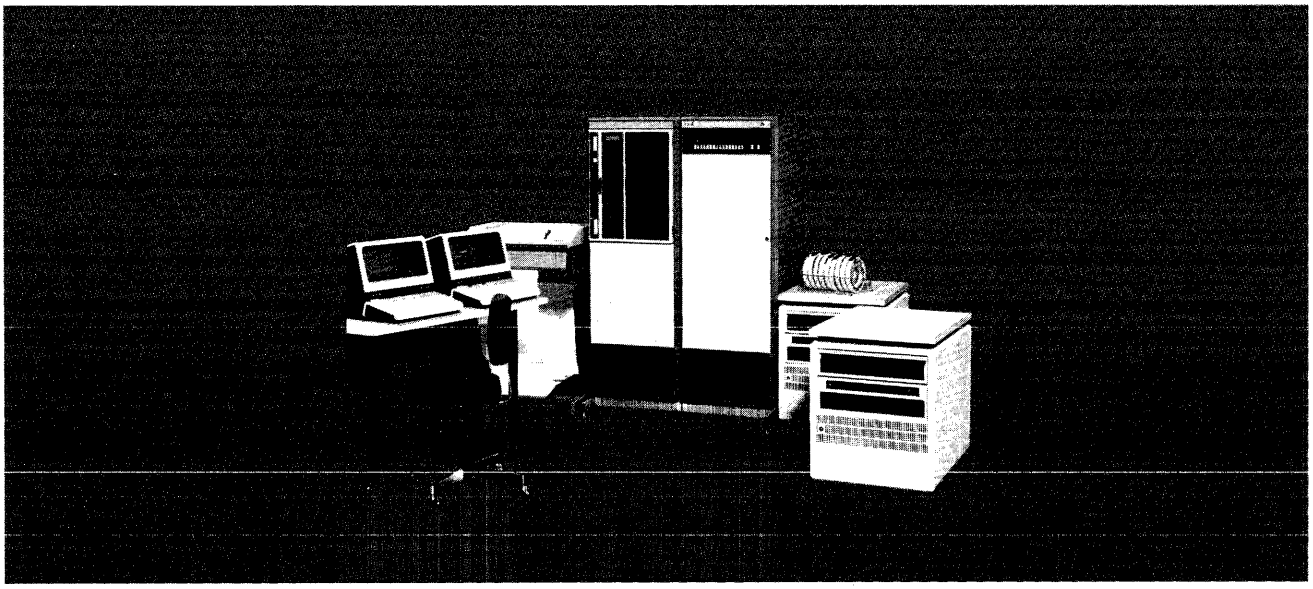
HEWLETT hp PACKARD

11/78

computer systems

COMMUNICATOR

3000



Issue No. 17

TABLE OF CONTENTS

EDITOR'S NOTE 1

MPE III: SECOND RELEASE 2

IMAGE CONTINUES TO IMPROVE 6

INTRODUCING THE HP 3000 SERIES III 9

SOFTWARE UPDATE: HP 3000 COMPUTER SYSTEMS USING MPE-C 12

- Contents of Installation Tape (IT) Date Code 1831 12
- MPE 13
- Compiler Library 16
- Online Diagnostics 17
- Offline Diagnostics 18

SOFTWARE UPDATE: HP 3000 COMPUTER SYSTEMS USING MPE III 20

- Contents of Installation Tape (IT) Date Code 1831 20
- MPE 21
- SPL/3000 29
- BASIC/3000 29
- FORTRAN/3000 31
- Basicomp 32
- RPG 33
- DS/3000 37
- MTS/3000 39
- Edit/3000 40
- KSAM/3000 43
- Compiler Library 45
- Fcopy 45
- Image/3000 46
- Query 47
- Diagnostics 47

MPE III: SECOND RELEASE

Bob Crum
HP General Systems Division

In the last issue of the COMMUNICATOR we reported on several new features which had been added to the Multiprogramming Executive Operating System. The release of MPE III on the current Installation Tape (B.00.01) contains several additional new features.

A. Summary of new MPE III features

- The REPORT command has been changed to allow the reporting of non-system volume sets.
- The ALTACCT and ALTGROUP commands have been changed to allow altering of account and group entries in non-system volume sets.
- HP 7925 discs are now supported as private volumes.
- The ability to log communications to and from the system console has been added via a new log record type.

B. Descriptions of each of these new features, with examples where they are appropriate, follow.

1. A parameter has been added to the REPORT command. The VS=<VS name> parameter is used to allow reporting on groups and accounts whose files reside on a particular volume set.

   The command:

   ```
   :REPORT @.@;VS=GEORGE
   ```

   will report filespace information for all groups in all accounts that reside on the volume set GEORGE. The master volume of the volume set must be mounted for this command to work.

2. The addition of a sub-parameter to the ALTGROUP and ALTACCT commands allows the altering of account or group information on a specified volume set. This is useful only if it is necessary to alter account and group file space limits for entries that have already been SPANned.

The syntax changes are:

```
:ALTACCT acctname [;VS=Volset: {ALT }]
                               {SPAN}
```

and

```
:ALTGROUP groupname [;VS= [volset [: {ALT }]]]
                                     {SPAN}
```

Suppose there exists a group G1 in account A1. If you want to change filespace limits for A1, and your want those changes reflected on the private volume directory, you would enter:

```
:ALTACCT A1;FILES=10000;VS=GEORGE:ALT
```

Suppose that you then wanted to change the group filespace limit for G1:

```
:ALTGROUP G1;FILES=1000;VS=GEORGE:ALT
```

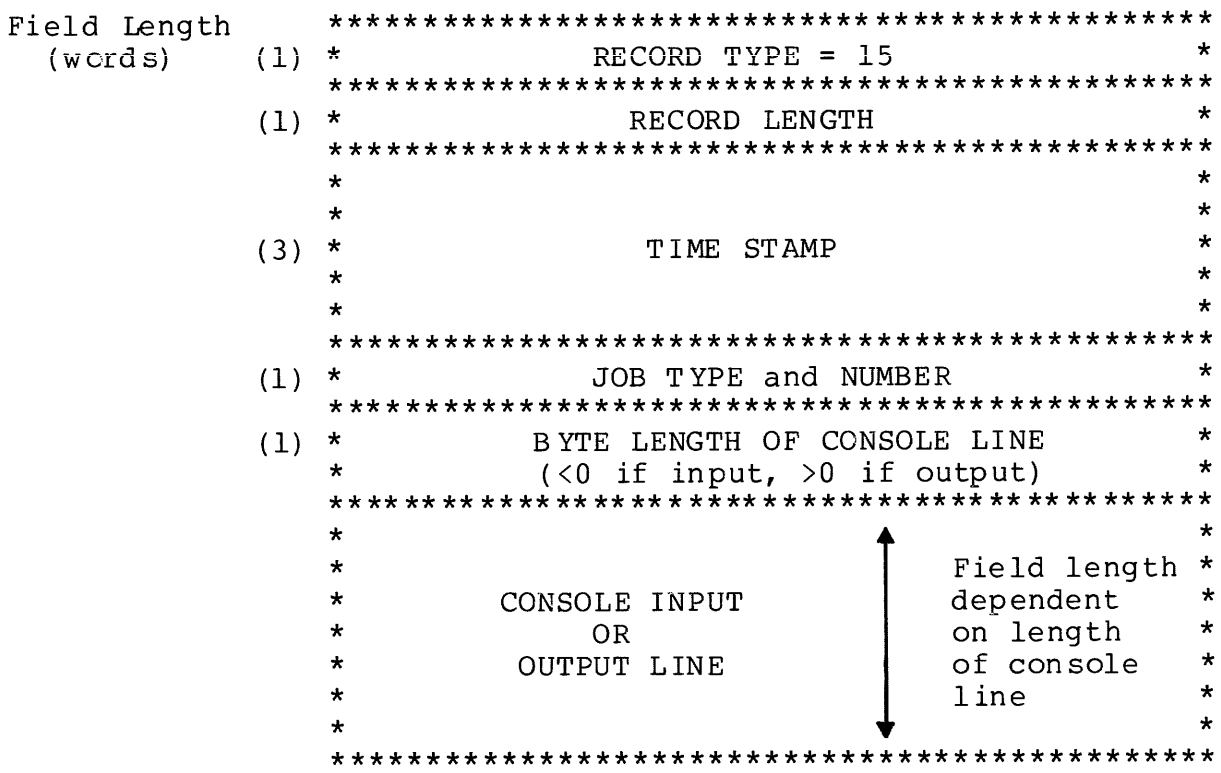
The information pertaining to the group filespace limits will then be reflected in the private volume directory. Note that the master volume of the volume set must be mounted in order for these commands to take effect. Note also that the account and group entries must already have been SPANned before the ALT parameter can be used.

3. MPE now allows users to access removable disc packs (private volumes) on the HP 7905, HP 7920 and HP 7925 disc drives. All of the features of private volumes on the HP 7905 and HP 7920 are available with the HP 7925, a new 120 megabyte disc subsystem. The VINIT subsystem, as well as MPE commands dealing with private volumes, now recognize "HP7925" as a valid parameter for volume type. Thus, you can now create a new volume set with two members that are 7925's with the command:

```
:NEWVSET GEORGE;MEMBERS=
     G1:HP7925,G2:HP7925
```

4. The ability to log communications with the system console has been added to MPE with the addition of a new log type to the system logging facility.

Log record type 15 is known as the "Console Log." The format of this record is shown below (the first four fields, Record Type through Job Type and Number, are standard on all log record headers):



Logging of console communications will be enabled via the SYSDUMP dialogue, just like the other logging types.

It is important to note that all communications that are not related to sessions at the console are logged. These include messages, I/O requests, REPLY's, and the *INVALID* messages. Messages to the console are denoted by a positive byte length in the log record; messages from the console are denoted by a negative byte length.

The uses of this feature are varied. For example, it is possible to keep track of illegal accesses to the computer and to keep a permanent record of operator interaction with the system.

It should be noted that console logging has been implemented as an archival message logging facility. That is, logged messages can be retrieved with the LISTLOG2 program (which has been modified to handle this log type) or with a user written program. An example of LISTLOG2 output for console logging is shown as follows:

```
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:54:7 :1  CONL  SYS              OUT =
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:54:13:4  CONL  SYS              IN  VMOUNT ON,AUTO;ALL
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:54:14:1  CONL  SYS              OUT =
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:54:19:4  CONL  SYS              IN  SESSION
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:54:43:8  CONL  S 1              OUT 13:54/#S1/16/LOGON FOR: SHIRLEY.QACOMM,DS3000 ON LDEV #20
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:55:1 :9  CONL  SYS              OUT =
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:55:8 :2  CONL  SYS              IN STREAMS10
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:55:26:2  CONL  S 1              OUT 13:55/#S1/16/PVDISC1.PUB.SYS IN USE BY SHIRLEY.QACOMM
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
13:55:30:8  CONL  S 1              OUT 13:55/#S1/16/AVAILABLE DRIVE ON LDEV# 2
                                  * - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

C. STREAM Files

One new feature of MPE III which was not described in the last issue of the COMMUNICATOR involves STREAM files. As opposed to MPE II, STREAM files under MPE III need not be unnumbered. This means that a KEEP command in the EDITOR, without the UNN option, will create a usable STREAM file for MPE III.

IMAGE CONTINUES TO IMPROVE

Sam Boot
General Systems Division

IMAGE/3000, one of Hewlett-Packard`s most successful software products, has been improved through the introduction of four new features:

- Global Control Blocks
- Global I/O Buffers
- Record Locking
- DBUTIL enhancements

Global Contrcl Blocks

In past versions of IMAGE, each user who opened the data base maintained a copy of the data base root file in memory. Although this feature is totally transparent to an application programmer or to a Query user, it did affect the performance of the HP 3000 due to the space required in memory.

Now, with the advent of Global Control Blocks, each user who opens a particular data base shares a single Global Control Block with all of the other users who open that particular data base. For example, if the size of the control block is 5k bytes, 10 users opening a data base would have taken up 50k bytes of memory. Now, these same 10 users require only 5k bytes in total. (Each user also uses 1k bytes of memory for user-specific status information, but that remains the same for both the old and new IMAGE versions.) Not only does IMAGE now require a smaller memory overhead, but all of your current programs should execute on the new version without change.

Global I/O Buffers

Another enhancement which is transparent to application programs is global I/O Buffers. Previously, IMAGE maintained four buffers in memory for each user. The size of these buffers could be varied by the data base designer, but were typically 1k bytes. When an IMAGE intrinsic call was made, the system checked only the requesting user`s buffers for the desired record. If the record did nct exist in the user´s buffer space, IMAGE then requested a time-consuming disc access to bring the block containing the record into main memory. All of this occurred even though the desired record existed in another user´s buffer. With

global buffering, all users of a data base share a pool of buffers. Whenever a user requests a specific record, IMAGE searches the buffer pool first. It does not matter which user request originally brought the record into memory, it is still available to all data base users (subject to locking considerations). Fewer disc accesses should result from this new approach, which does not affect current programs.

Record Locking

Until now, the only type of lock available was a lock of the entire data base. This slowed down throughput during multi-user access. Under the new locking method, users have the option of locking the data base, separate data sets, or one or more individual records. If you wish to continue locking the entire data base, your programs will run on the new IMAGE version without change. If you wish to lock a data set or a group of records, then some program changes are required.

To help facilitate set or record locking, DBLOCK now recognizes four new modes beyond modes 1 and 2 that are already used. Mode 1 applies an unconditional lock to the entire data base and returns to the calling program after the lock has been successfully executed. (The calling process suspends and waits until the data base is unlocked if it is locked by some other process first.) Mode 2 applies a conditional lock to the entire data base and returns to the calling program immediately. The value of the condition code is zero if the data base was successfully locked. If the value is other than zero, the data base was already locked and no lock is granted to the user. Mode 3 applies an unconditional lock to a data set. Mode 4 applies a conditional lock to the data set and returns a status code to indicate if the lock is successful. Mode 5 applies an unconditional lock to a group of data entries. Mode 6 applies a conditional lock to a group of data entries.

Access Mode	Locking Type	Entire Data Base or Subset
1	unconditional	entire
2	conditional	entire
3	unconditional	data set
4	conditional	data set
5	unconditional	data entries
6	conditional	data entries

In short, the program modifications needed to lock data sets or data entries are to select the appropriate value for the mode parameter, and apply the appropriate description for locking in the lock qualifier parameter. In addition, your program must take into account any new status codes which may result from a DBLOCK call.

DBUTIL Changes

If you have attempted to use DBUTIL lately, you may have noticed that it is much friendlier. Not only does DBUTIL have and expanded vocabulary of commands, but it now uses an interactive command language as well. This is a vast improvement over the use of entry points in previous versions. For example, to create empty data base files from the root file, you would have typed:

```
run dbutil.pub.sys,create
```

With the new DBUTIL, you type:

