

**PREPARATION OF NONGENERIC PARAMETER DATA (NPD)
ENTITY PARAMETERS—NO. 1A AMARC—GENERIC 2
BILLING SYSTEMS
SUPPLEMENTAL INFORMATION—CENTRAL OFFICES**

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1. GENERAL

1.01 This section is issued to give specific instructions for preparing No. 1A Automatic Message Accounting Recording Center (AMARC) entity parameter Nongeneric Parameter Data (NPD) forms for Generic 2.

1.02 Whenever this section is reissued, the reason will be listed in this paragraph.

1.03 The title for each figure includes a number(s) in parentheses which identifies the paragraph(s) in which the figure is referenced.

1.04 Entity parameters provide the information required for translations the No. 1A AMARC performs for Call Data Accumulator (CDA), Billing Data Transmitter (BDT), and No. 3 Electronic Switching System (3ESS) entities.

1.05 Billing data transmitted to the AMARC by Voice Storage System (VSS) and Electronic Translator System (ETS) entities are already formatted into call records. Because the AMARC does not perform any translations for these entities, none of the entity-related forms are prepared.

1.06 The instructions for the NPD forms, which contain the entity parameters, specify for each form whether it is to be prepared for CDA entities only, BDT entities only, or for both CDA and BDT entities. For 3ESS entities, only Form 0203 is prepared, although it is also prepared for both CDA and BDT entities.

2. BDT RECORDER PORTS—NO. 1A AMARC FORM 0200

2.01 The information on Form 0200 is entered into the BDT Block Table for the specified BDT entity. This table designates for each recorder port (the BDT interface to the regular recorder in the central office) the number of the Calling Office Index (COI) Translation Table to be used by the AMARC to determine the calling central office code.

2.02 On all BDT calls, the central office code portion of the calling telephone number is transmitted to the AMARC as a 2-digit code, the office index (COI). The AMARC translates the COI to the calling Numbering Plan Area (NPA) and central office code before recording the call details on magnetic tape. This translation is accomplished through the appropriate COI Translation Table.

2.03 Each BDT serves a maximum of ten regular recorders which interface to the BDT through a recorder port. Each regular recorder may receive calls from a different set of COIs. Therefore, there must be a COI Translation Table associated with each recorder port. This association is made through the BDT Block Table.

2.04 Entries to the BDT Block Table may be verified through input message **DUMP MEM NPD RDR**.

2.05 This form is only prepared for BDT entities. One Form 0200 is prepared for each BDT entity. An entity may be served by a maximum of three BDTs. The form accommodates three BDTs.

3. FORM ENTRIES—NO. 1A AMARC FORM 0200

3.01 Figure 1 is a sample Form 0200. The following paragraphs describe the entries to be made on the form.

3.02 *Entity Number*—Enter the entity number as assigned on Form 0101. Valid entries are 00 through 137 (octal).

3.03 *BDT Number, BDT Recorder Port*—These columns list the ten recorder ports of each BDT. Each recorder port is listed separately to allow association with an individual COI Translation Table, when required. More than one recorder port may use the same COI Translation Table, but each recorder port COI Translation Table specification must be entered separately in the BDT Block Table.

3.04 *COI Translation Table*—Enter the number of the COI Translation Table to be used to translate the COIs received on calls from the particular recorder port. Valid entries are 0 through 26 (decimal). In the example shown in Figure 1 for BDT 0, recorders 0, 1, and 8 use the same COI Translation Table (01). Similarly recorders 2, 3, 4, 5, 6, 7, and 9 use the same COI Translation Table (00).

3.05 Before this portion of Form 0200 is completed, two other forms should be completed:

(a) Office Record Form 0501 which specifies the assignment of each regular recorder to a BDT recorder port. This form is discussed in Section 201-900-082.

(b) Form 0202 which constructs one COI Translation Table for a BDT entity. The COI Translation Tables required for an entity should be structured on Form 0202 before the table numbers are entered on Form 0200. This will allow determination of whether some recorders (recorder ports) can use the same COI Translation Table. Instructions for the completion of Form 0202 are contained in this section.

4. CENTRAL OFFICE CODES—CDA ENTITIES—NO. 1A AMARC FORM 0201

4.01 The information contained on Form 0201 is entered into the COI Translation Table for the specified CDA entity. This table is used by the No. 1A AMARC in translating the calling telephone number. One COI Translation Table is constructed for each CDA entity. Similar tables must be constructed for BDT entities. The same input message is used to enter information into the COI Translation Table for a CDA entity or a COI Translation Table for a BDT entity. Form 0202 is used to record the information needed for a COI Translation Table for a BDT.

4.02 Entries to the COI Translation Table may be verified through input message **DUMP MEM NPDCOC**.

4.03 One Form 0201 is prepared for each CDA entity.

5. FORM ENTRIES—NO. 1A AMARC FORM 0201

5.01 Figure 2 is a sample Form 0201. The following paragraphs describe the entries to be made on the form.

5.02 *Entity Number*—Enter the entity number. Valid entries are 00 through 137 (octal).

