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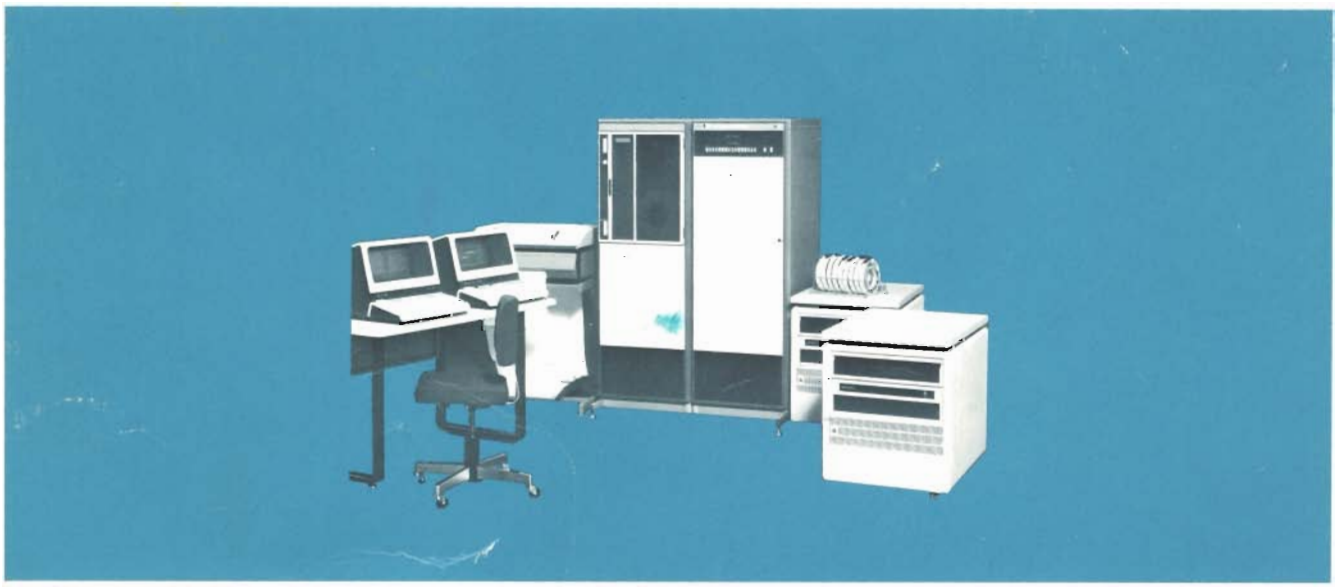
COMMUNICATOR

3000



PRE-CX, CX, SERIES I, SERIES II 1737

Issue No. 14

HP Computer Museum
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Computer Museum

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EDITOR'S NOTE

TRANSITION: That period of change between two states--past and future--is where the COMMUNICATOR 3000 is today. Our last issue (no. 13) marked the first step toward the future for the COMMUNICATOR 3000: it is important that we take the time now to state the objectives we hope to achieve with the COMMUNICATOR 3000.

First, the foremost reason it exists is to communicate, in an accurate and timely manner, the details of the changes, fixes, enhancements, etc. to the HP 3000 operating software present on a concurrent software update via the Master Installation Tape (MIT). Our intention is that the MIT will appear quarterly, and that the issue of the COMMUNICATOR 3000 documentating the specific quarterly MIT will be in your hands a week or two prior to the MIT arriving at the local Sales office. Our intention is to provide time to review the changes that may affect you on a specific software update in time for you to take appropriate action.

Second, the COMMUNICATOR 3000 is a vehicle to present helpful hints, programming tips, information on significant new products available for the 3000 environment, and provide general and specific information for better or more efficient use of your HP 3000.

Our strategy for achieving these two objectives is to provide four issues each year devoted primarily to the details of the software update, with occasional articles treating the second objective, and two additional issues each year treating the second objective alone.

Issue no. 13 marked the first step toward timeliness and specificity. It represented a major format change, from formal typset style to line-printer (3000 Editor) style. This change reflects our desire to achieve timeliness by reducing preparation time.

In a future issue we will be more specific about when you can expect the six issues to be published. There are a number of elements that need to be brought under control before we can publish a schedule. The major element is that of firmly scheduling the software update MIT itself.

We welcome your inputs--positive or otherwise. It is our intention to use the 3000 COMMUNICATOR to assist in your experiencing satisfaction from ownership and use of your HP 3000 computer system.

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INTRODUCING DISTRIBUTED SYSTEMS/3000

Larry Hartge
HP General Systems

Distributed processing for the commercial data processing world has been little more than a buzzword. Now, with the Hewlett-Packard introducton of Distributed Systems/3000 distributed processing becomes a reality. Building upon the full complement of software available on the 3000 Series II and HP's leadership role in industrial distributed systems (based on the 2100 family of hardware), DS/3000 was the next logical step.

