

DIAL FACILITIES MANAGEMENT PRACTICES
ENGINEERING AND ADMINISTRATION DATA ACQUISITION SYSTEM
OPERATIONAL MAINTENANCE

APPENDIX A

SYSTEM MESSAGES CATALOG

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The following is a list of all messages which are automatically generated when an EADAS detects an error condition.

The general format of an error message is
 Time Date T PR NO F1 F2 F3.

T indicates the Type of message and could be one of the following:

- A — Action required. Usually manual intervention on the part of the operator is requested. Will generate a minor alarm.
- F — Fatal error. Indicates a serious malfunction of the system. Will generate a major alarm.
- I — Information. Informs the operator of any abnormal situation. No alarm.
- W — Warning. A peripheral access error, software errors or some function prevented from being carried out will cause this message to be printed. Will generate a minor alarm.

PR indicates which program generated the message, such as CA (calculations), MT (magnetic tape), HR (hour reports), etc.

NO is the message number within a program. This usually identifies the error in more detail.

F1, F2, and F3 are optional fields which vary according to the message.

- NOTES: (1) Where a major or minor alarm is generated, as designated above, refer to paragraphs 7.16 — 7.18 in this section for instructions as to how to restore that alarm.
- (2) Where "PM" is used in Explanation, indicates progress mark.

<u>Message</u> (All preceded by Time and Date)	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
A LP 01	LINE PRINTER DRIVER	<p>Indicates one of the following error conditions:</p> <ol style="list-style-type: none"> 1. power off 2. printer off-line 3. no paper 4. printer drum gate open 5. over temperature alarm <p>NOTE 1. This message will not necessarily be printed when the error occurs, but will be indicated when the program attempts to use the printer.</p> <p>NOTE 2. When error is corrected the printer will resume where it stopped.</p>	<ol style="list-style-type: none"> 1. Turn power on 2. Push on-line button 3. Load paper 4. Shut printer drum gate 5. Turn power off on printer; enter OF:LP: command on TTY. 	Some data may be lost for the system period on line printer only. Magnetic tape and long term storage should not be affected.
A MH 01 a	MOVING HEAD DISC DRIVER	<p>Moving Head Disc in Write-Protect Mode. This message may be accompanied by an error message generated by the requesting program.</p> <p>a = Requesting program PM address</p>	Manually reset the write protect switch on the front of drive. If the light does not go out, call maintenance.	Some data may be lost for the system period.
A MT 06 a	MAG TAPE	<p>Data written beyond end of tape mark. Tape automatically dismounted.</p> <p>a = Requesting program PM address</p>	<ol style="list-style-type: none"> 1. Mount another tape. 2. Enter the mount command on the teletype MO:MT:a,b <ol style="list-style-type: none"> a. tape drive number (thumbwheel switch nbr.) b. tape label (Volume and Serial Nbr. — 6 characters) 	No data are lost provided the operator acts to correct the situation within the system period (15 or 30 minutes).

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
A MT 07	MAG TAPE	Tape writing prevented as a result of a previous DM:MT: message	<ol style="list-style-type: none"> 1. Mount another tape 2. Enter the mount command on the teletype. MO:MT: a, b a. tape drive number (thumbwheel switch nbr.) b. tape label (Volume and Serial Nbr. — 6 characters) 	No data are lost provided the operator acts to correct the situation within the system period (15 or 30 minutes).
A MT 10 b	MAG TAPE	<p>Tape writing prevented by tape physically off-line — possibly because of power failure.</p> <p>b = Progress mark address (octal)</p>	<ol style="list-style-type: none"> 1. Reload tape if required 2. Switch tape to ON-LINE 3. Enter RS:MT:a on CCU teletype to restart magnetic tape. a = Tape drive number (thumbwheel switch nbr) 	No data are lost provided the operator acts to correct the situation within the system period (15 or 30 minutes).
A PF 01		System experienced a loss of commercial power. When power is restored, a few seconds are necessary to allow the disc driver to come up to speed and normal system operation is resumed.	After a power failure, the system automatically restores itself except for the line printer and the magnetic tape drive. The tape drive must be restored to the ON-LINE position (by using the ON-LINE switch) and then repositioned by entering the command RS:MT:01 on the CCU teletype. Verify that the time and data are correct, and reset if incorrect.	All data may be lost for the interval when system had no power.

