AMARS
#1A AUTOMATIC MESSAGE ACCOUNTING RECORDING CENTER (AMARC) NONGENERIC PARAMETERS

CONTENTS

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1. GENERAL INFORMATION

1.1 This section outlines procedure for loading Non-Generic parameters (or Non Program Data, NPD). The Generic program requires this data in order to perform its major functions such as call processing. The NPD is Non-Generic in the sense that these parameters are not identical for all installations. Since the parameter information is loaded into the processors by typing specific input statements as described in this section and the Input Manual, the Generic program must be loaded into both processors first. Detailed information concerning the specific AMARC installation related remote offices (i.e., CDA, etc.) may be obtained from the Operating Company.

1.2 Loading the NPD for system use is the responsibility of the TELCo. If Western is requested to perform this function on an extra item basis, then this section may be used.

1.3 Once parameters have been entered and for every time the parameters have been changed with valid information, a parameter backup on magnetic tape should be made as outlined in Paragraph 6 of this Section. The backup parameter tape will provide an easier method for reloading parameters compared to the manual insertion otherwise required. It is recommended, however, that special numbers entered via the "RC SPN" message not be included in the data backed up on the Non-Generic data magnetic tape since these numbers are subject to frequent change. Instead, these numbers should be entered via the TTY after the back up tape has been made. The same applies for RC ENT OBS for CDT.

2. TEST EQUIPMENT

2.1 Input Output Manuals, IM/OM, for the appropriate generic issue.

2.2 Magnetic Tape, 1600 bpi, blank, for the purpose of recording Non-Generic parameters. (Obtained from the TELCo).

2.3 Magnetic tapes, 1600 bpi, IBM standard label, for the purpose of recording AMA data (obtained from the TELCO).

3. PROCEDURE

3.1 Non-Generic parameters can only be entered on an out-of-service processor. Remove the standby processor by typing the following input on system console 1 (if the standby processor is not already out-of-service).

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INPUT    : RMV SYS!
RESPONSE : M tt yz RMV SYS n OOS
           ØØØØØ1 where n = 0 or 1 -
           the OOS processor
           tt = time
            y = processor state (A,S
                or 0)
            z = processor I.D. (0 or
                1)
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3.1 (Cont'd)

NOTE: When entering parameter information on a live system (i.e., a system recording actual traffic); if at any time during the execution of this procedure, the active processor encounters a major alarm condition which is not channel related, the procedure being executed should be immediately abandoned and proceed to Paragraph 9.

3.2 Enter the appropriate Non-Generic parameter data from system console 1. The sequence in which these messages are entered is important. The sequence specified in Paragraph 4 is recommended. Refer to the Input Manual for proper input format and data field details.

4. PARAMETER DESCRIPTION

4.1 This part will describe the Non-Program Data input message available to specify the parameters. Which statements to be used will depend upon the particular AMARC and the remote offices it serves, see Table A. For example, not all AMARC installations will require the special number statements "RC SPN". Select the appropriate parameter statements as required by the specific installation; however, when manually typing in this paragraph omit inappropriate statements. Detailed information concerning the specific AMARC installation is required which should be available from the operating company. This information will involve the AMARC and the remote offices. Refer to IM/OM for details concerning the following parameter statements.

4.2 AMARC Parameters: These parameters pertain to the AMARC installation itself, although some of these parameters indirectly reflect the remote offices the AMARC serves. These parameters are entered only once for each processor (usually when the first channel is equipped).

4.201 AMARC Identification (ID): Each AMARC has a six digit identification number which is part of the label written onto the magnetic tape.

4.202 Message Rate: This message is used to specify the message rate and/or the input entry format for AMARC's serving LAMA-C, ETS, CDA, No. 3 ESS or CDT only.

4.203 Detailed Billing This message specifies the detailed billing option is to be used. This message is accepted only if the Multi-Message Unit (MMU)rate plan is in effect for AMARC's serving CDA, No. 3 ESS and/or CDT.

4.204 Equip the DZ11 Miltiplexors: This message is used to equip a DZ11 multiplexer in the AMARC software. Each multiplexer controls eight data channels which may be equipped only after the multiplexer has been equipped.