5.03 *COC Index*—List all Central Office Code (COC) indexes for the entity. There must be one COC index for each NXX in the entity. Valid entries are 0 through 9 (decimal). The form indicates that four characters should be entered. This is because the same input message is used for BDT COI Translation Tables. Leading zeros will be assumed when a single character is typed for the **bbcc** entry of the **RC ENT COC** input message.

5.04 The COC index is the single digit which represents a 3-digit central office code in a step-by-step entity. When call details are transmitted to the No. 1A AMARC from a CDA entity, the index and the four digits of the line number are included as the calling number. The AMARC must translate the COC index to determine

the calling number. The following paragraphs discuss valid COC index numbers:

(a) For CDA entities with Automatic Number Identification (ANI)-C or ANI-D, a new COC index, to be used only on local calls, must be assigned to each central office code. This assignment must be communicated to Western Electric for implementation when the ANI equipment is modified for CDA operation. Valid COC indexes for ANI-C and ANI-D entities are 1 through 6, 8 and 9 (decimal). Indices 0 and 7 cannot be used.

(b) For CDA entities with ANI-B, the COC index *must* be the same number that is presently wired into the ANI equipment. The present COC index representing the central office code can be found on the T-7970, outpulser frame wiring list and equipment drawing for the entity. This information is found in Table A, Assignment of Offices in an Outpulser-Identifier Group. The COC index is the number representing an office code. Valid index numbers for ANI-B offices are 0 through 9 (decimal). Figure 3 displays the Table A portion of a sample 7970 drawing.

5.05 Calling NXX—Enter the physical central office code (or other 3-digit code used in lieu of a central office code—but not a theoretical code) which is represented by the COC index. Valid entries are 001 through 999 (decimal).

5.06 Rate Center—Enter the rate center of the NXX represented by the COC index. Valid entries are 0 and 1.

5.07 A rate center is defined as a group of calling and called central office codes where the rate structure is identical for all calling central office codes in the group. Each CDA entity may have two rate centers, which are arbitrarily designated as 0 and 1.

5.08 If an entity has two rate centers, a Message Billing Index (MBI) Table must be constructed for each rate center. This allows customers in the same entity but different rate centers to be charged different rates for a call to the same NXX. In order to determine the MBI value for a call, the No. 1A AMARC consults the COI Translation Table for the calling entity, determines the rate center of the calling COC index, and checks the

MBI Table for that class of service and that rate center.

5.09 The master record for an entity will make note if there is more than one rate center and will designate the calling central office codes within each rate center.

5.10 Some telephone companies are offering a new class of service which allows a customer to call nearby parts of his *local* area at a flat rate and more distant parts of his *local* area at a message rate. This class of service is known to the AMARC as 1SR.

5.11 1SR and regular measured customers in an entity will have the same central office code and therefore the same COC index. The 1SR customers must be charged for their local calls using different rates from those used for regular measured customers. The No. 1A AMARC accommodates this need by designating a separate set of MBI Tables for 1SR customers in an entity.

5.12 Since only one rate center within a class of service can be designated for a specific COC index, the AMARC allows for determination of the MBI Table it will use on a call based on one of two factors:

(a) The rate center designated for the COC index in the COI Translation Table. This is the determining factor in entities which do not have 1SR customers (specified in the channel table). These calls use one of the two regular MBI Tables depending on rate center.

(b) The classmark transmitted on the call. This is the determining factor in entities which have 1SR customers. The 1SR customers transmit a flat classmark. In these entities, when a flat classmark is received, the No. 1A AMARC automatically consults the special rate MBI Table for the appropriate rate center.

5.13 The master record for an entity will make note if the 1SR class of service is offered, though it may be called by another name.

5.14 Physical/Theoretical Indication—Enter 0 if the COC index cannot be translated to a theoretical office code; enter 1 if it can.

5.15 The Entity Table (Form 0101) specifies whether or not a CDA entity has any theoretical office codes. The COI Translation Table specifies for each COC index within the entity whether or not translation to a theoretical office code is possible. If this is possible, the No. 1A AMARC makes the translation to the calling central office code through the COC index, the calling line thousands digit and hundreds digit. Translations of theoretical codes are developed by Forms 0205 and 0206. When the physical/theoretical indication in a COI Translation Table is 1 for a particular COC index, the No. 1A AMARC consults the tables associated with theoretical office codes before translating the COC index to a calling central office code. Any theoretical office codes in an office will be shown in its master record. If no entry is made for the physical/theoretical parameter via the **RC ENT COC** input message, a zero entry is assumed.

6. CENTRAL OFFICE CODES—BDT ENTITIES—NO. 1A AMARC FORM 0202

6.01 The information contained on Form 0202 is entered into a Calling Office Index (COI) Translation Table for the specified BDT entity. This table is used by the No. 1A AMARC along with the Special COI Translation Table in translating the calling telephone number. Up to 27 COI Translation Tables may be provided for a BDT entity.

6.02 A similar table must be constructed for each CDA entity. The same input message is used to enter information into the COI Translation Table for a BDT entity or the COI Translation Table for a CDA entity. Form 0201 is used to record the information needed for the COI Translation Table for a CDA.

