ENGINEERING AND ADMINISTRATION DATA ACQUISITION SYSTEM

OPERATING THE CENTRAL CONTROL UNIT

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1. GENERAL

1.01 This section is designed to provide information needed by the administrator of the Engineering and Administration Data Acquisition System (EADAS) Central Control Unit (CCU) for the effective administration, operation, and control of the entire EADAS. Specific topics covered include a description of the EADAS system, CCU operating instructions, administrative commands, system back-up and recovery, and administrative requirements.

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

1.03 The scope of this practice is the boundaries of EADAS. It will identify the basic operating functions which must be performed in the Central Control Unit for EADAS, and it will describe the relationships between functions which are part of the normal system flow. Also included are samples of administrative aids which should enhance the management and control of the mini-computer operations.

Related Documents

1.04 Appendices A, B, and C to this practice are Position Practices providing detailed, operating instructions on particular aspects of this subject. They are entitled:

Position Practices

Appendix A. **Load the EADAS Generic**—step-by-step procedures required to transform the CCU devices into an EADAS system.

Appendix B. **Supply, Modify and Verify Definitions**—step-by-step procedures detailing the use of CCU peripheral equipment, system definition input and system back-up function.

Appendix C. **Maintain Magnetic Tape for Downstream Processing**—step-by-step procedures for insuring that EADAS output is maintained in a timely and accurate manner for downstream processes.

1.05 A complete discussion of the System Definitions portion of an operating EADAS is contained in DFMP Div. D, Sec. 4-g. For information on EADAS Surveillance Applications, please refer to DFMP Div. D, Sec 4-h. System Operational Maintenance aspects are covered in DFMP Div. D, Sec. 4-i.

1.06 References in this section to methods, planning data requirements, service levels, and equipment quantities are based on American Telephone and Telegraph Company recommendations.

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

2. SYSTEM DESCRIPTION

2.01 The Engineering and Administration Data Acquisition System (EADAS) was developed in response to the need for timely, accurate traffic data for more efficient network utilization. Switching services managers need key data on a real-time basis if they are to analyze, control, and take corrective action affecting the switching network. Sufficient reliable data is also required to maximize equipment construction program efficiency.

2.02 EADAS is part of an integrated system of programs, referred to as the Total Network Data System (TNDS), which are being developed to meet the long-term Network Management needs of the Bell System. It is an effective data collection and real-time data analysis system. A system of

processing programs known as TDAS—Traffic Data Administration System, and associated downstream programs are being developed for systemwide long-term data analysis.

2.03 EADAS consists of a central control unit which stores and analyzes traffic data sent by various data collection devices.

2.04 The central control unit (CCU) is built around a Digital Equipment Corporation PDP 11/40 mini-computer supplemented with additional equipment as follows:

(a) Disk and core memory

(b) Magnetic tape units

(c) Special test and interface circuits

(d) Teletypewriters—command and remote for input/output

(e) Line printer (optional)

2.05 Administrators communicate with EADAS in a specially designed conversational type language. Data can be accepted from the following sources for immediate use or later analysis:

(a) Newly-designed EADAS Traffic Data Converters (ETDC)

(b) Newly-designed Pollable Data Terminals (PDT-1A) for use in small offices

(c) Existing TDRS Traffic Data Converters (PCC and TURC)

(d) Traffic data from electronic switching systems

(e) Outside supplier terminals which satisfy a specified interface

CCU Physical Design

2.06 The Basic EADAS data processor is a 8-cabinet configuration termed the Central Control Unit (CCU). A fully equipped CCU will require 135 amps at 120 volts and normal computer room temperature and humidity control. A ninth cabinet will be required if an optional back up mag tape drive is ordered. The cabinets are interconnected with connectorized cables. Six cabinets contain

equipment supplied by Digital Equipment Corporation (DEC). The six cabinets are a functional processing unit which is installed and tested by the supplier. The remaining two cabinets house system input-output equipment designed by WECo.

2.07 The mini-computer is a PDP 11/40, general purpose computer. Software required is a BTL-designed generic program, common to all installations. Variable data pertinent to each location's needs is added by the user as required via a convenient "recent change" type of procedure.

2.08 Core memory varies from 64k (65,536) to 80k (81,920) words, depending upon the number of input channels required. The fixed head and moving head disc memories store accumulated traffic data and office-pertinent data, such as calculation and threshold tables, collection schedules, and backup operation programs.

2.09 The magnetic tape recorder is a 9-track, 800 bit-per-inch, IBM compatible unit, used to store summarized data prior to further downstream processing. Normally, one tape should hold 24 hours worth of data.

2.10 The channel interface drawers contain circuitry designed to interface incoming data with the computer's communication bus. The circuitry is on plug-in cards, with one card required per input channel. Twenty channel interface circuits are housed in a slide-in module or drawer. EADAS has a 100 channel capacity in multiples of 20 per drawer. Each type of data source (ETDC, PDT, etc.) will require a different type of plug-in channel interface circuit. Tip and ring signal control circuits provide access to each channel for trouble isolation and reverse signaling for TDRS-1A data sources.

2.11 A single card, plug-in data set is provided for each channel in the channel data set cabinet. TTY data sets are supplied for the 16 possible remote TTYs, plus an automatic calling unit for pollable data terminals.

SOFTWARE

2.12 EADAS is controlled by a generic program, developed and maintained by Bell Telephone Laboratories. Variable data, unique to each office, is entered by the user through administration of a "recent change" type program. This program leads the user through the proper input steps using

a conversational language. Examples of variable data are system configuration, system parameters, calculations, threshold schedules, thresholds, office identifications, etc.

Input/Output Scheduling

2.13　As described in TFP, Division D, Section 9b, Western Electric Company is responsible for supplying a pre-programmed magnetic tape to each EADAS site. This tape is divided into three sections known as SYSBAK, the Generic Program and System Definitions.

　(a)　*SYSBAK* appears first on the EADAS generic tape. Like the Generic Program, SYSBAK is a computer program. Unlike the Generic Program it can only accomplish three very limited functions.

　　(1)　It can force the CCU to read *both* the Generic Program *and* the System Definitions from the EADAS generic tape into the computer's memory. This mode is used primarily for initial system loading.

　　(2)　It can force the CCU to read *only* the Generic Program into the computer's memory from the EADAS' generic tape. Any System Definitions already in the computer would remain unchanged. This function is used for updating new generic programs (also WECO supplied).

　　(3)　It can force the Generic Program to momentarily stop operating while it (SYSBAK) *writes* a copy of itself, the current Generic Program, and all System Definitions to a blank tape. This mode is used for writing system back up tapes.

　(b)　*The Generic Program* appears after SYSBAK on the EADAS generic tape. It constitutes all those instructions which tell the CCU equipment how to process incoming traffic data.

　(c)　*The System Definitions* are supplied by the Associated Company. They explain to the Generic Program the type of incoming data to expect and allow the Associated Company to tailor the Generic Program's functions to its needs.

Specific information on the use of EADAS generic tapes may be found in the Appendices to this practice.

SELECTION OF SYSTEM CONFIGURATION

2.14　With EADAS generic 1C or later programs, a process of *System Configuration Selection* will take place whenever a system backup tape (see part 6 of this practice) or a new generic tape is loaded. Each EADAS has a fixed amount of core storage assigned to buffer incoming data. This buffer store can be totally assigned to single-event data sources, (i.e., ETDC & OTDC) or shared between accumulated data (ESS, PDT 1A, outside vender, etc.) and single-event sources. During system initialization, each site is required to select a configuration to suit its requirements and size by completing an interactive dialogue at the CCU. The dialogue, which consists of a series of questions printed on the CCU TTY, is contained in Task 4A of *Load EADAS Generic* Position Practice (DFMP Div. D, Sec. 4e, Appendix A.)

　　Note: At one point in the dialogue, if accumulated data sources are desired and sufficient basic core is available, the system will request "SELECT SYSTEM CHANNEL CONFIGURATION * * * CONSULT DFMP, DIV. D, SECT. 4E FOR INSTRUCTIONS. REPLY A,B,C, OR D." The following table should be used to select the proper response:

LETTER RESPONSE	SINGLE-EVENT CHANNELS*	BUFFERS FOR ACCUMULATED DATA (1 PER ACC. DATA SOURCE)*
A	99	NONE
B	90	26
C	72	52
D	50	78

*Hardware channel assignment may not exceed 100 per EADAS.

It is recommended that EADAS planners anticipate the ultimate system configuration for accumulated data channel requirements and provide for them as outlined above so that rearrangements will not be necessary.

SYSTEM SCHEDULING

2.15 Input Data Collection Scheduling—No scheduling is required on most input channels since data sources such as ETDC's are actively transmitting data at all times. The counts from these channels are used to update totals on the disc continuously. The collection interval is specified as 15 minutes or 1/2 hour. The interval is defined for the complete system and is entered into the system by the central control unit teletypewriter. Scheduling is required on those channels which control TUR and PDT data exclusively.

2.16 Output Tape Scheduling—Data collected from a given channel is accumulated and stored in the disc memory for 15 minute or 1/2 hour intervals. At the end of each interval, scheduled totals on the disc are transferred to an output tape. This transfer may be accomplished on an hourly basis, if desired. In this case, four 15-minute intervals (or two 1/2 hour intervals) are accumulated in memory and then transferred to tape.

2.17 Data can only be reported according to a predefined schedule. The schedule can be represented as a 24-hour period divided into 96, 15 minute slots (or a 24-hour period divided into 48, 30-minute slots). Up to 16 independent 24-hour schedules can be defined for the complete system and entered via the central control unit teletypewriter. Schedule assignment is performed in a conversational mode with the central processor via the CCU teletype. Each channel can be assigned any of the 16 schedules. One schedule covers 7 days and

includes magnetic tape writing, hourly report presentation and TUR/DTS machine operation.

Near Real-Time Processing and Reporting

2.18 Near real-time calculations will be made by the central processor to monitor the incoming data and to provide local dial administrators with sufficient information to determine the quality of service being provided by their offices. For these purposes, a number of calculations will be performed for each of the input channels. These calculations will be repeated every collection interval using the data gathered during the previous collection period. Disc storage for calculation definitions is arranged modularly in blocks (up to 17 calculation definitions can be stored in a block). One or more blocks may be assigned to a given entity, i.e., an entity may have one block (17 calculations), two blocks (34 calculations), etc. The total calculation capacity of the system is dependent on the length of user specified calculations, but will range between 5000 and 6800. Specific information on calculation definition administration may be found in DFMP, Div D., Sect. 4-g.

2.19 To avoid the problem of reporting large amounts of "normal" data which tend to mask trouble indications, the system will output exception reports. That is, thresholds will be defined by the user, against which each of the calculations will be compared. Should an exception occur, the calculation identity and its results will be printed out on the appropriate remote dial administrative TTY and on the central control unit high-speed printer, if provided.

2.20 Should additional data be desired at a remote TTY, a user can request to have the data printed out for that office. A system may employ as many as 16 remote TTYs. The dial administrator may also examine any threshold value by typing

an appropriate message at the remote TTY. However, threshold modifications will be allowed only through the central control unit TTY. Instruction for Operating the Dial Administrator TTY are contained in DFMP Division D, Section 4-f.

2.21 While there is no strict rule on the makeup of the calculations and their thresholds, suggested calculation sets and threshold rationale are provided on an office-type basis in Appendices to DFMP Division D, Section 4-h.

Surveillance Features

2.22 Following are some features of the near real-time reports. For a detailed description of these features, refer to DFMP Div. D, Sec. 4-h (Surveillance Applications).

(a) User Defined Calculations.

(b) Exception Thresholds—One of five types may be specified per calculation.

Type 1—Upper bound
Type 2—Lower bound
Type 3—Upper/lower bound
Type 4—Always print
Type 5—Never print

(c) Calculation Linkage—Each calculation can be designated as either a master or a slave. Any calculation which is defined as a master is printed only if it exceeds its threshold. A slave calculation, on the other hand, is printed either if it or its master exceeds its threshold. If a calculation is defined without a master or slave designation, it assumes an independent status and cannot have other calculations associated with it.

(d) Calculation Labeling (Terms)—Frequently, the interpretation of the result of a calculation depends upon certain sub parts of the calculation, e.g., the value of the numerator or denominator or a particular register(s).

In EADAS, up to five separate subparts (terms) can be defined, labeled, and printed with the master calculation. A subpart can be a register reading or a sum of register readings.

(e) TTY Output—Up to *six entities* can be defined or concentrated on one EADAS input

channel. All calculations associated with an entity are also associated with a particular dial administrative TTY. This means that normally all exceptions for a given entity are printed on the particular assigned TTY in addition to the CCU Line Printer if desired. However, one can define a separate entity for a channel which gives one the ability to print some calculated results (say trunk group data) on one TTY and other data (service indicators) on another TTY for a given switching machine. In case of concentrated ETDCs, the second entity identification permits results to be printed on different TTYs. This is desirable if the ETDCs are in different Dial Administrators' areas.

(f) Cross Channel Calculation—EADAS provides the ability to define a calculation involving registers from more than one channel.