4.205 Equip the Automatic Call Units (ACU): This message is used to equip an automatic call unit (ACU) in the AMARC software. Each dial backup channel to be equipped in the AMARC requires a dedicated ACU to be associated with it.

4.206 Equip the Dial Backup Channel: This message is used to equip a dial backup data channel in the AMARC software. 202S and 212A dialups may be equipped on any channel on an equipped multiplexor. 2024 and 2048 dialups may be equipped only on even-numbered channels on an equipped multiplexor and require the next higher-numbered channel to be available for equipping. When channels are equipped with either 2024 or 2048 dialup types, the next sequential higher-numbered channel (called a 2024 or 2048 secondary channel) is made unavailable for equipping.

4.207 Clock Compensation Factor

This message allows a compensation factor to be applied to AMARC's realtime clock when it is found to be gaining or losing time.

4.208 Expiration period of AMA billing tapes: This message is used to input the expiration period of AMA billing tapes into the AMARC system.

4.209 Flexport multiplexor 1: Flexport multiplexors must be equipped before individual ports on the multiplexor are equipped. Flexports are the primary communication interface for system control. Flexport multiplexor 0 is automatically equipped.

4.210 Flexports: This message equips flexport ports for communication and control. Flexport multiplexor 0, ports 0 and 1 are automatically equipped. Flexports 00 and 01 are the system consoles.

4.3 Switching Entity Parameters: These parameters describe the switching entities served by the AMARC. There may be more than one channel assigned to an individual entity and the number assignment of entities may not correspond with the number assignment of the channels. Each entity will be equipped by typing its own set of parameter statements, therefore, the following inputs will be repeated for each switching entity. The entities need not be equipped in sequential order. These parameters must be entered before attempting to equip the associated channels.

4.301 Entity Format: This message is used to specify the type of local central office switching entity to be served and data associated with that entity.

4.302 Central Office Code: This message specifies a Central Office Code translation table. This message is accepted for AMARC's serving CDA, BDT or CDT.

4.303 Entity Recorder Scan Port: This message specifies the calling office index translation table for each Recorder scan port for each entity. This message is accepted only by AMARC's serving BDT.

4.304 Special Central Office Code: This message enables Special COC number to be assigned for billing regular subscribers, CCSA, TWX and WATS calls or any combination when their central office index (COI) is the same.

4.305 Special Message Billing Index: This message permits offices served by BDT's to format call types for billing according to locally specified Special MBI codes.

4.306 Calling NPA: This message specifies the calling NPA codes.

4.307 Called NPA: This message enters a 3 digit CALLED NPA into a table with a corresponding one digit code. This combination is used to translate the one digit compressed code received from a BDT to the CALLED NPA for billing purposes. It is also used in CDT to translate the CALLED NPA index obtained from the CALLED NXX to NPA index translation table to the CALLED NPA.

4.308 Theoretical Office Codes: This message specifies the one, two or three Theoretical Office Codes. This message is accepted only for AMARC's serving CDA.

4.309 Theoretical Office Code Hundreds Digit: This message specifies the theoretical office code hundreds digit and thousands digit. (CDA offices only)

4.310 Digit Reconstruction Table: This message specifies an entry to be placed in the Digit Reconstruction Table. This message is accepted only by AMARC's serving CDA.

4.311 Message Billing Index: This message specifies an entry to one of the Message Billing Index Tables. This message is accepted only by AMARC's serving CDA.

4.312 Billing Rate Indicators: This message is used to assign local or non-local call treatment and bulk or detailed billing for a particular billing rate indicator (BRI) in the specified message rate billing table for the given CDT entity.

4.313 Dedicated Trunk: Enters data into the dedicated trunk table for CDT. Used by CCSA and WATS-AFR message billing.

4.314 Flat Rate Billing Tables: Equip flat rate billing tables for CDT. These tables are used to determine whether calls to a particular NXX are to be treated as local or non-local.

