North American Response Centers

HP 3000 APPLICATION NOTE #5

MPE SYSTEM LOGFILE RECORD FORMATS

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MPE SYSTEM LOGFILE RECORD FORMATS

This document describes the record formats for HP 3000 system log files for both MPE IV and V. The details of system logging are discussed in Chapter 5 of the *System Operation and Resource Management Reference Manual (P/N 32033-90005)* - for MPE V/E systems or Chapter 6 of the *MPE IV System Manager/System Supervisor Reference Manual (P/N 30000-90014)* - for MPE IV and V/P.

The formats of most type of records are the same under MPE IV and MPE V. However, beginning with MPE V/E, a few changes were made primarily to accomodate the new larger PIN and LDEV number fields. In addition, the TYPE 4 record was enhanced to include PIN and CPU TIME fields.

INTRODUCTION

Log records are written to log files by MPE. This is done by calls to an internal procedure by the process that requires the recording of a particular event. The log records can by subsequently accessed, manipulated, and displayed through user-supplied analysis routines.

There are 21 types of log records that can be generated:

TYPE	DESCRIPTION
0	Log Failure Record
1	System Up Record
2	Job Initiation Record
3	Job Termination Record
4	Process Termination Record
5	File Close Record
6	System Shutdown Record
7	Power Failure Record
8	Spoolfile Done Record
9	Line Disconnection Record
10	Line Close Record
11	I/O Error Record
12	Physical Mount/Dismount Record
13	Logical Mount/Dismount Record
14	Tape Labels Record
15	Console Log Record
16	Program File Event Record
17	Call Progress Signals Record
18	DCE Provided Info Record
46	MPE Maintenance Request Log Record
47	Diagnostic Control Unit Log Record

Log records, although different in format, length, and content, always have the same heading:

Field Length (words)	Contents
1	Record Type
1	Record Length
3	Time Stamp (As defined in the CLOCK and CALENDAR intrinsics)
1	0 Job Type 1 | 2 Job Number 15

RECORD TYPE — Defines the record as one of the 21 types listed before

RECORD LENGTH — Defines the number of words that the record contains

TIME STAMP — Date and time, in the same format used by the CLOCK and CALENDAR intrinsics, as shown below

JOB TYPE — Type of main process being run, where bits 0 and 1 have the following meaning:

00 = System
01 = Session
10 = Job

JOB NUMBER — Number defining the job/session under which the log record has been output. If the last word is 0, this means that the record is related to the system and was not output for a user.

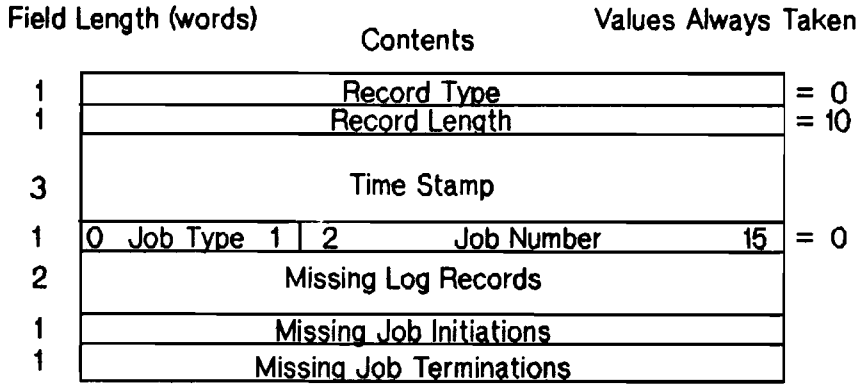
The TIME STAMP field as described above looks like this:

0	Year(last 2 digits)	6	7	Day of Year	15
0	Hours	7	8	Minutes	15
0	Seconds	7	8	Tenth-of-Second	15

DETAILED RECORD FORMATS

The remainder of this document describes each of the different record formats. When the MPE V and MPE IV formats differ, each is shown.

LOG ERROR RECORD (TYPE 0)



This record is issued after a recoverable logging error has occurred, and logging resumes.

JOB TYPE/JOB NUMBER (1 word)	Always set to 0.
MISSING LOG RECORDS (2 words)	Total number of Log Record events occurring while the Logging System was suspended
MISSING JOB INITIATIONS (1 word)	Number of jobs/sessions initiated while logging was suspended
MISSING JOB TERMINATIONS (1 word)	Number of jobs/sessions terminated while logging was suspended

Note: The last three fields correspond to log records that would have been emitted if logging had not been suspended.

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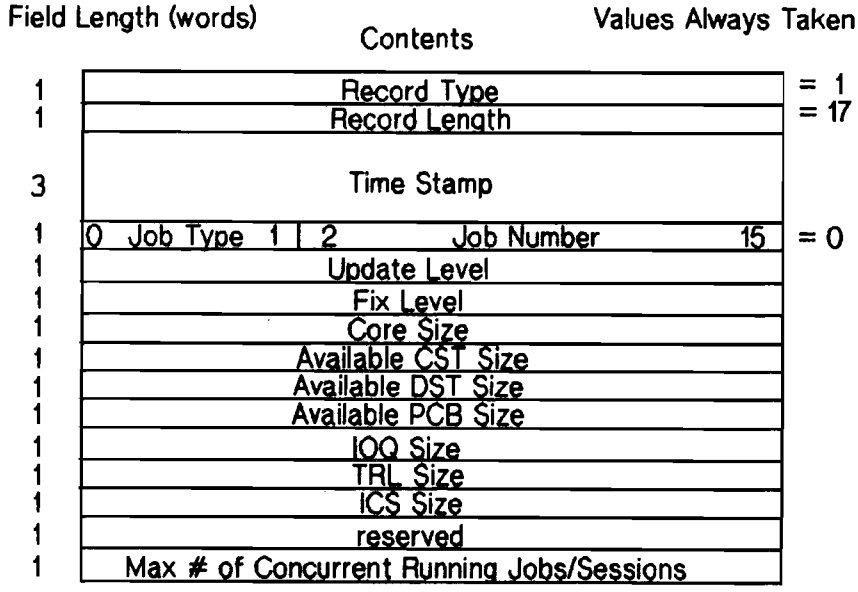
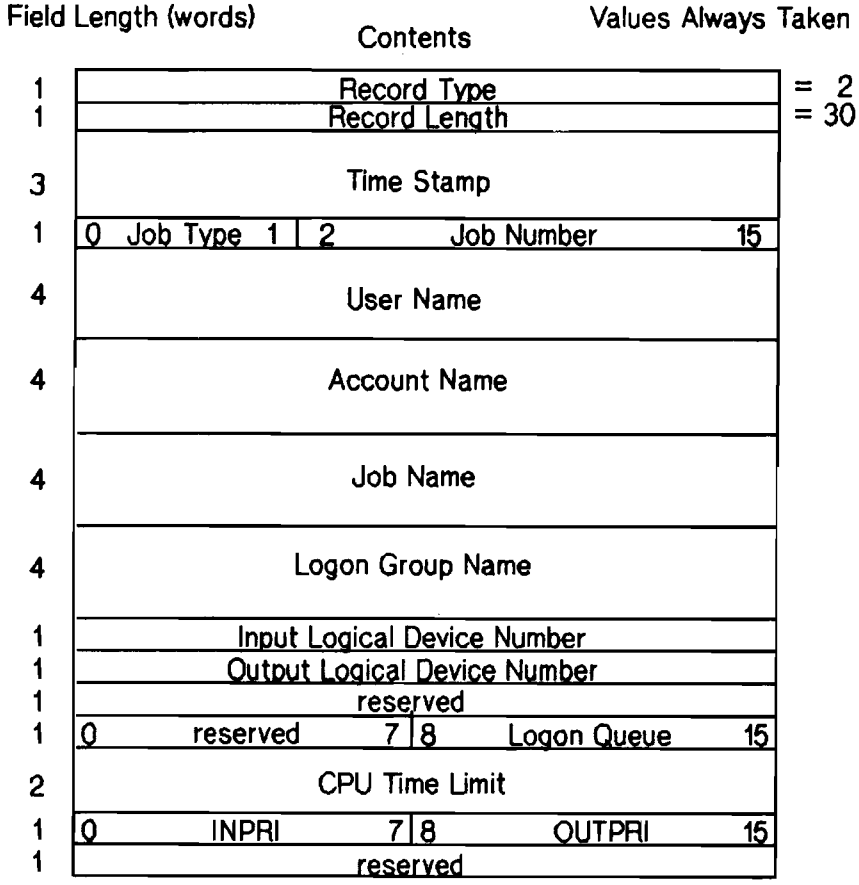
SYSTEM UP RECORD (TYPE 1)