(g) Long Term Calculation Storage—As previously mentioned, data in the form of register totals are normally transferred to output tape on 15 minute, 1/2 hour, or hourly intervals. In addition, calculated results may be stored on disc for longer periods of time. A system parameter may be defined which specifies those hours each day when calculated results are to be placed in long term storage. A total of 96 system periods or up to 48 cumulative hours (assuming a 30 minute system period) worth of calculated results will be stored according to this parameter. *Note that calculated results only (not terms) are stored.*

(h) Hourly Reports—EADAS has the ability to generate hourly reports. Normally, it is expected that the user will only want such reports for preselected hours during a day. Therefore, up to 16 schedules can be user defined, and each channel may be assigned a schedule for hourly reports.

These reports will go to the appropriate dial administrators as well as being printed on the Central Control Unit high-speed line printer. Such reports will be printed *after* the exception reports are printed, i.e., exception reports have priority over hourly reports.

The hourly reports are user defined but are fixed-format-per-office type. Space for sixteen hourly report formats will be available, and the user merely specifies what calculation results are

to be inserted within a given format. Hourly reports may consist of up to 64 calculation results.

The hourly report structure is also used for defining ESS demand reports which will be generated automatically on the system period *following* data collection.

3. COMMAND LANGUAGE

3.01 The Command language is the primary communication link between the people involved in CCU activities and EADAS. Fig. 1 contains a complete list of System commands. The language is designed to be interactive, that is, the system will usually advise the CCU Teletype if an illegal command has been attempted and allow the correction to be made.

3.02 This portion of the practice will explain how the system communication process functions, and give some general Command language rules.

3.03 All commands in EADAS consist of two or three parts separated by delimiters. The delimiter used by EADAS is the colon (:). The first two parts of a command never have more than two letters each. The makeup of the third part, when required, depends on the particular command. For example:

<center>AA:BB:a,b,c</center>

(1) AA—Action Field—must be valid 2-letter action statement.

(2) BB—Information Field—must be valid 2-letter information statement—must also be valid in the context of Field(1).

(3) a,b,c—Data Field—alphanumeric characters not required on all commands—must also be valid in the context of Fields (1) and (2). Commas are used as delimiters within the data field.

(4) :—delimiters (colon) used to separate command fields.

    ● The first part of any EADAS command is a mnemonic, that is an abbreviation, for

some *action* which EADAS is requested to take such as:

    M O unt magnetic tape or *E*nter *M*ode for Parameter definition

● The second part of a command is an *identification* mnemonic. This specifies the object of the action as in:

    M O unt:*M*agnetic *T*ape:*or*

    *E*nter *M*ode:*PA*rameter definition:

● The third part of a command contains additional information or *data* needed to carry out the command. This field is not required on all commands. If not required, it is left blank. For example:

    M O unt:*M*agnetic *T*ape:number_0

    *E*nter *M*ode:*PA*rameter definition:

    Note: When the data field is blank the second delimiter (:) should be used.

3.04 There are two types of commands available in the EADAS Command Language. These are *mode* commands and *action* commands.

● *Action commands* cause the system to perform the requested action immediately. For example, "PR:DA:ALL, message!" will cause "message" to be printed immediately on all dial administrative teletypes.

● *Mode commands* prepare the system to receive further instructions. They do not cause the system to do anything specific at the time they are given. It is through the action of mode commands that system definitions are supplied. Mode commands always have an action statement of EM (*E*nter *M*ode).

3.05 Messages from the system following the typing of a command will tell the operator whether or not the command was valid or invalid. Some messages are unique to a command. Others, like the following, will be used in many situations throughout the Command Language. A summary of all System Response messages is contained in Fig. 2.

(a) OK—the message was received, processed correctly by EADAS, and the requested action was successfully completed. (Good)

(b) NG—the command format was valid, but the action requested is in conflict with the current status of EADAS (e.g., Dismounting a tape when no tape is on the drive). (No good)

(c) RL—the command was a valid request which may not be executed at this time. Usually, this is due to interaction with the system period. (Repeat later)

(d) IP—the requested action is being processed. The results of the request (printouts, etc.) may take a moment to appear. (In progress)

(e) PF—the requested action involves a request for a printout on the CCU teletype. The printout will appear momentarily. (Printout follows)

(f) ?A—the command contains an error in the action field and is ignored. This error may be the result of a wrong character in the action field, or it may be caused by a missing or misplaced delimiter.

Example:

EQ:SY:!   ?A
(There is no EQ action command.)

EMSY:!   ?A
(The delimiter between EM and SY is missing.)

EMS:Y:!   ?A
(The delimiter is misplaced. It should be between the M and S.)

(g) ?I—the command contains an error in the information (second) field. This may result from one of three causes:

(1) The information field could be wrong

-More than two characters (including spaces)

-Invalid characters

Examples:

EM:SYS:!   ?I
(There should only be two characters in the information field. The second S is wrong.)

EM:SX:!   ?I
(There is no SX information statement)

(2) The second delimiter (:) could be missing

Example:

EM:SY!   ?I

(3) The action specified may not be in agreement with the information specified.

Example:

MO:SY:!   ?I

*No such combination exists even though action and information are both valid separately.

Note: In the third case above, the error may be in the action field (if, for example, you meant to enter command EM:SY: and you in fact entered MO:SY).

(h) ?D—the command contains an error in the data (third) field. This error message may result from one of several causes.

(1)) The data field is incompatible with the action field, the identification field or both.

Example:

OP:CA:09*,ALL,09:30,2

*the OP:CA: command requires an entity name, not a number as the first data field. ON:CH:09 would be acceptable.

(2) Improper characters were entered in the data field.

Example:

ON:CH:ZM*

*a number was expected where ZM appears.

(3) The correct characters were entered, but they exceeded the allowable limits for this type of data.

Example:

ON:CH:109*

*channel numbers may not exceed 99.

(4) The delimiters (commas,) used to separate data fields were not present or were in the wrong position.

Example:

OP:CA:PHLAPAGLS01 *ALL,09:30

*comma required between PHLAPAGLS01 and ALL

(i) ?E—a command was in the process of executing when a second command was received. The second command is ignored. The operator may stop the execution of the first command immediately by typing EX:! or may wait until the first command has finished executing. In either case, the second command must be re-entered.

(j) ?C—a command included an illegal carriage return character (denoted by the symbol <CR>). <CR> may only be used with certain clearly designated commands. All other commands are limited to a single line (72 characters) of teletype input.

3.06 Certain characters used in the Command Language have a special meaning to EADAS. These are called control characters. It is important to remember that these characters are limited in their uses. That is, a colon (:) may not be used as a colon except in the third (data) field when listing a time (hour:minute:second) or a date (month:day). Its primary use is as a delimeter between the action, identification, and data fields in a command. Control characters were chosen to lessen the impact on the set of characters normally used.

(a) !—the exclamation point signals the end of a command message. It tells the system to execute the command preceding it, and disables the CCU teletype until the system responds.

(b) <CR>—the carriage return symbol used throughout these documents refers to the CCU teletype key marked CR, not to the letters C and R. <CR> is used when the data field of certain commands exceeds one line (72 characters). If <CR> is used with a command that does not allow it a ?C error message will result.

(c) &—this character causes the system to ignore a command. It must be used before an execute (!) character is given. It is useful if you discover halfway through typing a command that you have made an error.

(d) :—this character is used only as a delimiter between the action, information, and data fields of a command; and when entering time or date in the data field.

(e) .—this character is used only as a delimiter between the parts (sometimes referred to as arguments) of the data field in certain commands.

(f) /—this character is used as a delimiter when changing the software date.

(g) ← or Rub Out—these characters are used to erase the previous character on the line. The rubout key will cause a backarrow (←) to be printed on the CCU teletype. Each time one of these characters is used another character is erased.

Example:

EMSY ← ←:SY:! is transmitted to the computer as EM:SY:!

(h) @—(shift P) this character causes the system to discontinue printing at the CCU teletype. It then returns control to CCU personnel who may enter commands as desired.

Note: Due to system constraints, a maximum of two extra lines of report may be printed after @ is typed. Control will then be transferred as above.

(i) ;—this character is used as a delimiter in the data field for certain commands.

4. CCU Operating Procedures

4.01 The operating process of an EADAS CCU can be divided into sixteen specific functions or tasks to be performed by CCU personnel. As previously discussed, Position Practices containing step-by-step procedures for performing these tasks are included as Appendices, A, B and C to this practice.

4.02 Appendix A, *Load EADAS Generic,* contains the following tasks:

(1) Bring Central Processing Unit (CPU) and Disk Drive to Ready.

—complete installation and power availability is assumed.

(2) Mount EADAS Generic

—places the Western Electric supplied Generic Tape in position on the tape drive.

(3) Load SYSBAK from Tape

—loads the initial, direction giving portion of the EADAS Generic Tape into the system.

(4) Load Generic With System Definitions

—used on all initial start ups of a CPU for loading the remainder of the Generic Program.

-respond to System Configuration questions

(5) Load Generic Without System Definitions

—used only to incorporate an improved, Western Electric supplied Generic Program to a working system. Allows already existing System Definitions to be retained.

(6) Dismount Generic Tape

—removes the Generic Tape from the tape drive.

4.03 Appendix B, *Supply, Modify, Verify System Definitions* contains the following tasks:

(1) Bring CCU Teletype and Line Printer to Ready

—details use of CCU Teletypewriter and high speed line printer including paper and ribbon loading procedures.

(2) Analyze Input and Determine Action

—provides a decision/reference chart.

(3) Supply System Definitions

—describes commands, system responses and proper formats for entering Company specific System Definitions to EADAS.

(4) Modify System Definitions

—provides procedures for modification of existing definitions.

(5) Verify System Definitions

—Provides the means for reviewing the current status of any system definition.

(6) Back-up EADAS Generic

—provides the mechanics of making a copy of all System Definitions present including a copy of SYSBAK and the basic EADAS Generic.

4.04 Appendix C, *MAINTAIN MAGNETIC TAPE FOR DOWNSTREAM PROCESSING* contains the following tasks:

(1) Consult Daily Schedule and Determine Action

—provides a brief decision/reference table assuming a daily schedule and tape log is provided.

(2) Mount Data Tape

—details the physical placement of a data writing tape on the drive and prepares it to receive data as scheduled.

(3) Dismount Data Tape

—provides tape dismount preparation command and describes physical removal from the tape drive.

(4) Restart Magnetic Tape

—provides procedures for proper restart of data tape following power loss from tape drive.

5. ADMINISTRATIVE AND UTILITY COMMANDS

5.01 In addition to the System Definition Commands used to supply, modify and verify definitions to Engineering and Administration Data Acquisition System (EADAS), Administrative and Utility Commands are available for further machine communication. Fig. 3 contains a list of the Administrative and Utility Commands as well as Processor Switch Register settings for system loading operations.

5.02 EADAS has a series of commands whose primary function is to assist in the administration of the system. These include:

- Commands which cause reports normally printed on the Dial Administration teletype only, to be printed on the CCU line printer also.

- Commands which connect or disconnect dial administration teletypes from the system.

- A command which allows the CCU teletype to communicate with any or all dial administrator teletypes.

- Commands for setting processor software time and date.

- Commands for control of TUR's, channels, calculations and mag tape writing activities.

- Commands to mount, dismount and restart Magnetic Tapes.

5.03 The CCU administrator has six commands to control the printing of reports at the

CCU apart from their appearance at the appropriate dial administration teletype. These commands are:

(a) "ON:EX:!" -causes *all* exception reports for *all* dial administrators to be printed at the CCU.

(b) "OF:EX:!" turns the above feature off.

(c) "ON:HR:!" causes *all* hourly reports, for *all* dial administrators to be printed at the CCU.

(d) "OF:HR:!" turns off feature (c) above.

(e) "ON:LP:!" combines features (a) and (c) above in addition to routing the reports to the line printer.

(f) "OF:LP:!" combines features (b) and (d) above and in addition, causes all requested line printer directed output to be printed on the CCU TTY.

5.04 All functions of a dial administration teletype may be stopped or restored from the CCU teletype. A disconnection using the command "OF:DA:teletype number!" makes the system react as if that teletype were not there. This function is useful if a teletype is to be moved, or if a disabled teletype is causing persistent alarms.

- *Reconnection*

5.05 When the teletype is ready for use, enter the command "ON:DA:teletype number!" to restore the teletype to the system.

5.06 If the CCU administrator wants to send a message to any or all dial administrator's teletypes, the command "PR:DA:teletype number, message!" may be used. The word "ALL" may be substituted for "teletype number" to print the message on all remote teletypes.

Examples:

e.g., PR:DA:14, IS YOUR TTY BROKEN?!

PR:DA:ALL, SYSTEM WILL SHUT DOWN IN 1Ø MIN!

5.07 TURs are automatically turned on or off according to predefined schedules. In addition,

EADAS can turn TURs on and off from the CCU teletype. TURs manually turned off remain off until the end of the current system period. At that time the appropriate TUR schedule is consulted. The commands used are:

(a) "ON:TU:channel number!" turns on all TURs controlled for the channel specified. If "ALL" is specified instead of "channel-number", all TUR's in the system are turned on. Once turned on *manually*, TURs remain on until they are turned off *manually* or a TUR detector test is run.

> *NOTE:* Cases may arise where TURs send data on Channel A but are controlled by Channel B. In this case, "channel number" specified should be B.