4.315 Message Rate Billing Tables: Equip message rate billing tables for CDT. Used to determine the Billing Rate Indicator (BRI) to be applied to calls in a particular NXX.

4.316 NPA location in NXX: Specifies the NPA in which a particular NXX is located when the NXX is called from a CDT entity equipped for 7 digit dialing across NPA boundaries.

4.317 Complaint Observed: Enters a telephone number to be complaint observed for CDT.

4.318 Originating Line Class: Enters data into the Originating Line Class to message billing class translation table for CDT entities.

4.319 Ten Digit Dialing Translation: Enters data into the Ten Digit local dialing translation table for CDT entities.

4.320 Highest Trunk Link Frame: Specifies the number of the highest trunk link frame (TLF) equipped in a CDT entity.

4.321 Call Class Indication: Used to characterize certain call class indices (CCI's) for BDT entities

4.322 Trunk Audit Table: This message adds entries in the trunk audit table for the specified CDT entity.

4.323 Message Billing Class: This message enters data into the Message Billing Class to calling NXX translation table for CDT entities.

4.324 Equip Module Table: This message enters data into the module equipped table for No. 2B and No. 5 ESS entities.

4.325 Secondary Originating Line Class: This message enters data into the secondary originating line class translation table for CDT entities which allow ten digit local dialing.

4.4 Channel Parameters: These parameters provide information concerning a specific channel assigned to the AMARC. Each channel will be equipped by typing its own set of parameter statements. The channels need not be equipped in ascending order except for related BDT and CDT channels.

4.41 Equip Data Channel: Each data channel from a remote location must be equipped.

NOTE: For No. 3 ESS, the next higher sequential channel (abb+1), called a dedicated backup, is equipped automatically and does not require a RC input message. Channels associated with BDT and CDT entities must be equipped in sequential order. Channels for No. 2B and No. 5 ESS must be even-numbered channels on an equipped multiplexor and require that the next higher-numbered channel be available for equipping.

4.42 Equipped Scan Port (CDA): For each channel the following input specifies the last equipped scan port on each of the input network/multiplexer units of the CDA served by the channel.

4.43 Equipped Scan Port (BDT): This message specifies the highest trunk number equipped for a given Recorder Scan Port for a given BDT.

4.44 Equipped Scan Port (No. 3 ESS): This message specifies the highest equipped junctor on a No. 3 ESS.

4.45 Terminal Identification Number This message specifies the No. 3 ESS 6-digit AMA terminal identification number (TID) for the specified No. 3 ESS or the 3 digit TID number for the specified CDT channel.

4.46 Channel Line Monitor (CDA): For each channel to be equipped, a specified line is assigned to facilitate automatic test calls and threshold level tests which verify the operation of the remote office and the AMARC. These test calling line numbers are assigned by the operating company.

4.47 Trunk Scan Board Columns: Equips trunk scan board columns on a CDT controller served by this channel.

4.48 Call Record Register (2B and 5 ESS): This message enters data into the call record register equipped table for No. 2B and No. 5 ESS channels. This message also results in allocation of CRR's for the channel in AMARC memory.

4.5 Special Number Parameters:

4.51 This message enters a directory number into the special number table. The special number table contains the line numbers of customers who are requesting special services. This table contains a maximum of 400 entries, and covers all CDA and No. 3 ESS entities served by this AMARC.

NOTE: For No. 3 ESS, only the complaint observing and detailed billing options are applicable.

5. NPD COMPUTATION AND TRANSFER

5.1 When all parameters have been entered, type the following input on system console 1.

INPUT : TEST DET 6!
RESPONSE: M tt zy REPT DET CMP PASSED

NOTE: This input computes a new CRC check for the new NPD.

5.2 Initialize the system by typing the following input using system console 1.

INPUT : INIT SYS!
RESPONSE: *tt yz INIT SYS n OOS

NOTE: If the processor repeatedly initializes (printing the "INIT SYS" repeatedly), it is probably due to changes or additions being made incorrectly. Perform a stable system initialization as described in Paragraph 6.7. This will delete all Non-Generic data from the out-of-service processor. Reenter the changes or additions taking care to verify that the specified data is correct and is typed in the recommended sequence.