INTERACTIVE COMMUNICATIONS

DS/3000 consists of the software enhancements to MPE II and interface cards that permit interactive communications between HP 3000 Series II computers via hardwired coaxial cables or via modem links over phone lines. With this HP contribution, the user is not required to have a knowledge of telecommunications concepts--that means "transparent" distributed processing power from HP 3000 to HP 3000. This transparency means you can:

- Attain full use of another remote HP 3000 processor just as if it were your local processor.
- Automatically access remote HP 3000 files just as if they were on your local system.
- Use the standard input/output facilities of each language (Cobol, RPG, Fortran, etc.) to do input/output on another HP 3000 system.

Put another way, this network transparency means that your EDP staff is freed from system level programming--in fact, they are freed from all communications programming. Processing a command on a remotely connected HP 3000 system is as easy as typing "remote" when using DS/3000!

CAPABILITIES AND FEATURES

The three major functional capabilities of this DS/3000 mode that are "transparent" are:

- REMOTE COMMAND PROCESSING--gives the user the ability to execute any and all MPE II commands through an interactive remote session.
- REMOTE FILE ACCESS--permits the user to automatically access remote files using normal I/O of all languages simply by expanding his file statement to identify the remote system.

- PROGRAM-TO-PROGRAM COMMUNICATION--affords the programmer the ability to write application programs which run simultaneously in separate computers and communicate directly and efficiently with each other.

The use of these three capabilities results in many benefits and features, such as:

- VIRTUAL TERMINAL CAPABILITY--the ability of a HP 3000 terminal user to attain full use of another remote HP 3000 processor just as if it were his local processor.

- PERIPHERAL SHARING--overall cost reduction by minimizing duplication of expensive, specialized peripherals (such as an upper/lower case line printer). This is achieved automatically via the remote file access capabilities.

- DATA BASE AND DATA FILE SHARING--the use of program-to-program communication and remote file access eliminates duplication of data bases or files.

- APPLICATION TRANSPARENCY--the application programmers need not be concerned with the details of network communication, but can now concentrate on the application problem.

- EFFICIENT COMMUNICATIONS--all communications take place in a bidirectional, interleaved fashion for efficiency. In addition, these communications may take place over switched, leased or hardwired lines.

- NETWORK CONTROL--a computer network can be implemented that distributes computer power to locations where it is needed--at the same time maintaining control at a central location, if desired.

- NETWORK SECURITY--full network security is assured through the password and lockword provisions of the MPE accounting system. Full accounting of remote usage is also automatic.

PRODUCT PRICE AND TRAINING

This "tranparent" software power is available for $3000 initial payment, with $125 as a monthly software fee for each computer (node) in the network. A hardwired interface costing $2300, or a modem interface costing $2000, is also required for each computer.

Coaxial cables for the hardwired link are available from 25′ for $175 to 2000′ for $1,775. On-site DS/3000 training should be purchased at least once by each organization, and includes 3 days of training for up to 10 students.

A TYPICAL HEWLETT-PACKARD DISTRIBUTED SYSTEMS NETWORK

As an example of what you can do with Hewlett-Packard's Distributed Systems Network capability, consider the commercial/ industrial environment of a manufacturing plant in a multidivisional corporation. Here the functional areas of Accounting, Manufacturing, Marketing, and Engineering each make their contributions to the operation of the division as a whole. As well as performing separate tasks, they might also be separated physically. The warehouses could be miles away, with several distribution centers spread across the country, and of course, a sales organization is always dispersed over a wide geographical area.

The network depicted in the adjacent diagram mirrors the organizational structure of the division--Hewlett-Packard distributed system networks can be configured to match any organizational structure. In this example each functional area has computers to process its particular functional tasks. This means the people who enter the data and use the results are responsible for the processing and schedule work, and establish priorities according to their actual needs. Information is entered once, at its source, avoiding redundancies and errors, yet is available to all who need it.

