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

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1. GENERAL

1.01 This section provides procedures to add new trunks or service circuits to the EF-2 and 2B-EF-2 generic programs of a No. 2/2B Electronic Switching System (ESS).

1.02 This section is reissued to modify the TSCK-14 and CT-1 forms and to incorporate miscellaneous changes. Since this is a general revision, change arrows ordinarily used to indicate changes have been omitted.

1.03 ***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 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 New (conventional) service order codes were adopted for use with the EF-2 and 2B-EF-2 generic programs. However, the translations can be configured with the old (No. 2 ESS unique) service order codes as an option. These old codes are common to all previous No. 2/2B ESS generic programs. The EF-2 and 2B-EF-2 generic programs can be arranged to recognize either option. In this section the term "conventional (new)" or "No. 2 ESS unique (old)" is used to identify the service order code for the keywords in each TTY input message given.

1.06 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

1.07 The purpose of this manual translation modification procedure is to add new trunks or service circuits (except tones or announcements) 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) or SD-2H183 (remote office test line), SD-2H118 (tones), or SD-2H119 (announcements) may not be added.

1.08 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 232-127-303 for No. 2 ESS and 232-327-303 for No. 2B ESS. See Section 232-127-101 for background information on manual translation modification.

GENERAL DESCRIPTION OF PROCEDURE

1.09 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

1.10 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.

1.11 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.

1.12 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 4-word entry in the miscellaneous or service circuit subtranslator.

1.13 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 entry within an auxiliary subtranslator as shown in Section 400 of PA-2H204 for No. 2 ESS offices and PA-2H205 for No. 2B ESS offices. The 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. A pointer in the auxiliary subtranslator provides the link between the scan point and its 4-word circuit entry.

1.14 The trunk group translation tables are also divided into two distinct parts as shown in Section 610 of the PA. The parts in the trunk group translation tables correspond to service circuits and trunk circuits.

1.15 Trunk circuits and service circuits have a principal scan point number that must be entered in the trunk circuit list. The principal scan point number is considered the base or reference scan point number (SPN) of the circuit. 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 number being added.

1.16 The terminal equipment number translator tables (Section 300 of the PA) 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 nonline 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-11 form is used to obtain preliminary information which will be used throughout the procedure. The procedure to obtain the required information for the TSCK-11 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-12) deals with indexing through the SPN translations to the universal subtranslator. The information to be used in the TSCK-12 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-13 and it is more involved in that a pointer to be added to an auxiliary subtranslator must also be determined. The pointer that is determined will point to the service circuit subtranslator or miscellaneous trunk subtranslator where the information identifying the circuit will be placed.

1.21 The TSCK-14 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-15 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 utilization of the procedures in this section. The size and address of each block will be read out of the No. 2 ESS program store or No. 2B ESS main store in octal in response to a TTY input message. The standard CHIPS procedure for changing program store cards or main store information requires an octal input. All address calculation and indexing

are 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 adding and subtracting in octal, binary-to-octal conversions and tables for decimal-to-octal conversion.

1.23 All the information gathered will be entered in the EF-2 Chips Table. This table will be used in performing Manual Translation Modification Procedure—Changes in Program Store Formatting, Section 232-127-303 for No. 2 ESS offices or Section 232-327-303 for No. 2B ESS offices. Formatting must be completed before performing procedures for changing program store words (Section 232-004-303 for No. 2 ESS offices or Section 232-304-303 for No. 2B ESS offices).

1.24 If the EF-2 Chips Table or necessary TSCK-11, TSCK-12, TSCK-13, TSCK-14, or TSCK-15 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-11, TSCK-12, TSCK-14, TSCK-15, and EF-2 Chips Table forms. Miscellaneous trunks require TSCK-11, TSCK-13, TSCK-14, TSCK-15, and EF-2 Chips Table forms.

1.25 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 Manual Translation Procedures—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.

1.27 PA-2H204 is the document referred to in this section as the PA when adding trunks and service circuits to a No. 2 ESS office. PA-2H205 is used when adding trunks and service circuits to a No. 2B ESS office.

1.28 Help messages are used in this section to search for a specific translation area (trunk group, scan point, or terminal equipment number) and identify the locations to be modified when adding a new circuit to the office.

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

STEP	PROCEDURE
1	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 scan point number (SPN) which has the lowest enable address within the assigned sequence. The information requested is as follows: (1) Terminal equipment number (2) Equipment location (3) Auxiliary PD point—Trunk PD enable

STEP	PROCEDURE

(4) Supervisory scan points—Designate the line or trunk function of the SPN, line = L, trunk = T

(5) Directed scan points—SPN, line = L, trunk = T

(6) Trunk order code

(7) Group member

(8) Member number.

Note: Some of the items in TSCK-11 are not required for universal trunk circuits. Leave those items blank. The completed portion of TSCK-11 applicable to universal trunk circuits is found in Fig. 3. The completed TSCK-12 form is found in Fig. 4.

2 Refer to the circuit definition table within Section 610 of the PA drawings to determine the characteristics of the circuit shown in TSCK-11, Items 1 through 3.

3 Enter the direction value of the trunk (TRK) in TSCK-11, Item 5. The values are shown in TSCK-11.

4 Enter the first SPN in TSCK-11, Item 11. 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 (trunk scanner number, row number, and column in row) from decimal to binary and enter the binary number in the format shown in TSCK-11, Item 11.

6 Convert the W_F, X_F, and LB_F of the first SPN from binary to octal and enter the octal numbers in TSCK-11, Item 11.

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-11, Item 3. Enter the principal scan point number in TSCK-11, Item 12.

Note: 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 (trunk scanner number, row number, and column in row) from decimal to binary and enter the binary number in the format shown in TSCK-11, Item 12.

9 Enter the network, concentrator group, concentrator, switch, and level obtained on ESS 2201 in TSCK-11, Item 13. Convert the decimal entry to binary.

10 Enter the binary digits in the TEN format shown in TSCK-11, Item 13.

STEP	PROCEDURE

11 Enter the trunk group and member number obtained on ESS 2201 in TSCK-11, Item 14 and 15. Convert the decimal entries to octal and binary.

12 Enter the octal and binary digits in the trunk group and member format shown in TSCK-11, Items 14 and 15.

Note: Step 13 uses a help message to provide the craftsperson with the locations within the scan point translation tables corresponding to the scan point specified. The message also checks the STC code via the output message. The keyword UTB ensures the proper STC code for universal trunks. If no data is given after the keyword, an error has been made. Do not proceed until the error is corrected.

13 At the maintenance TTY—
For offices using No. 2 ESS unique (old) code, type in:

```
A HP:G/
SPN ss rrbb/
END!
```

For offices using conventional (new) code, type in:

```
A HP:G/
SP ss rrbb/
END!
```

ss = Trunk scanner number in decimal (00-11 for No. 2 ESS) or (00-30 for No. 2B ESS) from TSCK-11, Item 11

rr = Row number in decimal (00-63) from TSCK-11, Item 11

bb = Column in row in decimal (00-15) from TSCK-11, Item 11.

The system response for offices using No. 2 ESS unique (old) code is as follows:

```
AR HP G
SPN ss rrbb
UTB aaaaaaaa cccccccc
UWD 1 aaaaaaaa cccccccc
UWD 2 aaaaaaaa cccccccc
END
```

The system response for offices using conventional (new) code is as follows:

```
AR HP G
SP ss rrbb
UTB aaaaaaaa cccccccc
UWD 1 aaaaaaaa cccccccc
```

STEP	PROCEDURE
	UWD 2 aaaaaaaa cccccccc END
13	ss rrbb = First scan point number UTB aaaaaaaa cccccccc = Address and contents of the universal subtranslator base UWD 1 aaaaaaaa cccccccc = Address and contents of universal subtranslator entry word 1 UWD 2 aaaaaaaa cccccccc = Address and contents of universal subtranslator entry word 2.
14	Enter the address and contents of UWD 1 and UWD 2 in TSCK-12, Item 1. Ensure that the contents of UWD 1 and UWD 2 are all zeros. If the contents of both words are not all zeros, an error has been made.
15	Enter the following in the binary format shown in TSCK-12, Item 2: TRK from TSCK-11, Item 5 TEN from TSCK-11, Item 13 MEMBER from TSCK-11, Item 15 GROUP from TSCK-11, Item 14.
16	Convert from binary to octal, and enter the constructed program store word UWD 1 and UWD 2 in TSCK-12, Item 2 and in the EF-2 Chips Table, Item B1 under new contents. Obtain the address of UWD 1 and UWD 2 from TSCK-12, Item 1. Enter these addresses in TSCK-12, Item 2 and in the EF-2 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	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 forms 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. The information requested is as follows: (1) Terminal equipment number (2) Equipment location

STEP	PROCEDURE

(3) Auxiliary PD point—Trunk PD enable

(4) Supervisory scan points—Designate the line or trunk function of the SPN, line = L, trunk = T

(5) Directed scan points—SPN, line = L, trunk = T

(6) Trunk order code

(7) Group member

(8) Member number.

