Edinburgh Regional Computing Centre

EMAS 2900 : Journal System

A Management and Engineering information retrieval system for the operating system EMAS 2900

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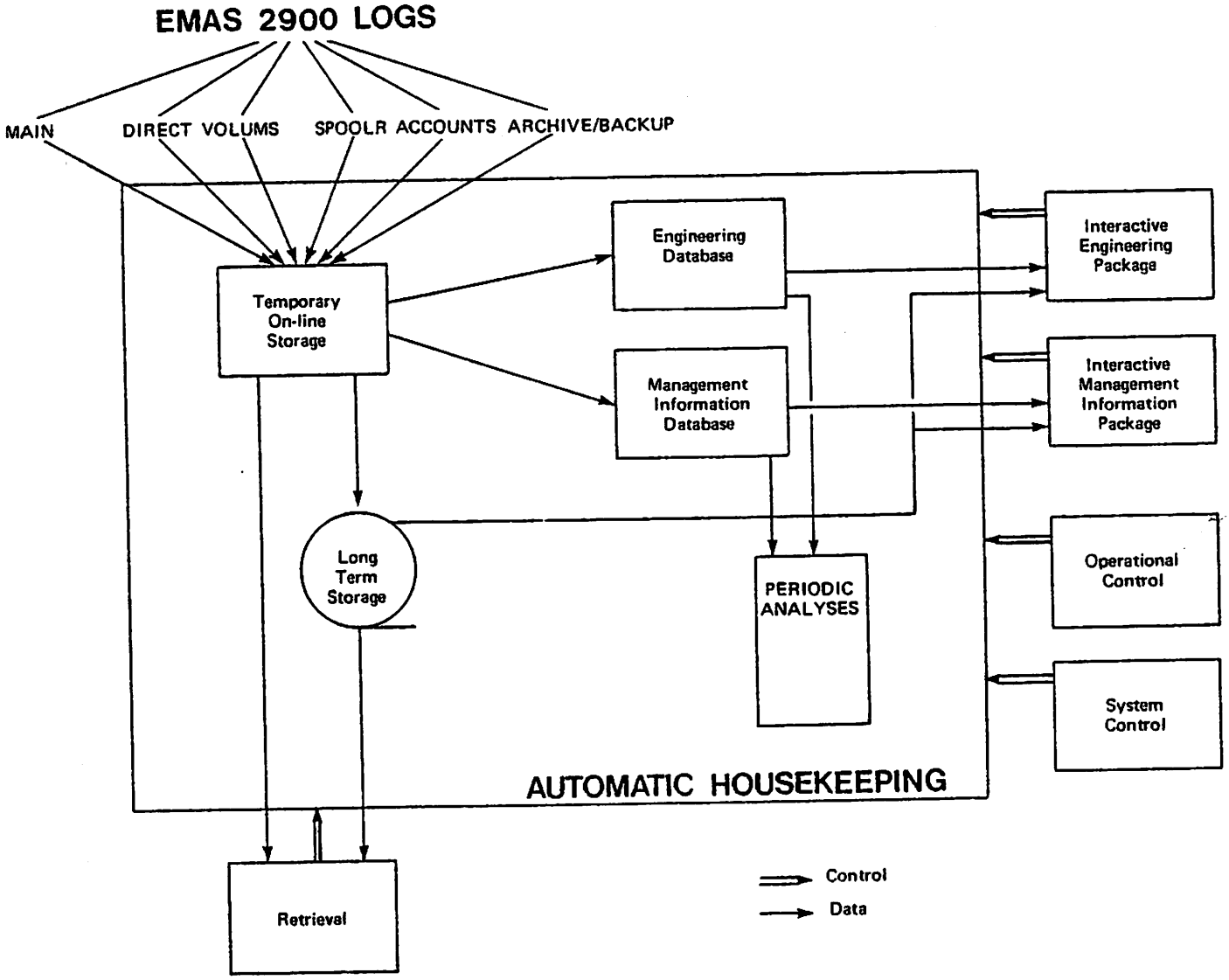
CHAPTER 1: INTRODUCTION

The Journal System implemented on EMAS 2900 is a file storage and retrieval system that enables regularly produced files to be retained over a long period of time, and retrieved on demand. The System can handle up to twenty different types of file (filetypes), each of which is uniquely identified by a keyword.

Interactive commands provide access to the files and to databases generated and updated by analyses of the files, for ICL engineers and the System management.



EMAS 2900 Journal System: Summary

Details of the control mechanisms can be found in the following chapters:

To understand how the Journal System operates, consider the progress of one particular filetype through the System: EMAS Mainlogs, which the Journal System identifies by means of the keyword MAINLOG.

During the operation of EMAS 2900, Mainlogs are produced and are queued by Spooler for the JOURNL process, where the Journal System operates. This continues throughout the period of operation and these Mainlogs (together with other logs similarly queued) are the input files for the Journal System.

A background job is run in the JOURNL process regularly (maximum rate once per hour); it looks at the number of files queued by Spooler for the Journal System and at the time elapsed since the last run of the Journal housekeeping. From these factors it decides whether or not a run of the Journal housekeeping is required. If it is, the job automatically runs the housekeeping.

This housekeeping is performed in three steps, as follows:

a) All files are taken from the Spooler queue and are sorted into chronological order within individual filetypes. Each file is then analysed for detailed information on the period of time covered by the file. Having obtained this information the Journal System can now make an entry for the file in the relevant filetype index (see Chapter 7: SYSTEM FILES: JJ#nDEX). A copy of the file is placed in a short term data partition, which ensures that files remain on-line for a period of time after their entry into the Journal System, for fast retrieval.

b) When all the files have been removed from the Spooler queue and all the index entries have been completed, the second stage of the housekeeping begins. All the files that have been gathered during this run of housekeeping are moved to magnetic tape and the relevant filetype indexes are updated with information concerning the tape and chapter position of each file on the long term storage.

Finally the third stage of the housekeeping begins; this is optional, depending on the filetype. In the case of EMAS Mainlogs this stage applies.

c) An automatic analysis is run. In the case of the Mainlogs the result is the updating of a database giving interactive facilities covering all aspects of error reporting for the ICL Engineers; see Chapter 6: ENGINEERS' FACILITIES (JEF).

The overall control of the Journal System is maintained by the System master file (see Chapter 8: System Files: JJMASTER) and is so arranged that the housekeeping will recover automatically from any System failure which may have occurred during a previous run. In the event of any problems occurring during a run of the housekeeping (e.g. file index full, tape errors), the housekeeping will "flash" a failure message on the Oper console and will inhibit the automatic runs of the housekeeping until the System management have taken appropriate action (as defined for the particular failure, in Chapter 4).

Once the files are in the System, access to them is through the command

```
Command: RETRIEVE
```

There are two basic options available:

i) To retrieve the entire file

ii) To retrieve selected parts of the file (based on a series of keys)

See Chapter 5: Retrieval Facilities.

In order to accommodate the Journal System, the JOURNL process (8 Kbyte index, 32 Mbyte VM) must be set up with the following options:

* AUXSTACK set to 1 Megabyte

* MAXFILESIZE set to 8 Megabytes

* INITWORKSIZE set to 512 Kilobytes

A single OBEY instruction has the effect of linking, inserting and cherishing the Journal System object file from the partitioned file JSYSTEMnn (which is transferred to the site's JOURNL process by EXPORT):

```
Command:OBEY(JSYSTEMnn_JLINK)     where nn is the release number.
```

This will give a fully optimised object file.

[If a "checks on" object file is required, then

```
Command:OBEY(JSYSTEMnn_JLINKC) ]
```

Now the System can be fully initialised, using the command

```
Command:CREATE JOURNAL SYSTEM     (see Chapter 3: System Commands)
```

and the Automatic housekeeping can be initialised using the command

```
Command:JOURNAL OVERRIDE
```

Command: CREATE JOURNAL SYSTEM

This command is run once only in the installation of the Journal System. Its effect is to create the System master file JJMASTER and the indexes JJ#nDEX (ref: System Files) associated with the basic Journal System.

The command will fail if there is any attempt to create the Journal System "on top of" an existing Journal System.

Having created the above files, the program will ask for tape identifiers for two tapes, the minimum number which the System requires.

Give one tape identifier in reply to the following prompt, which is repeated:

JOURNAL TAPE:

Additional tapes to expand the tape storage capacity of the System can be added using the command NEW JOURNAL TAPE, described below.

Command: NEW JOURNAL TAPE

Files are stored by the Journal System over any period of months/years. This period is governed by two factors:

i) an imposed maximum of 10,000 files of one type in the System at any one time
ii) the tape capacity of the System

A tape is added to the set by use of the command NEW JOURNAL TAPE. The identifier of the new tape is given in reply to the prompt JOURNAL TAPE:

JOURNAL TAPE: reply

where reply must be of length 6 and must not already be a tape in the set.

Command: NEW JOURNAL INDEX

Each filetype has associated with it an exclusive keyword and an exclusive index file. The index file is used by the Journal System to keep information on all the stored files of that filetype. See Chapter 8: System Files, for further details.

When an installation wishes to use the Journal System to store or analyse files of a filetype not hitherto stored, this command must first be used. It creates a new index file, and requests three items of information from the user:

1) The first ten indices are reserved for System use; the remainder are for general use. Define which is required by reply to:

SYS OR OWN: reply 'SYS' or 'OWN'

2) The keyword to be used when referring to the new filetype is prompted for:

KEYWORD: keyword

The restrictions on keyword are:

i) length must not be more than 12 characters

ii) keyword must not apply to an already existing file type

3) The form of the file (i.e. text or store mapped) which the files of this type are to be is prompted for:

FILE FORM: reply TEXT or MAPPED

Command: REMOVE JOURNAL INDEX

This command is used to destroy an index and hence remove all references or access to a filetype stored in the System. The filetype index to be removed is defined by the reply to the prompt KEYWORD:

KEYWORD: reply

Command: JOURNAL STATE

This command will give a report, on the terminal, of the current state of the Journal System.

Command: LIST JOURNAL INDEX

This command will give a list, in file JLIST, of the contents of the index defined by the reply to the following prompts:

KEYWORD:

LOW DATE, TIME:

HI DATE, TIME:

These replies determine which index you are interested in and the relevant period of time.

See Chapter 5 for reply definitions.

Control of the Journal System's routine functions is maintained automatically by a regularly running background job (AUTOJRNL) and there should, under normal circumstances, be no need to manipulate Journal's housekeeping functions manually.

If the automatic housekeeping should fail for any reason a flashing message will appear on the Oper, of the form:

```
JOURNAL SYSTEM FAILS
FAILURE NO: n
```

The action required is defined below.

Notes:

* The command JOURNAL STATE will give a description of the current state of the JOURNAL SYSTEM at any time and, if in a failed state, will define the action to take.

* The JOURNL stream limit must, in normal circumstances, be kept at 1024.

* There must always be one batch stream open with a time limit no less than

```
2960    : 600 secs
2970    : 420 secs
2980/72 : 300 secs
```

* Should the AUTOJRNL job be lost from the batch queue, a run

```
Command: JOURNAL OVERRIDE
```

  will reinstate it.

* At any time between two runs of the housekeeping a report on the previous run is available in the file JJREPORT.

Failure type 1

Problems with tape decks or with the current Journal master tape.

Action: First give the Spooler command

```
S/JOURNL LIMIT 0
```

on the Oper then call

```
Command: JOURNAL RECOVERY
```

Repeat this command until the tape section of the housekeeping succeeds. If this proves to be impossible then use the command

```
Command: ABORT JOURNAL TAPE
```

followed by

```
Command: JOURNAL RECOVERY
```

Reset the JOURNL process limit on the Oper console:

S/JOURNL LIMIT 1024

when the recovery is complete. (The automatic housekeeping is re-enabled when the error is cleared.)

Failure type 2

Temporary file space in JOURNL process is full.

Action: First give the Spooler command

S/JOURNL LIMIT 0

on the Oper console, and then call:

Command: JOURNAL RECOVERY

Repeat this command until the housekeeping run succeeds. If this proves to be impossible, use the command:

Command: ABORT JOURNAL FILES

followed by:

Command: JOURNAL RECOVERY

Reset the JOURNL process limit on the Oper console:

S/JOURNL LIMIT 1024

when recovery is complete.

Failure type 3

Automatic control batch job not being accepted by Spooler.

Action: Check first that SPOOLR is running normally. If it is, run the housekeeping:

Command: JOURNAL RECOVERY

Failure types 4/5/6/7

These failures refer to the automatic analyses carried out by the housekeeping (4: Mainlog, 5: Spooler, 6: Volumes, 7: Direct).

Action: First give the command

S/JOURNL LIMIT 0

on the Oper, then call

Command: JOURNAL RECOVERY

If this fails again in the same automatic analysis then use the relevant command listed below:

For failure type 4 use Command: ABORT MAIN ANALYSIS

For failure type 5 use Command: ABORT SPOOLR ANALYSIS

For failure type 6 use Command: ABORT VOLUMS ANALYSIS

For failure type 7 use Command: ABORT DIRECT ANALYSIS

followed by

Command: JOURNAL RECOVERY

which should now run successfully.