COMMON VIRTUAL DATA BASE

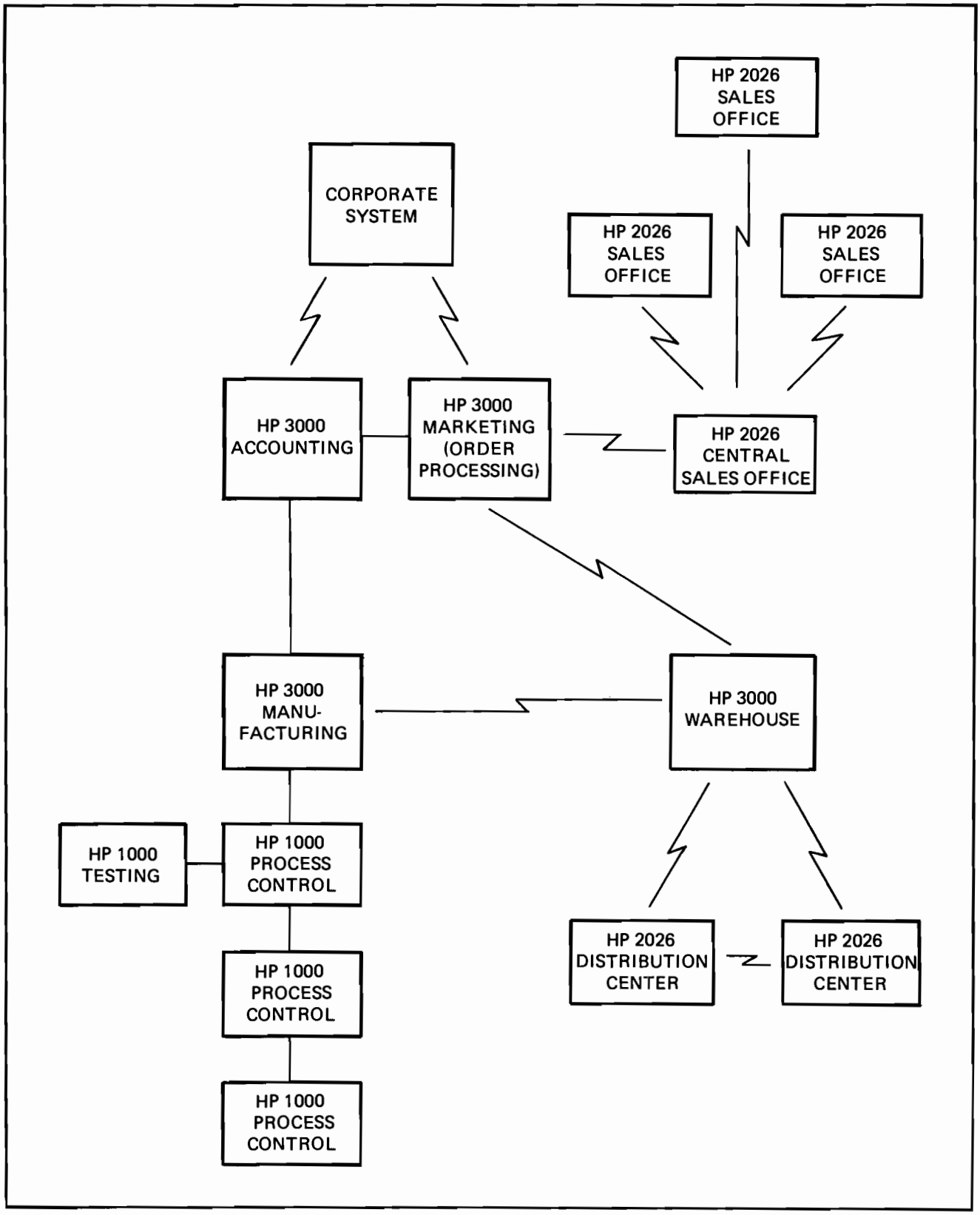
The functional areas usually operate independently, however, for some applications they are highly interrelated. For example, the same information about parts and materials is needed throughout the division--for cost accounting, engineering, manufacturing, purchasing --nearly every department uses this data. Through the Distributed System links that join each computer to the others, the data bases used by each department are shared by all--a virtual data base. This "one set of books" (or data bases) eliminates duplication of records and ensures that departments base their decisions on the same data.

ACCOUNTING

The HP 3000 in Accounting draws upon information supplied by the other computers in the network to perform the division's financial management. Typical are general ledger, accounts receivable, accounts payable, payroll, and cost accounting.

ORDER PROCESSING

The HP 3000 in the Order Processing Department receives incoming orders from customers through telephone links with either the corporate mainframe computer, or the HP 2026 at the central sales office. This HP 2026 is the central node of an order entry and communications network of HP 2026's and multidropped HP 2645 terminals which covers every sales office. Order Processing's computer also has a telephone link with the warehouse network so it can check the finished goods inventory before scheduling deliveries, and have the warehouse's line


HP 2026
SALES
OFFICE
CORPORATE
SYSTEM
HP 2026
SALES
OFFICE
HP 2026
SALES
OFFICE
HP 3000
ACCOUNTING
HP 3000
MARKETING
(ORDER
PROCESSING)
HP 2026
CENTRAL
SALES OFFICE
HP 3000
MANU-
FACTURING
HP 3000
WAREHOUSE
HP 1000
TESTING
HP 1000
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HP 2026
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PROCESS
CONTROL

printer produce shipping documents. Order Processing's computer also accesses Manufacturing's HP 3000 through the Accounting Department link to inquire about production schedules when that information is needed for scheduling deliveries. This computer also handles customer billing and periodically runs forecasting and market research studies.