Note: Some of the items in TSCK-11 and TSCK-13 are not required for miscellaneous trunk circuits or service circuits. Leave those items blank. The completed portion of TSCK-11 applicable to miscellaneous trunk and service circuits is found in Fig. 5. The completed TSCK-13 form is found in Fig. 6.

2 Refer to the circuit definition table within Section 610 of the PA drawings to determine the characteristics of the circuit shown in TSCK-11, Items 1 through 4.

3a If the circuit is a miscellaneous trunk—
Enter the direction of the trunk (TRK) in TSCK-11, Item 5. The values are shown in TSCK-11.

4 Enter the circuit type (CKT) in TSCK-11, Item 6. The values are shown in TSCK-11.

5 Subtract 1 from the number of PD buffers entered in TSCK-11, Item 4. Convert from decimal to binary and enter this binary number for BUF -1 in TSCK-11, Item 7.

6a If the circuit is a miscellaneous trunk—
Enter the BY number in TSCK-11, Item 8. The values are shown in TSCK-11.

7 Obtain the frame number entered on ESS 2201 and enter this number in TSCK-11, Item 9. Convert the number from decimal to binary and enter the binary number in TSCK-11, Item 9 also. If the frame number is 64 or greater, 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-11, Item 10. Convert the decimal number to binary.

9 Enter the binary numbers in the PD buffer format shown in TSCK-11, Item 10. Convert the binary format to octal and enter the octal number beside PD buffer address in TSCK-11, Item 10.

10 Enter the first scan point number in TSCK-11, Item 11. 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 direct scan point with the lowest address. This information was recorded on the ESS 2201 form.

STEP	PROCEDURE
11	Convert the first scan point (trunk scanner number, row number, and column in row) from decimal to binary and enter the binary number in the format shown in TSCK-11, Item 11.
12	Convert the W_F, X_F and LB_F of the first SPN from binary to octal and enter the octal number in TSCK-11, Item 11.
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-11, Item 3. Enter the principal scan point number in TSCK-11, Item 12. ***Note:*** 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 (trunk scanner number, row number, and column in row) from decimal to binary and enter the binary number in the format shown in TSCK-11, Item 12.
15	Enter the network, concentrator group, concentrator, switch, and level obtained on ESS 2201 in TSCK-11, Item 13. Convert the decimal entry to binary.
16	Enter the binary digits in the TEN format shown in TSCK-11, Item 13.
17	Enter the trunk group and member number obtained on ESS 2201 in TSCK-11, Item 14 and 15. Convert the decimal entries to octal and binary.
18	Enter the octal and binary digits in the trunk group and member format shown in TSCK-11, Items 14 and 15. ***Note:*** Step 19 uses a help message to provide the craftsperson with the locations within the scan point translation tables corresponding to the scan point specified. The message also checks the STC code via the output message. The keyword AS BSE ensures the proper STC code for miscellaneous trunks and service circuits. If no data is given after the keyword, an error has been made. Do not proceed until the error is corrected.
19	At the maintenance TTY— ***For offices using No. 2 ESS unique (old) code, type in:*** A HP:G/ SPN ss rrbb/ END! ***For offices using conventional (new) code, type in:*** A HP:G/ SP ss rrbb/ END!

STEP	PROCEDURE

ss = Trunk scanner number in decimal (00-11 for No. 2 ESS) or (00-30 for No. 2B ESS) from TSCK-11, Item 11

rr = Row number in decimal (00-63) from TSCK-11, Item 11

bb = Column in row in decimal (00-15) from TSCK-11, Item 11.

The system response for offices using No. 2 ESS unique (old) code is as follows:

```
AR HP G
SPN ss rrbb
AS BSE aaaaaaaa
AS ENT aaaaaaaa cccccccc
END
```

The system response for offices using conventional (new) code is as follows:

```
AR HP G
SP ss rrbb
AS BSE aaaaaaaa
AS ENT aaaaaaaa cccccccc
END
```

ss rrbb = First scan point number

AS BSE aaaaaaaa = Address of the auxiliary subtranslator base

AS ENT aaaaaaaa cccccccc = Address and contents of auxiliary subtranslator entry. This full word contains the half-word entry corresponding to the scan point specified.

20 Enter the address and octal contents of AS ENT in TSCK-13, Item 1.

21b If a No. 2 ESS office—
At the maintenance TTY—
Type in:

```
UB PS:RP:aaaaaa dddddd 2!
```

aaaaaa = Address of AS BSE (0)

dddddd = Address of AS BSE (2).

The system response will be:

```
UR PS RP aaaaaa bbbbbbbb cccccccc
UR PS RP dddddd eeeeeeee ffffffff
```

aaaaaa = Address of AS BSE (0)

STEP	PROCEDURE

bbbbbbbb = Contents of AS BSE (0)

cccccccc = Contents of AS BSE (1)

dddddd = Address of AS BSE (2)

eeeeeeee = Contents of AS BSE (2)

ffffffff = Contents of AS BSE (3).

22b At the maintenance TTY—
Type in:

UB PS:RP:aaaaaa dddddd 2!

aaaaaa = Address of AS BSE (4)

dddddd = Address of AS BSE (6).

The system response will be:

UR PS RP aaaaaa bbbbbbbb cccccccc
UR PS RP dddddd eeeeeeee ffffffff

aaaaaa = Address of AS BSE (4)

bbbbbbbb = Contents of AS BSE (4)

cccccccc = Contents of AS BSE (5)

dddddd = Address of AS BSE (6)

eeeeeeee = Contents of AS BSE (6)

ffffffff = Contents of AS BSE (7).

23c If No. 2B ESS office—
At the maintenance TTY—
Type in:

DMP:PS aa!

aa = Address of AS BSE (0).

The system response will be:

DMP PS aa
bb cc dd ee ff gg hh ii

STEP	PROCEDURE

aa = Address of AS BSE (0)

bb = Contents of AS BSE (0)

cc = Contents of AS BSE (1)

dd = Contents of AS BSE (2)

ee = Contents of AS BSE (3)

ff = Contents of AS BSE (4)

gg = Contents of AS BSE (5)

hh = Contents of AS BSE (6)

ii = Contents of AS BSE (7).

24 Enter the octal contents and address of AS BSE (0) through AS BSE (7) in TSCK-13, Item 2.

25 Convert C[AS BSE (0)], C[AS BSE (2)], C[AS BSE (4)], and C[AS BSE (6)] from octal to binary. Enter the binary contents in the formats shown in TSCK-13, Item 2.

26a If the circuit is a miscellaneous trunk—
The value of STC must be 101. Select the first word in the binary format which has STC equal to 101. If no value of STC is 101, an error has been made. Do not proceed before correcting the error. An ODA run may be necessary.

27d If the circuit is a service circuit—
The value of STC must be 010. Select the first word in the binary format which has STC equal to 010. If no value of STC is 010, an error has been made. Do not proceed before correcting the error. An ODA run may be necessary.

28 Ensure the value of bits 11 through 15 of the selected word are all zeros. If the value is not all zeros, an error has been made. Recheck A[AS BSE (0)]. If A[AS BSE (0)] is correct, call translations contact at Western Electric regional computation center.

29 Ensure that the contents of the next address after STC chosen is no more than 3777777. If the contents is more than 3777777, subtract 4000000 from the contents. Enter the number in TSCK-13, Item 3 beside A(SUBB). Note that the parity bit must also be deleted.

Note: Step 30 uses a help message in conjunction with the help message used in Step 19 when adding a miscellaneous trunk or service circuit. The first eight words of the auxiliary subtranslator contains four 2-word entries found in Step 19. These entries identify the connecting subtranslators as miscellaneous trunk or service circuit subtranslators. The second word of the 2-word entry contains the base address of the associated subtranslator table. This word which had the proper STC code was labeled as SUBB in Step 29. The

STEP	PROCEDURE

following help message will locate a free 4-word block within the specified circuit subtranslator and output the starting location.

30 At the maintenance TTY—
Type in:

```
A HP:T/
SUBB 0 bbbbbbbb/
END!
```

bbbbbbbb = Address of the SPN subtranslator base location (SUBB) entered in TSCK-13, Item 3.