(b) "OF:TU:channel number!" turns off all TURs controlled on the channel specified. "ALL" may replace "channelnumber", and the NOTE above applies.

5.08 In a similar manner, other EADAS functions can be controlled by the CCU Teletype as follows:

(a) "ON:CA:channel number!" activates the predefined calculations for the designated channel while "OF:CA: channel number!" turn them off. The use of ALL in the data field will enable or disable calculations for all channels.

(b) "ON:MT:channel number!" allows raw register data to be written to magnetic tape per the defined Mag Tape Schedule while "OF:MT: channel number!" removes this capability for that particular channel. The use of AUTO in place of a channel number in the data field affects all channels.

(c) During normal operation, the program scans each TDC—type data channel interface every 11 ms looking for event data. It scans each channel whose address is in the SCNADR (scan address) table.

"OF:CH:channel number!" literally deactivates a predefined channel from the scan process. This command must be given before the address selector for that channel can be removed from the interface drawer. The command "ON:CH: channel number!" activates it, i.e., instructs the program to scan the designated channel for data input.

> *NOTE:* A channel must never be activated unless its address selector is plugged into the interface drawer otherwise a fatal trap will occur.

5.09 The processor contains a software "calendar clock" from which all system schedules are administered. The date and time are initially set upon loading an EADAS generic program. This "clock" will effectively stop whenever the CCU ceases processing. This condition will exist, for example, whenever a back-up generic tape is being made or in any powered down situation. When sufficient time has been lost by the processor the time and/or date can be reset by using the following commands:

"TI:hours (in military time):minutes:seconds!"

"DA:month/day/year,day of week (1st two characters)!"

> *NOTE:* Changing the time of day will affect the validity of data being collected for the current period and may hinder accurate retrieval of long term data storage. Similarly, changing the day and date modifies the current daily schedules, thus affecting scheduled tasks. Therefore, time and date should only be reset if they are grossly incorrect or after the system has been down for any significant period of time. If ESS channels are interfaced with EADAS, it is necessary to retain reasonable synchronization with their clocks.

5.10 EADAS has three commands concerning operation of the data magnetic tape as follows:

(a) The "MO:MT:drive number,tape label, site ID!" command places a volume and header label followed by a file mark on the mag tape and is the final step preparing EADAS to write raw register data to tape for downstream processing. (Refer to Appendix C, Task 2).

(b) "DM:MT:drive number!" prepares a tape for physical dismounting by making an end-of-tape mark followed by an end-of-file and two additional end-of-tape marks. The used magnetic tape is then automatically rewound

and the tape drive placed in the off-line mode. (Refer to Appendix C, Task 3).

(c) The command "RS:MT:! allows the magnetic tape to be repositioned properly following a momentary loss of power to the tape drive. (Refer to Appendix C, Task 4).

> *NOTE:* The above commands will not be accepted by the processor within three minutes of the end of a system period.

Utility Commands

5.11 Utility commands are also provided to perform various tasks. These commands are grouped under categories according to function. These commands are discussed in greater depth in relation to their use for maintenance purposes in DFMP Div. D, Sec. 4i.

- ● *Dump commands* (Refer to 5.12)

  These commands allow determination of certain values exactly as they appear in the computer's memory.

- ● *Test commands* (Refer to 5.13)

  These commands cause various maintenance tests to be performed with results printed at the CCU teletype or line printer.

- ● *Register commands* (Refer to 5.14)

  These two commands allow the CCU to manipulate the values contained in the locations where register differences are kept.

- ● *Tape dump* (Refer to 5.15)

  EADAS can examine the contents of a tape or part of a tape.

- ● *Calculation results* (Refer to 5.16 and 5.17)

  The system can examine or sum the results of any calculation.

Dump commands

5.12 A dump is a printout which shows exactly how the values appear in the computer's memory. The dump commands identify which area

of core memory should be examined and printed. The use of a dump command does not affect ongoing data collection unless requested within 3 minutes of a system period.

(a) DU:CB:a (*DU*mp *C*alculation *B*lock, *a*) where *a* is one of the 400 possible calculation blocks (valid values 0-399). This command causes an octal printout of the specified calculation block on the line printer. A dump of calculation block 0 will result in an English/decimal printout of all entity names contained in the system.

(b) DU:CO:a,b (*DU*mp *CO*re memory from *a* to *b*) where *a* is the octal starting address, and *b* is the octal ending address of the core desired. Valid addresses are from 0—157776. *a* must be less than *b*. If a single address is specified, only that core location will be printed on the CCU TTY. Output for all other requests will appear in octal, on the line printer.

(c) DU:HD:a,b (*DU*mp *Hea D*er information) where *a* is the channel number and *b* specifies active or passive storage (valid entries A or P). This command causes an octal dump of the headers associated with the active or passive storage tracks on the fixed head disk for the channel specified.

(d) DU:KW: (*DU*mp *K*ey *W*ord). This command causes an English/numeric listing of the Keyword Table to be printed on the line printer. The Keyword Table contains all mnemonics developed by the OTC and specified in the "LABEL=" responses in calculation definitions. Since there are a maximum of 256 keywords per system, the ability to examine the keyword table for redundancies (e.g., calling peg count PEG, PG, and PEGC in the same table) is important.

(e) DU:RG:a,b,c,d (*DU*mp *R*e*G*ister totals) where *a* is the channel number (CCU TTY) or entity name (DA TTY); *b* indicates active or passive values desired (valid entries A or P); *c* is the starting register number in decimal; and *d* is the ending register number in decimal. If *c* and *d* are not specified, all registers associated with the indicated channel will be printed. If no *d* is specified the single register specified in *c* is dumped. This utility allows its user to obtain a *decimal* dump of the register or range of registers specified. Dumps of several registers

will appear on the line printer. Dumps of a single register will appear on the CCU teletype.

Note 1: Substitution of the character "M" in the *b* data field in place of A or P will cause an M register dump. This will cause the *register totals* for the most recent hourly report or tape write period which are accumulated and stored on the moving head disk to appear on the line printer. Requests for the hours register totals must be made before the end of the first system period within the next scheduled hourly report or tape write period.

Note 2: For #1ESS and #2ESS, the channel number must be followed by the schedule designation H or C. Use is only valid for the (A) active mode.

Test commands

5.13 EADAS provides four test commands to be used in system troubleshooting. A full description of the maintenance aspects of CCU Operations and these test commands may be found in DFMP-Div D. Sec 4i.

(a) TS:TU:a,b (*TeSt:TUr's*)

This command causes the system to make a detector test on TUR's

(b) TS:TC:a,b,c (*TeSt:Traffic Data Converter*)

This test consists of two parts:

1. A "pass/fail" test which determines if the TDC is equipped with those input cards specified in the channel definition.

2. An "inhibit/busy" test which makes all inputs to the TDC appear first as "no count", then as "count".

(c) TS:CI:a,b,c,d! (*TeSt:Computer Interface*)

This command is used to test that portion of an EADAS channel which lies between the data link and the processor, that is, the data set at the CCU, and the associated computer interface.

Register commands

5.14 EADAS has two commands (in addition—to "dump register", covered in 5.12 above) for the manipulation of raw register counts.

(a) ZE:RG:a (*ZEro* active *ReGister* readings) where *a* is the channel number.

This command sets those areas holding active register readings for the channel specified to zero.

The command may be used to zero registers for diagnosis of "trouble" or testing. It may also be used with a subsequent dump register command to see if a previously malfunctioning register is now scoring.

(b) SU:RG:a,b (*SUm ReGisters*) where *a* is the channel number, and *b* indicates counts for active or counts for passive (valid entry "A" or "P"). Data link capacity or TDC capacity can be checked by the sum register command. The sum register command causes the total number of counts received on a channel during the previous system period (*b* set to "P") or to present in the current system period (*b* set to "A") to be printed on the CCU teletype.

Tape dump

5.15 The tape dump command allows the user to examine the contents of all, or a portion, of any data tape. The command used is "EM:TA:". Like many system definition commands; "EM:TA:" is a mode command which asks questions to which you must respond. The use of this command is contained in DFMP-Div. D., Sect 4i.

Output Calculated Results

5.16 Calculated results may be obtained by using the command OP:CA:a,b,c,d,e! where *a* is the entity name; *b* is the calculation name (the letters "ALL" may be substituted giving all calculations within an entity); *c* is the starting time desired (*c* may be left blank and the most recently concluded system period is assumed. If *c* is left blank *d* and *e* must also be left blank. Assumed values are *d* = current date, *e* = 1); *d* is the date of the desired interval (If blank, current date is assumed); and *e* is the number of

consecutive intervals wanted. (If blank, 1 is assumed).

> **NOTE:** If "ALL" is specified, field "e" **must** be blank.

● This command is useful in several areas. Possibilities include:

(a) Defining a special study calculation, and never printing the results. OP:CA: may then be used to obtain all results at one time.

(b) Checking the previous results of an exception calculation which has failed.

> **NOTE:** In this and the following command (SU:CA), starting time refers to **report generation** rather than data gathering, e.g., to output results gathered from 8:30 to 9:00, the start time in data field **c** would be specified as 9:00.

Sum Calculated Results

5.17 The sum of the results of any given calculation for up to 48 accumulated hours of stored intervals (assuming a 30 minute system period) may be obtained by using the command SU:CA:a,b,c,d,e! where **a** is the entity name; **b** is the calculation name (only one calculation at a time may be specified); **c** is the starting time desired; **d** is the date of the desired interval; and **e** is the number of consecutive intervals required (up to a maximum of 96 system periods). Input to all five parts of the data field is required.

● Since this command can produce the total of any peg count data for a 24 hour period, it is especially useful for:

(a) Originating peg count studies taken in local dial offices for divisions of revenue purposes.

(b) Separation peg count studies in tandem switching centers.

(c) Plant register readings taken for maintenance index calculations purposes.

6.   SYSTEM BACKUP CONSIDERATIONS

GENERAL

6.01 Backup refers to the activities designed to help the user recover from a processing failure after the cause of the failure has been corrected. It is important to keep the difference between correction of system failures and backup in mind when reviewing these activities.

6.02 If the system is halted for maintenance or some other reason which leaves the generic program intact on disk, EADAS can be restarted by setting 773300 (octal) into the address register, depressing the **LOAD ADDR** switch and then the **START** key.

6.03 In EADAS, backup is a means of recovering from situations where:

(a) The EADAS generic program and its associated system definitions are lost to the computer.

(b) EADAS data are lost to the dial administrator.

Backup of the EADAS generic program and associated system definitions

6.04 The generic program and the system definitions are contained in the computer's memory during normal processing. Occasionally a situation may occur which will cause the partial destruction of either the generic program or the system definitions, or both.

6.05 Once the situation has been corrected, a copy of the most current generic program, and the most current system definitions must be reloaded into the computer's memory from magnetic tape. The system may then begin processing data again.

6.06 This leads directly into the three aspects of backing up the EADAS generic and associated system definitions:

(a) Provisions must be made to create a series of tapes containing the current EADAS generic and the associated system definitions.

(b) Provisions must be made for recreating additional backup tapes whenever significant changes in the system definitions are made.

(c) Provisions must be made for actually reloading the most current tape into the computer's memory.

6.07 Backup of an EADAS generic and system definitions is accomplished by performing Task 6 of Appendix B—*Supply, Modify, and Verify System Definitions* Position Practice. This task will create a "backup" EADAS generic tape which contains the generic program, all system definitions at the time the tape was made, and a copy of SYSBAK for reloading the information.

6.08 Rather than attempting to keep a single backup tape up to date, it is recommended that a series of three tapes be employed permanently for backup. Each tape will contain all the information specified in 6.07 above.

(a) Each time a substantial number of system definitions are added or modified a new backup tape is written.

(b) When all three tapes have been used, the oldest tape is rewritten again, becoming the newest tape.

(c) Records must be filed showing any changes made between the creation dates of the three backup tapes on hand. A combination of these system definition records and the backup tape will be used to recreate EADAS.

(d) Whenever a backup tape is written it should immediately be logged by an identifying number, date and time in a permanent record (refer to Fig. 17). The tape itself should be marked with the same information. The series of backup tapes should have a clearly designated filing location in a cabinet convenient to the tape drive. It is suggested that a place card showing the number of the most current backup tape be prominently displayed on or near the tape drive cabinet(s).

6.09 Reloading the EADAS generic tape is accomplished by performing Tasks 3 and 4A of Appendix A—*Load EADAS Generic* position practice. Once the most current backup tape has been loaded, those system definitions entered since the date that tape was created must be entered via the CCU teletype.

CAUTION:

It is possible that one of these system definitions may have caused the original problem which halted the system. The system message accompanying the failure should be analyzed according to the following general diagnostic procedure.

(a) If the cause of the problem is not clearly equipment use, the list of program codes in the SYSTEM MESSAGE CATALOG which may be found in DFMP Div D, Sec 4-i, Appendix A to determine the type of function EADAS was performing at the time of the error.

(b) If the code points to a program which uses system definitions (e.g., CA means calculation program) find the most recent set of system definition entries which correspond to that code.

(c) Examine this definition(s) closely to insure that it follows the guidelines established for supplying or modifying system definitions. If a mistake is found, correct it and reenter the definition.