6.03 Entries to a COI Translation Table may be verified through input message **DUMP MEM NPD COC**.

6.04 Form 0202 constructs one COI Translation Table. One copy is prepared for each COI Translation Table required for a BDT entity.

7. FORM ENTRIES—NO. 1A AMARC FORM 0202

7.01 The information required for a COI Translation Table should be obtained from the accounting center.

7.02 Figure 4 is a sample Form 0202. The following paragraphs describe the entries to be made on the form.

7.03 **Entity Number**—Enter the entity number. Valid entries are 00 through 137 (octal).

7.04 **COI Translation Table Number**—Enter the number which will identify this table. This number is an arbitrary assignment. Valid entries are 00 through 26 (decimal).

7.05 A COI Translation Table translates the COI, the 2-digit code which represents a 3-digit central office code in a BDT entity. The No. 1A AMARC receives the COI and the four digits of the line number when call details are transmitted. The No. 1A AMARC must translate the COI to determine the calling telephone number.

7.06 Up to 30 COIs may be assigned in an entity. A BDT entity may have as many as 27 regular recorders. Each of these recorders may receive calls marked with a different group of COIs. A COI Translation Table must be associated with each regular recorder to define the COIs which are transmitted by that recorder to the No. 1A AMARC.

7.07 A BDT entity will have one emergency recorder. A COI Translation Table is not associated with the emergency recorder. When a regular recorder in the remote office fails and the emergency recorder is put into service, the No. 1A AMARC is not notified. The No. 1A AMARC, therefore, continues to perform translations on the calls received from the affected BDT recorder port using the COI Translation Table associated with that recorder port.

7.08 A maximum of 27 COI Translation Tables may be provided for a BDT entity. More than one recorder may be associated with a particular translation table. The BDT Block Table constructed for each BDT entity from the information on Form 0200 specifies the number of the COI Translation Table to be used for translating the COIs received from each recorder port.

7.09 **COI**—List all COIs *presently* assigned in the entity. Up to 30 COIs may be in use. Valid entries are 00 through 29 (decimal).

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7.10 Calling NXX—Enter the 3-digit calling central office code (or other 3-digit code used in lieu of a central office code) which is represented by the COI. Valid entries are 001 through 999.

7.11 Calling NPA Index—Enter the index which represents the calling NPA of the COI in the calling NPA table. Valid entries are 0 through 9 (decimal).

7.12 To ensure consistency, Form 0203, which constructs the Calling NPA Table, should be completed before entering the index.

7.13 If no entry is made for a COI for the calling NPA parameter via the **RC ENT COC** input message, a zero entry is assumed.

7.14 Call Format Treatment Type—Some COI codes represent customers whose calls always require special call record formatting. Enter the value from the table below, which corresponds to the appropriate call record formatting treatment.

CALL FORMAT TREATMENT TYPE	CALL RECORDS FORMAT TREATMENT
0	Normal (COI and MBI)
1	WATS
2	TWX
3	Local Recording Requirement
4	Left-Shift CCSA

7.15 With BDT operation, the AMARC receives the same data as had been perforated on paper tape and sent to the accounting center. Call formatting will normally be determined by the MBI, just as it was determined by the accounting center with paper tape operation. The AMARC allows specification by COI of the call record formatting to be used, if desired. The following call formatting treatments may be designated for a COI:

- (a) Normal (Call Format Treatment Type 0)—Every call on which the specified COI is transmitted will be formatted according to the MBI received on the call. WATS Automatic

Flexible Routing (AFR) calls are excepted as explained in paragraph 7.16.

- (b) WATS (Call Format Treatment Type 1)—Every call on which the specified COI is transmitted will be formatted as a WATS call (Call Type 11 per Comptroller's Letter M284A). WATS AFR calls are excepted as explained in paragraph 7.16.

- (c) TWX (Call Format Treatment Type 2)—Every call on which the specified COI is transmitted will be formatted as a TWX call (Call Type 08 per Comptroller's Letter M284A). WATS AFR calls are excepted as explained in paragraph 7.16.

- (d) Local Recording Requirement (Call Format Treatment Type 3)—Every call on which the specified COI is transmitted will be formatted as a special, detail-billed call (Call Type 35 per Comptroller's Letter M284A). WATS AFR calls are excepted as explained in paragraph 7.16. The local recording requirement call type is used for COIs which require special translations that must be performed by the accounting center. When the accounting center finds a call on the billing tape which is formatted as Call Type 35, it performs the special translations required according to its own tables. For example, the accounting center may have tables for a particular office which specify that if a POTS call (determined from the MBI included in the call record) is received with COI 09, the calling NXX is 321, but if a CCSA call is received with COI 09, the calling NXX is 338. If Call Format Treatment Type 3 is specified for COI 09 on Form 0202, a Call Type 35 format will be used for every call with this COI. The accounting center will then recognize that special translations are required for these calls and will determine the proper NXX before billing each call for COI 09.

- (e) Left-shift CCSA (Call Format Treatment Type 4)—Every call on which the specified COI is transmitted will be formatted as a CCSA call (Call Type 09 per Comptroller's Letter M284A). WATS AFR calls are excepted as explained in paragraph 7.16.