Reset the limit for the JOURNL queue with

S/JOURNL LIMIT 1024

> A prompt preceded by an asterisk indicates that a reply of HELP will result in information about the possible replies being printed, after which the prompt will be repeated.

Command: RETRIEVE

This command provides the only means of access to files stored in the Journal System. When files are "retrieved", the original copy is still retained by the Journal System.

The action to be taken is defined by the user's response to a series of prompts, as follows:

KEYWORD: reply (reply length not greater than 12)

This defines the filetype in question.

DATES/FILES: reply

The reply, DATES or FILES, defines how you are going to express the files concerned:

a) Replying DATES indicates that you wish to define the file(s) by a date sequence, by responding to the two prompts

   LOW DATE,TIME: and HI DATE,TIME:

   the replies each being of the format ddmmyy,hhmmss. Note that this form of reply defines <u>all</u> files whose timespans include <u>any</u> of the timespan specified.

   'yy' may be omitted, in which case the current year is assumed. Likewise, 'ss' may be omitted, in which case '00' is assumed.

   Examples of valid replies: 0211,122315 0906,0511

   <u>Always</u> include leading zeroes.

b) Replying FILES indicates that you know the file identity sequence numbers (usually from the output from the command LIST JOURNAL INDEX) and wish to make the definition from them, by replying to the prompts

   LOWER FILE: and UPPER FILE:

   with replies in the range $0 \leq n \leq 9999$.

Now you define the retrieval action to be carried out, by replying to the repeated prompt:

OPTION: reply

where valid replies are defined below. The prompt is repeated until the reply END is given, when retrieval proceeds. A reply of STOP ends the run without any processing.

The available retrieval options are as follows:

* OPTION: COMPLETE

This option retrieves the defined file(s) fully. What is then done with the file(s) is determined by the user's reply to the prompt:

OUTPUT ACTION:

Options are SEND, OFFER, and LIST+OFFER. In the case of SEND and LIST+OFFER, delivery information will be requested, and in the case of OFFER and LIST+OFFER the name of the process to which the offer is to be made will be requested. Note that any offered files which have not been accepted by the time that Journal housekeeping is next run will be destroyed.

* OPTION: ON KEY

Searching is done using the concept of an atom. An atom is a string of text which has at either end a space or a newline character.

Consider the following three lines of text from a Mainlog:

```
**OPER 0 1/ 0 SUCCESSFUL
   DT: 09/06/78 14.15.11 PROCESS 7 STOPS
   TWO BROWN BOGEYS
```

Treated as atoms: line 1 has 5, line 2 has 6 and line 3 has 3. We could define a search on line 1 by looking for, say, "1/" in position 3 and "**OPER" in position 1.

The retrieval option ON KEY will search for a user-defined set of keywords in each line. A key set can be defined as:

i) a set of fixed position words (not necessarily consecutive), or

ii) a set of consecutive words which may have their starting point at any position in the line.

The reply to the prompt FIXED OR FREE: determines which is defined:

i) FIXED: define the key set by replying to the repeated prompts:

```
POSITION:   reply with the numerical position at which the
            word must lie in the line.
MATCHWORD:  reply with the atom to match.
```

Terminate with !END.

ii) FREE: define the (consecutive) key set by replying to the repeated prompt:

```
MATCHWORD:  reply with the atom to match.
```

Terminate with !END.

In both cases the user's reply to the prompt LINES OF PRINT: defines how many lines are to be output for every successful match.

The action taken with respect to the output file (JJANL) is defined by the user's reply to the prompt

OUTPUT ACTION:

Options are SEND, OFFER, and LIST+OFFER. In the case of SEND and LIST+OFFER a delivery address will be requested, and in the case of OFFER and LIST+OFFER the name of the process to which the offer is to be made will be requested. Note that any offered files which have not been accepted by the time that Journal is next run will be destroyed.

Notes:

* The command:

  Command:UPDATE JOURNAL

  will ensure that the Journal System is as up-to-date as possible and hence can be used before retrieval if the information required is not yet in the Journal System.

* The ON KEY option can be repeatedly defined for up to 20 separate key sets for the one file pass; the resulting output will all be in the one file (JJANL).

CHAPTER 6: JOURNAL ENGINEERS' FACILITIES - JEF

EMAS 2900 produces Mainlogs throughout its operation and these logs contain all the information relevant to Engineers. One of the functions of the EMAS Journal System is to collect this engineering information and maintain interactive engineering facilities (JEF).

JOURNAL housekeeping is run automatically on EMAS 2900 periodically, depending on the rate of System log generation, and each run produces a summary of engineering information. This summary covers the period between the last two runs of JOURNAL housekeeping (up to 24 hours) and every summary is held on-line for a period of up to 10 days.

A summary consists of a summary page and a set of device error summaries.

The summary page contains a count, for the period concerned, of the errors on the following units:

SMAC, DISC, DRUM, TAPE, DFC, SFC, GPC

The device error summaries contain details of the errors on the following units:

SMAC, DISC, DRUM, TAPE

Note: JOURNAL will already have automatically printed full dumps of DFC, SFC and GPC errors for the Engineers, on the local line printer (see Appendix 1C).

The following section describes how an Engineer can use JEF interactively to look at errors, and how these errors are presented. There are three relevant commands, described below.

Notes:

* Any prompt preceded by an asterisk will accept the reply HELP and give guidance to the Engineer regarding valid replies. It will then be repeated.

* If the Engineers require the summaries to be brought up-to-date urgently then the command:

  Command: UPDATE JEF

  should be used. This will force JOURNAL to update the engineering database from its current end point up to the present time.

1) The command JEF

On entry to JEF an Index of all summaries held on-line is given and each summary is identified by a number, in the range 1-10. See Figure 1.

After printing the Index, JEF will prompt the Engineer with the standard JEF prompt, which is of the following form:

```
<output device><SUMMARY: n>
:
```

On entry to JEF, 'output device', which is an indication of where device

error reports will be displayed by JEF, is defaulted to the Engineer's terminal, i.e. TERMINAL. At this stage the SUMMARY in which the Engineer is currently interested has not been defined and so the initial prompt will be as follows:

```
<TERMINAL><SUMMARY: ?>
:
```

To define a summary the engineer must reply either

i) n (1<n<10)

or ii) NOW

'NOW' is a special reply that produces a summary of the System log currently being produced by EMAS 2900; i.e. an analysis from the current time to as far back as the current System log goes.

Once a summary has been defined JEF displays the summary page of all errors for the summary period (see Figure 2), and prompts

```
<TERMINAL><SUMMARY: 2>
:
```

(here we have assumed that summary 2 was requested); any of the following list are valid replies.

Reply	Short Form	Resulting Action
INDEX	I	The index of all on-line summaries (Figure 1) is displayed again.
STOP	S	JEF is exited and the terminal returned to command level.
NOW	N	Derive the summary from the current EMAS 2900 System log and display summary page (as in Figure 2).
n (1<n<10)		Change to summary n and display the summary page (as in Figure 2).
TERMINAL	T	Set the JEF 'output device' to the Engineer's terminal.
PRINTER	P	Set the JEF 'output device' to the local line printer. This gives greater detail of errors than when the output device is selected to the Engineer's terminal).
TAPE DISC SMAC DRUM		Display the particular device error summaries for the currently selected summary period on the currently selected JEF output device, i.e. <TERMINAL>.
TAPE Mnn DISC EDnn SMAC n DRUM p/t/s		As above but for the specified device only.

Note: During terminal display of device error summaries JEF will stop at the bottom of the screen and prompt:

CONTINUE:

Valid replies are YES (Y) or NO (N).

```
Command:JEF

-------------------------------------------------

EMAS 2980: INDEX OF ON LINE ENGINEERING SUMMARIES
PAGE    FROM                TO
 8    03/04/79 00.29.16  03/04/79 17.23.51
 9    03/04/79 17.25.53  05/04/79 00.26.31
10    04/04/79 17.45.45  05/04/79 17.23.37
 1    05/04/79 17.24.49  06/04/79 17.13.13
 2    07/04/79 01.58.01  09/04/79 23.36.26
 3    09/04/79 14.48.00  09/04/79 17.08.18
 4    10/04/79 00.47.59  10/04/79 14.17.23
 5    10/04/79 14.28.18  10/04/79 20.25.03
 6    10/04/79 21.05.48  11/04/79 11.59.54
 7    11/04/79 12.09.52  12/04/79 19.08.39

-------------------------------------------------
```

Figure 1

```
<TERMINAL><SUMMARY: ?>
-------------------------------------------------------------------

EMAS 2980 SUMMARY FOR PERIOD 07/04/79(01.58.01) TO 09/04/79 (23.36.26)

NO SMAC ERRORS RECORDED
NO DRUM ERRORS RECORDED
DISC ERRORS: ED21(50)
TAPE ERRORS(RC/UNR): M60(42/0)     M61(47/2)
NO DFC DUMPS RECORDED
NO SFC DUMPS RECORDED
TOTAL GPC ERRORS:   1

-------------------------------------------------------------------
```

Figure 2

2) The command JEFRECALL

This command is not governed by the 10-day time limit, as the above command is, but can be used to reference information covering a period from the present to as far back as the Journal System has tape records. In this case the original Mainlogs are re-analysed, as defined by the Engineer's replies to prompts.

The program firstly requests the period of time which the Engineer wishes to examine, by asking:

```
* LOW DATE,TIME: reply
* HI DATE,TIME: reply
```

"reply" in each case being of the format ddmmyy,hhmmss .

Note that 'yy' may be omitted, in which case the current year is assumed. Likewise, 'ss' may be omitted, in which case '00' is assumed.

Examples of valid replies: 0207,122315 0910,0511

Always include leading zeroes.

The program then establishes the required analysis by asking:

```
* OPTION:
```

A valid reply is one of the following:

a) CONTROLLER

This lists the dumps of the controller type, specified by the Engineer's response to the question

TYPE: reply DFC or GPC or SFC or ALL

The errors recorded are listed either to the line printer or to the terminal, as defined by the Engineer's reply to the question

PRINTER OR TERMINAL: (See Appendix 1C)

b) DISC

This analysis gives every detail of disc failures rather than a summary. It is sent to the device defined by the Engineer's reply to the question

PRINTER OR TERMINAL: (See Appendix 1D)

The Engineer can define a specific drive (e.g. ED21) or all drives (ALL) in reply to the prompt

SPECIFIC DEVICE:

c) ALL

This option will give summaries on the line printer of all DISC, DRUM, TAPE, SMAC, GPC, SFC and DFC errors in the period concerned, in the same format as the printer summaries that are given from the on-line data. The difference is here that the Engineer can now look

at a period of time (say a week) in the past and obtain a complete Engineering analysis over that period. (See Appendix 1C and printer summaries in Appendix 1B).

3) The command TAPE LIBRARY

A tape library data base is constantly updated by the Journal System. It gives details of mounts and failures for each tape used in the System from the time that the tape was first used. The command TAPE LIBRARY gives interactive access to the data base, as follows:

The user has two modes of access to the data base defined by his response to the prompt

AMEND/REPORT:

a) REPORT produces, from the data base, reports on the terminal or the line printer or both (see Appendix 1E). The reply to the prompt

TERMINAL, PRINTER OR BOTH?

defines the destination of the report.

The following two prompts allow the user to define the reporting he requires:

```
DEFINE THE TAPES YOU WISH TO LOOK AT, REPLY EITHER 'ALL'
OR THE TSN OF THE SPECIFIC TAPE REQUIRED.
TSN:      (e.g. AB1342)

DEFINE THE DECKS YOU WISH TO LOOK AT, REPLY EITHER 'ALL'
OR THE IDENTITY OF THE SPECIFIC DECK REQUIRED
DECK:     (e.g. M51)
```

If the report has been directed to the terminal, at the end of each page of output the prompt

CONTINUE:

will be given. A reply of YES allows the report to continue, while a reply of NO terminates the report. In the latter case, when output to BOTH terminal and printer has been selected the program gives the further prompt

DO YOU WISH THE PRINTER REPORT COMPLETED?

Reply YES or NO.

b) AMEND allows the user to delete specific entries within the data base when, say, a tape has been discarded (or the label re-used on a new tape), or when a faulty deck has been repaired and the Engineers require the table for the deck to be cleared down. In order to define the required amendment, the Engineer replies as appropriate to the following prompts:

DECK/TAPE/ALL:

Replying DECK clears down all entries for the deck defined by the reply to the prompt

DECK IDENTITY: (e.g. M60)

Replying TAPE clears down entries for the tape defined by the reply to the prompt

TSN: (e.g. AC0327)

Replying ALL clears down the entire data base.

Note:

* A complete set of unit reports is produced on the line printer by JOURNAL for the System management and, should access to the interactive package be impossible (e.g. because the System is down), these are therefore available to the Engineers.

