

AUTOMATIC TROUBLE ANALYSIS (ATA) SYSTEM OPERATING PROCEDURES

CONTENTS	PAGE	CONTENTS	PAGE
1. GENERAL	1	Q. Stop Output From Electronic Translation System (ETS)	8
2. TYPES OF REPORTS	2		
3. ER SUMMARY	3	1. GENERAL	
4. COMMANDS	3	1.01 This section provides Automatic Trouble Analysis (ATA) operating procedures for the central office.	
A. Retire an Alarm	4	1.02 This section is reissued to add information pertaining to Generic 3. Revision arrows are used to emphasize the more significant changes.	
B. Stop a Pumper From Printing	4	1.03 The primary stimulus for all craft activity with the ATA System is the occurrence of an immediate action (IA) report or an exception report (ER). Either of these reports denotes that a given piece of equipment is failing with specific symptoms. These reports are explained in Part 2 of this section.	
C. Restart an IA	4	1.04 After an ER is received, the craft must determine, based upon the severity of the problem and the present workload, whether to work on the problem immediately or defer it. The determining factors in assigning priorities are the bin (is the problem severely service affecting, revenue losing, etc), the frequency at which the problem is occurring, and the expected effort in clearing the problem.	
D. Print New Copy of an ER or IA	4	1.05 System response timing is provided at the central office. If a null character is not received from the ATA computer within 3 minutes, the maintenance data transmitter (MDT) makes itself busy and reverts to trouble cards. It also sounds the major alarm.	
E. Print Cards Associated With an ER or IA	4	1.06 A time line report is printed every 15 minutes to indicate that the system is operational.	
F. Compare Cards Associated With an ER or IA	4		
G. Update an ER or IA	4		
H. Verify an ER	5		
I. Inhibit an ER	5		
J. Cancel an Inhibit	5		
K. Throttle an ER	5		
L. Modify Bin Activity	6		
M. Create New Entry	7		
N. Output Active Records	7		
O. Get Profile of Bin	7		
P. Recent Change	8		

NOTICE

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SECTION 190-105-302

1.07 Various commands are available to assist the craft in dealing with ERs. These commands are explained in Part 4.

1.08 The term "card" used in this section applies to No. 5 crossbar; for No. 1 crossbar, substitute "indicator(s)" for card.

1.09 **Sitename** is optional and is used to indicate destination of the output. If there is no sitename, the output goes to one's own site. The exclamation point (!) signifies that the command is complete and that action on it is requested. Without it, the computer will not act upon what was typed.

2. TYPES OF REPORTS

2.01 Two types of reports are received in the central office: IA and ER reports. The IA report may be a pumper, which is accompanied by a major alarm, or a special bin, which is accompanied by either a major or minor alarm.

2.02 The pumper report will continue printing until the trouble is cleared or a command is entered to cause printing to stop.

2.03 An example of a bin which might be designated as a special bin is one which indicates an automatic message accounting failure, which could result in lost revenue.

2.04 The large majority of problems in the central office will be reported via the ER (Fig. 1). The following information is shown on each ER:

(1) The first line begins with an alarm indication.

A single asterisk denotes a minor alarm. A minor alarm is retired automatically by the central computer. A major alarm can be retired only by entering an alarm release message on the keyboard printer associated with the MDT.

(2) The next field is the date and time assigned to the ER. The time may differ by several minutes from the actual time when the ER is printed. If the time differential is more than 10 minutes, the craft should notify the ATA administrator.

(3) The next field is the identity of the site to which the ER refers. Normally, this will be the site at which the craft is located.

(4) The last field is the ATA report, which identifies the ATA System as the source of the message.

(5) The second line begins with the ER number, which is used in almost all communications with the ATA System regarding specific troubles. There are two parts to this number—the number itself, followed by a dash, and a number denoting how many times this ER has repeated. ER1-2 indicates that this is the second time ER1 has been issued. The number of times an ER has been repeated can be used as an indicator of the priority which should be assigned to the problem.

(6) The next item is the date of the first issue of the ER.