7.16 WATS AFR calls require Call Type Format 25 per Comptroller's Letter M284A. A WATS AFR call is recognized by the CCI digit 6. When the AMARC receives a BDT call with the CCI digit 6, the call format treatment type parameter specified in the COI Translation Table

for the COI transmitted on the call is disregarded and the call is formatted as Call Type 25.

7.17 If no entry is made for a COI for the call format treatment type parameter via the RC ENT COC input message, a zero entry will be assumed.

8. CALLING NPA—NO. 1A AMARC FORM 0203

8.01 The information contained on Form 0203 is entered into the Calling NPA Table for the specified CDA, BDT, or 3ESS entity. The table constructed for each CDA entity defines the home NPA. The table constructed for each BDT or 3 ESS entity designates an index to represent each of up to ten calling NPAs.

8.02 Entries to a Calling NPA Table may be verified by input message DUMP MEM NPD CGN.

8.03 Form 0203 is prepared for each CDA, BDT, or 3ESS entity.

8.04 The input message RC ENT CGN is accepted for ETS and Voice Storage System (VSS) entities, but has no meaning. ETS and VSS entities send assembled call records to the AMARC.

9. FORM ENTRIES—NO. 1A AMARC FORM 0203

9.01 Figure 5 is a sample Form 0203. The following paragraphs describe the entries to be made on the form.

9.02 **Entity Number**—Enter the entity number. Valid entries are 00 through 137 (octal).

9.03 **Calling NPA Index**—Each index represents a possible calling NPA for the entity. This index is not part of existing billing data. Valid entries are 0 through 9 (decimal). This index must be consistent with the values assigned in the COI Translation Table (Form 0202).

9.04 For BDT or 3ESS, enter up to ten indices, as required. For CDAs, only one calling NPA (the home NPA) can be specified. Enter 0 for CDAs. If there is more than one calling NPA for an entity, it will be noted in the master record.

9.05 **Calling NPA**—List all possible calling NPAs (or 3-digit codes used in lieu of a

calling NPA) for the entity. Valid entries are 000 through 999. For BDT or 3ESS, enter up to ten calling NPAs, designating the home NPA as index 0. For CDAs, enter the home NPA as index 0.

10. CALLED NPA—NO. 1A AMARC FORM 0204

10.01 The information contained on Form 0204 is entered into the Called NPA Table for the specified BDT entity. This table is used to translate the 1-digit compressed code received from a BDT to the called NPA.

10.02 Entries to a Called NPA Table may be verified through input message DUMP MEM NPD CDN.

10.03 Form 0204 is only prepared for BDT entities. One copy is prepared for each BDT entity.

11. FORM ENTRIES—NO. 1A AMARC FORM 0204

11.01 Figure 6 is a sample Form 0204. The information for this form should be obtained from the accounting center. The following paragraphs describe the entries to be made on the form.

11.02 **Entity Number**—Enter the entity number. Valid entries are 00 through 137 (octal).

11.03 **Compressed Called NPA**—Enter up to ten compressed NPAs which are presently used by the office. Each compressed code represents an NPA which is frequently called by customers in the entity. Valid entries are 0 through 9 (decimal).

11.04 **Called NPA**—Enter the called NPA (or other 3-digit code used in lieu of an NPA) which is represented by the compressed NPA. Valid entries are 000 through 999.

12. THEORETICAL OFFICE CODES—NO. 1A AMARC FORM 0205

12.01 The information contained on Form 0205 is entered into the Theoretical Office Code Table for the specified CDA entity. This table designates an index to represent each of up to three theoretical codes in an entity. The table provides translation of the index to rate center, theoretical NPA and theoretical NXX.

12.02 Entries to this table may be verified through input message **DUMP MEM NPD TOC**.

12.03 Form 0205 is only prepared for CDA entities which have theoretical office codes. One copy is prepared for each of these CDA entities.

13. FORM ENTRIES—NO. 1A AMARC FORM 0205

13.01 Figure 7 is a sample Form 0205. The information for this form is found in the master record for the entity. The following paragraphs describe the entries to be made on the form.

13.02 *Entity Number*—Enter the entity number. Valid entries are 00 through 137 (octal).

13.03 *Theoretical Office Code Index*—Enter index numbers 1, 2, and 3 as required for the entity.

13.04 *Rate Center*—Enter the rate center of the theoretical code represented by each index. Valid entries are 0 and 1.

13.05 *Theoretical NPA NXX*—Enter the theoretical NPA and NXX which are to be represented by each index. Valid entries are 000 through 999 for NPA and 001 through 999 for NXX.

14. THEORETICAL CODE THOUSANDS AND HUNDREDS DIGITS—NO. 1A AMARC FORM 0206

14.01 The information contained on this form is entered into the Theoretical Code Hundreds Table for the specified CDA entity. This table lists the COC indices in the entity which require translation to a theoretical office code and provides the information needed by the No. 1A AMARC to perform this translation.

14.02 For example, suppose COC Index 9 in an entity represents both the physical central office code 323 and the theoretical code 542. Since the theoretical code is superimposed on the physical code, they share a maximum of 10,000 line numbers. Specific line numbers must be designated to each of the codes with no overlapping of numbers. For COC Index 9, the arrangement might be that line numbers 0000 through 9799 are to be translated to the 323 code, while line numbers 9800 through 9999 are to be translated to the 542 code.