Section 1: Automatically-produced periodic analyses

Management statistics data bases are updated automatically by the Journal System. Reports based on the information held in these data bases are automatically provided as follows:

A) Output queue monitoring

A monthly report is printed (on the first of the month) by the Journal System. This report contains two sections:

a) A breakdown for each Spooler queue of all files or jobs passing through the queue in the period. Associated with each queue are the following statistics:

1) Total number of files or jobs.

2) Total Kilobytes.

3) Mean queueing time (i.e. the elapsed time between entry into the queue and the start of transfer from it).

4) Mean execution time (i.e. the elapsed time between the start and end of transfer from the queue).

5) Distribution histograms.

b) A breakdown, by file system and then user within file system, of the spooled files or jobs, giving total numbers and total sizes for each Spooler queue. Within each file system, the users appear in the order "largest total Kilobytes transferred" first.

See Appendix 2A.1.

Output queue description

Since queue mnemonics and queue uses are different for different sites, a site can describe unidentified output queues as follows:

```
Command: QUEUE DESCRIPTION

THE FOLLOWING QUEUES REQUIRE DESCRIPTION.

    {List of queues}

DO YOU WISH TO ADD A DESCRIPTION TO ANY.
YES OR NO:
```

Replying YES starts the following prompt cycle.

```
QUEUE:  reply with a queue mnemonic as given in the list
        (e.g. GP23).
```

DESCRIPTION: give queue description. Up to 32 characters are allowed.

The cycle is terminated by replying END to the QUEUE: prompt. Note that you do not have to give descriptions for all the queues listed (they will remain described as '????' in the reports until defined otherwise).

Replying NO to the original question leaves the queues undescribed.

The above dialogue is then followed by the prompt

DO YOU WISH TO CHANGE ANY QUEUE DESCRIPTION(S)?
YES OR NO:

If you wish to change a queue description as it appears in the report, then reply YES to this prompt; the following prompt cycle is then entered:

QUEUE: give the queue mnemonic

CURRENT DESCRIPTION IS: <current description output>

DESCRIPTION: to which you reply with the new description

The cycle is terminated by the user replying END to the QUEUE: prompt.

See Appendix 2A.2 for an example of the use of this command.

B) Background Job Monitoring

This analysis, produced on the first of the month, contains two sections:

a) A descriptive breakdown of all background jobs run on the System (excepting 'JOURNL' automatic housekeeping runs). The jobs are distributed into REQUESTED CPU categories, and for each category the following figures are given:

1) total jobs

2) total requested CPU

3) total used CPU

4) mean waiting time before execution

5) mean execution (elapsed minutes) time

The final category gives the overall total.

b) A histogram giving jobs run and cpu used in each hour of the day over the month.

C) Session Monitoring

A summary report on the interactive and background sessions is produced monthly (on the first of the month). See Appendix 2C.1.

Separate reports are produced for each user community group defined by the management, the groups being specified as described below.

The default monthly session monitor report consists of one copy of the report on the user community group 'ALL' (i.e. on all users).

Use the following command to expand the reporting:

Command: SESSION MONITOR

This results in the prompt

OPTION: reply

The following are valid replies:

* ADD GROUP

  Here a new group type is to be added to the monthly automatic session reporting; i.e. a separate list and totals are to be produced for the user group.

  Any number of groups (subject to an overall maximum of 50) can be added by this call, the groups being defined by reply to the repetitive prompts:

  GROUP:
  DESCRIPTION:

  to which the terminating reply is END.

  The reply to "GROUP:" is a six-character user group identifier or ALL (for all users). In this reply an asterisk represents any character.

  e.g. ERCC**
  EGN***
  *PC*01

  The reply to "DESCRIPTION:" is text of up to 30 characters which will be used as a heading for the group on the report.

* REMOVE GROUP

  Opposite of ADD GROUP: define the group to be removed by replying to the prompt "GROUP:".

* MONTHLY COPIES <n>

  This sets to n the number of copies of the monthly automatic report to be printed.

Section 2: On demand management reporting (derived from on-line "Journal-maintained" databases)

A) Reporting on output queue statistics

This is done by use of the command

Command: OUTPUT QUEUES

This will report on the output queues, giving the statistics from the beginning of the current month to the current time, the report being of the same format as that generated by the automatic monthly reporting (section 1.A above).

The report can be directed to the terminal or the local line printer or both, by replying to the prompt

TERMINAL, PRINTER OR BOTH?

The report on the terminal will not contain the histograms.

See Appendix 2A.1 for the report format.

B) Reporting on background job statistics

This is done by use of the command

Command: BACKGROUND ANALYSIS

This will report, on the local line printer, the background statistics from the beginning of the current month to the current time, the report being of the same format as that generated by the automatic monthly reporting.

See Appendix 2B.1 for the report format.

C) Reporting on Interactive/Background Sessions and CPU utilisation

This is done by use of the command

Command: SESSION MONITOR

The following options are available with this command:

* REPORT

  This option will give a report, on the local line printer, of the same format as the monthly automatic report (see Appendix ?). The exact form of the report is defined by replies to the following prompts:

  LOW DATE, TIME: ddmmyy, hhmmss
  HI DATE, TIME: ddmmyy, hhmmss

  yy defaults to current year, ss defaults to 00. Always include the leading zero.

e.g. 2107,0915
2012,103645
010680,2359

Replies to these two prompts define the period to be looked at; it must be within the database range (which will have been printed on the user's terminal).

HISTOGRAMS:reply YES or NO

YES will result in the relevant histograms being produced.

GROUP REPORTS:

reply	NO	No reports produced.
or	DEFAULTS	Report produced as for the monthly automatic report (but without clearing down the database).
or	SPECIFIC	you wish to define the user groups for this particular report. This is done by reply to the repetitive prompts: GROUP: DESCRIPTION: (See "Session monitoring" above for details of the replies.)

COPIES: <n>

Give n copies.

* <USER> BREAKDOWN

This option will result in a chronological list, on the local line printer, of all foreground and background sessions recorded for the user (or user group) defined.

The user must define the period which the report is to cover, as in option (i).

Note that <USER> can be a single user, e.g. ERCC33, or a group of users, e.g. ERCC**.

Examples: ERCC33 BREAKDOWN
SR**** BREAKDOWN

See Appendix 2C.2 for an example of the output format.

* CPU Profile

This option gives, in histogram form on the local line printer, a profile of CPU usage for the day specified via the prompt:

DATE: reply DDMMYY YY defaults to this year.

e.g. 0906
090780

Section 3: On-demand management summaries (requiring analysis of original System logs)

These summaries are derived from the original System logs (MAINLOG, DIRECT, SPOOLR, VOLUMS, etc.) and represent summaries of the type defined for a specified period of time.

It is possible to run any number of management summaries simultaneously as long as they are each extracted from the same system log type.

The summaries are accessed as follows:

Command: <summary> — See the Table below for available summaries.

Low Date,Time:
Hi Date,Time: — Defines the time period required. The reply form is DDMMYY,HHMMSS. Note that: YY may be omitted, current year assumed; SS may be omitted, 00 assumed.

:
(Prompts then follow that depend on the specific summary command.)
:

OTHER SUMMARY: — Reply 'END' to stop this repeated prompt and commence processing. 'STOP' returns to command level.

or

<summary>, where this new summary is of the same type as the command level summary. Prompts then follow that depend on the summary selected.

Summary	Documentation reference	Summary type	Notes
BACKGROUND SUMMARY	p.26; App 2B.2	SPOOLR	Produces, for defined group of users (or all users), a chronological summary of batch work over the period specified. Output to local line printer.

Summary commands

1) Summary of Background Jobs

Summary: BACKGROUND SUMMARY

This will result in a report, on the local line printer, of all information concerning the entry and execution of background jobs for all (or up to 20 specified) users during a specified period. See Appendix 2B.2 for an example of the summary produced.

Prompts are given as follows:

SPECIFIC USER:

Reply either

i) ALL for all users, or

ii) aaaaaa being a specific user name. This prompt is then repeated and up to twenty users may be specified. Terminate the cycle with 'END'.

System file: JJMASTER

This is the master control file without which the Journal System cannot run. The contents are as follows:

Displ. from File Start	Contents
X'00'	Header.
X'20'	(%INTEGER PDATE) The date and time of the last run of the System.
X'24'	(%INTEGER JSTATE) The current state of the System: 0 OK, last run having terminated successfully; 1 the last run failed whilst taking files from SPOOLR; 2 either i) as 1 but System has begun recovery, or ii) last run skipped tape dump; 3 last run failed to dump all files from pd to tape; 4 recovering from 3 (set to this value by prompt to force tape rerun, otherwise set to 2);
X'28'	(2 bytes only) ICL cyclic error count used in producing compatible error file.
X'30'	Array of 20 entries, each of the form: (%BYTEINTEGER ID CHAR, DATA TYPE, %STRING(12) KEYWORD) This area controls allocation and searching for individual indexes. ID CHAR gives the "n" in "JJ#nDEX". DATA TYPE: 0 is text and 1 is mapped data.
X'6D8'	(%INTEGER AUTOFAIL) The failure type (1, 2, 3, 4, 5, 6 or 7) of the automatic run. (The failure number appears in any flashing Oper message given.)
X'6DC'	(%INTEGER AUTO FLAG) Controls the automatic housekeeping: 1 - automatic housekeeping OK; 0 - failed.
X'6EA'	(%STRING(7) BAD FILE) This is set by option KILLFILE of JOURNAL if the file to be destroyed is still in the Spooler queue. The next run of JOURNAL will then remove the file.
X'6F2'	(%STRING(7) FAIL FILE) The identity of the failing file if the last run failed (i.e. if JSTATE=1).
X'700'	(%INTEGER) Total number of tapes in the Journal System tape cycle.
X'704'	(%INTEGER RELATIVE AGE) Controls the tape cycle when deciding which full tape is overwritten next.
X'708'	(%INTEGER MASTER TAPE) Index to MASTER tape.
X'710'	(%INTEGER CHAPTERS) Total chapters on master tape.
X'714'	(%INTEGER EPAGES) Count of total epages on the master tape.
X'720'	Array of 100 entries (%STRING(6) TSN, %INTEGER AGE) defining the tape cycle. AGE $\geq$ 0 if it is full, 0 if not yet used, -1 if in use as current master or copy tape.
X'1FFC'	(%INTEGER P FILE COUNT) the number of files in the JOURNL process awaiting processing as a result of a crash during a run of JOURNAL (JSTATE=1).
X'2000'	(%STRING(7)%ARRAY PENDING FILES(1:250)) The identities of files awaiting processing. The number of files is defined by P FILE COUNT.

System file: JJ#nDEX

These files ($0 \leq n \leq 99$) are the indexes for the different types of file in the Journal System. There is one index of this type for each filetype in the System.

Displ. from File Start	Contents
X'00'	Header.
X'20'	(%INTEGER NEXT SLOT) Points to the next slot in the index to be used for a file entry (0-9999).
X'24'	(%INTEGER NEXT SEQ) This is the sequence number to be allocated to the next file to form its new file name.
X'28'	(%INTEGER LAST SLOT PROCESSED) Used by automatic analysis, together with NEXT SLOT to define which files to analyse.
X'30'	(%STRING(12) KEYWORD) Keyword associated with filetype.
X'40'	Array of 10,000 entries with the format: (%INTEGER SEQN, START DT, FINISH DT, %C %BYTEINTEGER STATUS, %INTEGER CHAPTER, %C %STRING (6) TAPE)

SEQN: holds the file sequence number (mmmm) which gives the file name JnImmmm.
START DT: defines the date and time of the starting point of relevance to this file.
FINISH DT: defines the finishing point.
STATUS: 0 - file in data partition only;
1 - in data partition and on tape;
2 - on tape only;
8 - unused index entry;
9 - file lost for good (either overwritten or physically irretrievable).
CHAPTER: position of file on tape.
TAPE: the identifier of the tape.

Other files used by the Journal System

File	Use
JJREPORT	Report on last JOURNAL run
JJ#PD	Partitioned file forming on-line storage
JENGPD	Partitioned file, engineering data base
JSPLRSTAT	Partitioned file, management statistics data base
JDIRECTSTAT	Partitioned file, management statistics date base
JVOLSTAT	Partitioned file, management statistics data base

Every file sent to the Journal System via the Spooler process SPOOLR must conform to a header standard, as follows:

* Word 6 of the header must contain an integer representation of the date and time of creation of the file (see EMAS 2900 System Note 5).

* Word 7 must be an integer with the value X'FFFFFFnn', where nn is the identity number of the filetype in the Journal System. This identity number is given by the System when the index for the filetype is created. Numbers have currently been assigned as follows:

Filetype	Identity	Keyword
Mainlogs	00	MAINLOG
Volumes logs	01	VOLUMS
Spooler logs	02	SPOOLR
Accounting logs	03	ACCOUNTS
Director logs	04	DIRECT
Backup and Archive logs	05	BACK&ARCH

For MAPPED DATA files this is all that is required, as the date in word 6 is used as date and time information in the index for each file; i.e. a file will be assumed to cover the period of time from the last file in the index up to the time specified in its own header.