(7) The next field contains the bin name, a mnemonic (memory jogging) code which indicates the category of trouble.

(8) The next field is used to record the current status of each ER in the system. When an ER is generated, it automatically receives a craft status of no action taken (NAT). At any time thereafter, the craft can update the craft status to any of ~~six~~ other conditions: trouble found (TFD), no trouble found (NTF), equipment made busy (EMB), referred (RFD), other (OTH), ~~or~~ test okay (TOK) (Generic 3).~~4~~ The latest craft status is printed in this field each time the ER is reissued and any time it is reprinted by request. Once the status has been updated, NAT cannot be reentered.

(9) The last field gives the time and date of the last craft status update in effect for the ER. The craft, when examining an ER containing an update other than NAT, should examine the time and date to determine whether the update was made prior to the reissuing of the ER. This is particularly important in the case of TFD and EMB updates made prior to the ER, since they indicate that the trouble has not been cleared.

(10) The third line begins with the sort group number. This number indicates the combination of equipment which exceeded the threshold.

(11) The next field is the threshold value, which indicates the number of cards involved in exceeding the threshold associated with the sort group. The craft can modify the threshold associated with any bin (if the terminal has been given the power to do so).

(12) The next field is the throttle level. If throttle is set for the sort group which has exceeded the threshold, then only a percentage of the ERs generated is actually printed; eg, if the throttle is set to three, only every third ER generated will be printed.

(13) The last field is sort group equipment and values. This field indicates the equipment types which matched and exceeded a threshold, and the identification of the frames or units within the equipment types which were involved. Thus, if the ER was caused by exceeding the threshold on dial tone markers, this field will indicate that dial tone markers caused the ER and which dial tone marker was involved.

(14) The fourth line is the zero sort group header. This is a predefined header, unique to each bin. It defines those items of equipment, if any, that the craft wants identified, regardless of the actual equipment which caused the ER. The date and time of each card is also shown. For some bins, there are no zero sort groups defined; therefore, no zero sort group header will appear.

(15) The values are printed out one line per card for the zero sort group values.

(16) The last group of information on the ER is supplementary information which should enable the craft to initiate a test call which will duplicate the failure. The most recent of the cards which contributed to the ER is used as the source of the supplementary information.

3. ER SUMMARY

3.01 An ER summary is generated automatically by the ATA System. This report summarizes ER activity for each site for the preceding 24-hour time period. These reports can also be printed on a demand basis in 1-hour increments by typing **op: [sitename.]erd [xx];yy!**, where xx is the number of hours to be reported and yy is the indicator

type (No. 1 crossbar only). The number of hours cannot go past the preceding midnight.

3.02 An ER summary is shown in Fig. 2. The following information is presented on the report:

(1) The first field identifies the item as an IA or ER, followed by a number identifying the report. The number is followed by a dash and then another number which indicates how many times they were reissued.

(2) ♦The second field is the number of ERs generated for the report period (daily count).♦

(3) The third field is the craft status. This is a 3-letter code which indicates the current status of the IA or ER.

(4) The fourth field is the bin name from which the report was generated. This indicates the category of failure.

(5) The fifth field is the date and time when the IA or ER was first issued, followed by another date and time of the latest recurrence of the IA or ER. This is followed by the date and time of the update. If no update has been entered by the craft, the status will be NAT and no time entry will be made.

3.03 Any text information added to an ER via the update command will appear on a second line directly below the three time entries.

3.04 ♦The line following the optional update status line will contain the threshold and the sort group equipment and values.♦

3.05 Following the list of ERs/IAs is a summary of the craft status, issue, and trouble codes.♦

4. COMMANDS

4.01 All of the commands available to central office personnel are given in Section 190-105-301. These commands are entered on the keyboard printer associated with the MDT. Some of the more commonly used commands are explained in A through Q.

A. Retire an Alarm

4.02 Minor alarms initiated by the central computer are retired automatically after approximately 5 to 10 seconds. A major alarm initiated by the central computer is retired by typing `r:alm!` at the keyboard printer. Hardware alarms initiated by the MDT hardware failure detection circuitry may be retired by operating the ALARM RELEASE (AR) key at the MDT.

