

**ALLOCATING NEW CARRIER GROUP TABLE
MANUAL TRANSLATION MODIFICATION PROCEDURE
EF-1 AND 2B-EF-1
NO. 2/2B ELECTRONIC SWITCHING SYSTEM**

	CONTENTS	PAGE	
			1. GENERAL
1.	GENERAL	1	1.01 This section provides the procedures for allocating a new carrier group table when the scan point number (SPN) is given for a No. 2/2B Electronic Switching System (ESS) equipped with an EF-1 or a 2B-EF-1 generic program.
2.	DESCRIPTION	2	1.02 This section is reissued to incorporate changes resulting from field evaluation and to upgrade the rating to AT&TCo Standard. Since this is a general revision, no revision arrows have been used to denote significant changes.
3.	PROCEDURES FOR ALLOCATING A NEW CARRIER GROUP TABLE FOR EF-1 GENERIC	2	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 scheduling of an office data administration (ODA) update is not feasible.</i>
4.	PROCEDURES FOR ALLOCATING A NEW CARRIER GROUP TABLE FOR 2B-EF-1 GENERIC	8	1.04 The ODA update procedures can be performed with greater accuracy due to the inherent error check in the ODA routines. 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. <i>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.</i>
Figures			1.05 The ability to add and subtract in octal and binary is essential in performing the procedure in this section. The addresses and data read from the program stores in response to a TTY input
1.	Carrier Group Number Translations for No. 2 ESS With EF-1 Generic	21	
2.	Carrier Group Number Translations for No. 2B ESS With 2B-EF-1 Generic	23	
3.	Example of Completed CGN-1 Form	25	
4.	Example of Completed CGN-2 Form	27	
5.	Reproducible CGN-1 Form	31	
6.	Reproducible CGN-2 Form	33	
7.	Reproducible GNX-1 Form	37	
Tables			
A.	Table Size Indicators	16	

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SECTION 232-127-316

message are in octal. All address calculation and indexing is done by octal addition and subtraction. 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 conversions.

1.06 Parity will not be calculated in this section for words where the parity bit is the most significant bit. In these cases, parity will be calculated when the procedures in Section 232-127-303 or Section 232-327-303 are performed.

1.07 The Input Message Manual (IM-2H200) and the Output Message Manual (OM-2H200) may be required to interpret TTY messages.

2. DESCRIPTION

2.01 The procedures in this section provide a method for allocating a new carrier group table from spare translation memory when the scan point number is given.

2.02 For systems with the No. 2 EF-1 generic (Fig. 1), the procedures in this section will concern the following translations:

- SPTBL Master Table Index (MTI) entry
- Scan Point Translator
- Scan Point Auxiliary Subtranslator

- Carrier Group Member Table
- CGNTBL MTI entry
- Carrier Group Number (CGN) Table.

2.03 For systems using the 2B-EF-1 generic (Fig. 2), the procedures in this section will concern the following translations:

- SPNPTR MTI entry
- SPTBL MTI entry
- Scan Pointer Translator
- Scan Pointer Auxiliary Subtranslator
- SPN Pointer Table
- Carrier Group Member List
- CGNTBL MTI entry
- Carrier Group Number Table.

3. PROCEDURES FOR ALLOCATING A NEW CARRIER GROUP TABLE FOR EF-1 GENERIC

3.01 To add a new carrier group table in a system with the EF-1 generic, perform the following procedure:

STEP	PROCEDURE
1	Provide a complete description of the new carrier group table by filling out form ESS 2216-1. A copy of the ESS 2216-1 and complete instructions are contained in the TG-2H Translation Guide.
2	Record the scan point number (SPN) associated with the carrier group and the carrier group number on the CGN-1 form (Fig. 3 and 5) in items 1(a) and 1(b).
3	Convert the carrier group number to octal and record in item 1(c).
4	Convert the SPN to binary and record the result in item 2.
5	Convert the sections of the binary number labeled W and X into octal. Record the results in item 3.

STEP	PROCEDURE
6	<p>Perform a program store read at the address in item 4 and record the contents in item 5. Use the following input message to perform the read:</p> <p>At the maintenance TTY—</p> <p>Type in:</p> <p>UB PS:RP:aaaaaa 0 1!</p> <p>where aaaaaa = address of SPTBL.</p> <p>The system response will be:</p> <p>UR PS RP aaaaaa bbbbbbbb</p> <p>where aaaaaa = address of SPTBL</p> <p>and bbbbbbbb = contents of SPTBL.</p>
7	<p>The six least significant digits of the contents at the address read in the previous step are the octal starting address of the scan point translator. Record this address in item 6.</p>
8	<p>Add the octal value for W in item 3 to the octal address in item 6. Record the sum in item 7(a).</p>
9	<p>Perform a program store read at the address in item 7(a).</p> <p>At the maintenance TTY—</p> <p>Type in:</p> <p>UB PS:RP:aaaaaa 0 1!</p> <p>where aaaaaa = address in item 7(a).</p> <p>The system response will be:</p> <p>UR PS RP aaaaaa bbbbbbbb</p> <p>where aaaaaa = address in item 7(a)</p> <p>and bbbbbbbb = contents of address in item 7(a).</p>
	<p>Record the contents in item 7(b). The seventh octal digit from the least significant digit is the subtranslator code (STC) and must be a one. Do not proceed unless it is.</p>
10	<p>The six least significant digits of item 7(b) are the octal starting address of the auxiliary subtranslator. Copy the six digits into item 8.</p>

STEP	PROCEDURE
11	<p>The address of the word in the subtranslator which contains the address of the carrier group member table is calculated by using the following formula:</p> $\text{ADR} = \text{item 8} + X + 2$ <p>X = octal value of X in item 3.</p> <p>Record the resulting address in item 9(a).</p>
12	<p>Perform a program store read at the address in item 9(a) and record the contents in item 9(b).</p> <p>At the maintenance TTY—</p> <p>Type in:</p> <p>UB PS:RP:aaaaaa 0 1!</p> <p>where aaaaaa = address in item 9(a).</p> <p>The system response will be:</p> <p>UR PS RP aaaaaa bbbbbbbb</p> <p>where aaaaaa = address in item 9(a)</p> <p>and bbbbbbbb = contents of address in item 9(a).</p>
13	<p>Use the procedures in Section 232-127-302 to allocate 50 words of translation store for a carrier group member table.</p>
14	<p>Record the starting address of the allocated carrier group member table in item 10. The starting address must be at an even-numbered location.</p>
15	<p>If the least significant bit of the scan point number is 0, record the address of item 10 in item 11(a). If the least significant bit of the scan point number is a 1, add 31 octal to the address in item 10 and record in item 11(a).</p>
16	<p>Add 1 to the address in item 11(a) and record in item 9(c).</p>
17	<p>Perform a program store read at the address in item 11(a).</p> <p>At maintenance TTY—</p> <p>Type in:</p> <p>UB PS:RP aaaaaa 0 1!</p> <p>where aaaaaa = address in item 11(a).</p>