```
run dbutil.pub.sys
>>create   basel

DATA-BASE BASEl IS CREATED

>>exit
```

In Conclusion

IMAGE has proven for many of you to be a useful product in the past. With the new enhancements featured here, IMAGE will continue as a more powerful and friendlier data management tool.

INTRODUCING THE HP 3000 SERIES III

Fred Gibbons
General Systems Division

During the evolution of the HP 3000 product line, two major trends in computing have emerged: terminal-oriented transaction processing applications and decentralized data processing. Evidence of this is the increasing number of customers using HP 3000's for dedicated applications such as accounting, materials management, or order processing. Almost all of these customers have a goal of giving more of their users in different functional areas of the firm on-line access to computing power and local data bases.

Designed for On-Line Transaction Processing

With the introduction of HP 3000 Series III, Hewlett-Packard is increasing its capacity to service this trend toward on-line transaction processing applications. The Series III, with memory of up to 2048 Kb, dramatically increases the price/performance range of the 3000 family.

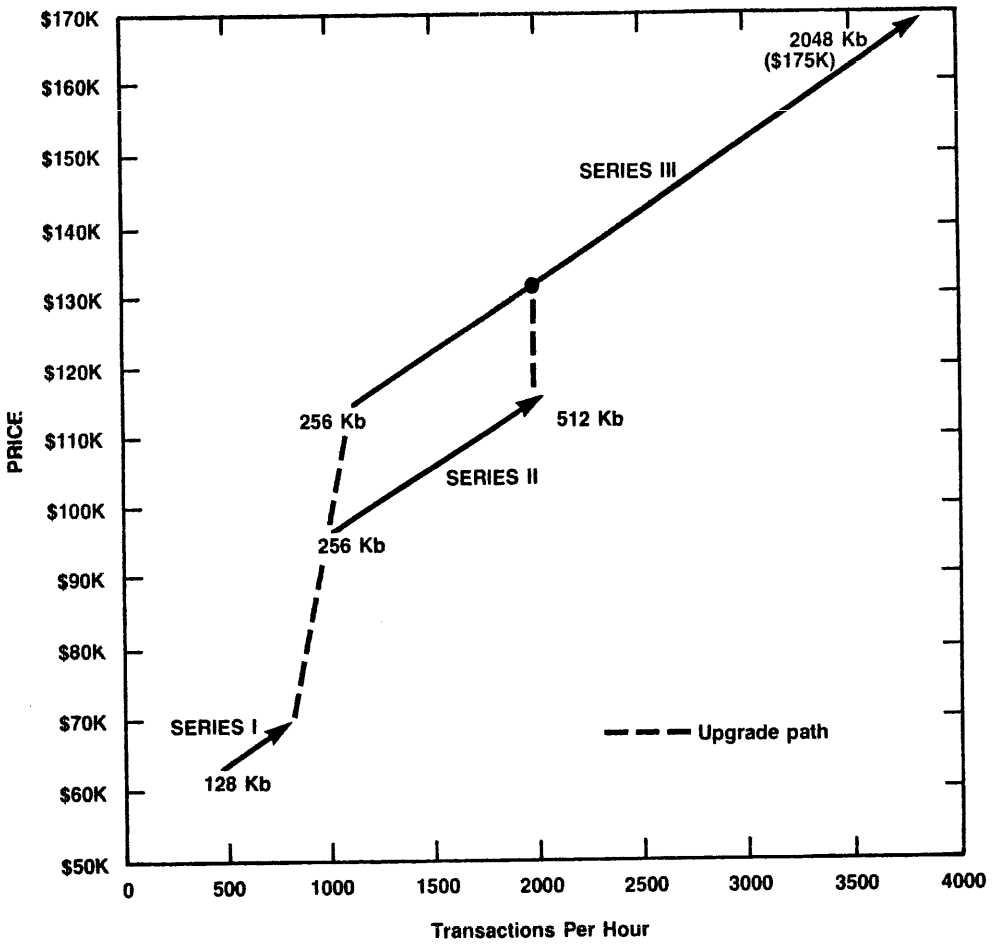
The 3rd Generation of 3000's

The name, HP 3000 Series III, was chosen to mark the beginning of a 3rd generation of 3000's. It is a name which builds upon the broad awareness established by the Series I and II, and signifies the extension of a family of upgradeable, MPE compatible systems.

Expandable to 2 Megabytes

The Series III System is racked, powered, and configured identically to the base 2-bay Series II Model 6. The Series III CPU, MUX, selector, backplane, 16K RAM memory arrays and fault correction are new. The Series III will have the ability to address up to 2048 Kb of memory versus 512 Kb for the Models 6 and 8.

Series III: A New High Performance Member of an Upgradeable MPE Based Family



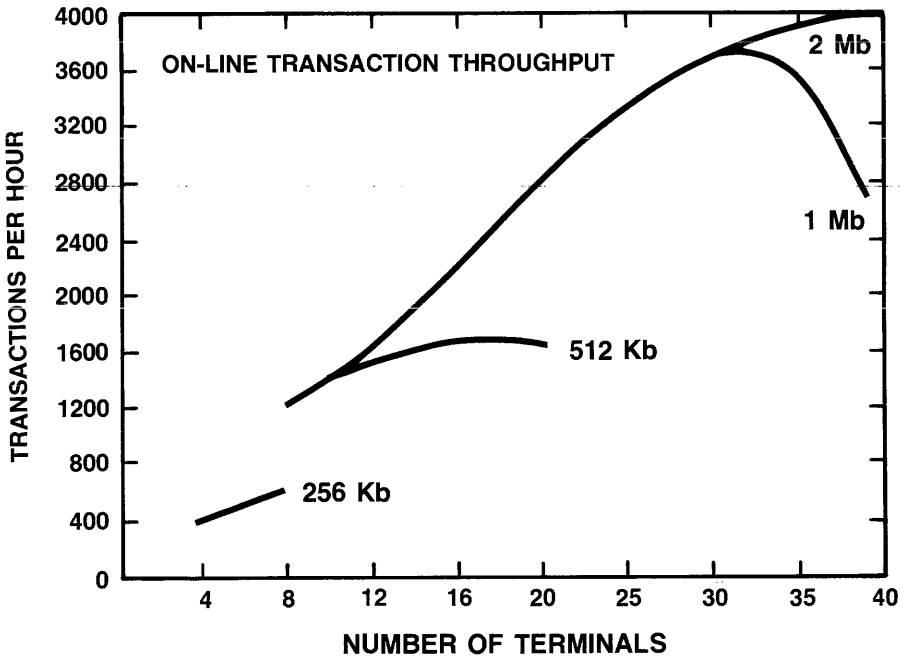
Price/Performance Range of the 3000 Product Line

I/O Growth Path

The base system configuration is 256 Kbytes with options to increase this to 512 Kb, 768 Kb, 1024 Kb, 1536 Kb and 2048 Kb. As with the Model 6, the Series III has 10 spare I/O slots and capacity to support 32 terminals. Option 200 of the Series III will add a third bay, 13 extra I/O slots and capacity for an additional 32 terminals (64 in all). This configuration is identical to today's Model 8.

Increased Performance

From a performance point of view, the large memory capacity of the Series III can be used to: increase the number of on-line terminals while keeping response time constant, increase system throughput, or decrease response time for a given number of terminals. The following graph illustrates these possibilities:



Industry Leader in Memory Price

From a price point of view, the Series III is the industry leader in large memory configurations. Series III memory is priced at $8,000 per 256 Kb including error correction. That's $32,000/ megabyte.

A Product Family: Series I, Series II, Series III

The Series III does not obsolete the Series I or the Series II. At $64,000 the Series I is still the lowest cost entry into the 3000 product line. Similarly, at $99,000 the 256 Kb Series II is the lowest cost entry system that can run MPE III (that's right . . . the base memory of the Series II is now 256 Kb up from 128 Kb with no increase in list price). The Series III is priced at $115,000 for a basic 256 Kb configuration, a higher price for greater expansion capability.

A Growth Path for Every 3000

Every HP 3000 customer, no matter which system he has, (PRE-CX, CX, Series I, or Series II) can upgrade to the Series III. Thus with the introduction of the Series III, Hewlett-Packard has significantly broadened the price/performance range and transaction processing capabilities of the 3000 product line to meet today's and tomorrow's data processing requirements.

MPE - C SOFTWARE UPDATE

MULTIPROGRAMMING EXECUTIVE OPERATING SYSTEM

****

CONTENTS OF INSTALLATION TAPE DATE CODE 1831

PRODUCT NAME	PRODUCT NUMBER	LEVEL	DATE CODE
*MPE	32000C	01.01	1831
SEGMENTER	32050A	00.00	1814
*SPL	32100A	06.06	1831
*BASIC	32101B	00.09	1831
*FORTRAN	32102B	00.10	1831
*BASIC COMPILER	32103B	00.09	1831
*RPG	32104A	03.08	1831
BUILDINT	32150A	03.01	1623
*EDITOR	32201A	07.03	1831
STAR	32204A	01.00	1603
SCIENTIFIC LIBRARY	32205A	02.04	1814
DEL/3000	32206A	01.07	1814
INDEX	32207A	01.02	1814
SDM	32210A	05.00	1508
*COMPILER LIBRARY	32211C	04.07	1831
*FCOPY	32212A	03.07	1831
COBOL	32213B	03.01	1814
COBOLC	32213C	02.01	1814
SORT/MERGE	32214B	01.07	1814
IMAGE	32215A	04.05	1814
*QUERY	32216A	03.05	1831
TRACE	32222A	03.03	1814
XA2100	32223A	01.03	1814
XL2100	32226A	02.00	1636
CALCOMP PLOTTER	30126A	00.01	1640
2780/3780 EMULATOR	30130D	00.02	1814
PROG CTRLR/BCS	30300A/ 30361A	00.00	1621
PROG CTRLR/RTE-C	30301A/ 30361A-1	00.02	1701
*ONLINE DIAGNOSTICS		-- --	1831
*OFFLINE DIAGNOSTICS		-- --	1831

*Products with asterisks are updated/changed on this Installation Tape and reference note files containing information about the modifications. Files which pertain to both MPE-C and MPE III appear in the MPE III Software Update Section only.

Note files (N00NYYYZ) contain the change information where:

YYY = last three digits of the product number. (e.g., MPE is HP32002; therefore, YYY=002)

Z = currently released version of product.

These files may be listed using EDITOR or FCOPY.

MPE 32000C.01.01

DATE CODE 1831, N00N000C.HP32000.SUPPORT

I. MPE 32000C.01.01

A. MODULES MODIFIED

MODULE		CHANGE HISTORY								
NAME	NO	C.00.XX						C.01.XX		
		11	12	13	14	15	16	00	01	02
INITIAL	0	X	X	X		X		X		
SYSDUMP	1		X		X	X	X	X		
SEGPROC	2							X		
SEGDVR	3		X							
DISPATCH	4	X	X							
LOAD	5		X					X	X	
MAPP	6						X			
UCOP	7									
DEVREC	8									
PROGEN	9		X			X	X	X		
ININ	10	X		X				X		
EXIN	11	X			X	X		X		
LOG	12									
IOPTRD0	13									
IOPTPN0	14					X				
IOPLOT0	15									
IOMDISK0	16							X		
IOFDISK0	17					X		X		
IOTAPE0	18									
IOLPRT0	19		X	X						
IOCDRD0	20									
IOCLTTY0	21							X		
IOTERM0	22	X					X	X		

MODULES MODIFIED (continued)

MODULE	CHANGE HISTORY									
NAME	NO	C.00.XX						C.01.XX		
IOCDPN0	23									
IOPRPN0	24	X	X			X		X		
IOREM0	25									
IOBSC0	26									
IOMDISK1	27					X		X		
PFAIL	30									
FILESYS	50	X	X	X	X	X	X	X		
COMM'INT	51	X	X		X	X	X	X		
STORE/RESTORE	52		X			X				
DIRC	53			X						
ALLOCATE	54	X	X			X	X			
DISKSPC	55									
MMCORER	56	X					X	X	X	
MMDISKR	57	X			X		X		X	
ABORTRAP	58	X		X			X			
MESSAGE	59	X				X	X	X		
CROUTINE	60	X					X	X		
IOUTILTY	61				X	X	X	X		
TTYINT	62					X	X	X		
PCREATE	63						X			
MORGUE	64						X	X	X	
PROCMAIL	65						X		X	
PINT	66	X		X		X				
DATASEG	67									
IOPM	68	X	X				X	X		
CHECKER	69									
UTILITY	70			X	X		X	X		
SEGUTIL	71		X		X	X		X		
LOADER1	72				X			X	X	
RINS	73		X							
JOBTABLE	74						X			
DEBUG	75						X			
NURSERY	76						X			
SYSDPLY	77			X						
FIRMWARESIM	78	X					X			
SPOOLING	79	X		X		X	X			
SPOOLCOMS	80		X			X	X	X		
MESSAGE CAT	--		X	X				X		

B. CORRECTIVE SOFTWARE CHANGES

1. PROCMAIL and MORGUE have been modified to correctly handle job termination when mail waits are present.

2. System failures 216, 217, 220, and 221 have been added to MMCORER to trap bad CST and DST indices passed to procedures GETDST, PUTDST, GETCST, and PUTCST, respectively.

3. The LOAD process previously left an extraneous word on the user's stack. It is now deleted.

4. LOADER1 now correctly handles the situation where a process is waiting for a program to be loaded, is awakened due to the completed load, and the program is unloaded before the process can reference it.

5. SIR handling has been corrected in LOAD.

6. Bit map initialization has been added in procedure SATISFY of LOAD.

7. System failures 222 and 223 have been added to procedure ADJSEG in LOADER1 to trap bad loader segment table reference count fields.

8. System failure 225 has been added to MMDISKR to trap bad table indicies.

C. KNOWN PROBLEMS

1. Lower case :EOD is not recognized as an end-of-file on data accepting devices.

2. The line printers 2613A, 2617A, and 2618A may intermittently report a unit failure condition to the I/O driver that will abort the print operation. This condition has been observed when the unit is brought online after being placed offline while printing.

3. The directory may indicate a table overflow even though there is room available. This situation has been observed when doing a full RELOAD on a system with a full directory, and on systems where large numbers of files are created and purged daily.

4. The EOF on a disc file can exceed the file limit. This situation occurs as a result of files being allocated on sector boundaries.

5. When configuring I/O devices in INITIAL, if the I/O device is greater than the maximum DRT number, the system may wipe out lower memory.

6. System clock overflow counter overflows after 24 days of continuous running giving bad current dates and times.

7. Store bit in file label may remain set after STORE if accessed by another process during the STORE.

II. SUPPORTED UTILITIES

A. UTILITIES MODIFIED

UTILITY	C.00.XX						C.01.XX		
	11	12	13	14	15	16	00	01	02
DISKEDIT									
DPAN		X				X			
FREE							X		
LISTDIR									
LISTEQ		X				X			
LISTLOG									
PATCH									
RECOVER							X		
SAEDIT					X		X		
SAVIOUR					X		X		
SLPATCH									

B. KNOWN PROBLEMS

When DPAN finds that the PCB table has been filled, it prints the erroneous messages, "INVALID UNASSIGNED ENTRY" and "INVALID BACKWARD SUBQUEUE POINTER", even though there is no error in the PCB table.

COMPILER LIBRARY/3000 HP32211C.04.07

DATE CODE 1831, N00N211C.HP32211.SUPPORT

A. CORRECTIVE SOFTWARE CHANGES

Internal changes have been made to the compiler library due to changes in the MPE operating system.

RELEASE ISSUE OF THE SERIES I ONLINE DIAGNOSTICS.

DATE CODE 1831, NDONLN.HPONLN.SUPPORT

I. MAGNETIC TAPES ASSOCIATED WITH HPONLN

SOURCE	30000-1X007
MAINTENANCE	30000-1X008

II. ON-LINE DIAGNOSTICS 1831

DIAGNOSTIC NAME	NAME	LEVEL	COMMENTS
DISC FILE-2888A	PD360A	00.00	
CART DISC-7900A	PD361A	00.00	
MAGNETIC TAPE	PD362A	03.00	
TERMINAL DATA	PD363A	02.00	
CARD READER	PD365A	05.00	
LINE PRINTER	PD366A	03.00	FOR 2607/10/14
LINE PRINTER	PD366B	01.01	FOR 2607/13/17/18
TELEPRINTER	PD367A	02.00	
TERMINAL CONTROL	PD368A	01.00	
2640 TERMINAL	PD369A	00.00	
CARD PUNCH	PD370A	00.00	
TERM-2600A	PD371A	00.00	
PAPER TAPE READER	PD372A	01.00	
PAPER TAPE PNCH	PD373A	01.00	
TERM-2635A	PD374A	00.00	
TERM-2762A/B	PD375A	00.01	
CALCOMP PLOTTER	PD376A	00.00	
TERM-2615A	PD378A	01.01	
CARD-READ/PUNCH	PD379A	01.01	

RELEASE ISSUE OF THE SERIES I STANDALONE DIAGNOSTICS.

DATE CODE 1831, NDOFFLN.HPOFFLN.SUPPORT

I. MAGNETIC TAPES ASSOCIATED WITH HPOFFLN

SOURCE	30000-1X005
MAINTENANCE	30000-1X006
CPU COLD LOAD	30000-1X001
NON-CPU C/L	30000-1X002

II. OFFLINE DIAGNOSTICS 30000-1X002, DATE CODE 1831

A. DIAGNOSTICS CHANGED

DIAGNOSTIC NAME	NAME	LEVEL	OCTAL FILE #
*SLEUTH	PD211A	02.03	(01)
SDUP	D217A	04.01	
CART DISC-7905A	PD319A	02.02	(02)
MEMORY PATTERN	PD321B	00.00	(03)
MULTIPLEXOR CHAN	PD322A	00.00	(04)
DISC FILE-2888A	PD323A	01.00	(05)
CART DISC-7900A	PD324A	01.00	(06)
SYSTEM CLOCK	PD325A	00.00	(07)
TELEPRINTER	PD326A	00.00	(10)
FIXED HEAD DISC	PD328A	02.00	(11)
SELECTER CHAN	PD329A	00.00	(12)
TERM-2762A/B	PD330A	01.00	(13)
EXTEND FLT PT	PD331A	00.00	(14)
HSI (unused)	PD332A	00.00	
MAGNETIC TAPE	PD333A	01.01	(15)
SSLC INTERFACE	PD334A	01.00	(16)
UI DIAG	PD335A	00.01	(17)
CARD-READ/PUNCH	PD336A	00.01	(20)
DECIMAL FIRMWARE	PD337A	00.00	(21)

* UPDATED/CHANGED in this IT

B. CORRECTIVE SOFTWARE CHANGES

STAND ALONE SLEUTH DIAGNOSTIC

1) The CONF command in SLEUTH will nc longer halt the program.

III. SLEUTH CANNED PROGRAMS

A. PROGRAMS

VERI7920
VERI7925

IV. CPU DIAGNOSTICS 30000-1X001, DATE CODE CL 1403/MAINT 1531

SECTION	FILE NAME	REV
1	PD320A	03.00
2	PD320A1	03.00
3	PD320A2	03.00
4	PD320A3	03.00
5	PD320A4	03.00

MPE III SOFTWARE UPDATE

MULTIPROGRAMMING EXECUTIVE OPERATING SYSTEM

****

CONTENTS OF INSTALLATION TAPE DATE CODE 1831

PRODUCT NAME	PRODUCT NUMBER	LEVEL	DATE CODE
*MPE	32002B	00.01	1831
SEGMENTER	32050A	00.00	1814
*SPL	32100A	06.06	1831
*BASIC	32101B	00.09	1831
*FORTRAN	32102B	00.10	1831
*BASIC COMPILER	32103B	00.09	1831
*RPG	32104A	03.08	1831
API/3000	32105A	00.05	1814
BUILDINT	32150A	03.01	1623
*DS/3000	32190A	02.02	1831
MRJE	32192A	00.02	1814
*MTS	32193A	00.01	1831
*EDITOR	32201A	07.03	1831
SCIENTIFIC LIBRARY	32205B	00.03	1814
DEL/3000	32206A	01.07	1814
*KSAM/3000	32208A	02.01	1831
*COMPILER LIBRARY	32211D	00.07	1831
*FCOPY	32212A	03.07	1831
COBOL	32213C	02.01	1814
SORT/MERGE	32214B	01.07	1814
*IMAGE	32215B	01.00	1831
*QUERY	32216A	03.05	1831
TRACE	32222A	03.03	1814
XA2100	32223A	01.03	1814
XL2100	32226A	02.00	1636
PROG CONTROLLER 30300B/30361B-BCS	30361B	00.00	1621
PROG CONTROLLER 30301B/30361B-1-RTE	30361B-1	00.02	1701
RJE 2780/3780	30130E	00.02	1814
CALCOMP PLOTTER	30126A	00.01	1640
*DIAGNOSTICS	32230A	-- --	1831

DIAGNOSTIC INFORMATION IS CONTAINED IN THE FILE N00N230A.

*Products with asterisks are updated/changed on this Installation Tape and reference note files containing information about the modifications.

Note files (N00NYYYZ) contain the change information where:

YYY = last three digits of the product number. (e.g., MPE is HP32002; therefore, YYY=002)

Z = currently released version of product.

MPE HP32002B.00.01

DATE CODE 1831, N00N002B.HP32002.SUPPORT

I. MPE 32002B.00.00

A. MODULES MODIFIED B.00.01

	MODULE		CHANGE HISTORY												
	NAME	NO	A.01.XX			B.00.XX									
			1	2	MR	0	1	2	3	4	5	6	7	8	9 10
	INITIAL	0	X		X	X	X								
	SYSDUMP	1	X		X	X	X								
*	SEGPROC	2													
*	SEGDVR	3													
	DISPATCH	4				X									
	LOAD	5				X	X								
	UCOP	7				X	X								
	DEVREC	8				X	X								
	PROGEN	9	X		X	X	X								
	ININ	10	X	X		X									
	MEMLOGP	11				X									
	LOG	12		X		X									
	IOPTRD0	13				X									
	IOPTPN0	14		X		X									
	IOPLOT0	15				X									
	IOMDISC0	16													
	IOFDISC0	17													
	IOTAPE0	18	X	X		X									
	IOLPRT0	19				X									
	IOCDRD0	20				X									
	IOTERM0	22	X	X		X									
	IOPRPN0	24		X		X									
	IOREM0	25													
	IOMDISC1	27		X		X									
	PFAIL	30													

MODULES MODIFIED B.00.01 (continued)

MODULE		CHANGE HISTORY				
NAME	NO	A.01.XX			B.00.XX	
PVPROC	31				X	X
VINIT	32				X	X
MAKECAT	40				X	
FILESYS	50	X	X	X	X	X
COMM'INT	51	X	X	X	X	X
STORE/RESTORE	52	X			X	
DIRC	53				X	X
ALLOCATE	54	X	X		X	X
DISCSPC	55					
MMCORER	56	X	X		X	X
MMDISKR	57	X	X		X	X
ABORTRAP	58		X		X	
MESSAGE	59				X	X
CROUTINE	60	X	X		X	
CLOCKIO	61	X			X	
NRIO	62	X	X		X	
PCREATE	63		X		X	
MORGUE	64	X	X		X	
PROCMAIL	65					
PINT	66	X	X		X	
DATASEG	67	X	X		X	X
CRIO	68	X	X	X	X	
CHECKER	69				X	X
UTILITY	70	X	X		X	
SEGUTIL	71					
LOADER1	72		X		X	X
RINS	73					X
JOBTABLE	74	X	X		X	X
DEBUG	75				X	
NURSERY	76				X	X
STKDUMP	77					
FIRMWARESIM	78				X	
SPOOLING	79	X	X		X	
SPOOLCOMS	80	X	X		X	
PVSYS	81				X	X
UDC	82				X	
USER	83				X	
HELPUSER	84				X	
LABSEG	86				X	X
SDISC	87				X	X
CATALOG					X	X
CICAT					X	

SYSTEM	LAST CHANGE NUMBER
B.00.00	0066
B.00.01	0134

NOTE: Each change made to MPE is now identified by a unique change number in columns 64/72 (e.g. <<00120>>). This matrix provides the range of the change numbers used to build each version of MPE.

*Segmenter modules have been moved to HP32050.

B. ENHANCEMENTS

1. The REPORT command has been changed to allow the reporting of non-system volume set by the addition of VS=<vs name>. See Documentation Section.

2. ALTACCT and ALTGROUP commands have been changed to allow altering of account and group entries in non-system volume sets. See Documentation Section.

3. HP7925 disc can now be a private volume.

4. Added the ability to log communications with the system console. SYSDUMP initializes the capability via a new log type.

5. PROGEN. HELP may be accessed at system startup by setting bit zero of system switch register on.

C. CORRECTIVE SOFTWARE CHANGES

1. INITIAL. This fix does the following:

   a. Corrected the method of returning space to alleviate the "DISC DRIVER DOES NOT EXIST" problem.

   b. On coldloads from SDISC, keep Tzt core resident wherever possible for performance reasons.

   c. Only allow removable subtypes in serial disc classes.

d. Clean up the operator dialog for switching unit numbers during coldload from serial disc.

e. Deleted "OKAY TO MOUNT NEXT VOLUME" from rewind and unload function for serial discs.

f. Extend SYSDB size to %1000 words to allow room for softdump area.

2. SYSDUMP. The following changes have been made:

a. Expanded the facilities to detect and correct pseudo-cylinder overflows on the 7905 and 7906.

d. Removed all but the removable subtypes from the serial disc classes.

3. NURSERY. This change causes suppression of passwords (user/account/group) from the $STDLIST device that issued the :STREAM command when an error is discovered on the :JOB line of a stream file. (SMR #4055).

4. JOBTABLE. Prior to this fix the following sequence of file equations would hang a session or job:

```
FILE A,B,C=D
FILE F=*A,B,C
FILE F=G
```

(SMR #4584).

5. MMCORER. An internal memory manager queue is no longer destroyed if an IOFREEZE occurs while MAM is discarding processes.

6. MMCORER/MMDISKR. To resolve a data overrun problem, two uncallable procedures were changed to allow them to execute with interrupts enabled.

7. MMCORER. Memory Management Tables for extended memory sizes to "float" to allow for differing size of dump area beginning at 1400.

8. MMCORER/INITIAL. Changes allocation of SYSGLOB extension. %377 of SYSDB now contains SYSDB relative pointer to extension area.

9. SDISC. This change initializes XDS on open request when just allocated from label and fixes double sector address calculation in Declarehole.

10. COMM'INT. Use of UDC's will no longer cause System Failure 134.

11. COMM'INT. Prior to this fix, calls to Command Intrinsic resulted in clobbering of the user's stack (DB+%260).

12. DATASEG. More extensive bounds checking is performed in DMOVIN and DMOVOUT.

13. UCOP. Maxdata for CI processes has been increased from 4800 to 5312 to accomodate the needs of REMOTE IMAGE.

14. FILESYS. Error allowing file names to start with numeric character in FOPEN has been fixed. Also, fixed wrong position with rewind disposition on FCLOSE with labelled tapes. (SMR #4648).

15. FILESYS/COMM'INT. :RELEASE, :SECURE and :ALTSEC no longer yield a security violation if the creator does not have read access to the file.

16. FILESYS. Corrects previous change to give error on numeric formal designator.

17. FILESYS. The following changes have been made.

    a. SETACB - Internal documentation change.

    b. FPREP/FGETINFO - bounds check fixes.

    c. FREAD/FCONVBLD/FNUBUF - Length of multirecord short read at EOF or write past end of file space is no longer returned incorrectly.

    d. FCREATE - Extent size made type LOGICAL.

    e. GETREC - Code for illegally formatted V-record tape read.

    f. FOPENDA - Check for FCB open count overflow.

    g. FCLOSE - Disposition code six.

    SMR #4846, #4838, #2048.

18. FILESYS/DIRC. The following problems have been fixed:

    a. FOPEN didn't return 0 on errors.

    b. Premature EOF on multi-extent files was reported when using execute-access (e.g. :SETCATALOG).

c. FRENAME deleted file if user didn't have save access to groups (new and old).

d. FRENAME failed to insure creator/user ID's matched.

19. LABSEG. Fixed file seq. number limitation from 255 to 9999 files for labelled tape. Fixed requirement for labelled tape so that less than six characters will be accepted.

20. LOADER1. A system failure would sometimes occur while aborting a program on Private Volume. This bug has been fixed.

21. ALLOCATE. This change corrects a problem in ALLOCATE which fails to properly calculate LDTX offset in LDTDST and can cause suddendeath #9 in some cases. This problem has been observed on odd bank systems.

22. RINS. Bounds checking has been corrected in LOCKGLORIN intrinsic. (SMR #5027).

23. MESSAGE. Prior to this change, some messages which exceeded CRT width would lose a character on continued lines.

24. SYSDUMP

a. This change cleans up LDTX in initialization section to prevent serial discs mounted during sysdump from being trapped as "in use" after the load from tape. SMR# 5222.

b. Allows 7925 in serial disc classes.

c. Only allows R7905/7920/7925/R7906/7902 in serial disc classes. SMR# 5225.

d. Call GENMSG to interpret the error number returned from STORE. SMR# 5269.

25. COMM'INT. Correction to REPORT command, where list file specifier could not be used together with UV parameter.

26. LOADER1. This change fixes a timing problem which could result in a SF126 when two processes were trying to load the same program file simultaneously.

27. LOAD. SIR handling corrected so that SIR is always held when referencing loader segment table. LOADPROC no longer leaves extraneous word on stack.

28. CATALOG. This change prevents "MISSING MSG" error in case of two DS errors.

29. NURSERY. Occasional System Failure 311 upon logon for user with higher MAXPRI than account will no longer occur. SMR #5435 and #5436.

30. FILESYS. Prior to this change, FOPEN of a new, fully-qualified file on a system domain group, then FRENAME (to logon PV group), then FCLOSE (permanent) when logged on to PV group resulted in SF 206 or 407, due to bad directory. This situation is now disallowed.

D. DOCUMENTATION CHANGES

1. COMMAND CHANGES

Nature of Changes

Addition of the ALT sub-parameter. Directs the altering of an account or group entry in the specified volume set. Useful only if it is necessary to alter account and group file space limits for entries that have already been spanned.

Addition of the VS parameter. Directs the reporting of accounting information from the specified volume set.

a. ALTACCT acctname

[;VS=volset:πALTSPAN→]

b. ALTGROUP groupname

[;VS=[volset[:πALTSPAN→]]]

c. REPORT

[;VS=volset]

E. KNOWN PROBLEMS

See HP 3000 Software Status Bulletin

II. SUPPORTED UTILITIES

A. UTILITIES MODIFIED

UTILITY	A.01.XX			B.00.XX									
	1	2	MR	0	1	2	3	4	5	6	7	8	9	10
DISKED2	X	X		X										
DPAN2	X	X		X	X									
FREE2	X	X		X	X									
LISTDIR2	X			X	X									
LISTEQ2	X			X										
LISTLOG2	X	X		X	X									
PATCH	X	X		X										
MEMLOGAN	X	X		X										
MEMTIMER	X	X		X										
SADUTIL	X			X										
SLPATCH	X			X										
SPOOK	X			X	X									
RECOVER2	X	X		X										

B. ENHANCEMENTS

1. SPOOK. Addition of procedures to copy, append spoolfiles. These new features are not available across communication lines (DS/3000), and are incompatible with B.00.00.

2. LISTLOG2. Causes LISTLOG2 to list console logging as a log type.

3. DPAN2. Expanded the formatted portion of a dump to facilitate ease of use.

C. CORRECTIVE SOFTWARE CHANGES

1. LISTDIR2. Extent sizes exceeding 32767 were previously displayed as negative numbers. This is now fixed.

2. FREE2. This change allows system break after it has been disabled.

3. SPOOK. COPYALL will not correctly result in a spoolfile for $STDLIST input. Previously it copied file to terminal.

SPL/3000 HP32100A.06.06

DATE CODE 1831, N00N100A.HP32100.SUPPORT

The SPL source will be resequenced and combined with the maintenance file using this maintenance file (from IT 1831). This will be done by using the control card $EDIT SEQNUM=1000 when compiling the SPL compiler. The resulting new file will be the resequenced source, called A.07.00, and released on the next IT.

BASIC/3000 HP32101B.00.09

DATE CODE 1831, N00N101B.HP32101.SUPPORT

A. ENHANCEMENTS

1. PRINT USING and MAT PRINT USING to ASCII files is now permitted. The basic syntax is:

```
[MAT] PRINT# filenumber [,recordnumber]
     [;]USING π label/stringexpr→ [;list]
```

[MAT] PRINT USING to ASCII files works in the save manner as [MAT] PRINT USING except that output is directed to the specified ASCII file. A record number may optionally be used for direct access. The list is a MAT PRINT USING list or a PRINT USING list as appropriate. END may be used at the end or instead of the list. The ";" before "USING" is optional. BASIC will accept ";" before "USING", but it will not be printed when the line is listed.

2. A MARGIN statement has been added to BASIC/3000. The syntax is:

```
MARGIN [#filenumber,] marginsize
```

MARGIN sets the effective line length for [MAT] PRINT and [MAT] PRINT# statements. If the file number is 0 or is not specified, then the margin for the PRINT statement is set. Otherwise, the margin is set for the appropriate ASCII file. The margin size may not be greater than the record size or less than 15. If a marginsize outside of these bounds is specified, a warning will be given and the margin will be set to 15 or to the record size as

appropriate. Both the file number and the margin size may be numeric constants, variables, or expressions.

Setting a margin has no affect on [MAT] PRINT USING or file [MAT] PRINT USING statements.

3. The line number limit has been increased to 15999. All commands which accept line numbers now accept line numbers up to 15999. In additon, program listings have been adjusted to print 5 digit line numbers.

4. The ITM function has been added to BASIC/3000. The syntax is:

ITM(filenumber)

The file number can be a numeric constant, variable or expression. Its value must be a valid local file number for a currently open BASIC formatted file. The result of the function is a real value showing the number of data items between the beginning of the currently accessed record and the position of the file pointer for the file (i.e. it does the same thing as ITM in 2000 BASIC).

5. The ASSIGN statement has been enhanced to allow for the new restriction codes RD and RL. RD and RL have the same effect as NR and NL respectively, except that the file is opened with read only access. All of the currently existing restriction codes have the same effect as before. This change allows other programs that ASSIGN with WR and WL to be started at a later time and still work.

B. CORRECTIVE SOFTWARE CHANGES

1. The MOD operator produced inaccurate results whenever one of the operands had a very large value. This has been corrected. [SMR# 4811]

The FORTRAN source will be resequenced and combined with the Maintenance file using this Maintenance file (from IT 1831). This will be done by using the control card $EDIT SEQNUM=1000 when compiling. The new file that results will be the resequenced source called B.01.00 and released on the next IT.

A. CORRECTIVE SOFTWARE CHANGES

SMR #3775 - The intrinsic INDEX was not working properly when called with two strings, such as INDEX('ABCD','-'). Incorrect code was produced. This has been fixed.

SMR #4741 - The compiler was incorrectly generating the USL file for entry points in subroutines when they fell on record boundries in the USL file. This has been fixed.

SMR #4607 - The code generated by the compiler to allocate memory and addresses for character arrays caused an INTEGER OVERFLOW error if the stack pointer was greater than or equal to 16384. The compiler was changed to generate a logical subtract in order to avoid the overflow error.

SMR #4957 - The use of an EQUIVALENCE statement to equivalence character variables resulted in an INTEGER OVERFLOW error at the time of program execution if the stack pointer was greater than 16384. The compiler was changed to emit a logical subtract instruction, thus avoiding the overflow.

SMR #4697 - The compiler generated incorrect code for statements of the form I=I+(-J) where J=1 or J=2, which resulted in the unary minus sign being ignored. This has been fixed.

SMR #4594 - The compiler generated incorrect code for comparisons which involved a type CHARACTER variable with dynamically specified length and a character constant. This has been fixed.

BASICOMP/3000 HP32101B.00.09

DATE CODE 1831, N00N103B.HP32103.SUPPORT

A. ENHANCEMENTS

1. PRINT USING and MAT PRINT USING to ASCII files is now permitted. The basic syntax is:

```
[MAT] PRINT# filenumber [,recordnumber]
     [;]USING #label/stringexpr# [;list]
```

[MAT] PRINT USING to ASCII files works in the save manner as [MAT] PRINT USING except that output is directed to the specified ASCII file. A record number may optionally be used for direct access. The list is a MAT PRINT USING list or a PRINT USING list as appropriate. END may be used at the end or instead of the list. The ";" before "USING" is optional. BASIC will accept ";" before "USING", but it will not be printed when the line is listed.

2. A MARGIN statement has been added to BASIC/3000. The syntax is:

```
MARGIN [#filenumber,] marginsize
```

MARGIN sets the effective line length for [MAT] PRINT and [MAT] PRINT# statements. If the file number is 0 or is not specified, then the margin for the PRINT statement is set. Otherwise, the margin is set for the appropriate ASCII file. The margin size may not be greater than the record size or less than 15. If a margin size outside of these bounds is specified, a warning will be given and the margin will be set to 15 or to the record size as appropriate. Both the file number and the margin size may be numeric constants, variables, or expressions.

Setting a margin has no affect on [MAT] PRINT USING or file [MAT] PRINT USING statements.

3. The line number limit has been increased to 15999. All commands which accept line numbers now accept line numbers up to 15999. In additon, program listings have been adjusted to print 5 digit line numbers.

4. The ITM function has been added to BASIC/3000. The syntax is:

```
ITM(filenumber)
```

The file number can be a numeric constant, variable, or expression. Its value must be a valid local file number for a currently open BASIC formatted file. The result of the function is a real value showing the number of data items between the beginning of the currently accessed record and the position of the file pointer for the file (i.e. it does the same thing as ITM in 2000 BASIC).

5. The ASSIGN statement has been enhanced to allow for the new restriction codes RD and RL. RD and RL have the same effect as NR and NL respectively, except that the file is opened with read only access. All of the currently existing restriction codes have the same effect as before. This change allows other programs that ASSIGN with WR and WL to be started at a later time and still work.

B. CORRECTIVE SOFTWARE CHANGES

1. The BASIC compiler was previously able to list RUNONLY programs. It can no longer do so. [SMR# 4531]

2. Exponentiation in a compiled BASIC program produced slightly inaccurate results when either the base or exponent was type LONG and the exponent was a whole number. This has been corrected.

RPG HP32104A.03.08

DATE CODE 1831, N00N104A.HP32104.SUPPORT

A. ENHANCEMENTS

1. The file system requires that if any of several processes desire to lock a file (in order to achieve data integrity), then each process must open the file with dynamic locking specified. If the LOCK continuation card is specified for a file, then RPG will open the file with dynamic locking specified and will call the FLOCK/FUNLOCK intrinsics before/after doing I/O on the file. This locking/unlocking is always done regardless of the file designation. In order to improve performance, RPG has been enhanced to allow a file to be opened with dynamic locking, but to NOT call FLOCK/FUNLOCK. This nolocking feature is specified by placing "NOLOCK" in columns 54-59 of the F spec continuation card. The RPG user is cautioned that if NOLOCK is used, there is no guarantee as

to the currency of that user's buffers. That is to say, the buffers may not reflect the current state of the file if there are concurrent processes updating the file with LOCK specified.

B. CORRECTIVE SOFTWARE CHANGES

1. SMR #4109 Error #760 referenced only IMAGE files; the message has been changed to reflect KSAM and RSAM.

2. SMR #4107 A 15 character name in the DSNAME continuation record could not be used because of an error; that is to say, the name had to be 14 characters or less.

3. SMR #3895 RPG did not detect a run-time file system error for an output file which had spacing and/or skipping specified and whose actual designator was a disc file.

4. SMR #4189 & SMR #4321 RPG was sorting the cross-reference for 'Field Names Used' on the first 2 characters only, instead of the full field name.

5. SMR #4467 RPG did not monitor the current line number correctly when total time output extended beyond the end of the form.

6. SMR #4149 RPG limited DSPLY output lines to a maximum of 48 characters and input lines to a maximum of 31 characters. RPG now sets DSPLY line length according to the configured line length of the device as stated on page 8-51 of the reference manual.

C. DOCUMENTATION CHANGES

1. The RPG reference manual references FIELD in compile time error #768, it should reference FIELD1.

2. The RPG reference manual indicates that error #760 references only IMAGE, it should reference KSAM and RSAM also.

3. The RPG reference manual indicates that position 62 on the Header record can contain 1,2,3,4,5 ; it should indicate that 0,2,3,4,5 are acceptable.

4. The following changes should be noted in the RPG manual, which will be updated on the next revision cycle, to reflect enhancement number one.

Page 4-29 (Table 4-2).

(Cols 54 thru 59 entry)

NOLOCK Opens this file so that other concurrent users of the file can specify LOCK; however,this option will not dynamically lock and unlock the file. (Does not apply to RSAM and IMAGE files).

(cols 60 thru 65 entry)

(Not Applicable)

WARNING

Use of the NOLOCK feature may invalidate the integrity of data read by the RPG program. See further discussion below.

Page 4-30 (replace last two paragraphs)

You may also use the Option Type Field to allow users either exclusive or shared access to a file during input/output operations.

Request exclusive access by entering LOCK in this field; this temporarily locks the file against other input/output requests each time you access it. You may wish to do this; for instance, when you are running a program concurrently with other programs that update the same file. This would prevent simultaneous update of the same records on that file; no other programs could access the file whenever your program was accessing a record on it.

Request shared access by entering NOLOCK in this field; this allows the file to be opened so that other concurrent users of the file can specify LOCK; however, this users access is performed without dynamically locking and unlocking the file. You may wish to do this; for instance, when you are running a program that will be performing READ-ONLY operations on the file concurrently with other programs that are performing UPDATE operations on the file. Use of this option will increase program performance by eliminating the software overhead associated with locking/unlocking.

NOTE

The NOLOCK feature is NOT restricted to input files. You should use it with the full knowledge that buffer currency for both input and update files, accessed by your

program, cannot be guaranteed. Thus, if you are concerned with buffer currency, you should NOT use this feature.

The LOCK/NOLOCK entry is not valid for RSAM and IMAGE files, but it can be used for KSAM and all other files. The continuation record on which LOCK/NOLOCK appears must immediately follow the file description specification for the file to be LOCKED/NOLOCKED.

When the LOCK option is specified for a file, input/output is conducted as follows:

- An input file is locked, read, and unlocked.
- An output file is locked, written to, and unlocked.
- An update file is locked, read, updated, and unlocked.

Note: If an update file has been locked and read but not updated (and thus not unlocked) by a program, RPG unlocks this file when the program again attempts to read it at the start of the next cycle. This allows other programs which are waiting for the file to be serviced.

D. MISCELLANEOUS

1. All holders of the RPG compiler and library source note, after installation of the next IT (IT 1844), the M00M104A and M01M104A files should be merged with the current source tapes. The source files should then be resequenced.

DS/3000 HP32190A.02.02

DATE CODE 1831, N00N190A.HP32190.SUPPORT

A. ENHANCEMENTS.

1. More performance improvements have been made. These changes will primarily improve RFA transmission of short records over HSI links. For instance, FCOPYing a standard 80-byte ASCII file from one system to another should be faster.

2. If the user requests a specific buffer size with the LINEBUF= parameter of the :DSLINE command, and the requested size cannot be allocated for any reason, a warning message is issued giving the actual buffer size allocated (also see corrective change #1).

3. A new entry point, "VERS", has been added to DSTEST. It prints the version number of each DS module. Since some DS modules are not automatically stored with a SYSDUMP, problems have arisen in the past because different versions of DS were being mixed or simply because the latest version was not being run. The version information should be checked when submitting bug reports. In order to run DSTEST.PUB.SYS,VERS, the user must have READ access to the DS program files in PUB.SYS.

B. CORRECTIVE SOFTWARE CHANGES

1. READs and PRINTs of more than 255 characters are now possible, so DEL will now work properly in block/page mode over DS lines.

   The rules determining the maximum READ or PRINT size are:

   - Default is 256 characters.
   - If the user specifies a LINEBUF= parameter in the :DSLINE command, the maximum is approximately that many words (actually exactly 2*buffer size-10 characters).
   - If the requested buffer size cannot be obtained because another user has the line open with a smaller buffer size, that size will determine the maximum READ or PRINT size.

   A LINEBUF size of 2000 words is generally adequate for a full screen of data and non-printing characters. If a READ or PRINT is too large, an error (CCL) will be returned to the user program (previously, PRINTing or READing more than 255 characters simply wrote over the DS

extra data segment and possibly into other users' memory, possibly causing miscellaneous errors or system failures).

2. EOF on $STDIN is now handled correctly in all cases. The REMOTE command now correctly resets the proper EOF indicators before returning to a user program, so the program may continue to read from $STDIN. The command :REMOTE :EOF: no longer locks out the DS pseudo terminal.

3. Various problems with break, ABORT and RESUME have been corrected.

4. An attempt to do a POPEN to a slave session which is already in break mode will now return an error #225.

5. PTOP intrinsics now work correctly in split stack mode.

6. A System failure 913 no longer occurs when slave side PTOP programs are not terminated correctly.

C. KNOWN PROBLEMS

1. After breaking a PTOP operation during slave access to $STDIN or $STDLIST, RESUME sometimes doesn't work.

2. A remote command issued from a batch job which results in an error in the remote session that would cause termination of a batch job does not terminate the local batch job.

3. A console =ABORTJOB of a DS master job or session which is in the process of transmitting continuation records may cause a system failure #10. Do a break and abort of the program from the user terminal instead. If that is not possible, abort the slave session first.

4. A REMOTE HELLO to a slave session which is in break mode, followed by a response of YES to the ABORT? question will result in strange behavior. The REMOTE HELLO command must be repeated.

MTS/3000 HP32193A.00.01

DATE CODE 1831, N00N193A.HP32193.SUPPORT

A. ENHANCEMENTS

MTS/3000 allows access to the HP 2645 Multipoint Terminals by way of device-independent File System.

B. CORRECTIVE SOFTWARE CHANGES

1. A check for mutual compatibility of MTS/3000 modules was added.

2. CCLOSE intrinsic is now called before the MPMON process terminates.

3. If CS error 207 or 223 occurs, the terminal is selected and two ASCII NULLs are sent to the terminal.

4. The line is not shut by MTS when POWERFAIL occurs and terminals operate in hardwired configuration. Active terminals will receive system message " I/O ERROR ON INPUT ".

5. IDLIST parameter is set to 0 when COPEN is called.

6. No message is output when CS error 206 is detected (RVI received).

7. Extra data segments serving as terminal read buffers are now reserved only when line is open.

C. DOCUMENTATION CHANGES

1. The message identifying MTS/3000 version was changed as follows:

   -MULTIPOINT VERSION A.00.01

2. The following messages were added:

   -LINE CAN'T BE OPEN(INCOMPATIBLE MTS VERSIONS)
   -LINE CAN'T BE OPEN (UNABLE TO GET DATA SEG.)
   -LINE WAS BEING SHUT BUT IS NOW REOPENED

D. KNOWN PROBLEMS

1. The terminal user should always wait for a prompt (or a prompting message) before entering data. Otherwise some data may be unexpectedly lost.

2. The MPLINE...TRACE command parameters are not always passed to the CS intrinsics. This problem may occur as a result of the MPMON stack growing larger than it was when the pointer to the TRACE vector was computed. As a result, the MASK and WRAP parameters may not be executed as expected.

EDIT/3000 HP32201A.7.03

DATE CODE 1831,N00N201A.HP32201.SUPPORT

A. ENHANCEMENTS

1. A new feature has been added to the EDITOR that allows you to type MPE commands without having to BREAK. The form of the command is as follows:

```
/:SHOWJOB
/:BUILD .....
/:FILE  .....
/:PURGE .....
```

The colon is required to indicate that it should pass the rest of the record to MPE without regard to semicolons. These commands may be in USE files. They cannot be in WHILE blocks. They can contain Z:: for substitution of parameters. Typing a BREAK during the execution of the command will cause a break in the EDITOR and when RESUME is typed, the command will resume. Any errors or warnings will be reported as follows:

```
***COMMAND ERROR  m,n
```

The first number, (m), indicates the message number, and the second, (n), the parameter in error. (These are the same as returned by the COMMAND intrinsic.) UDC's are not currently recognized and will cause error #0, as will any invalid commands. The RUN command is also invalid and will cause error #12. See the MPE INTRINSICS manual, page 4-9 for a list of valid commands.

2. The restrictions on the short forms of TEXT and KEEP in regards to not being able to have additional commands on the same line are removed. Also the same restriction in the following command is removed:

```
T  XYZ;L ALL
```

where XYZ is unnumbered.

3. The PROCEDURE command with no options, will call the last loaded user procedure, with the current line.

4. BEGIN-END pairs can be used outside of WHILE blocks, but will not iterate.

5. Echoing of commands during the processing of a WHILE command will no longer print the commands twice in a batch job. The form in a session will be the same as a job, with the nesting indicated and the "-" indicating FLAG is false.

6. The INSERT command saves the remainder of the line where the insert is being made. Prior to this release of EDIT/3000, if more lines were added than space allowed, the remainder was lost without any indication. Now, a warning message is printed, as well as the remainder.

7. If the TEXT file contains variable length records, (type "V"), "VARIABLE" will be set.

8. An entry point to the EDITOR is available that will automatically TEXT in a file when the first command is typed, and will KEEP it when EXIT is typed. To use:

```
:FILE EDTTEXT=FILENAME
:RUN EDITOR.PUB.SYS,BASICENTRY
/L ALL
/A
/EXIT
```

The FILE equation must be used even if FILENAME is EDTTEXT itself. When this special entry is used, the commands TEXT and KEEP are disallowed since they are done automatically to that specific file name.

B. CORRECTIVE SOFTWARE CHANGES

1. SMR's #1223, #1422, #2804, #4242, #4560, #4561 - all problems with the INSERT command have been fixed except for the position of the pointer after the insert. Also a warning message is issued if part of a line is lost when there is no more room to insert lines. The lost line is also printed out.

2. SMR #3264 - EXPLAIN command updated. References to "text file" are replaced by "work file".

3. SMR #3265 - & (continuation) will no longer insert a blank.

4. SMR's #2274,#3274 - the bounds violation in the MODIFY command has been fixed.

5. SMR #3357 - ADD will no longer add past 999.998 with FORMAT=COBOL.

6. SMR #3421 - if an error is made in opening the KEEP file to purge it, error *41* is reported instead of KEEPing the file and then getting file system error 100.

7. SMR #3814 - control Y in BEGIN/END block with empty work file will now ignore the block.

8. SMR #4243 - the HOLD file will no longer have its previous last line when INSERTing from the HOLD file.

9. SMR #4559 - the short form of the TEXT command will no longer ask to CLEAR twice if the file is unnumbered.

10. SMR #4572 - a FIND of a string of blanks positions pointer correctly.

C. DOCUMENTATION CHANGES

1. Add to paragraph 3-101:

   If the TEXT file has variable length records, (type "V"), then VARIABLE will be set.

2. Change paragraph 3-102 and 3-66 to remove limitations on multiple commands per line if the short forms of the TEXT and KEEP commands are used.

3. Add to paragraph 1-5 and 1-6 the formal file designators EDITIN and EDITOUT.

4. Add to table 1-1 the command ":".

5. Add new command ":". This will describe using system commands from within EDIT/3000.

6. Add to paragraph 4-33 the option of defaulting the pname.

7. Remove limitation in paragraph 4-11 limiting BEGIN-END pairs to WHILE blocks.

8. Add to section 4 comments about the entry point BASIC-ENTRY and description of HP32201'USERINIT.

KSAM/3000 HP32208A.02.01

DATE CODE 1831, N00N208A.HP32208.SUPPORT

A. ENHANCEMENTS

1. A new option has been added to the KSAM file system which allows random insertion of duplicate keys in the duplicate key chain. With this option, the time required to write a record with duplicate keys to a KSAM file will be the same as that without duplicate keys. But the chronological order of keys in the duplicate key chain is no longer maintained with this option. When a record is retrieved, the record pointed by the first key in the duplicate key chain will be returned as before.

   The option can be specified in the KEY specification of the BUILD command:

   KEY=keytype,keylocation,keysize[,[keyblocking],

   [RDUPPLICATE]].....
   RDUP

   or

   set the bit lastword(8:1) to 1 where lastword is the 4th word of the individual key definition (4 words for each key definition) and the bit thirdword(1:1) (the D bit) as before in ksamparam of FOPEN.

   When VERIFY is used, under the DUPLICATE column the character "R" indicates the option has been specified.

2. In KSAMUTIL:

   a) E can be used as EXIT
   b) B can be used as BUILD
   c) V can be used as VERIFY
   d) H can be used as HELP
   e) S can be used as SAVE
   f) R can be used as RENAME
   g) carriage return is used to response none instead of 5

B. CORRECTIVE SOFTWARE CHANGES

1. KSAM DS interface routine returns negative instead of positive length for FREADBYKEY.

2. FGETKEYINFO does not return the most recent highest & lowest primary key locations.

3. FCONTROL(..,2,...) updates the highest & lowest primary key locations.

4. FWRITE does not position the current record pointer to next key location if the write causes a key block split.

5. For duplicate key FPOINT returns CCG instead of CCL if the key value is found in key file but the right key is not found. The right key is the key which points to the specified record.

6. FREMOVE or FUPDATE returns EOF instead of Error 175 if the key value is found but the right key is not found.

7. FREADBYKEY returns CCG instead CCL if the key value is not found in the key file.

8. When relation operation is equal, FFINDBYKEY returns CCG instead of CCL if the key (full key or generic key) is not found in the key file.

9. FUPDATE deletes the old record if the updated record contains duplicate key value but duplication is not allowed for that key sequence.

10. KSAMUTIL does not display the correct FREE KEYHD which is the relative record number of the first key block of the free key block chain.

11. FOPEN counter is one greater then FCLOSE count in KSAMUTIL.

13. In a stream job if KSAMUTIL fails then the rest of the job is not flushed.

C. KNOWN problems

1. Running a KSAM file will reset EOF pointer to zero.

2. MPE file system does not post data file's EOF properly.

3. BKREAD will fail if the parameters specified are less than the maximum.

4. The lockword on the data file is not put on the key file.

D. MANUAL UPDATES

1. Page 4-34 ksamcontrol parameter word offset 65 " Free key chain head record number" is replaced by not used. Same table word offset 96 double word contain the free key block chain head.

2. Page A-4 error code 191 returned from FREMOVE or FUPDATE which indicates that the key in key file does not match with the key field in the record, i.e., the key is invalid.

COMPILER LIBRARY/3000 HP32211D.00.07

DATE CODE 1831, N00N211D.HP32211.SUPPORT

A. CORRECTIVE SOFTWARE CHANGES

Internal changes have been made to compiler library due to changes in the MPE operating system.

FCOPY/3000 HP32212A.3.07

DATE CODE 1831, N00N212A.HP32212.SUPPORT

A. ENHANCEMENTS

1. Reading from cartridges will no longer cause the screen to move up for each line read. Cartridges not written by FCOPY should be read by the :PTAPE command.

2. Serial disc will be treated exactly like magnetic tape.

B. CORRECTIVE SOFTWARE CHANGES

1. When copying to printer, default will be postspacing with auto-eject.

2. Variable length KSAM files will be created correctly. Before, the new data file was treated as fixed.

3. SUBSET for strings will create NEW file the same length as the original file.

4. The relative SKIPEOF options work the way the manual states, i.e., SKIPEOF=+2 will skip 2 EOFs instead of just one.

5. When copying from $STDIN in a session to a file with CCTL, a carriage return will no longer cause error 109, bad carriage control.

6. The error display for cartridges will now return the correct status.

IMAGE/3000 HP32215B.01.00

DATE CODE 1831, N00N215B.HP32215.SUPPORT

A. ENHANCEMENTS

1. IMAGE has been modified internally to use a new buffering technique that gives improved performance when used in a multi-terminal environment. This change causes a single, larger Data Base Control Block to be created for each open data base rather than for each user.

2. The DBLOCK intrinsic has been extended to permit locking at the data set and data entry level. The intrinsic will correctly honor all existing calls to lock the whole data base.

3. DBUTIL has been extended with new commands to permit the DB creator to examine the state of a running data base. Also provided is a means of altering the specifications that control the number of buffers IMAGE uses.

4. DBLOAD, DBUNLOAD, DBSTORE and DBRESTOR now operate with the new MPE Serial Disc capability.

5. DBLOAD now uses a new buffer management strategy that enables it to run two or more times faster than the previous version of IMAGE. However, if a system crash interrupts DBLOAD, the data base will be unusable, and the load must be restarted.

B. DOCUMENTATION CHANGES

All the above features are described in Update No 1 to the IMAGE/3000 manual 32215-90003. The update package is dated SEPT 78.

C. MISCELLANEOUS

This version of IMAGE replaces release 32215B.00.00. It will operate under MPE III only. Systems running versions of MPE older than MPE III should continue to use the latest release of IMAGE version A.

QUERY/3000 HP32216A.03.05

DATE CODE 1831, N00N216A.HP32216.SUPPORT

A. MISCELLANEOUS

The purpose for this change is to comply with the new distribution formats. There have been no changes since the 1709 version.

N00N230A

RELEASE ISSUES OF HP 32230A SERIES II DIAGNOSTICS.

** DATE CODE 1831 **

Magnetic tapes associated with HP32230A:

Source	32230-1X001
CPU Coldload	30000-1X016
NON-CPU C/L	30000-1X017

Manuals associated with HP 32230A:

32230-60001
32230-60002

*** CPU *** 30000-1X016 1831

SECTION 1	PD420A	01.00
SECTION 2	PD420A1	01.00
SECTION 3	PD420A2	01.01
SECTION 4	PD420A3	01.02 **
SECTION 5	PD420A4	01.00
SECTION 6	PD420A5	01.00
SECTION 7	PD420A6	01.00
SECTION 8	PD420A7	01.00
SECTION 9	PD420A8	01.00
SECTION 10	PD420A9	01.00
SECTION 11	PD420A10	01.00
SECTION 12	PD420A11	01.00
SECTION 13	PD420A12	01.01
SECTION 14	PD420A13	01.00

*** STAND-ALONE *** 30000-1X017 1831 % FILE NO.

SLEUTH	PD411A	01.04 **	(01)
SDUPII	PD417A	01.03	
CART DISC-7905A	PD419A	01.04	(02)
MEMORY PATTERN	PD421A	01.00	(03)
MULTIPLEXOR CHAN	PD422A	01.02 **	(04)
DISC FILE-2888A	PD423A	01.00	(05)
CART DISC-7900A	PD424A	01.00	(06)
SYSTEM CLOCK	PD425A	01.00	(07)
TERMINAL DATA	PD427A	01.00	(10)
FIXED HEAD DISC	PD428A	01.00	(11)
SELECTOR CHAN	PD429A	01.01	(12)
FAULT CORRECTING MEM.	PD430A	01.01	(13)
EXTENDED INSTRUC SET	PD431A	01.00	(14)
HSI DIAG.	PD432A	01.00	(15)
MAGNETIC TAPE	PD433A	01.00	(16)
SSLC INTERFACE	PD434A	01.02	(17)
ASLC INTERFACE	PD434B	01.02	(20)
UI DIAG	PD435A	01.01	(21)
TERMINAL CONTROL	PD438A	01.00	(22)
CALCOMP PLOTTER	PD439A	01.01	(23)

*** ONLINE ***

CARD READER	PD465A	01.00
LINE PRINTER	PD466A	01.00
2617J LINE PRINTER	pd466j	01.00
2640 TERMINAL	PD469A	01.00
TERM-2635A	PD474A	00.00
TERM-2762A/B	PD475A	01.00
TERM-2645K	pd476a	00.00
DISPLAY TERMINAL 2644	PD477A	01.00
TERM-2615A	PD478A	01.00
CARD-READ/PUNCH	PD479A	01.00
OPTICAL MARK READER	PD480A	00.00

UTILITY FILES

SLEUTH BATCH FILES

```
************************************************
*                                              *
*  THESE FILES MAY ONLY BE USED IN CONJUNCTION *
*  WITH THE SLEUTH PROGRAM. REFER TO THE SLEUTH *
*  MANUAL FOR INFORMATION ON HOW THEY MAY BE   *
*  LOADED.                                     *
************************************************
```

FILE NAME	FUNCTION
SLEUTH01	
SLEUTH02	
SLEUTH03	
SLEUTH04	
SLEUTH05	
SLEUTH06	
SLEUTH07 **	DISC VERIFIER-7905,7906,7920,&7925
SLEUTH08	

STAND-ALONE DIAGNOSTIC TAPE CREATORS