(d) If no mistake is apparent, reenter the definition and see if the same system failure occurs again. If it does the problem is now isolated to a specific system definition or group of definitions.

6.10 Occasionally, the information contained on the most recent backup tape may be found to be causing system failures. If this is suspected, EADAS should be halted and the next most recent backup tape should be reloaded. If this corrects the problem, system definitions entered since this tape's creation date should be examined according to the procedures discussed in the CAUTION statement above.

Backup of EADAS data

6.11 Whenever EADAS processing halts, the collection of data stops. Data lost in this situation cannot be recovered.

6.12 Occasionally, a line printer or a TTY may fail without causing the rest of the system to fail. In this case, certain steps may be taken to recover some of the lost information.

(a) Exception reports—

(1) Determine the entity name for the missing exception calculation reports.

(2) Use the output calculation command (OP:CA:entityname,ALL,HM:MM,MM:DD! where ALL specifies all calculations for that entity, HH:MM specifies the report time of the interval desired, MM:DD specifies month and day of the interval desired) to print all calculation results, and whether they passed or failed the threshold tests.

NOTE: Leading 0's must be supplied, i.e., January the third becomes "01:03".

(b) Demand reports—

Reenter the demand for the report.

(c) Hourly reports—

EADAS does not provide a method for backup of hourly reports.

(d) If a dial administration teletype is not working properly, copies of the hourly and exception reports may be found on the line printer if it is turned on (see paragraph 5.03, "Administrative Commands" ON:LP:).

7. MAGNETIC TAPE ADMINISTRATION

7.01   One of the primary functions of EADAS is to pass its collected raw register readings on for additional processing. This is accomplished by means of a magnetic tape. This practice provides recommended procedures, on how to keep track of these tapes and the information contained on them.

7.02   EADAS data tapes are used as input to various downstream processes. The number of reels of tape required depends on several factors:

(a) How many hours of information are to be stored on each EADAS data tape? In other words, how often will a new tape be mounted?

(b) How often will EADAS data tapes be sent to downstream processing?

(c) How many tapes will be included in each shipment?

(d) How long does it take to get the tapes after you order them?

(e) How long will downstream processing keep the tapes? TDAS may retain tapes for one TDAS processing cycle.

7.03   The schedule for each tape should be laid out initially on grid paper. This shows both timings and number of tapes required. Leave a certain amount of slack time for each tape as well as an adequate number of spare tapes. Fig. 4 depicts this process and assumes the following:

(a) Each tape contains 24 hours' worth of data.

(b) Tapes are sent downstreams every 7 days (Monday a.m.).

(c) There will be seven tapes in each shipment.

(d) Shipping is same day.

(e) Downstream processing takes 2 days.

(f) Tapes should be kept for one week after returning from downstream.

NOTE: At local discretion, consideration could be given to forwarding tapes to downstream process or a daily basis for the following reasons:

(1) Faster processing of ESS data to PATROL

(2) Improved spread of TDAS runs at the Data Processing Center

(3) Magnetic tape troubles may be discovered more expeditiously

7.04   Once the number of tapes and their approximate rotation has been established, maintain a list containing the following information for each tape:

(a) The tape serial number.

(b) The date and time (if necessary) of the data on the tapes.

(c) When the tape was sent downstream and where it was sent.

(d) When it is expected back.

(e) When it was actually returned.

Periodic inspection of this list will enable the EADAS administrator to check the accuracy of previous estimates, and insure that enough tapes are available at any given time. For example:

REPEAT
——▶

Tape Serial Number	Data Collected		Tape Out		Date Expected Back	Actual Date Returned	Data
	Date	Time	Date	Loc			Data
306302	3/22	7-23	3/26	TDAS	3/30	3/29	
306303	3/22-3/23	23-7	3/26	TDAS	3/30	3/29	

This shows that tape number 306302 contained in the EADAS data from 7 a.m. to 11 p.m. of March 22. It was sent along with tape number 306303 (containing data from 11 p.m. March 22 to 7 a.m. March 23) to TDAS on March 26. Both tapes were returned on March 29.

7.05 To facilitate the processing of tapes which are interchanged within a company, standards for magnetic tape labeling must be established by each company for its own *internal* use. Tapes which are interchanged between companies are governed by a Bell System Standard (M-465A) which defines tape characteristics specifications as well as internal and external tape label information. These standards, though not required for intra-company use, may be so used where suitable.

Magnetic Tape Recovery

7.06 In the event of a transient power failure the *system* will come back to processing mode automatically. This is not the case with the magnetic tape, which will come up off-line. In order to restore the tape to its previous position, follow the procedures shown in the position practice. *Maintaining Magnetic Tape for Downstream Processing,* Appendix C—Task 4. Note that:

(a) If the failure occurred while data was actually being written onto the tape the restart command (RS:MT) may fail to operate properly. If the tape does not advance to its previous position, *all data* on that tape is lost.

(b) If the tape was in the process of being written and the RS:MT command does succeed in repositioning the tape, data for the *collection period* in which the failure occurred may be lost. All prior data will still be useable.

(c) If the tape was *not* in the process of being written, the RS:MT command will operate successfully, and no data will be lost. The procedures used to recover from a transient power failure may be tried whenever the system fails to process magnetic tape as scheduled. This is the only method of restarting EADAS data tapes.

8. ADMINISTRATIVE RECORDS

8.01 As previously stated, EADAS operates solely on a user defined basis. While this fact allows the system total flexibility within basic constraints, it greatly magnifies the requirements for the maintenance of administrative records. CCU personnel must have ready access to reference documents ranging from data converter assignment lists and system definition specifications to operational maintenance logs and downstream processing schedules.

8.02 This part of "Operating the CCU" provides several suggested forms to assist in accomplishing the task of records administration. They are included under two general groupings:

● System Definition Input Records

Fig. 5—EADAS Form 1—*System Parameters*

Fig. 6—EADAS Form 2—*Schedule Definition*

Fig. 7—EADAS Form 3—*Hourly Report Format*

Fig. 8—EADAS Form 4—*Channel Definition—ETDC and OTDC*

Fig. 9—EADAS Form 4a—*Channel Definition—#1ESS and #2ESS*

Fig. 10—EADAS Form 5—*Entity Definition*

Fig. 11—EADAS Form 6—*Calculation Definition*

NOTE: These forms should all be used in conjunction with the Position Practice—*"Supply, Modify, Verify System Definitions" Appendix B.*

● System Administrative Records

Fig. 12—EADAS Form 7—*DA TTY Master Sheet*

Fig. 13—EADAS Form 8—*Data Channel Master Sheet*

Fig. 14—EADAS Form 9—*System Schedule Master Sheet*

Fig. 15—EADAS Form 10—*Weekly Study Schedule*

Fig. 16—EADAS Form 11—*Weekly Data Tape and Trouble Leg*

Fig. 17—EADAS Form 12—*Data Tape Status and History Log*

Fig. 18—EADAS Form 13—*Generic/System Backup Tape Log*

Fig. 19—EADAS Form 14—*System Trouble Log*

Fig. 20—EADAS Form 15—*Calculation Block Administration Record*

System Definition Input Records

EADAS Form 1—*System Parameters* (see Fig. 5)

This form is provided to simply record the four parameters of the system. The parameters affect all defined channels and entities and as such will not be subject to frequent alteration.

EADAS Form 2—*Schedule Definition* (see Fig. 6)

The Schedule Definition and Hourly Report Format (EADAS Form 3) forms are used by the CCU staff to construct these items for all system users. Since only sixteen of each definition are allowed, it is recommended that they be established by CCU personnel in cooperation with the field users and following the recommendations contained in DFMP Div D - Sec. 4g **(System Definitions)**. This form parallels the questions asked by EADAS software in the EM:SC:! (Enter schedule definition) mode as follows:

(a) DAY—the two digit designator for the day of the week.

(b) SCHED #—the schedule number

(c) COPY/NEW—an indicator used in conjunction with d and e to answer the COPY DAY # or IF NEW !)

(d) The DAY and SCHEDULE number to be copied

(e) The new Magnetic Tape, Hourly Report and TUR schedules

NOTE: d and e are mutually exclusive.

(f) A block to record the schedule's entry at the CCU. Notification of additional or changed schedules should be sent to dial.

EADAS Form 3—*Hourly Report Format* (see Fig. 7)

The hourly report format add, change, or delete form may be used for the initial layout of and subsequent changes to an

hourly report format. Again the form parallels the software questions asked in the hourly report format definition mode.

(a) Format name—the two character name of the format.

(b) Function—the function to be performed is indicated by the box checked.

(c) Function/Line Number—in the case of a modification or deletion of a line or lines of the format, the function is entered in the function column. If a new format is being defined, the function need not be specified since it is covered by the IN:ALL statement. The line number corresponds to the line of the format. Line numbers for blank lines should be included so that a pleasing layout may be constructed directly on the form.

(d) Changes —the three blocks under the heading changes represent possible modifications to the format. The most recently completed changes block will be used for entry at the CCU. Additional forms may be used for a single format if more than three changes are required.

(e) Function—an indication of the type of change to be made. A complete revision of the format may require a delete and reentry. If "change existing format" is checked, the line by line function must be specified in the function column.

(f) Line content—the contents of each line as they will appear on the hourly report starting at the first block to the right of the Line No. column.

(g) CCU entry and notification space for initial and change entries.

The form on Fig. 7, page 2 is an example of a correctly filled out hourly report format definition form for initial entry and a subsequent change.

EADAS Form 4—*Channel Definition*—ETDC & OTDC (see Fig. 8)

The Channel, Entity (Fig. 10) and Calculation (Fig. 11) Definition forms contain space for initial input by the dial administrator and a section for CCU use only. They allow the user to provide all information required by the CCU to enter the three definitions and a means for the CCU administrator to correct errors or concur with the field input on a line by line basis. Input to the Channel Definition form is self-explanatory. The register assignments portion is not repeated for add or change use. If the dial portion of the form has been filled out properly, the CCU administrator can simply check the appropriate boxes to the right of the dotted line. If a dial entry is in error, the correct entry may be entered on the appropriate line to the left of the dotted line. In either case, all appropriate entries to the left of the dashed vertical line in the CCU portion are to be filled in. Entity and calculation definition forms follow the same conventions. In considering the two parts of the forms, note that the CCU portion is as level with the corresponding dial question as workable spacing will permit. This facilitates the use of a ruler as a guide if desired.

EADAS Form 4a—*Channel Definition—#1ESS and #2ESS* (see Fig. 9)

EADAS generic issue 1C or later allows low speed data collection from #1ESS and #2ESS entities equipped with CTX-7 or earlier generic programs. Channel Definition requirements differ greatly from ETDC or OTDC data devices necessitating a separate form. EADAS will ask identical questions until it is told the user is defining a channel for ESS. It then proceeds with ESS related information omitting reference to TUR's and input assignments.

EADAS Form 5—*Entity Definition* (see Fig. 10)

In this form, again initiated by the dial administrator, the relationship between the "CCU ONLY" and english language section is the same as Form 4 and 4a—Channel Definition.

EADAS Form 6—*Calculation Definition* (see Fig. 11)

This two page form is designed to be initiated by dial and examined by the CCU administrator for accuracy. It contains the following information:

(a) Page control—this is a device for controlling master and slave calculation sets. Since the master/slave relationship is maintained by order of entry they must be kept together for all add, change, or delete transactions. An example of page control would operate as follows:

1 master calculation X 2 pages = 2 pages

4 slave calculation X 2 pages = *8* pages

TOTAL = 10 pages

The master calculation pages would be labeled page 1 of 10 and page 2 of 10.

The first slave would be 3 of 10 and 4 of 10, etc.

Page control should always be checked to insure that all required pages have been received from dial.

(b) Master/Slave boxes—used in conjunction with page control to establish master/slave relationships.

(c) Functions—note that the change function appears on the second page (form 6b) of the calculation definition.

(d) Definition—an algebraic statement of the computation required to obtain the desired result. Note that register numbers are present but that term and result labels and the decimal place designtion are found elsewhere on the dial section of form 6a.

(e) Number of decimal places—not to exceed 2.

(f) Result label—not to exceed 4 characters.

(g) Term label—term should be picked from the definition (see d above). Labels must not exceed three characters.

(h) CCU only definition—this definition must include the appropriate term designators (T1, T2, etc.) and the special term brackets (< and >). The CCU administrator may obtain the terms desired from the terms and labels section of the form. Thus if the dial definition is 100 (R725)/(R726 + R727) and the labels are specified as: TERM 1...R725...LABEL...TST, TERM 2... (R726 + R727)...LABEL...DLY the definition in the CCU only section should read $100*T1 < R725 > /T2 < R726 + R727 >$.

(i) Threshold type—note the short explanation given for each type.

(j) Threshold values—the decimal places specified must agree with the "DECIMAL PLACES" given on the previous page. The "NOTE" explains the interaction between values and types.

(k) Threshold schedule—defined at the entity level associated with this calculation.

System Administrative Records

EADAS Form 7—*DA TTY Master sheet* (see Fig. 12)

One copy of this form for each DA TTY in the system is designed to be maintained at the CCU. It records the identification of each entity, channel and converter which output data to that TTY as well as location and contact information. A copy should be sent to the appropriate TTY location where any changes can be made and returned to the CCU for file update.