14.03 For this entity the Theoretical Code Hundreds Table will specify that for calls transmitting COC Index 9, line number thousands digit 9, and hundreds digit 8 or 9, the central office code will be translated as 542. The translation for hundred groups nontheoretical are provided through the COI Translation Table (Form 0202).

14.04 Entries to the Theoretical Code Hundreds Table may be verified by input message **DUMP MEM NPD TCH**.

14.05 Form 0206 is only prepared for CDA entities which have theoretical office codes. One copy is prepared for each of these CDA entities.

15. FORM ENTRIES—NO. 1A AMARC FORM 0206

15.01 Figure 8 is a sample Form 0206. The information for this form is found in the master record for the entity. The following paragraphs describe the entries to be made on the form.

15.02 *Entity Number*—Enter the entity number. Valid entries are 00 through 137 (octal).

15.03 *COC Index*—Enter each COC index which may require translation to a theoretical code. These entries must be consistent with Form 0201 which specified for each COC index of the entity whether or not a theoretical translation was possible. Valid entries are 0 through 9 (decimal).

15.04 *Thousands Digit*—For each COC index, enter a line number thousands digit which may require translation of a theoretical office code. Valid entries are 0 through 9 (decimal).

15.05 *Hundreds Digits*—For each thousands digit, enter the hundreds digit(s) which, when combined with the specified thousands digit require(s) translation of the COC index to a theoretical office code. Up to ten hundreds digits may be specified. Valid entries are 0 through 9 (decimal). If theoretical translation is required for all line numbers with the specified thousands digit, all ten hundreds digits must be entered.

15.06 *Theoretical Office Code Index*—Enter the index into the entities Theoretical Office Code Table. This index specifies a theoretical NPA NXX. Valid entries are 1, 2, or 3.

16. DIGIT RECONSTRUCTION—NO. 1A AMARC FORM 0207

16.01 The information contained on this form is entered into the Digit Reconstruction Table (DRT) for the specified CDA entity. This table is used by the No. 1A AMARC to reconstruct called central office codes on calls from CDA entities which allow local call completion with less than seven digits or whose digit absorption feature absorbs 1, 2, or 3 digits of the 7-digit called number.

16.02 A step-by-step entity may be equipped with digit absorbing selectors. With these selectors, certain digits are absorbed without advancing the call to the next stage. The call remains on the selector until the next digit is dialed. With the next digit dialed, the selector may absorb again, cut through to the next selector or piece of equipment in the switching train, or block the call. For example, if the called number desired was 332-7689, digit absorbing selectors could be arranged so that the digits "33" would be absorbed by the first selector, then the digit "2" would cut through on the second level to an idle terminal to operate the first selector. The "7" would operate a fourth selector, the "6" would operate a fifth selector and the digits "8" and "9" would operate the connector. The selectors perform in accordance with a prearranged scheme illustrated by the traffic schematic for the entity.

16.03 It is unnecessary for a customer to dial any digit which is absorbed by a selector since it does not advance the call. With CDA (*MMU only*) operation, the called number is transmitted as dialed. If the customer has dialed less than seven digits or if digit absorption has occurred, the AMARC must reconstruct the called central office code to determine the MBI value of the call so the call can be properly billed. This reconstruction is accomplished by consulting the Digit Reconstruction Table for the entity. The AMARC makes no attempt to reconstruct a 7-digit number when a special 3-digit code is dialed.

16.04 Entries to the DRT can be verified by input message **DUMP MEM NPD DRT**.

16.05 Form 0207 is prepared for each MMU CDA entity which has digit absorbing selectors. Several copies of the form may be required for one entity.

16.06 A Digit Reconstruction Table is not needed for an SMU CDA entity, since the called number is not transmitted to the AMARC on an SMU call and an MBI value is not determined.

17. FORM ENTRIES—NO. 1A AMARC FORM 0207

17.01 Figure 9 is a sample Form 0207. The information for this form is determined from the traffic schematic and the master record for the entity. The following paragraphs describe the entries to be made on the form.

17.02 *Entity Number*—Enter the entity number. Valid entries are 00 through 137 (octal).

17.03 *Dialed Prefix*—List each shortened central office code which will be accepted by the step-by-step equipment. Enter each code with a dash in place of any digit that is not dialed. For example, if a customer can dial 8 for the central office code 438, --8 would be entered. Exactly three characters must be entered, with at least one dash.

17.04 Acceptable abbreviated codes must be determined from the master record or customer telephone directory and the traffic schematic for the entity. The master record or customer telephone directory lists the codes which can be dialed locally by customers in the entity. Each of these codes must be checked carefully through the traffic schematic to determine whether or not the customer can dial less than three digits. Each digit that is absorbed may not need to be dialed.

17.05 The following paragraphs provide an example of determining locally dialable codes which can be shortened and discuss the entries for Form 0207 which would be appropriate for the sample entity.