B. Stop a Pumper From Printing

4.03 To stop a pumper from printing, type `stop:ia!`.

C. Restart an IA

4.04 The `start:ia!` command cancels the stop command and allows the pumper to be printed. If the problem has been cleared, the IA will not print out.

D. Print New Copy of an ER or IA

4.05 A new copy of an ER or IA can be provided by typing `op:[sitename.]er nn!` or `op:[sitename.]ia nn!` where `nn` is the basic ER or IA number. This is the ER or IA number that would have appeared on the ER or IA first received, or on any summaries. The ER or IA number is only the basic number and should not reference the repeat field which follows the dash in the ER or IA itself. Thus, to obtain a copy of ER29-5, the command would be of the form `op:er 29!`.

E. Print Cards Associated With an ER or IA

4.06 In some cases, the report which has been printed by the ATA System will need to be supplemented by the data which was on the cards, but not extracted as part of the ER or IA. To do this, there are variations on the output command described in paragraph 4.05. They are `op:er nn;last!`, `op:er nn;all!`, `op:ia nn;last!`, or `op:ia nn;all!`. Here the output command has been expanded by the addition of a new field, separated from the basic command by a semicolon (;). The word "last" causes only the last (most recent) card to be printed. The word "all" causes all cards associated with the ER or IA to be printed. All punches on the card will be printed for reference. The supplementary information on the ER or IA contains almost all of the significant punches, so the use

of the output command for this purpose should not be a general practice.

F. Compare Cards Associated With an ER or IA

4.07 The original ER or IA indicated that all of the cards associated with it had at least one field in common, the field or fields which exceed the threshold. In addition, if zero sort group information has been specified for a bin, that data may indicate other areas in which all cards are identical. If the craft wishes to obtain information on other possible areas of commonality, type `cmp:[sitename.]er nn!` or `cmp:[sitename.]ia nn!`. The command will perform a comparison of all cards involved in the ER or IA (number `nn`) and will print out the mnemonics of all fields which are common to all cards.

G. Update an ER or IA

4.08 When the craft has obtained all of the information required to pursue a problem and has resolved the problem in some manner, then the ER or IA can and should be used to record both the action taken and any additional information which may be appropriate. The mechanism for doing this is the "update" command. The form of the command is as follows: `upd:[sitename.]er (xxx1,xxx2,...);[status aaa];[code nna]:[text]!` or `upd:[sitename.]ia (xxx1,xxx2,...);[status aaa];[code nna]:[text]!`.

4.09 The basic verb of the command is `upd`, standing for "update". The ER or IA is denoted by the number `xxx1`, as in the output command. Three new fields are used in this command. The first field uses a keyword, `status`, to indicate a 3-letter status code. The codes are TFD, NTF, EMB, RFD, OTH, or TOK (Generic 3).

4.10 The next field uses a keyword, `code`, to indicate the trouble code. It is denoted by `nna` which is the equipment and apparatus code. The remaining field, delimited by a colon (:), is a text field. The craft may type anything in this field up to the limit of 40 characters (including spaces). In this field, there may be entries regarding the specific actions taken with respect to the trouble referred to by the ER or IA. Any field

which does not have a keyword and value will not be changed. The following examples are given:

- (a) The command `upd:er 12;status tfd!` changes the status.
- (b) The command `upd:er 12;text!` adds text without changing status.
- (c) The command `upd:er 12;code 01a!` adds the trouble code.
- (d) The command `upd:er 12!` changes nothing, but will cause the exception report directory (ERD) entry to print out its current state.

4.11 The craft status becomes part of the ER and is printed on any subsequent printing of the report. The text information added as part of the update command becomes part of another file, the ERD.

H. Verify an ER

4.12 When a trouble has been cleared by craft action, it is helpful to verify the effectiveness of the corrective action. The verify command provides a mechanism for obtaining rapid feedback in this area. The format of the command is `ver:[sitename.]er nn!` where nn is the ER which is to be verified.