EADAS Form 8—*Data Channel Master Sheet* (see Fig. 13)

In similar fashion one per data channel lists all pertinent information on the converter(s) served by that channel in addition to contact information. While initially prepared by the CCU staff, updates or corrections should be made by the field and forwarded to the CCU.

EADAS Form 9—*System Schedule Master Sheet* (see Fig. 14)

Used in conjunction with the Schedule Definition (EADAS Form 2), this form allows a clear presentation of each of the sixteen system schedules and the channels assigned to each. It is designed solely for CCU use.

EADAS Form 10—*Weekly Study Schedule* (see Fig. 15)

This form is used only by the CCU staff as a control sheet for all studies requested or required during a given week. The "office" and "busy hour" columns can be pre-printed for each system (with the busy hour, of course, subject to change). The "schedule ent'd" and "Mag Tape on" columns can be checked as CCU personnel insure that these functions are appropriately ready.

EADAS Form 11—*Weekly Data Tape and Trouble Log* (see Fig. 16)

Maintenance of this form by CCU personnel provides a weekly record of the magnetic data tapes utilized by the system. The upper portion contains blocks to note all pertinent information on use of data tapes while the lower half provides space to log any tape troubles on a daily basis.

EADAS Form 12—*Data Tape Status and History Log* (see Fig. 17)

It is most important to have a status record of each magnetic tape used to record the raw register data for further downstream processing. This form, designed to fulfill that need is to be maintained on each data tape used by a CCU. In addition to historical information, space is provided to record each time it is used and when maintenance (i.e., eliminating frayed ends) is performed.

EADAS Form 13—*Generic/System Back-up Tape Log* (see Fig. 18)

The generic *or* system back-up magnetic tape log is provided to record the use activity for those tapes. It is recommended that a separate form be maintained for each since system back-up tapes will, of course, have much greater use.

EADAS Form 14—*System Trouble Log* (see Fig. 19)

This form provides a means of an overview recording of system trouble conditions. Complete recommendations on detailed trouble reporting, analysis, and an additional form for trouble reporting are contained in DFMP, Div. D, Sec. 4i, "Operational Maintenance."

EADAS Form 15—*Calculation Block Administration Record* (see Fig. 20)

As an EADAS becomes loaded and more surveillance calculations are utilized for each defined entity, the problems associated with efficient calculation block utilization will begin to magnify. This form is designed to be used in conjunction with the Calculation Definition (EADAS Form 6) and the material on calculation block administration and machine word usage contained in part 10 of DFMP Div. D, Sec. 4g, "System Definitions. Its purpose is to provide a means for calculation block planning and administrative control. The form, although set up on an individual block basis, should be used with the total entity requirements in mind. In addition to providing space for pertinent details on each calculation in a particular block, the two columns on the right are for individual and cumulative word use or attenuation. The bottom of the form provides a line to record the output of the VE:EN: entity name! command as to unused calculation and definition word space.

8.03　It is not intended that these forms be viewed as "Bell System Standard" nor as all inclusive since local needs and procedures may require different or supplemental records. Consideration should be given to additional records maintained in the areas of:

(a) Data validation work sheets for converter or data channel performance.

(b) Special calculation or study requests by field personnel or executive support requirements.

(c) Calculation or study output log as a work control sheet.

(d) CCU outage log as a running record of all error messages or processor problems.

(e) TELCo or outside vender repair call out log.

(f) Power failure log.

(g) Conversion worksheet for new converters or offices containing office configuration and equipment scheduling information.

(h) Data tracking worksheets for historical or short-term analysis.

(i) Converter assignment and report master update logs.

(j) CCU supply inventory record.

EADAS Verification Commands

8.04 EADAS, through use of the "verify" commands provides printouts of existing system definitions status. At the conclusion of any addition, deletion or change to the definition a printout of the affected area(s) should be obtained, verified and filed for future reference. Three verification commands are available as follows:

(a) VE:CA:a,b! (*VE*rify *CA*lculation) where *a* = the entity name and *b* = the calculation name. This results in the specified calculation definition being printed. Retension of individual calculation printouts is optional since they are available from the "verify entity" command.

(b) VE:CH:a! (*VE*rify *CH*annel) where a = the channel number (0-99). In addition to an individual channels printout on the COMMAND TTY, "ALL," in place of the channel number may be requested causing the following information to be printed on the line printer for all defined channels:

(1) Channel number

(2) Data collection unit identification

(3) Collection device type

(4) Schedule number

(5) TUR status

(6) Calculation status

(7) Magnetic tape recording status

(8) Internal channel number

(c) VE:EN:a! (*VE*rify *EN*tity) where *a* = the entity name causes all pertinent information associated with the entity including all defined calculations to be printed. ("ALL" in place of a particular entity name will cause a list containing the information in items 1-5 below of all entities defined in an EADAS to be output on the line printer arranged by dial administrator TTY number.) The following information is provided in response to a "VE:EN:Entity Name!" command from the CCU TTY.

(1) Entity name

(2) Channel number

(3) DA TTY number

(4) Calculation Block number. When all entities are requested, the system will indicate the number of the first calculation block assigned to the entity. When a single entity is verified, each block used by that entity's defined calculations will cause the printout of a header followed by all information contained in that block including unused calculation and word space.

(5) Hourly Report format name

(6) Threshold schedules.

(7) For all calculations:

● Calculation header information including calculation name, master or slave, threshold data (type, value, schedule), hourly report location number and the letter U if the calculation involves usage registers.

● The specific algebraic calculation definition.

8.05 A verify print out should be made for each channel and entity in the system and maintained on file in the CCU with the corresponding administrative forms. It is further recommended that a copy of these documents be sent to the

appropriate dial administrator and updated each time changes are made.

Key Word Administration

8.06 Key word administration is another area requiring records control. Key words are up to 4 alphanumeric character abbreviations (such as %, OFL, etc.) which label calculation results and terms in exception reports. (Term label keywords consist of up to 3 alphanumeric characters but count as a full key word.) There is space in EADAS memory for a total of 256 key word labels. Ease of understanding and space conservation

requires uniform abbreviation meanings. *A key word list of all abbreviations in the system insuring uniformity should be maintained and distributed to field personnel by the CCU administrator.*

8.07 The command DU:KW:! (*DU*mp *K*ey *W*ord) causes the key words defined in all system calculations to be output on the line printer.

8.02 The command UP:KW: !(*UP*date *K*ey *W*ord) utilized from the EM:CA: mode will automatically purge the table of any key words which were defined but are not now in use.

MESSAGE FORMATS

ALPHABETICAL LISTING OF
VALID COMMAND/MODE MESSAGE FORMATS
WITH BRIEF APPLICATION EXPLANATIONS

VALID INPUT COMMANDS	BRIEF DESCRIPTION	COMMENTS	EXAMPLE OF CCU TTY COMMANDS
CG:CA:Entity Name	Change Calculation	Sub Mode of EM:CA	CG:CA:PHLAPAGLSØ1!
CG:EN:Entity Name	Change Entity	Sub Mode of EM:CA	CG:EN:PHLAPAGLSØ1!
CG:New Format Name	Change Format Name	Sub Mode of Hour Report Mode (EM:HR)	CG:1X!
DA:aa/bb/cc,xx	Set Date	aa = Month bb = Day cc = Year xx = 1st 2 Characters of Day (optional), if not specified the day remains unchanged.	DA:08/22/74,TH!
DE:a	Delete Line or Format	Sub Mode of Hour Report Mode (EM:HR) a = valid line number or "all"	DE:Ø2!
DE:CA:Entity Name	Delete Calculation	Sub Mode of EM:CA	DE:PHLAPAGLSØ1!
DE:CH:a	Delete Channel	a = Channel No. (Ø—99)	DE:CH:Ø9!
DE:EN:Entity Name	Delete Entity	Sub Mode of EM:CA	DE:EN:PHLAPAGLSØ!
DM:MT:a	Dismount Mag Tape	a = Mag Tape Drive No. (Ø—1)	DM:MT:Ø1
DS:AM:	Disable audible CCU alarm		DS:AM:!
DU:CB:a	Dump Calculation Definition Block	a = Block No. (Ø—399)	DU:CB:123!

Fig. 1—Command Message Formats (Sheet 1 of 8)
(3.01)

VALID INPUT COMMANDS	BRIEF DESCRIPTION	COMMENTS	EXAMPLE OF CCU TTY COMMANDS
DU:CO:a,b	Dump Core Memory Contents On Line Printer In Octal	a = Starting Core Address in octal b = Ending Core Address in octal	DU:CO:022222,033333!
DU:HD:a,b	Dump Header Information	a = Channel No. (∅—99) append schedule type for ESS channels i.e., C,H,W) b = Active (A) or Passive (P) Track	DU:HD:∅8,A!
DU:KW:	Dump Key Word Table	Contains all mneumonics used for calcs and terms.	DU:KW:!
DU:RG:a,b,c,d	Dump Register Totals on Line Printer in Decimal	a = Channel No. (∅—99) (ESS schedual type i.e., C,H,W) b = Active (A) or Passtive (P) Registers c = Starting Register Address (1 or higher) d = Ending Register Address (less than 999)	DU:RG:∅2,A,99,998!
		Note: For ESS offices, the channel number must be followed by schedule designation H,C or W. Use is only valid for the (A) active mode.	
EM:CA	Enter Mode for Calculation Definition		EM:CA:!
EM:CH	Enter Mode for Channel Definition		EM:CH:!
EM:HR:	Enter Mode for Hourly Report Format Definition		EM:HR:!
EM:MC:	Enter mode for Channel Definition Modification	Available with Generic Issue ID	EM:MC:!
EM:PA:	Enter Mode for System Parameter Definitions		EM:PA:!
EM:SC:	Enter Mode for Mag Tape, TUR and Hour Report Schedule Definitions		EM:SC:!

Fig. 1—Command Message Formats (Sheet 2 of 8)
(3.01)

VALID INPUT COMMANDS	BRIEF DESCRIPTION	COMMENTS	EXAMPLE OF CCU TTY COMMANDS
EM:SY:	Enter Mode for loading SYSBAK		EM:SY:!
EM:TA:	Enter Mode for Mag Tape Dump		EM:TA:!
EX:	Exit any program mode originated by the CCU TTY.	Also Exits from TDC, TUR Maintenance	EX:!
FI:	Finish (abort) a Task	Restarts Original Mode at Beginning	FI:!
IN:a	Insert Line of Format in Hour Report Mode	a = Line No. or "ALL"	IN:ALL!
IN:CA:Entity Name	Insert Calculation	Sub Mode of Calculation Mode (EM:CA)	IN:CA:PHLAPAGLS∅1!
IN:EN:Entity Name	Insert Entity	Sub Mode of Calculation Mode (EM:CA)	IN:EN:PHLAPAGLS∅1!
LI:	Lists all the Names of Hour Reports	Also Indicates the Number of Unused Format Storage Bytes remaining.	LI:!
MO:MT:a,b,c	Mount Mag Tape	a = Mag Tape Drive No. (∅—1) b = 6 Alphanumeric Character Tape Lable c = Site ID (UP to 11 characters)	MO:MT:∅,123456, MIAMFLCA∅1P
OF:CA:a	Turn Off Calculations for a Channel	a = Channel No. (∅—99) (C, H, or W suffix letters are accepted for ESS channels. C is default.).	OF:CA:15H!
OF:CH:a	Turn Off Channel	a = Channel No. (∅—99) Channel can be restored by ON:CH command. *Note:* This command is temporarily inhibited for ESS channels.	OF:CH:∅9!

Fig. 1—Command Message Formats (Sheet 3 of 8)
(3.01)

VALID INPUT COMMANDS	BRIEF DESCRIPTION	COMMENTS	EXAMPLE OF CCU TTY COMMANDS
OF:DA:a	Turn Off DA TTY	a = TTY No. (∅—15)	OF:DA:15!
OF:HR	Turn Off CCU directed hour reports		OF:HR:!
OF:EX:	Turn Off CCU directed Exception Reports		OF:EX:!
OF:LP:	Turn Off Line Printer	Turns off CCU directed Exception and Hourly Reports and in addition directs all other Outputs to CCU TTY	OF:LP:!
OF:MT:a	Turn Off Mag Tape Writing	a = Channel No. (∅—99) (with schedule type C,H, or W appended for ESS channels) or "Auto" *Note:* "Auto" stops tape writing for all channels	OF:MT:∅2!
OF:TU:a	Turn Off TUR's	a = Channel No. (∅—99) or "ALL". TUR's remain off until next scheduled period.	OF:TU:∅1!
ON:CA:a	Turn on Calcs for a Channel	a = Channel No. (∅—99) (C, H or W suffix is accepted for ESS channels. C is default.)	ON:CA:∅1!
ON:CH:a	Turn on Channel	a = Channel No. (∅—99) C, H or W suffix is accepted for ESS channels C is default)	ON:CH:15C!
ON:DA:a	Turn on DA TTY	a = DA TTY (∅—15)	ON:DA:15!
ON:EX:	Turn on CCU directed Exception Reports		ON:EX:!
ON:HR:	Turn on CCU directed Hour Reports		ON:HR:!