5.3 Restore the out-of-service system by typing the following input using system console 1.

INPUT : RST SYS!
RESPONSE: UPD MEM TRN COMPLETE
RST SYS n STANDBY

5.4 Using system console 0, switch processors by typing the following input.

INPUT : SW SYS!
RESPONSE: M tt zy SW SYS n ACTIVE
p STANDBY
Where n = new active
p = standby

5.5 Remove the new standby processor by typing the following input on system console 1.

INPUT : RMV SYS!
RESPONSE: M tt yz RMV SYS p OOS
ØØØØØ1

5.6 Using system console 0, transfer the new NPD from the active processor to the out-of-service processor by typing the following input.

INPUT : UPD MEM NPD!
RESPONSE: M tt yz UPD MEM NPD COMPLETE

5.7 Using system console 1, request the CRC computation of the NPD by typing the following input:

INPUT : TEST DET 6!
RESPONSE: m tt yz REPT DET CMP PASSED

NOTE: The output of the computed CRC should match the output in Paragraph 5.1.

6. CREATING A BACKUP COPY OF NON-GENERIC DATA ON MAGNETIC TAPE

6.1 In order to prepare a backup copy of the parameters on magnetic tape, the processor and tape unit to be used must be out-of-service. If the processor is not already out-of-service remove the standby processor by typing the following input using system console 1.

INPUT : RMV SYS!
RESPONSE: M tt yz RMV SYS n OOS 000001
where n = system removed from service (0-1)

6.2 Remove the tape unit by typing the following input on system console 1.

INPUT : RMV TAPE!
RESPONSE: M tt yz RMV TAPE AMA

Dismount the AMA (call processing) magnetic tape if this tape is present.

6.3 Mount a backup tape with a write enable ring provided on the out-of-service tape unit by following the procedure given in Paragraphs 8.1 thru 8.6.

6.4 Restore the tape unit for out-putting NPD data from memory to tape by typing the following input using system console 1.

INPUT : RST TAPE NPW!
RESPONSE: M tt yz RST TAPE NPD nnnnn...

6.5 Copy the NPD data onto magnetic tape by typing the following input using system console 1.

INPUT : OP RCTBL TAPE!
RESPONSE: The Non-Generic data stored in memory will be outputted as the tape moves forward. When output is complete the tape will rewind and the following response is typed.

M tt yz RMV TAPE NPD COPIED

6.6 Depress the tape unit's REWIND key. Remove the backup tape and remove the write enable ring.

6.7 Perform a stable initialization by depressing the HALT key, loading the address 1000, releasing the HALT key, and then depressing the START key on the out-of-service processor's console.

6.8 All Non-Generic data has been cleared from the out-of-service processor by the previous stable initialization. Restore the parameters using the newly made backup tape.

TABLE A (Order of Entry)

INPUT	LAMA-C or ETS	CDA	CDT	BDT	No. 3 ESS	No. 2B Ess or No. 5 ESS	PARAGRAPH
RC ID	X	X	X	X	X	X	4.201
RC MR	X	X	X		X		4.202
RC DB		X	X		X		4.203
RC ENT	X	X	X	X	X	X	4.301
RC ENT COC		X	X	X			4.302
RC ENT RCDR				X			4.303
RC ENT SPCOC				X			4.304
RC ENT SPNBI				X			4.305
RC ENT CGN		X	X	X			4.306
RC ENT CDN			X	X			4.307
RC ENT CCI				X			4.321
RC ENT OLC			X				4.318
RC ENT OLCS			X				4.325
RC ENT NBC			X				4.323
RC ENT MSG			X				4.315
RC ENT FLT			X				4.314
RC ENT BRI			X				4.312
RC ENT DTK			X				4.313
RC ENT NXX			X				4.316
RC ENT OBS			X				4.317
RC ENT TLF			X				4.320
RC ENT TDL			X				4.319
RC ENT AUD			X				4.322
RC ENT TOC		X					4.308
RC ENT TCH		X					4.309
RC ENT MOD						X	4.324
RC DRT		X					4.310
RC NBI		X					4.311
RC MPX	X	X	X	X	X	X	4.204
RC FLXMPX	X	X	X	X	X	X	4.209
RC FLXPRT	X	X	X	X	X	X	4.210
RC ACU	X	X	X	X	X	X	4.205
RC DLP	X	X	X	X	X	X	4.206
RC CHL EQP	X	X	X	X	X	X	4.41
RC CHL CRR						X	4.48
RC CHL COL			X				4.47
RC CHL ESP		X					4.42
				X			4.43
					X		4.44
RC CHL TID			X		X		4.45
RC CHL MON		X					4.46
RC SPN		X			X		4.5
RC CLK COMP	X	X	X	X	X	X	4.207
RC EXP	X	X	X	X	X	X	4.208