4.13 The verify command causes the next card which would contribute toward a repeat of the specified ER to generate a repeat report by itself. If it takes five cards of a particular type to produce a reissue of the ER, the verify command will cause production of the report with only one card, giving rapid feedback regarding the recurrence of the problem.

4.14 Whenever a card has been assigned to a bin and is being analyzed for a possible ER, all cards in the bin are checked to see if they should produce a verify report. If some cards had entered the bin after the first issue of the ER, but before the trouble was cleared by the craft, they will produce a verify report if the verify command is entered against that ER and any card enters that bin for analysis.

4.15 The verify command remains in effect for 4 hours, then it is automatically disabled by

the system. It is also canceled if a matching trouble record is received.

I. Inhibit an ER

4.16 There are cases where corrective action cannot be taken immediately, but it is not desired to receive continuing notification of the problem. The inhibit command permits the craft to suppress the printing of any ER which has been issued. The format of the command is `inh:[sitename.]er nn!`.

4.17 The inhibit command only prevents the printing of repeat ERs. It does not affect any of the internal work connected with the generation of these repeat reports. Thus, if an ER was inhibited immediately after ERnn-1 was printed, and three more reissues of the ER occurred during the time the inhibit was in effect, then the ER number would be ERnn-4 on the next report actually printed.

4.18 The inhibit command remains in effect for 4 hours, then it is released automatically. It is not possible to permanently inhibit an ER. The ER summary will also indicate the latest ER issue even though the ER is inhibited.

J. Cancel an Inhibit

4.19 The craft can release the inhibited ER for printing by typing `alw:[sitename.]er nn!`. This cancels any inhibit in effect against ERnn.

4.20 Any time an inhibit or allow command is entered from a keyboard printer, the notification of the command will be repeated at the ATA administrative station and at any station designated to monitor the activities of the site.

K. Throttle an ER

4.21 There are certain problems in switching offices which result in not just one ER repeated over and over, but a number of similar ERs, identifying similar but not identical items. Because these ERs are not reissues, the inhibit command is not effective. If the problem is evident in one particular group of equipment in the analysis of a bin, that is, in one of the sort groups, then the throttle command should be used. This command affects every ER generated because the

particular throttles specified caused the generation of ERs.

4.22 Instead of totally suppressing the output of ERs, the throttle command reduces the volume of output by printing only a certain number of the ERs. Thus, if in a particular bin, such as o-mut.dig, (originating mutilated digits), the sort on the line number is producing excessive output, then this sort can be throttled. Now, every ER in this bin, which was caused by a match on the line numbers, will occur much less frequently. Every different line number has its own ER, but if any line number repeats, then the throttle can limit the printing of the repeat ER.

4.23 The format for the throttle command is as follows: **set:[sitename.]bin name;sorts (sort 1,sort 2,...);throt xxx!**

4.24 The command is a set bin command, which modifies the action of the ATA System on a particular bin or bins of a specified site. The second major subfield in the throttle command is the specification of the particular sort groups which are to be throttled. More than one sort group may be specified by using a list enclosed in parentheses. The sort group number must be obtained from the ER. The last subfield is the actual specification of the throttle value. If the throttle value is 3, only every third ER will be printed, and the intervening repeat reports will be suppressed from printing.

L. Modify Bin Activity

4.25 The set bin command is used to modify the internal action of the ATA System. This command sets status flags which direct the analysis activity for all trouble inputs reaching the bin. The format of the set bin command is **set:[sitename.]bin (binname)[;keyword value]!**. The keywords with their values are shown below:

KEYWORD	VALUE
thresh	immediate, normal, xtwo
status	disable, normal, special, summary
period	0 thru 31
match	8, 16, 24, 32

purge print, noprint

alarm major, minor

pumper enable, disable

route normal, rt1, rt2, rt3, critical

4.26 When the ATA System is installed, there is a standard threshold assigned to each item or group of equipment which will be examined when a specific category of trouble is encountered. The items or groups of equipment are called sort groups, and each sort group has its own threshold, which is determined in such a way that the lower thresholds are assigned to the sort groups which are less likely to occur without a real trouble being present. Thus, for a particular trouble category, or bin, the threshold for generating an ER might be 3 for a particular occurrence of a specific line number, and 6 for the occurrence of the same marker. The line number is much less likely to occur on a trouble record than the marker, so it has a lower threshold. The relative values of the thresholds are important to the accuracy of the ATA System. The actual numbers used are determined in such a way that they will indicate, as early as possible, probable troubles.