Fig. 1—Command Message Formats (Sheet 4 of 8)
(3.01)

VALID INPUT COMMANDS	BRIEF DESCRIPTION	COMMENTS	EXAMPLE OF CCU TTY COMMANDS
ON:LP:	Turn on Line Printer	Turns on CCU directed Exception and Hourly Reports and directs other outputs to the Line Printer.	ON:LP:!
ON:MT:a	Turn on Mag Tape Writing for Channel	a = Channel No. (∅—99) (with schedule type C, H, or W appended for ESS channels) or "AUTO" *Note:* "Auto" restores those channels that were "on the air" when OF:MT: AUTO was input	ON:MT:∅2!
ON:TU:a	Turn on TUR's	a = Channel No. (∅—99) or "ALL"	ON:TU:∅1!
OP:CA:a,b,c,d,e	Output Calc Result	a = Entity Name b = Calc Name ("All" will cause all calc results of an entity to be output) c = Starting Time (HH:MM) (If blank, most recently completed interval is assumed). <u>NOTE:</u> Fields d & e must be left blank if c is blank. d = Date of desired interval (MM:DD). If blank, current date is used. e = No. of consecutive intervals wanted. (1—96) If blank, one is assumed. *Note:* Starting time refers to report generation.	OP:CA:PHLAPAGLS∅1,ALL,10:30, 11:21,8!
PR:a	Print Hour Report Format or Line of HR Format	a = "ALL" or Line No. Sub Mode of Hour Report Mode (EM:HR)	PR:ALL!

Fig. 1—Command Message Formats (Sheet 5 of 8)
(3.01)

VALID INPUT COMMANDS	BRIEF DESCRIPTION	COMMENTS	EXAMPLE OF CCU TTY COMMANDS
PR:DA:a,b	Print Message on DA TTY	a = DA TTY No. ($\emptyset$—15) or "ALL" b = Message of up 72 characters in length, but it must not exceed one line.	PR:DA:15,WELCOME TO EADAS!
RS:MT:	Restart Mag Tape		RS:MT:!
RS:TC:	Restart TDC Maintenance	Goes to beginning of Test on last channel tested.	RS:TC:!
SU:CA:a,b,c,d,e	Sum Calculation	a = Entity Name b = Calculation Name (only one calculation may be specified) c = Starting Time (HH:MM) d = Date of Start Time e = No. of consecutive intervals desired (maximum of 96 15 min. or 30 min. system period intervals stored in long term data storage). Note: All 5 parts of data field must be supplied. Note: Starting Time refers to Report Generation	SU:CA:PHLAPAGLS$\emptyset$1,DRSTUDY, $\emptyset\emptyset$:3$\emptyset$,11:15,48!
SU:RG:a,b	Sum Registers	a = Channel No. ($\emptyset$—99) (with schedule type C,H, or W appended for ESS channels) b = Active (A) or Passive (P)	

Fig. 1—Command Message Formats (Sheet 6 of 8)
(3.01)

VALID INPUT COMMANDS	BRIEF DESCRIPTION	COMMENTS	EXAMPLE OF CCU TTY COMMANDS
TI:aa:bb:cc	Set Time	aa = Hours ($\emptyset\emptyset$—23) bb = Minutes ($\emptyset\emptyset$—59) cc = Seconds ($\emptyset\emptyset$—59)	TI:14:30:45!
TS:CI:a,b,c,d	Test Computer Interface	a = Channel No. ($\emptyset$—99) b = Test Mode — 　　RO — Receive Only 　　TO — Transmit Only 　　TR — Transmit & Receive c = (Used only in TO Mode) 　　Data to be transmitted. 　　Any No. in Octal. d = (Used only in TO Mode) 　　No. of times data is to be 　　transmitted in decimal.	TS:CI:15,TO,222222,5!
TS:TC:a,b,c	Test TDC	a = Channel No. ($\emptyset$—99) or A 　　for ALL b = Type of Output (L-Line 　　Printer Raw Dump, P-Pass/ 　　Fail Test) c = Home (H) or Remote (R) 　　Unit to be Tested (C omitted 　　defaults to both)	TS:TC:15,P H!
TS:TU:a,b	Test TUR-Detector Test	a = Channel No. ($\emptyset$—99) or 　　"ALL" b = Receiving Channel. If used, 　　data will be collected on 　　Channel "b" while the TUR 　　will be controlled on Channel 　　a. If field B is not used, then 　　Channel "a" will receive 　　the data.	
UP:KW:a	Update Key Word	a = Space. All non-reference 　　keywords are deleted from 　　the keyword table. Sub 　　Mode of EM:CA.	UP:KW:(space bar)!

Fig. 1—Command Message Formats (Sheet 7 of 8)
(3.01)

VALID INPUT COMMANDS	BRIEF DESCRIPTION	COMMENTS	EXAMPLE OF CCU TTY COMMANDS
VE:CA:a,b	Verify Calculation	a = Entity Name b = Calc Name. The specified calculation definition is printed. If all calculations are desired, see VE:EN:	VE:CA:PHLAPAGLS∅1,DTS%MF!
VE:CH:a	Verify Channel	a = Channel No. (∅—99) (with schedule type C, H, or W appended for ESS channels) or "ALL"	VE:CH:∅1!
VE:EN:a	Verify Entity	a = Entity Name or "ALL"	VEN:EN:ALL!
ZE:RG:a	Zero Active Register Reading	a = Channel No. (∅—99) (with schedule type C, H or W appended for ESS channels) Used when installing or diagnosing a particular channel.	ZE:RG:∅9!

Fig. 1—Command Message Formats (Sheet 8 of 8)
(3.01)

SYSTEM RESPONSES

Response	Translation	What it Means
OK	Good	Message was received, processed correctly, and the action was completed.
IP	In Progress	The request is being processed, the results may take a moment.
NG	No Good	Message format was valid but action requested was incompatible with status of system.
PF	Printout Follows	The request is being processed. A printout will appear momentarily.
RL	Repeat Later	Command was a valid request which may not be executed at this time due to unavailable system resources such as system overload, excessive queue lengths, the requested program is busy or not enough time to complete the action before some system process renders the action invalid. Try again later.
?A	Action Field Error	The message contains an error in the action field. This could mean an improper character(s) was typed or that a field delimiter was omitted or incorrect.
?C	Illegal Continue	A multiple line input is not valid in the present mode of operation of the teletype. Carriage Return may only be used with certain commands.
?D	Data Field Error	The message contains an error in the data (third) field due to one of several causes: (1) the data field is incompatible with the action field and/or the information field; (2) improper characters were entered in the data field; (3) correct characters were entered but exceeded the allowable limits for this type of data; (4) the delimiters (,) were used in the wrong position or were not present.
?E	Illegal Execute	The system is currently executing a previous command. This command is ignored. The command being processed by stopped by typing EX:! The latest command may then be repeated.

Fig. 2—System Responses (Sheet 1 of 3) (3.05)

Response	Translation	What it Means
?I	Information Field Error	The message contains an error in the information field. This may result from any one of 3 causes: (1) the information field could be wrong due to too many characters or invalid characters; (2) the second delimiter could be missing; and (3) the action specified may not be in agreement with indicated information.
?0	Overflow Condition	The Calculation Definition length has exceeded the maximum of 240 characters.
?S	Invalid Command	The input to various submodal queries were not compatible with EADAS programmed expectations. This may vary depending on specific piece of requested data. For example if received on: 1) HR Calc# = would mean invalid hour report number 2) Definition = would mean invalidly formulated Calc string 3) Output = would mean either a) result label contains more than 4 characters b) i in Ti is not within valid range (1 to 5) c) Term was not defined in the Calc definition Also could indicate an invalid piece of data within schedule string or more than 3 schedules specified. Causes entire string to be ignored. Also indicates invalid format name.
ALREADY ON FILE	Item was previously defined	This entity or calc name has been used in a previous submodal command
ALREADY DEFINED	Channel no. previously used	This channel number has previously been entered into EADAS. If it is to be reused, the original must be deleted (DE:CH:A) or different channel number selected.
DISC ERROR	Disc error occurred during attempts to update data base	This disc error may have resulted in some degree of data mutilation. The user should assume that this is the case, and reload the system from the last known valid backup tape, and retry the command.
INVALID CARD ASSIGNMENT	Same card number used twice	The input utilized the same card number as two different card types. All card assignments must be re-entered when this occurs.

Fig. 2—System Responses (Sheet 2 of 3) (3.05)

Response	Translation	What it Means
INVALID INPUT	Item input is inappropriate	Utilized by most modal commands to indicate wrong or incomplete entry. Refer to the System Message Catalog — Appendix A of DFMP, Div. D, Sec. 4;.
KEYWORD TABLE FULL	New keyword entry has exceeded EADAS capacity	A total of 256 entries of keywords may be specified. See the update keyword table command (UP:KW:) when this response is received.
NO MASTER CALC	All Slave calculations require a "master" calculation	A slave calculation is dependent upon a master calculation. Thus, if a string is being defined, the slave(s) must be defined immediately, after the master.
NOT DEFINED	Item being modified has not been previously entered into EADAS	Indicates either the entity of Calc name can't be found or is not on file.
STORAGE CAPACITY EXCEEDED	Too many entities entered for EADAS	A maximum of 170 entities may be defined in EADAS
SYSTEM TAPE STILL ON LINE MUST BE DISMOUNTED	EADAS can't process request in current state of mag tape	The mag tape is still mounted for active data collection. It must be dismounted using the command DM:MT:$\emptyset$ before EADAS can process the request.
TAPE UNIT $\emptyset$/1 NOT READY TYPE CO WHEN READY	Mag tape drive not ready to process command	This tape unit is either not loaded on line or selected as unit $\emptyset$/1. After all conditions are met, enter the command CO: (continue) to restart the program
CANNOT LOCATE REQUESTED DATA	Block(s) on Mag tape is not available	Although the format of the responses appear to be correct, the requested data cannot be found after a search of the entire tape.
TAPE READ ERROR MTRD = XXXXXX	Mag tape error has block completion of command	The data field contains the contents of the TU-10 READ LINES register in octal. This line is printed on the line printer replacing the record in error.

Fig. 2—System Responses (Sheet 3 of 3) (3.05)

ADMINISTRATIVE COMMANDS

DA: month/day/year, Day of Week!   Set date
TI: Hours: Minutes: Seconds!   Set date

MO:MT: drivenumber, tape label, site ID!   Mount Magnetic Tape on drive number
DM:MT: drivenumber!   Dismount Magnetic Tape from drive number

ON:CA: channelnumber!   Turn on calculations for a channel
OF:CA: channelnumber!   Turn off calculations for a channel
ON:CH: channelnumber!   Activate channel
OF:CH: channelnumber!   Turn off channel

OF: DA: TTY number!   Turn off Dial Administration TTY
ON: DA: TTY number!   Turn on Dial Administration TTY

ON:EX:!   Turn on line printer exception reports
OF:EX:!   Turn off line printer exception reports

ON:HR:!   Turn on hour report printing on line printer
OF:HR:!   Turn off line printer hour reports

ON:LP:!   Turn on line printer
OF:LP:!   Turn off line printer

ON:MT: channelnumber!   Turn on Magnetic tape writing for a channel
OF:MT: channelnumber!   Turn off Magnetic tape writing for a channel

ON:TU: channelnumber!   Turn on TUR's for a channel
OF:TU: channelnumber!   Turn off TUR's for a channel

PR:DA: TTY number, message!   Print message on Dial Administrator teletype
RS:MT:!   Restart Magnetic Tape

UTILITY COMMANDS

DU:CB: blocknumber!   Dump Calculation Definition Block
DU:CO: starting, ending address!   Dump Core Memory Contents on Line Printer in Octal
DU:HD: channelnumber, A! or P!   Dump Header Information active or passive
DU:KW:!   Dump Keyword Table
DU:RG: channelnumber, A or P,
        starting reg. number,
        ending reg. number!   Dump Register Totals on Line Printer in Decimal
EM:SY:! confirm EADAS!   Load SYSBAK from disk on running system (backup).
EM:TA:!   Enter Mode for Magnetic Tape Dump
OP:CA: entity name, calculation
        name, HH:MM,MM:DD,
        number consecutive
        intervals!   Output Calculation Result

Fig. 3—Administrative and Utility Commands (Sheet
1 of 2) (5.01)

SU:CA: entity name, calculation   Sum Calculation Result
         name, HH:MM, MM:DD,
         numver consecutive
         intervals

SU:RG: channelnumber, A or P!   Sum Registers, Active or Passive
TS:CI: channelnumber, test mode,
         data, frequency of trans-
         mission!   Test Computer Interface

TS:TU: channelnumber, receiving
         channels!   Test TUR — detector test
TS:TC: channelnumber, output
         type, test unit!   Test Traffic Data Converter
UP:KW: Space!   Update key word table
ZE:RG: channelnumber!   Zero Active Register Reading

PROCESSOR SWITCH REGISTER PROCEDURES

OCTAL ADDRESSES (HALT, set switch reg. LOAD ADDR., ENABLE, START)

77333ϕ transfer SYSBAK to computer's memory from tape
7733$\phi\phi$ transfer SYSBAK to computer's memory from disk

SYSBAK FUNCTIONS (switch register, CONT)

