) are the next three succeeding addresses after SUBTRANE (0).</p>
61	<p>Enter the following in the binary format shown in TSCK-8, Item 15:</p> <p>CKT from TSCK-6, Item 7 TRK from TSCK-6, Item 6 (TRK = 00 for service circuits) TEN from TSCK-6, Item 14 BUF - 1 from TSCK-6, Item 8 BY from TSCK-6, Item 9 (BY = 0 for service circuits) MEMBER from TSCK-6, Item 16 GROUP from TSCK-6, Item 15 FRAME from TSCK-6, Item 10 SCAN POINT NUMBER from TSCK-6, Item 12 PD BUFFER ADDRESS from TSCK-6, Item 11.</p>

STEP	PROCEDURE
62	Convert from binary to octal and enter the constructed program store words of SUBTRANE (0) through SUBTRANE (3) in TSCK-8, Item 15 and in the 2B Chips Table, Item B-2 under new contents. The address of SUBTRANE (0) through SUBTRANE (3) must be entered in the 2B Chips Table, Item B-2. All zeros should be entered under old contents.
63	Obtain the current PSPN from TSCK-8, Item 11. Enter that number in TSCK-8, Item 16.
64	Obtain the BPSNSC for a service circuit from TSCK-8, Item 10, or BPSNT for a miscellaneous trunk from TSCK-8, Item 9. Enter this number in TSCK-8, Item 16 beside BPSN.
65	Subtract the BPSN from the current PSPN to obtain the PSPI. Enter this number in TSCK-8, Item 16.  <i>Note:</i> This number must be between 2 and 777 or an error has been made.
66	Convert the PSPI from octal to the binary format in TSCK-8, Item 17.
67a	If the circuit is a miscellaneous trunk— Enter a 0 in the S bit.
68c	If the circuit is a service circuit— Enter a 1 in the S bit.
69	Obtain the L <sub>B</sub> of the scan point number from TSCK-6, Item 12. If the L <sub>B</sub> = 0, enter the PSPI in the right half of the word [AXSTE (0)]. If the L <sub>B</sub> = 1, enter the PSPI in the left half of the word.
70	Obtain the data that was in the other half of the word from TSCK-8, Item 7. Enter that binary number in the appropriate half of the word [AXSTE (0)] in TSCK-8, Item 18.  <i>Note:</i> If the L <sub>B</sub> is 0 and another SPN is to be added for this circuit, repeat Steps 67 through 69 using the next SPN.
71	Convert from binary to octal and enter the constructed program word [AXSTE (0)] in TSCK-8, Item 18 and in the 2B Chips Table, Item B-3 under new contents. Obtain the old contents of AXSTE (0) from TSCK-8, Item 7 and enter this number in the No. 2B Chips Table, Item B-3 under old contents.
72	Obtain the address of AXSTE (0) from the bottom line of TSCK-8, Item 6. Enter this value in TSCK-8, Item 18 and in the Chips Table, Item B-3.
73b	If the circuit is dc operator signaling— Obtain the data of AXSTE (1) from TSCK-8, Item 8 and enter the value in the 2B Chips Table, Item B-3 under address and new contents. Enter all zeros under old contents. Obtain the address of AXSTE (1) by adding 1 to A[AXSTE (0)] and enter this value in the No. 2B Chips Table, Item B-3.

STEP	PROCEDURE
74	Repeat Steps 1 through 73 for each additional scan point of this circuit. Substitute the additional scan point for the first scan point. The principal scan point will not change.

#### 4. PROCEDURE FOR UPDATING TRUNK GROUP TRANSLATIONS

STEP	PROCEDURE
	<p><b>Note:</b> For referenced calculations, refer to Fig. 3 and 4. The completed TSCK-9 form is found in Fig. 7.</p>
1	Obtain the octal trunk group number from TSCK-6, Item 15 and enter it on TSCK-9, Item 1.
2	Convert the octal entry to the binary format shown in TSCK-9, Item 1.
3	Convert the B(4-8) field and the B(0-3) field from binary to octal and enter the octal number in Item 1.
4	Obtain the address of GRPTBL from the master table index contained within PA-2H203. Enter the address of GRPTBL in TSCK-9, Item 2.
5	Obtain B(4-8) from Item 1 of TSCK-9 and calculate the sum $[A(\text{GRPTBL}) + B(4-8)]$ . Enter the resulting value in TSCK-9, Item 2. This sum is the address of GDBPTR.
6	<p>At the maintenance TTY— Type in: DMP:PS aa!</p> <p>Where aa = Address of GDBPTR.</p> <p>The system response will be: DMP PS aa bb dd dd dd dd dd dd dd</p> <p>Where aa = Address of GDBPTR and bb = Contents of GDBPTR and dd = Contents of additional PS words, ignore.</p>
7	Enter the octal contents of GDBPTR in TSCK-9, Item 3. Convert the octal value obtained into the binary format indicated in Item 3.
8	Extract the octal value of G type from TSCK-9, Item 3 and enter it in Item 4.

STEP	PROCEDURE
9	Ensure the value in Item 4 is 0 for a service circuit or a 1 for a universal or miscellaneous trunk. If these values were not obtained, an error was made.
10	Convert the binary value of A(GDP) from TSCK-9, Item 3 to octal and enter this value in TSCK-9, Item 5.
11a	If the circuit is a service circuit— Obtain the binary value of B(0-3) from TSCK-9, Item 1 and enter the value in TSCK-9, Item 6. Calculate the value 4B(0-3) by shifting the binary number two places to the left as shown in TSCK-9, Item 6. Convert the binary number to octal and enter the value obtained beside GRPIX in TSCK-9, Item 6.
12b	If the circuit is a universal or miscellaneous trunk— Obtain the octal value of B(0-3) from TSCK-9, Item 1 and enter the value in TSCK-9, Item 7. Calculate the value 8B(0-3) by shifting the octal number one place to the left as shown in TSCK-9, Item 7.
13	Enter the value obtained in TSCK-9, Item 5 for A(GDP) in TSCK-9, Item 8. Obtain the value of GRPIX from TSCK-9, Item 6 for a service circuit or TSCK-9, Item 7 for a universal or miscellaneous trunk. Enter this value in TSCK-9, Item 8.
14	Calculate the address of GRP (0) by adding A(GDP) and GRPIX. Enter this value beside A[GRP (0)] in TSCK-9, Item 8.
15	At the maintenance TTY— Type in: DMP:PS aa!  Where aa = Address of GRP (0).  The system response will be: DMP PS aa bb cc dd ee ff ff ff ff  Where aa = Address of GRP (0) and bb = Contents of GRP (0) and cc = Contents of GRP (1) and dd = Contents of GRP (2) and ee = Contents of GRP (3) and ff = Contents of additional PS words, ignore.
16	Enter the contents of GRP (0) through GRP (3) in TSCK-9, Item 9.
17	Enter the address and contents of GRP (0) through GRP (3) (obtained in Step 15) into TSCK-9, Item 10. Convert the octal values of the words to the binary format in Item 10.
18	Convert the largest member number field, the A(CKT LIST) field, and the circuit state table index field from binary to octal. Enter the three values in TSCK-9, Item 10.