This record is issued after each cold-load or reload before the system is up.

JOB TYPE/JOB NUMBER (1 word)	Always set to 0
UPDATE LEVEL (1 word)	Update level of the system, composed of two ASCII characters
FIX LEVEL (1 word)	Fix level of the system, composed of two ASCII characters
CORE SIZE (1 word)	Main-memory size in K (1024) words of memory
AVAILABLE CST SIZE (1 word)	Number of entries in the Code Segment Table
AVAILABLE DST SIZE (1 word)	Number of entries in the Data Segment Table
AVAILABLE PCB SIZE (1 word)	Number of entries in the Process Control Block
IOQ SIZE (1 word)	Number of entries in the Input/Output Queue
TRL SIZE (1 word)	Number of entries in the Timer Request List
ICS SIZE (1 word)	Number of words in the Interrupt Control Stack
MAX # OF RUNNING JOBS (1 word)	Maximum number of running jobs/sessions allowed in execution

JOB INITIATION RECORD (TYPE 2)

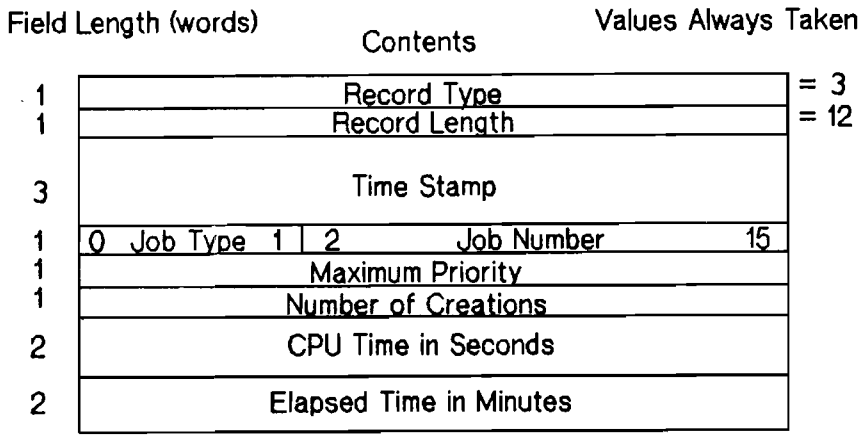


This record is issued by the MPE Command Interpreter following a successful logon to MPE.

JOB TYPE/JOB NUMBER (1 word)	Type and number of job/session
USER NAME (4 words)	User name as specified in the :JOB or :HELLO command, left-justified, blank-padded
ACCOUNT NAME (4 words)	Account name as specified in the :JOB or :HELLO command, left-justified, blank-padded
JOB NAME (4 words)	Job name as specified in the :JOB command, or the session name as specified in the :HELLO command, left-justified, blank-padded. If *jobname* or *sessionname* was omitted, the words are filled with blanks.
LOGON GROUP NAME (4 words)	Group name under which the logon was performed, left-justified, blank-padded

INPUT LOGICAL DEVICE NUMBER (1 word)	Logical device number of the standard input device for the job/session
OUTPUT LOGICAL DEVICE NUMBER (1 word)	Logical device number of the standard listing device for the job/session
LOGON QUEUE (1 byte, right-justified)	Single ASCII character representing the subqueue in which the job/session will execute; i.e. "B", "C", "D", or "E"
CPU TIME LIMIT (2 words)	Double-word showing the central processor time limit as specified in the :JOB or :HELLO command. If no limit applied, the field contains -1. If omitted, the field contains 0.
INPRI (1 byte)	Job selection priority as defined in the :JOB command, or the default value if no priority specified.
OUTPRI (1 byte)	Job output priority as specified in the OUTCLASS parameter of the :JOB command, or 0 if no priority is specified or the job type is a session.

JOB TERMINATION RECORD (TYPE 3)



This record is issued at the end of a job or session, regardless of the cause of the termination.

JOB TYPE/JOB NUMBER (1 word) — Type and number of the job/session

MAXIMUM PRIORITY (1 word) — Lowest priority number (highest priority) ever run under by any process of the job/session. This value can range from 0 to 255.

NUMBER OF CREATIONS (1 word) — Total number of processes created under the main process during the job/session

CPU TIME (2 words) — Double-word containing the total central processor time used (in seconds) by all processes of the job/session

ELAPSED TIME (2 words) — Double-word containing the wall clock time (in minutes) during which the job/session has existed in the system. For a session, this time is called *connect time*

PROCESS TERMINATION RECORD (TYPE 4) - MPE V

Field Length (words)	Contents	Values Always Taken
1	Record Type	= 4
1	Record Length	= 14
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	# of Program File Segments	
1	# of SL Segments (Non-MPE)	
1	Maximum Stack Size Ever	
1	Maximum Data Segment Size Ever	
1	Cumulative Total of Virtual Storage	
1	PIN of Process	
2	CPU Time in Seconds	

PROCESS TERMINATION RECORD (TYPE 4) - MPE IV

Field Length (words)	Contents	Values Always Taken
1	Record Type	= 4
1	Record Length	= 11
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	# of Program File Segments	
1	# of SL Segments (Non-MPE)	
1	Maximum Stack Size Ever	
1	Maximum Data Segment Size Ever	
1	Cumulative Total of Virtual Storage	

This record is issued when a user process other than a Main Process terminates.