For TEXT files, messages of the following type are recommended to appear at least at the start and finish of the text, on newlines, to define the file index entries:

```
DT: dd/mm/yy hh.mm.ss
```

In general, analysis by the Journal System will succeed for any text file as long as the following convention is adhered to:

There must be no more than 68 atoms on any one line (i.e. before a newline character) and no one atom must exceed 127 characters in length.

* * * * * * * * * * *
A P P E N D I C E S
* * * * * * * * * * *

APPENDIX 1A : EXAMPLE OF SUMMARY INDEX AND SUMMARY PAGE

These examples appear in Chapter 6 as Figures 1 and 2.

APPENDIX 1B.1 : EXAMPLE OF TAPE ERROR REPORTING TO THE ENGINEER'S TERMINAL

```
<TERMINAL><SUMMARY: 2>
: TAPE

 DATE TIME  DEV MEDIA  OP LVL STREAMR0 STREAMR1 SOTOT1T2T3T4T5T6T7T8T910
-------------------------------------------------------------------------

07/04 02.00 M60 NRB038 WR RC  72409000 80000000 10000000300000100000100O
07/04 02.00 M60 NRB038 WR RC  72409000 80000000 1000000030000010000002OO
09/04 01.00 M60 NRA100 WR RC  72409000 80000000 1000000030000010000040O0
09/04 01.01 M61 NRA101 WR RC  73409000 80000000 1000000030000010000080O0
09/04 01.01 M61 NRA101 WR RC  73409000 80000000 1000000030000010000080O0
09/04 01.02 M61 NRA101 WR RC  73409000 80000000 1000000031000010000300O0
09/04 01.02 M61 NRA101 WR RC  73409000 80000000 1000000030000010000080O0
09/04 01.03 M61 NRA101 WR RC  73409000 80000000 1000000030000010000001O0
09/04 01.03 M61 NRA101 WR RC  73409000 80000000 1000000020000010000080O0
09/04 01.04 M61 NRA101 WR RC  73409000 80000000 1000000030000010000001O0
09/04 01.06 M60 NRA100 WR RC  72409000 80000000 1000000030000010000020O0
09/04 01.06 M61 NRA101 WR RC  73409000 80000000 1000000030000010000020O0
09/04 01.08 M61 NRA101 OT UN  7344B000 80000004 2000008000000000000000O0
09/04 01.38 M61 NRA103 WR RC  73409000 80000000 1000000030000010000001O0

CONTINUE:YES

 DATE TIME  DEV MEDIA  OP LVL STREAMR0 STREAMR1 SOTOT1T2T3T4T5T6T7T8T910
-------------------------------------------------------------------------

09/04 01.39 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.39 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.39 M61 NRA103 WR RC  73409000 80000000 1000000030000010000020O0
09/04 01.39 M61 NRA103 WR RC  73409000 80000000 1000000030000010000004O0
09/04 01.39 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.40 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.40 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.40 M61 NRA103 WR RC  73409001 80000000 1000000001000000000000O4
09/04 01.41 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.41 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.41 M61 NRA103 WR RC  73409000 80000000 1000000030000010000040O0
09/04 01.41 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.41 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.42 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
CONTINUE:YES

 DATE TIME  DEV MEDIA  OP LVL STREAMR0 STREAMR1 SOTOT1T2T3T4T5T6T7T8T910
-------------------------------------------------------------------------

09/04 01.42 M61 NRA103 WR RC  73409000 80000000 1000000030000010000200O0
09/04 01.43 M61 NRA103 WR RC  73409000 80000000 1000000030000010000004O0
09/04 01.43 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.43 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.43 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.44 M61 NRA103 WR RC  73409000 80000000 1000000030000010000008OO
09/04 01.44 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.44 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.44 M61 NRA103 WR RC  73409000 80000000 1000000030000010000200O0
09/04 01.45 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.45 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.45 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.45 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
09/04 01.45 M61 NRA103 WR RC  73409000 80000000 1000000030000010000002OO
```

```
CONTINUE:NO

CHRONOLOGICAL SUMMARY TERMINATED, BY DECK BREAKDOWN FOLLOWS:
CONTINUE: YES

SUMMARY FOR TAPE DECK: M60
TOTAL ERRORS(READ/WRITE/OTHER)  RCVD(0/42/0)  UNRCVD(0/0/0)

LEVEL:    1   2   3   4   5   6   7   8   9  10  11  12  13  14  15 UNR
-------------------------------------------------------------------------
READ:     0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
WRITE:   41   1   0   0   0   0   0   0                               0

TRACK ERRORS: TRK28 TRK27 TRK26 TRK25 TRK24 TRK23 TRK22 TRK21 TRK20
-------------------------------------------------------------------
SINGLE:          0     0     0     0     0     0     0     0     0
MULTI:           2     1     3     2     5     2     6     3    26

MTE TAPE ERRORS:  NRB038(2)   NRA100(2)   SDD001(1)   NRA099(37)
STE TAPE ERRORS:


CONTINUE:YES

SUMMARY FOR TAPE DECK: M61
TOTAL ERRORS(READ/WRITE/OTHER)  RCVD(0/47/0)  UNRCVD(0/0/2)

LEVEL:    1   2   3   4   5   6   7   8   9  10  11  12  13  14  15 UNR
-------------------------------------------------------------------------
READ:     0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
WRITE:   46   1   0   0   0   0   0   0                               0

TRACK ERRORS: TRK28 TRK27 TRK26 TRK25 TRK24 TRK23 TRK22 TRK21 TRK20
-------------------------------------------------------------------
SINGLE:          0     0     0     0     0     0     0     0     0
MULTI:           3     4     1     2     0     3     5    24     3

MTE TAPE ERRORS:  NRA101(9)   NRA103(37)  NRA098(3)
STE TAPE ERRORS:
```

Notes:

* "LVL" indicates error to be RC (recovered) or UN (unrecovered).

* "OP" gives operation: RD (read), WR (write) or OT (other).

* EMAS 2900 fails a write transfer after 9 retries, and fails a read transfer after 16 retries.

APPENDIX 1B.2 : EXAMPLE OF DISC ERROR REPORTING TO THE ENGINEER'S TERMINAL

```
<TERMINAL><SUMMARY: 2>
: DISC ED21

TIME   UNIT MEDIA ROUTE STREAMR0 STREAMR1 CCCCHHHHRR SOTOT1T2T3T4T5T6
---------------------------------------------------------------------

12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
CONTINUE:YES

TIME   UNIT MEDIA ROUTE STREAMR0 STREAMR1 CCCCHHHHRR SOTOT1T2T3T4T5T6
---------------------------------------------------------------------

12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
12.24  ED21 EMAS01 111  00409002 00000D24 0017001003 4000040000002620
13.44  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000020
13.44  ED21 EMAS01 111  00409000 00000005 0017001003 4000040000000420
CONTINUE:NO

<TERMINAL><SUMMARY: 2>
:
```

Notes:

* ROUTE = Port Trunk Stream

* CCCCHHHHRR = CYL HEAD RECORD

```
<TERMINAL><SUMMARY: 2>
: DRUM 1/0/1

DATE  TIME  ROUTE ERR  STREAM 0 STREAM 1 STREAM 2 STREAM 3 STREAM 4
-----------------------------------------------------------------

16/04 11.54 1/0/1 RCVD ******** ******** ******** ******** ********
            SECTOR: 00040008 00240070  ADVISORY rec srnh
            SECTOR: 00800000 00250070  NORMAL TERM
            SECTOR: 00800000 00260070  NORMAL TERM
            SECTOR: 00800000 00270070  NORMAL TERM

16/04 12.03 1/0/1 RCVD ******** ******** ******** ******** ********
            SECTOR: 00040008 00200000  ADVISORY rec srnh
            SECTOR: 00800000 00210000  NORMAL TERM
            SECTOR: 00800000 00220000  NORMAL TERM
            SECTOR: 00800000 00230000  NORMAL TERM

CONTINUE:YES

DATE  TIME  ROUTE ERR  STREAM 0 STREAM 1 STREAM 2 STREAM 3 STREAM 4
-----------------------------------------------------------------

16/04 14.47 1/0/1 RCVD ******** ******** ******** ******** ********
            SECTOR: 00800000 0034007A  NORMAL TERM
            SECTOR: 00040008 0035007A  ADVISORY rec srnh
            SECTOR: 00800000 0036007A  NORMAL TERM
            SECTOR: 00800000 0037007A  NORMAL TERM

16/04 16.11 1/0/1 RCVD ******** ******** ******** ******** ********
            SECTOR: 00040008 0028000C  ADVISORY rec srnh
            SECTOR: 00800000 0029000C  NORMAL TERM
            SECTOR: 00800000 002A000C  NORMAL TERM
            SECTOR: 00800000 002B000C  NORMAL TERM

SUMMARY COMPLETED.
<TERMINAL><SUMMARY: 2>
:
```

Note:

* STREAM0 - STREAM4 are only set for unrecovered errors.

This is of the same format as the line printer output (Appendix 1B.8).

APPENDIX 1B.5 : EXAMPLE OF TAPE ERROR REPORTING TO THE LINE PRINTER

EMAS 2900 TAPE ERROR REPORT PAGE: 1

DATE	TIME	DEV	MEDIA	OP.	FAIL	LVL	SINCE LAST IPL TRNSFERS/FAILS	STREAM RESPONSE-- WORD 0	WORD 1	STREAM STATUS: S0 T0T1T2T3 T4T5T6T7	T8T91011	FAILED LBE
07/04/79	02.00.07	M60	NRB038	WRITE	RCVD	1	12/1	72409000	80000000	10 00000030	00001000 001000A0	80000300
07/04/79	02.00.17	M60	NRB038	WRITE	RCVD	1	146/2	72409000	80000000	10 00000030	00001000 000200A0	80000300
09/04/79	01.00.39	M60	NRA100	WRITE	RCVD	1	310/1	72409000	80000000	10 00000030	00001000 004000A0	80000300
09/04/79	01.01.14	M61	NRA101	WRITE	RCVD	1	612/1	73409000	80000000	10 00000030	00001000 008000A0	80000300
09/04/79	01.01.52	M61	NRA101	WRITE	RCVD	1	946/2	73409000	80000000	10 00000030	00001000 008000A0	80000300
09/04/79	01.02.13	M61	NRA101	WRITE	RCVD	1	1120/3	73409000	80000000	10 00000031	00001000 030000A0	80000300
09/04/79	01.02.30	M61	NRA101	WRITE	RCVD	1	1278/4	73409000	80000000	10 00000030	00001000 008000A0	80000300
09/04/79	01.03.12	M61	NRA101	WRITE	RCVD	1	1694/5	73409000	80000000	10 00000030	00001000 000100A0	80000300
09/04/79	01.03.35	M61	NRA101	WRITE	RCVD	1	1916/6	73409000	80000000	10 00000020	00001000 008000A0	80000300
09/04/79	01.04.25	M61	NRA101	WRITE	RCVD	1	2354/7	73409000	80000000	10 00000030	00001000 000100A0	80000300
09/04/79	01.06.10	M60	NRA100	WRITE	RCVD	1	3276/2	72409000	80000000	10 00000030	00001000 002000A0	80000300
09/04/79	01.06.54	M61	NRA101	WRITE	RCVD	1	3658/8	73409000	80000000	10 00000030	00001000 002000A0	80000300
09/04/79	01.08.18	M61	NRA101	OTHER	UNRC	1	4353/9	7344B000	80000004	20 000C8000	00000000 00000060	00D03200
09/04/79	01.38.55	M61	NRA103	WRITE	RCVD	1	6/1	73409000	80000000	10 00000030	00001000 000100A0	80000300
09/04/79	01.39.20	M61	NRA103	WRITE	RCVD	1	191/2	73409000	80000000	10 00000030	00001000 000200A0	80000300
09/04/79	01.39.33	M61	NRA103	WRITE	RCVD	1	306/3	73409000	80000000	10 00000030	00001000 000200A0	80000300
09/04/79	01.39.39	M61	NRA103	WRITE	RCVD	1	352/4	73409000	80000000	10 00000030	00001000 002000A0	80000300
09/04/79	01.39.43	M61	NRA103	WRITE	RCVD	1	383/5	73409000	80000000	10 00000030	00001000 000400A0	80000300
09/04/79	01.39.52	M61	NRA103	WRITE	RCVD	1	466/6	73409000	80000000	10 00000030	00001000 000200A0	80000300
09/04/79	01.40.23	M61	NRA103	WRITE	RCVD	1	730/7	73409000	80000000	10 00000030	00001000 000200A0	80000300

EMAS 2900: ERROR REPORT FOR TAPE DECK: M60

SINGLE TRACK ERROR SUMMARY:

TOTAL RECOVERIES PER TRACK:									TAPES IN ERROR(FAILURE COUNT):				
TRK28	TRK27	TRK26	TRK25	TRK24	TRK23	TRK22	TRK21	TRK20	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)
0	0	0	0	0	0	0	0	0					

MULTI TRACK ERROR SUMMARY:

TOTAL FAILURES PER TRACK:									TAPES IN ERROR(FAILURE COUNT):				
TRK28	TRK27	TRK26	TRK25	TRK24	TRK23	TRK22	TRK21	TRK20	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)
2	1	3	2	5	2	6	3	26	NRB038(2)	NRA100(2)	SDD001(1)	NRA099(37)	

BREAKDOWN OF ERRORS ON THIS DECK:

	READ	WRITE	OTHER
RECOVERED :	0	42	0
UNRECOVERED :	0	0	0

RECOVERY LEVEL:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	UNRECOVERED
TOTAL READ FAILS:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL WRITE FAILS:	41	1	0	0	0	0	0	0								0

END OF REPORT FOR DECK M60

EMAS 2900: ERROR REPORT FOR TAPE DECK: M61

SINGLE TRACK ERROR SUMMARY:

TOTAL RECOVERIES PER TRACK:									TAPES IN ERROR(FAILURE COUNT):				
TRK28	TRK27	TRK26	TRK25	TRK24	TRK23	TRK22	TRK21	TRK20	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)
0	0	0	0	0	0	0	0	0					

MULTI TRACK ERROR SUMMARY:

TOTAL FAILURES PER TRACK:									TAPES IN ERROR(FAILURE COUNT):				
TRK28	TRK27	TRK26	TRK25	TRK24	TRK23	TRK22	TRK21	TRK20	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)	TAPE(FAILS)
3	4	1	2	0	3	5	24	3	NRA101(9)	NRA103(37)	NRA098(3)		

BREAKDOWN OF ERRORS ON THIS DECK:

	READ	WRITE	OTHER
RECOVERED :	0	47	0
UNRECOVERED :	0	0	2

RECOVERY LEVEL:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	UNRECOVERED
TOTAL READ FAILS:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL WRITE FAILS:	46	1	0	0	0	0	0	0								0

END OF REPORT FOR DECK M61

EMAS 2900 DISC ERROR REPORT PAGE: 1

DATE	TIME	UNIT	MEDIA	ROUTE P/T/S	STATISTICS TRNSFRS/FAILS	STREAM---RESPONSE 0	1	CONTROLR STATUS	STREAM STATUS: SOTOT1T2	T3T4T5T6	MOM1M2M3	FAILED LBE	SEEK INF CCCCHHHHRR
09/04/79	12.24.03	ED21	EMASO1	1/1/1	859/0	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.03	ED21	EMASO1	1/1/1	860/1	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.03	ED21	EMASO1	1/1/1	861/2	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.03	ED21	EMASO1	1/1/1	862/3	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.03	ED21	EMASO1	1/1/1	863/4	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.03	ED21	EMASO1	1/1/1	864/5	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.03	ED21	EMASO1	1/1/1	865/6	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.03	ED21	EMASO1	1/1/1	866/7	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.03	ED21	EMASO1	1/1/1	867/8	00409000	00000005	00000000	40000400	00000420	92000048	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	868/9	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	871/10	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	874/11	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	877/12	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	880/13	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	883/14	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	886/15	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	889/16	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	892/17	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	895/18	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003
09/04/79	12.24.05	ED21	EMASO1	1/1/1	898/19	00409000	00000005	00000000	40000400	00000420	92000088	84106900	0017001003

EMAS 2900 DRUM ERROR REPORT PAGE: 1

DATE	TIME	PORT/ TRUNK/ MEC	INSM	ERR TYPE	CONTROLLER STATUS WORD 0	WORD 1	WORD 2	WORD 3	WORD 4	SECTOR DESCRIPTION(ONE PER 1 K BYTE SECTOR) -STREAM RESPONSE- WORD 0	WORD 1	BREAKDOWN
16/04/79	11.54.55	1/0/1		RCVD	********	********	********	********	********	00040008	00240070	ADVISORY rec srnh
										00800000	00250070	NORMAL TERM
										00800000	00260070	NORMAL TERM
										00800000	00270070	NORMAL TERM
16/04/79	12.03.59	1/0/1		RCVD	********	********	********	********	********	00040008	00200000	ADVISORY rec srnh
										00800000	00210000	NORMAL TERM
										00800000	00220000	NORMAL TERM
										00800000	00230000	NORMAL TERM
16/04/79	14.47.51	1/0/1		RCVD	********	********	********	********	********	00800000	0034007A	NORMAL TERM
										00040008	0035007A	ADVISORY rec srnh
										00800000	0036007A	NORMAL TERM
										00800000	0037007A	NORMAL TERM
16/04/79	16.11.43	1/0/1		RCVD	********	********	********	********	********	00040008	0028000C	ADVISORY rec srnh
										00800000	0029000C	NORMAL TERM
										00800000	002A000C	NORMAL TERM
										00800000	002B000C	NORMAL TERM

EMAS 2900 SMAC ERROR REPORT PAGE: 1

DATE	TIME	SMAC	POINTER	ADDRESS	ENG STATE	STATUS	CONFIG	SEI PARAM	DATA	BLK/ UNIT	BRD	PLAT	DLC
05/01/79	08.22.01	0	3F000000	8001E220	01000000	002000C0	00000FA5	50164000	48906290E68F0360	00BU	04	UPPER	H9
05/01/79	08.22.01	0	3F000000	8001E220	01000000	002000C0	00000FA5	50164000	48906290E68F0360	00BU	04	UPPER	H9
05/01/79	08.22.01	0	3F000000	8001E234	01000000	002000C0	00000FA5	50144000	49987883158002B0	00BU	04	UPPER	H9
05/01/79	08.22.01	0	3F000000	8001E234	01000000	002000C0	00000FA5	50164000	49987883158002B0	00BU	04	UPPER	H9
05/01/79	08.22.01	0	3F000000	8001E234	01000000	002000C0	00000FA5	50164000	49987883158002B0	00BU	04	UPPER	H9
05/01/79	08.22.01	0	3F000000	8001E234	01000000	002000C0	00000FA5	50164000	49987883158002B0	00BU	04	UPPER	H9
05/01/79	08.22.01	0	3F000000	8001E234	01000000	002000C0	00000FA5	50164000	49987883158002B0	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E234	01000000	002000C0	00000FA5	50144000	49987883158002B0	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E234	01000000	002000C0	00000FA5	50164000	49987883158002B0	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E000	01000000	002000C0	00000FA5	50164000	E201489A7A005A8E	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E000	01000000	002000C0	00000FA5	50164000	E201489A7A005A8E	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E044	01000000	002000C0	00000FA5	50144000	4893E69202E00004	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E044	01000000	002000C0	00000FA5	50164000	4893E69202E00004	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E044	01000000	002000C0	00000FA5	50164000	4893E69202E00004	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E044	01000000	002000C0	00000FA5	50164000	4893E69202E00004	00BU	04	UPPER	H9
05/01/79	08.33.00	0	3F000000	8001E044	01000000	002000C0	00000FA5	50164000	4893E69202E00004	00BU	04	UPPER	H9
05/01/79	09.04.34	0	3F000000	8001E044	01000000	002000C0	00000FA5	50644000	628738401583F7C8	00BU	04	UPPER	H9
05/01/79	09.04.34	0	3F000000	8001E048	01000000	002000C0	00000FA5	50664000	1583F7C87780102C	00BU	04	UPPER	H9
05/01/79	09.04.34	0	3F000000	8001E048	01000000	002000C0	00000FA5	50664000	1583F7C87780102C	00BU	04	UPPER	H9

APPENDIX 1C : EXAMPLE OF CONTROLLER REPORTING TO LINE PRINTER

This report is printed automatically for the Engineers. It can also be obtained using the command "JEF RECALL".

Output to the Engineer's terminal is of the same format.

```
&& DUMP OF DFC 11 04/01/79 18.28.09
91800000 91810000 91820000 91830000 91D00000 91D10201 91D20000 91D30800
91D40000 91D50000 91D60000 91D70800 93804000 93881800 9389E000 938A0000
938B6000 938C2000 938D6000 938E0000 938FE000 93900008
5040 0000 0000 0080 8178 0038 8083 0080Z
50C0 0500 0500 0500 0500 0500 0500 0500Z
50C8 0018*
5100 4000 1000 5102 0300Z
5108 8400 0400Z
5118 0500 FF01 00F8 0006 0078 0018 E6C6 66E6
5120 FFFF 0500 0000 2200 0000 0000 0000 0018
5180 0600 0000 0400 0200 0600 0000 0400 0200
51C0 0000 0000 8084 0000 0293Z
51D0 0000 0201 0000 0800 0000 0000 0000 0800
51D8 0000 0000 0001*
51E8 0200*
51F8 FFFF*
5208 0000 0000 0000 0000 0000 0000 0000 0080
5210 0000 0000 0000 0000 0000 0000 0080Z
5240 000B 0000 00ED 0000 02C0 007E 0000 00B8
5248 02C0 0000 003F 0000 0000 0000 000F FFFF
5250 000C 8000 00ED 0000 02C0 007EZ
5258 0000 0000 0000 0000 0000 0000 FFF0 FFFF
5260 0000 0000 00ED 0000 02C0 007E 0000 00B8
5268 02C0 0000 003F 0000 0000 0000 000F FFFF
5270 018C 8000 00ED 0000 02C0 007EZ
5278 0000 0000 0000 0000 0000 0000 FFF0 FFFF
5280 DC6B DDEE DF87 E0FD 0098*
5288 006D 006E 0688 0000 0600 006DZ
5290 2600 2600 2600 2600 3240*
5300 FFFF*
5308 FFFF*
5310 FFFF*
5328 FFFF*
5330 FFFF*
5338 FFFF*
5340 FFFF*
5348 FFFF*
5350 FFFF*
5358 FFFF*
5360 FFFF*
5368 FFFF*
5370 FFFF FFFF FFFF 0000 FFFF*
5378 FFFF*
5380 4000 4000 4000 4000Z
5388 1800 E000 0000 6000 2000 6000 0000 E000
5390 000C*
53C0 FFFF*
53C8 FFFF*
53D0 FFFF*
```

```
53D8 FFFF*
53E0 FFFF*
53E8 FFFF*
53F0 FFFF*
53F8 FFFF*
5450 0000 0030 0000 0008 0001 0030Z
5458 0081 0081 0006 0006 00D0 00D0Z
5488 0000 0000 000A 000A 0000 0000 0004*
5490 0008 0000 0000 0000 0000 0002 000BZ
5498 0000 0000 0000 0000 00FF 00FFZ
54C0 0000 0000 0000 0000 0008 0008 0000 0008
54C8 0000 0000 0000 0000 0008*
54D0 0000 0000 0000 0000 0002*
54D8 0000 0000 0000 0000 000A*
5500 4000 4080 7BF7 7BF7 00FE 00FE 0000 0001
5508 0101 0101 0101 0101 0023*
5510 0000 0000 0200 0200 0000 0000 0200*
5540 0000 0000 2700 2700Z
5548 0044 0044 0000 0000 0000 0000 0061Z
55C0 FFFF FFFF FFFF 0000 FFFF*
55C8 FFFF*
55D0 FFFF FFFF 0000 FFFF*
55D8 FFFF*
55E0 FFFF*
55E8 FFFF*
55F0 FFFF*
55F8 FFFF*
5610 0105 0105 0105 0105 0105 0000 0105*
5618 0000 0000 0000 0000 000D 000D 0016*
5640 000E 000E 000E 000E 0A93*
5648 0040 0040 0042 0042 0000 0059 01E7*
5650 0006 0006 0006 0006 0006 0006 0CF5*
5658 0000 0000 0006 0006 0017 0017 0305*
5680 0040 004A 0040 0041Z
5688 0004 0004 0000 0004Z
5690 00D2 0092 0092 0092Z
56C8 0000 0000 0000 0000 0000 0000 3300*
56D0 0000 0000 0000 0000 0040 0040 0010*
56D8 0000 0000 0000 0000 0000 0000 0002Z
5700 00FF 00FF 00FF 0012 0030 0008 0020Z
5708 4420 4420 4455 4455 44E7*
5710 0000 0000 000E 000E 0000 0000 0001*
5718 00FF 00FD 00D2 00D0 0005 0007 0011 0010
5740 F000 F000 0000 0000 F000 F000 0000 F000
5748 0000 8092*
5758 0000 0000 0000 0000 0000 0000 0041*
5780 0000 0000 0000 0000 000CZ
5798 0000 0000 000C 0000 0008 0008 00F0*
57C0 FFFF*
57C8 FFFF*
57D0 FFFF*
57D8 FFFF*
57E0 FFFF*
57E8 FFFF*
57F0 FFFF*
57F8 FFFF*
5810 0000 0000 0000 0000 0000 0008 0004 0007
5818 0000 0000 0000 0000 6400*
5820 00C0 00C0 00C0 00C0Z
5828 0000 0000 000FZ
5840 FFFF FFFF 0000 0000 FFFF FFFFZ
```

```
5848 6800 6800Z
5850 0047 0047Z
5858 0002 0002 0000 0000 0002 0002Z
5880 0000 0000 B047 B047 0047 0047 B004*
5888 0000 0000 6801 6801 6801 6801 0001*
5890 0000 0000 FFFF FFFF 0000 0000 FFFFZ
5898 0000 0000 FFFF FFFF 0000 0000 FF7F*
58C0 B000 B000 7000 7000 0000 0000 A000*
58D0 0000 0000 0000 0000 0000 0000 C000Z
5900 0000 0000 0000 0000 0000 FFFF FFFFZ
5908 0000 0000 0000 0000 0000 FFFF FFFFZ
5910 0000 0000 0000 0000 FFFF*
5948 0000 0000 0000 594B FFFFZ
5950 0000 0000 0000 0000 8000 0800 0000 8000
5980 0000 0000 0004 0000 0004 0004Z
5988 0000 0000 0000 0000 0001Z
5990 0000 0000 8000Z
5998 0000 0000 0000 0000 0200 0000 4000Z
59A0 0000 0000 0000 0002Z
59C0 4040*
59C8 0000 0000 0003 0000 0001 0000 0001*
59D0 0000 0020 0020 0000 0000 0020 0020Z
59D8 0400 0400 0400 0400 0000 0400 0400Z
59F8 FFFF*
CNTRLR SPADS
0000 0004 0000 0000 0000 FFFFZ
0008 0500 0000 0046Z
0060 8000 2304 0000 1000 8106 C000 0023 00C5
0068 0002 0003 FF03 8100 FEAB 8180 8000 0020
0070 0000 0000 0000 0000 0EAC 0044Z
0080 0200 C000 0000 8400 1800 0100 80CC 0150
0088 1800 0158 80CC 0258 0000 FF00 1E00 1300
0090 0030 0008 0000 0000 0000 0000 0004Z
0098 0000 0092 0004 0000 0000 0030 0020Z
00A0 0000 1000 8106 C000 0001 0001 FFE4Z
00A8 0000 0000 8080 0000 0000 0028 026CZ
00B0 83FC 0000 8400 80CCZ
00B8 0086 007F 1432 11B4 0008 0000 0700Z
00C0 0000 0000 0000 0000 8200Z
00C8 0080 0000 0000 0008 3200 0014 0002 5360
00D0 05CC 11A5 0000 07CA 000B DBC0Z
00D8 0000 0FFF C000 0000 0000 3FFF F415 25CD
00E0 0000 8000Z
00F8 0FFF 0000 F000 F000 F000 0000 0000 8000
SPADS FOR STRM 0
0200 0000 0000 0000 0000 2700 0812 3008 2000
0208 004A F065 0794 0000 0000 0000 FF00 0030
0210 0000 0000 0300 0004 A480 1002Z
0218 80CC 0120 0000 0000 F21B 32AC 0F80 07CA
SPADS FOR STRM 1
0220 0000 0000 0000 0000 2700 0412 2404 2150
0228 0019 684F 0094 0000 0000 0000 FF00 0024
0230 0000 0000 0300 0004 A480 1002Z
0238 0000 03B0 0000 0000 AB20 4692 0000 07CA
SPADS FOR STRM 2
0240 0000 0000 0000 0000 2700 0212 2402 22A0
0248 0022 212C 00A9 0000 0000 0000 FF00 0024
0250 0000 0000 1A00 0000 0080 1002Z
0258 80CC 0640 0000 0000 A966 DB31 0F80 07CA
SPADS FOR STRM 3
0260 0000 0000 0000 0000 2700 0612 0106 2350
```

```
0268 0023 D817 00BB 0000 0000 0000 FF00 0001
0270 0000 0000 0400 0000 0080 1007Z
0278 80CC 08D0 0000 0000 A91C EA78 0F80 07CA
SPADS FOR STRM 4
0280 0008Z
0288 0000 0000 0000 0000 0000 0000 FF00Z
0290 0000 0000 0000 0000 0041 1001Z
0298 8028 0100 0000 0000 0000 0000 0E00 07CA
SPADS FOR STRM 5
02A0 0008Z
02A8 0000 0000 0000 0000 0000 0000 FF00Z
02B0 0000 0000 0000 0000 0041 1001Z
02B8 8028 0100 0000 0000 0000 0000 0E00 07CA
SPADS FOR STRM 6
02C0 0008Z
02C8 0000 0000 0000 0000 0000 0000 FF00Z
02D0 0000 0000 0000 0000 0041 1001Z
02D8 8028 0100 0000 0000 0000 0000 0E00 07CA
SPADS FOR STRM 7
02E0 0008Z
02E8 0000 0000 0000 0000 0000 0000 FF00Z
02F0 0000 0000 0000 0000 0041 1001Z
02F8 8028 0100 0000 0000 0000 0000 0E00 07CA
REG ATU 1 ATU 2
0 21F00B80 00476801
1 B0476801 83FC0000
2 00000000 00008400
3 21F00B80 0200C000
4 B0476801 00008400
5 00000000 80CC0120
6 21F00B80 00000150
7 B0476801 80CC0258
8 00000000 8106C000
9 0113FF80 00000000
10 B0040001 00000000
11 B004D801 00000000
12 00000000 00000000
13 00000000 8050188C
14 00000000 00000000
15 8004DC01 00501C00
LBE BUFFER
0000 0002 8410 6900 0000 0005 8050 188C 0080
0010 0000 8410 690C 0000 0005 8050 10F4 0080
0018 0007 0007 0007 0007 0007 0000 0007*
```