MANUFACTURING

The HP 3000 on the factory floor forms the center of a manufacturing control system and is used for capacity planning, master scheduling, materials requirements planning, and job routing and control. Linked to it is an HP 1000 that logs work in progress and inventory movement on the factory floor. This HP 1000 also passes work schedules and downloaded programs from the HP 3000 to a network of HP 1000's that control automated manufacturing processes and computer-aided testing facilities. The DS/3000 link to the warehouse obtains component inventory information used in production scheduling, and issues schedules for parts deliveries to the work centers.

WAREHOUSE

The HP 3000 in the warehouse maintains a data base on all parts and equipment which are currently available at the warehouse or are on order. This inventory can be accessed by Accounting for valuation, or by Order Processing for shipment. In addition, this HP 3000 handles purchase orders and does receiving and stores control. The computer is also connected to an HP 2026 network that controls finished goods inventories held at distribution centers.

INCREMENTAL GROWTH

The network does not have to begin in its present form--its growth may be staged incrementally. As each functional area justifies the need for its own computer, one is purchased and added to the network. The Distributed System links provide immediate use of the computer as soon as it is installed, without requiring any software conversions to existing programs.

SUMMARY

In this example you see individual Hewlett-Packard computer systems being used effectively for specific manufacturing and management functions, while the HP Distributed System Network links tie them together into a cohesive information processing network. In addition, the remote job entry capabilities of Hewlett-Packard computers allow the network to be comfortably integrated into the overall corporate computing structure. Thus the appropriate financial analyses and controls can be exercised at the corporate level, while individual divisions manage their own resources efficiently.

PRE-CX, CX AND SERIES I SOFTWARE UPDATE

MULTIPROGRAMMING EXECUTIVE OPERATING SYSTEM
****

CONTENTS OF MASTER INSTALLATION TAPE (MIT) DATE CODE 1737

PRODUCT NAME	PRODUCT NUMBER	LEVEL	DATE CODE	SUPPORT ACCOUNT FILE CONTAINING CHANGES**
*MPE	32000C	00.16	1737	N00N000C.HP32000
SPL	32100A	06.04	1709	
*BASIC	32101B	00.07	1737	N00N101B.HP32101
*FORTRAN	32102B	00.08	1737	N00N102B.HP32102
*BASIC COMPILER	32103B	00.07	1737	N00N103B.HP32103
*RPG	32104A	03.06	1737	N00N104A.HP32104
BUILDINT	32150A	03.01	1623	
*EDITOR	32201A	07.00	1737	N00N201A.HP32201
STAR	32204A	01.00	1603	
*SCIENTIFIC LIBRARY	32205A	02.03	1737	N00N205A.HP32205
*DEL/3000	32206A	01.05	1737	N00N206A.HP32206
SDM	32210A	05.00	1508	
*COMPILER LIBRARY	32211C	04.06	1737	N00N211C.HP32211
*FCOPY	32212A	02.00	1737	N00N212A.HP32212
*COBOL	32213B	03.00	1737	N00N213B.HP32212
*COBOLC	32213C	02.00	1737	N00N213C.HP32213
*SORT/MERGE	32214B	01.05	1737	N00N214B.HP32214
*IMAGE	32215A	04.04	1737	N00N215A.HP32215
QUERY	32216A	03.04	1709	
*TRACE	32222A	03.02	1737	N00N222A.HP32222
XA2100	32223A	01.02	1709	
XL2100	32226A	02.00	1636	
CALCOMP PLOTTER	30126A	00.01	1640	
*2780/3780 EMULATOR	30130D	00.01	1737	N00N130D.HP30130
PROG CTRLR/BCS	30300A/			
	30361A	00.01	1512	
PROG CTRLR/RTE-C	30301A/			
	30361A-1	00.02	1701	
ONLINE DIAGNOSTICS		-- --	1709	
*OFFLINE DIAGNOSTIC		-- --	1737	NDOFFLN.HPOFFLN