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
F FH 01 a b c	FIXED HEAD DISC MONITOR	Generated after three attempts to read data associated with the channel currently being updated. a = Contents of control status register (octal) b = Contents of disc error register (octal) c = Current channel being updated (channel X2 — octal)	There will be an automatic system warm start. If there are repeated errors of this type, it may become necessary to re-initialize the system using the most recent backup tape. See <u>Load EADAS Generic Position Practice</u> , tasks 3 & 4A.	All data will be lost or mutilated.
F FH 02 a b d	FIXED HEAD DISC MONITOR	Generated after three attempts to execute a requested function. A failure indication is given to the requesting program and request is terminated. a = Contents of control status register (octal) b = Contents of disc error register (octal) d = Address of requesting program PM slot (octal)	If repeated errors of this type are encountered, reload the system from a back up tape. Diagnostic procedures should be performed on the fixed head disc.	Data for one channel may be mutilated.
F MH 02 b c a	MOVING HEAD DISC DRIVER (BASE LEVEL)	Indicates that requested function could not be completed after eight attempts (reasons indicated by the register contents). Indicates a hardware problem with the disc drive, format error on the disc or software problem. b = Contents of drive status register (octal) c = Contents of error register (octal) a = Requesting program PM address (octal)	A diagnostic procedure should be run on the disc for repeated errors of this nature.	The data may be partially lost, i.e., one or more entities.

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
F MH 03 b c a	MOVING HEAD DISC DRIVER (INTERRUPT SERVICE ROUTINE)	Indicates that requested function could not be completed after eight attempts (reason indicated by the register contents). Indicates disc formatting error such as parity error. b = Contents of drive status register (octal) c = Contents of error register (octal) a = Requesting program PM address (octal)	Repeated errors of this nature could be corrected by reloading the system from the most recent backup tape.	There may be a partial loss of data, i.e., one or more entities.
F TP 04 a b c	SYSTEM INITIALIZATION	Trap to location 4. Caused by word addressing on odd boundary, bus time-out occurring when attempting to address non-existent memory or peripherals, and stack errors. a = Contents of program counter when the error occurred. Usually this is the address of the instruction following the offending instruction (octal) b = Contents of stack pointer (octal) c = Processor status (octal)	1. The system will automatically attempt to restart itself. If it cannot, follow the procedure outlined in Task 3 of <u>Load EADAS Generic Position Practice</u> . 2. Notify PECC after every occurrence of a trap error. Include a copy of the error message and a description of what the system was trying to do at the time the error occurred.	All data will be lost for the system period when the message occurred.
F TP 05 a b c	SYSTEM INITIALIZATION	Stack error trap. Trap to location 5. a = Contents of program counter when the error occurred. Usually this is the address of the instruction following the offending instruction (octal) b = Contents of stack pointer (octal) c = Processor status (octal)	1. The system will automatically attempt to restart itself. If it cannot, follow the procedure outlined in Task 3 of <u>Load EADAS Generic Position Practice</u> . 2. Notify PECC after every occurrence of a trap error. Include a copy of the error message and a description of what the system was trying to do at the time the error occurred.	All data will be lost for the system period when the message occurred.

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Action Time</u>	<u>Impact on Data</u>
F TP 10 a b c	SYSTEM INITIALIZATION	<p>Trap to location 10. Occurs whenever a program attempts to execute one of a set of reserved or illegal instructions usually due to partial mutilation of core locations.</p> <p>a = Program counter (octal) b = Contents of stack pointer (octal) c = Processor status (octal)</p>	<ol style="list-style-type: none"> 1. The system will automatically attempt to restart itself. If it cannot, follow the procedure outlined in Task 3 of <u>Load EADAS Generic Position Practice</u>. 2. Notify PECC of the error conditions. Include a copy of the error message and a description of what the system was trying to do at the time the error occurred. 	All data will be lost for the system period when the message occurred.
I AB 03	ACCUMULATED BASE DATA	<p>An attempt was made to store more ESS data than had been allocated at channel definition time. This is probably caused by:</p> <ol style="list-style-type: none"> (1) More registers have subsequently been defined at an ESS office than the existing channel definition provides for. (2) The schedule was garbled resulting probably in wrong totals due to a data link error or a temporary halt of the system. Will probably be a one time occurrence. 	<ol style="list-style-type: none"> 1. Correct channel definition to reflect current register capacity requirements. 	The schedule is lost in each case. This message will accompany an I AB 10 message which identifies the specific schedule which was affected
I AB 10 a b	ACCUMULATED BASE DATA	<p>If the message received without another message, the number of ESS registers is wrong. But this message is usually received with another message.</p> <p>a = channel number b = schedule type (C, H or W) - C = 103 - H = 110 - W = 127</p>	<ol style="list-style-type: none"> 1. Verify chan. 	Collection of schedule is aborted.