END OF CONTROLLER DUMP.

APPENDIX 1D : EXAMPLE OF EXPANDED DISC ERROR REPORT

This report is obtained using the command "JEF RECALL", the output format being the same for both terminal and printer. Note that '*' indicates the failed LBE.

```
DUMP ON 09/04/79 AT 12.24.03

DISC TRANSFER FAILS: ED21 ROUTE:(111) MEDIA:EMAS01

RESPONSE 0: 00409000  RESPONSE 1: 00000005

TRANSFERS:       859  FAILURES:          0

C0 : 00000000   S0 : 40000400   T3 : 00000420   T7 : 07120000
T11: 00800000   T15: 00000000   T19: 00000000   T23: 00000000
T27: 00000000   T31: 00000000   M0 : 92000048   M4 : 24212607

  RCB      LBE       ADDRESS LIST      ID

0200C000 84106900* 0000000580500A5A 0017001003
00008400 01000000  0000000580500A5A
18000100 80002302  0000100081051000
80CC03E0 86001050  0000000000000000
18000158 84106904  0000000580500376
80CC04E8 01000004  0000000580500376
0000FF00 80002306  0000100008106F000
02001300 84002306  0000100008106F000
00265007 86000000  0000000580500A5A
```

```
DUMP ON 09/04/79 AT 12.24.03

DISC TRANSFER FAILS: ED21 ROUTE:(111) MEDIA:EMAS01

RESPONSE 0: 00409000  RESPONSE 1: 00000005

TRANSFERS:       860  FAILURES:          1

C0 : 00000000   S0 : 40000400   T3 : 00000420   T7 : 07120000
T11: 00800000   T15: 00000000   T19: 00000000   T23: 00000000
T27: 00000000   T31: 00000000   M0 : 92000048   M4 : 24212607

  RCB      LBE       ADDRESS LIST      ID

0200C000 84106900* 0000000580500A5A 0017001003
00008400 01000000  0000000580500A5A
18000100 80002302  0000100081051000
80CC03E0 86001050  0000000000000000
18000158 84106904  0000000580500376
80CC04E8 01000004  0000000580500376
0000FF00 80002306  0000100008106F000
02001300 84002306  0000100008106F000
00265007 86000000  0000000580500A5A
```

```
Command:TAPE LIBRARY
DEFINE THE REQUIRED FUNCTION.
AMEND/REPORT:REPORT
TERMINAL PRINTER OR BOTH
WHERE:T
DEFINE THE TAPES YOU WISH TO LOOK AT.
REPLY EITHER 'ALL' OR THE TSN OF THE SPECIFIC TAPE REQUIRED.
TAPE:ALL
DEFINE THE DECKS YOU WISH TO LOOK AT.
REPLY EITHER 'ALL' OR THE IDENTITY OF THE SPECIFIC DECK REQUIRED.
DECK:ALL


EMAS 2900 JOURNAL SYSTEM TAPE LIBRARY REPORT FOR DECK M50  PAGE   1
FOR THE PERIOD: 23/07/79(17.36.27) TO 14/09/79(00.31.20)
        RECORD           READ ERRORS---------- WRITE ERRORS---------
MEDIA   STARTS  MOUNTS   RCVRD(AV.LVL) UNRCVRD  RCVRD(AV.LVL) UNRCVRD
-------------------------------------------------------------------
AK0001 21/08/79     1  ..........................................
AK0005 12/09/79     2  ..........................................
BK7221 24/07/79     1  ..........................................
CC7203 24/07/79     1  ..........................................
CDM000 02/08/79     4  ..    2(  1.0 ).........   19(  1.1 ).......
DMP001 30/07/79     6  ..    4(  1.0 )..............................
DMP002 01/08/79     4  ..    4(  1.0 )..............................
DMP003 02/08/79     6  ..    2(  1.0 )..............................
DMP004 02/08/79     1  ..    2(  1.5 )..............................
DMP006 06/08/79     1  ..    2(  1.0 )..............................
DMP007 07/08/79     4  ..    3(  1.0 )..............................
DMP008 14/08/79     3  ..    8(  1.1 )..............................
CONTINUE:Y


EMAS 2900 JOURNAL SYSTEM TAPE LIBRARY REPORT FOR DECK M50  PAGE   2
FOR THE PERIOD: 23/07/79(17.36.27) TO 14/09/79(00.31.20)
        RECORD           READ ERRORS---------- WRITE ERRORS---------
MEDIA   STARTS  MOUNTS   RCVRD(AV.LVL) UNRCVRD  RCVRD(AV.LVL) UNRCVRD
-------------------------------------------------------------------
DMP010 26/07/79     3  ..    3(  1.0 )..............................
DS3676 31/07/79    22  ..........................................
DS3700 15/08/79     6  ........................    2(  2.0 ).......
FT4359 06/08/79     3  ..........................................
FT4360 27/07/79     1  ..........................................
FT4361 31/07/79     1  ..........................................
FT4363 24/07/79     2  ..........................................
FT4365 28/08/79     1  ..........................................
FT4366 31/07/79     1  ..    1(  2.0 )..............................
FT4367 06/08/79     5  ..    1(  1.0 )..............................
FT4368 14/08/79     1  ..........................................
GI7201 24/07/79     1  ..........................................
CONTINUE:Y
```

```
EMAS 2900 JOURNAL SYSTEM TAPE LIBRARY REPORT FOR DECK M50  PAGE   3
FOR THE PERIOD: 23/07/79(17.36.27) TO 14/09/79(00.31.20)
        RECORD           READ ERRORS----------  WRITE ERRORS---------
MEDIA   STARTS  MOUNTS   RCVRD(AV.LVL) UNRCVRD  RCVRD(AV.LVL) UNRCVRD
-------------------------------------------------------------------
GM4070 27/07/79     2  ..........................................
GM4305 23/08/79     3  ..    1(  1.0 ).........  11(  1.7 ).......
IAN123 16/08/79     1  ..........................................
IAN132 16/08/79     2  ..........................................
JEXP01 17/08/79     1  ........................    1(  2.0 ).......
JL7215 24/07/79     1  ..........................................
JNL001 22/08/79     7  ..    1(  1.0 )       1.....................
JNL004 04/08/79    13  ........................    1(  2.0 ).......
JR3062 10/09/79     3  ..........................................
KY4171 07/08/79     2  ........................    5(  1.4 ).......
KY4290 27/08/79     2  ..    5(  1.0 ).........    1(  2.0 ).......
LP0101 12/09/79     7  ..........................................
CONTINUE:N
JOURNAL:  RUN ABANDONED  AS REQUESTED.


Command:TAPE LIBRARY
DEFINE THE REQUIRED FUNCTION.
AMEND/REPORT:AMEND
NOW DEFINE AMENDMENT REQUIRED.
DECK/TAPE/ALL:TAPE
TSN:DMP001
JOURNAL:  TAPE DMP001 CLEARED DOWN OK.
```

Notes:

* The "RECORD STARTS" date is the date that the tape first appeared on the System (or the first time it appeared after its record had been cleared down by the tape library amender facility).

* The "AV LVL" facility is the mean retry level for all the recorded errors; for EMAS 2900 there are 16 retries for each read attempt and 8 retries for each write attempt.