STEP	PROCEDURE
	<p>The system response will be:</p> <p>UR PS RP aaaaaa bbbbbb</p> <p>where aaaaaa = address in item 11(a)</p> <p>and bbbbbb = contents of address in item 11(a).</p>
18	Record the contents of address in item 11(a) in item 11(b).
19	Copy the carrier group number from item 1(c) into item 11(c).
20	Perform a 2-word program store read at the address in item 13(a).
	<p>At maintenance TTY—</p> <p>Type in:</p> <p>UB PS:RP:aaaaaa!</p> <p>where aaaaaa = CGNTBL address in item 13(a).</p> <p>The system response will be:</p> <p>UR PS RP aaaaaa bbbbbb cccccc</p> <p>where aaaaaa = address in item 13(a)</p> <p>bbbbbb = contents of address in item 13(a)</p> <p>ccccc = contents of address in item 13(d).</p>
21	Record the contents of the address in item 13(a) in item 13(b) and the contents of the address in item 13(d) in item 13(e).
22	Use Table A to determine the size of the carrier group number table. To do this, locate the six most significant digits from item 13(b) in Table A and record the decimal number associated with it in item 14.
23	If item 14 is greater than item 1(b), copy the six least significant digits of item 13(e) into item 15 and proceed to Step 37; if not, continue.
24	Use the procedures in Section 232-127-302 to allocate a new carrier group number table. Use the size from item 1(c). Record starting address in item 13(f) and in item 15.
25	Obtain a GNX-1 form (Fig. 7) and circle NEW at top of form. Record the allocated table start address at the START location of GNX-1 form.

STEP	PROCEDURE
26	Perform a program store read of the new carrier group number table and record the contents as initial contents on the GNX-1 form. Use the following message: At maintenance TTY— Type in: UB PS:RP: aaaaaa bbbbbb! where aaaaaa = octal starting at item 15; increment by octal four for each read. bbbbbb = octal address aaaaaa plus octal 2.
27	Obtain another GNX-1 form and circle OLD at top of form.
28	Record the start address from item 13(e) at START location of GNX-1 form.
29	Perform a program store read and record as initial contents on the form. Use the following message: At maintenance TTY— Type in: UB PS:RP: aaaaaa bbbbbb! when aaaaaa = octal address starting with item 13(e); increment by octal four for each read. bbbbbb = octal address aaaaaa plus two. The length of the table is located in item 14.
30	Copy the initial contents from the GNX-1 form marked OLD as the new contents of the GNX-1 form marked NEW.
31	Record all zeros as the new contents of the GNX-1 form marked OLD.
32	Use Table A to determine the new table size indicator word. To do this, locate the decimal number of the carrier group number of item 1(b) in Table A and record the six most significant digits of the corresponding number in item 16.
33	Convert item 16 to binary and record in bits 6 through 21 of item 17.
34	If the number of words in the carrier group number is an integral power of two (ie, equal to 1, 2, 4, 8, 16, 32, 64 or 128), set the bit labeled R of the binary word in item 17 to zero. If the carrier group number is not an integral power of two, set R to one.
35	Since the parity bit of the binary word in item 17 is bit 4, a check must be made for even parity and the parity bit set to a one or zero.

STEP	PROCEDURE
	<p>Example:</p> <p>Given the binary word</p> <p>1 111 111 110 010 100 1_0 001</p> <p>Count the number of ones to obtain an odd or even number. In this example, there are thirteen ones. Since thirteen is an odd number and even parity is desired, the parity bit must be set to one. Therefore, the word corrected for parity gives</p> <p>1 111 111 110 010 100 110 001.</p>
36	To obtain the new octal word to be entered as the first word of CGNTBL address, convert item 17 from binary to octal and record the result in item 13(c).
37	Add carrier group number, item 1(c), to item 15 and record in item 18(a).
38	Perform a program store read at the address of item 18(a).
	At maintenance TTY—
	Type in:
	UB PS:RP: aaaaaa 0 !!
	aaaaaa = address in item 18(a).
	The system response will be:
	UR PS RP aaaaaa bbbbbbbb
	aaaaaa = address in item 18(a)
	bbbbbbbb = contents of address in item 18(a).
39	Record the contents of item 18(a) in item 18(b).
40	Construct the new word for the carrier group number table by converting the binary scan point number in item 2 to octal and recording it in item 18(c).
41	In order to implement the CHIPS procedures, the data must be arranged in CHIPS format. The GNX-1 form is already arranged in CHIPS format. Data on the CGN-1 form that may require CHIPS procedure is located in the following items:
	Item 9
	Item 11

STEP	PROCEDURE
Item 13	
Item 18.	
42	The data in each item on the CGN-1 form may be transferred to a separate GNX-1 form in order to better arrange the data for CHIPS procedure. When all forms are completed, implement the changes using procedures in Section 232-127-303.

4. PROCEDURES FOR ALLOCATING A NEW CARRIER GROUP TABLE FOR 2B-EF-1 GENERIC

4.01 To allocate a new carrier group table in a system with the 2B-EF-1 generic, perform the following procedure:

STEP	PROCEDURE
1	Provide a complete description of the new carrier group table by filling out ODA form ESS 2216-1. A copy of ESS 2216-1 and complete instructions are contained in the TG-2H Translation Guide.
2	Record the scan point number (SPN) associated with the carrier group and the carrier group number on the CGN-2 form (Fig. 4 and 6) in item 1(a) and item 1(b).
3	Convert the CGN to octal and record in item 1(c).
4	Convert the SPN to binary and record the result in item 2.
5	Convert the sections of the binary number labeled W and X into octal and record the results in item 3.
6	Perform a program store read at the address in item 4 and record the contents in item 5. Use the following input message to perform the read: At the maintenance TTY— Type in: DMP:PS aa! where aa = SPTBL address in item 4.
7	(a) The seven least significant digits of the contents read out from the address are the octal starting address of the scan point translator. Record this address in item 6(a).