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
I AB 11 a	ACCUMULATED BASE DATA	EADAS could not locate the channel header in order to correct data: a = scan address (hardware interface address)	Ensure the channel is activated (turned on)	The data schedule for this channel is ignored resulting in lost data.
I AB 13	ACCUMULATED BASE DATA	Indicates an error in data being received on more ESS registers than were provided for in Channel Definition. Always followed by a "I AB 10 a b" system message	If once, probably due to a transmission error. If it happens repetitively, confirm the validity of the register assignments entered in Channel Definitions with the originating ESS office and that a finish/end line is being transmitted	All data will be lost for the system period when the message occurred
I AB 16 a b c	ACCUMULATED BASE DATA	Applicable to No. 2 ESS. EADAS has found some special characters in the schedule header line. These indicate either a system overload or trouble in No. 2 ESS office. a = channel number b = schedule type (C, H or W) — C = 103 — H = 110 — W = 127 c = special character indicators — 104 (D) for dynamic service protection (DSP) — 123 (S) for system overload (SOL) — 124 (T) for toll network protection (TNP)	Refer condition to No. 2 ESS dial administrator	

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
I AC 00 a b c	ACCUMULATED DATA	<p>Indicates a timing error. Received new character to scan while still processing last line of data. If a string of this type of message is received, there is probably a disc error or system problem which causes the accumulated data buffer to be left in an unrecoverable state.</p> <p>a = channel number b = current register total c = schedule type (C, H, or W) — C = 103 — H = 110 — W = 127</p>	<p>If a new character is received, it is thrown out, and processing continues. If a string of messages is received, reboot the system.</p>	<p>If a string, received data will be aborted.</p>
I AC 01 a b c	ACCUMULATED DATA	<p>An error occurred while collecting register totals. It did not collect 10 registers in a line.</p> <p>a = channel number b = current register total c = schedule type (C, H, or W) — C = 103 — H = 110 — W = 127</p>	<p>If reoccurs refer condition to ESS DA for identification of problem in ESS output data stream.</p>	<p>The schedule was abandoned. Data was lost.</p>
I AC 02 a b c	ACCUMULATED DATA	<p>There was a timing error.</p> <p>a = channel number b = current register total c = schedule type (C, H, or W) — C = 103 — H = 110 — W = 127</p>	<p>If there are multiple occurrences of this message over a short period, halt and then reboot the system from disk.</p>	<p>May lose some register totals. Data suspect for this interval.</p>

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
I AC 05 a b c	ACCUMULATED DATA	There was an overflow in the ASCII section of the line buffer. The overflow characters can overwrite register stored in the binary total buffer. a = channel number b = current register total c = schedule type (C, H, or W) — C = 103 — H = 110 — W = 127	If reoccurs, refer to ESS DA for resolution. May be missing a carriage return or line feed.	There may be some errors in the data.
I AC 06 a b c	ACCUMULATED DATA	EADAS has received a bad data total. The system has set the bad total to -1. Then the system continues processing. This is probably caused by transmission error or a register total exceeding the maximum 65,535. a = channel number b = current register totals c = schedule type (C, H, or W) — C = 103 — H = 110 — W = 127	If reoccurs, refer to ESS DA to check register total, may be larger than max. possible (up to 6 digits).	Lose one register total may cause schedule to be lost.
I AC 21 a b c	ACCUMULATED DATA	An invalid line buffer was found. The line buffer was deallocated. Processing then continues with the next line buffer. a = channel number b = current register total c = schedule type (C, H, or W) — C = 103 — H = 110 — W = 127	If problem persists, reboot system from disk.	If condition occurs during schedule, data may be lost.