*Updated/changed in this MIT

**Changed files not documented in the following pages appear in the Series II 1737 documentation.

MPE 32000C.00.16

DATE CODE 1737, N00N000C.HP32000.SUPPORT

I. MPE 32000C.00.16

A. MODULES MODIFIED C.00.16

MODULE NAME	NO	CHANGE HISTORY C.00.XX														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INITIAL	0		X	X			X	X	X	X	X	X	X		X	
SYSDUMP	1	X	X			X		X	X			X		X	X	X
SEGPROC	2	X				X			X	X						
SEGDVR	3											X				
DISPATCH	4		X			X				X	X	X				
LOAD	5	X										X				
MAPP	6				X											X
UCOP	7															
DEVREC	8															
PROGEN	9							X	X	X		X			X	X
ININ	10				X		X			X	X		X			
EXIN	11	X	X		X	X	X		X		X			X	X	
LOG	12									X						
IOPTRD0	13															
IOPTPN0	14					X		X							X	
IOPLOT0	15															
IOMDISK0	16		X				X	X	X							
IOFDISK0	17		X				X	X							X	
IOTAPE0	18			X				X								
IOLPRT0	19											X	X			
IOCDRD0	20	X				X										
IOCLTTY0	21															
IOTERM0	22										X					X
IOCDPN0	23															
IOPRPN0	24				*	X					X	X			X	
IOREM0	25															
IOBSC0	26															
IOMDISK1	27		*				X	X	X	X					X	
PFAIL	30		X	X	X											
FILESYS	50	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
COMM'INT	51		X			X					X	X		X	X	X
STORE/RESTORE	52		X	X			X	X	X			X			X	
DIRC	53								X				X			
ALLOCATE	54	X		X				X			X	X			X	X
DISKSPC	55															

MMCORER	56				X		X			X							X
MMDISKR	57									X				X			X
ABORTRAP	58				X	X		X		X			X				X
MESSAGE	59					X		X	X	X					X		X
CROUTINE	60		X	X					X	X							X
IOUTILTY	61		X	X		X	X	X						X	X		X
TTYINT	62	X	X	X		X		X							X		X
PCREATE	63								X								X
MORGUE	64		X					X	X								X
PROCMAIL	65																X
PINT	66				X		X	X		X			X		X		
DATASEG	67							X									
IOPM	68	X			X					X		X					X
CHECKER	69																
UTILITY	70	X	X		X				X				X		X		X
SEGUTIL	71		X			X		X				X			X	X	
LOADER1	72	X	X				X		X						X		
RINS	73				X							X					
JOBTABLE	74																X
DEBUG	75																X
NURSERY	76		X														X
SYSDPLY	77				X								X				
FIRMWARESIM	78							X	X	X							X
SPOOLING	79		X	X		X	X	X	X	X			X		X		X
SPOOLCOMS	80				X		X		X			X			X		X
MESSAGE CAT	--		X		X	X	X	X	X			X	X				
*New																	

B. ENHANCEMENTS

File equations are now permitted in SYSDUMP for the list of successful and non-successful restored files. The respective formal designatcrs are SYSDGOOD and SYSDERR.

C. CORRECTIVE SOFTWARE CHANGES

1. SYSDUMP was modified to insure that it would not accept a logical device number of zero.

2. SYSDUMP will now insure that a previously aborted SYSDUMP will not adversely affect the current attempt due to presence of an old TEMPSL file.

3. A check has been added to IOTERM0 to determine if a new IOCB entry has been allocated. This corrects the system failure 206 when using modems.

4. The Command Interpreter was modified so that a LISTF ,-1 into a small disc file will not crash the system. The problem occurred when an attempt was made to allocate a second extent to the list file.

5. The :DEALLOCATE command now returns an error 217,52 for a file that does not exist.

6. The commands LISTACCT, LISTGROUP, and LISTUSER will no longer lock the directory indefinitely if the output is written to an unspooled device that is not ready.

7. The system failure 67 will result in MMDISKR if anyone tries to release a system defined code segment. This is a new system failure.

8. The system failure 66 will result in MMDISKR if anyone tries to release a system defined data segment. This is a new system failure.

9. MMDISKR has been modified to insure that a stack overflow cannot occur in the procedures GETDATASEG and MMLOG.

10. ABORTRAP was changed to insure a dump is produced when a user requests a stackdump and then exits via QUIT or QUITPROG.

11. A new uncallable procedure has been added to CROUTINE to allow subsystems to determine the type of system presently being used. The name of the procedure is THISCPU.

12. A system failure 51 will be generated from CROUTINE if a SIN instruction fails on the CLOCK/TTY interface.

13. PSEUDODISABLE and PSEUDOENABLE has been deleted from MMCORER. Entry points have been added to existing procedures in CROUTINE. This reduces the size of MMCORER.

14. The procedures GETIOENTRY and RELIOENTRY were rewritten. GETIOENTRY will now initilize the entire entry to zero. Also system failure 201 was deleted from GETIOENTRY and system failure 203 was deleted from RELIOENTRY.

15. System procedure SUDDENDEATH was modified to set the DB register back to its original setting before entering SUDDENDEATH.