The system response will be:

```
AR HP T
SUBB bbbbbbbb
SUBE aaaaaaaa iiiiiiii
END
```

bbbbbbbb = Address of SUBB

aaaaaaaa = Address of SUBE (0) [SUBE (0) is a 4-word free entry located within the circuit subtranslator whose base address is SUBB]

iiiiiiii = Octal index used within the circuit auxiliary subtranslator half-word entry and is a pointer to identify the connecting circuit subtranslator entry.

31e If the address of SUBE (0) is not given—
The subtranslator is full. Repeat Steps 26a through 31e for miscellaneous trunk circuits or Steps 27d through 31e for service circuits using next word with the proper STC code.

32 Enter the address of SUBE (0) in TSCK-13, Item 4.

33 Enter the octal index (iiiiiiii found in Step 30) in TSCK-13, Item 5.

34b If No. 2 ESS office—
At the maintenance TTY—
Type in:

```
UB PS:RP:aaaaaa dddddd 2!
```

aaaaaa = Address of SUBE (0)

dddddd = Address of SUBE (2).

STEP	PROCEDURE

The system response will be:

UR PS RP aaaaaa bbbbbbbb cccccccc
UR PS RP dddddd eeeeeeee ffffffff

aaaaaa = Address of SUBE (0)

dddddddd = Contents of SUBE (0)

cccccccc = Contents of SUBE (1)

dddddd = Address of SUBE (2)

eeeeeeee = Contents of SUBE (2)

ffffffff = Contents of SUBE (3).

35c If No. 2B ESS office—
At the maintenance TTY—
Type in:

DMP:PS aa!

aa = Address of SUBE (0).

The system response will be:

DMP PS aa
bb cc dd ee ff ff ff ff

aa = Address of SUBE (0)

bb = Contents of SUBE (0)

cc = Contents of SUBE (1)

dd = Contents of SUBE (2)

ee = Contents of SUBE (3)

ff = Contents of additional PS words, ignore.

36 Ensure that the contents of SUBE (0) through SUBE (3) is all zeros. If the contents of all words are not all zeros, an error has been made.

37 Enter the address of SUBE (0) through SUBE (3) in TSCK-13, Item 6.

38 Enter the following in the binary format shown in TSCK-13, Item 6.

STEP	PROCEDURE
38	CKT from TSCK-11, Item 6 TRK from TSCK-11, Item 5 (TRK = 00 for service circuits) TEN from TSCK-11, Item 13 BUF - 1 from TSCK-11, Item 7 BY from TSCK-11, Item 8 (BY = 0 for service circuits) MEMBER from TSCK-11, Item 15 GROUP from TSCK-11, Item 14 FRAME from TSCK-11, Item 9 SCAN POINT NUMBER from TSCK-11, Item 11 PD BUFFER ADDRESS from TSCK-11, Item 10.
39	Convert from binary to octal and enter the constructed program store words of SUBE (0) through SUBE (3) in TSCK-13, Item 6 and in the EF-2 Chips Table, Item B-2 under new contents. The address of SUBE (0) through SUBE (3) must be entered in the EF-2 Chips Table, Item B-2. All zeros should be entered under old contents.
40	Obtain the octal value of Y from TSCK-13, Item 5. Delete five leading zeros and convert this number from octal to binary and enter the binary value in the format shown for Y in TSCK-13, Item 7.
41	The L/T value in TSCK-13, Item 7 should be a 0 if the scan point is for line side supervision or a 1 for trunk side supervision. This information was entered on the ESS 2201 form. Enter the appropriate value in the format shown in TSCK-13, Item 7.
42	The HW value in TSCK-13, Item 7 is determined by the AS BSE ( ) word used in Step 29. Enter the appropriate value, which follows in the format shown in TSCK-13, Item 7.
42	AS BSE (1) = 00 AS BSE (3) = 01 AS BSE (5) = 10 AS BSE (7) = 11.
43	Obtain the address and contents of AS ENT from TSCK-13, Item 1. Enter the address and contents in TSCK-13, Item 8.
44	Convert the contents from octal to binary and enter this value in the format shown in TSCK-13, Item 8.
45	Obtain the LB_F of the scan point number from TSCK-11, Item 11. If the LB_F = 0, the data obtained in TSCK-13, Item 7 will go in the right half of the new AS ENT (0) word. If the LB_F = 1, the data will go in the left half of the word.
46	Ensure that all zeros are located in the half word of the old AS ENT (0) (TSCK-13, Item 8) in which the new data 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.

STEP	PROCEDURE

47 Using the LB_F found in Step 45, enter the data obtained in TSCK-13, Item 7 in the right half of the word AS ENT (0) if $LB_F = 0$. Enter the data in the left half of the word AS ENT (0) if $LB_F = 1$.

48 Obtain the data that was in the other half of the word from the old AS ENT (0) in TSCK-13, Item 8. Enter that binary number in the appropriate half word in the new AS ENT (0) in TSCK-13, Item 8.

Note: If the LB_F is 0 and another SPN is to be added for this circuit, enter the same information in the other half of the new AS ENT except the L/T bit should be recalculated.

49 Convert from binary to octal and enter the constructed program word [AS ENT (0)] in TSCK-13, Item 8 and the EF-2 Chips Table, Item B-3 under new contents.

50 Obtain the old contents of [(AS ENT (0)] from TSCK-13, Item 8 and enter this number in the EF-2 Chips Table, Item B-3 under old contents.

51 Obtain the address of [AS ENT (0)] from TSCK-13, Item 8. Enter this value in the EF-2 Chips Table, Item B-3.

52f If the circuit uses dc operator signaling—
The LB_F in Step 45 must be 0. In addition, AS ENT (1) must be all zeros so the word in TSCK-13, Item 9 can be written.

53f If No. 2 ESS office—
At the maintenance TTY—
Type in:

UB PS:PR:aaaaaa 0 2!

aaaaaa = Address of AS ENT (0).

The system response will be:

UR PS RP aaaaaa bbbbbbbb cccccccc

aaaaaa = Address of AS ENT (0)

bbbbbbbb = Contents of AS ENT (0)

cccccccc = Contents of AS ENT (1).

54f If No. 2B ESS office—
At maintenance TTY—
Type in:

DMP:PS aa!

aa = Address of SPTEV (0).

STEP	PROCEDURE

The system response will be:

DMP PS aa
bb cc dd dd dd dd dd dd

aa = Address of AS ENT (0)

b = Contents of AS ENT (0)

cc = Contents of AS ENT (1)

dd = Contents of additional PS word, ignore.

55f Ensure that the contents of AS ENT (1) are all zeros using the last TTY response.

56f Obtain the contents of AS ENT (1) from TSCK-13, Item 9 and enter the values in the EF-2 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 EF-2 Chips Table, Item B-3.

57 Repeat Steps 1 through 56d 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

Note: For referenced calculations, refer to Fig. 3 and 4. The completed TSCK-14 form is found in Fig. 7.

1 Obtain the octal trunk group number from TSCK-11, Item 14 and enter it in TSCK-14, Item 1.

2 Convert the octal entry to the binary format shown in TSCK-14, 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 in the PA. Enter the address of GRPTBL in TSCK-14, Item 2.

5 Calculate the sum [A(GRPTBL) + B(4-8)] and enter the value in TSCK-14, Item 2. This sum is the address of GDBPTR. B(4-8) was entered in TSCK-14, Item 1.

STEP	PROCEDURE

6a If No. 2 ESS office—
At the maintenance TTY—
Type in:

UB PS:RP:aaaaaa 0 1!

aaaaaa = Address of GDBPTR.

The system response will be:

UR PS RP aaaaaa bbbbbbbb

aaaaaa = Address of GDBPTR

bbbbbbbb = Contents of GDBPTR.

7b If No. 2B ESS office—
At the maintenance TTY—
Type in:

DMP:PS aa!

aa = Address of GDBPTR.

The system response will be:

DMP PS aa
bb dd dd dd dd dd dd dd

aa = Address of GDBPTR

bb = Contents of GDBPTR

dd = Contents of additional PS words, ignore.

8 Enter the octal contents of GDBPTR in TSCK-14, Item 3. Convert the octal value obtained into the binary format indicated in Item 3.

9 Extract the octal value of G type from TSCK-14, Item 3 and enter it in Item 4.

10 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.