STEP	PROCEDURE
	<p>(b) Convert the octal value of W in item 3 to binary and record in item 6(b).</p> <p>(c) Convert item 6(b) to octal and record the result in item 6(c).</p> <p>(d) Add the octal value in item 6(c) to the address in item 6(a).</p> <p>(e) Record the sum in item 7(a).</p>
8	Increment the address in item 7(a) by one and record the resulting address in item 7(c).
9	Perform a program store read at the address in item 7(a). Use the following message: At maintenance TTY— Type in: DMP:PS aa! aa = address in item 7(a). Record the contents of the first two words in item 7(b) and item 7(d). The octal contents of the first word should be 10000400. Do not proceed if it is not.
10	The seven least significant digits of item 7(d) are the octal starting address of the auxiliary subtranslator. Copy the seven digits in item 8.
11	Calculate the address of the word in the auxiliary subtranslator that contains the SPN pointer table index (SPTI) by using the following formula: $\text{ADR} = \text{item 8} + X + 2$ where X = octal value of X in item 3. Record the resulting address in item 9(a).
12	Perform a program store read at the address in item 9(a) using the following message: At maintenance TTY— Type in: DMP:PS aa! where aa = address in item 9(a). Record the contents of the address in item 9(b).
13	If item 9(b) is not all zeros, proceed to Step 14. If item 9(b) is all zeros, proceed to Step 15.

STEP	PROCEDURE
14	<p>Calculate the value of the SPTI by completing item 10 of the CGN-2 form.</p> <p>(a) First, make sure that the seventh through fourth octal digits from the least significant digit of item 9(b) are 4000.</p> <p>(b) Subtract one from Z of item 9 and record the result in item 10(a).</p> <p>(c) Add the value of the L/T bit from item 2 to item 10(a). Record the sum in item 10(b).</p>
15	<p>Perform a 2-word program store read at the addresses of item 11(a) and item 11(d) using the following input message:</p> <p>At maintenance TTY—</p> <p>Type in:</p> <p>DMP:PS aa!</p> <p>where aa = address in item 11(a).</p> <p>Record the contents of the first word in item 11(b). Record the contents of the second word in item 11(e).</p>
16	<p>The seven least significant digits of item 11(e) are the address of the SPN pointer table. Record these digits in item 12.</p>
17	<p>The six most significant digits of item 11(b) are the table size indicator for the SPN pointer table. Record these digits in item 13 in the space preceding the two zeros. Use Table A to determine the pointer table length. To do this, locate the number in item 13 in Table A. Record the corresponding decimal number in item 14.</p>
18	<p>If item 9(b) is not all zeros, proceed to Step 30.</p>
19	<p>Obtain a GNX-1 form and circle OLD at the top of the form. Record item 12 at the START address on the form.</p>
20	<p>Perform a program store read of the SPN pointer table starting at the address in item 12. Use the following message:</p> <p>At maintenance TTY—</p> <p>Type in:</p> <p>DMP:PS aa!</p> <p>where aa = octal address starting with item 12.</p> <p>Increment the address by octal 10 and continue the read until either two consecutive all zero words are found or the entire table has been read (the length of the table is recorded in item 14).</p>

STEP	PROCEDURE
21	If two consecutive all zero words are found, proceed to Step 27. If two consecutive all zero words are not found, a new pointer table must be allocated by using the procedures in Section 232-127-302. The length of the new table is equal to item 14 plus two. The new table will require the information from the old table plus the new information to be added.
22	Record the starting address of the new pointer table in item 11(f). This address will be the new contents of the second word of the SPNPTR MTI entry.
23	Obtain another GNX-1 form and circle NEW at the top of the form. Record item 11(f) at the START address of the GNX-1 form.
24	Copy the old contents from the GNX-1 form circled OLD as the new contents on the GNX-1 form circled NEW.
25	Record zeros as the new contents on the form circled OLD and as old contents of form circled NEW.
26	<p>Complete item 15 in order to build the new contents of the first word in the SPNPTR MTI entry.</p> <p>(a) Record the length of the new pointer table (item 14 plus two) in item 15(a).</p> <p>(b) Use Table A to find the octal table size indicator for the number in item 15(a). Record the six most significant digits of the new table size indicator in item 15(b).</p> <p>(c) If item 15(a) is an integral power of two (ie, equal to 2, 4, 8, 16, 32, 64, 128, 256, or 512), set the bit labeled R of the binary word in item 15(c) to zero. If item 15(a) is not an integral power of two, set R to one.</p> <p>(e) Since the parity bit of the binary word in item 15(c) is bit 4, a check must be made for even parity and the parity bit set to a one or zero.</p>
	Example:
	Given the binary word
	1 111 111 110 010 100 1_0 001
	Count the number of ones to obtain an odd or even number. In this example, there are thirteen ones. Since thirteen is an odd number and even parity is desired, the parity bit must be set to 1. Therefore, the word corrected for parity gives
	1 111 111 110 010 100 110 001.
	(f) To obtain the new octal word to be entered as the first word of the SPNPTR, convert item 15(c) from binary to octal. Record the result in item 11(c).
27	Record the address of the two all zero words in item 16(a) and item 16(d). If Steps 19 through 21 were performed, the all zero words are the last two words in the new pointer table. Record all zeros in item 16(b) and item 16(e).

STEP	PROCEDURE
28	<p>The SPTI for the all zero words must now be calculated. To do this, complete item 17 by performing the following:</p> <ul style="list-style-type: none">(a) Subtract the pointer starting address from the address of the first all zero word. Record the difference in item 17(a).(b) Convert item 17(a) from octal to binary. Record the result in 17(b).(c) Record all but the low bit in the portion of the binary word of item 17(c) labeled SPTI. Record the data from right to left and use zeros to fill any empty spaces.(d) Convert item 17(c) to octal and record the result in item 9(c).
29	<p>Determine which of the all zero words in item 16 will contain the carrier group member list table pointer. If the L/T bit in item 2 equals zero, the pointer will be entered in the first all zero word. If the L/T bit in item 2 equals one, the pointer will be entered in the second all zero word. The word that is not the pointer will remain all zero. Proceed to Step 32.</p>
30	<p>Determine which word in the SPN pointer table is used to point to the carrier group member list. To do this, add the address in item 12 to the octal value in item 10(b). Record this address in item 16(a).</p>
31	<p>Perform a program store read at the address in item 16(a) using the following message:</p> <p>At maintenance TTY—</p> <p>Type in:</p> <p>DMP:PS aa!</p> <p>where aa = address in item 16(a).</p> <p>Record the contents in item 16(b).</p>
32	<p>Use the procedures in Section 232-127-302 to allocate 26 words of translation store for a new carrier group member list. Record the starting address of the allocated list in item 18.</p>
33	<p>Add two to the address in item 18 and record as new contents of word determined by Step 29 or Step 30.</p>
34	<p>Add one to address of Step 18 and record in item 19(a).</p>