17.06 Figure 10 is the traffic schematic for a sample MMU CDA entity. The master record for this entity states that all subscribers are entitled to local messages to all stations in the following central office codes:

897

695

924

17.07 From Figure 10 it can readily be determined that:

- 897 can be shortened to 97 or 7
- 924 can be shortened to 24
- 695 can be shortened to 95 or 5.

17.08 Figure 9 shows the Form 0207 entries that would be required for this sample entity to allow reconstruction of the shortened locally dialable codes.

17.09 In step-by-step entities with digit absorption, some unusual dialing configurations are possible. Figure 10 shows that the code 695 will also be reached if a customer dials the shortened prefix 35, 65, or 85.

17.10 If a customer dials any of these codes, it is possible 695 was not intended. The step-by-step equipment, however, will complete the call to that central office code. If the call is completed, the AMARC will receive the actual dialed code. If 35, 65, or 85 has been dialed, the AMARC will attempt to reconstruct a 3-digit central office code. If these codes are not listed in the Digit Reconstruction Table for the calling entity, a **REPT CHL TBL DRC ERR** message will be printed at the AMARC terminal. The call will still be recorded by the AMARC and therefore billed.

17.11 To prevent error messages when no equipment failure is involved, the Digit Reconstruction Table should be as complete as possible. For this sample entity, Form 0207 should specify that --5, -35, -65, -85, and -95 be reconstructed to 695.

17.12 Digit absorption may be arranged on the second selector as well as the first selector. For a dialed prefix, 6-2 is a valid entry.

17.13 In some common control step-by-step entities using dial pulse sending with either by-link or wink start operation, routing codes must be dialed by the customer on some calls. With CDA operation, the routing codes are detected by the first digit, deleted by the CDA scan control unit, and the remaining digits transmitted to the No. 1A AMARC. The master record for an entity specifies any central office codes which must be dialed using a routing code. Analysis of alternative dialed call

patterns should recognize routing code options set up in the CDA.

17.14 **Reconstructed Central Office Code**—Enter the appropriate central office code for each dialed prefix. Valid entries are 200 through 999.

18. MESSAGE BILLING INDEX—NO. 1A AMARC FORM 0208

18.01 The information on this form is entered into the Message Billing Index (MBI) Table(s) for the specified CDA entity. This table is used by the No. 1A AMARC to determine an MBI value for each completed call received from the entity. The MBI value is determined by the rate center of the calling number and the central office code of the called number.

18.02 The MBI value is a key to the charging rate to be applied to a call. The MBI value sometimes determines the call record format to be used for a call. If the detail billing option chosen for the No. 1A AMARC (Form 0100) was to detail bill all calls with a MBI value greater than 1, the MBI value determines the call record format, unless the calling number is listed in the SPN Table.

18.03 Entries to the MBI Tables can be verified through input message **DUMP MEM NPD MBI**.

18.04 Since the called number is only transmitted to the AMARC on calls from CDA entities that are MMU, a MBI value is only determined on calls from MMU CDA entities. Form 0208 is prepared for MMU CDA entities only. Several copies of the form may be required for one entity.

19. FORM ENTRIES—NO. 1A AMARC FORM 0208

19.01 Figure 11 is a sample Form 0208. The information for this form is obtained from the rates department. The following paragraphs describe the entries to be made on the form.

19.02 **Entity Number**—Enter the entity number. Valid entries are 00 through 137 (octal).

19.03 **Rate Center**—Enter the rate center for which the MBI value applies. Valid entries are 0, 1, 2, and 3, where 0 and 1 are normal and 2 and 3 correspond to 1SR rate centers 0 and 1,

respectively. The rate center numbers must be consistent with Forms 0201 and 0205.

19.04 If an entity has two rate centers, two regular MBI Tables must be constructed. Also two 1SR MBI Tables must be constructed if the entity has 1SR service. Entries for all rate centers may be made on the same copy of Form 0208.

19.05 The sample entity for which the Form 0208 in Figure 11 was prepared offers 1SR class of service. The entity has two rate centers. The 1SR customers must be charged different rates for their local calls from other customers in the entity. To accommodate this requirement, separate rate centers (2 and 3) are used to specify their charges (MBI values) to the AMARC. For this entity, the AMARC will construct four MBI Tables. See Section 201-900-073, paragraph 6.03 for a further explanation. If no entry is made for the rate center parameter via the **RC MBI** input message, a zero entry is assumed.

19.06 Called Prefix—List every 3-digit code which can be dialed locally by customers in the entity. Valid entries are 200 through 999.

19.07 The master record for an entity lists all central office codes which can be dialed as a local call. The customer telephone directory also contains this information.

19.08 Special 3-digit codes such as 411, 611, 911 should be listed on Form 0208.

19.09 In the discussion on the Digit Reconstruction Table, the traffic schematic and the master record for a sample entity were examined. Valid locally dialable codes according to the master record were 897, 695, 924. Examination of the traffic schematic revealed that 695 could be reached by dialing 3-digit codes 985, 965, 935, 885, 865, 835, 695, 685, 665, 635, 395, 385, or 365.