Note: Step 11 uses a help message to provide the craftsperson with the location within the group translation table which may need to be modified when adding a new circuit member. The base location of the group data block and the location of the corresponding circuit list member entry are the items obtained by the output message. If appropriate address or contents is not given after either keyword, an error has been made or the

STEP	PROCEDURE

group "maximum group size" limit has been reached. (Refer to Section 232-127-312.) Do not proceed until this is corrected.

11 At the maintenance TTY—

```
A HP:G/
GRP ggg/
MBR mmm/
END!
```

ggg = Trunk Group in decimal from TSCK-11, Item 14

mmm = Member Number in decimal from TSCK-11, Item 15.

The system response will be:

```
AR HP G/
GRP ggg aaaaaaaa
MBR mmm
END
```

ggg = Trunk Group Number

mmm = Member Number

aaaaaaaa = Address of word [GRP (0)]

Note: If the third line of the system response is

MBR mmm bbbbbbbb cccccccc

bbbbbbbb = Address of word (CKT MBR)

cccccccc = Contents of Word (CKT MBR).

The Address of word (CKT MBR) should be 0, and therefore should not be printed out. See Step 23.

12 Enter the address of GRP (0) in TSCK-14, Item 5.

13a If No. 2 ESS office—
At the maintenance TTY—
Type in:

```
UB PS:RP:aaaaaa dddddd 2!
```

aaaaaa = Address of GRP (0)

dddddd = Address of GRP (2).

STEP	PROCEDURE

The system response will be:

UR PS RP aaaaaa bbbbbbbb cccccccc
UR PS RP dddddd eeeeeeee ffffffff

aaaaaa = Address of GRP (0)

bbbbbbbb = Contents of GRP (0)

cccccccc = Contents of GRP (1)

dddddd = Address of GRP (2)

eeeeeeee = Contents of GRP (2)

ffffffff = Contents of GRP (3).

14b If No. 2B ESS office—
At the maintenance TTY—
Type in:

DMP:PS aa!

aa = Address of GRP (0).

The system response will be:

DMP PS aa
bb cc dd ee ff ff ff ff

aa = Address of GRP (0)

bb = Contents of GRP (0)

cc = Contents of GRP (1)

dd = Contents of GRP (2)

ee = Contents of GRP (3)

ff = Contents of additional PS words, ignore.

15 Enter the address and contents of GRP (0) through GRP (3) into TSCK-14, Item 5. Convert the octal values of the words to the binary format in Item 5.

16 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-14, Item 5.

STEP	PROCEDURE
17	Ensure that the value of the circuit state table index is the same in TSCK-14, Item 5 and TSCK-11, Item 2. If the values are not identical, an error exists. Do not proceed until the error is corrected.
18c	If the circuit is a service circuit or incoming trunk— Bits 0 through 15 of GRP (1) must not be all zeros. If the value is all zeros, an error exists. Do not proceed until the error is corrected.
19	Obtain the octal value of the member number from TSCK-11, Item 15. Enter this value in TSCK-14, Item 6. 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-14, Item 5. 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 number, an error has been made. Do not proceed until the error is corrected.
20d	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-14, Item 5 to Item 6. Convert the octal member number to the binary format of largest member number (bits 0 through 7) in Item 6.
21d	Convert the new binary contents of GRP (0) to octal and enter the octal number in Item 6. Enter the address and new contents of GRP (0) in the EF-2 Chips Table, Item A-1. Obtain the old data of GRP (0) from TSCK-14, Item 5 and enter this number in the EF-2 Chips Table, Item A-1 under old contents.
22	Add the octal value of the member number (Item 6 of TSCK-14 form) to the value of A(CKT LIST) (Item 5 of TSCK-14 form) to find the Address of Word (CKT MBR).
23	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 translation information, Steps 15 and 16 of Part 1 or Steps 38 and 39 of Part 2.
24	Enter the address and contents of CKT MBR in TSCK-14, Item 7.
25	Obtain the binary value of the principal SPN from TSCK-11, Item 12. Enter the principal SPN in the binary format shown in TSCK-14, Item 7.
26	Convert the constructed program store word from binary to octal and enter in TSCK-14, Item 7 and in the EF-2 Chips Table, Item A-2 under new contents. Enter the address of CKT MBR in the EF-2 Chips Table, Item A-2. Enter all zeros under old contents.

5. PROCEDURE FOR UPDATING DIRECTED SCAN POINT IN TEN TRANSLATIONS

STEP	PROCEDURE

Note 1: The completed TSCK-15 form is found in Fig. 8.

Note 2: Step 1 uses a help message to identify the terminal equipment originating subtranslator entry which corresponds to the ***TEN*** specified.

1 At the maintenance TTY—

For offices using No. 2 ESS unique (old) code, type in:

```
A HP:G/
TEN nn gcsl/
END!
```

For offices using conventional (new) code, type in:

```
A HP:G/
OE nn gcsl/
END!
```

nn = The network number in decimal (0 through 14) from TSCK-11, Item 13

g = The concentrator group in decimal (0 through 7) from TSCK-11, Item 13

c = The concentrator in decimal (0 through 7) from TSCK-11, Item 13

s = The switch in decimal (0 through 7) from TSCK-11, Item 13

l = The level in decimal (0 through 3) from TSCK-11, Item 12.

The system response for offices using No. 2 ESS unique (old) code is as follows:

```
AR HP G
TEN nn gcsl
OSE aaaaaaaa cccccccc
END
```

The system response for offices using conventional (new) code is as follows:

```
AR HP G
OE nn gcsl
OSE aaaaaaaa cccccccc
END
```

STEP	PROCEDURE
	OSE aaaaaaaa cccccccc = The address and contents of the originating subtranslator entry (OSE). This is the full word of the originating subtranslator which was assigned to the terminal equipment number specified.
2	Enter the octal contents and address of OSE in TSCK-15, Item 1.
3	The contents of OSE should be all zeros. If OSE is not all zeros, an error has been made. Do not proceed before the error has been corrected.
4a	If no direct scan point is assigned to the circuit (refer to ESS 2201)— Enter all zeros in the direct scan point format shown in TSCK-15, Item 1.
5b	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-11, Item 12 in the directed scan point format shown in TSCK-15, Item 1.
6c	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 in row from ESS 2201 and enter these numbers in TSCK-15, Item 2.
7c	Convert the trunk scanner number, row number, and column in row from decimal to binary and enter the binary number in the format shown in TSCK-15, Item 2.
8c	Enter the binary value of the directed scan point number obtained in the Step 7c in the directed scan point format shown in TSCK-15, Item 1.
9	Convert the binary number to octal and enter the constructed program word in TSCK-15, Item 1 and the EF-2 Chips Table, Item C.
10	Obtain the address of OSE from TSCK-15, Item 1 and in the EF-2 Chips Table, Item C. Enter all zeros under old contents.
11	Use the information on the EF-2 Chips Table (completed EF-2 Chips Table is found in Fig. 9) to perform Manual Translation Modification Procedure Formatting Change in Program Store, Section 232-127-303 for No. 2 ESS offices or 232-327-303 for No. 2B ESS offices.

6. GLOSSARY

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

AS BSE—Auxiliary Subtranslator Base

AS ENT—Auxiliary Subtranslator Entry

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 System

FR—Frame

GDBPTR—Group Data Block Pointer

GRP—Group Pointer

GRPTBL—Group Table

G Type—Group Type

HW—Header Word

LB$_F$—Low Bit of First Scan Point Number

L/T—Line Side or Trunk Side

ODA—Office Data Administration

OPT—Option

OSE—Originating Subtranslator Entry

PA-2H204—Electronic Switching System No. 2—Office Data Table Layout Specification For Offices Equipped with the EF-2 Generic Program

PA-2H205—Electronic Switching System No. 2B—Office Data Table Layout Specification for Offices Equipped with the 2B-EF-2 Generic Program

PD—Peripheral Decoder

PS—Program Store

ROTL—Remote Office Test Line

SCKT—Special Circuit Indicator

SD—Schematic Diagram

SPN—Scan Point Number

SPTBL—Scan Point Table

SPTEV—Scan Point Translator Entry Value

STC—Subtranslator Code

SUBB—Miscellaneous Trunk or Service Circuit Subtranslator Base

SUBE—Miscellaneous Trunk or Service Circuit Subtranslator Entry

TEN—Terminal Equipment Number

TENTBL—Terminal Equipment Number Table

TG-2H—Translation Guide

TRK—Direction of Trunk

TSCK—Trunk or Service Circuit Form

UTB—Universal Subtranslator Base

UWD 1—Universal Subtranslator Entry Word 1

UWD 2—Universal Subtranslator Entry Word 2

W$_F$—W Field of First Scan Point Number

W$_F$ *2—WF Times Two

X$_F$—X Field of First Scan Point Number

Y—Octal Index of Miscellaneous Trunk or Service Circuit Subtranslator.