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
I CA 03 a b c	CALCULATION	<p>Error detected in a calculation definition block.</p> <p>a = Block number (decimal)</p> <p>b = Chan number being worked on (decimal)</p> <p>c = Reason number as follows:</p> <p>10 — There are no calculations defined channel. (Channel to first block translation table has a zero entry or no end-of-block found)</p> <p>20 — Calculation begin/end pointers incorrect</p> <p>30, 31 — Calculations end not found before the end of the block</p> <p>40 — Illegal operation code within a calculation</p> <p>50 — Entity not found in entity to TTY translation table.</p> <p>60 — Attempt to overwrite calculation block 0.</p> <p>70 — Mutilated link word in calculation block.</p> <p>80 — More than 400 disc accesses attempted during one run. (Link word may be pointing to existing block)</p>	<p>For code 10, verify the channel status. Verify all entities to determine if there is one which corresponds to that channel number. If there are none use command "OF:CA: chan. number" to turn calc off for that channel. If there is one, follow the procedure for codes 20—80 as follows. For codes 20—80 backup the system from a previous run using a backup tape. Notify PECC.</p>	<p>Calculations for one channel will be skipped.</p>

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
I DA 04	DIAL ADMINISTRATOR INTERRUPT	Not enough time to complete exception reports in allotted time (when less than 15 seconds remain before next system period). Could be caused by too many exception reports being directed to one of the DA TTY.		Any exception reports not already printed this system period will be lost. If the line printer is on line for exception report printing, all exceptions can be recovered.
I HR 01 a b c	HOUR REPORTS	Calculation definition block access errors. Either channel to first block translation table or link word are found to be zero or negative or disc access error. a = Calculation block number (decimal) b = Device index (TTY*2 or 32=LP) c = Entity number according to entity name table.	Boot the system from a previous run using a back up tape. Notify PECC.	An hourly report may be skipped.
I HR 02	HOUR REPORTS	Disc access error during format read.	Notify Maintenance.	Reports will stop during the present swap period.
I HR 03	HOUR REPORTS	Reports not finished in allotted printing time (less than 15 seconds remain before next system swap period). Probable causes is line printed off-line.		Any hour reports not already printed will be lost.
I HR 04 a b c	HOUR REPORTS	Format error. Line exceeds 72 characters. Indication of mutilated formats. a = Format pointer (octal) b = Device Index (TTY #2 or 32=LP) c = Entity Number according to the entity name table.	Boot the system from previous run using back up tape. Notify PECC.	The report for this entity will be skipped.
I MT 01	MAG TAPE	Mag tape had been turned off with message OF:MT:AUTO.	Turn on Mag tape program with ON:MT:AUTO! if desired.	No tape will be written, even if scheduled.

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
I MT 02 a	MAG TAPE	Magnetic tape can only be written for two more periods (assuming maximum channel configuration). a = Block count (decimal)	A new tape should be mounted to avoid writing beyond the end of the tape mark.	
I UI 02 a	GENERIC	Each item of peripheral hardware has an address (called a vector) assigned it by BTL spec. If the hardware is delivered with an improperly assigned vector, this message will appear.	Notify PECC.	
W CA 01 TRACK ADDR	CALCULATION	Disc access timeout (2 seconds) while attempting to read raw register totals or hour totals.		Calculations for this channel will be skipped.
W CA 02 TRACK ADDR	CALCULATION	Disc access time-out (4 seconds) while reading or writing a calculation definition block.		Calculations for this channel will be skipped.
W CF 01 a	DISC UPDATE	The channel carrier fail status is checked by this program each time its storage area is updated on disc. When the number of times a carrier fail condition is encountered exceeds a preset threshold (during one system period), this message is generated. a = Channel No. associated with data link.	This can be suppressed by placing channel OFF-LINE until data link problem is corrected.	Data lost for duration of time link is down or channel is off-line.
W DA 01 a	DIAL ADMINISTRATOR INTERRUPT	A break has been detected on a dial administrator teletype. (Only if longer than 15 seconds.) a = dial administrator teletype number (decimal)	Remove the break. If there is no break, the DM-11 multiplexer may be malfunctioning.	This condition will mutilate or stop any incoming TTY message.
W DA 02	DIAL ADMINISTRATOR INTERRUPT	Attempt to address nonexistent memory by DH-11.	Record 16 core locations starting at symbolic location CAT (use command DU:CO:). These are core locations addressed by the DH-11.	This condition may result in the mutilation of any reports presently being printed on a Dial Administrator teletype.