4.27 In particular cases, the on-site craft may wish to modify the thresholds supplied, in order to meet specific needs in the office. There are two modifications which can be made to the supplied thresholds: they may be set to one, in which case every card entering the bin will generate a normal ER, and they may be set to twice the normal amount, in which case more cards will be required to generate an ER. The thresh immediate is usually reserved for special testing situations in which the craft wishes to see and verify every card in the bin. The thresh xtwo is used in those cases where a greater base of cards is desired before producing an ER, or when the standard thresholds seem to be overly sensitive and give rise to false or misleading ERs. This doubling should be used with caution, since the doubling of the number of cards required usually results in a higher processing overhead in the ATA System and can result in an overload condition under some traffic conditions.

4.28 Once the thresholds have been modified and the information required has been obtained,

they may be restored to the normal values by using the thresh normal command.

4.29 The status variation of the set bin command modifies even more drastically the operation of the ATA System with regard to cards entering a bin. The **four** possibilities are: disable, normal, special, and summary.

4.30 The status disable variation causes all cards which are entering a particular bin to be discarded from the ATA System. The bin is effectively turned off, and no ERs are possible from the bin. This command might be used when unusual situations in an office are causing meaningless or useless cards to be sent to a particular bin. An example might be when particular tests are being performed on a new office addition, or when outside plant conditions are causing cards to be generated which are useless to the local craft.

4.31 The status special command causes each card which enters the bin to generate an IA report, an abbreviated form of an ER which will be returned to the on-site craft with high-priority treatment. This is unlike the thresh immediate variation described above in that the normal ER route is not followed as in the thresh case.

4.32 The status summary command causes each card in the bin to be retained for later reference, but disables the sorting and matching process which would produce an ER. This command might be used with bins such as the LVM trap bin, in which no matching is desired, but the cards must be retained for possible later reference.

4.33 The keyword period selects the number of full days a trouble is allowed to remain in the ATA System if it does not cause an ER. The period keyword is effective only with bins having normal status.

4.34 The keyword match specifies the maximum number of trouble inputs which are allowed to participate in the matching process. The match keyword is effective only with bins having normal status.

4.35 The keyword purge specifies whether trouble inputs which have not caused ERs to be issued should be printed in an abbreviated form at the time they are removed from the system through normal purge activity. The purge keyword

is effective only with bins having normal status or summary status.

4.36 The keyword alarm selects the office alarm treatment to be accorded the IA reports resulting from trouble inputs to a bin set to status special. ERs from a normal status bin automatically receive minor alarms, and IA reports resulting from a pumper automatically receive major alarm treatment.

4.37 The keyword pumper indicates whether the pumper detection mechanism should be activated for trouble inputs entering the bin. Pumper detection is active on all bins, regardless of the selection of status, unless the pumper disable command is entered.

4.38 The keyword route selects the message class used to output issued ERs for the specified bin. The route keyword is effective only with bins having normal status.

M. Create New Entry

4.39 The create new entry command creates a new entry in the ERD and passes back an ER number that can be assigned to an office trouble not associated with trouble record cards. The format for the create new entry command is **cne:[sitename.]er!**. This command can then be updated using the upd command to incorporate any text, code, and status desired.

N. Output Active Records

4.40 The output active records command is used to output either the last or all active records within a bin. Typical format for the output active records is **op:[sitename.]act (binname1,...);last long!**.

O. Get Profile of Bin

4.41 The profile command is used to display all of the master record storage (MRS) records in a bin (or list of bins) or all bins by MRS record type. This gives a quick check of activity in a given bin. The record types are pointer record (PTR), match record (MAT), recent record (RCT), active record (ACT), report record (RPT), passive record (PAS), quick verify (QVR), active purge (APRG), purge (PRG), and void. Typical format for the profile command is **prof:[sitename.]bin binname!**.