19.10 If a customer dials any of these codes, it is possible 695 was not intended. The step-by-step equipment, however, will complete the call to that central office code. If the call is completed, the No. 1A AMARC will receive the actual dialed code and attempt to determine an MBI value for the call. If these codes are not listed in the Message Billing Index Table for the calling entity, a **REPT CHL TBL MBI ERR** message

will be printed at the AMARC terminal. The call will still be recorded by the AMARC and therefore billed.

19.11 To prevent error messages where no equipment failure is involved, the Message Billing Index Table should be as complete as possible. Form 0208 should list all alternative listed codes and show the same MBI value as 695. Similar analysis and listings of alternatives should be done for codes 897 and 924.

19.12 In some common control step-by-step entities using dial pulse sending with either by-link or wink start operation, routing codes must be dialed by the customer on some calls. With CDA operation, the routing codes are detected by the first digit, deleted by the CDA scan control unit, and the remaining digits transmitted to the AMARC. The master record for an entity specifies any central office codes which must be dialed using a routing code. Analysis of alternative dialed call patterns should recognize routing code options set up in the CDA.

19.13 MBI—Enter the MBI value which applies to a customer calling from the specified rate center within the entity to the called code. Valid entries are 0 through 9 (decimal). MBI values must be determined according to the telephone company's tariffs for message rate calls. The rate department is the source of information for determining MBI values. MBI values must be communicated to the accounting center. MBI 0 generally represents a no-charge call. The central office code for the telephone company PBX would usually be a no-charge call.

20. SPECIAL COI TRANSLATION—NO. 1A AMARC FORM 0209

20.01 The information contained on Form 0209 is entered into a Special Calling Office Index (COI) Translation Table for the specified BDT entity. This table is used in conjunction with the regular COI Translation Table by the AMARC in determining the calling telephone number. Up to 27 Special COI Translation Tables may be provided for a BDT entity—each corresponding to a regular COI Translation Table. This table is only required for BDT entities.

SECTION 201-900-077

20.02 Entries to a Special COI Translation Table may be verified through input message **DUMP MEM NPD SPC**.

20.03 Form 0209 constructs one Special COI Translation Table. One copy is prepared for each Special COI Translation Table required for a BDT entity.

21. FORM ENTRIES—NO. 1A AMARC FORM 0209

21.01 The information required for a Special COI Translation Table should be obtained from the accounting center.

21.02 Figure 12 is a sample Form 0209. The following paragraphs describe the entries to be made on the form.

21.03 *Entity Number*—Enter the entity number. Valid entries are 00 through 137 (octal).

21.04 *Special COI Translation Table Number*—Enter the number which will identify this table. This number must be the same as the regular COI Translation Table number. Valid entries are 00 through 26 (decimal).

21.05 A Special COI Translation Table supports the regular COI Translation Table on special service BDT calls in translating the COI, the 2-digit code which represents a 3-digit central office code in a BDT entity. The No. 1A AMARC receives the COI and the four digits of the line number when call details are transmitted. The No. 1A AMARC must translate the COI to determine the calling telephone number.

21.06 Up to 30 COIs may be assigned in an entity. A BDT entity may have as many as 27 regular recorders. Each of these recorders may receive calls marked with a different group of COIs. A COI Translation Table must be associated with each regular recorder to define the COIs which are transmitted by that recorder to the No. 1A AMARC.

21.07 A BDT entity will have one emergency recorder. A COI Translation Table is not associated with the emergency recorder. When a regular recorder in the remote office fails and the emergency recorder is put into service, the AMARC is not notified. The AMARC, therefore, continues to perform translations on the calls received from

the affected BDT recorder port using the COI Translation Table associated with that recorder port.

21.08 A maximum of 27 Special COI Translation Tables may be provided for a BDT entity. More than one recorder may be associated with a particular translation table. The BDT Block Table constructed for each BDT entity from the information on Form 0200 specifies the number of the COI Translation Table and Special COI Translation Table to be used for translating the COIs received from each recorder port.

21.09 *COI*—List all COIs *presently* assigned in the entity for which special translation is required. Up to 30 COIs may be in use. Valid entries are 00 through 29 (decimal).

21.10 *CCSA, TWX, or WATS*—Enter type of service which is being assigned the special NXX.

21.11 *Calling NXX*—Enter the 3-digit calling central office code (or other 3-digit code used in lieu of a central office code) which is represented by the special translation of the COI. Valid entries are 001 through 999.

22. SPECIAL MBI—NO. 1A AMARC FORM 0210

22.01 The information on this form is entered into the Special Message Billing Index Table(s) for the specified BDT entity. On 4- or 5-line initial entry calls, it allows the AMARC to perform custom MBI translations on a per-entity basis. These translations relate the MBI transmitted from the BDT to a call type format code.

22.02 This special MBI Table is only used on calls whose COI translation yields a call format treatment type of 0 or 4. Calls whose treatment types are 1, 2, or 3 are automatically formatted as WATS, TWX, or Local Recording Requirement Calls, respectively, and the MBIs are not translated.

22.03 Entries to the Special MBI Tables can be verified through input message **DUMP MEM NPD SPM**.

22.04 Form 0210 is only prepared for BDT entities which transmit 4- or 5-line initial entries.

23. FORM ENTRIES—NO. 1A AMARC FORM 0210

23.01 Figure 13 is a sample Form 0210. The information for this form is obtained from the accounting department. The following paragraphs describe the entries to be made on the form.