## STEP

## PROCEDURE

- 19 Ensure that the value of the circuit state table index is the same in TSCK-9, Item 10 and TSCK-6, Item 2. If the values are not identical, an error exists. Do not proceed until the error is corrected.
- 20c If the circuit is a service circuit or incoming trunk—  
Bits 0 through 15 of GRP (1) must be all zeros. If the value is not all zeros, an error exists. Do not proceed until the error is corrected.
- 21 Obtain the octal value of the member number from TSCK-6, Item 16. Enter this value in TSCK-9, Item 11. Ensure that the octal value of the member number of the circuit being added is no more than one greater than the value of the largest member number obtained in TSCK-9, Item 10. It can be smaller if a hole existed in the group. If the value of the member number of the circuit being added is greater than one over the largest member number, an error has been made. Do not proceed until the error is corrected.
- 22d If the new member number is larger than the value obtained for the largest member number—  
The word GRP (0) must be modified to reflect this change. Copy the address and binary contents (bits 8 through 20) obtained for the PS word GRP (0) from TSCK-9, Item 10 to Item 11. Convert this octal member number to the binary format of largest member number (bits 0-7) in Item 11.
- 23d Convert the new binary contents of GRP (0) to octal and enter the octal number in Item 11. Enter the address and new contents of GRP (0) in the 2B Chips Table, Item A-1. Obtain the old data of GRP (0) from TSCK-9, Item 9 and enter this number in the 2B Chips Table, Item A-1 under old contents.
- Note:** For referenced calculations in “b” lettered steps, refer to Fig. 3 and 4.
- 24b If the circuit is a universal or miscellaneous trunk—  
Enter the value of A(CKT LIST) and member number in TSCK-9, Item 12. The value of A(CKT LIST) was obtained in TSCK-9, Item 10 and the member number was obtained in TSCK-9, Item 11.
- 25b Add the two numbers together to obtain A(CKT MBR). Enter this number in TSCK-9, Item 12.
- 26b At the maintenance TTY—  
Type in:  
DMP:PS aa!

Where aa = Address of CKT MBR.

The system response will be:

DMP PS aa  
bb dd dd dd dd dd dd dd

STEP	PROCEDURE
	<p>Where aa = Address of CKT MBR            and bb = Contents of CKT MBR            and dd = Contents of additional PS words, ignore.</p>
27b	Enter the address of CKT MBR in TSCK-9, Item 13.
28b	Ensure that the contents of CKT MBR is not 17777777. If the contents is 17777777, the group "maximum group size" limit has been reached. Refer to Section 232-127-312 before proceeding with this procedure to allocate a new trunk group or change the size of the existing trunk group.
29b	The contents of CKT MBR should be all zeros. If the contents are not all zeros, this member number has been assigned to a circuit which is currently an active member of the group and the value obtained is the principal SPN of the active member. Another member number must be assigned and this procedure must be repeated. The new member number must be entered in the scan point translator information, Steps 31 and 32 in Part 1, or Steps 61 and 62 in Part 2.
30b	Obtain the binary value of the principal SPN from TSCK-6; Item 13 if the circuit is a universal trunk. If the circuit is a miscellaneous trunk, obtain the PSPI from TSCK-8, Item 16 and convert the PSPI to a 14-bit binary number. Enter the principal SPN or PSPI in the binary format shown in TSCK-9, Item 13.
31b	Convert the constructed program store word from binary to octal and enter in TSCK-9, Item 13 and in the 2B Chips Table, Item A-2 under new contents. Enter the address of CKT MBR in the 2B Chips Table, Item A-2. Enter all zeros under old contents.
	<b>Note:</b> For reference calculations in "a" lettered steps, refer to Fig. 5 and 6.
32a	If the circuit is a service circuit— Obtain the octal value of the member number from TSCK-9, Item 11. Enter the member number in TSCK-9, Item 14. Convert the octal number to the binary format shown in TSCK-9, Item 14.
33a	Convert the MEMBER NO/2 field from binary to octal and enter the octal number of MEMBER/2 in TSCK-9, Item 15.
34a	Enter the value of A(CKT LIST) obtained in TSCK-9, Item 10 in TSCK-9, Item 15. Add the two values together to obtain A(CKT MBR). Enter the value in TSCK-9, Item 15.
35a	At the maintenance TTY— Type in: DMP:PS aa!
	Where aa = Address of CKT MBR.
	The system response will be: DMP PS aa bb dd dd dd dd dd dd

