

**FORMATTING CHANGES IN PROGRAM STORE
MANUAL TRANSLATION MODIFICATION PROCEDURE
NO. 2B ELECTRONIC SWITCHING SYSTEM**

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1. GENERAL

1.01 This section provides the procedures for transferring all changes recorded on the translator change forms onto the "Change in Program Store (CHIPS) message guide" (CMG-2) form (Fig. 1). Therefore, the procedures in this section are used only after the translator forms for making a specific change or changes such as allocating a new trunk group or changing the TOTANI table, etc, have been completed in accordance with the Bell System Practice (BSP) provided for that purpose. The completed CMG-2 form provides the user with all the

CHIPS messages needed to transfer the new translation changes into the No. 2B Electronic Switching System (ESS) main store. After the CMG-2 form has been correctly filled out, the procedures for changing main store words provided in Section 232-090-022 must be used to transfer the changes into the main store.

1.02 This section is reissued to incorporate the appendix into the section and to provide referencing to Task Oriented Practices (TOP).

Revision arrows are used to emphasize the more significant changes.

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 When a change in translation data is required, the appropriate translator change forms are filled out in accordance with the instructions in the related 232-127-XXX or 232-327-XXX section. The completed translator change forms contain both the

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current memory contents and the new memory contents to provide a new translation configuration. All translator change forms must be sorted in ascending address order. Then for 2B-EF-1 and 2B-EF-2 generics, even parity must be calculated for all change data which has bit 21 as the parity bit. If bit 4 is the parity bit, parity was calculated when the translation change forms were completed. In the 2BE3 generic, parity is not considered.

1.06 Employing the information on the translator change forms and the procedures in this section, the user will form the TTY input messages for CHIPS and record them on the CMG-2 form. The addresses of all CHIPS messages must be written in numerical sequences.

1.07 Due to the size of the overwrite buffer, it is recommended that an overwrite be limited to the number of changes that can be listed on one CMG-2 form. If the information to be added or changed is more than can be entered on one CMG-2 form, additional forms can be used. The information will be entered into the overwrite buffer, one sheet at a time. Each sheet will be overwritten separately, but all the sheets will be overwritten on one main store before the other main store is updated.

1.08 A translation overwrite number must be assigned to each overwrite. This number must be taken from a list of numbers reserved for translations. For the 2B-EF-1 generic, the reserved numbers range from 7500 through 7999. For the 2B-EF-2 and 2BE3 generics, the reserved numbers range from 0001 through 0999. The administration of these numbers is controlled by the local telephone company.

1.09 The ability to add and subtract in octal 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. 2B ESS main store in octal in response to a TTY input message. The standard CHIPS procedure required to change the main store requires an octal input. All address calculation and indexing is done by octal addition and subtraction. The user must also be able to calculate parity by adding the binary bits that are the contents of the new translator words to be written. Refer to Section 232-127-101, Manual Translation Modification Procedure—General Description, for methods of addition and subtraction in octal, binary to octal conversions, and tables for decimal to octal conversion.

2. MESSAGE FORMATTING FOR CHIPS

2.01 The CHIPS message formatting procedures provide the proper TTY input messages for the changes in each sequence of changes.

2.02 Assemble all the translator change forms which have been prepared in accordance with the procedures in one or more of the 232-127-XXX or 232-327-XXX sections.

2.03 On each translator change form, in the upper right-hand corner is the "form CHIPS address range." (See Fig. 2 for a typical example.) If the address range is not preprinted in the two slots provided on the form, enter the address of the first word changed in the first slot followed by the address of the last word changed on the form in the second slot.

2.04 After all forms have a "form CHIPS address range," put the forms in numerical sequence by address range with the lowest numbered octal address on the first form and the highest on the last form.

2.05 Obtain an unmarked CHIPS change message guide (CMG-2) form. If blank (CMG-2) forms are not available, a reproducible blank CMG-2 form is provided in Fig. 1 of this section.

2.06 Enter the translation overwrite number on the CMG-2 form in the first entry. Refer to paragraph 1.08 for overwrite number. The translation overwrite number will go beside the message

IN:OW n; TTY!

where n = translation overwrite number.

2.07 Address by address scan down the change columns on the various subtranslator change forms as illustrated in Fig. 2 for the first entry in one of the change columns. This address is the starting address of the CHIPS sequence.

2.08 Record the address found in paragraph 2.07 in the second entry position of the CMG-2 form. (See Fig. 3 as an example.) In the second and all subsequent entry positions write the address, old data, and new data beside the following message for every change slot on the translator change forms:

For the 2B-EF-1 generic—

IN:OWDATA:0,0, adr, old, new!

For the 2B-EF-2 and later generics—

IN:OWDATA:—,0,adr, old, new!

2.09 Continue to enter the address and data in sequence of addresses until the CMG-2 form is filled or all entries have been made.

2.10 If more messages cannot be written because the form is filled, begin the next sequence on a new CMG-2 form by writing the next translation overwrite number beside the following message:

IN:OW n;TTY!

where n = next sequential translation overwrite number after the entry in paragraph 2.06.

2.11 Repeat paragraphs 2.08, 2.09, and 2.10 until all the changes on the translator change forms have been transferred to the CMG-2 form adjacent to the appropriate complete CHIPS message.

Note: Even parity is required on every 2B-EF-1 and 2B-EF-2 generic translation data word. Parity is not considered in the 2BE3 generic. This means the sum of the binary bits that make up each data word must be an even number.

2.12 For the 2B-EF-1 and 2B-EF-2 generics, convert all octal digits of each most recent word (the farthest right change) to binary digits using the information in Table A.

2.13 Add the binary digits in each word.

2.14 If the word is a 7-digit octal word and the sum of the binary digits is even, go to the next word until all forms have been processed. If the sum of the binary digits is odd, place a 1 in the eighth octal bit position (See Fig. 4 as an example.) Then go to the next word.

TABLE A

BINARY TO OCTAL CONVERSION

BINARY	=	OCTAL
001	=	1
010	=	2
011	=	3
100	=	4
101	=	5
110	=	6
111	=	7

BINARY TO OCTAL CONVERSION:

BINARY = 1011011111001

OCTAL = 1 3 3 7 1

2.15 If the word is an 8-digit octal word, parity has already been calculated but should be checked. If parity is even, no change is required. If parity is odd, an error was made on the original form prior to the transfer of information to the CMG-2 form. Check the information on the original form in accordance with the related procedural Section 232-127-XXX or 232-327-XXX.

3. MANUAL TRANSLATION MODIFICATION PROCEDURES

3.01 At this point, all the messages and change information required have been entered on the CMG-2 forms. This information can now be used to make manual translation changes to the No. 2B ESS System.

3.02 Transfer the information on the CMG-2 forms to the main store by following the procedures in Section 232-090-022.

Note: Making a paper tape of the CMG-2 input messages prior to starting the manual translation change procedures is recommended. See IM-2H200 for procedures.

2B CHIPS TABLE

CT-2

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

Fig. 2—No. 2B CHIPS Table for Trunk and Service Circuits