STEP	PROCEDURE
35	<p>Perform a program store read at the address in item 19(a) using the following message: At maintenance TTY— Type in: DMP:PS aa! where aa = address in item 19(a). Record the contents in item 19(b).</p>
36	Copy item 1(c) into item 19(c).
37	<p>Perform a program store read at the addresses of item 20(a) and item 20(d) using the following message: At maintenance TTY— Type in: DMP:PS aa! where aa = address in item 20(a).</p> <p>Record the contents of the address in item 20(a) in item 20(b) and the contents of the address in item 20(d) in item 20(e).</p>
38	Use Table A to determine the size of the carrier group number table. To do this, locate the six most significant digits from item 20(b) in Table A and record the decimal number associated with it in item 21.
39	If item 21 is greater than item 1(b), copy the seven least significant digits of item 20(e) into item 22 and proceed to Step 52; if not, continue.
40	Use the procedures in Section 232-127-302 to allocate a new carrier group number table. Use the size from item 1(c). Record the starting address in item 20(f) and in item 22.
41	Obtain a GNX-1 form and circle NEW at the top of the form. Record the allocated table start address at the START location of GNX-1 form.
42	<p>Perform a program store read of the carrier group number table and record the contents as initial contents on the GNX-1 form. Use the following message: At maintenance TTY— Type in: DMP:PS:aa! where aa = octal address starting with address at item 22; increment by octal 10 for each read. The length of the table is located in item 1(c).</p>
43	Obtain another GNX-1 form and circle OLD at the top of the form. Record the seven least significant digits of item 20(e) at the start location on the GNX-1 form.

STEP	PROCEDURE
44	Perform a program store read of the old carrier group number table and record the contents as initial contents on the GNX-1 form marked OLD. Use the following message: At maintenance TTY— Type in: DMP:PS:aa! where aa = octal address at START location; increment by octal 10 for each read. The length of the table is shown in item 21.
45	Copy the initial contents from the GNX-1 form marked OLD as the new contents of the GNX-1 form marked NEW.
46	Record all zeros as the new contents of the GNX-1 form marked OLD.
47	Use Table A to determine the new table size indicator word. To do this, locate the decimal number of the carrier group number of item 1(b) in Table A and record the six most significant digits of the corresponding number in item 23.
48	Convert item 23 to binary and record in bits 6 through 21 of item 24.
49	If the carrier group number in item 2 is an integral power of two (ie, equal to 1, 2, 4, 8, 16, 32, 64, or 128), set the bit labeled R of the binary word in item 24(b) to zero. If the carrier group number is not an integral power of two, set R to one.
50	Since the parity bit of the binary word in item 25(b) is bit 4, a check must be made for even parity and the bit set to a one or zero. Example: Given the binary word 1 111 111 110 010 100 1_0 001 Count the number of ones to obtain an odd or even number. In this example, there are thirteen ones. Since thirteen is an odd number and even parity is desired, the parity bit must be set to one. Therefore, the word corrected for parity gives 1 111 111 110 010 100 110 001.
51	To obtain the new octal word to be entered as the first word of the CGNTBL address, convert item 24 from binary to octal and record in item 20(c).
52	Add carrier group number, item 1(c), to item 22 and record in item 25(a).

STEP	PROCEDURE
53	Perform a program store read at the address of item 25(a). At maintenance TTY— Type in: DMP:PS aa! aa = address of item 25(a)
54	Record the contents of item 25(a) in item 25(b).
55	Construct the new word for carrier group number table by converting the binary scan point number in item 2 to octal and recording it in item 25(c).
56	In order to implement the CHIPS procedures, the data must be arranged in CHIPS format. The GNX-1 form is already arranged in CHIPS format. Data on the CGN-2 form that may require CHIPS procedure is located in the following items: Item 9 Item 11 Item 16 Item 19 Item 20 Item 25. The data in each item on the CGN-2 form may be transferred to a separate GNX-1 form to better arrange the data for CHIPS procedure.
57	When all forms are completed, implement the changes on them using procedures in Section 232-327-303.
58	Use the procedures in Section 232-127-302 to return the old tables to spare memory.

TABLE A
TABLE SIZE INDICATORS

1 = 17777700	27 = 17774500	53 = 17771300	79 = 17766100	105 = 17762700
2 = 17777600	28 = 17774400	54 = 17771200	80 = 17766000	106 = 17762600
3 = 17777500	29 = 17774300	55 = 17771100	81 = 17765700	107 = 17762500
4 = 17777400	30 = 17774200	56 = 17771000	82 = 17765600	108 = 17762400
5 = 17777300	31 = 17774100	57 = 17770700	83 = 17765500	109 = 17762300
6 = 17777200	32 = 17774000	58 = 17770600	84 = 17765400	110 = 17762200
7 = 17777100	33 = 17773700	59 = 17770500	85 = 17765300	111 = 17762100
8 = 17777000	34 = 17773600	60 = 17770400	86 = 17765200	112 = 17762000
9 = 17776700	35 = 17773500	61 = 17770300	87 = 17765100	113 = 17761700
10 = 17776600	36 = 17773400	62 = 17770200	88 = 17765000	114 = 17761600
11 = 17776500	37 = 17773300	63 = 17770100	89 = 17764700	115 = 17761500
12 = 17776400	38 = 17773200	64 = 17770000	90 = 17764600	116 = 17761400
13 = 17776300	39 = 17773100	65 = 17767700	91 = 17764500	117 = 17761300
14 = 17776200	40 = 17773000	66 = 17767600	92 = 17764400	118 = 17761200
15 = 17776100	41 = 17772700	67 = 17767500	93 = 17764300	119 = 17761100
16 = 17776000	42 = 17772600	68 = 17767400	94 = 17764200	120 = 17761000
17 = 17775700	43 = 17772500	69 = 17767300	95 = 17764100	121 = 17760700
18 = 17775600	44 = 17772400	70 = 17767200	96 = 17764000	122 = 17760600
19 = 17775500	45 = 17772300	71 = 17767100	97 = 17763700	123 = 17760500
20 = 17775400	46 = 17772200	72 = 17767000	98 = 17763600	124 = 17760400
21 = 17775300	47 = 17772100	73 = 17766700	99 = 17763500	125 = 17760300
22 = 17775200	48 = 17772000	74 = 17766600	100 = 17763400	126 = 17760200
23 = 17775100	49 = 17771700	75 = 17766500	101 = 17763300	127 = 17760100
24 = 17775000	50 = 17771600	76 = 17766400	102 = 17763200	128 = 17760000
25 = 17774700	51 = 17771500	77 = 17766300	103 = 17763100	129 = 17757700
26 = 17774600	52 = 17771400	78 = 17766200	104 = 17763000	130 = 17757600