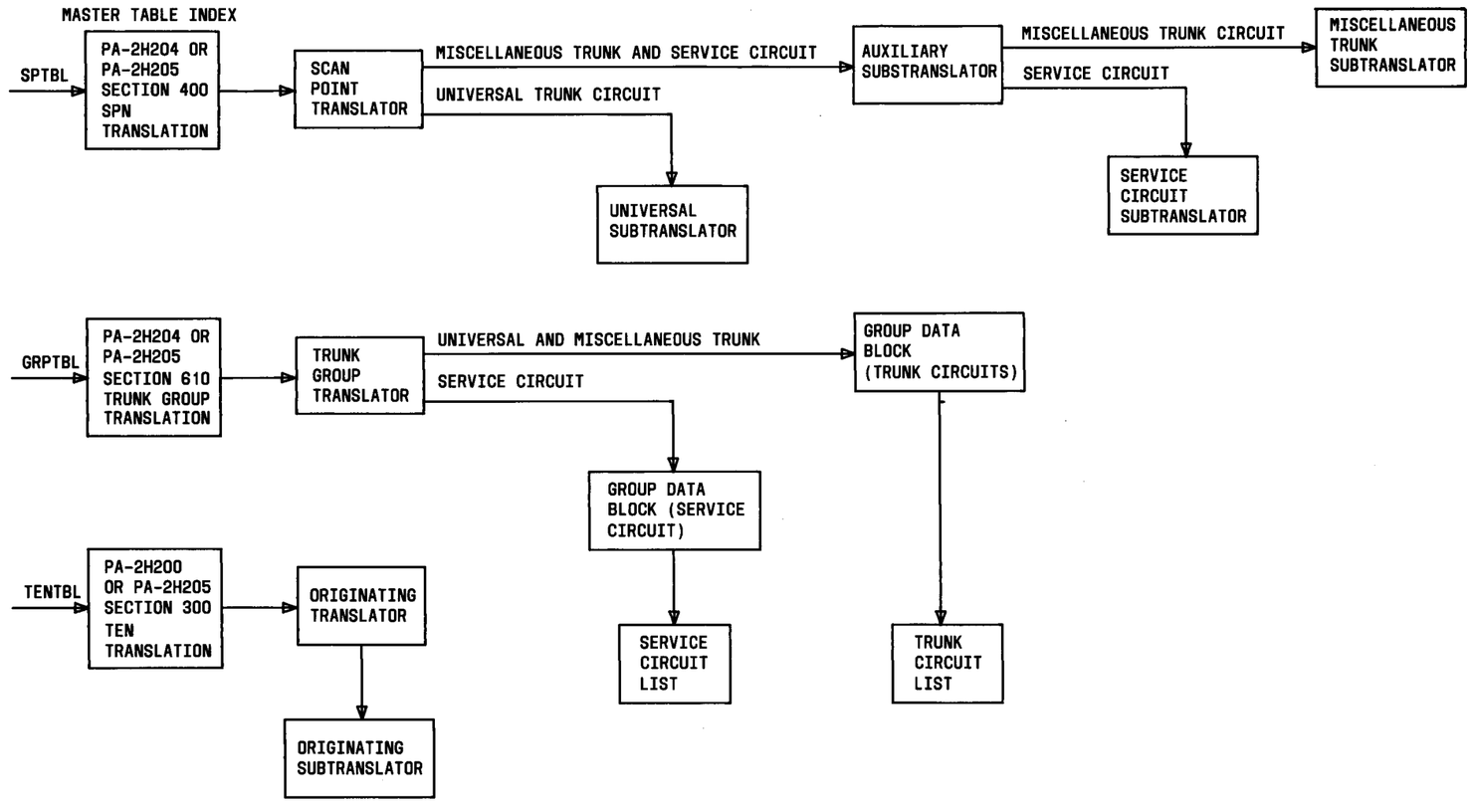

Fig. 1—Translation Tables Involved

ESS 2201-1 (05) TG-2H

TRUNK ASSIGNMENT TABLE

NO. 2 ESS

DATE 1 2 3 4 5

BASE & CONTROL 6 7 8 9 10 11

FORM CODE 21 14 15

ESS UNIT

PAGE 19 20 21 OF

ITEM	TERMINAL EQUIPMENT NUMBER					EQUIPMENT LOCATION						AUX PD POINT / TRUNK PD ENABLE					SUPERVISORY SCAN POINT				DIRECTED SCAN POINT			TRUNK ORDER CODE	OPTION	TRUNK GROUP	MEMBER	SD NUMBER	ROTL NO		REVISE
	NET	CONC GR	CONC	SWITCH	LEVEL	FR TYPE	FRAME NUMBER	UTJF BAY	HORIZONTAL MTG PLT	CKT NO.	H/M (UT)	PORT	CPD FR	NEST	CARD	POINT	BUFFER	BUF PT	TRUNK SCANNER	ROW	COL	FIELD	TRUNK SCANNER	ROW	COL								
22 23	24 25	26	27	28	29	30	31 32	33	34 35	36	37	38	39	40	41	42	43	44	45 46	47 48	49 50	51	52 53	54 55	56 57	58 62	63	64 66	67 69	70 74	75	76	80
50	00	0	0	2	0	U	02	2	24	1	H	01	7	1	6	2			01	07	08	L				15600		234	002	2H101			
51	00	0	0	2	0	U	02	2	24	1	H	01	7	1	6	2			01	07	09	T				15600		234	002	2H101			
52																																	
53																																	
54	10	4	4	2	1	7	04		10	3		02	2	1	0	1	1					L	03	16	10	61123		002	010	2H114			
55																																	
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99																																	

One line for each SPN

Fig. 2—Trunk Assignment Table

PRELIMINARY INFORMATION TSCK-11

1. CIRCUIT TYPE U
   - A. UNIVERSAL TRUNK = U
   - B. MISCELLANEOUS TRUNK = M
   - C. SERVICE CIRCUIT = S
2. CIRCUIT STATE TABLE INDEX $00\underline{1}_8$
3. PRINCIPLE SPN (OFFSET VALUE) 0
4. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY
   NUMBER OF PD BUFFERS _
5. FOR UNIVERSAL AND MISCELLANEOUS TRUNKS ONLY
   TRK = $\underline{1}\,\underline{0}_2$
   - A. NOT USED = 00
   - B. OUTGOING = 01
   - C. INCOMING = 10
   - D. TWO WAY = 11
6. 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.
7. FOR MISCELLANEOUS TRUNK AND SERVICE CIRCUITS ONLY
   BUF - 1 _ _2
8. 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
9. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY
   FRAME _ _ _10
   _ _ _ _ _ _ _ _2
   FRAME

Fig. 3—TSCK-11—Preliminary Information (Universal Trunks) (Sheet 1 of 4)

10. FOR MISCELLANEOUS TRUNK AND SERVICE CIRCUITS ONLY TSCK-11

PD BUFFER ADDRESS

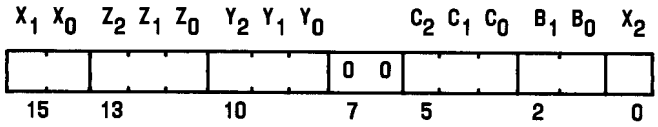
CPD FR – 10 $\overline{C_2}\ \overline{C_1}\ \overline{C_0}^2$

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 $\overline{B_1}\ \overline{B_0}^2$



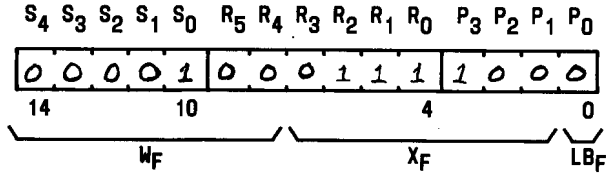
PD BUFFER ADDRESS _ _ _ _ _ _ 8

11. FIRST SCAN POINT NUMBER

TRUNK SCANNER NUMBER $\underline{0}\,\underline{1}_{10}$ $\underline{\overline{0}}\ \underline{\overline{0}}\ \underline{\overline{0}}\ \underline{\overline{0}}\ \underline{\overline{1}}_2$

ROW NUMBER $\underline{0}\,\underline{7}_{10}$ $\underline{\overline{0}}\ \underline{\overline{0}}\ \underline{\overline{0}}\ \underline{\overline{1}}\ \underline{\overline{1}}\ \underline{\overline{1}}_2$