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
W DA 03	DIAL ADMINISTRATOR INTERRUPT	DH-11 multiplexer time-out. The DH-11 cannot gain bus access for transfers from memory. Indicates that higher priority devices usurped bus time.	Notify maintenance.	This condition may result in the mutilation of any reports presently being printed on a Dial Administrator teletype.
W DT 01	DETECTOR TEST	Prescheduled detector tests were prevented from running at the scheduled time due to the central TTY being used.	There is no corrective action. The detector test may be requested manually from the CCU teletype during the remainder of the system period.	Automatically scheduled detector test did not run.
W EX 01 a b	EXECUTIVE	<p>Sequence error: Base level program to which the EXEC relinquished control is not the same as the base level program that has just returned control to the EXEC.</p> <p>a = Contents of EXPNTR (Indicates the base level program that was given control)</p> <p>b = Contents of Reg 0. (Indicates the base level program that has just returned control)</p> <p>EXEC program restores the initial value of the stack pointer. The base level priority is set to zero and control is transferred to the next active level program.</p>	Repeated errors of this nature should be corrected by reloading the system from the most recent backup type. If the problem persists, call PECC.	
W EX 02 a b	EXECUTIVE	<p>Stack pointer value incorrect when control is returned to the EXEC by any program.</p> <p>a = Contents of EXPNTR (Indicates the base level program that was given control)</p> <p>b = Contents of stack register EXEC program restores the initial value of the stack pointer, sets the base level priority to zero, and transfers control to the next active base level program.</p>	Repeated errors of this nature should be corrected by reloading the system from the most recent backup tape. If the problem persists, call PECC.	

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
W EX 03 a b	EXECUTIVE	<p>Base level priority is incorrect (priority is different from zero when control is returned to EXEC).</p> <p>a = Contents of EXPNTR (indicates the base level program that was given control)</p> <p>b = Contents of program status (indicates current priority of the system).</p> <p>EXEC program restores the initial value of the stack pointer, sets the base level priority to zero and transfers control to the next active base level program.</p>	<p>Repeated errors of this nature should be corrected by re-loading the system from the most recent backup tape. If the problem persists, call PECC.</p>	
W EX 04 a	EXECUTIVE	<p>Unexpected interrupt from peripheral device. Interrupt generated for a base level program that was not active.</p> <p>a = Contents of EXPNTR (octal)</p>	<p>Repeated errors of this type should be corrected by re-loading the system from the most recent backup tape. If problem persists call PECC.</p>	
W MT 03 a	MAG TAPE	<p>Magnetic tape can only be written for one more period (assuming maximum channel configuration).</p> <p>a = Block count (decimal).</p>	<p>The new tape must be mounted as soon as possible.</p>	
W MT 04 a b c	MAG TAPE	<p>Disc error or time-out (disc error should be accompanied by another message).</p> <p>a = Mag tape program PM expressed in octal.</p> <p>b = Track address (octal)</p> <p>c = Second word of Track Address (octal).</p>		<p>No further data will be written on magnetic tape for the system period in which the error occurred.</p>

<u>Message</u>	<u>Source/Generating Program</u>	<u>Explanation</u>	<u>Corrective Action Taken</u>	<u>Impact on Data</u>
W MT 05 a b	MAG TAPE	Fatal tape error or time-out (tape error identified by tape status). Usually caused by a faulty tape. a = Progress mark address (octal). b = Tape status register (octal).	Dismount defective tape using command DM:MT:. Mount a new tape using MO:MT: command.	No further data will be written on magnetic tape for the system period in which the error occurred.
W UI 02 a		Unexpected interrupt from unassigned vector. a = Status word (indicates location of interrupt).	Notify PECC.	