TABLE A (Contd)

TABLE SIZE INDICATORS

131 = 17757500	157 = 17754300	183 = 17751100	209 = 17745700	235 = 17742500
132 = 17757400	158 = 17754200	184 = 17751000	210 = 17745600	236 = 17742400
133 = 17757300	159 = 17754100	185 = 17750700	211 = 17745500	237 = 17742300
134 = 17757200	160 = 17754000	186 = 17750600	212 = 17745400	238 = 17742200
135 = 17757100	161 = 17753700	187 = 17750500	213 = 17745300	239 = 17742100
136 = 17757000	162 = 17753600	188 = 17750400	214 = 17745200	240 = 17742000
137 = 17756700	163 = 17753500	189 = 17750300	215 = 17745100	241 = 17741700
138 = 17756600	164 = 17753400	190 = 17750200	216 = 17745000	242 = 17741600
139 = 17756500	165 = 17753300	191 = 17750100	217 = 17744700	243 = 17741500
140 = 17756400	166 = 17753200	192 = 17750000	218 = 17744600	244 = 17741400
141 = 17756300	167 = 17753100	193 = 17747700	219 = 17744500	245 = 17741300
142 = 17756200	168 = 17753000	194 = 17747600	220 = 17744400	246 = 17741200
143 = 17756100	169 = 17752700	195 = 17747500	221 = 17744300	247 = 17741100
144 = 17756000	170 = 17752600	196 = 17747400	222 = 17744200	248 = 17741000
145 = 17755700	171 = 17752500	197 = 17747300	223 = 17744100	249 = 17740700
146 = 17755600	172 = 17752400	198 = 17747200	224 = 17744000	250 = 17740600
147 = 17755500	173 = 17752300	199 = 17747100	225 = 17743700	251 = 17740500
148 = 17755400	174 = 17752200	200 = 17747000	226 = 17743600	252 = 17740400
149 = 17755300	175 = 17752100	201 = 17746700	227 = 17743500	253 = 17740300
150 = 17755200	176 = 17752000	202 = 17746600	228 = 17743400	254 = 17740200
151 = 17755100	177 = 17751700	203 = 17746500	229 = 17743300	255 = 17740100
152 = 17755000	178 = 17751600	204 = 17746400	230 = 17743200	256 = 17740000
153 = 17754700	179 = 17751500	205 = 17746300	231 = 17743100	257 = 17737700
154 = 17754600	180 = 17751400	206 = 17746200	232 = 17743000	258 = 17737600
155 = 17754500	181 = 17751300	207 = 17746100	233 = 17742700	259 = 17737500
156 = 17754400	182 = 17751200	208 = 17746000	234 = 17742600	260 = 17737400

TABLE A (Contd)

TABLE SIZE INDICATORS

261 = 17737300	287 = 17734100	313 = 17730700	339 = 17725500	365 = 17722300
262 = 17737200	288 = 17734000	314 = 17730600	340 = 17725400	366 = 17722200
263 = 17737100	289 = 17733700	315 = 17730500	341 = 17725300	367 = 17722100
264 = 17737000	290 = 17733600	316 = 17730400	342 = 17725200	368 = 17722000
265 = 17736700	291 = 17733500	317 = 17730300	343 = 17725100	369 = 17721700
266 = 17736600	292 = 17733400	318 = 17730200	344 = 17725000	370 = 17721600
267 = 17736500	293 = 17733300	319 = 17730100	345 = 17724700	371 = 17721500
268 = 17736400	294 = 17733200	320 = 17730000	346 = 17724600	372 = 17721400
269 = 17736300	295 = 17733100	321 = 17727700	347 = 17724500	373 = 17721300
270 = 17736200	296 = 17733000	322 = 17727600	348 = 17724400	374 = 17721200
271 = 17736100	297 = 17732700	323 = 17727500	349 = 17724300	375 = 17721100
272 = 17736000	298 = 17732600	324 = 17727400	350 = 17724200	376 = 17721000
273 = 17735700	299 = 17732500	325 = 17727300	351 = 17724100	377 = 17720700
274 = 17735600	300 = 17732400	326 = 17727200	352 = 17724000	378 = 17720600
275 = 17735500	301 = 17732300	327 = 17727100	353 = 17723700	379 = 17720500
276 = 17735400	302 = 17732200	328 = 17727000	354 = 17723600	380 = 17720400
277 = 17735300	303 = 17732100	329 = 17726700	355 = 17723500	381 = 17720300
278 = 17735200	304 = 17732000	330 = 17726600	356 = 17723400	382 = 17720200
279 = 17735100	305 = 17731700	331 = 17726500	357 = 17723300	383 = 17720100
280 = 17735000	306 = 17731600	332 = 17726400	358 = 17723200	384 = 17720000
281 = 17734700	307 = 17731500	333 = 17726300	359 = 17723100	385 = 17717700
282 = 17734600	308 = 17731400	334 = 17726200	360 = 17723000	386 = 17717600
283 = 17734500	309 = 17731300	335 = 17726100	361 = 17722700	387 = 17717500
284 = 17734400	310 = 17731200	336 = 17726000	362 = 17722600	388 = 17717400
285 = 17734300	311 = 17731100	337 = 17725700	363 = 17722500	389 = 17717300
286 = 17734200	312 = 17731000	338 = 17725600	364 = 17722400	390 = 17717200

TABLE A (Contd)