APPENDIX 2A.1 : EXAMPLE OF OUTPUT QUEUE STATISTICS TO THE PRINTER

```
JOURNAL REPORT ON OUTPUT QUEUES FROM EMAS 2900

31/08/79(01.49.03) TO 07/09/79(12.18.29)
QUEUE          TOTAL JOBS  TOTAL KBYTES  QUEUE  DESCRIPTION
-------------------------------------------------------------------

 GP                    36           755  LOCAL GRAPH PLOTTER
 LP                   715         23671  2970 LOCAL LINE PRINTER
 P34                  191          3662  ??????????
 LP23                 325          2601  ??????????
 LP15                 236          4648  ??????????
 LP40                  51           483  ??????????
 LP14                  25           846  ??????????
 LP50                   7           187  ??????????
 LP45                   1            37  ??????????
 PP                     7           153  ??????????
 LP155                 20            56  ??????????
 LP49                   6             8  ??????????
 FEP49                  3           122  ??????????
 P80                   10          1757  LINK TO 2980
 LP44                  12            22  ??????????
 P49                    6           210  ??????????
 MP                     9          1692  ??????????
END OF QUEUE TOTALS, 'BY QUEUE' SUMMARY FOLLOWS.
```

Note:

* A set of histograms of the form shown on the following page is generated for each output queue.

```
QUEUE: LP     2970 LOCAL LINE PRINTER   TOTAL JOBS:   715    KILOBYTES:  23671  31/08/79(01.49.03) TO 07/09/79(12.18.29)

JOBS BY SIZE(KBYTES):  <=16    17-64  65-128 129-256 257-512  > 512
                     I-------I-------I-------I-------I-------I-------I
JOBS                     472     134      73      20      13       3
AS % OF TOTAL           66.0    18.7    10.2     2.8     1.8     0.4
KILOBYTES               2131    4667    6714    3750    4110    2299
AS % OF TOTAL            9.0    19.7    28.4    15.8    17.4     9.7
AV QUEUED TIME(MINS)    10.1     4.9    17.1    11.3    19.5   162.3
AV EXECUTION  (MINS)     0.3     1.2     3.4     4.9     7.3    11.3
```

```
            AS % OF JOBS <= 16 KILOBYTES
                10   20   30   40   50   60   70   80   90   100
          ----------------------------------------------------
      0K I
      1K I**************
      2K I***********
      3K I*********
      4K I***
      5K I**
      6K I***
      7K I*
      8K I**
      9K I*
     10K I**
     11K I*
     12K I*
     13K I*
     14K I*
     15K I*
     16K I*
```

```
   AS % OF TOTAL KBYTES OF JOBS <= 16K
       10   20   30   40   50   60   70   80   90   100
 ----------------------------------------------------
 I
 I***
 I****
 I*****
 I**
 I**
 I****
 I**
 I****
 I***
 I****
 I****
 I*
 I**
 I***
 I**
 I****
```

```
            AS % OF ALL JOBS
                10   20   30   40   50   60   70   80   90   100
          ----------------------------------------------------
   0->20K I*********************************
   20-40K I*****
   40-60K I***
   60-80K I***
  80-100K I*
 100-120K I**
 120-140K I
 140-160K I
 160-180K I
 180-200K I
 200-220K I
 220-240K I
 240-260K I
 260-280K I
 280-300K I
 300-320K I
 320-340K I
 340-360K I
 360-380K I
 380-400K I
 400-420K I
 420-440K I
 440-460K I
 460-480K I
 480-500K I
 500-520K I
    >520K I
```

```
   AS % OF TOTAL KILOBYTES
       10   20   30   40   50   60   70   80   90   100
 ----------------------------------------------------
 I*****
 I****
 I****
 I*****
 I***
 I******
 I*
 I*
 I**
 I**
 I**
 I
 I*
 I*
 I***
 I*
 I*
 I***
 I*
 I
 I
 I
 I
 I
 I
 I
 I*****
```

USER OUTPUT LIST FOR PERIOD 31/08/79(01.49.03) TO 07/09/79(12.18.29). FILE SYSTEM: 1 PAGE: 1

USER	TOTALS JOBS	TOTALS KBYTES	ENTRIES: QUEUE(TOTAL JOBS/TOTAL KBYTES)				
ERNM02	153	4487	LP(6/1633)	P34(5/905)	LP23(57/58)	LP15(85/1891)	
ERCC14	60	4008	LP(8/162)	P34(5/5)	LP23(2/3)	PP(3/59)	LP155(5/41)
			LP49(6/8)	FEP49(3/122)	P80(9/1692)	LP44(5/15)	P49(5/209)
			MP(9/1692)				
ERCS01	74	2197	LP(67/2186)	LP23(7/11)			
EGNP21	27	606	GP(7/152)	LP(7/13)	LP15(13/441)		
EXPN01	20	571	LP(12/129)	P34(4/74)	LP14(4/368)		
SRCP01	11	523	LP(9/434)	LP23(2/89)			
ERCC33	5	499	LP(5/499)				
ERCC19	10	376	LP(10/376)				
ERCC27	17	242	LP(12/201)	P34(1/35)	LP23(4/6)		
ERCI06	8	237	LP(7/172)	P80(1/65)			
EKZA01	10	179	P34(1/14)	LP23(4/4)	LP14(5/161)		
JOBR01	17	154	LP(17/154)				
VOLUMS	4	109	LP(4/109)				
EFTM12	5	101	LP15(5/101)				
ERCC06	5	97	LP(4/60)	LP45(1/37)			
EJJW04	52	86	LP(3/7)	P34(10/30)	LP23(39/49)		
EGNP35	6	73	LP15(6/73)				
CONLIB	1	42	LP23(1/42)				
EGMT06	1	21	LP15(1/21)				
ERCLIB	3	15	LP(1/1)	LP15(2/14)			
ERUA03	1	1	LP23(1/1)				

Note: A table of this form is produced for each file system. The users appear in order of most Kilobytes transferred first.

APPENDIX 2A.2 : EXAMPLE OF OUTPUT QUEUE DEFINITION

```
Command:QUEUE DEFINITION
THE FOLLOWING QUEUE(S) REQUIRE DESCRIPTION.
GP  P34  LP23  LP15  LP40  LP14  LP50  LP45
PP  LP155  LP49  FEP49  P80  LP44  P49  MP

DO YOU WISH TO ADD A DESCRIPTION TO ANY?
YES OR NO:Y
QUEUE:GP
DESCRIPTION:LOCAL GRAPH PLOTTER
QUEUE:P80
DESCRIPTION:LINK TO 2980
QUEUE:END

DO YOU WISH TO CHANGE ANY QUEUE DESCRIPTION(S)?
YES OR NO:Y
QUEUE:LP
CURRENT DESCRIPTOR IS: LOCAL LINE PRINTER
DESCRIPTION:2970 LOCAL LINE PRINTER
QUEUE:END
```

APPENDIX 2B.1 : EXAMPLE OF BACKGROUND JOB ANALYSIS ON THE LINE PRINTER

EMAS 2900 JOURNAL SYSTEM REPORT ON BATCH JOBS

10/01/80(04.04.17) TO 02/02/80(02.46.04)

REQUESTED CPU SECONDS FOR JOB:	0 TO: 60	61 120	121 180	181 240	241 300	301 360	361 420	421 480	481 540	541 600	601 900	901 1200	1201 3600	>3600	TOTAL
JOBS :	175	19	6	4	130	1	7	5	9	48	18	4	17	0	443
AS % OF TOTAL JOBS :	39.50	4.29	1.35	0.90	29.35	0.23	1.58	1.13	2.03	10.84	4.06	0.90	3.84	0.00	100.00
CPU SECONDS REQUESTED :	3742	1917	860	960	39000	360	2940	2400	4860	28800	14040	4560	32400	0	136839
CPU SECONDS USED :	960	508	200	158	7014	9	991	904	2167	3855	2335	1081	10544	0	30726
USED AS % OF REQUESTED :	25.65	26.50	23.26	16.46	17.98	2.50	33.71	37.67	44.59	13.39	16.63	23.71	32.54	0.00	22.45
USED AS % OF TOTAL USED:	3.12	1.65	0.65	0.51	22.83	0.03	3.23	2.94	7.05	12.55	7.60	3.52	34.32	0.00	100.00
MEAN REQ CPU PER JOB :	21.4	100.9	143.3	240.0	300.0	360.0	420.0	480.0	540.0	600.0	780.0	1140.0	1905.9	0.0	308.9
MEAN ACT. CPU PER JOB :	5.5	26.7	33.3	39.5	54.0	9.0	141.6	180.8	240.8	80.3	129.7	270.2	620.2	0.0	69.4
MEAN WAIT TIME(MINS) :	10.9	5.3	33.5	33.7	35.3	20.0	1.9	58.4	101.3	129.7	361.1	673.0	445.8	0.0	70.3
MEAN EXEC TIME(MINS) :	0.6	1.6	1.2	1.7	5.8	1.0	19.7	12.4	18.0	6.6	10.5	12.5	23.8	0.0	5.3

JOBS	REQ CPU	ACT CPU	HOUR	ACTUAL CPU OF JOBS ENDING IN HOUR AS % OF TOTAL ACTUAL CPU. 5 0	4 0	3 0	2 0	1 0	0	JOBS ENDING IN HOUR AS % OF TOTAL JOBS. 1 0	2 0	3 0	4 0	5 0
2	2460	1247	0						*****I					
13	9194	952	1						***I***					
0	0	0	2						I					
5	4397	1730	3						*******I*					
5	6420	2074	4						********I*					
2	3120	2390	5						*********I					
0	0	0	6						I					
2	1380	962	7						***I					
15	730	251	8						*I***					
27	6802	732	9						**I******					
58	11718	2213	10						*******I*************					
23	2716	977	11						***I*****					
40	5061	995	12						***I*********					
28	5606	889	13						***I******					
42	10438	1273	14						****I*********					
40	7861	1648	15						*****I*********					
39	6196	1824	16						******I*********					
29	6250	1106	17						****I*******					
33	20950	4178	18					****************	I*******					
10	8520	2347	19						*********I**					
16	11581	2025	20						*******I****					
2	1500	142	21						I					
6	2760	111	22						I*					
6	1179	660	23						**I*					

APPENDIX 2B.2 : EXAMPLE OF BACKGROUND SUMMARY ON THE LINE PRINTER

```
EMAS 2900 JOURNAL SYSTEM REPORT ON BACKGROUND JOBS FOR USER(S): ALL
-------------------------------------------------------------------------------------------------------------------------------
29/01/80 09.26.10 ERCC05 020818 FROM34              QUEUED
29/01/80 09.35.21 ERCC05 020818 FROM34              UNQUEUED
29/01/80 09.35.23 ERCC05 020818 FROM34              STARTED  AS JOB0, REQUESTED CPU: 125 SECONDS
29/01/80 09.36.20 ERCC05 020818 FROM34              FINISHED AS JOB0, ACTUAL CPU: 16 SECONDS, PAGETURNS: 697, REASON: 100

29/01/80 09.44.16 FROM34 FROM:  USER PROCESS        USER=ERCC14,DEST=BATCH,RERUN=YES,PASS=XXXX,TIME=99,PRTY=VHIGH

29/01/80 09.44.16 ERCC14 000111 FROM34              QUEUED
29/01/80 09.44.16 ERCC14 000111 FROM34              UNQUEUED
29/01/80 09.44.18 ERCC14 000111 FROM34              STARTED  AS JOB0, REQUESTED CPU: 99 SECONDS
29/01/80 09.44.56 ERCC14 000111 FROM34              FINISHED AS JOB0, ACTUAL CPU: 14 SECONDS, PAGETURNS: 662, REASON: 100

29/01/80 09.55.31 FROM80 FROM:  USER PROCESS        USER=ERDB04,DEST=BATCH,RERUN=YES,PASS=IDMS,TIME=10,PRTY=VHIGH

29/01/80 09.55.33 ERDB04 020822 FROM80              QUEUED
29/01/80 09.55.33 ERDB04 020822 FROM80              UNQUEUED
29/01/80 09.55.35 ERDB04 020822 FROM80              STARTED  AS JOB0, REQUESTED CPU: 10 SECONDS
29/01/80 09.55.48 ERDB04 020822 FROM80              FINISHED AS JOB0, ACTUAL CPU: 2 SECONDS, PAGETURNS: 400, REASON: 100

29/01/80 10.49.03 ERCS03 FROM:  USER PROCESS        SRCE=T#DET0,DEST=BATCH,TIME=300,START=32,LENGTH=118,NAME=GETFITS01N
29/01/80 10.49.03 ERCS03 030672 GETFITS01N          QUEUED
29/01/80 10.49.20 ERCS03 FROM:  USER PROCESS        SRCE=T#DET0,DEST=BATCH,TIME=300,START=32,LENGTH=100,NAME=GETFIDF01S
29/01/80 10.49.22 ERCS03 030673 GETFIDF01S          QUEUED
29/01/80 10.50.31 ERCS03 030672 GETFITS01N          UNQUEUED
29/01/80 10.50.37 ERCS03 030672 GETFITS01N          STARTED  AS JOB0, REQUESTED CPU: 300 SECONDS
29/01/80 10.51.55 ERCS03 030672 GETFITS01N          FINISHED AS JOB0, ACTUAL CPU: 11 SECONDS, PAGETURNS: 1245, REASON: 100
29/01/80 10.51.57 ERCS03 030673 GETFIDF01S          UNQUEUED
29/01/80 10.51.59 ERCS03 030673 GETFIDF01S          STARTED  AS JOB0, REQUESTED CPU: 300 SECONDS
29/01/80 10.53.29 ERCS03 030673 GETFIDF01S          FINISHED AS JOB0, ACTUAL CPU: 15 SECONDS, PAGETURNS: 1375, REASON: 100

29/01/80 10.55.08 FROM34 FROM:  USER PROCESS        USER=ERCC18,DEST=BATCH,RERUN=YES,PASS=GAUD,TIME=24,PRTY=VHIGH

29/01/80 10.55.10 ERCC18 040899 FROM34              QUEUED

29/01/80 11.08.12 EGNP21 FROM:  USER PROCESS        SRCE=T#DET0,DEST=BATCH,TIME=840,START=32,LENGTH=293,NAME=KDP127P_JOB127
29/01/80 11.08.12 EGNP21 010819 KDP127P_JOB127      QUEUED

29/01/80 11.14.28 FROM34 FROM:  USER PROCESS        USER=ERCI10,DEST=BATCH,RERUN=YES,PASS=LFLF,TIME=10,PRTY=VHIGH

29/01/80 11.14.28 ERCI10 020830 FROM34              QUEUED
29/01/80 11.14.28 ERCI10 020830 FROM34              UNQUEUED
29/01/80 11.14.32 ERCI10 020830 FROM34              STARTED  AS JOB0, REQUESTED CPU: 10 SECONDS
29/01/80 11.14.42 ERCI10 020830 FROM34              FINISHED AS JOB0, ACTUAL CPU: 3 SECONDS, PAGETURNS: 363, REASON: 100
```