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STEP	PROCEDURE
	Where aa = Address of CKT MBR and bb = Contents of CKT MBR and dd = Contents of additional PS words, ignore.
36a	Enter the address and contents of CKT MBR in TSCK-9, Item 16.
37a	Ensure that the contents of CKT MBR is not 17777777. If the contents is 17777777, the group circuit state limit has been reached. Refer to Section 232-127-312 before proceeding with this procedure to allocate a new trunk group or change the size of the existing trunk group.
38a	Each member of the service circuit group is assigned a 10-bit entry within the service circuit list table. The word which was entered in "OLD CONTENTS" of TSCK-9, Item 16 contains two 10-bit entries. Convert the octal value of this word to binary and record the word in the binary format shown in TSCK-9, Item 16.
39a	Obtain the LB <sub>M</sub> from TSCK-9, Item 14. If the LB <sub>M</sub> is 0, the 10-bit number for this member will go in the right half of the binary word format provided in TSCK-9, Item 16. If the LB <sub>M</sub> is 1, the 10-bit number for this member will go in the left half of the word. Ensure that the contents of the half-word entry in this 10-bit number is all zeros. If the contents is not all zeros, this member number has been assigned to a circuit which is currently an active member of the group and the value obtained is the 10-bit entry of the active member.
40a	Obtain the current PSPN from TSCK-8, Item 11 and enter this number in TSCK-9, Item 17.
41a	Subtract 35400 <sub>8</sub> from the current PSPN and enter the number in TSCK-9, Item 17.
42a	Convert the octal number [2*(10-bit number)] in Item 17 of TSCK-9, to the binary format shown in TSCK-9, Item 18.
43a	Enter the 10-bit number located in TSCK-9, Item 18 into the appropriate half-word entry of TSCK-9, Item 19. Obtain the address and the second half-word entry from TSCK-9, Item 16 and enter these numbers in TSCK-9, Item 19.
44a	Convert from binary to octal and enter the constructed program store word in TSCK-9, Item 19 and in the 2B Chips Table, Item A-3 under new contents. Enter the address of CKT MBR in 2B Chips Table, Item A-3. Obtain the old contents of CKT MBR from TSCK-9, Item 16 and enter it in the 2B Chips Table, Item A-3 under old contents.

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**5. PROCEDURE FOR UPDATING DIRECTED SCAN  
POINT IN TEN TRANSLATIONS**

STEP	PROCEDURE
1	Obtain the address of TENTBL from the master table index contained within PA-2H203. Enter the address of TENTBL in TSCK-10, Item 1.
	<i>Note:</i> For referenced calculations, refer to Fig. 3 and 4. The completed TSCK-10 form is found in Fig. 8.
2	Obtain the value of TEN(9-14) from TSCK-6, Item 14. Enter this value in TSCK-10, Item 1.
3	Calculate the sum [TENTBL * TEN(9-14)] and enter this value in TSCK-10, Item 1. The sum is the address of OTENT.
4	<p>At the maintenance TTY— Type in: DMP:PS aa!</p> <p>Where aa = Address of OTENT.</p> <p>The system response will be: DMP PS aa bb dd dd dd dd dd dd dd</p> <p>Where aa = Address of OTENT and bb = Contents of OTENT and dd = Contents of additional PS words, ignore.</p>
5	Enter the octal contents of OTENT in TSCK-10, Item 2.
6	Ensure that the contents of OTENT is no more than 3777777. If C(OTENT) is more than 3777777, subtract 4000000 from C(OTENT). Enter the number that is no more than 4000000 in TSCK-5, Item 3 beside OSTBASE. Note that the parity bit must also be deleted.
7	Obtain the value of TEN(0-8) from TSCK-6, Item 14. Enter this value in TSCK-10, Item 3.
8	Calculate the sum [OSTBASE + TEN(0-8)] and enter this value in TSCK-10, Item 3. The sum is the address of OSTENT.
9	<p>At the maintenance TTY— Type in: DMP:PS aa!</p> <p>Where aa = Address of OSTENT.</p>

STEP	PROCEDURE
	<p>The system response will be:  DMP PS aa  bb dd dd dd dd dd dd</p> <p>Where aa = Address of OSTENT  and bb = Contents of OSTENT  and dd = Contents of additional PS words, ignore.</p>
10	Enter the octal contents of OSTENT in TSCK-10, Item 4.
11	The contents of OSTENT should be all zeros. If OSTENT is not all zeros, an error has been made. Do not proceed before the error has been corrected.
12a	If no directed scan points are assigned to the circuit (refer to ESS 2201)— Enter all zeros in the directed scan point format shown in TSCK-10, Item 5.
13b	If directed scan points are assigned to the circuit, but no supervisory scan points are assigned— Enter the binary value of the principal scan point number from TSCK-6, Item 13 in the directed scan point format shown in TSCK-10, Item 5.
14c	If both directed and supervisory scan points are assigned to the circuit— The directed scan point to be used is the directed scan point with the lowest enable address. This information was recorded on the ESS 2201 form. Obtain the trunk scanner, row, and column point from ESS 2201 and enter these numbers in TSCK-10, Item 6.
15c	Convert the trunk scanner, row, and column point from decimal to binary and enter the binary numbers in the format shown in TSCK-10, Item 6.
16c	Enter the binary value of the directed scan point number obtained in Step 15c in the directed scan point format shown in TSCK-10, Item 5.
17	Convert the binary number to octal and enter the constructed program word in TSCK-10, Item 5 and in the 2B Chips Table, Item C.
18	Obtain the address of OSTENT from the bottom line of TSCK-10, Item 3 and enter in TSCK-10, Item 5 and in the 2B Chips Table, Item C. Enter all zeros under old contents.
19	Use the information on the 2B Chips Table (completed 2B Chips Table is found in Fig. 9) to perform Manual Translation Modification Procedure Formatting Change in Program Store, Section 232-327-303.

**6. GLOSSARY**

**6.01** The following list defines abbreviations and nonstandard terms used in this section:

**AXSTB**—Auxiliary Subtranslator Base

**AXSTE**—Auxiliary Subtranslator Entry

**BPSPNSC**—Base Pseudoscan Point Number-Service Circuit

**BPSPNT**—Base Pseudoscan Point Number-Trunk

**BUF - 1**—Number of PD Buffers Minus One

**BY**—Bylink Trunk

**CHIPS**—Change In Program Store

**CKT**—Circuit Type

**CKT LIST**—Circuit List

**CKT MBR**—Circuit Member

**CPD**—Central Pulse Distributor

**dc**—Direct Current

**EF**—Extended Features Generic Program

**ESS**—Electronic Switching Systems

**FR**—Frame

**GDBPTR**—Group Data Block Pointer

**GDP**—Group Data Pointer

**GRP**—Group Pointer

**GRPIX**—Group Pointer Index

**GRPTBL**—Group Table

**G Type**—Group Type

**IPSPN**—Initial Pseudoscan Point Number

**LB<sub>f</sub>**—Low Bit of First Scan Point Number

**LB<sub>m</sub>**—Low Bit of Member Number

**MAXSPN**—Maximum Pseudo Scan Point Number

**MEMBER NO/2**—1/2 Member Number

**MT/SCSTB**—Miscellaneous Trunk or Service Circuit Subtranslator Base

**ODA**—Office Data Administration

**OPT**—Option

**OSTBASE**—Originating Subtranslator Base

**OSTENT**—Originating Subtranslator Entry

**OTENT**—Originating Translator Entry

**PA-2H203**—Electronic Switching System No. 2B—Office Data Table Layout Specification For Office Equipped with 2B-EF-1 Generic Program