TABLE SIZE INDICATORS

391 = 17717100	417 = 17713700	443 = 17710500	469 = 17705300	495 = 17702100
392 = 17717000	418 = 17713600	444 = 17710400	470 = 17705200	496 = 17702000
393 = 17716700	419 = 17713500	445 = 17710300	471 = 17705100	497 = 17701700
394 = 17716600	420 = 17713400	446 = 17710200	472 = 17705000	498 = 17701600
395 = 17716500	421 = 17713300	447 = 17710100	473 = 17704700	499 = 17701500
396 = 17716400	422 = 17713200	448 = 17710000	474 = 17704600	500 = 17701400
397 = 17716300	423 = 17713100	449 = 17707700	475 = 17704500	501 = 17701300
398 = 17716200	424 = 17713000	450 = 17707600	476 = 17704400	502 = 17701200
399 = 17716100	425 = 17712700	451 = 17707500	477 = 17704300	503 = 17701100
400 = 17716000	426 = 17712600	452 = 17707400	478 = 17704200	504 = 17701000
401 = 17715700	427 = 17712500	453 = 17707300	479 = 17704100	505 = 17700700
402 = 17715600	428 = 17712400	454 = 17707200	480 = 17704000	506 = 17700600
403 = 17715500	429 = 17712300	455 = 17707100	481 = 17703700	507 = 17700500
404 = 17715400	430 = 17712200	456 = 17707000	482 = 17703600	508 = 17700400
405 = 17715300	431 = 17712100	457 = 17706700	483 = 17703500	509 = 17700300
406 = 17715200	432 = 17712000	458 = 17706600	484 = 17703400	510 = 17700200
407 = 17715100	433 = 17711700	459 = 17706500	485 = 17703300	511 = 17700100
408 = 17715000	434 = 17711600	460 = 17706400	486 = 17703200	512 = 17700000
409 = 17714700	435 = 17711500	461 = 17706300	487 = 17703100	513 = 17677700
410 = 17714600	436 = 17711400	462 = 17706200	488 = 17703000	514 = 17677600
411 = 17714500	437 = 17711300	463 = 17706100	489 = 17702700	515 = 17677500
412 = 17714400	438 = 17711200	464 = 17706000	490 = 17702600	516 = 17677400
413 = 17714300	439 = 17711100	465 = 17705700	491 = 17702500	517 = 17677300
414 = 17714200	440 = 17711000	466 = 17705600	492 = 17702400	518 = 17677200
415 = 17714100	441 = 17710700	467 = 17705500	493 = 17702300	519 = 17677100
416 = 17714000	442 = 17710600	468 = 17705400	494 = 17702200	520 = 17677000