ϕ11111   prepare backup generic tape
ϕ22222   load generic without system definitions
ϕ33333   load generic with system definitions

**Fig. 3—Administrative and Utility Commands (Sheet
2 of 2) (5.01)**
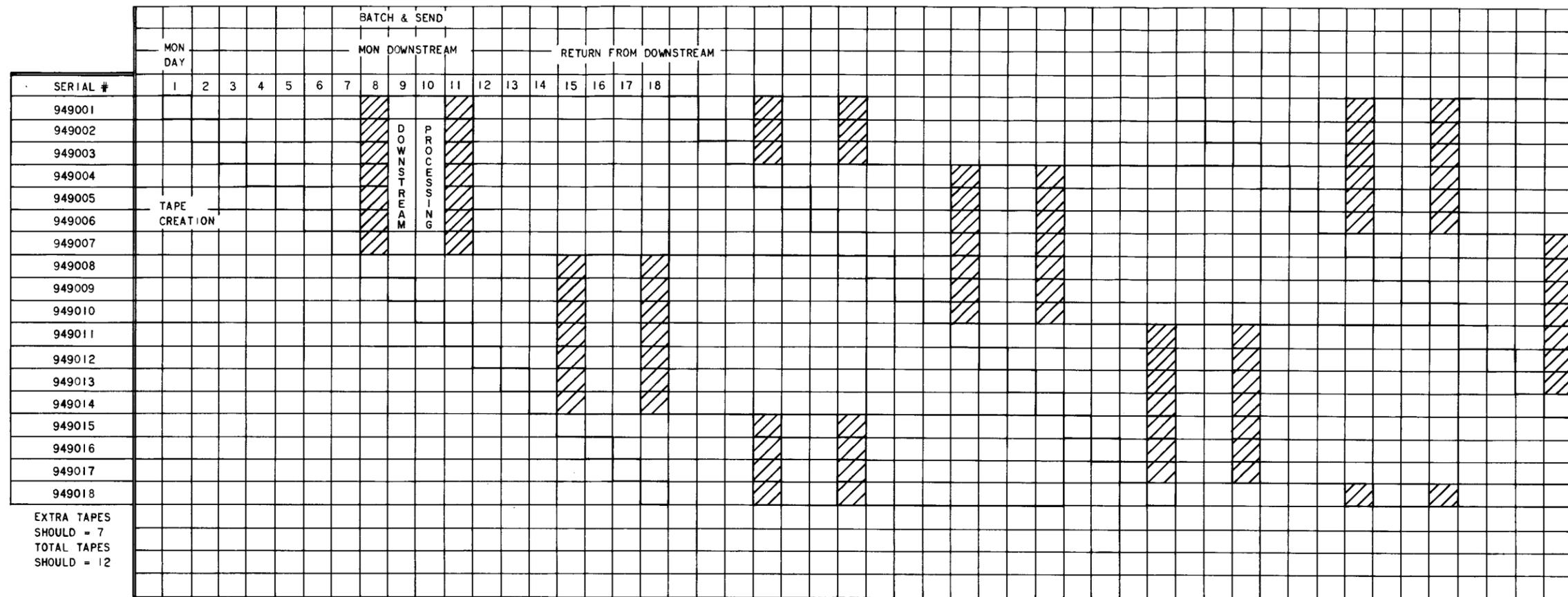
Fig. 4—Magnetic Tape Schedule (7.03)

Company _____

CCU _____   Date_____

SYSTEM PARAMETERS

SYSTEM REPORTING PERIOD _____
                        (15,30)

MAGNETIC TAPE WRITING PERIOD _____
                            (15,30,60)

LONG TERM CALCULATION RESULT STORAGE INTERVAL:

                    START_____ : _____

                    END   _____ : _____

AUTOMATIC TUR DETECTOR TEST START   _____ : _____

Fig. 5—EADAS Form 1—System Parameters (8.02)

SCHEDULE DEFINITION

EADAS FORM 2

Fig. 6—EADAS Form 2—Schedule Definition (8.02)

HOURLY REPORT FORMAT
(ADD, DELETE, CHANGE)

EADAS FORM 3

FORMAT NAME ☐ ☐

☐ NEW FORMAT (IN: ALL)

CHANGES		
☐ NEW FORMAT (IN: ALL)	☐ NEW FORMAT (IN: ALL)	☐ NEW FORMAT (IN: ALL)
☐ DELETE ENTIRE FORMAT	☐ DELETE ENTIRE FORMAT	☐ DELETE ENTIRE FORMAT
☐ CHANGE EXISTING FORMAT	☐ CHANGE EXISTING FORMAT	☐ CHANGE EXISTING FORMAT

FORMAT LAYOUT

FUNCTION | LINE NO. | LINE CONTENT (5 10 15 20 25 30 35 40 45 50 55 60 65 70)

| ENTERED BY _____ |
| DATE _____ |
| NOTIFICATION DATE _____ |

CHANGES		
ENTERED BY _____	ENTERED BY _____	ENTERED BY _____
DATE _____	DATE _____	DATE _____
NOTIFICATION DATE _____	NOTIFICATION DATE _____	NOTIFICATION DATE _____

Fig. 7—EADAS Form 3—Hourly Report Format (Sheet 1 of 2) (8.02)

HOURLY REPORT FORMAT
(ADD, DELETE, CHANGE)

EADAS FORM 3

FORMAT NAME 5 B

☑ NEW FORMAT (IN: ALL)

CHANGES		
☐ NEW FORMAT (IN: ALL)	☐ NEW FORMAT (IN: ALL)	☐ NEW FORMAT (IN: ALL)
☐ DELETE ENTIRE FORMAT	☐ DELETE ENTIRE FORMAT	☐ DELETE ENTIRE FORMAT
☑ CHANGE EXISTING FORMAT	☐ CHANGE EXISTING FORMAT	☐ CHANGE EXISTING FORMAT

FORMAT LAYOUT

Fig. 7—EADAS Form 3—Hourly Report Format (Sheet 2 of 2) (8.02)

ENTERED BY		
DATE		
NOTIFICATION DATE		

CHANGES		
ENTERED BY	ENTERED BY	ENTERED BY
DATE	DATE	DATE
NOTIFICATION DATE	NOTIFICATION DATE	NOTIFICATION DATE

Name _____

Tel. No. _____

CHANNEL DEFINITION (ADD, CHANGE, OR DELETE) — ETDC AND OTDC

Based on the Function You Wish to Perform Fill in Only the Appropriate Line(s)

☐ **DELETE** the Definition of Channel __ _____
 $(\phi\text{-99})$

☐ **ADD** a New or Previously Deleted Channel to the System

　PLEASE GIVE:

　● **CHANNEL NUMBER** _____ $(\phi\text{-99})$

　● **DATA COLLECTION UNIT ID** _____ (up to 11 characters)

　● **SCHEDULE NUMBER** to be Associated With This Channel _____ $(\phi\text{-15})$

　● Have **CALCULATIONS** to Process This Channel's Data Been Defined and Do You Wish This

　　Processing to Begin Now? _____ (yes or no)

　● Are the Data Collected on This Channel to be Placed on **MAGNETIC TAPE** For Downstream

　　Processing Beginning Now? _____ (yes or no)

　● What **TYPE** of Device is Sending Data on This Channel? _____ **(ETDC, OTDC)**

　● Are There Any **TUR'S** Associated With This Channel? _____ (yes or no)

　● **INPUT ASSIGNMENTS** (Fill in Below)

　● Should This Channel be Put on Line? _____ (yes or no)

☐ **CHANGE** The Definition of the Above Channel

　Based on the Type of Change You Wish to Make Fill In Only the Appropriate Line(s)

　Change the **DCU ID** to _____ (up to 11 characters)

　Change the Associated **SCHEDULE NUMBER** _____ $(\phi\text{-15})$

　Change the **TUR STATUS**

　　(circle one)　Yes — There Are TURS on This Channel Where None Existed Before
　　　　　　　　NO — All TUR's Have Been Removed From This Channel

　Change the **INPUT ASSIGNMENT** As Follows:

　Should this Channel be **PUT ON LINE?** _____ (yes or no)

INPUT ASSIGNMENTS

(Lowest Ranges First, Individual Values From $\phi\text{-1023}$ on ETDC)

DECADE SCALED INPUTS _____

_____

USAGE SCANNING INPUTS (ETDC ONLY) _____

_____

NONSCALED INPUTS (ETDC ONLY) _____

_____

DISCRETE INPUTS (ETDC, EADAS PHASE NM ONLY) _____

_____

CCU OPERATIONS ONLY

ENTERED BY _____ **DATE** _____ **NOTIFICATION DATE** _____

CCU USE ONLY

☐ DELETE

☐ ADD

CHAN # ☐ OK

DCUID ☐ OK

SCHED# ☐ OK

CALCS ON? ☐ Y ☐ N

MT? ☐ Y ☐ N

CHANTYPE ☐ OK

TUR? ☐ Y ☐ N

PUT ON LINE ☐ Y ☐ N

☐ CHANGE

DCUID ☐ OK

SCHED# ☐ OK

TUR? ☐ Y ☐ N

PUT ON LINE ☐ Y ☐ N

SCALED REGS = ☐ OK

USAGE REGS = ☐ OK

PEG REGS = ☐ OK

DISCRETE INPUTS = ☐ OK

Fig. 8—EADAS Form 4—Channel Definition ETDC and OTDC (8.02)

Name _____ **CHANNEL DEFINITION (ADD, CHANGE, OR DELETE) — #1 ESS AND #2 ESS**

Tel. No. _____

	CCU USE ONLY

Based on the Function You Wish to Perform Fill in Only the Appropriate Line(s)

☐ **DELETE** the Definition of Channel _____   ☐ DELETE

       (ϕ-99)

☐ **ADD** a New or Previously Deleted Channel to the System   ☐ ADD

    PLEASE GIVE:

- **CHANNEL NUMBER** ____ _____ (ϕ-99)   CHAN #   ☐ OK

- **DATA COLLECTION UNIT ID** _____ (up to 11 characters — DCU ID for C Schedule)   DCUID   ☐ OK

- **SCHEDULE NUMBER** to be Associated With This Channel _____ (ϕ-15)   SCHED #   ☐ OK

- Have **CALCULATIONS** to Process This Channel's Data Been Defined and Do You Wish This

  Processing to Begin Now _____ (yes or no)   CALCS ON? ☐ ☐   Y   N

- Are the Data Collected on This Channel to be Placed on **MAGNETIC TAPE** For Downstream

  Processing Beginning Now? _____ (yes or no)   MT? ☐ ☐   Y   N

- What **TYPE** of Device is Sending Data on This Channel _____ (ES1L, ES2L)   CHANTYPE   ☐ OK

- How Many **REGISTERS** are There **IN** the **C SCHEDULE**?   REGS IN C SCHED   ☐ OK

- How Many **REGISTERS** are There **IN** the **C T/G SCHEDULE**?   REGS IN C T/G SCHED   ☐ OK

- **DATA COLLECTION UNIT ID FOR H SCHEDULE** _____ (up to 11 characters)   DCU ID   ☐ OK

- What is the **H SCHEDULE** Number? _____   H SCHED _____ ☐ OK

- How Many **REGISTERS** are There **IN** the **H SCHEDULE**?   REGS IN H SCHED   ☐ OK

- How Many **REGISTERS** are There **IN** the **H T/G SCHEDULE**?   REGS IN H T/G SCHED   ☐ OK

- **DATA COLLECTION UNIT ID FOR W SCHEDULE** _____ (up to 11 characters)   DCU ID   ☐ OK

- How Many **REGISTERS** are There **IN** the **W SCHEDULE**?   REGS IN W SCHED   ☐ OK

- Should This Channel Be Put on Line? _____ (yes or no)   PUT ON LINE ☐ ☐   Y   N

NOTE: The **CHANGE ACC-DATA** Function is Not Yet Available.

CCU OPERATIONS ONLY

ENTERED BY _____ DATE _____ NOTIFICATION DATE _____

Fig. 9—EADAS Form 4a—Channel Definition #1 ESS and #2 ESS (8.02)

Page_____of_____

Name_____ Telno_____

ENTITY ADD, CHANGE OR DELETE

ENTITY NAME_____
(UP TO 12 CHARACTERS)

| | | | | | | | ⬜ OK
ENTITY NAME   ⬜ DELETE

Based on the function you wish to perform, fill in the appropriate lines.

☐ **DELETE** the Above Entity
NOTE: CALCULATIONS ASSOCIATED WITH THIS ENTRY ARE NOT AUTOMATICALLY DELETED.