**PD**—Peripheral Decoder

**PS**—Program Store

**PSPI**—Pseudoscan Point Index

**PSPN**—Pseudoscan Point Number

**S**—Status

**SCKT**—Special Circuit Indicator

**SD**—Schematic Diagram

**SPN**—Scan Point Number

**SPTBL**—Scan Point Table

**SPTBLPSPN**—Scan Point Table Pseudoscan Point Number

**SPTEV**—Scan Point Translator Entry Value

**STC**—Subtranslator Code

**SUBTRANE**—Subtranslator Entry

**TEN**—Terminal Equipment Number

**SECTION 232-327-314**

**TENTBL**—Terminal Equipment Number Table

**TG-2H**—Translation Guide

**TRK**—Direction of Trunk

**TSCK**—Trunk and Service Circuit Form

**USTB**—Universal Subtranslator Base

**USTE**—Universal Subtranslator Entry

**W<sub>r</sub>**—W Field of First Scan Point Number

**X<sub>r</sub>**—X Field of First Scan Point Number.

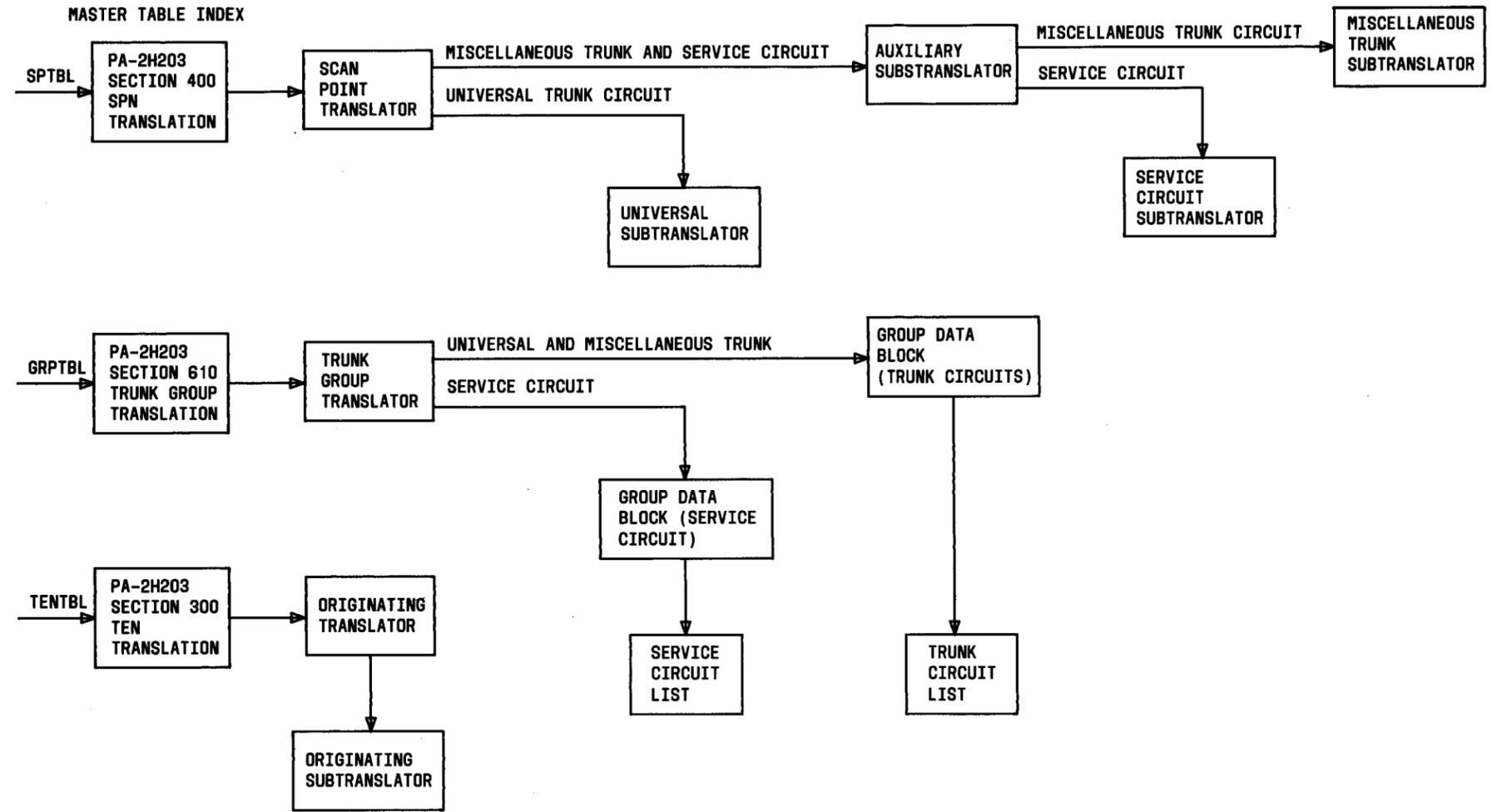


Fig. 1—Translation Tables Involved



PRELIMINARY INFORMATION

TSCK-6

1. CIRCUIT TYPE U
  - A. UNIVERSAL TRUNK = U
  - B. MISCELLANEOUS TRUNK = M
  - C. SERVICE CIRCUIT = S
  
2. CIRCUIT STATE TABLE INDEX 273<sub>8</sub>
3. PSPN CODE -
4. PRINCIPLE SPN (OFFSET VALUE) 0
5. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY  
NUMBER OF PD BUFFERS -
6. FOR UNIVERSAL AND MISCELLANEOUS TRUNKS ONLY  
TRK = 10<sub>2</sub>
  - A. NOT USED = 00
  - B. OUTGOING = 01
  - C. INCOMING = 10
  - D. TWO WAY = 11
7. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY  
CKT - - - 2
  - A. E & M BYLINK TRUNK = 011
  - B. MISCELLANEOUS CIRCUIT = 100
  - C. BYLINK TRUNK = 111