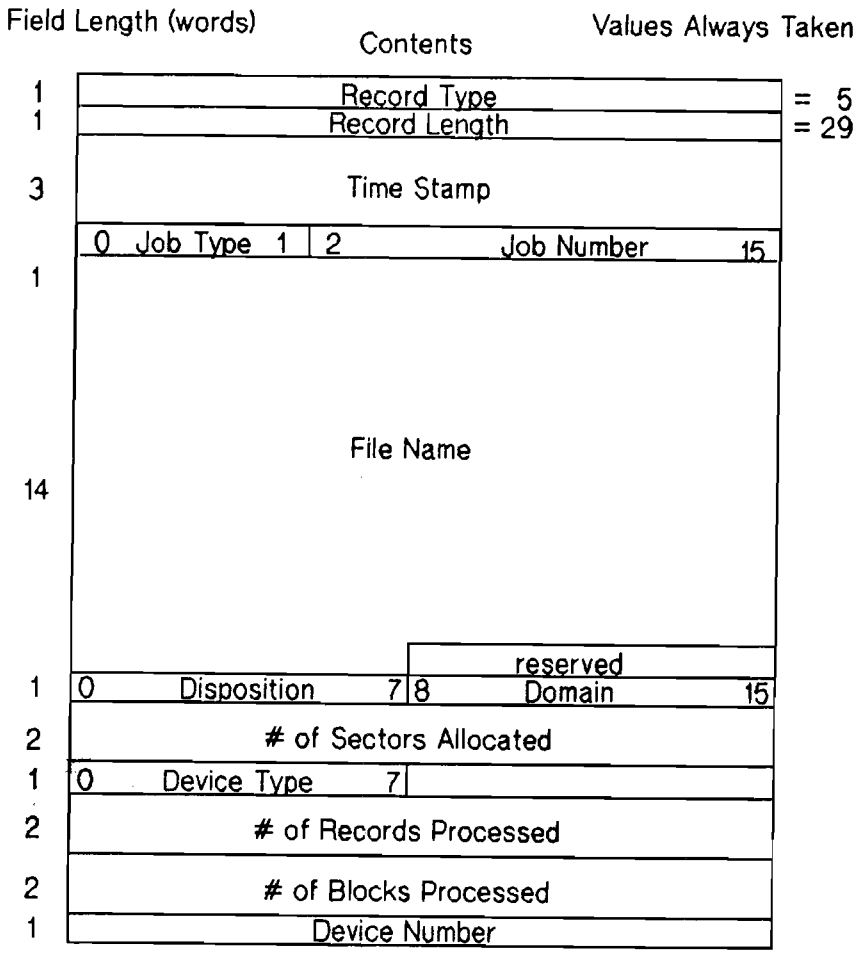
JOB TYPE/NUMBER (1 word)	Type and number of the job/session
# OF PROGRAM FILE SEGMENTS (1 word)	Number of segments contained in the program file loaded on behalf of the process
# OF NON-MPE SL SEGMENTS (1 word)	Number of segments from the segmented library (excluding MPE), loaded on behalf of the process

MAXIMUM STACK SIZE EVER (1 word)	Largest size (in words) ever attained by the stack during process life
MAXIMUM DATA SEGMENT SIZE EVER (1 word)	Largest size (in sectors) ever attained by an extra data segment during process life
CUMULATIVE TOTAL OF VIRTUAL STORAGE (1 word)	Total amount of disc space (in sectors) requested for data (stack and extra data segments) during process life

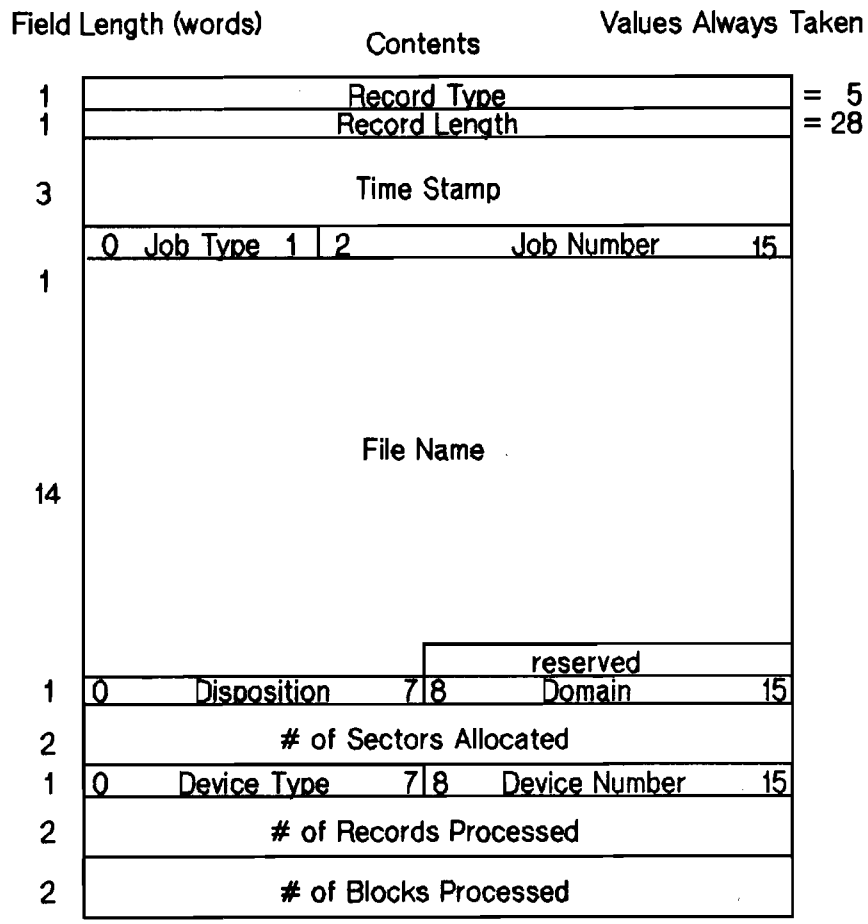
The following two fields are also generated on MPE V systems:

PIN OF PROCESS (1 word)	Process Identification Number of the process
CPU TIME (2 words)	Double-word containing the central processor time used (in seconds) by the process

FILE CLOSE RECORD (TYPE 5) - MPE V



FILE CLOSE RECORD (TYPE 5) - MPE IV



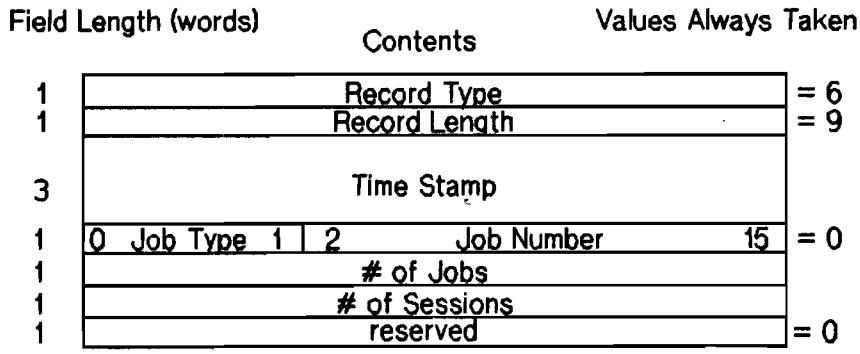
This record is issued whenever a file is closed.