16. A timing problem has been fixed in IOAWAKE. This change elimnates the possibility of a hard pause under heavy loads.

17. A one character delay has been added to line feeds when using an EXECUPORT (TERM=3) at 300 baud.

18. A problem has been fixed in the terminal monitor which will prevent a console lockout when break is pressed while a program is loading or terminating.

19. CTRANSLATE has been changed to insure proper code conversion. The conversion tables now provide a complete set of conversion codes.

20. Messages sent with the user commands TELL and TELLOP are now edited to delete special character(s) which deal with cursor movements on the 2640 terminal series.

21. The module JOBTABLE was modified to allow lower case characters to be sent via TELL and TELLOP.

22. FIRMWARESIM has been modified to disable interrupts while adjusting the Q register in procedures DIDIV and DIMPY.

23. The defines for PSEUDODISABLE and PSEUDOENABLE in the following modules were removed and replaced with calls to PSEUDODISABLE and PSEUDOENABLE in CROUTINE: MAPP, PROGEN, IOTERM0, FILESYS, MMDISKR, MESSAGE, TTYINT, PROCMAIL, IOPM, DEBUG, SPOOLING, MORGUE, PCREATE.

24. The COMMAND instrinsic has been modified such that it will no longer modify the users buffer. This fixes the problem with TELL and TELLOP, were the character preceding the message will some times be destroyed.

D. DOCUMENTATION CHANGES

1. The following system failures have been added to the system:

NUMBER	SEGMENT	PROCEDURE	DESCRIPTION
51	CROUTINE	PSEUDOENABLE	SIN Instruction Failure.
66	MMDISKR	RELDATASEG	Attempting to release a system defined data Segment.
67	MMDISKR	RELCODESEG	Attempting to release a system defined code segment.

2. If the user tries to Restore a Series II file with more than 16 extents the following file rejection message will appear:

GREATER THAN 16 EXTENTS

E. 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 boundary.

5. The CPU times displayed via a REPORT command periodically far exceeds reality.

6. All FREADs following the modification of the line termination character(FCONTROL with a control code of 25) result in a returned condition code of CCL and a error code of 31.

7. When using the 2640B terminal with DEL the forms may come out garbled if the terminal is running at 2400 baud.

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

F. MISCELLANEOUS

1. There are two new files in PUB.SYS to help you provide the information necessary to analyze an MPE problem or report a requested enhancement. A description of these files follows:

   a. DUMPJOB

      1) Generates a Software Maintenance request form.

      2) Obtains a copy of the loadmap form the file LOADMAP in PUB.SYS. This is an absolute "MUST" item for anyone attempting to analyze a system dump listing.

      3) Obtains a copy of the system I/O CONFIGURATION by doing a "SYSDUMP" to a null device ($NULL). This particular program will then "abort" after obtaining the I/O listing. Please note that this section of the program will abort as part of the normal operation.

      4) Runs DPAN.PUB.SYS to obtain a listing of the system dump taken in response to your problem.

   CAUTION: If the dump to be taken using the stream file was not physically taken on the host machine, the LOADMAP and I/O CONFIGURATION generated will be incorrect. Please insure proper administrative measures to assure that the LOADMAP and I/O CONFIGURATION are the correct ones for the dump in question.

This streamed file logs on under MANAGER.SYS. It is important to remember to remove passwords from this account/user or to modify the STREAM file "DUMPJOB" using the EDITOR subsystem.

b. FORMGEN

This program generates twenty copies of the software maintenance request form for your use in reporting subsystem problems and enhancements. The program output is automatically directed to a line printer in the device class "LP." The output can be directed to another list device by using the formal file designator "LIST". For example:

```
:FILE LIST;DEV=$STDLIST
```

The above example would direct output to the session/job output device which could be a hardcopy terminal.

2. THE SOURCE FOR MPE IS GOING TO BE RESEQUENCED FOLLOWING THE RELEASE OF C.00.16. The next release of MPE will be C.01.0. There are three new files in HP32000.SUPPORT. These files are:

   a. BUILDSCR--Modifies the maintenance and compilation job files in order to create and resequence the new source.

   b. COMPILE--Generates the new MPE sources. It streams all the modified job files in HP32000.SUPPORT.

   c. FIXMAINT--Creates the new maintenance files that are compatible with the new source.

   d. The order of events in creating the new source files are:

      1) Restore @.HP32000.SUPPORT from the MIT tape (date code 1737).

      2) Restore the MPE source into HP32000.SUPPORT.

      3) Set the job limit to one.

      4) Stream the file BUILDSCR to modify the maintenance and job files. It in turn will stream COMPILE. COMPILE will stream FIXMAINT.

5) Store the new source files.

3. All maintenance files were modified to allow for the creation of the new source files and a $TWENTY record was added to each file. These changes are not reflected in the Modules Modified table (see I.A.).