COLUMN IN ROW $\underline{0}\,\underline{8}_{10}$ $\underline{\overline{1}}\ \underline{\overline{0}}\ \underline{\overline{0}}\ \underline{\overline{0}}_2$



$W_F = \underline{0}\,\underline{0}\,\underline{4}_8$

$X_F = \underline{0}\,\underline{7}\,\underline{4}_8$

$LB_F = \underline{0}$

Fig. 3—TSCK-11—Preliminary Information (Universal Trunks) (Sheet 2 of 4)

12. PRINCIPLE SCAN POINT NUMBER

TSCK-11

TRUNK SCANNER NUMBER 01_{10} $\overline{0}\ \overline{0}\ \overline{0}\ \overline{0}\ \overline{1}$ ($\overline{S_4}\ \overline{S_3}\ \overline{S_2}\ \overline{S_1}\ \overline{S_0}$)

ROW NUMBER 07_{10} $\overline{0}\ \overline{0}\ \overline{0}\ \overline{1}\ \overline{1}\ \overline{1}$ ($\overline{R_5}\ \overline{R_4}\ \overline{R_3}\ \overline{R_2}\ \overline{R_1}\ \overline{R_0}$)

COLUMN IN ROW 08_{10} $\overline{1}\ \overline{0}\ \overline{0}\ \overline{0}$ ($\overline{P_3}\ \overline{P_2}\ \overline{P_1}\ \overline{P_0}$)

S_4	S_3	S_2	S_1	S_0	R_5	R_4	R_3	R_2	R_1	R_0	P_3	P_2	P_1	P_0
0	0	0	0	1	0	0	0	1	1	1	1	0	0	0
14				10						4				0

13. TERMINAL EQUIPMENT NUMBER

NETWORK 00_{10} $\overline{0}\ \overline{0}\ \overline{0}\ \overline{0}$ ($\overline{N_3}\ \overline{N_2}\ \overline{N_1}\ \overline{N_0}_2$)

CONCENTRATOR GROUP 0_{10} $\overline{0}\ \overline{0}\ \overline{0}$ ($\overline{G_2}\ \overline{G_1}\ \overline{G_0}_2$)

CONCENTRATOR 0_{10} $\overline{0}\ \overline{0}\ \overline{0}$ ($\overline{C_2}\ \overline{C_1}\ \overline{C_0}_2$)

SWITCH 2_{10} $\overline{0}\ \overline{1}\ \overline{0}$ ($\overline{S_2}\ \overline{S_1}\ \overline{S_0}_2$)

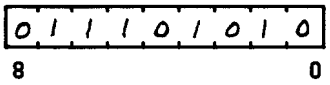
LEVEL 0_{10} $\overline{0}\ \overline{0}$ ($\overline{L_1}\ \overline{L_0}_2$)

N_3	N_2	N_1	N_0	G_2	G_1	G_0	C_2	C_1	C_0	S_2	S_1	S_0	L_1	L_0
0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
14			11			8			5			2		0

Fig. 3—TSCK-11—Preliminary Information (Universal Trunks) (Sheet 3 of 4)

TSCK-11

14. TRUNK GROUP 234$_{10}$ 352$_{8}$



15. MEMBER 002$_{10}$ 002$_{8}$

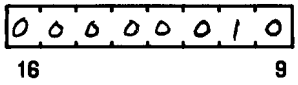


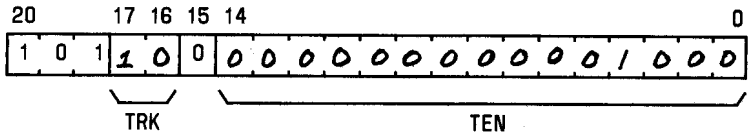
Fig. 3—TSCK-11—Preliminary Information (Universal Trunks) (Sheet 4 of 4)

SPN TRANSLATOR (UNIVERSAL TRUNKS) TSCK-12

1. UWD 1 PS LOC 00346211_8 OLD CONTENTS 00000000_8

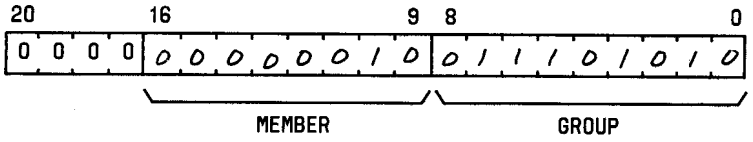
   UWD 2 PS LOC 00346212_8 OLD CONTENTS 00000000_8

2. UWD 1



PS LOCATION 03462118 NEW CONTENTS 54000108

UWD 2



PS LOCATION 03462128 NEW CONTENTS 00023528

Fig. 4—TSCK-12—SPN Translator (Universal Trunks)

PRELIMINARY INFORMATION TSCK-11

1. CIRCUIT TYPE 5
   - A. UNIVERSAL TRUNK = U
   - B. MISCELLANEOUS TRUNK = M
   - C. SERVICE CIRCUIT = S
2. CIRCUIT STATE TABLE INDEX 050_8
3. PRINCIPLE SPN (OFFSET VALUE) 0
4. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY
   NUMBER OF PD BUFFERS 1
5. FOR UNIVERSAL AND MISCELLANEOUS TRUNKS ONLY
   TRK = - -2
   - A. NOT USED = 00
   - B. OUTGOING = 01
   - C. INCOMING = 10
   - D. TWO WAY = 11
6. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY
   CKT 100_2
   NOTE: MISCELLANEOUS CIRCUITS INCLUDE SERVICE CIRCUITS AND MISCELLANEOUS TRUNKS OTHER THAN A AND C.
   - A. E & M BYLINK TRUNK = 011
   - B. MISCELLANEOUS CIRCUIT = 100
   - C. BYLINK TRUNK = 111
7. FOR MISCELLANEOUS TRUNK AND SERVICE CIRCUITS ONLY
   BUF - 1 00_2
8. 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
9. FOR MISCELLANEOUS TRUNKS AND SERVICE CIRCUITS ONLY
   FRAME 004_{10}
   $000001\underbrace{00}_{\text{FRAME}}{}_2$

Fig. 5—TSCK-11—Preliminary Information (Miscellaneous Trunks and Service Circuits) (Sheet 1 of 4)

10. FOR MISCELLANEOUS TRUNK AND SERVICE CIRCUITS ONLY TSCK-11

PD BUFFER ADDRESS

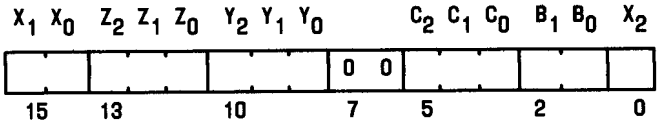
CPD FR – 10 $\overline{C_2}\ \overline{C_1}\ \overline{C_0}^2$

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 $\overline{B_1}\ \overline{B_0}^2$



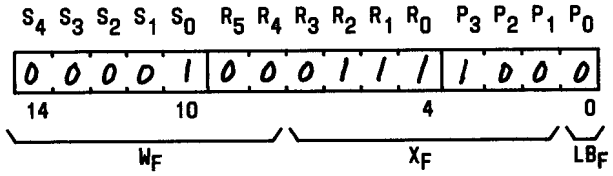
PD BUFFER ADDRESS _ _ _ _ _ _ 8

11. FIRST SCAN POINT NUMBER

TRUNK SCANNER NUMBER $\underline{0}\ \underline{1}_{10}$ $\overline{0}\ \overline{0}\ \overline{0}\ \overline{0}\ \overline{1}_2$ ($\overline{S_4}\ \overline{S_3}\ \overline{S_2}\ \overline{S_1}\ \overline{S_0}$)

ROW NUMBER $\underline{0}\ \underline{7}_{10}$ $\overline{0}\ \overline{0}\ \overline{0}\ \overline{1}\ \overline{1}\ \overline{1}_2$ ($\overline{R_5}\ \overline{R_4}\ \overline{R_3}\ \overline{R_2}\ \overline{R_1}\ \overline{R_0}$)

COLUMN IN ROW $\underline{0}\ \underline{8}_{10}$ $\overline{1}\ \overline{0}\ \overline{0}\ \overline{0}_2$ ($\overline{P_3}\ \overline{P_2}\ \overline{P_1}\ \overline{P_0}$)



$W_F = \underline{0}\ \underline{0}\ \underline{4}_8$

$X_F = \underline{0}\ \underline{7}\ \underline{4}_8$

$LB_F = \underline{0}$

Fig. 5—TSCK-11—Preliminary Information (Miscellaneous Trunks and Service Circuits) (Sheet 2 of 4)