JOB TYPE/JOB NUMBER (1 word)	Type and number of the job/session
FILENAME (27 bytes)	The *filename.groupname.accountname* of the file; each name is eight bytes long, left-justified with trailing blanks, with the 27th byte undefined
DISPOSITION (1 byte)	File disposition as specified in the FCLOSE intrinsic
DOMAIN (1 byte)	File domain, as specified in the FOPEN intrinsic
# OF SECTORS ALLOCATED (2 words)	Physical space (in sectors) actually reserved on disc for the file. When the file does not reside on disc, this value is 0.
DEVICE TYPE (1 byte)	Device type of the device on which the file resides, as returned by the FGETINFO intrinsic

RECORDS PROCESSED (2 words)	Number of records processed since the last FOPEN on the file by the process
BLOCKS PROCESSED (2 words)	Number of blocks written to and read from the file since the last FOPEN on the file by the process
DEVICE NUMBER	Logical device number of the device on which the file resides

Note: The DEVICE NUMBER field is 1 word long on MPE V systems, but only 1 byte long on MPE IV systems.

SYSTEM SHUTDOWN RECORD (TYPE 6)



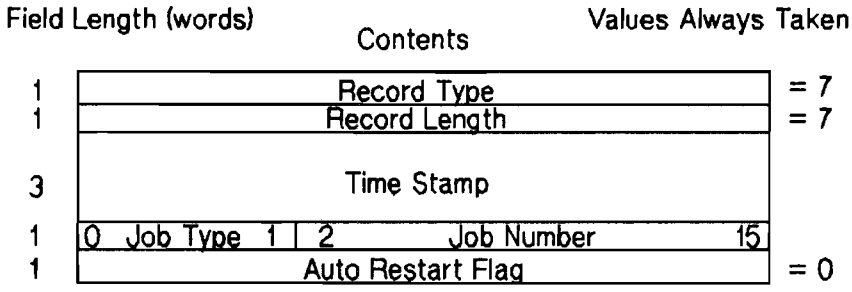
This record is issued when the system is shutdown (by the =SHUTDOWN console command).

JOB TYPE/JOB NUMBER (1 word) — Always set to 0

OF JOBS (1 word) — Number of jobs on the system when the command took effect

OF SESSIONS (1 word) — Number of sessions on the system when the command took effect

POWER FAILURE RECORD (TYPE 7)



This record is issued when a restart occurs following a power failure.

JOB TYPE/JOB NUMBER (1 word) — Type and number of job/session

AUTO RESTART FLAG (1 word) — Logical value representing the state of the restart flag

SPOOLFILE DONE RECORD (TYPE 8)

Field Length (words)	Contents	Values Always Taken
1	Record Type	= 8
1	Record Length	= 34
3	Time Stamp	
1	Job Type/Job Number	= 0
4	User Name	
4	Account Name	
4	Job Name	
4	File Name	
1	0 Job Type 1 | 2 Job Number 15	
1	0 I/O | 1 Device File ID 15	
1	0 Device Type 7 | 8 Spoolee # 15	
1	NUMCOPIES | OUTPRI	
2	# Records Processed	
2	# Sectors Used	
1	0 Subtype 7 | reserved | 12 FUNC 15	
1	reserved | 10 #LP/PP 15	
2	# Physical Pages	

This record is issued when a spooler completes loading a spoolfile.

JOB TYPE (2 bits)

- 00 = SESSION' - Spoolfile originally created on another system by a session
- 01 = SESSION - Spoolfile created for a session on this system
- 10 = JOB - Spoolfile created for a job on this system
- 11 = JOB' - Spoolfile originally created on another system by a job

Note: For job types 00 and 11, SPOOK was used to create the spoolfile on this system.

JOB NUMBER (14 bits) — Number of job/session which originally created the spoolfile

I/O (1 bit)

- 0 = Input
- 1 = Output

DEVICE TYPE (1 byte)	For Input spoolfiles - 0 For Output spoofiles - 32 (device type of a lineprinter)
SPOOLEE # (1 byte)	For Input spoolfiles - the logical device number of the disc on which the spoolfile resided For Output spoolfiles - the logical device number of the printer used
NUMCOPIES (1 byte)	Number of copies that are yet to be printed for this spoolfile. For multiple copy spoolfiles, this number is decremented after each copy has been printed and a different spooling logging record exists for each copy printed. If there is only one copy to be printed, the field is 0.
# RECORDS PROCESSED (2 words)	For Input spoolfiles - the number of lines in the Input spoolfile For Output spoolfiles - the number of lines printed for this spoolfile
# SECTORS USED (2 words)	Number of disc sectors that the spoolfile occupied on disc
SUBTYPE (1 byte)	For Input spoolfiles - 0 For Output spoolfiles - the subtype of the lineprinter used

If the SUBTYPE is that of the 2680A, subtype 8, then the following two fields will be non-zero. For any other lineprinter, the fields will contain zeros.

# PHYSICAL PAGES (2 words)	Total number of physical pages printed
# LP/PP (6 bits)	If the spoolfile is using a LPX type environment file, this field is defined as the number of logical pages per physical page when the spoolfile ended. NOTE: THIS VALUE CAN CHANGE WHILE THE SPOOLFILE IS PRINTING.
FUNC (4 bits)	The last operation the spooler performs on the spoolfile: 0 = normal completion 1 = delete spoolfile 2 = defer spoolfile 3 = relink spoolfile

LINE DISCONNECTION RECORD (TYPE 9)

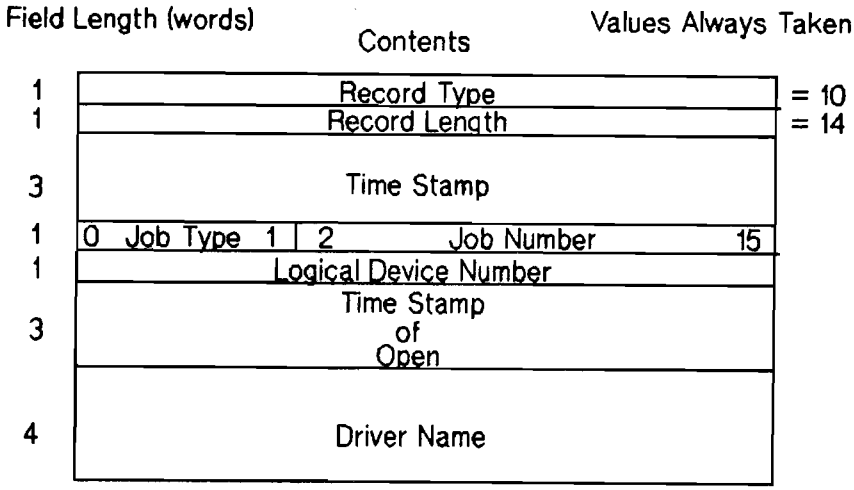
Field Length (words)	Contents	Values Always Taken
1	Record Type	= 9
1	Record Length	= 43
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	Logical Device Number	
2	Time of Connection or Open	
2	# Output Data Transfers	
2	# Input Data Transfers	
1	# Recoverable Line Errors (Modulo 2**16)	
1	# Irrecoverable Line Errors (Modulo 2**16)	
9	Local ID Sequence	
9	Remote ID Sequence	
10	Phone Number of Remote	

This record is issued when a data communication line is disconnected from the system either intentionally or due to an error.

ID sequences are significant for both switched and non-switched lines. The first byte is the length of the sequence. The remainder is the actual ID sequence (up to 16 bytes, left-justified with trailing blanks).