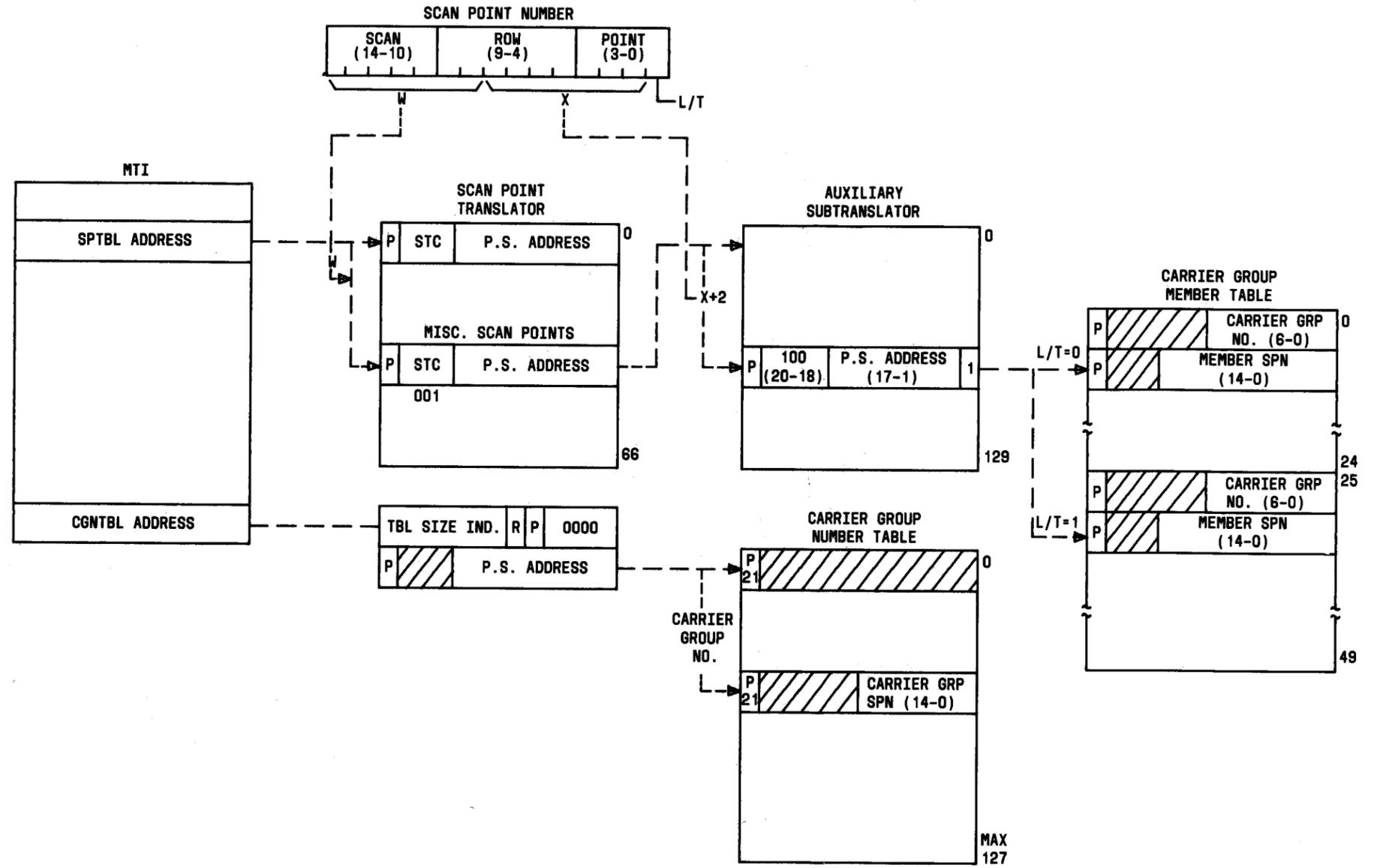


Fig. 1 — Carrier Group Number Translations for No. 2 ESS With EF-1 Generic

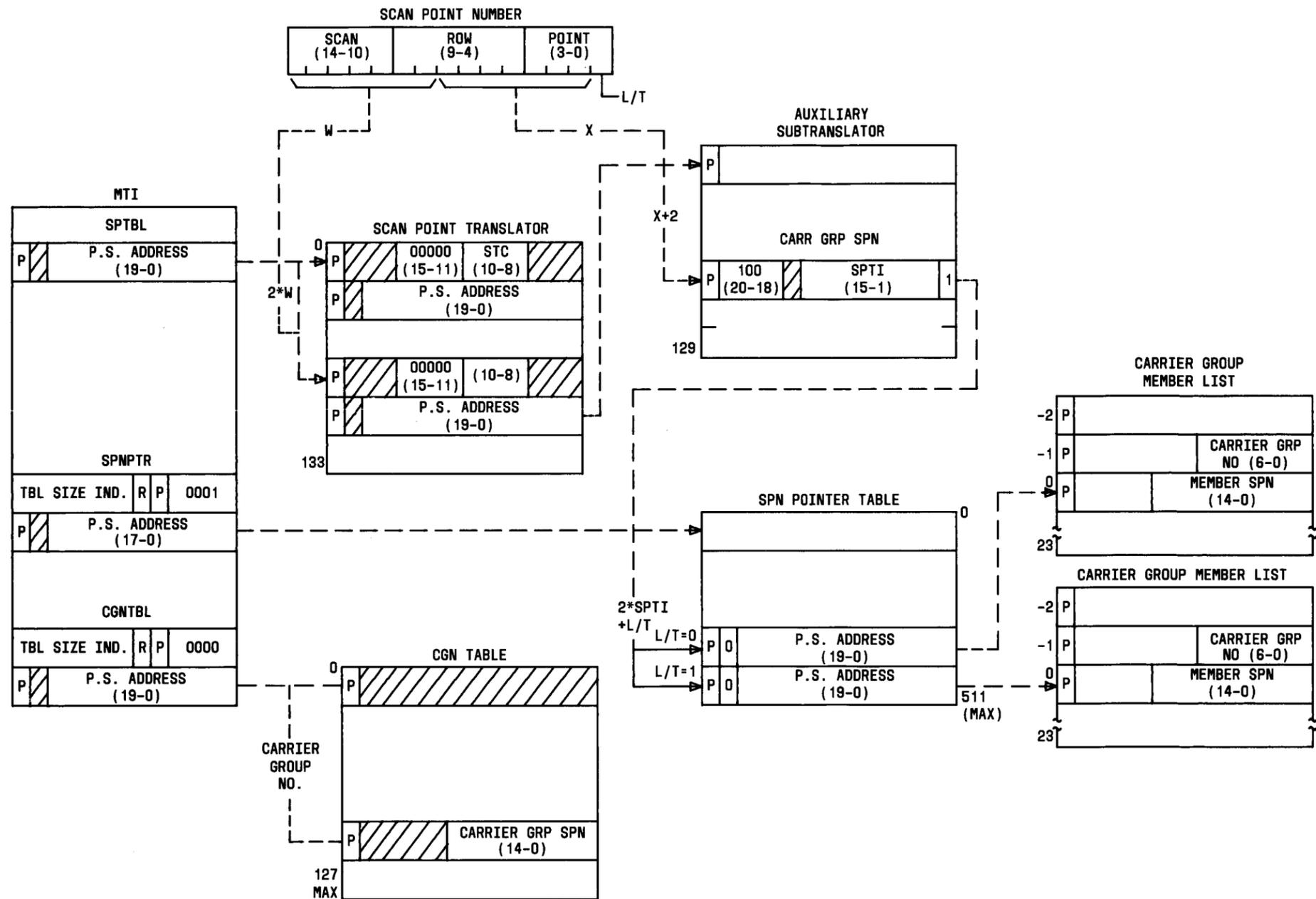


Fig. 2—Carrier Group Number Translations for No. 2B ESS With 2B-EF-1 Generic

NO. 2 EF-1 CARRIER GROUP ALLOCATION FORM

CGN-1 Form

OFFICE _____

CHIPS Address Range (_ _ _ _ _)

DATE _____

start
(_ _ _ _ _)
stop

Note: Enter data from right to left starting with least significant bit.

- | | scanner | row | point |
|----------------------------|----------------------|------------|--------------------|
| 1. (a) Carrier Group SPN = | <u>0 6</u> | <u>3 7</u> | <u>0 9</u> decimal |
| (b) Carrier Group Number = | <u>0 1 5</u> decimal | | |
| (c) Carrier Group Number = | <u>0 1 7</u> octal | | |

2. SPN in Binary = $\overbrace{001101001011001}^{\text{scanner}} \overbrace{01011001}^{\text{row}} \overbrace{1001}^{\text{point}}$
W X L/T

3. W in Octal = 0 3 2 X in octal = 0 5 4

4. SPTBL Address = 3 4 0 0 6 6 octal

5. Contents of SPTBL Address = 0 0 5 4 2 3 0 6 octal

6. Scan Point Translator Address = 5 4 2 3 0 6 octal

7. (a) Item 6 + Octal W = 5 4 2 3 4 0

(b) Contents of Item 7(a) Address = 1 1 6 0 0 0 0 0 octal

Must be a 1 \uparrow

Fig. 3—Example of Completed CGN-1 Form (Sheet 1 of 2)

NO. 2B-EF-1 CARRIER GROUP ALLOCATION FORM

CGN-2 Form

OFFICE _____

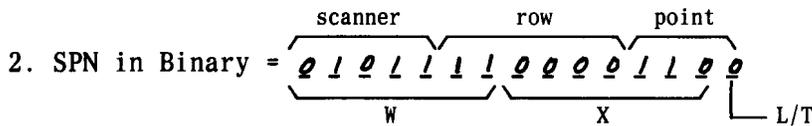
CHIPS Address Range (_ _ _ _ _)
start

DATE _____

(_ _ _ _ _)

Note: Enter data from right to left starting with least significant bit.

- | | | | | |
|--------|---|-----------|-----------|---------|
| | scanner | row | point | |
| 1. (a) | Carrier Group SPN = <u>11</u> | <u>48</u> | <u>12</u> | decimal |
| (b) | Carrier Group Number = <u>124</u> decimal | | | |
| (c) | Carrier Group Number = <u>174</u> octal | | | |



3. W in Octal = 057 X in octal = 006
4. SPTBL Address = 0640066 octal
5. Contents of SPTBL Address = 01002600 octal
6. (a) Scan Point Translator Address = 1002600 octal
- (b) Record W in Binary = $\overbrace{010111}^{\text{W}}10$
- (c) Convert Item 6(b) to Octal = 136

Fig. 4—Example of Completed CGN-2 Form (Sheet 1 of 4)

7. Address = 6(a)+6(c) Old Contents

(a) 1 0 0 2 7 3 6 (b) 1 0 0 0 0 4 0 0 ← Must be 10000400

(c) 1 0 0 2 7 3 7 (d) 0 0 7 2 4 3 2 0 octal

8. Auxiliary Subtranslator Address = 0 7 2 4 3 2 0 octal

9. Address = Item 8+X+2 Old Contents New Contents

(a) 0 7 2 4 3 3 0 (b) 1 4 0 0 0 3 4 7 (c) _ 4 0 0 0 _ _ _

 Must be 4000 4 Z

10. (a) Z-1 = 3 4 6 octal

(b) Item 10(a) + L/T Bit = 3 4 6 octal

11. SPNPTR Address Old Contents New Contents

(a) 0 6 4 2 0 1 5 (b) 1 7 7 4 3 3 4 1 (c) _ _ _ _ _

(d) 0 6 4 2 0 1 6 (e) 0 1 0 0 6 6 4 0 (f) _ _ _ _ _

12. SPN Pointer Table Address = 1 0 0 6 6 4 0 octal

13. Table Size Indicator = 1 7 7 4 3 3 0 0

14. Table Length = 2 2 9 decimal words

Fig. 4—Example of Completed CGN-2 Form (Sheet 2 of 4)