X = Applicable

7. RESTORING NON-GENERIC PARAMETERS FROM MAGNETIC TAPE

7.01 In order to copy parameters from magnetic tape to memory, the processor and tape unit to be used must be out-of-service. If the processor is not already out-of-service, remove the standby processor by typing the following input using system console 1.

INPUT : RMV SYS!
RESPONSE: M tt yz RMV SYS n OOS

7.02 Remove the tape unit by typing the following input on system console 1 (unless the tape unit is already OFF-LINE).

INPUT : RMV TAPE!
RESPONSE: M tt yz RMV TAPE AMA

NOTE: Turn this tape over to the TELCo, since it may contain billing data.

7.03 Mount the written backup parameter tape on the out-of-service tape unit. Mount and thread the tape by following the procedure given in Paragraphs 8.1 thru 8.6.

NOTE: Make sure that the "write enable" ring has been removed for this procedure.

7.04 Restore the tape unit for inputting NPD data from tape to memory by typing the following input using system console 1.

INPUT : RST TAPE NPR!
RESPONSE: M tt yz RST TAPE NPD mmmm...

7.05 Copy the NPD data from magnetic tape by typing the following input using system console 1.

INPUT : IN RCTBL TAPE!
RESPONSE: The Non-Generic data stored on the tape will be transferred to memory as indicated by the tape moving forward. When transfer is complete, the tape will rewind and the following response is typed:

M tt yz RMV TAPE NPD RESTORED

7.06 Depress the tape unit's REWIND key. Dismount and properly store the backup parameter tape. Remount the AMA magnetic tape as described in Paragraph 8.

7.07 Verify that the parameters just entered from the magnetic tape are valid by typing the following input using system console 1.

INPUT : TEST DET 6!
RESPONSE: M tt yz REPT DET CMP PASSED

NOTE: The output of the computed CRC should match the output in Paragraph 5.7.

7.08 Initialize the out-of-service processor by inputting the following on system console 1:

INPUT : INIT SYS!

AN initialization printout will be obtrained.

7.09 Refer to the IM. Set the date and time on th OOS CPU using the SET CLK UCL command on system console 1.

7.10 Restore the out-of-service processor to standby by typing the following input on system console 1 (mount an accounting magnetic tape instead of the backup parameter tape on the out-of-service tape unit before restoring the system). Never remount a tape which contains valid billing data.

INPUT : RST TAPE AMA!
RESPONSE: UPD MEM TRN COMPLETE
RST SYS p STANDBY
RST TAPE AMA

NOTE: Refer to OM for details. If instead of the above messages, a "REPT TAPE ERR" is printed then consult with the output manual for reason of failure. Never remount a tape which contains valid billing data.

8. MOUNTING A MAGNETIC TAPE IN THE DUPLEX MODE

8.1 Verify that the tape to be mounted is an IBM standard lable tape (containing no valid billing data) fitted with a plastic "write enable" ring. Depress the tape drive's RESET key.

8.2 Pull the locking handle on the upper handle and push the tape reel over the hub. Then push the locking handle closed.

8.3 Thread the magnetic tape over the guides, rollers, tape head, capstan, and onto the take up reel on the lower mount as indicated in the diagram located on the tape drive housing.