The phone number is significant only if the local system (MPE) performed the dialing for an outgoing call (up to 20 characters, left-justified with trailing blanks).

LINE CLOSE RECORD (TYPE 10)



This record is issued when a data communication line is closed.

The driver name may be up to eight ASCII characters in length, left-justified with trailing blanks.

I/O ERROR RECORD (TYPE 11) - MPE V

Field Length (words)	Contents	Values Always Taken
1	Record Type	= 11
1	Record Length	
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	Error Index Word	
1	A | S | D | Y | W | B | C | F | M | P | L | R | T | | G	
1	Queue LDEV Number	
1	Miscellaneous (Driver Defined) Data	
1	Target Data Segment	
1	Target Data Address	
1	Unit | Function	
1	Transmission Count (Negative if Bytes)	
1	Driver Defined Parameter = 1	
1	Driver Defined Parameter = 1	
1	8 Stat Qualifier 12 | 13 Stat 15	
1	Process PCB Number	
1	4 Subtype 7 | 8 Device Type 15	
1	Hardware Unit Number	
1	DRT Number	
n	Status Words Logged	

I/O ERROR RECORD (TYPE 11) - MPE IV

Field Length (words)	Contents	Values Always Taken
1	Record Type	= 11
1	Record Length	
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	Error Index Word	
1	A | S | D | Y | W | B | C | F | M | P | L | R | T | G	
1	0 Unit 7 | 8 Logical Device 15	
1	Miscellaneous (Driver Defined) Data	
1	Target Data Segment	
1	Target Data Address	
1	Driver Function Code	
1	Transmission Count (Negative if Bytes)	
1	Driver Defined Parameter = 1	
1	Driver Defined Parameter = 1	
1	0 Process PCB Number 7 | 8 Stat Qualifier 12 | 13 Stat 15	
1	4 Subtype 7 | 8 Device Type 15	
1	0 Unit Number 7 | 8 DRT 15	
n	Status Words Logged	

This record is issued each time an I/O error occurs on the system.

JOB TYPE/JOB NUMBER (1 word) — Type and number of job/session

ERROR INDEX WORD (1 word) — First byte is number of error status words logged. Second byte is Device Information Table relative index to words logged.

Description of bit flags in Word 8. All are single bit fields (except T, which is 2 bits long). A '1' in any single bit field indicates:

A (ABORT) — Request has been aborted externally

S (SPECIAL) — Special handling is to be applied to this request; for disc this indicates a Memory Management request

D (DIAG) — Diagnostic request (not used)

Y (SYSBUFR) — Indicates the target data segment is irrelevant; the target data address is the absolute main memory address of the buffer

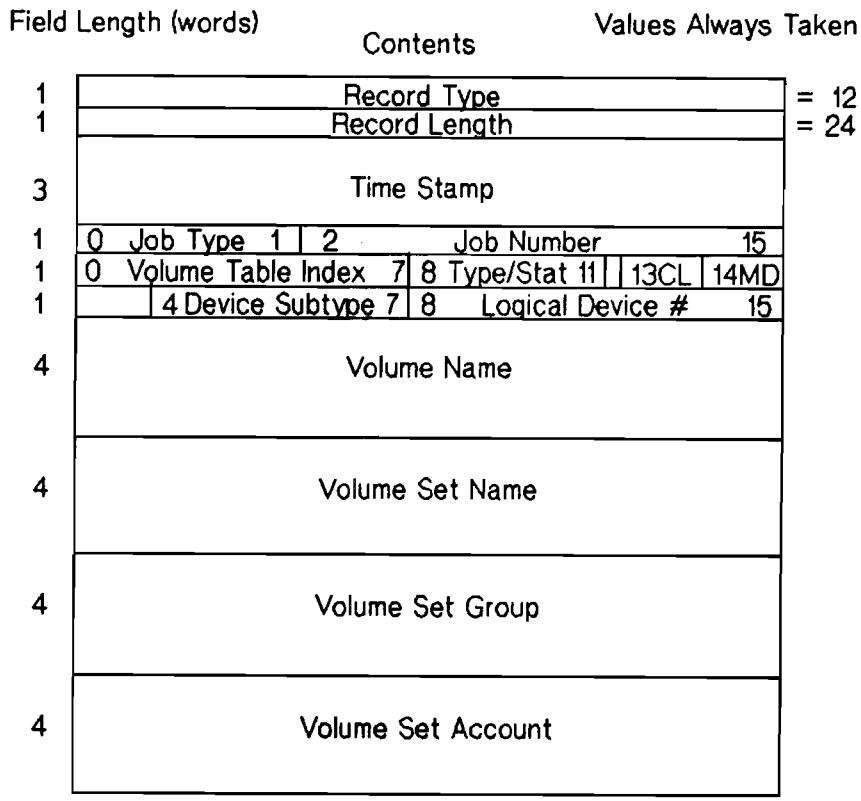
W (IOWAKE) — Wake caller on completion of request

B (BLOCKED)	Blocked I/O; caller is waited until request is completed
C (COMPLETED)	Request has been completed and caller is awake if he had so specified
F (DATAFRZN)	Data segment has been made present and is frozen
M (MEMERRORD)	MAM error on data segment make-present
P (PREQ)	This request has been started but was preempted by a MAM request
L (SFAIL)	Start SIO failure in General Interrupt Processor
R (PFAIL)	The I/O has been aborted because of a power failure
T (PREEMPT)	Preemptive type code: 1=soft, 2=hard
G (MSGDONE)	A message request reply has been completed
DRIVER FUNCTION CODE	Generally a number indicating a particular driver action, such as: 0 = read; 1= write
TRANSMISSION COUNT (1 word)	Final transfer count (if any) for this I/O request. If positive, it indicates words; if negative, it indicates a byte count
DRIVER PARAMETER 1 (1 word)	Defined within the I/O system for various drivers
DRIVER PARAMETER 2 (1 word)	Defined within the I/O system for various drivers
PROCESS PCB NUMBER	Is zero if not associated with a user process
STAT (3 bits)	Indicates current and resultant state of the request: 0 = Not started, or awaiting completion 1 = Successful completion 2 = End of file detected 3 = Unusual condition (normally recoverable) 4 = Irrecoverable error

Note: The PROCESS PCB NUMBER, HARDWARE UNIT NUMBER, and DRT NUMBER fields are 1 word long on MPE V systems, but only 1 byte on MPE IV systems. Likewise, the DRIVER FUNCTION CODE is only 1 byte long on MPE V systems, but 1 word long on MPE IV systems.

Therefore, the record length is (21 + the number of status words logged) - *on MPE V systems* or (19 + the number of status words logged) - *on MPE IV systems.*

PHYSICAL MOUNT/DISMOUNT RECORD (TYPE 12)



This record is issued each time a volume is physically mounted or dismounted on the system.

JOB TYPE/JOB NUMBER (1 word) — Type and number of job/session

VOLUME TABLE INDEX (8 bits) — Index into the volume table for this volume

TYPE/STAT (4 bits)

0 = Valid Private Volume
1 = Scratch Volume
2 = System Volume
3 = Unformatted Volume
4 = Unreadable Volume
5 = Serial Disc Volume
6 = Foreign Volume

CL (1 bit)

0 = Mount/Dismount detected by auto recognition
1 = Volume mounted at Coldload time

MD (2 bits)

0 = Mount
1 = Dismount
2 = New volume created by INIT function

Note: VOLUME NAME, VOLUME SET NAME, VOLUME SET GROUP, VOLUME SET ACCOUNT fields are meaningful only if MD is 0 or 2.