NOTE: MISCELLANEOUS CIRCUITS INCLUDE SERVICE CIRCUITS AND MISCELLANEOUS TRUNKS OTHER THAN A AND C.
8. FOR MISCELLANEOUS TRUNK AND SERVICE CIRCUITS ONLY  
BUF - 1 - - 2
9. FOR MISCELLANEOUS TRUNK CIRCUIT ONLY  
BY - 2
  - A. FROM A STEP-BY-STEP OFFICE = 1
  - B. AN INCOMING E & M DIAL PULSE TRUNK = 1
  - C. ALL OTHER TRUNKS = 0
10. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY  
FRAME - - - - 10  
- - - - - 2  
    └───┬───┘  
        FRAME

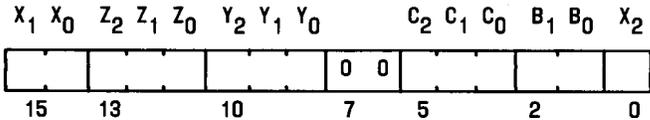
Fig. 3—TSCK-6—Preliminary Information (Universal Trunks) (Sheet 1 of 4)

11. FOR MISCELLANEOUS TRUNK AND SERVICE CIRCUITS ONLY

TSCK-6

PD BUFFER ADDRESS

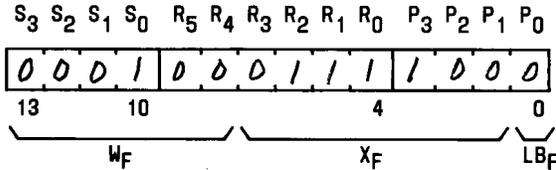
- CPD FR - 10  $\overline{C_2} \overline{C_1} \overline{C_0}^2$
- NEST - 10  $\overline{X_2} \overline{X_1} \overline{X_0}^2$
- CARD - 10  $\overline{Z_2} \overline{Z_1} \overline{Z_0}^2$
- POINT - 10  $\overline{Y_2} \overline{Y_1} \overline{Y_0}^2$
- BUFFER - 10  $\overline{B_1} \overline{B_0}^2$



PD BUFFER ADDRESS - - - - - 8

12. FIRST SCAN POINT NUMBER

- TRUNK SCANNER  $\underline{01}_{10}$   $\frac{0}{S_3} \frac{0}{S_2} \frac{0}{S_1} \frac{1}{S_0}^2$
- ROW  $\underline{07}_{10}$   $\frac{0}{R_5} \frac{0}{R_4} \frac{0}{R_3} \frac{1}{R_2} \frac{1}{R_1} \frac{1}{R_0}^2$
- COLUMN POINT  $\underline{08}_{10}$   $\frac{1}{P_3} \frac{0}{P_2} \frac{0}{P_1} \frac{0}{P_0}^2$

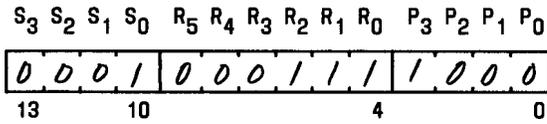


- $W_F = \underline{0A}_8$
- $X_F = \underline{074}_8$
- $LB_F = \underline{0}$

Fig. 3—TSCK-6—Preliminary Information (Universal Trunks) (Sheet 2 of 4)

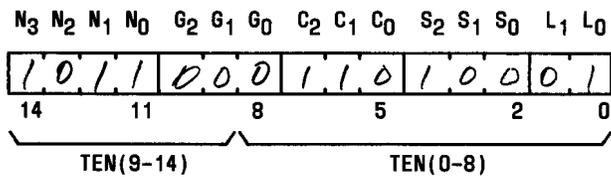
13. PRINCIPLE SCAN POINT NUMBER

TRUNK SCANNER  $\underline{01}_{10}$        $\frac{0}{S_3} \frac{0}{S_2} \frac{0}{S_1} \frac{1}{S_0}$   
 ROW       $\underline{07}_{10}$        $\frac{0}{R_5} \frac{0}{R_4} \frac{0}{R_3} \frac{1}{R_2} \frac{1}{R_1} \frac{1}{R_0}$   
 COLUMN POINT  $\underline{08}_{10}$        $\frac{1}{P_3} \frac{0}{P_2} \frac{0}{P_1} \frac{0}{P_0}$



14. TERMINAL EQUIPMENT NUMBER

NETWORK       $\underline{11}_{10}$        $\frac{1}{N_3} \frac{0}{N_2} \frac{1}{N_1} \frac{1}{N_0}^2$   
 CONCENTRATOR GROUP  $\underline{0}_{10}$        $\frac{0}{G_2} \frac{0}{G_1} \frac{0}{G_0}^2$   
 CONCENTRATOR       $\underline{6}_{10}$        $\frac{1}{C_2} \frac{1}{C_1} \frac{0}{C_0}^2$   
 SWITCH       $\underline{4}_{10}$        $\frac{1}{S_2} \frac{0}{S_1} \frac{0}{S_0}^2$   
 LEVEL       $\underline{1}_{10}$        $\frac{0}{L_1} \frac{1}{L_0}^2$

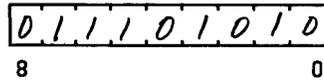


TEN(9-14) =  $\underline{54}_{18}$   
 TEN(0-8) =  $\underline{321}_{18}$

Fig. 3—TSCK-6—Preliminary Information (Universal Trunks) (Sheet 3 of 4)

15. TRUNK GROUP  $\underline{234}_{10}$   $\underline{352}_8$

TSCK-6



16. MEMBER  $\underline{002}_{10}$   $\underline{002}_8$

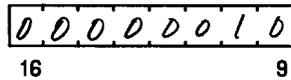
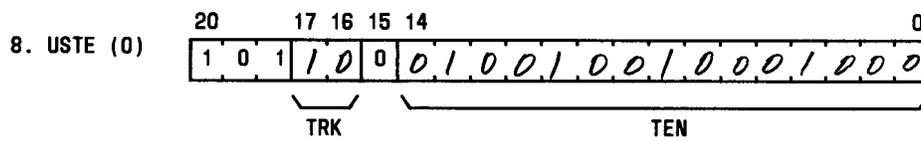