SESSION MONITOR REPORT FOR THE PERIOD 06.30.00 01/10/80 TO 06.30.00 09/10/80. PAGE: 8
USER GROUP: ALL COMPLETE LIST

USER	TOTAL CPU	TOTAL PAGETURNS	FOREGROUND SESSIONS	FOREGROUND ELAPSE/SESS	FOREGROUND CPU/CMIN	FOREGROUND PTS/CPUS	BACKGROUND SESSIONS	BACKGROUND ELAPSE/SESS	BACKGROUND CPU/CMIN	BACKGROUND PTS/CPUS
EYRH36	22	14457	2	26.0	0.4	657.1	0	0	0	0
EYRH37	8	13433	3	17.0	0.2	1679.1	0	0	0	0
EYRH38	14	15866	2	25.5	0.3	1133.3	0	0	0	0
EYRH41	5	14388	4	16.5	0.1	2877.6	0	0	0	0
EYRH45	62	35214	9	12.0	0.6	568.0	0	0	0	0
EYRH46	2	1786	1	8.0	0.2	893.0	0	0	0	0
EYRH47	3	2063	1	11.0	0.3	687.7	0	0	0	0
EYRH48	18	13855	2	27.0	0.3	769.7	0	0	0	0
JOURNL	494	543071	41	6.6	0.4	2086.3	101	2.4	1.6	839.3
KNTLIB	9	33250	3	22.3	0.1	3694.4	0	0	0	0
MANAG1	0	1733	1	1.0	0.0	0	0	0	0	0
MANAGR	329	326789	56	5.0	1.1	1050.4	1	2.0	11.5	233.3
MICROS	2	31719	11	1.5	0.1	14312.5	11	0.0	0	0
PLULB2	0	4256	2	1.0	0.0	0	0	0	0	0
PLULB3	14	26049	8	1.9	0.5	3203.9	2	0.5	7.0	517.4
PLULIB	12	62131	7	7.3	0.2	4728.5	15	0.3	0.0	0
PXLSO1	38	39220	3	30.3	0.4	1032.1	0	0	0	0
SUBSYS	7	26667	7	8.0	0.1	3809.6	0	0	0	0
TONYAG	2	19458	4	3.7	0.1	9729.0	0	0	0	0
UFMTO2	23	20846	4	6.5	0.1	9096.5	1	1.0	21.0	126.3
YCAWO2	11	81133	9	13.9	0.1	7375.7	0	0	0	0
YCAWO4	2	14465	2	14.5	0.1	7232.5	0	0	0	0
YCAW13	0	1445	1	1.0	0.0	0	0	0	0	0
YCAW16	0	11321	3	3.0	0.0	0	0	0	0	0
YCAW24	0	8150	5	3.6	0.0	0	0	0	0	0
YCAW31	2	10895	2	6.5	0.2	5447.5	0	0	0	0
YCAW32	0	3438	1	3.0	0.0	0	0	0	0	0
YCAW33	2	8589	4	2.2	0.2	4294.5	0	0	0	0
YCAW34	9	45246	7	16.3	0.1	5027.3	0	0	0	0
YCAW35	0	1352	1	0.0	0	0	0	0	0	0

TOTALS FOR GROUP	SESSIONS	CPU	PAGETURNS	ELAPSE/SESS	CPU/CMIN	PTS/CPUS
FOREGROUND:	8193	74953	41058562	13.2	0.7	547.8
BACKGROUND:	435	26309	1716940	2.9	20.9	65.3

END OF SESSION MONITOR REPORT.

Note that: ELAPSE/SESS = Average page turns per interactive session
CPU/CMIN = Average CPU seconds per connected minute
PTS/CPUS = Average page turns per CPU second

APPENDIX 2C.2 : EXAMPLE OF SESSION MONITOR LIST FOR A USER GROUP

EMAS 2900 JOURNAL SYSTEM SESSION MONITOR LIST FOR USER: ERCC**

USER	SESSION ENDS-----	ELAPSE	TYPE	CPU	PTS	PAGE: 1
ERCC16	08/10/80 09.28.50	1	FOREGROUND	0	321	
ERCC09	08/10/80 09.32.39	2	FOREGROUND	0	2663	
ERCC20	08/10/80 09.45.25	0	FOREGROUND	0	2317	
ERCC33	08/10/80 09.57.19	5	FOREGROUND	47	10342	
ERCC20	08/10/80 09.58.26	5	FOREGROUND	1	2933	
ERCC09	08/10/80 10.17.27	31	FOREGROUND	2	13269	
ERCC16	08/10/80 10.25.21	56	FOREGROUND	47	18686	
ERCC63	08/10/80 10.26.09	8	FOREGROUND	3	8321	
ERCC04	08/10/80 10.28.42	72	FOREGROUND	18	16556	
ERCC16	08/10/80 10.35.48	1	FOREGROUND	0	1076	
ERCC04	08/10/80 10.42.58	12	FOREGROUND	12	9245	
ERCC28	08/10/80 10.52.54	1	FOREGROUND	0	2101	
ERCC33	08/10/80 14.13.33	1	FOREGROUND	0	192	
ERCC27	08/10/80 14.31.47	1	FOREGROUND	0	1122	
ERCC28	08/10/80 14.32.20	0	FOREGROUND	0	1251	
ERCC08	08/10/80 14.34.26	3	FOREGROUND	14	3103	
ERCC07	08/10/80 14.35.10	0	FOREGROUND	0	913	
ERCC33	08/10/80 14.36.42	7	FOREGROUND	41	9553	
ERCC08	08/10/80 14.45.11	10	FOREGROUND	34	5492	
ERCC04	08/10/80 15.09.28	40	FOREGROUND	12	6920	
ERCC08	08/10/80 15.10.00	24	FOREGROUND	0	1358	
ERCC20	08/10/80 15.14.39	41	FOREGROUND	1	4773	
ERCC20	08/10/80 15.24.05	1	FOREGROUND	0	706	
ERCC27	08/10/80 15.29.53	4	FOREGROUND	0	1209	
ERCC28	08/10/80 15.50.21	20	FOREGROUND	2	2787	

Note that: ELAPSE is given in seconds
CPU is given in seconds

EMAS 2900 JOURNAL SYSTEM

RELEASE NOTE

VERSION : 009

Bugs cleared :

i) UKC 166 (BR 72)
ii) UKC 168 (BR 73)

Includes :

i) Reserved index for UPDATES

ii) Dilic translate (P3/2960) correction

iii) Pageturn (Housekeeping) reduction of order of 25%

iv) Current Mainlog terminated only if housekeeping run is triggered

v) JEF can now be driven from a seperate private process for Engineers.

Only the command JEF will be available in this process (without NOW facility) and is intended for use by the engineers when access to JEF is required and JOURNL is running the housekeeping functions.

MAP1 FILE : OCMROM (SENGPO)

(Permit SENGP in JOURNL)

~ 4Meg Mast FS.

~ " Indiv FS.

IMSERT (JOURNL.SOURMACSYS)

John Henshall
15th January 1981

22-Nov-82

Journal Vsn 14: Changes with respect to previous version

1) Date and time format. This version uses the current Subsystem standard. This entails converting some of Journal's files. Note that the 'date of last change' in the headers of the files on tape are not being converted (the mind boggles!), but the index files referring to these tape files have had their date entries changed.

2) There has been a change to routine CREATE JOURNAL PROCESS, in package A, to use the new password command (or at least the Director equivalent). This does not entail the user having to give the current foreground password, and so the foreground password is not stored. However, the background password is stored (in JJMASTER), and is referred to whenever a job is to be detached. Thus it no longer has to be LOGS.

3) The JOURNL process can now have the NOBRACKETS option set. Appropriate action is taken when detaching jobs if this is so.

4) JJ#nDEX files now have a different format, to save space.

5) e command LIST JOURNAL INDEX can now take two parameters: .dd/mm/yy,dd/mm/yy), to specify the range to be covered by files to be included in the report. The user is prompted, as before, for the relevant keyword.

6) S series Mainlogs are now catered for (relevant to the ERCC 2988). This affects tape error and disc error reports.

7) A new format in mainlog for tape errors (P and S series) has recently been introduced. This is now accommodated. Note that the heading MG after TO...T14 output in tape error reports refers to what type of tape deck is in use: 00 - MTS; 01 - GTS.

8) Changes have been made in VOLUMS ANALYSIS, to accommodate changes in the Volums log.

9) Further changes have been made to the list processing code used in analysing Spoolr records re queued jobs*. The number of completed jobs about which information can be held (in JSPLRSTAT_CJOB) has been increased 50000/30-day period; the previous limit of 25000 was not adequate for ne ERCC 2972.

10) Minor errors relating to entry point suppression (at the MODIFY stage, when building a new version of Journal) have been corrected.

* i.e. documents

The main differences between this version of Journal and version 14 concern file handling. The three pdfiles JSPLRSTAT, JVOLSTAT and JDIRECTSTAT have been removed, and their members are now files in their own right. The way in which such files are updated by a Journal run, and extended when necessary, have also been changed. The intention in all cases was to reduce the pageturns required by Journal, and possibly the cpu time.

The changes are detailed below, followed by instructions for moving from version 14 to version 15.

Changes

1) Journal logfiles. Instead of sending the logfile from monitor and auto runs to the line printer, Journal now keeps them as files, named JJLOGn where 0<=n<=7. The command JOURNAL STATE prints out which of these files contains the latest log.
   File JJREPORT is no longer produced.

2) Background password. It is now possible to set the JOURNL process background password without confusing the Journal system. A new command, JOURNAL BACKPASS, is provided for this purpose. You need to know the current foreground password.
   To change the foreground password, you should use the standard Subsystem command PASSWORD. Do NOT use PASSWORD to change the background password.
   The command CREATE JOURNAL SYSTEM has been modified to call JOURNAL BACKPASS.

3) When a retrieved file is offered to JOURNL, no 'offer' command is now executed - it is merely left in JOURNL's file index.

4) The command SESSION MONITOR no longer requires a space after the comma separating the date and time values specified.

5) Various corrections have been made where dates were still held in the old format. This particularly affected the generation of monthly reports.

6) The handling of files required by the various analyses has been considerably modified (perhaps even improved). The Volums analysis work file can now be extended as necessary - there is no arbitrary upper limit. The extension of the workfiles is now done without disconnecting and copying, if this is possible.

7) The following files have been renamed:

JSPLRSTAT_IJOB	->	JJ#SPIJOB
JSPLRSTAT_CJOB	->	JJ#SPCJOB
JSPLRSTAT_JCONS	->	JJ#SPCONS
JVOLSTAT_JRESTAB	->	JJ#VOLRTAB
JVOLSTAT_JRESTWK	->	JJ#VOLRWK
JDIRECTSTAT_JCONTROL	->	JJ#DIRCON
JDIRECTSTAT_JSESS	->	JJ#DIRSESS

When these files are required, instead of making a copy, modifying the copy and then copying back if all is well, Journal now modifies the files direct if this merely consists of appending material. On successful completion, pointers held in the file header are updated to include the new material.
Where this cannot be done, temporary files are used, with names as above except that T# is substituted for JJ#. On successful completion, these files are NEWGENed.

8) A new parameter to command JOURNAL is provided. When the command

```
Command:JOURNAL(CLOSETAPE)
```

is given, the effect is to cause the current dump tape to be marked as ful so that when files are next dumped to tape, the next tape in the cycle wil be used. This is useful in cases where a tape is consistently failing during the writing of new material.

9) Minor changes have been made to the S series disc error report headings.

10) A change has been made in the holding of information on jobs in the Spoolr queues, to reduce the pageturns when such information is being processed.