```
************************************************
*                                              *
* THESE FILES ARE STREAMABLE JOB FILES WHICH   *
* WILL CREATE CONFIGURED CPU DIAGNOSTIC TAPES  *
* AND NON-CPU DIAGNOSTIC TAPE.                 *
*                                              *
************************************************
```

FILE NAME	FUNCTION
CPU064	CPU TAPE CONFIGURED FOR 64K OF MEMORY
CPU096	CPU TAPE CONFIGURED FOR 96K OF MEMORY
CPU128S2	CPU TAPE CONFIGURED FOR 128K OF MEMORY
CPU128S3	CPU TAPE CONFIGURED FOR 128K OF MEMORY
CPU160	CPU TAPE CONFIGURED FOR 160K OF MEMORY
CPU192	CPU TAPE CONFIGURED FOR 192K OF MEMORY
CPU224	CPU TAPE CONFIGURED FOR 224K OF MEMORY
CPU256S2	CPU TAPE CONFIGURED FOR 256K OF MEMORY
CPU256S3	CPU TAPE CONFIGURED FOR 256K OF MEMORY
CPU384S3	CPU TAPE CONFIGURED FOR 384K OF MEMORY
CPU512S3	CPU TAPE CONFIGURED FOR 512K OF MEMORY
CPU640S3	CPU TAPE CONFIGURED FOR 640K OF MEMORY
CPU768S3	CPU TAPE CONFIGURED FOR 768K OF MEMORY
CPU896S3	CPU TAPE CONFIGURED FOR 896K OF MEMORY
CPU1KS3	CPU TAPE CONFIGURED FOR 1024K OF MEMORY
DIAGIOTP	NONCPU TAPE (%23 FILES SEE ABOVE FOR NEW FILE REFERENCE TABLE)

** IMPLIES FIXED THIS TIME

****
SPECIAL NOTE:

EIGHT(8) FILES HAVE BEEN ADDED TO THE UTILITY FILES FOR CREATING THE STAND-ALONE CPU DIAGNOSTIC TAPES TO SUPPORT THE SERIES III COMPUTER SYSTEMS.

THESE FILES ARE STREAMABLE JOB FILES WHICH WILL CREATE CONFIGURED DIAGNOSTIC TAPES OF THE DATE CODES SPECIFIED ABOVE.

****

FIX LEVEL .04 SLEUTH

D411A.01.04

TWO BUGS WERE FIXED IN THE SLEUTH PROGRAM.

1) THE "GOTO" STATEMENT NOW WORKS PROPERLY AFTER AN EDIT OPERATION.

2) A CHECK FOR THE MAXIMUM DB SIZE IS MADE AND SIZES GREATER THAN 32767 ARE NOT ALLOWED.

3) THE "MAKT" AND "BA [N]" COMMANDS NOW STORE AND RESTORE SLEUTH PROGRAMS PROPERLY.

****

FIX ---- SLEUTH07

THIS SLEUTH PROGRAM HAS BEEN FIXED TO PROPERLY HANDLE THE FORMAT OPERATION FOR THE DISCS.

****

FIX LEVEL .02 CPU DIAG---SECTION 4

D420A3.01.02

THIS FIX CORRECTS A PROBLEM IN THE "BANKSIO" PROCEDURE WHICH WOULD CAUSE ERRORS IN THE DIAGNOSTIC OPERATION WHEN EXECUTING THE DIAGNOSTIC WITH MORE THAN 2 MEMORY BANKS AND USING THE SEL. CHANNEL MAINTENANCE CARD TO TEST THE SIO OPERATION.

A SWITCH REGISTER BIT WAS DEFINED TO SPECIFY THAT SOME OPTIONAL FIRMWARE(SUCH AS APL) HAS BEEN INSTALLED IN THE SYSTEM AND THOSE TESTS FOR UNIMPLEMENTED INSTRUCTIONS SHOULD BE BY-PASSED.
SWITCH REGISTER BIT 2 = OPTIONAL FIRMWARE INSTALLED

****

FIX LEVEL .02 MULTIPLEXOR CHANNEL

D422A.01.02

THIS FIX LEVEL CORRECTED THE PLACEMENT OF THE VARIABLE "HBANK" IN THE DB AREA SO AS NOT TO CAUSE ERRORS IN PRECONFIGURING THIS DIAGNOSTIC.

****

DOCUMENTATION

The tables at the end of this section list currently available customer manuals for HP 3000 Computer Systems products. This list supersedes the lists in previous issues of the COMMUNICATOR 3000.

Manuals and updates can be ordered through your local HP Sales and Service office. The address and telephone number of the office nearest you is listed in the back of all customer manuals. Prices are subject to change without notice.

Customers in the U.S. may also order manuals directly by mail. Simply list the name and part number of the manual(s) you need on the Parts and Supplies Order Form found in the back of this publication.

Update packages are free of charge. If you require an update package, complete the Update Order Form in the back of this issue.

TERMS

A few words about documentation terms and procedures:

NEW — A new manual refers to the first printing of the first edition of the manual. When first printed, a manual is assigned a part number that is retained for the life of the manual.

UPDATE — An update is a supplement to an existing manual which contains new or changed information. Updates generally are issued at the same time IT's are. However, THERE IS NO DIRECT CORRELATION BETWEEN SOFTWARE FIXES AND MANUAL UPDATES. Software enhancements that require documentation changes will be accompanied by manual updates, but software fixes and manual corrections may be made independently.

Updates are retroactively inclusive, that is, whenever successive updates are issued, the later update contains the previous one. This means that one need obtain only the latest update to have all the information added or changed since the last printing of the manual.

Update packages have no part numbers, they are numbered sequentially from the time the last edition was issued.

Updates are supplied upon request at no charge. When a manual is ordered, both the current edition of the manual and the current update, if one exists, are delivered.

NEW EDITION

When major changes must be made to a manual, issuing an update package may be inappropriate or impractical. When this is the case, a new edition is printed. A new edition obsoletes all previous versions of the manual and its updates. A list of the dates of all previous editions and updates is kept on the Printing History page of every manual. The date on the title page and back cover is the printing date of the new edition. The manual part number remains the same.

When further updates are required, they are made to the new edition.

REPRINTING

When our stocks of a manual fall below a certain level, we reprint it. The printing date of the edition remains the same on the title page and back cover, and the date of the reprinting is added to the back cover and Printing History page.

INCORPORATED REPRINTING

Often there are updates outstanding to the manual when we reprint it. Any existing updates to the manual are incorporated into the reprinting at this time. THERE IS NO CHANGE TO THE CONTENT OF THE CURRENT VERSION OF THE MANUAL. An incorporated manual has precisely the same content as the current edition plus the latest update.

The printing date of the edition remains the same on the title page and back cover, and the date of the incorporated reprinting is added to the back cover and Printing History page.

The existing update that was incorporated for reprinting is kept in stock for six months to supply those users of the current edition who have not yet requested the update.

Updates made following the printing of an incorporated manual continue to be numbered sequentially from the point of the latest edition. Such updates only contain corrections to the current version of the manual, that is, to the incorporated manual (the manual consisting of current edition plus the updates outstanding at the time of incorporation). Note that ALL CURRENT DOCUMENTS ARE BEING UPDATED, WHETHER IT IS AN UPDATED EDITION, OR AN INCORPORATED MANUAL.

COMMUNICATOR BACK ISSUES

If you want to order past issues of the COMMUNICATOR, please note that supplies are now limited and only the following issues are available:

Issues # 13, 14, 15 and 16.

Order information can be found on the COMMUNICATOR order form in the rear matter.

NEW MANUALS

MTS/3000 REFERENCE MANUAL
Part number 32193-90002

This manual is written for users of the new HP data communications subsystem called MTS/3000. MTS/3000 provides access to HP multipoint terminals through MPE. With MTS/3000, users issue MPE commands and file system intrinsic calls to communicate with numerous terminals which are physically connected into a data communications network in a multipoint environment.

Sections in the manual explain:

- Multipoint terminal software operation
- Multipoint terminal hardware operation
- How to use MTS/3000 during an MPE session
- Programming for a multipoint environment
- Opening and closing a multipoint communications line
- Modem requirements
- MPE configuration for multipoint terminals and for MTS/3000
- Subsystem verification.

MTS/3000 SITE PREPARATION AND INSTALLATION MANUAL
Part number 32193-90001

This manual defines a customer's responsibilities when selecting, planning, and preparing a site for MTS/3000 installation. It also defines responsibilities of the HP customer engineer and the customer for multipoint hardware installation.

The manual provides the following:

- Pre-installation information
- Instructions for receiving, unpacking, and handling the MTS equipment
- Cable fabrication guidelines
- Instructions for strapping and installing data communications boards in the HP 3000 and in the multipoint terminals
- Multipoint terminal self-test procedures
- Data communications self-test procedures.

HP 30037A ASYNCHRONOUS REPEATER INSTALLATION AND SERVICE MANUAL
Part number 30037-90003

This manual contains installation and servicing information for the HP 30037A Asynchronous Repeater. The Asynchronous Repeater is a stand-alone device which converts standard EIA RS232C communication signals to levels which are compatible with the HP family of terminals that operate in asynchronous multipoint communications mode. The Repeater can also be used to connect multiple terminals in a daisy chain, to extend the distance between terminals, and to extend the distance between the computer and the terminals.

In addition to a complete product description, the manual also provides all of the information required to install and service the device.

NEW EDITIONS

MPE-C SOFTWARE POCKET GUIDE
Part number 03000-90126

A second edition of the MPE-C Software Pocket Guide is now available. It documents the following enhancements and corrects errors in the prior edition:

- Initial now supports termtype 15, the HP 2635A printing terminal.
- During a :STORE or :RESTORE, you now have the capability of specifying the maximum number of files.
- The disc file label checks for valid record types.
- The Editor now has tab control; that is, you are able to set tabs.

SYSTEM UTILITIES MANUAL
Part number 32000-90008

This new edition of the System Utilities manual documents corrections to the previous edition as well as changes to the following utility programs:

- SAVIOUR
- SAEDIT
- RECOVER
- SDUP

With SAVIOUR, SAEDIT and RECOVER, you now are able to communicate with the HP 2607, 2610, 2613, 2614, 2617, and 2618 line printers; while SDUP now provides methods for creating stand-alone diagnostics.

UPDATES

IMAGE REFERENCE MANUAL
Part number 32215-90003

Update number 1 to the IMAGE Reference Manual documents a new version of the IMAGE Data Base Management System (version 32215B.01.00). This version operates only on MPE III. It provides the following features and enhancements:

- Locking at the data set and data entry level - The new levels of locking are in addition to the locking of the entire data base available in previous versions. The new locking capability means that when access to the data base is shared, the data base can be locked at any of three levels: the whole data base, entire data sets, or data entries. Mixed levels of locking allow one user to lock a data set while another is locking an entry in another data set. Locking is used to protect the logical integrity of shared data during transactions that affect the data base. Locking does not prevent reading of the locked entry, data set, or data base.

- New DBUTIL commands - Two new commands allow the data base administrator to alter dynamically the number of IMAGE buffers, and to examine a running data base. The SET command is used to specify buffer counts for various numbers of concurrent users. The SHOW command lists such information as the number of processes currently using the data base, the status of data base locking, and the current buffer specifications.

- Serial disc capability - Utilities that in previous versions operate only with magnetic tape have been extended to operate with the new MPE III serial disc capability. This means that a data base can be stored or unloaded to a serial disc volume or set of volumes and subsequently restored or loaded from the serial disc(s) using the same utilities used for magnetic tape.

- Performance enhancements - A new control block scheme, incorporating a global pool of buffers for the entire data base, rather than private buffers for each user, gives improved performance in a multi-terminal environment. A new buffer management strategy allows DBLOAD in many cases to operate at least twice as fast as in previous versions.

INDEX/3000 REFERENCE MANUAL
Part number 30000-90005

This manual has been updated to document the XUTIL "PURGE" command. The PURGE command can be used to remove an index file, both data and key files, from the system by referencing the key file.

EDIT/3000 Reference Manual
Part number 03000-90012

This update documents removal of restrictions on the short form of the KEEP command, corrects minor errors, and explains the new ":" command. This command allows the user to enter some MPE commands from within EDIT/3000. An entry point to EDIT/3000, which will automatically text in a file when the first command is typed and will keep it when EXIT is entered, is also documented. In addition, to satisfy a number of needs for customizing EDIT/3000 in specific applications, three "stubs" for user written procedures are available:

- A string may be specified as the first command to be executed when an Editor process is begun,

- Editor command records may be scanned (to screen the syntax of the commands, for example),

- Lines input using the ADD command may be accepted or rejected.

BASIC/3000 INTERPRETER REFERENCE MANUAL
Part number 30000-90026

This update contains information about the PRINT #USING and MAT PRINT # USING statements, which allow output to be directed to a specified ASCII file. The MARGIN statement, which sets the length of the print line, is also explained, as well as the added restriction codes RD and RL for the ASSIGN statement, the new ITM function, and the increase in the line number limit to 15999. Minor errors are corrected.

DS/3000 Reference Manual
Part number 32190-90001

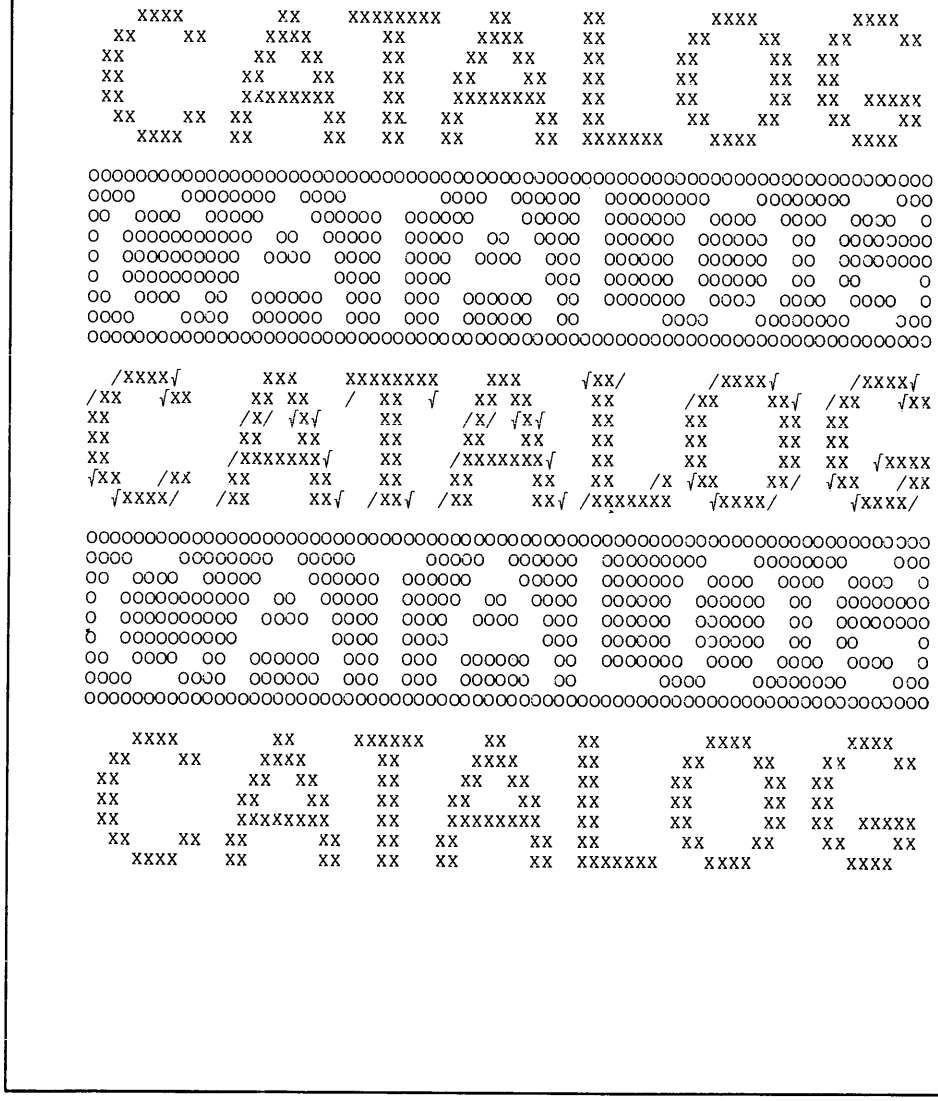
This update reflects the new MPE III operating system and the DS/3000 enhancements included in Software Version 32190A.02.01.

The MPE III changes to the manual include new Welcome and Signoff messages as they appear in the examples of initiating and closing a session. Appendix B, Error Codes and Messages, has been entirely replaced (all but the title) by a new Appendix B that shows all of the MPE III error messages that pertain to DS/3000. The messages have been grouped into two general categories. The first group contains all messages pertaining to DSLINE syntax problems. The second group contains the messages that report a functional problem. The messages are listed in numerical sequence within each category for easy reference. The configuration dialogue in Appendix A has also been updated and, at the same time, it has been streamlined through the removal of material extraneous to DS/3000.

The software enhancement changes to the manual include information on the activation and deactivation of the Data Compression feature (sometimes referred to as Record Packing). There are also writeups on the use of two new interface routines that provide COBOL and BASIC users access to the program-to-program communications capability. These writeups, provided as Appendix H, DS/3000 BASIC Interface, are complete with examples.

CATALOG OF CUSTOMER PUBLICATIONS
FOR HP 3000 COMPUTER SYSTEMS

SEPTEMBER 1978



HP 3000 COMPUTER SYSTEMS USING MPE III

SYSTEM MANUALS

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
General Information Manual	30000-90008	5.25	6/78		
MPE Commands Reference Manual	30000-90009	13.50	4/78		
MPE Intrinsics Reference Manual	30000-90010	20.00	4/78		
MPE Segmenter Reference Manual	30000-90011	3.50	2/77		
MPE Debug/Stack Dump Reference Manual	30000-90012	4.50	9/76	6/77	
Console Operator's Guide	30000-90013	13.50	4/78		
System Manager/System Supervisor Manual	30000-90014	12.75	4/78		
Error Messages and Recovery Manual	30000-90015	14.00	6/76	5/78	8/77
System Reference Manual	30000-90020	8.25	6/76	12/77	8/77
Machine Instruction Set	30000-90022	5.50	6/76		
MPE System Utilities Reference Manual	30000-90044	5.00	3/77	5/78	
Index to MPE Reference Documents	30000-90045	5.50	12/77		
Software Pocket Guide	30000-90049	5.25	4/78		
Instruction Decoding Pocket Guide	30000-90057	1.00	9/77		
Using Files	30000-90102	4.50	4/78		
Using the HP 3000: An Introduction to Interactive Programming	03000-90121	6.50	6/78		

LANGUAGE MANUALS

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
BASIC Interpreter Manual	30000-90026	10.50	6/76	8/78	
BASIC Compiler Reference Manual	32103-90001	3.00	11/74	6/76	9/77
BASIC/3000 Pocket Guide	03000-90050	1.25	9/74		
BASIC for Beginners	03000-90025	6.00	11/72		
System Programming Language Reference Manual	30000-90024	10.00	9/76	2/77	12/77
System Programming Language Textbook	30000-90025	7.50	6/76	1/77	9/77
SPL Pocket Guide	32100-90001	2.00	11/76		
FORTRAN Reference Manual	30000-90040	8.50	6/76	4/78	5/77
FORTRAN Pocket Guide	32102-90002	1.50	9/77		
RPG/3000 Compiler Reference Manual	32104-90001	22.00	2/77	8/78	12/77
RPG Listing Analyzer	32104-90003	.50	2/77		
APL Reference Manual	32105-90002	9.50	11/76		
APL Pocket Guide	32105-90003	4.50	11/76		
COBOL Reference Manual	32213-90001	12.00	7/75	5/78	11/77
Using COBOL: A Guide for the COBOL Programmer	32213-90003	6.50	3/78		

When a date is entered in the "Incorp" column, it means that all updates prior to the date have been incorporated into subsequent printings of the manual. An "incorporated" manual has precisely the same content as the "unincorporated" manual plus the prior update.

Dates in the "Printed" column change only when the manual is revised so extensively that it is re-issued as a new edition. Unless a new edition is issued, it is not necessary to obtain a new manual to have the latest information on the software. Updates are comprehensive in bringing each edition up-to-date.

ADDITIONAL MANUALS

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
EDIT Reference Manual	03000-90012	6.00	8/75	4/78	10/77
Trace Reference Manual	03000-90015	4.50	6/76		
FCOPY Reference Manual	03000-90064	4.50	2/78	6/78	
Cross Assembler for 2100 Computers Reference Manual	03000-90047	11.50	5/76		
HP 3000 Cross Loader for HP 2100 Computers	03000-90107	7.25	10/74		1/77
Guidebook to Data Communications	5955-1715	3.00	1/77		
Scientific Library Reference Manual	30000-90027	4.25	6/76	2/77	9/77
Compiler Library Reference Manual	30000-90028	8.50	11/76		
QUERY Reference Manual	30000-90042	7.50	6/76	4/78	
2780/3780 Emulator Reference Manual	30000-90047	7.50	6/77		
Data Entry Library Mnl	30000-90050	7.00	5/78		
HP 3000 CX to HP 3000 Series II Program Conversion Guide	30000-90046	3.50	6/76		
Programmable Controller Reference Manual	30000-90066	5.75	6/76	10/76	
Real-Time Programmable Controller Reference	30000-90067	7.50	6/76		
KSAM Reference Manual	30000-90079	10.00	1/77	4/78	6/77
Site Preparation Manual	30000-90082	6.00	2/77	10/77	
Site Planning Workbook	30000-90086	6.00	9/77		
Communications Pocket Guide	30000-90105	14.00	12/77		

ADDITIONAL MANUALS (Cont'd)

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
HP 30032B Asynchronous Terminal Controller Ins. & Service Manual	30032-90004	20.00	1/74	7/76	8/76
HP 30032B Terminal Data Interface Stand-alone Diagnostic Mnl (D427A)	30032-90011	3.00	2/76		
HP 30037A Asynchronous Repeater, Installation & Service Manual	30037-90003	4.75	5/78		
HP 30055A Synchronous Single-line Controller Ins and Service Manual	30055-90001	6.25	5/76	7/78	
HP 30055A Synchronous Single-line Controller Stand-alone Diagnostic Manual (D434)	30055-90008	1.55	7/78		
HP 2894A Card Reader Punch Operating Manual	30119-90009	11.50	10/76		
Line Printer Operating and Programming Manual	30209-90008	6.75	6/76		
Hardwired Serial Interface, Installation and Service Manual	30360-90001	6.00	3/77		
Hardwired Serial Interface Stand-alone Diagnostic Mnl (D432)	30360-90007	2.50	3/77	4/77	
IBM System/3 to HP 3000 Conversion Guide	32104-90004	5.75	12/75		
DS/3000 Reference Manual	32190-90001	11.00	3/77	5/78	
DS/3000 Modem Link Site Preparation and Installation Manual	32190-90003	3.50	10/77		
DS/3000 Hardwired Link Site Preparation and Installation Manual	32190-90004	3.00	10/77		

ADDITIONAL MANUALS (Cont'd)

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
DS/3000 to DS/1000 Reference Manual	32190-90005	7.25	1/78		
MRJE/3000 Reference Manual	32192-90001	8.75	1/78		
MTS/3000 Site Preparation and Installation Manual	32193-90001	7.00	5/78		
MTS/3000 Reference Mnl	32193-90002	6.50	5/78		
SORT Reference Manual	32214-90001	3.50	8/76		
IMAGE Data Base Management Reference Manual	32215-90003	9.50	4/78		
Student Information System Reference Manual	32900-90001	13.00	9/74	8/76	
Student Information System Technical Mnl	32900-90005	32.00	3/75		
Student Assignment System Reference Manual	32901-90001	15.50	7/75	8/76	
Student Assignment System Technical Manual	32901-90005	9.75	7/75		
College Information System Reference Manual	32902-90003	13.00	1/78		
College Information System Technical Mnl	32902-90005	10.50	2/78		

SYSTEM MANUALS

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
MPE Intrinsics Reference Manual	30000-90087	20.00	4/77	4/78	
MPE Commands Reference	30000-90088	20.00	4/77	4/78	
System Manager/System Supervisor Manual	30000-90089	12.50	4/77	4/78	
Console Operator's Guide	30000-90090	11.00	4/77	4/78	
General Information Mnl	30000-90091	9.25	4/77		
MPE/3000 Operating System, System Utilities	32000-90008	2.05	10/75		
Systems Reference Manual HP 3000 Computer	03000-90019	24.00	9/73	3/77	
Software Pocket Guide	03000-90126	2.70	7/78		
Using Files	30000-90102	4.50	7/77		
Using the HP 3000: An Introduction to Interactive Programming	03000-90121	8.25	6/78		

When a date is entered in the "Incorp" column, it means that all updates prior to the date have been incorporated into subsequent printings of the manual. An "incorporated" manual has precisely the same content as the "unincorporated" manual plus the prior update.

Dates in the "Printed" column change only when the manual is revised so extensively that it is re-issued as a new edition. Unless a new edition is issued, it is not necessary to obtain a new manual to have the latest information on the software. Updates are comprehensive in bringing each edition up-to-date.

LANGUAGE MANUALS

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
BASIC Interpreter Reference Manual	03000-90008	9.75	7/75		
BASIC/3000 Pocket Guide	03000-90050	1.25	9/74		
BASIC Compiler Reference	32103-90001	3.00	11/74	6/76	9/77
BASIC for Beginners	03000-90025	6.00	11/72		
COBOL Reference Manual	32213-90001	12.00	7/75	5/78	11/77
Using COBOL: A Guide for the COBOL Programmer	32213-90003	6.50	3/78		
FORTRAN Reference Manual	32102-90001	10.00	3/76		
FORTRAN Pocket Guide	32102-90002	1.50	9/77		
RPG Compiler Reference and Application Manual	32104-90001	22.00	2/77		12/77
RPG Listing Analyzer	32104-90003	.50	2/77		
System Programming Language Reference Manual	30000-90024	10.00	9/76	2/77	12/77
System Programming Language Textbook	30000-90025	7.50	6/76	1/77	9/77
SPL Pocket Guide	32100-90001	2.00	11/76		

When a date is entered in the "Incorp" column, it means that all updates prior to the date have been incorporated into subsequent printings of the manual. An "incorporated" manual has precisely the same content as the "unincorporated" manual plus the prior update.

Dates in the "Printed" column change only when the manual is revised so extensively that it is re-issued as a new edition. Unless a new edition is issued, it is not necessary to obtain a new manual to have the latest information on the software. Updates are comprehensive in bringing each edition up-to-date.

ADDITIONAL MANUALS

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
Compiler Library Reference Manual	03000-90009	11.50	2/76		
Scientific Library Reference Manual	03000-90010	5.75	7/75		
Cross Assembler for 2100 Computers	03000-90047	11.50	5/76		
EDIT Reference Manual	03000-90012	6.00	8/75	4/78	10/77
Trace Reference Manual	03000-90015	4.50	6/76		
FCOPY Reference Manual	03000-90064	4.50	2/78	6/78	
HP 3000 Cross Loader for HP 2100 Computers	03000-90107	7.25	10/74	6/76	1/77
IBM System/3 to HP 3000 Conversion Guide	32104-90004	5.75	12/75		
IMAGE Data Base Management Reference Manual	30000-90041	7.00	12/76	5/78	
QUERY Reference Manual	30000-90042	7.50	6/76	4/78	
Index/3000 Reference Mnl	30000-90095	10.50	6/77	4/78	
Site Preparation Manual	30000-90096	5.25	4/77		
Site Planning Workbook	30000-90100	6.00	4/77		
Programmable Controller Reference Manual	30300-90002	12.50	4/76	1/77	
2780/3780 Emulator Subsystem Reference Mnl	30130-90001	9.00	12/74	2/76	
Data Entry Library Mnl	30000-90050	7.00	4/78		
Real-Time Programmable Controller Reference	30301-90002	7.75	2/75	7/76	
HP 2894A Card Reader Punch Operating Manual	30119-90009	11.50	10/76		
SORT Reference Manual	32214-90001	3.50	8/76		

ADDITIONAL MANUALS (Cont'd)

Manual Title	Part Number	Price	Printed	Up-dated	Incorp
Student Information System Reference Manual	32900-90001	13.00	9/74	8/76	
Student Information System Technical Mnl	32900-90005	32.00	3/75		
Student Assignment System Reference Manual	32901-90001	15.50	7/75	8/76	
Student Assignment System Technical Manual	32901-90005	9.75	7/75		
College Information System Reference Manual	32902-90003	13.00	1/78		
College Information System Technical Mnl	32902-90005	10.50	2/78		
IBM 1130/1800 to HP 3000 FORTRAN Conversion Gd	36995-90013	4.70	2/75	5/75	

When a date is entered in the "Incorp" column, it means that all updates prior to the date have been incorporated into subsequent printings of the manual. An "incorporated" manual has precisely the same content as the "unincorporated" manual plus the prior update.

Dates in the "Printed" column change only when the manual is revised so extensively that it is re-issued as a new edition. Unless a new edition is issued, it is not necessary to obtain a new manual to have the latest information on the software. Updates are comprehensive in bringing each edition up-to-date.

BAUD LINE

MOVING COLUMNS OF DATA WITH THE EDITOR

Ginny Smith
General Systems Division

For some applications, data is arranged in a series of columns, such as in this example:

```
         1         2         3         4         5         6
12345678901234567890123456789012345678901234567890123456789 0
```

NAME	UNITS	DATE
Smith	100	9/12
Lewis	5	10/4
Croley	39	3/8
Totterdale	46	3/8
Stamps	19	7/28

Arranging the columns into a different order can be a tedious editing job, especially if the file contains a large number of records.

The EDITOR subsystem provides a method for manipulating columns of data in long files. Assume, for example, that it became necessary to output the above file with the leftmost column of data moved to the rightmost position, and with the other two columns shifted to the left; that is:

```
UNITS          DATE          NAME
```

The following EDITOR commands will accomplish this:

```
/set right=20
/holdq all
HOLD FILE LENGTH IS 7 RECORDS
/set right=65
/changeq 7/22 to "" in all
/set left=37
/replaceq 1/7,holdq,now
/set left=1
/l all
```

```
1          UNITS          DATE          NAME
2          -------        --------      --------
3            100            9/12        Smith
4              5           10/4         Lewis
5             39            3/8         Croley
6             46            1/26        Totterdale
7             19            7/28        Stamps
```

Through the use of the SET, HOLD, and REPLACE commands (make certain you use the QUIET option when editing long files), one can manipulate columnar data files with ease.

PROGRAMMABLE CONTROLLER PRODUCTS

Richard Scott
General Systems Division

As a result of substantial advances in technology and the development of other more functional products, General Systems Division is no longer selling the Programmable Controller products listed below and will begin their 5-year support life on August 1, 1978.

- HP 30300A and HP 30300B Programmable Controller Subsystem with BCS.
- HP 30301A and HP 30301B Programmable Controller with RTE-C.
- HP 30361A and HP 30361B Kits - Programmable Controller Interface.
- HP 30403A Kit - RTE-C/3000 Software.
- HP 30404A Kit - BCS/3000 Software.
- HP 32223A - HP 3000 Cross Assembler Software for HP 2100 Computers.
- HP 32226A - HP 3000 Cross Loader Software for HP 2100 Computers.

These products are used to interface an HP 2100 processor with your HP 3000 computer system.

Recently, both the HP 2100 processor and the original HP 3000 system were superseded by faster and more capable products. The new HP 2100-type processors, the HP 1000 M Series, E Series and F Series processors, have been incorporated into new disc and memory-based systems along with new operating system software.

Advances in technology have also enabled Hewlett-Packard to develop two inter-system communication capabilities, DS/3000 and DS/1000. These new communication products permit the redistribution of data processing between the HP 3000 and HP 1000 systems for greater overall system optimization.

These new products are also easier to use than the Programmable Controller products and offer increased functionality. For instance, any terminal on the new HP 1000 system can be transparently utilized as a terminal on a directly connected HP 3000 Series II or III for program development purposes. Likewise, programs and terminals on the new HP 3000 systems can schedule and control various instruments interfaced to an attached HP 1000.

Hewlett-Packard will, of course, continue its normal customer support of the Programmable Controller products for at least five years until August 1, 1983.

If you would like more information on our new distributed processing products or if you have additional questions about the Programmable Controller products, feel free to contact your HP Sales Representative.

AN HP MNEMONICS PRIMER

Pete Sinclair
General Systems Division

The first thing that I discovered upon starting my job at GSD (General Systems Division) was that I had to learn a new language . . . ECM (Engineering Computer Mnemonics). Everyone here spoke in initials. Everything from ESR to TDI was thrown around in conversations as if these were common terms to everyone (CTTE). Well, I pretended to understand all of the initials. This strategy worked until someone came up to me and asked me what some initials meant. My ECM literal ignorance could be hidden no longer.

To assist all of us who suffer from temporary or permanent ECM ignorance, I have compiled this handy guide of commonly used ECM's. The initials are alphabetically organized, each set followed by its literal definition, description, and part number if applicable. I hope this guide will prove to be an invaluable asset to cherish and keep on your desk at all times.

Since this guide is but a first effort it is far from complete. In order to assist me in compiling a second edition of this guide, I would appreciate it if you could keep track of any engineering slang terms (EST=ECM) which are not listed in this guide. I am also open to general comments and suggestions relating to this guide and others which you think should exist.

103's	BELL MODEM, 300 BPS, FULL DUPLEX
113's	BELL MODEM (FANCY 103), 300 BPS, FULL DUPLEX
202's	BELL MODEM, 1200/1800 BPS (DEPENDS ON LINE CONDITIONING), HALF DUPLEX
ALGOL	ALGORITHMIC LANGUAGE
AMD	AUTOMATIC MEASUREMENT DIVISION (NOW PART OF DATA SYSTEMS)
AR	ASYNCHRONOUS REPEATER (EXTENDS TERMINAL DRIVING CAPABILITY - #30037A)
ASCII	AMERICAN STANDARD CODE FOR INFORMATION EXCHANGE
ATC	ASYNCHRONOUS TERMINAL CONTROLLER (TERMINAL MULTIPLEXER-INCLUDES 1 MUX PANEL, 1 TDI, AND 1 TO 2 TCIs - #30032A)
BAEDP	BAY AREA ELECTRONIC DATA PROCESSING (INTERNAL HP COMPUTER CENTER)
BAUD	BYTES PER SECOND
BCD	BINARY CODED DECIMAL
BCS	BINARY CONTROL SYSTEM FOR HP 2000
BOT	BEGINNING OF TAPE
BPS	BITS PER SECOND
BTU	BRITISH THERMAL UNIT
CCE	CONDITION CODE EQUAL
CCG	CONDITION CODE GREATER THAN
CCL	CONDITION CODE LESS THAN
CE	CUSTOMER ENGINEER
CIR	CURRENT INSTRUCTION REGISTER
CIS	COLLEGE INFORMATION SYSTEMS (SOFTWARE PACKAGE)
COBOL	COMMON BUSINESS ORIENTED LANGUAGE
CPC	CORPORATE PARTS CENTER
CPU	CENTRAL PROCESSING UNIT
CS	COMMUNICATION SYSTEM
CSD	COMPUTER SERVICE DIVISION
CTL	CENTRAL DATA BUS
CTS	CLEAR TO SEND (MODEM SIGNAL)
CWF	COURSE WRITING FACILITY (COLLEGE SOFTWARE PACKAGE)
D/C	DATA COMMUNICATIONS
DBMS	DATA BASE MANAGEMENT SYSTEMS
DCD	DATA CARRIER DETECT (SIGNAL FROM MODEM)
DCIF	DISC CONTROLLER INTERFACE (#30229)
DEL	DATA ENTRY LIBRARY (SOFTWARE PACKAGE)
DMD	DISC MEMORY DIVISION
DRT	DEVICE REFERENCE TABLE

DS	DISTRIBUTED SYSTEMS (LINKS BETWEEN 3000's)
DSD	DATA SYSTEMS DIVISION
DSR	DATA SET READY (MODEM SIGNAL)
DTD	DATA TERMINALS DIVISION
DTR	DATA TERMINAL READY (TERMINAL SIGNAL)
DTS70	DIGITAL TEST SET (TEST FIXTURE)
EBCDIC	EXTENDED BINARY CODED DECIMAL INTERCHANGE CODE
ECM	ERROR CORRECTION MEMORY
EDC	ELECTRONIC DATA CONTROL (INTERNAL INVENTORY CONTROL COMPUTER)
EIA	ELECTRONIC INDUSTRIES ASSOCIATION
EIS	EXTENDED INSTRUCTION SET FOR HP 3000 (ROMS IN UPPER ROM BOARD - #30011A FOR PRE-SERIES II AND #30012A FOR SERIES II AND LATER)
EOB	END OF BLOCK (USED IN DATA COMMUNICATIONS)
EOF	END OF FILE (USED WITH DISCS, MAG TAPES, AND TERMINALS)
EOT	END OF TEXT, TRANSMISSION, OR TAPE
ERS	EXTERNAL REFERENCE SPECIFICATION
ESR	EASTERN SALES REGION
FCA	FAULT CORRECTING ARRAY (CORRECTS MEMORY ERRORS - #30009)
FCO	FIELD CHANGE ORDER
FHD	FIXED HEAD DISC (2660)
FLI	FAULT LOGGING INTERFACE (INTERFACES PROCESSOR AND MEMORY FAULT CONTROL LOGIC)
FOR-TRAN	FORMULA TRANSLATOR
FSI	FIELD SERVICE INVENTORY
GIM	GENERAL INFORMATION MANUAL
GSD	GENERAL SYSTEMS DIVISION
GSDXX	TRAINING COURSE NUMBERS
HPIB	HP INTERFACE BUS
HSI	HARDWIRED SERIAL INTERFACE (#30360A)
HSUI	HIGH SPEED UNIVERSAL INTERFACE (#30059)
I/C	INTERCONNECT
I/F	INTERFACE
I/O	INPUT/OUTPUT
IC	INTEGRATED CIRCUIT OR INTERCONNECT PROCESS
ICF	INTEGRATED COMPUTER FAMILY
ICON	INTERCONTINENTAL SALES AND SERVICE
ICS	INTERRUPT CONTROL STACK
IDF	INSTRUCTIONAL DIALOGUE FACILITY (HP 2000 SOFTWARE PACK)
IMF	INSTRUCTIONAL MANAGEMENT FACILITY (HP 2000 SOFTWARE PACK)
IOP	INPUT/OUTPUT PROCESSOR
ISS	INFORMATION STORAGE SYSTEMS (MANUFACTURED 2883 THROUGH 2888 DISC DRIVES - DIVISION OF SPERRY UNIVAC)
IT	INSTALLATION TAPE
KSAM	KEYED SEQUENTIAL ACCESS METHOD (DATA BASE MANIPULATION ROUTINE)
LP	LINE PRINTER OR LAB PROTOTYPE
LPU	LINE POWER UP (POWER SUPPLY OUTPUT INDICATOR)
MB	MEGABYTE
MCL	MEMORY CONTROL AND LOGGING BOARD (#30007)
MCU	MODULE CONTROL UNIT BOARD (#30003-60007)

MC^2	HP 3000II MEMORY DIAGNOSTIC
MC^3	MULTI-CHANNEL COMMUNICATIONS CONTROLLER
MFG	MANUFACTURING APPLICATIONS SOFTWARE PACKAGE
MHD	MOVING HEAD DISC
MMT	MASTER MAINTENANCE TAPE (FOR HP 3000 SOFTWARE)
MODEM	MODULATOR/DEMODULATOR
MOP	MEMORY OP CODE
MPE	MULTIPROGRAMMING EXECUTIVE (HP 3000 OPERATING SYSTEM)
MPEC	MULTIPROGRAMMING EXECUTIVE (PRE-SERIES II)
MPEII	MULTIPROGRAMMING EXECUTIVE (1976 RELEASE)
MPEIII	MULTIPROGRAMMING EXECUTIVE (1978 RELEASE)
MPI	MAINTENANCE PANEL INTERFACE BOARD (#30354)
MRJE	MULTI-LEAVING REMOTE JOB ENTRY (ALLOWS MULTIPLE I/O RJE)
MSR	MIDWEST SALES REGION
MSRE	MIDWEST SALES REGION EAST
MSRW	MIDWEST SALES REGION WEST
MT	MAGNETIC TAPE
MTBF	MEAN TIME BETWEEN FAILURES
MTS	MULTIPOINT TERMINAL SOFTWARE
MTTR	MEAN TIME TO REPAIR
MUX	MULTIPLEXER (MUX CHANNEL INTERFACES ALL PERIPHERALS BUT TERMINALS AND HIGH SPEED DISCS WHILE MUX PANEL INTERFACES TERMINALS)
NPT	NEW PRODUCT TOUR (IN-FIELD TRAINING)
OBS	OBSOLETE
OIMS	OBSOLESCENCE IN MANUFACTURING SPECS
OIP	OBSOLESCENCE IN PROGRESS
OSS	OPERATING SYSTEM SPECIALIST
PC	PRINTED CIRCUIT OR PROGRAMMABLE CONTROLLER
PCA	PRINTED CIRCUIT ASSEMBLY
PCE	PARTS CENTER EUROPE
PCM	POWER CONTROL MODULE (HP 3000 POWER DISTRIBUTION UNIT)
PCU	POWER CONTROL UNIT (ISS DISK POWER DISTRIBUTION UNIT)
PICS	PHONE-IN CONSULTATION SERVICE (FOR CUSTOMER QUESTIONS)
PON	POWER-ON SIGNAL
PP	PRODUCTION PROTOTYPE
PROF	PRODUCTION FAILURE REPORTING SYSTEM
PROM	PROGRAMMABLE READ-ONLY MEMORY
PSP	PRODUCT SUPPORT PACKAGE (CE HARDWARE PACK)
PSU	POWER SUPPLY UP SIGNAL
RA	LOGICAL TOP OF STACK
RAM	RANDOM ACCESS MEMORY
RB	TOS - 1
RC	TOS - 2
RD	TOS - 3
RFI	RADIO FREQUENCY INTERFERENCE
RI	RING INDICATOR (MODEM SIGNAL)
RJE	REMOTE JOB ENTRY
ROM	READ ONLY MEMORY
RPG	REPORT PROGRAM GENERATOR (SOFTWARE)
RS232C	MODEM LINE LOGIC LEVEL STANDARDS
RTE	REAL TIME EXECUTIVE (HP 2000 OPERATING SYSTEM)
RTEC	REAL TIME EXECUTIVE (HP 2000 CORE-BASED SYSTEM)
RTS	REQUEST TO SEND (MODEM SIGNAL)

S/W	SOFTWARE
SAS	STUDENT ASSIGNMENT SYSTEM (EDUCATION SOFTWARE PACKAGE)
SCC	SELECTOR CHANNEL CONTROLLER BOARD (#30030)
SCCP	SINGLE CHANNEL COMMUNICATIONS PROCESSOR BOARD (#30010)
SCD	SANTA CLARA DIVISION
SCR	SELECTOR CHANNEL REGISTER BOARD (#30030)
SDE	SOURCE DATA ENTRY
SE	SYSTEMS ENGINEER
SF	SYSTEM FAILURE
SF#XXX	SYSTEM FAILURE NUMBER (HP 3000 MPE)
SIO	START INPUT/OUTPUT
SIS	STUDENT INFORMATION SYSTEM (EDUCATIONAL SOFTWARE PACKAGE)
SMA	SEMICONDUCTOR MEMORY ARRAY
SPL	SYSTEM PROGRAMMING LANGUAGE (FOR HP 3000 SYSTEM)
SSB	SOFTWARE STATUS BULLETIN
SSF	SKIP SPECIAL FIELD BOARD (#30003)
SSLC	SYNCHRONOUS SINGLE LINE CONTROLLER BOARD (#30055A)
SSR	SOUTHERN SALES REGION
SSS	SOFTWARE SUBSCRIPTION SERVICE
STX	START OF TEXT (BISYNCHRONOUS COMMUNICATIONS)
TBO	TO BE OBSOLETED
TCI	TERMINAL CONTROLLER INTERFACE BOARD (#30062)
TDI	TERMINAL DATA INTERFACE BOARD (#30032)
TOS	TOP OF STACK
TSB	TIME-SHARED BASIC
TSP	TELECOMMUNICATIONS SUPPORT PACKAGE
UDC	USER-DEFINED COMMANDS
UL	UNDERWRITERS LAB
VDE	EUROPEAN UNDERWRITERS LAB EQUIVALENT

NOTE: This order form is for *updates only.* To order complete manuals (new, new editions, reprints), use the Corporate Parts Center order form. After being incorporated into a manual through reprinting, updates continue to be available for six months.

HEWLETT hp PACKARD

SOFTWARE/PUBLICATIONS DISTRIBUTION
ORDER FORM

UPDATES TO 3000 AND 2000
LEVEL MANUALS ONLY

SHIP TO:

NAME _____

COMPANY _____

STREET _____

CITY _____ STATE _____ ZIP CODE _____

MANUAL NAME	PART NUMBER	QUANTITY

When completed, please mail this form to:

There is no charge for manual updates.

HEWLETT-PACKARD
SOFTWARE/PUBLICATIONS DISTRIBUTION
5303 Stevens Creek Blvd.
Santa Clara, CA 95050

Please photocopy this order form if you do not want to cut the page off. You will automatically receive a new order form with your order.

HEWLETT PACKARD

CONTRIBUTED SOFTWARE
Direct Mail Order Form

NOTE: No direct mail order can be shipped outside the United States.

Please Print:

Name _____ **Title** _____

Company _____

Street _____

City _____ **State** _____ **Zip Code** _____

Country _____

Item No.	Part No.	Qty.	Description	List Price Each		Extended Total	

Sub-total		
Your State & Local Sales Taxes*		
Handling Charge	1	50
TOTAL		

*Tax is verified by computer according to your ZIP CODE. If no sales tax is added, your state exemption number must be provided: # _____.
If not, your order may have to be returned.

Domestic Customers: Cash required on all orders less than $50.00. Mail the order form with your check or money order (payable to Hewlett-Packard Co.) or your U.S. Company Purchase Order to:

HEWLETT-PACKARD COMPANY
Contributed Software
P.O. Box 61809
Sunnyvale, CA 94088

International Customers: Order through your local Hewlett-Packard Sales office. No direct mail order can be shipped outside the United States.

All prices domestic U.S.A. only. Prices are subject to change without notice.

HEWLETT-PACKARD
COMPUTER SYSTEMS COMMUNICATOR ORDER FORM

Please Print:

Name _____ Date _____

Company _____

Street _____

City _____ State _____ Zip Code _____

Country _____

☐ HP Employee Account Number _____ Location Code _____

☐ **DIRECT SUBSCRIPTION**

Part No.	Description	Qty	List Price	Extended Dollars	Total Dollars
5951-6111	COMMUNICATOR 1000	_____	$48.00	_____	
	(if quantity is greater than 1 discount is 40%)			_____	
	TOTAL DOLLARS for 5951-6111				_____
5951-6112	COMMUNICATOR 2000	_____	25.00	_____	
	(if quantity is greater than 1 discount is 40%)			_____	
	TOTAL DOLLARS for 5951-6112				_____
5951-6113	COMMUNICATOR 3000	_____	48.00	_____	
	(if quantity is greater than 1 discount is 40%)			_____	
	TOTAL DOLLARS for 5951-6113				_____

☐ **BACK ISSUE ORDER FORM (cash only in U.S. dollars)**
(subject to availability)

Part No.	Description	Issue No.	Qty	List Price	Extended Dollars	Total Dollars
5951-6111	COMMUNICATOR 1000	_____	_____	$10.00	_____	
		_____	_____	10.00	_____	
		_____	_____	10.00	_____	
	TOTAL DOLLARS					_____
5951-6112	COMMUNICATOR 2000	_____	_____	$ 5.00	_____	
		_____	_____	5.00	_____	
		_____	_____	5.00	_____	
	TOTAL DOLLARS					_____
5951-6113	COMMUNICATOR 3000	_____	_____	$10.00	_____	
		_____	_____	10.00	_____	
		_____	_____	10.00	_____	
	TOTAL DOLLARS					_____
TOTAL ORDER DOLLAR AMOUNT						_____

☐ **SERVICE CONTRACT CUSTOMERS**

You will receive one copy of either COMMUNICATOR 1000, 2000, or 3000 as part of your contract. Indicate additional copies below and have your local office forward. Billing will be included in normal contract invoices.

Number of additional copies _____

FOR HP USE ONLY

CONTRACT KEY

5951-6111 Number of additional copies _____
5951-6112 Number of additional copies _____
5951-6113 Number of additional copies _____

Approved _____

HEWLETT-PACKARD
COMMUNICATOR SUBSCRIPTION AND ORDER INFORMATION

The Computer Systems COMMUNICATORS are systems support publications available from Hewlett-Packard on an annual subscription.

The following instructions are for customers who do not have Software Service Contracts.

1. Complete name and address portion of order form.
2. For new direct subscriptions (see sample below):
   a. Indicate which COMMUNICATOR publication(s) you wish to receive.
   b. Enter number of copies per issue under Qty column.
   c. Extend dollars (quantity x list price) in Extended Dollars column.
   d. Enter discount dollars on line under Extended Dollars. (If quantity is greater than 1 you are entitled to a 40% discount.*)
   e. Enter Total Dollars (subtract discount dollars from Extended List Price dollars).

   **To qualify for discount all copies of publications must be mailed to same name and address and ordered at the same time.*

SAMPLE

☒ **DIRECT SUBSCRIPTION**

Part No.	Description	Qty	List Price	Extended Dollars	Total Dollars
5951-6111	COMMUNICATOR 1000	3	$48.00	$144.00	
	(if quantity is greater than 1 discount is 40%)			57.60	
	TOTAL DOLLARS for 5951-6111				$86.40

3. To order back issues (see sample below):
   a. Indicate which publication you are ordering.
   b. Indicate which issue number you want (check availability in latest COMMUNICATOR).
   c. Enter number of copies per issue.
   d. Extend dollars for each issue.
   e. Enter total dollars for back issues ordered.

   All orders for back issues of the COMMUNICATORS are cash only orders (U.S. dollars only) and are subject to availability.

SAMPLE

☒ **BACK ISSUE ORDER FORM (cash only in U.S. dollars)**
(subject to availability)

Part No.	Description	Issue No.	Qty	List Price	Extended Dollars	Total Dollars
5951-6111	COMMUNICATOR 1000	XX	1	$10.00	$10.00	
		XX	2	10.00	20.00	
				10.00		
	TOTAL DOLLARS					$30.00

4. Domestic Customers: Mail the order form with your U.S. Company Purchase Order or check (payable to Hewlett-Packard Co.) to:

   HEWLETT-PACKARD COMPANY
   Computer Systems COMMUNICATOR
   P.O. Box 61809
   Sunnyvale, CA 94088
   U.S.A.

5. International Customers: Order by part number through your local Hewlett-Packard Sales Office.

USE THIS FORM TO ORDER MANUALS

Do not order updates separately. Existing updates are automatically included in shipments. Only the current edition of a manual may be ordered.

HEWLETT hp PACKARD

CORPORATE PARTS CENTER

Direct Mail
Parts and Supplies Order Form

SHIP TO:

NAME _____

COMPANY _____ CUSTOMER REFERENCE # _____

STREET _____ TAXABLE*? _____

CITY _____ STATE _____ ZIP CODE _____

Item No.	Check Digit	Part No.	Qty.	Description	List Price Each		Extended Total	

Special Instructions

Sub-total		
Your State & Local Sales Taxes*		
Handling Charge	1	50
TOTAL		

*Tax is verified by computer according to your ZIP CODE. If no sales tax is added, your state exemption number must be provided: #_____
If not, your order may have to be returned.

Check or Money Order, made payable to Hewlett-Packard Company, must accompany order.

When completed, please mail this form with payment to:

HEWLETT-PACKARD COMPANY
Mail Order Department
P.O. Drawer #20
Mountain View, CA 94043

Phone: (415) 968-9200

Most orders are shipped within 24 hours of receipt. Shipments to California, Oregon and Washington will be made via UPS. Other shipments will be sent Air Parcel Post, with the exception that shipments over 25 pounds will be made via truck. No Direct Mail Order can be shipped outside the U.S.

Although every effort is made to insure the accuracy of the data presented in the **Communicator**, Hewlett-Packard cannot assume liability for the information contained herein.

Prices quoted apply only in U.S.A. If outside the U.S., contact your local sales and service office for prices in your country.

Printed in U.S.A. 9/78
Part No. 5951-6113