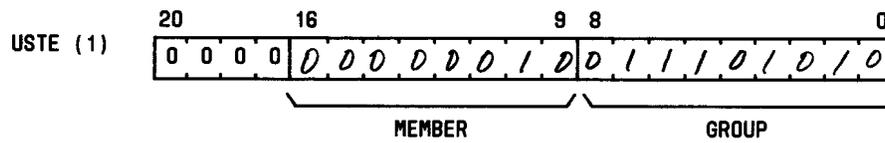
Fig. 3—TSCK-6—Preliminary Information (Universal Trunks) (Sheet 4 of 4)



TSCK-7



PS LOCATION 0346211<sub>8</sub>      NEW CONTENTS 5422210<sub>8</sub>



PS LOCATION 0346212<sub>8</sub>      NEW CONTENTS 0002352<sub>8</sub>

Fig. 4—TSCK-7—SPN Translator (Universal Trunks) (Sheet 2 of 2)

PRELIMINARY INFORMATION

TSCK-6

1. CIRCUIT TYPE 5
  - A. UNIVERSAL TRUNK = U
  - B. MISCELLANEOUS TRUNK = M
  - C. SERVICE CIRCUIT = S
  
2. CIRCUIT STATE TABLE INDEX 220<sub>8</sub>
3. PSPN CODE 0
4. PRINCIPLE SPN (OFFSET VALUE) 0
5. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY  
 NUMBER OF PD BUFFERS 1
6. FOR UNIVERSAL AND MISCELLANEOUS TRUNKS ONLY  
 TRK = 00<sub>2</sub>
  - A. NOT USED = 00
  - B. OUTGOING = 01
  - C. INCOMING = 10
  - D. TWO WAY = 11
  
7. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY  
 CKT 100<sub>2</sub>
  - A. E & M BYLINK TRUNK = 011
  - B. MISCELLANEOUS CIRCUIT = 100
  - C. BYLINK TRUNK = 111

NOTE: MISCELLANEOUS CIRCUITS INCLUDE SERVICE CIRCUITS AND MISCELLANEOUS TRUNKS OTHER THAN A AND C.
8. FOR MISCELLANEOUS TRUNK AND SERVICE CIRCUITS ONLY  
 BUF - 1 00<sub>2</sub>
9. FOR MISCELLANEOUS TRUNK CIRCUIT ONLY  
 BY -2
  - A. FROM A STEP-BY-STEP OFFICE = 1
  - B. AN INCOMING E & M DIAL PULSE TRUNK = 1
  - C. ALL OTHER TRUNKS = 0
  
10. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY  
 FRAME 004<sub>10</sub>  
00000100<sub>2</sub>  
 FRAME

Fig. 5—TSCK-6—Preliminary Information (Miscellaneous Trunks and Service Circuits) (Sheet 1 of 4)

11. FOR MISCELLANEOUS TRUNK AND SERVICE CIRCUITS ONLY

TSCK-6

PD BUFFER ADDRESS

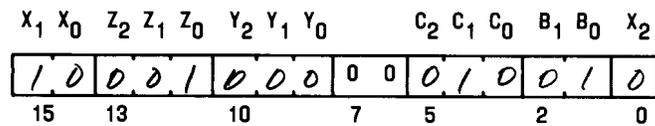
CPD FR  $\underline{2}_{10}$   $\frac{0}{C_2} \frac{1}{C_1} \frac{0}{C_0}^2$

NEST  $\underline{2}_{10}$   $\frac{0}{X_2} \frac{1}{X_1} \frac{0}{X_0}^2$

CARD  $\underline{1}_{10}$   $\frac{0}{Z_2} \frac{0}{Z_1} \frac{1}{Z_0}^2$

POINT  $\underline{0}_{10}$   $\frac{0}{Y_2} \frac{0}{Y_1} \frac{0}{Y_0}^2$

BUFFER  $\underline{1}_{10}$   $\frac{0}{B_1} \frac{1}{B_0}^2$



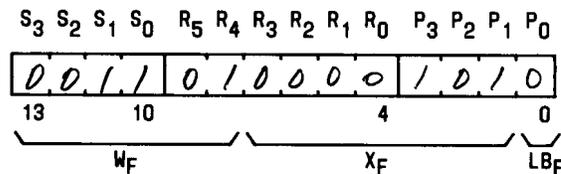
PD BUFFER ADDRESS  $\underline{\underline{104022}}_8$

12. FIRST SCAN POINT NUMBER

TRUNK SCANNER  $\underline{03}_{10}$   $\frac{0}{S_3} \frac{0}{S_2} \frac{1}{S_1} \frac{1}{S_0}^2$

ROW  $\underline{16}_{10}$   $\frac{0}{R_5} \frac{1}{R_4} \frac{0}{R_3} \frac{0}{R_2} \frac{0}{R_1} \frac{0}{R_0}^2$

COLUMN POINT  $\underline{10}_{10}$   $\frac{1}{P_3} \frac{0}{P_2} \frac{1}{P_1} \frac{0}{P_0}^2$



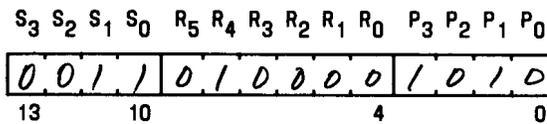
$W_F = \underline{15}_8$   
 $X_F = \underline{005}_8$   
 $LB_F = \underline{0}$

Fig. 5—TSCK-6—Preliminary Information (Miscellaneous Trunks and Service Circuits) (Sheet 2 of 4)

13. PRINCIPLE SCAN POINT NUMBER

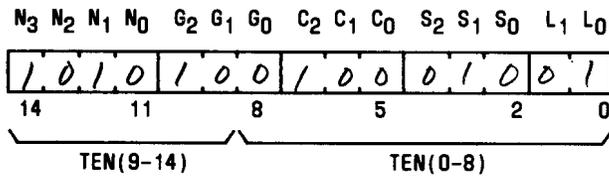
TSCK-6

TRUNK SCANNER  $\underline{03}_{10}$        $\frac{0}{S_3} \frac{0}{S_2} \frac{1}{S_1} \frac{1}{S_0}$   
 ROW       $\underline{16}_{10}$        $\frac{0}{R_5} \frac{1}{R_4} \frac{0}{R_3} \frac{0}{R_2} \frac{0}{R_1} \frac{0}{R_0}$   
 COLUMN POINT  $\underline{10}_{10}$        $\frac{1}{P_3} \frac{0}{P_2} \frac{1}{P_1} \frac{0}{P_0}$