12. PRINCIPLE SCAN POINT NUMBER

TSCK-11

TRUNK SCANNER NUMBER	03_{10}	$\frac{0}{S_4}\ \frac{0}{S_3}\ \frac{0}{S_2}\ \frac{1}{S_1}\ \frac{1}{S_0}$
ROW NUMBER	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 IN ROW	10_{10}	$\frac{1}{P_3}\ \frac{0}{P_2}\ \frac{1}{P_1}\ \frac{0}{P_0}$

S_4	S_3	S_2	S_1	S_0	R_5	R_4	R_3	R_2	R_1	R_0	P_3	P_2	P_1	P_0
0	0	0	1	1	0	1	0	0	0	0	1	0	1	0

14 10 4 0

13. TERMINAL EQUIPMENT NUMBER

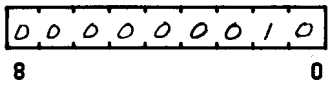
NETWORK	10_{10}	$\frac{1}{N_3}\ \frac{0}{N_2}\ \frac{1}{N_1}\ \frac{0}{N_0}_2$
CONCENTRATOR GROUP	4_{10}	$\frac{1}{G_2}\ \frac{0}{G_1}\ \frac{0}{G_0}_2$
CONCENTRATOR	4_{10}	$\frac{1}{C_2}\ \frac{0}{C_1}\ \frac{0}{C_0}_2$
SWITCH	2_{10}	$\frac{0}{S_2}\ \frac{1}{S_1}\ \frac{0}{S_0}_2$
LEVEL	1_{10}	$\frac{0}{L_1}\ \frac{1}{L_0}_2$

N_3	N_2	N_1	N_0	G_2	G_1	G_0	C_2	C_1	C_0	S_2	S_1	S_0	L_1	L_0
1	0	1	0	1	0	0	1	0	0	0	1	0	0	1

14 11 8 5 2 0

Fig. 5—TSCK-11—Preliminary Information (Miscellaneous Trunks and Service Circuits) (Sheet 3 of 4)

14. TRUNK GROUP 002_{10} 002_{8} TSCK-11



15. MEMBER 010_{10} 012_{8}

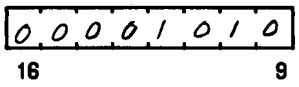
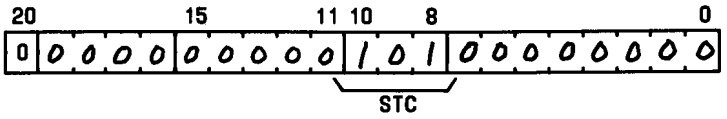


Fig. 5—TSCK-11—Preliminary Information (Miscellaneous Trunks and Service Circuits) (Sheet 4 of 4)

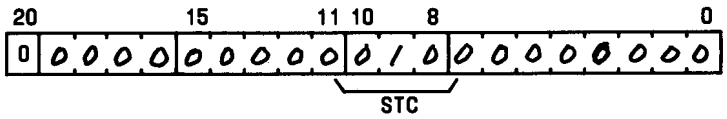
TSCK-13

SPN TRANSLATOR (MISCELLANEOUS TRUNK AND SERVICE CIRCUITS)

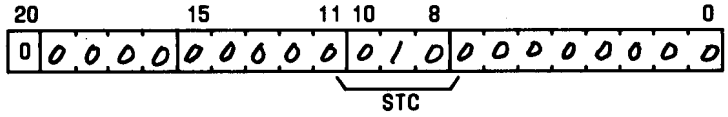
1. A(AS ENT) = 00423777_8
   C(AS ENT) = 12470000_8
2. AS BSE (0) PS LOC 00423762_8 OLD CONTENTS 00002400_8



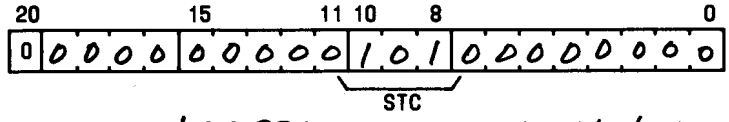
AS BSE (1) PS LOC 00423763_8 OLD CONTENTS 12246321_8
AS BSE (2) PS LOC 00423764_8 OLD CONTENTS 00001000_8



AS BSE (3) PS LOC 00423765_8 OLD CONTENTS 12401104_8
AS BSE (4) PS LOC 00423766_8 OLD CONTENTS 00001000_8



AS BSE (5) PS LOC 00423767_8 OLD CONTENTS 02726130_8
AS BSE (6) PS LOC 00423760_8 OLD CONTENTS 00002400_8



AS BSE (7) PS LOC 00423771_8 OLD CONTENTS 13117423_8

3. A(SUBB) 27231600_8
4. A(SUBE (0)) 32332717_8
5. Y 00000022_8

Fig. 6—TSCK-13—SPN Translator (Miscellaneous Trunks and Service Circuits) (Sheet 1 of 3)

TSCK-13

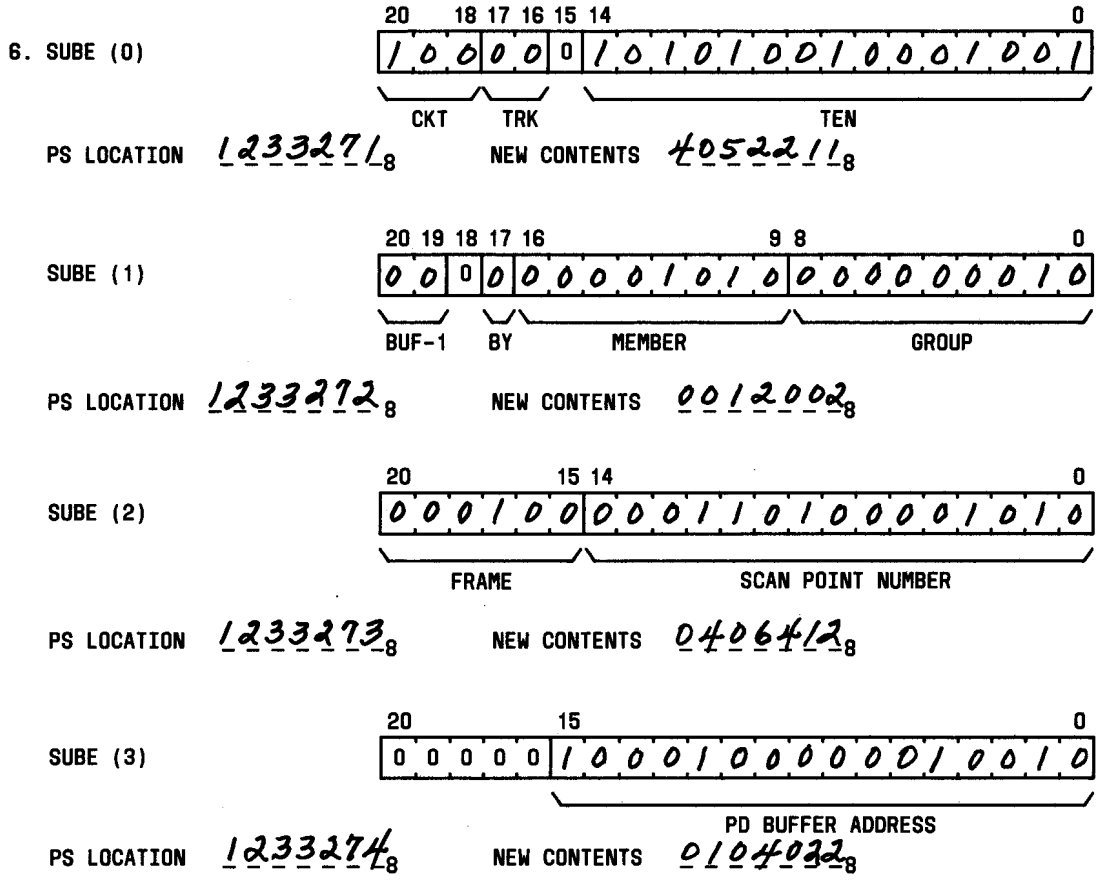
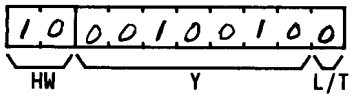


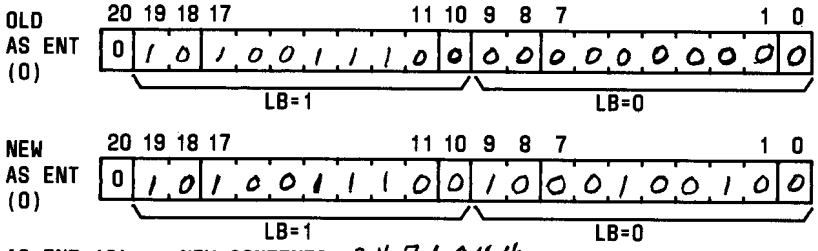
Fig. 6—TSCK-13—SPN Translator (Miscellaneous Trunks and Service Circuits) (Sheet 2 of 3)

TSCK-13

7.