⬜ INSERT

☐ INSERT the New or Previously Deleted Entity Named Above Into the System
Please Provide:

• This Entity is Associated with **CHANNEL NUMBER**_____
(φ-99)

|__|__| ⬜ OK
CHAN #

• Reports About This Entity Are to Appear on **D.A. TELETYPE NUMBER**_____
(φ-15)

|__|__| ⬜ OK
DATTY #

• The Following **THRESHOLD SCHEDULE(S)** Will Be Used By the
Calculations Defined Under This Entity Name:

SCHEDULE 1 From _____ to _____, And _____ To _____, And _____ To _____
(φ-23)   (1-24)   (2-23)   (3-24)   (4-23)   (5-24)

| | | | | | | | | | | | | | | | | ⬜ OK

(OPTIONAL) **SCHEDULE 2** From _____ to _____, And _____ To _____, And _____ To _____
(φ-23)   (1-24)   (2-23)   (3-24)   (4-23)   (5-24)

| | | | | | | | | | | | | | | | | ⬜ OK

(OPTIONAL) **SCHEDULE 3** From _____ to _____, And _____ To _____, And _____ To _____
(φ-23)   (1-24)   (2-23)   (3-24)   (4-23)   (5-24)

| | | | | | | | | | | | | | | | | ⬜ OK

• Hourly Reports Associated With This Entity Will Appear
in the **HOURLY REPORT FORMAT** Named _____
(2 Char.)

|__|__| ⬜ OK
HR FORMAT
NAME

☐ Change the Definition of the Entity Named Above
Based on the type of change you wish to make fill in only the appropriate line(s)

⬜ CHANGE

• Reports about this entity should now appear on **D.A. TELETYPE NUMBER**_____
(φ-15)

|__|__| ⬜ OK
DATTY #

• Change the **THRESHOLD SCHEDULES** Which Will Be Used by the
Calculations Defined Under This Entity Name to:

SCHEDULE 1 From_____ to _____, And _____ To _____, And _____ To _____
(φ-23)   (1-24)   (2-23)   (3-24)   (4-23)   (5-24)

| | | | | | | | | | | | | | | | | ⬜ OK

SCHEDULE 2 From _____ to _____, And _____ To _____, And _____ To _____
(φ-23)   (1-24)   (2-23)   (3-24)   (4-23)   (5-24)

| | | | | | | | | | | | | | | | | ⬜ OK

SCHEDULE 3 From _____ to _____, And _____ To _____, And _____ To _____
(φ-23)   (1-24)   (2-23)   (3-24)   (4-23)   (5-24)

| | | | | | | | | | | | | | | | | ⬜ OK

• Change the **ENTITY NAME** to _____
(UP TO 12 CHARACTERS)

| | | | | | | | ⬜ OK
ENTITY NAME

• Change the **HOURLY REPORT FORMAT** Associated With This Entity to_____
(12 Char.)

|__|__| ⬜ OK
HR FORMAT
NAME

CCU OPERATIONS ONLY

ENTERED BY_____DATE_____NOTIFICATION DATE_____

Fig. 10—EADAS Form 5—Entity Definition (8.02)

Page_____of_____

_____

CCU USE ONLY

_____

Name_____ Telno_____

CALCULATION (ADD, CHANGE OR DELETE)

The **CALCULATION** Associated With_____**NAMED**_____

(Entity Name)   (Calc Name)

☐ OK

| | | | | | | | | | | | |

Entityname

☐ OK

| | | | | | | | | |

Calc Name

☐ This Calculation is A **MASTER** Calculation

☐ This Calculation is A **SLAVE** to a **MASTER** Called_____

(Mastername)

☐ ☐
M   S

| | | | | | | |

Master Name

☐ OK

NOTE: Master and associated slave calculation must always be sent to the CCU as a set.

Use page _____ of _____ to indicate

the presence of a master/slave set.

Based on the function you wish to perform fill in only the appropriate line(s)

☐ **DELETE** This Calculation

☐ DE

☐ **INSERT** the above named as a new calculation

☐ IN

• The results of this calculation will

appear in **HOURLY REPORT FORMAT LOCATION NUMBER**_____

(ϕ-64 or none)

| | |

H.R. #

☐ OK

• This Calculation is **DEFINED** As Follows

Note: Algebraic Definition of Calculation Including

Appropriate register numbers; eg., (R725/724) (100)

_____

_____

_____

_____

_____

_____

_____

_____

| | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | |

DEFINITION

• How Many **DECIMAL PLACES** (2 Max.) Should Be Calculated?_____

(ϕ-2)

| | |

DEC. PL.

☐ OK

• Does the Calculation Involve **USAGE** Measurements Taken From a TUR?_____

(yes or no)

| |

TUR?

☐ OK

• The **RESULT** of This Calculation Should Be **LABELED**_____

(4 char max.)

| | | | |

RESULT

☐ OK

• From the Algebraic Definition Above Choose 1 to 5 Terms and

Supply Associated Labels, eg., Term 1 R725 Label I M L

	TERM 1_____ LABEL_____					=T1 ☐ OK
TERM 2_____ LABEL_____					=T2 ☐ OK
TERM 3_____ LABEL_____					=T3 ☐ OK
TERM 4_____ LABEL_____					=T4 ☐ OK
TERM 5_____ LABEL_____					=T5 ☐ OK

(3 char max.)

Fig. 11—EADAS Formm 6—Calculation Definition
(Sheet 1 of 2) (8.02)

Name_____ Telno_____

Page_____of_____

CCU USE ONLY

CALCULATION (ADD, CHANGE OR DELETE — CONTINUED)

• Choose One of the Following **TYPES OF THRESHOLD** For This Calculation

☐ **UPPER BOUND** (calculated result printed when it equals or exceeds the threshold value)
☐ **LOWER BOUND** (calculated result printed when it is equal to or less than the threshold value)
☐ **LOWER/UPPER** (calculated result printed when it equals or exceeds the threshold range)
☐ **NEVER PRINT**   (the calculated res. will be stored in long term data stor. and can be printed as a slave)
☐ **ALWAYS PRINT** (the calculated result will appear on every exception report regardless of threshold values)

THRESH TYPE   ☐ OK

• Choose A Pair of **VALUES** For the **THRESHOLD**   _____/_____
value 1   value 2

THRESH VALUE   ☐ OK

NOTE:

1) VALUE 1 corresponds to lower; value 2 to upper in LOWER/UPPER threshold type

2) VALUE 1 corresponds to non-scheduled; value 2 to scheduled in LOWER BOUND and UPPER BOUND type thresholds (schedule referred to is threshold schedule for associated entity)

3) No values need be specified with ALWAYS PRINT and NEVER PRINT threshold types

• Choose A **THRESHOLD SCHEDULE** From Those Defined With the Associated Entity   _____
(1-3)

THRESH SCHED   ☐ OK

NOTE: No schedule need be chosen for LOWER/UPPER, ALWAYS PRINT, or NEVER PRINT threshold values.

☐ CHANGE

☐ **CHANGE** the Above Named **CALCULATION**

Based on the type of change you wish to make fill in the appropriate line(s)

• Change the Current **HOURLY REPORT FORMAT LOCATION**   _____
(φ-64)

HR #   ☐ OK

• Change the Current **THRESHOLD TYPE** and/or **VALUE** to:

THRESHOLD TYPE
☐ **UPPER BOUND**
☐ **LOWER BOUND**   } CHECK ONE
☐ **LOWER/UPPER**
☐ **NEVER PRINT**
☐ **ALWAYS PRINT**

THRESH TYPE   ☐ OK

THRESHOLD VALUE_____/_____
(value 1)   (value 2)

THRESH VALUE   ☐ OK

• Change the current **THRESHOLD SCHEDULE NUMBER** to_____
(1-3)

THRESH SCHED   ☐ OK

• Change the calculation **NAME** to_____
(8 char. max.)

NAME   ☐ OK

CCU OPERATIONS USE ONLY

ENTERED BY_____DATE_____NOTIFICATION SENT_____

Fig. 11—EADAS Form 6—Calculation Definition (Sheet 2 of 2) (8.02)

Company

CCU   <u>D.A. TTY</u>   TTY NO.‗‗‗‗‗‗‗

Issue Date   <u>MASTER SHEET</u>   (00—15)

TTY CIRCUIT NUMBER ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗

TTY LOCATION ‗‗‗

PRIMARY CONTACT (DIAL ADMINISTRATOR)

    NAME ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗

    TITLE ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗

    ADDRESS ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗

    PHONE ‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗‗

REPORTS RECEIVED FOR:

NO	ENTITY NAME	CLLI CODE	CHANNEL	CONVERTER
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Fig. 12—EADAS Form 7—DA TTY Master Sheet (8.02)

Company _____

CCU _____

Issue Date _____

DATA CHANNEL

Master Sheet

                 Channel No. _____

Office: _____

Address: _____

Type Eqpt.: _____

Converter No.: _____

Type Conv.: _____

Controls: _____

Data Ckt. No. _____

Schedule No. _____

CLLI Code: _____

Pseudo Entity: _____

Dial Administration Responsible:

— District: _____

— Name: _____

— Title: _____

— Tel. No.: _____

Maintenance Responsible:

— District: _____

— Name: _____

— Title: _____

— Tel. No.: _____

D.A. TTY (Primary):

— Channel: _____

— Location: _____

— Tfc. Respon.: _____

— Title: _____

— Tel. No.: _____

Inputs Assigned:

DECADE SCLAED INPUTS _____

_____

_____

USAGE SCANNING INPUTS (ETDC ONLY) _____

_____

_____

NON SCALED INPUTS, (ETDC ONLY) _____

_____

_____

DISCRETE INPUTS (ETDC, EADAS PHASE NM ONLY ____

_____

CONCENTRATED ENTITIES:

CLLI CODE   OFFICE NAME/LOCATION   CONVERTER#/TYPE

Fig. 13—EADAS Form 8—Data Channel Master Sheet
(8.02)

Company _____

CCU _____

Issue Date _____

<u>SYSTEM SCHEDULE</u>

<u>Master Sheet</u>

Sch No		SU	MO	TU	WE	TH	FR	SA	CHANNELS ASSIGNED
00	MT								
	HR								
	TUR								
01	MT								
	HR								
	TUR								
02	MT								
	HR								
	TUR								
03	MT								
	HR								
	TUR								
04	MT								
	HR								
	TUR								
05	MT								
	HR								
	TUR								
06	MT								
	HR								
	TUR								
07	MT								
	HR								
	TUR								
08	MT								
	HR								
	TUR								
09	MT								
	HR								
	TUR								
10	MT								
	HR								
	TUR								
11	MT								
	HR								
	TUR								
12	MT								
	HR								
	TUR								
13	MT								
	HR								
	TUR								
14	MT								
	HR								
	TUR								
15	MT								
	HR								
	TUR								

Fig. 14—EADAS Form 9—System Schedule Master Sheet (8.02)

Company _____   <u>WEEKLY STUDY SCHEDULE</u>

CCU _____   Week of:_____

CH	OFFICE	BUSY HOUR	SCHEDULE		MT ON	TYPE OF STUDY
			#	ENT'D		
00						
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Fig. 15—EADAS Form 10—Weekly Study Schedule
(8.02)

Company _____   **WEEKLY DATA TAPE**   Eadas Form 11_____

                          AND TROUBLE LOG

CCU _____   WEEK ENDING____/____/_____

MAG. TAPE LOG

SERIAL NUMBER	ON		OFF		SENT DATE	NUMBER OF BLOCKS
	DATE	TIME	DATE	TIME		

TROUBLE LOG

MONDAY   _____

          _____

TUESDAY   _____

          _____

WEDNESDAY _____

          _____

THURSDAY   _____

          _____

FRIDAY   _____

          _____

SATURDAY   _____

          _____

SUNDAY   _____

          _____

Fig. 16—EADAS Form 11—Weekly Data Tape and Trouble Log (8.02)

Company _____

CCU _____

DATA TAPE STATUS
AND HISTORY LOG

TAPE NUMBER: _____   Page ___ of ___

DATE PURCHASED _____   LENGTH _____   CERTIFICATION DATES   (1) _____ (2) _____ (3) _____

MANUFACTURER _____   TEST DENSITY _____   RECERTIFIED AT   (1) _____ (2) _____ (3) _____

DATA					GENERAL			REMARKS
BLOCK COUNT	DATE MOUNTED	DATE DISMOUNTED	START TIME	END TIME	MAINTENANCE	NEW LENGTH	DATE DESTROYED	

Fig. 17—EADAS Form 12—Data Tape Status and History Log (8.02)

Company _____   **GENERIC/SYSTEM BACKUP**

                                               TAPE LOG

CCU _____

Tape #	Date Written	Time Written	Remarks

Fig. 18—EADAS Form 13—Generic/System Backup
Tape Log (8.02)

Company _____

CCU _____

SYSTEM

TROUBLE LOG

TROUBLE CONDITION	DEVICE	REPORTED				CLEARED		CORRECTIVE ACTION TAKEN	DOWNTIME/ COMMENTS
		BY	DATE	TIME	TO	DATE	TIME		

Fig. 19—EADAS Form 14—System Trouble Log (8.02)

Company _____   **CALCULATION BLOCK**

                                                 ADMINISTRATION RECORD

CCU _____

OFFICE NAME _____

ENTITY CODE _____

PRIMARY CHANNEL # _____   CALCULATION BLOCK NUMBER _____

CALC #	ENTERED	CALCULATION NAME	MASTER SLAVE	RESULT LABEL	H. R. LOCATION	TYPE	THRESHOLD (1) VALUE (2)	SCHED.	WORDS USED THIS CALC.	CUMULATIVE WORDS USED
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										

(VE:EN:__) FREE CALCS = _____   FREE DEF WORDS = _____

**Fig. 20—EADAS Form 15—Calculation Block
Administration Record (8.02)**