14. TERMINAL EQUIPMENT NUMBER

NETWORK       $\underline{10}_{10}$        $\frac{1}{N_3} \frac{0}{N_2} \frac{1}{N_1} \frac{0}{N_0}^2$   
 CONCENTRATOR GROUP  $\underline{4}_{10}$        $\frac{1}{G_2} \frac{0}{G_1} \frac{0}{G_0}^2$   
 CONCENTRATOR       $\underline{4}_{10}$        $\frac{1}{C_2} \frac{0}{C_1} \frac{0}{C_0}^2$   
 SWITCH       $\underline{2}_{10}$        $\frac{0}{S_2} \frac{1}{S_1} \frac{0}{S_0}^2$   
 LEVEL       $\underline{1}_{10}$        $\frac{0}{L_1} \frac{1}{L_0}^2$

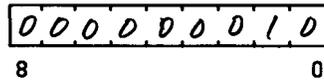


TEN(9-14) =  $\underline{52}_8$   
 TEN(0-8) =  $\underline{211}_8$

Fig. 5—TSCK-6—Preliminary Information (Miscellaneous Trunks and Service Circuits) (Sheet 3 of 4)

15. TRUNK GROUP  $\underline{002}_{10}$   $\underline{002}_8$

TSCK-6



16. MEMBER  $\underline{010}_{10}$   $\underline{012}_8$

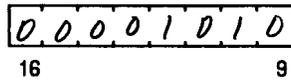


Fig. 5—TSCK-6—Preliminary Information (Miscellaneous Trunks and Service Circuits) (Sheet 4 of 4)



TSCK-8

8. REQUIRED FOR DC OPERATOR SIGNALING ONLY

$$C(\text{AXSTE } (1)) \underline{7} \underline{4} \underline{0} \underline{0} \underline{0} \underline{0} \underline{1}_8$$

9. REQUIRED FOR MISCELLANEOUS TRUNKS ONLY

$$\begin{array}{r} \text{BPSPNT} \quad \text{--- -- -- --} \text{--}8 \\ \quad \quad \quad + \quad 2 \end{array}$$

---


$$\text{IPSPN} \quad \text{--- -- -- --} \text{--}8$$

$$\begin{array}{r} \text{BPSPNT} \quad \text{--- -- -- --} \text{--}8 \\ \quad \quad \quad + \quad 1 \quad 0 \quad 0 \quad 0 \end{array}$$

---


$$\text{MAXPSPN} \quad \text{--- -- -- --} \text{--}8$$

10. REQUIRED FOR SERVICE CIRCUITS ONLY

$$\begin{array}{r} \text{BPSPNSC} = \underline{3} \underline{5} \underline{4} \underline{4} \underline{6}_8 \\ \quad \quad \quad + \quad 2 \end{array}$$

---


$$\text{IPSPN} = \underline{3} \underline{5} \underline{4} \underline{5} \underline{0}_8$$

$$\begin{array}{r} \text{BPSPNSC} = \underline{3} \underline{5} \underline{4} \underline{4} \underline{6}_8 \\ \quad \quad \quad + \quad 1 \quad 0 \quad 0 \quad 0 \end{array}$$

---


$$\text{MAXPSPN} = \underline{3} \underline{6} \underline{4} \underline{4} \underline{6}_8$$

11. CURRENT PSPN 35452<sub>8</sub>

$$2Y_C = \underline{166}_8$$

$$4Z_C = \underline{124}_8$$

12. C(SPTBL) 0237415<sub>8</sub>

$$+2Y_C \quad \underline{166}_8$$

---


$$A(\text{SPTBLPSPN } (0)) \underline{0} \underline{2} \underline{3} \underline{7} \underline{6} \underline{0} \underline{3}_8$$

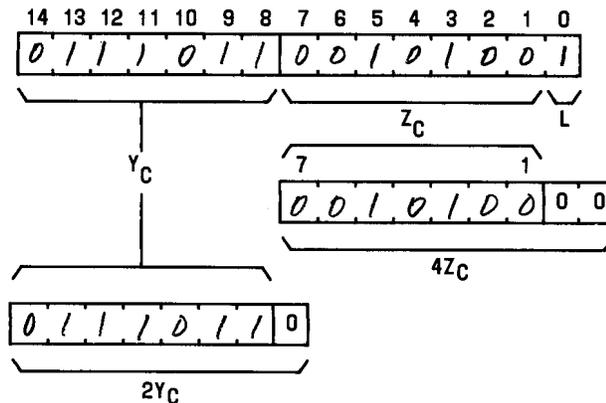


Fig. 6—TSCK-8—SPN Translator (Miscellaneous Trunks and Service Circuits) (Sheet 2 of 4)



TSCK-8

17. PSPI = 

1	0	0	0	0	0	0	1	0	0
---	---	---	---	---	---	---	---	---	---

  
S

18. 

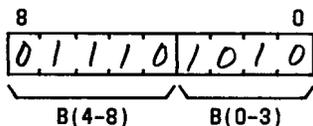
20	19							11	10	9				1	0			
0	1	0	1	0	0	1	1	1	0	1	0	0	0	0	0	1	0	0

  
LB = 1
LB = 0

AXSTE (0) P.S. LOC 0423762<sub>8</sub> NEW CONTENTS 2472010<sub>8</sub>

Fig. 6—TSCK-8—SPN Translator (Miscellaneous Trunks and Service Circuits) (Sheet 4 of 4)

1. TRUNK GROUP 352<sub>8</sub>



B(4-8) = 16<sub>8</sub>

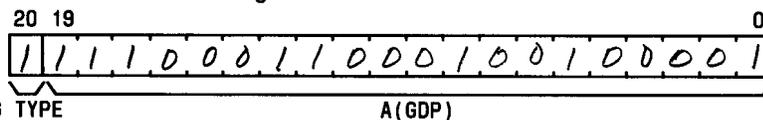
B(0-3) = 12<sub>8</sub>

2. A(GRPTBL) = 0641145<sub>8</sub>

+B(4-8) = 16<sub>8</sub>

A(GDBPTR) = 0641163<sub>8</sub>

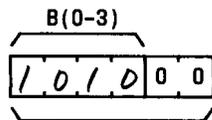
3. GDBPTR OLD CONTENTS 17430441<sub>8</sub>