LOGICAL MOUNT/DISMOUNT RECORD (TYPE 13) - MPE V

Field Length (words)	Contents		Values Always Taken
1	Record Type		= 13
1	Record Length		= 41
3	Time Stamp		
1	0 Job Type 1 | 2 Job Number 15		
1	0 No. of Accessors 11 | 12 TR 14 | MD		
1	PIN of Accessor		
4	User Name		
4	Group Name		
4	Account Name		
4	Volume Set Name		
4	Volume Set Group		
4	Volume Set Account		
1	# Volumes Mounted/Dismounted		
1	Device Subtype	1st Volume LDEV	
1	Device Subtype	2nd Volume LDEV	
1	Device Subtype	3rd Volume LDEV	
1	Device Subtype	4th Volume LDEV	
1	Device Subtype	5th Volume LDEV	
1	Device Subtype	6th Volume LDEV	
1	Device Subtype	7th Volume LDEV	
1	Device Subtype	8th Volume LDEV	

LOGICAL MOUNT/DISMOUNT RECORD (TYPE 13) - MPE IV

Field Length (words)	Contents	Values Always Taken
1	Record Type	= 13
1	Record Length	= 41
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	12 TR 14 | MD	
1	0 No. of Accessors 7 | 8 PIN of Accessor 15	
4	User Name	
4	Group Name	
4	Account Name	
4	Volume Set Name	
4	Volume Set Group	
4	Volume Set Account	
1	# Volumes Mounted/Dismounted	
1	Device Subtype | 1st Volume LDEV	
1	Device Subtype | 2nd Volume LDEV	
1	Device Subtype | 3rd Volume LDEV	
1	Device Subtype | 4th Volume LDEV	
1	Device Subtype | 5th Volume LDEV	
1	Device Subtype | 6th Volume LDEV	
1	Device Subtype | 7th Volume LDEV	
1	Device Subtype | 8th Volume LDEV	

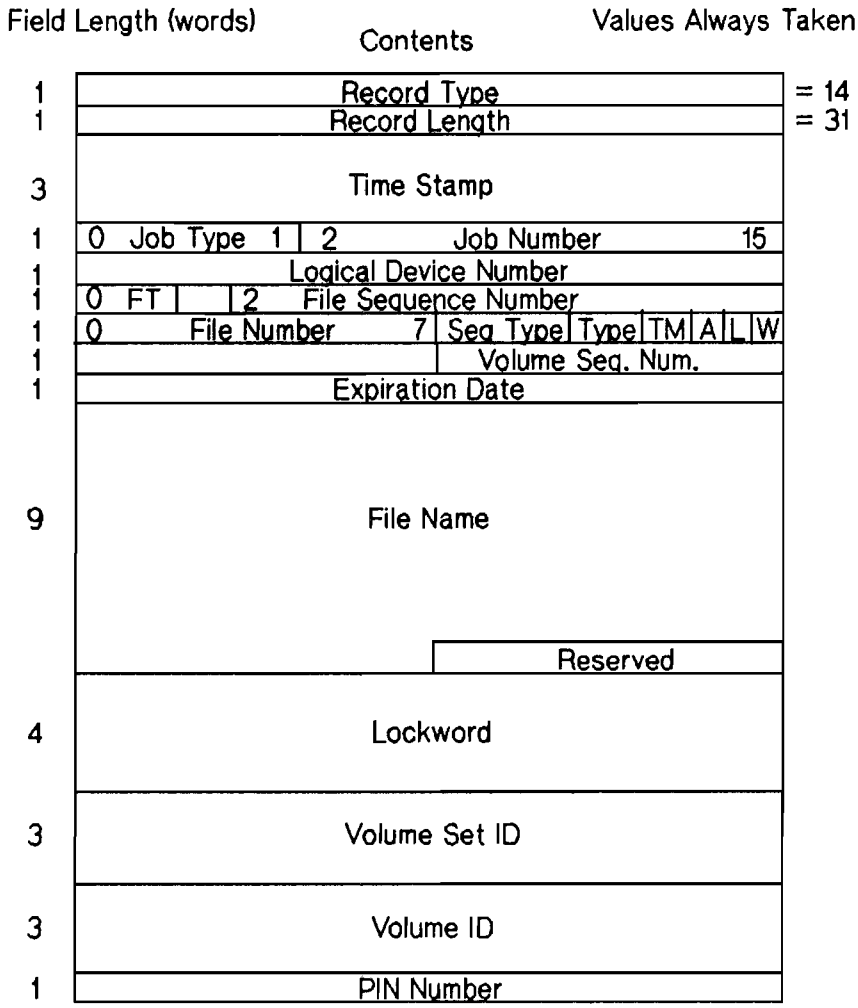
This record is issued when a disc volume is logically mounted or dismounted.

TR (3 bits) Type of request -
- 0 = :MOUNT/:DISMOUNT with directory binding
- 1 = :MOUNT/:DISMOUNT without directory binding
- 2 = Unconditional implicit mount
- 3 = Conditional implicit mount
- 4 = :LMOUNT/:LDISMOUNT
- 5 = Dismount due to job/session termination