II. SUPPORTED UTILITIES

A. UTILITIES MODIFIED C.00.16

UTILITY	CHANGE HISTORY C.00.XX												
	5	6	7	8	9	10	11	12	13	14	15	16	
DISKEDIT		*											
DPAN	*							X				X	
FREE		*											
LISTDIR		*			X								
LISTEQ	*							X				X	
LISTLOG	*												
PATCH		*											
RECOVER	*	X											
SAEDIT	*				X						X		
SAVIOUR	*				X						X		
SLPATCH		*											

*NEW

B. CORRECTIVE SOFTWARE CHANGES

1. Changed the diagnostic request(DIAG REQ) in DPAN to down request(DOWN REQ).

2. LISTEQ has been modified to print up to 96 file equations. This increases the limit from approximately 24.

C. KNOWN PROBLEMS

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

SCIENTIFIC LIBRARY/3000 HP32205A.02.03

DATE CODE 1737, N00N205A.HP32205.SUPPORT

CORRECTIVE SOFTWARE CHANGES

SMR# 2400 - The STAT procedure, causing a bounds violation in certain applications, has been fixed.

COMPILER LIBRARY/3000 HP32211C.04.06

DATE CODE 1737, N00N211C.HP32211.SUPPORT

CORRECTIVE SOFTWARE CHANGES

1. SMR# 1639 - If an error was encountered during a sequential access READ (e.g. Tape parity error), which had specified the option ERR=lab, control was not transfered to the statement label lab as expected.

2. SMR# 2604 - When using a user trap routine to analyze or recover from an arithmetic error, the parameter to this routine is a reference parameter of the result of the operation which caused the trap to be invoked. It has previously been assumed that this result will always be on TOS and thus the parameter to the trap routine has been set up accordingly. This was a problem when the last instruction executed prior to the trap was either INCM or DECM since the result was not on TOS. This has been changed so as to detect this circumstance and set up the parameter to the trap routine properly.

COBOL B HP32213B.03.00

DATE CODED 1737, N00N213B.HP32213.SUPPORT

A. ENHANCEMENTS

1. Subprograms can now be segmented by using priority numbers with the Section name. The technique is the same as for main programs.

2. The code generated for a GO TO statement which branches to a paragraph within the same section has been improved so that it will execute faster.

3. Programs which declare items in the Data Division which are not referenced in the Procedure Division will not allocate space for descriptive information in the run-time data stack for such items. Storage for the data items themselves will still be allocated, however.

4. If a newfile is created at compile time and both the textfile and masterfile are Editor Cobol Formatted files (Code=1052), then the newfile will also be given a file code of 1052.

B. CORRECTIVE SOFTWARE CHANGES

1. A SEARCH statement with multiple WHEN clauses left extra word(s) on the stack causing a stack overflow condition at run time.

2. A GO TO statement as the first statement in a section which had no paragraph names caused an abort at run time.

3. An ON SIZE ERROR in a COMPUTE statement which contained division sometimes generated an Error 211--Multiply or Undefined Internal Label.

4. Passing a paragraph/section name as an actual parameter in a CALL statement was not detected as an error.

5. A table larger than 65K bytes was not detected as an error.

6. Using a table element as a subscript was not detected as an error.

7. Using a file-name, a paragraph/section name, or an index-name in a DISPLAY statement was not detected as an error.

8. Corresponding elements which had 88-level condition names associated with both the sending and receiving items were not handled properly in a MOVE, ADD, or SUBTRACT CORRESPONDING statement.

9. A READ...INTO statement did not check for proper sequential/random access mode.

10. A VALUE clause starting with a + or - sign and a decimal point and followed by all zeroes generated an erroneous error message. For example, PIC S9V99 VALUE +.00, generated an error message.

11. The ON SIZE ERROR option did not work properly when the result was a COMP item containing less than 5 digits with no digits to the right of the decimal point.

12. A WORKING-STORAGE Section consisting only of 77-level items and which contained one or more 88-level condition names caused a run time abort.

13. Moving an item declared as unsigned but which contained a negative value to an unsigned field sometimes moved the negative value instead of the absolute value.

14. An 01-level REDEFINE in the LINKAGE SECTION did not work if the item being redefined was also an 01-level REDEFINE in the LINKAGE SECTION.

15. A READ statement with a bad file-name aborted the compiler with a bounds violation.

16. A COMPUTE ROUNDED statement with an intermediate result greater than 24 digits aborted at compile time.

17. A program with more than about 1020 Procedure Calls in one segment aborted at PREP time.

18. A SET statement where the item being set was an index-data-name which was a table element did not work.

19. A SEARCH statement with a compound condition sometimes generated an erroneous Error 100 message, Illegal Arithmetic Operand.