4. G TYPE = 1<sub>8</sub>

5. A(GDP) = 3430441<sub>8</sub>

6. FOR SERVICE CIRCUITS ONLY



GRPIX = 50<sub>8</sub>

7. FOR UNIVERSAL AND MISCELLANEOUS TRUNKS ONLY

GRPIX = 120<sub>8</sub>

8. A(GDP) = 3430441<sub>8</sub>

+GRPIX = 120<sub>8</sub>

A(GRP (0)) = 3430561<sub>8</sub>

9. OLD GRP DATA

C(GRP (0)) = 00406001<sub>8</sub>

C(GRP (1)) = 00000000<sub>8</sub>

C(GRP (2)) = 12353650<sub>8</sub>

C(GRP (3)) = 10200278<sub>8</sub>

Fig. 7—TSCK-9—Trunk Group Translator (Sheet 1 of 4)

TSCK-9

10. OLD GRP INFORMATION

GRP (0) PS LOC 3430561<sub>8</sub> OLD CONTENTS 0406001<sub>8</sub>  
 20 7 0  
000100000110000000001  
 LARGEST MEMBER NUMBER

GRP (1) PS LOC 3430562<sub>8</sub> OLD CONTENTS 0000000<sub>8</sub>  
 20 15 0  
000000000000000000000

GRP (2) PS LOC 3430563<sub>8</sub> OLD CONTENTS 2353650<sub>8</sub>  
 20 19 0  
010011101011110101000  
 A(CKT LIST)

GRP (3) PS LOC 3430564<sub>8</sub> OLD CONTENTS 0200273<sub>8</sub>  
 20 8 0  
00001000000000010111011

CIRCUIT STATE TABLE INDEX

LARGEST MEMBER NO. 001<sub>8</sub>  
 A(CKT LIST) 2353650<sub>8</sub>  
 CIRCUIT STATE TABLE INDEX 273<sub>8</sub>

11. IF NEW MEMBER NUMBER IS LARGER THAN LARGEST MEMBER NUMBER

NEW MEMBER NUMBER 002<sub>8</sub>  
 20 7 0  
 GRP(0) 000100000110000000010  
 LARGEST MEMBER NUMBER  
 PS LOC 3430561<sub>8</sub> NEW CONTENTS 0406002<sub>8</sub>

12. FOR UNIVERSAL AND MISCELLANEOUS TRUNKS ONLY

A(CKT LIST) = 2353650<sub>8</sub>  
 + MEMBER NUMBER = 002<sub>8</sub>  
 A(CKT MBR) = 2353652<sub>8</sub>

Fig. 7—TSCK-9—Trunk Group Translator (Sheet 2 of 4)



TSCK-9

19. FOR SERVICE CIRCUITS ONLY

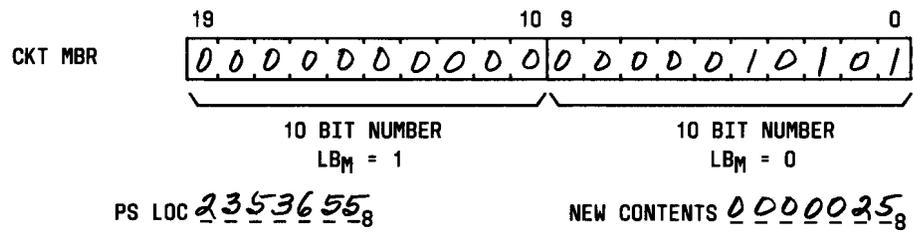


Fig. 7—TSCK-9—Trunk Group Translator (Sheet 4 of 4)



2B CHIPS TABLE

CT-2

A. TRUNK GROUP DATA MODIFICATIONS		FORM CHIPS ADDRESS RANGE (0346211) - (3430561)	
1. DATA BLOCK ENTRY (LARGEST MEMBER NUMBER)			
GRP (0) PS LOC	3430561 <sub>8</sub>	OLD CONTENTS	00406001 <sub>8</sub> NEW CONTENTS 0406002 <sub>8</sub>
2. TRUNK CIRCUIT LIST ENTRY (PRINCIPLE SPN)			
CKT MBR PS LOC	2353652 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 0002170 <sub>8</sub>
3. SERVICE CIRCUIT LIST ENTRY (10 BIT NUMBER)			
CKT MBR PS LOC	2353655 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 0000025 <sub>8</sub>
B. SCAN POINT TRANSLATION MODIFICATIONS			
1. UNIVERSAL SUBTRANSLATOR ENTRY			
USTE (0) PS LOC	0346211 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 5400010 <sub>8</sub>
USTE (1) PS LOC	0346212 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 0002352 <sub>8</sub>
2. MISCELLANEOUS TRUNK OR SERVICE CIRCUIT SUBTRANSLATOR ENTRY			
SUBTRANE (0) PS LOC	2723271 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 4052211 <sub>8</sub>
SUBTRANE (1) PS LOC	2723272 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 0012000 <sub>8</sub>
SUBTRANE (2) PS LOC	2723273 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 0406412 <sub>8</sub>
SUBTRANE (3) PS LOC	2723274 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 0104022 <sub>8</sub>
3. AUXILIARY SUBTRANSLATOR ENTRY			
AXSTE (0) PS LOC	0423762 <sub>8</sub>	OLD CONTENTS	12470000 <sub>8</sub> NEW CONTENTS 2472010 <sub>8</sub>
AXSTE (1) PS LOC	----- <sub>8</sub>	OLD CONTENTS	----- <sub>8</sub> NEW CONTENTS ----- <sub>8</sub>
C. TEN TRANSLATOR MODIFICATION			
OSTENT PS LOC	0440353 <sub>8</sub>	OLD CONTENTS	00000000 <sub>8</sub> NEW CONTENTS 0200000 <sub>8</sub>

Fig. 9—CT-2—2B Chips Table