NO. 2 EF-1 CARRIER GROUP ALLOCATION FORM

CGN-1 Form

OFFICE _____

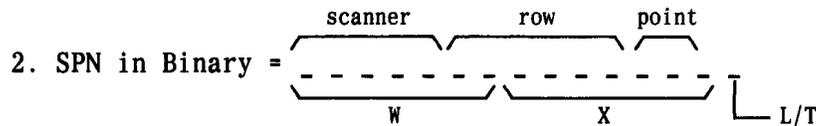
CHIPS Address Range (_ _ _ _ _)

DATE _____

start
(_ _ _ _ _)
stop

Note: Enter data from right to left starting with least significant bit.

- scanner row point
1. (a) Carrier Group SPN = _ _ _ _ _ _ decimal
 - (b) Carrier Group Number = _ _ _ decimal
 - (c) Carrier Group Number = _ _ _ octal



3. W in Octal = _ _ _ X in octal = _ _ _

4. SPTBL Address = 3 4 0 0 6 6 octal

5. Contents of SPTBL Address = _ _ _ _ _ octal

6. Scan Point Translator Address = _ _ _ _ _ octal

7. (a) Item 6 + Octal W = _ _ _ _ _

 (b) Contents of Item 7(a) Address = _ 1 _ _ _ _ _ octal

Must be a 1 

Fig. 5—Reproducible CGN-1 Form (Sheet 1 of 2)

NO. 2B-EF-1 CARRIER GROUP ALLOCATION FORM

CGN-2 Form

OFFICE _____

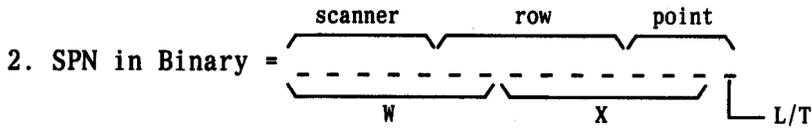
CHIPS Address Range (_ _ _ _ _)

DATE _____

start
(_ _ _ _ _)

Note: Enter data from right to left starting with least significant bit.

- scanner row point
1. (a) Carrier Group SPN = _ _ _ _ _ _ decimal
 - (b) Carrier Group Number = _ _ _ decimal
 - (c) Carrier Group Number = _ _ _ octal

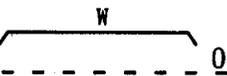


3. W in Octal = _ _ _ X in octal = _ _ _

4. SPTBL Address = 0 6 4 0 0 6 6 octal

5. Contents of SPTBL Address = _ _ _ _ _ octal

6. (a) Scan Point Translator Address = _ _ _ _ _ octal

(b) Record W in Binary = 

(C) Convert Item 6(b) to Octal = _ _ _

Fig. 6—Reproducible CGN-2 Form (Sheet 1 of 4)

OFFICE _____
 DATE _____

GENERAL TRANSLATION
 TABLE EXPANSION WORKSHEET

GNX-1 FORM

CHIPS Address Range (_ _ _ _ _) (_ _ _ _ _)
 START STOP

1. Circle *NEW* or *OLD*

Note: Enter data from right to left starting with the least significant digit.

2.	(A) ADDRESS	(B) INITIAL CONTENTS	(C) NEW CONTENTS
START	-----	-----	-----
START + 1 OCT	-----	-----	-----
START + 2 OCT	-----	-----	-----
START + 3 OCT	-----	-----	-----
START + 4 OCT	-----	-----	-----
START + 5 OCT	-----	-----	-----
START + 6 OCT	-----	-----	-----
START + 7 OCT	-----	-----	-----
START +10 OCT	-----	-----	-----
START +11 OCT	-----	-----	-----
START +12 OCT	-----	-----	-----
START +13 OCT	-----	-----	-----
START +14 OCT	-----	-----	-----
START +15 OCT	-----	-----	-----
START +16 OCT	-----	-----	-----
START +17 OCT	-----	-----	-----
START +20 OCT	-----	-----	-----
START +21 OCT	-----	-----	-----
START +22 OCT	-----	-----	-----
START +23 OCT	-----	-----	-----
START +24 OCT	-----	-----	-----
START +25 OCT	-----	-----	-----
START +26 OCT	-----	-----	-----
START +27 OCT	-----	-----	-----

Fig. 7—Reproducible GNX-1 Form (Sheet 1 of 2)

Circle *NEW* or *OLD*

	(A) ADDRESS	(B) INITIAL CONTENTS	(C) NEW CONTENTS
START + 0 OCT	-----	-----	-----
START + 1 OCT	-----	-----	-----
START + 2 OCT	-----	-----	-----
START + 3 OCT	-----	-----	-----
START + 4 OCT	-----	-----	-----
START + 5 OCT	-----	-----	-----
START + 6 OCT	-----	-----	-----
START + 7 OCT	-----	-----	-----
START + 0 OCT	-----	-----	-----
START + 1 OCT	-----	-----	-----
START + 2 OCT	-----	-----	-----
START + 3 OCT	-----	-----	-----
START + 4 OCT	-----	-----	-----
START + 5 OCT	-----	-----	-----
START + 6 OCT	-----	-----	-----
START + 7 OCT	-----	-----	-----
START + 0 OCT	-----	-----	-----
START + 1 OCT	-----	-----	-----
START + 2 OCT	-----	-----	-----
START + 3 OCT	-----	-----	-----
START + 4 OCT	-----	-----	-----
START + 5 OCT	-----	-----	-----
START + 6 OCT	-----	-----	-----
START + 7 OCT	-----	-----	-----
START + 0 OCT	-----	-----	-----
START + 1 OCT	-----	-----	-----
START + 2 OCT	-----	-----	-----
START + 3 OCT	-----	-----	-----
START + 4 OCT	-----	-----	-----
START + 5 OCT	-----	-----	-----
START + 6 OCT	-----	-----	-----
START + 7 OCT	-----	-----	-----

Fig. 7—Reproducible GNX-1 Form (Sheet 2 of 2)