23.02 *Entity Number*—Enter the entity number. Valid entries are 00 through 137 (octal).

23.03 *Special MBI*—Enter the special MBI. Valid entries are 00 through 29 (decimal).

23.04 *Call Type Format Code*—Enter the call type format code. This code determines how the call record will be formatted. Valid entries are as follows:

1 = Station Paid

8 = TWX

9 = CCSA

11 = WATS Billing No.

16 = Bulk Bill

22 = Detail Bill

25 = WATS Station ID

30 = Directory Assistance

35 = Local Recording

NO. 1A AMARC 0200

NO. 1A AMARC 216551
 ENTITY KENT OH67 67F

EFFECTIVE DATE 12-5-78

ISSUE DATE 12-1-78

REVISION NO. 1

BDT RECORDER PORTS

(aaa) ENTITY NUMBER 004

(b) BDT	(c) RECORDER PORT	(dd) COI TRANSLATION TABLE
0	1	01
	2	00
	3	00
	4	00
	5	00
	6	00
	7	00
	8	01
	9	00
	0	01
1	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	0	
2	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	0	

INPUT MESSAGE: RC ENT aaa RCDR b c dd!

DUMP MESSAGE: DUMP MEM NPD RDR

PREPARED BY J. Doe

TELEPHONE ABC-XXXX

Fig. 1—Sample Form AMARC 0200—BDT Recorder Ports (3.01) (3.04)

TABLE A				
ASSIGNMENT OF OFFICE AND TREATMENT RELAYS IN AN OUTPUTSER IDENTIFIER GROUP				
LINE	OFFICES	PHYSICAL OFFICE CODE	TREATMENT	REMARKS
121	OF - 0	834	—	
122	OF - 1		—	
123	OF - 2		—	
124	OF - 3		—	
125	SP - 0 & 1	—		
126	SP - 2 & 3	—		
127	SP - 4 & 5	—		
128	SP - 6 & 7	—		
129	SP - 8 & 9	—		
130				
COL	A	B	C	D

Fig. 3—Sample 7970 Drawing (5.04)

NO. 1A AMARC 0203

NO. 1A AMARC 216551
ENTITY KENT 0467 69F

EFFECTIVE DATE 12-5-78
ISSUE DATE 12-1-78
REVISION NO. 1

CALLING NPA

(aaa) ENTITY NUMBER 004

(b) CALLING NPA INDEX	(ccc) CALLING NPA
<u>0</u>	<u>216</u>

INPUT MESSAGE: RC ENT aaa CON b ccc
DUMP MESSAGE: DUMP MEM NPD CON

PREPARED BY J. Doe
TELEPHONE ABC-XXXX

Fig. 5—Sample Form AMARC 0203—Calling NPA (9.01)

NO. 1A AMARC 0204

NO. 1A AMARC 216551
ENTITY KENT 046767FEFFECTIVE DATE 12-5-78
ISSUE DATE 12-1-78
REVISION NO. 1

CALLED NPA

(aaa) ENTITY NUMBER 004

(b) COMPRESSED CALLED NPA	(ccc) CALLED NPA
0	216
1	201
2	412
3	313
4	614
5	215
6	716
7	317
8	518
9	419

INPUT MESSAGE: RC ENT aaa CDN b ccc!

DUMP MESSAGE: DUMP MEM NPD CDN

PREPARED BY J. Doe
TELEPHONE ABC-XXXX

Fig. 6—Sample Form AMARC 0204—Called NPA (11.01)

NO. 1A AMARC 0205
NO. 1A AMARC 216551
ENTITY YNTW OH89 897

EFFECTIVE DATE 12-5-78
ISSUE DATE 12-1-78
REVISION NO. 1

THEORETICAL OFFICE CODES

(aaa) ENTITY NUMBER 007

(b) THEORETICAL OFFICE CODE INDEX	(c) RATE CENTER	(ddddd) THEORETICAL NPA NXX
<u>1</u>	<u>0</u>	<u>216042</u>

INPUT MESSAGE: RC ENT aaa TOC bc dddddd!
DUMP MESSAGE: DUMP MEN NPD TOC

PREPARED BY J. Doe
TELEPHONE ABC-XXXX

Fig. 7—Sample Form AMARC 0205—Theoretical Office Codes (13.01)

1st
SELECTOR

- 0 TSPS OUT OF TRUNK
- A 9 SECOND SELECTOR
- AR 8
- 7 897 OUT OF TRUNK
- AR 6
- 5 695 OUT OF TRUNK
- 4 411 OUT OF TRUNK
- A 3 SECOND SELECTOR
- 2 924 DIGIT ABSORBING OUT OF TRUNK
- 1 SVC & CAMA

A = ABSORB ONCE ONLY, UNLOCK FOR SUBSEQUENT CONNECTION
TO A SECOND SELECTOR OR TRUNK

AR = ABSORB REPEATEDLY

Fig. 10—Sample Traffic Schematic (17.06) (17.07) (17.09)