8.4 Unwind slack from the upper reel sufficient to allow it to be taken up manually by the lower reel in about two revolutions. At this point, the tape should be properly tensioned so that no slack exists.

8.5 Depress the tape drive's LOAD key. The tape will wind onto the take up reel until the "load point" is reached. At that time the LOAD lamp will light.

8.6 Depress the tape drive's ON LINE key. (Perform the following paragraphs only if an AMA magnetic tape is mounted).

8.7 Initialize the out-of-service system by typing the following input using system console 1.

INPUT : INIT SYS!
RESPONSE: ** tt yz INIT SYS n OOS

8.8 Restore the tape unit by typing the following input using system console 1.

INPUT : RST TAPE!
RESPONSE: after a short delay, the the following message will be printed:

UPD MEM TRN COMPLETE
RST SYS n STANDBY
RST TAPE AMA

NOTE: Refer to OM for details. If instead of the above messages, a "REPT TAPE ERR" is printed then consult with the output manual for reason of failure. Never remount a tape which contains valid billing data.

9. EMERGENCY RECOVERY

9.01 For an active AMARC (an AMARC recording actual traffic data), when one processor has been removed from service in order to perform Non-Generic data changes or updates and the active processor encounters a major alarm trouble which is not related to a channel failure, it is required to bring the out-of-service processor to the in-service state as soon as possible. This paragraph describes the procedure to be used for the emergency recovery of the out-of-service processor.

9.02 If Non-Generic data in the out-of-service processor has not been changed nor added to, proceed to Paragraph 9.03. If the NPD has been altered, attempt to restore the original data by typing the following input using system console 0:

INPUT : UPD MEM NPD!
RESPONSE: M tt yz UPD MEM NPD COMPLETE

If the above attempt fails, restore the NPD information from magnetic tape. Use the procedure given in Paragraph 7.

9.03 After the original NPD has been restored, determine if the active processor is repeatedly initializing (the "INIT SYS..." output message). If the active processor is repeatedly initializing, proceed to Paragraph 9.04. Otherwise, proceed to Paragraph 9.09.

9.04 Verify (or mount if necessary) that a new clean AMA tape is mounted and threaded on the out-of-service unit. Refer to Paragraph 8 if an AMA magnetic tape has to be mounted. Before proceeding to Paragraph 9.05, the out-of-service processor's tape unit must be at LOAD POINT and ON LINE.

9.05 Depress the HALT key on the console of the active processor. Then momentarily depress the START key.

9.06 Using system console 1, initialize the processor by typing the following input:

INPUT: INIT SYS!

The out-of-service processor will be restored to the active state.

9.07 Using system console 0, restore its tape
unit by typing the following input:

INPUT: RST TAPE!

NOTE: If the AMA tape just mounted was not an IBM standard label tape (containing no valid billing data), or if the disk backup feature is disabled, the tape will not restore. In this case, reattempt this procedure but substitute an unconditional tape restoral "RST TAPE AMA UCL!".

Normally, a "RST TAPE AMA..." will be printed. If the "REPT TAPE ERR..." message is printed refer to OM for details and reattempt restoring the tape unit.

9.08 After having restored the out-of-service processor to the active state with its tape unit ON LINE, proceed to remedy the major alarm situation in the out-of-service processor. Proceed to Paragraph 9.11.

9.09 Mount a new clean AMA tape on the out-of-service unit and restore to the standby state. (Refer to Paragraph 8). Before proceeding to Paragraph 9.10, the out-of-service processor's tape must be at LOAD POINT and ONLINE.

9.10 If the major alarm was caused by a channel failure (for example, a "RMV CHL" output message), attempt to restore the channel by typing the following input using system console 0.

INPUT: : RST CHL nnn!
where nnn = the number of the channel removed from service.

If the major alarm was caused by a system fault, switch processors by typing the following input using system console 0:

INPUT: SW SYS!

9.11 Remedy the major alarm condition before reattempting to update or change the NPD information.

No changes are indicated due to extensive revision.

Manager, Product Engineering
Control Center

Reason for Reissue:
To update for Generic 4.