SECTION 190-105-302

4.42 Typically, only the number of active records would be of interest to the central office. This number indicates how many cards are in the bin and which ones have not contributed to an ER.

P. Recent Change

4.43 The recent change command implements recent change for certain office test data. Typical format for a recent change command is **rc: [sitename.]testname!**. The allowable test names

are: automatic number announcement (ANA) office codes, emergency trap (EMTRAP) numbers, nuisance trap (NUTRAP) numbers, and translator trap (TRANST) numbers.

Q. Stop Output From ETS

4.44 To stop reports or other information from going to the ETS, type **stop!**. The stop command can only be used while in the ETSX mode.¶

ELECTROMECHANICAL SWITCHING CONTROL CENTER
 AUTOMATIC TROUBLE ANALYSIS
 EXCEPTION REPORT - ER

ALARM INDICATION	DATE TIME	SITE IDENTITY	ATA REPORT	
------------------	-----------	---------------	------------	--

ER NUMBER	DATE OF FIRST ER	BIN NAME	CRAFT STATUS	DATE AND TIME OF UPDATE
-----------	------------------	----------	--------------	-------------------------

SORT GRP NUMBER	THRESHOLD VALUE	THROTTLE LEVEL	SORT GROUP EQUIPMENT AND VALUES
-----------------	-----------------	----------------	---------------------------------

DATE AND TIME OF EACH CARD	SORT GRP NUMBER	THRESHOLD VALUE	THROTTLE LEVEL	ZERO SORT GROUP EQUIPMENT AND VALUES
----------------------------	-----------------	-----------------	----------------	--------------------------------------

SUPPORTING INFORMATION (LONG FORM ONLY)

```
* NOV 14 16:10 SMTWGD ATA REPT
ER1-2 NOV 12 HMSI NAT
26 8 0 MKR DRT.0 DR.2
NOV 13 14:00 244 3 0 CHO
NOV 13 15:30 244 3 0 CH2
NOV 14 11:10 244 2 0 CH3
MKR ORTO DR.3 WT RT.0 1TR
D
PNR
TB.0 TG.0 TLF.27 FS.27 TS.4 LC.4 LV.2 FAK LK
CH.5 LL.5 RF TTF STP1 JC.6 JG.0 2 4
LLF.12 FUT.2 VGT.9 HGT.4 VFT.2 CS.3
LLF.12 FT.1 FU.2
```

Fig. 1—Example of Exception Report

DATE TIME	SITE IDENTITY	DAILY SUMMARY
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ER/IA NUMBER	DAILY COUNT	CRAFT STATUS	BIN NAME	CREATE TIME	LAST ISSUE	LAST UPDATE
-----------------	----------------	-----------------	-------------	----------------	---------------	----------------

	CRAFT UPDATE GENERAL STATUS (OPTIONAL)
--	--

	THRESHOLD	SORT GROUP EQUIPMENT AND VALUES
--	-----------	---------------------------------

JUL 18 00:00 CEND DAILY SUMMARY
 EXCEPTION REPORT SUMMARY
 ER/IA NO. STAT BIN NAME CREATE TIME LAST ISSUE LAST UPDATE
 TROUBLE CODE AND CRAFT COMMENT (IF AVAILABLE)
 MATCHED SORT GROUP (IF AVAILABLE)
 ER 0-63 (63) NAT SSTI JUL 17 09:22 JUL 17 12:24
 (2)FT.0 FU.0 SW.7 VU.3 LH
 ER 1-8 (8) NAT SSTI JUL 17 09:30 JUL 17 12:28
 (2)FT.0 FU.2 SW.7 VU.5 RH
 .
 .
 ER 35-1 (1) NAT SSTI JUL 17 11:30
 (2)FT.0 FU.0 SW.4 VU.9 LH
 SUMMARY OF THE CRAFT STATUS, ISSUE, AND TROUBLE CODES

Fig. 2—Example of Exception Report Summary