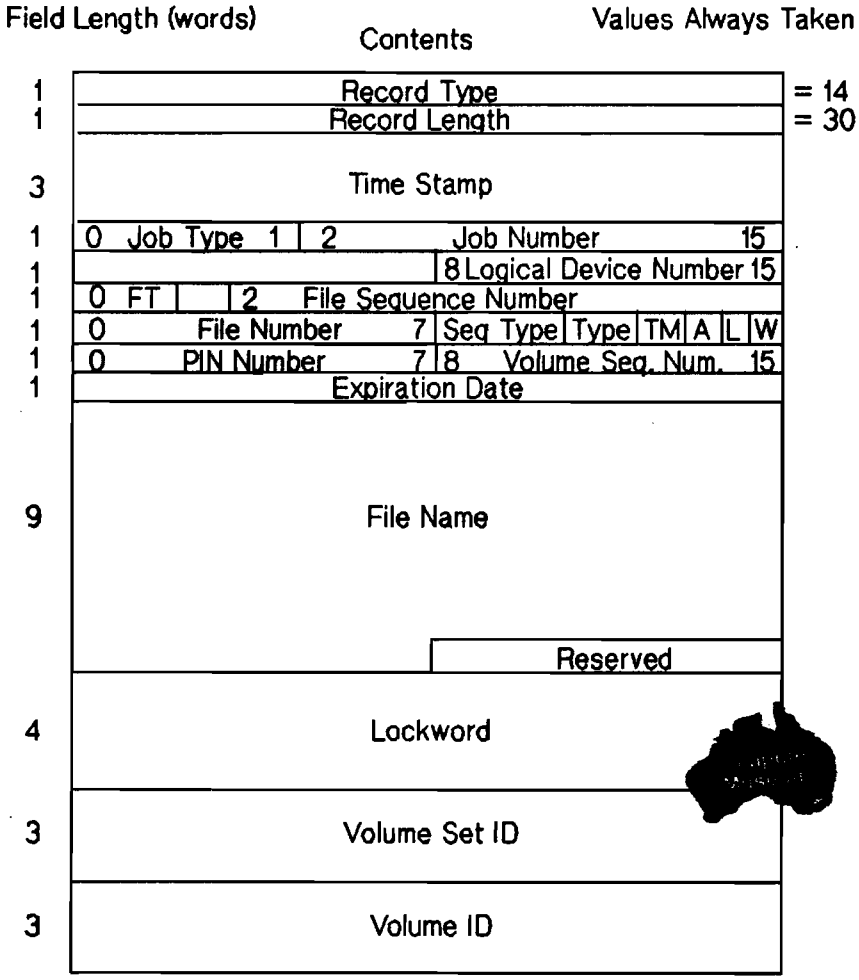
MD (1 bit)
- 0 = Mount
- 1 = Dismount

Note: The NO. OF ACCESSORS field is 12 bits long on MPE V systems, but only 8 bits long on MPE IV systems. Likewise, the PIN OF ACCESSOR field is 1 word long on MPE V systems, but only 1 byte long on MPE IV systems.

TAPE LABELS LOG RECORD (TYPE 14) - MPE V



TAPE LABELS LOG RECORD (TYPE 14) - MPE IV

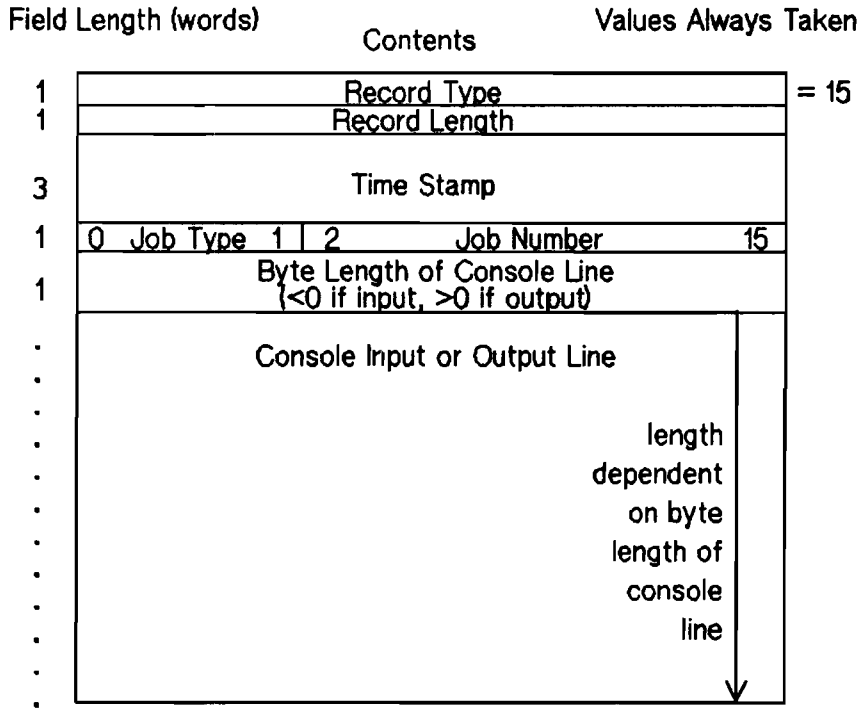


This record is issued when a labelled tape is mounted.

FT (1 bit)	1 = At least one read/write completed	
SEQ TYPE (2 bits)	0 = Search for match on file name 1 = Next or default	2 = Add file to end of volume set 3 = Specified file sequence number
TYPE (2 bits)	2 = ANSI standard label	3 = IBM standard label
TM (1 bit)	User trailer label	
A (1 bit)	User header label	
L (1 bit)	Job entry linked to logical device	
W (1 bit)	Wait for mount	

Note: The LOGICAL DEVICE NUMBER and PIN NUMBER fields are 1 word long on MPE V systems, but only 1 byte long on MPE IV systems.

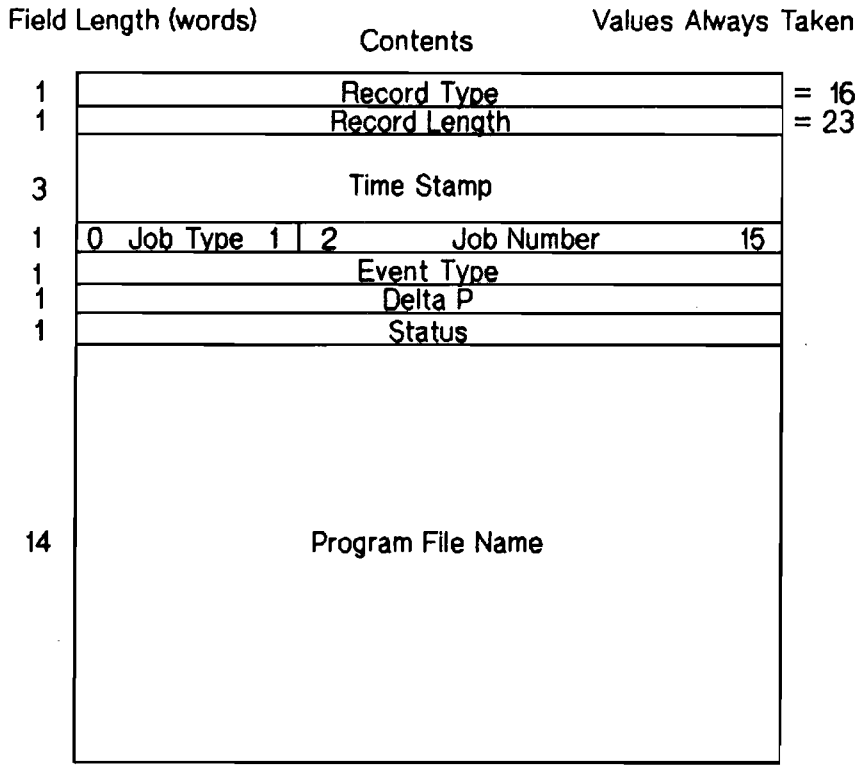
CONSOLE LOG RECORD (TYPE 15)



This record is issued when a line is output to the console or any console command is entered, from any device. This does not include other MPE commands or their output, even on the console terminal.

NOTE: The length of the console line found in word 7 of the log record is the actual number of characters transmitted to the console. This value may be greater that the number of characters found in the log record because the maximum size of the log record is currently set at 99 words.

PROGRAM FILE EVENT RECORD (TYPE 16)



This record is issued when a program file event occurs.

Note: If EVENT TYPE = 0 (Stack Underflow Recovery), DELTA P and STATUS are not applicable.

Currently, the only defined Program File Event is 0, Stack Underflow Recovery. In general, this occurs because a program uses outmoded constructs, emitted by earlier versions of compilers, which are trapped and "manually" executed by system software. Recompiling such a program with a current compiler will correct the problem.