8. P.S. LOC 042376_8 OLD CONTENTS 12470000_8



AS ENT (0) NEW CONTENTS 34710448

9. REQUIRED FOR DC SIGNALING ONLY

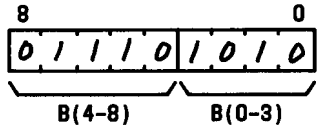
C(AS ENT (1)) 740001_8

Fig. 6—TSCK-13—SPN Translator (Miscellaneous Trunks and Service Circuits) (Sheet 3 of 3)

TSCK-14

TRUNK GROUP TRANSLATOR

1. TRUNK GROUP _ _ -8



B(4-8) = 16_8

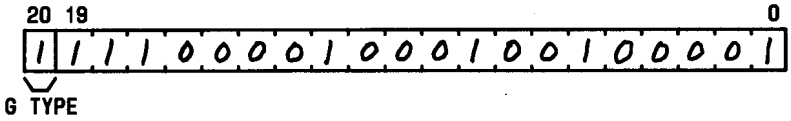
B(0-3) = 12_8

2. A(GRPTBL) = 0341145_8

+B(4-8) = 16_8

A(GDBPTR) = 0341163_8

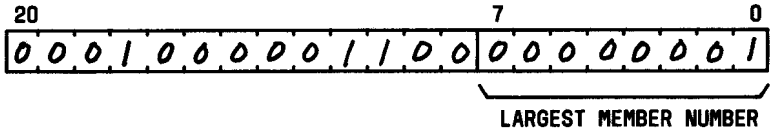
3. GDBPTR OLD CONTENTS 17430441



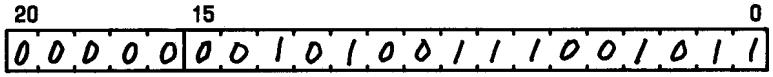
4. G TYPE = _-8

5. OLD GRP INFORMATION

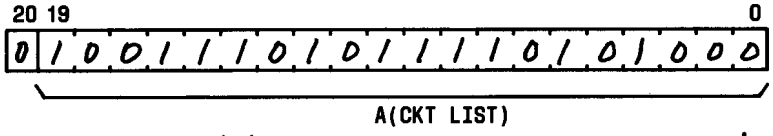
GRP (0) PS LOC 1303561_8 OLD CONTENTS 00406001_8



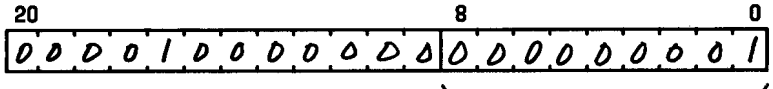
GRP (1) PS LOC 1303562_8 OLD CONTENTS 00024713_8



GRP (2) PS LOC 1303563_8 OLD CONTENTS 12353650_8



GRP (3) PS LOC 1303564_8 OLD CONTENTS 00200001_8



LARGEST MEMBER NO. 001_8

A(CKT LIST) 12353650_8

CIRCUIT STATE TABLE INDEX 001_8

Fig. 7—TSCK-14—Trunk Group Translator (Sheet 1 of 2)

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

NEW MEMBER NUMBER 002_8

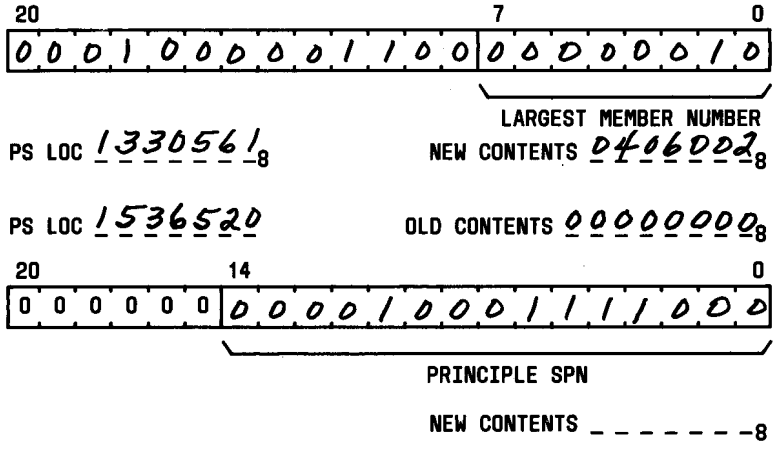
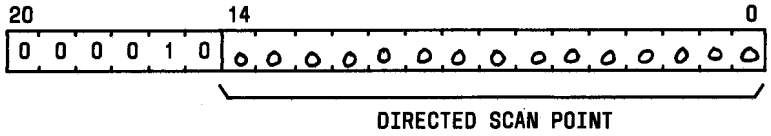


Fig. 7—TSCK-14—Trunk Group Translator (Sheet 2 of 2)

TEN TRANSLATOR

1. OSE PS LOC 00044343_8 OLD CONTENTS 00000000_8



NEW CONTENTS 02000008

2. FOR CIRCUITS WHICH HAVE BOTH DIRECTED AND SUPERVISORY SCAN POINTS

DIRECTED SCAN POINT NUMBER

TRUNK SCANNER NUMBER	- -10		$\overline{S_4}$	$\overline{S_3}$	$\overline{S_2}$	$\overline{S_1}$	$\overline{S_0}$
ROW NUMBER	- -10	$\overline{R_5}$	$\overline{R_4}$	$\overline{R_3}$	$\overline{R_2}$	$\overline{R_1}$	$\overline{R_0}$
COLUMN IN POINT	- -10			$\overline{P_3}$	$\overline{P_2}$	$\overline{P_1}$	$\overline{P_0}$

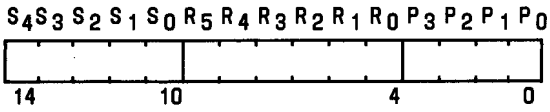


Fig. 8—TSCK-15—TEN Translator

EF-2 CHIPS TABLE CT-1

A. TRUNK GROUP DATA MODIFICATIONS FORM CHIPS ADDRESS RANGE (0346211) – (1233274)

1. DATA BLOCK ENTRY (LARGEST MEMBER NUMBER)

GRP (0) PS LOC 1330561_8 OLD CONTENTS 00406001_8 NEW CONTENTS 04060002_8

2. CIRCUIT LIST ENTRY (PRINCIPLE SPN)

CKT MBR PS LOC 3536520_8 OLD CONTENTS 00000000_8 NEW CONTENTS 00021700_8

B. SCAN POINT TRANSLATION MODIFICATIONS

1. UNIVERSAL SUBTRANSLATOR ENTRY

UWD 1 PS LOC 0346211_8 OLD CONTENTS 00000000_8 NEW CONTENTS 54000100_8

UWD 2 PS LOC 0346212_8 OLD CONTENTS 00000000_8 NEW CONTENTS 00023520_8

2. MISCELLANEOUS TRUNK OR SERVICE CIRCUIT SUBTRANSLATOR ENTRY

SUBE (0) PS LOC 1233271_8 OLD CONTENTS 00000000_8 NEW CONTENTS 45522110_8

SUBE (1) PS LOC 1233272_8 OLD CONTENTS 00000000_8 NEW CONTENTS 00120020_8

SUBE (2) PS LOC 1233273_8 OLD CONTENTS 00000000_8 NEW CONTENTS 04064120_8

SUBE (3) PS LOC 1233274_8 OLD CONTENTS 00000000_8 NEW CONTENTS 01040220_8

3. AUXILIARY SUBTRANSLATOR ENTRY

AS ENT (0) PS LOC 0423767_8 OLD CONTENTS 12470000_8 NEW CONTENTS 24710440_8

AS ENT (1) PS LOC _____-8 OLD CONTENTS _____-8 NEW CONTENTS _____-8

C. TEN TRANSLATOR MODIFICATION

OSE PS LOC 0440343_8 OLD CONTENTS 00000000_8 NEW CONTENTS 02000000_8

Fig. 9—CT-1—EF-2 Chips Table