CALL PROGRESS SIGNALS LOG RECORD (TYPE 17) - MPE V

Field Length (words)	Contents	Values Always Taken
1	Record Type	= 17
1	Record Length	= 8
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	CPS Message Number	
1	DS LDEV Number	

CALL PROGRESS SIGNALS LOG RECORD (TYPE 17) - MPE IV

Field Length (words)	Contents	Values Always Taken
1	Record Type	= 17
1	Record Length	= 7
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	0 DS LDEV Number 7 | 8 CPS Message Number 15	

This record is issued when a call over a X.21 line fails.

Note: The CPS MESSAGE NUMBER and DS LDEV NUMBER fields are 1 word long on MPE V systems, but only 1 byte long on MPE IV systems.

DCE PROVIDED INFORMATION RECORD (TYPE 18) - MPE V

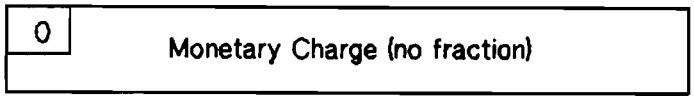
Field Length (words)	Contents	Values Always Taken
1	Record Type	= 18
1	Record Length	= 10
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	CPS Message Number	
1	DS LDEV Number	
2	CPS Message Number Dependent Info (shown below)	

DCE PROVIDED INFORMATION RECORD (TYPE 18) - MPE IV

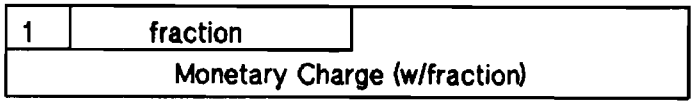
Field Length (words)	Contents	Values Always Taken
1	Record Type	= 18
1	Record Length	= 9
3	Time Stamp	
1	0 Job Type 1 | 2 Job Number 15	
1	0 DS LDEV Number 7 | 8 CPS Message Number 15	
2	CPS Message Number Dependent Info (shown below)	

CPS Message Number Dependent Info Field:

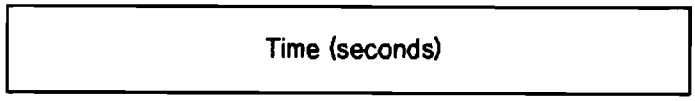
If CPS message number = 1 (Charge info type 1) –



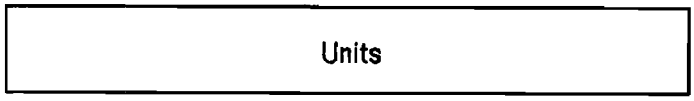
If CPS message number = 2 (Charge info type 2) –



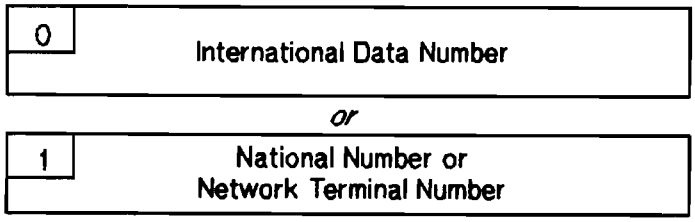
If CPS message number = 3 (Charge info type 3) –



If CPS message number = 10 (Line ID signal) –



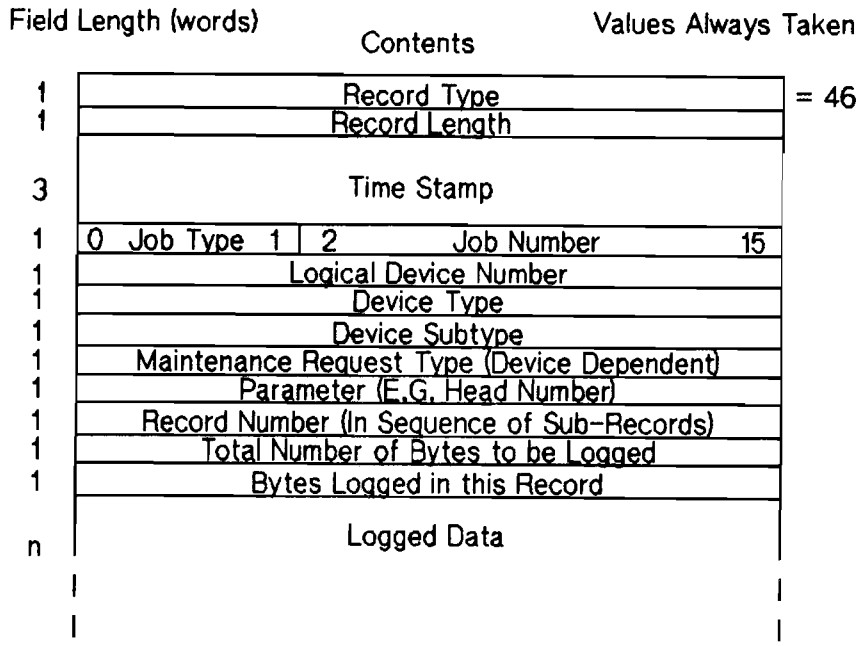
If CPS message number is not one of the above –



This record is issued at the end of a call over a X.21 line.

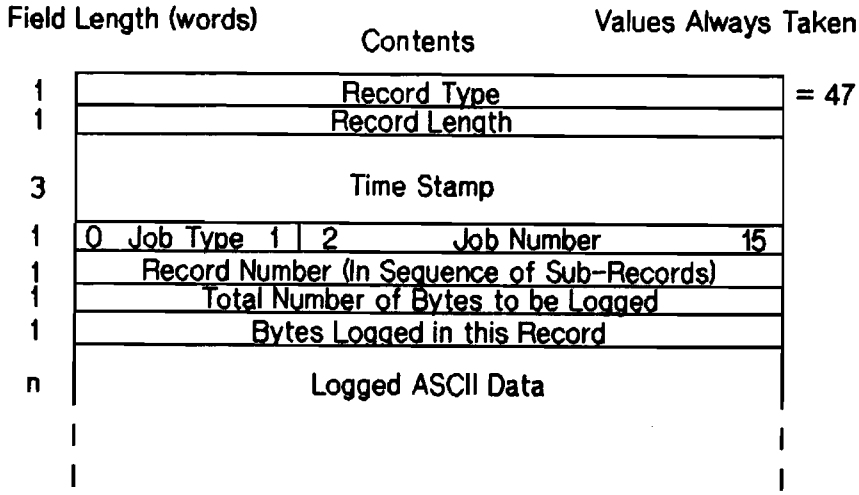
Note: The CPS MESSAGE NUMBER and DS LDEV NUMBER fields are 1 word long on MPE V systems, but only 1 byte long on MPE IV systems.

MPE MAINTENANCE REQUEST LOG RECORD (TYPE 46)



This record is issued when MPE needs to log maintenance information for one of the system's devices.

DIAGNOSTIC CONTROL UNIT LOG RECORD (TYPE 47)



This record is issued (only on Series 6x systems) when the DCU needs to log information.

READER COMMENT SHEET

North American Response Centers
HP 3000 Application Note #5 / RC Question & Answers (5/1/86)

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Are the concepts and wording easy to understand?	☐ Yes ☐ No	☐ Yes ☐ No
Are the formats of the documents convenient in size, arrangement and readability?	☐ Yes ☐ No	☐ Yes ☐ No

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