20. Using a REDEFINE clause after an Empty Group (Warning 52) sometimes aborted the compiler.

21. Using a numeric literal in the VALUE clause of an 88-level condition name associated with an alphanumeric item caused an Error 201--Bad Pass 1 Operand.

22. A COMPUTE statement with only 1 operand did not detect an illegal numeric operand.

23. A multiply of two numbers which contained a total of 28 digits or more to the right of the decimal point did not work.

24. The following Corrective Software Changes have been made in version 4.07 of the Cobol Library.

    a. A SEARCH ALL statement with a Descending Key looped.

    b. Raising a number with an absolute value less than .31 to a non-integer power sometimes produced erroneous results.

    c. Moving a literal to an alphanumeric edited item which was longer than the literal caused the literal to be propagated instead of blank filling on the right.

25. Storing a value in a COMP-3 field with an even number of digits did not zero out the unused half-byte at the beginning of the number if the sending field was shorter than the receiving field or had a different number of digits to the right of the decimal point.

C. DOCUMENTATION CHANGES

ERROR 133 has been deleted due to the enhancement mentioned above concerning subprogram segmentation (Page C-26 of the COBOL/3000 COMPILER Reference Manual).

D. KNOWN PROBLEMS

The base shown in the symbol table map for an index-name in an INDEXED BY clause in the LINKAGE SECTION is shown as LINK when it should be OWN for non-dynamic subprograms.

E. MISCELLANEOUS

The source file for this product has been resequenced with this MIT. If you have the source for version B.02.00 and wish to create a new source for version B.03.00, stream the file J00J213B.HP32213.SUPPORT using the B.02.00 source for file S00S213B. After the job is completed, the new source will be in file TEXT.HP32213.SUPPORT. The job also requires file M00M213B.HP32213.SUPPORT from MIT 1737 to be present. A new maintenance file (M00M213B) should be started for future compilations which will use version

B.03.00 source. This file must consist of at least one record. A $CONTROL NOLIST record is sufficient for this purpose.

RJE/3000 2780/3780 EMULATOR HP30130D.00.01

DATE CODE 1737, N00N130D.HP30130.SUPPORT

A. ENHANCEMENTS

1. Two new parameters have been added to the #RJLINE command:

   a. LOCK = {YES / NO}

      The Emulatcr normally issues a LOCKSEG request on its stack to prevent it from being swapped out. If the Emulator is run concurrently with jobs which have large memory requirements, especially in small memory configurations, the other jobs may suffer severe performance degradation. This can be overridden by specifying LOCK = NO.

   b. PRI = {HIGH / NORMAL}

      The Emulator normally issues a GETPRIORITY request for an absolute execution priority of 150. If the Emulator is run on a high-speed (e.g., 4800 baud) full-duplex line with 0 turnaround delay, the result may be that the Emulator will adversely affect the execution of other jobs, since it will be using an inordinate proportion of the CPU. This can be overridden by specifying PRI = NORMAL, which causes the call to GETPRIORITY to be bypassed.

2. The driver IOSBSC0 has been modified to issue I/O control orders to configure the 30055 for 4800 baud. This has no effect on normal operation using modems, since the modem clock takes precedence over the configured speed.

3. For user output procedures, the HP3000 carriage control byte is now available at Q-6. It is NOT, however, a formal parameter; the calling sequence is unchanged.

4. The receive timeout (not to be confused with the line-bid timeout, which is specified by the WAIT = parameter) has been increased from 20 seconds to 45 seconds.

B. CORRECTIVE SOFTWARE CHANGES

1. Batch jobs are no longer aborted when a WAIT = timeout occurs. This is true regardless of whether or not the command file is the same as the JOB input file.

2. A SYNTAX ERR 4 is now issued if an illegal value is specified for the WAIT = parameter(s). The maximum value is a total number of seconds less than 32768. If WAIT = 0 is specified, the timer is disabled, and no timeout will occur.

3. In 3780 mode, the maximum number of data bytes per transmission block has been changed from 512 to 511. EXCEPTION: If #RJIN.....;MAXSIZE=128 is specified, the maximum is still 512 bytes.

4. If the ID = parameter is specified on the #RJLINE command, a LINE ERR 0 no longer occurs.

5. In version B.02.00, the 10 word array at DB+0 reserved for user input and output procedures was incorrectly declared as indirect; this has been corrected.

6. Receiving an 'ENQ' during a line close no longer causes a system failure.

7. On a 4800 baud full-duplex four-wire line, a spurious RJE I/O ERR 5 is no longer generated.

8. On a non-switched line, certain transmission errors caused the driver IOSBSC0 to go into an infinite wait; this has been corrected.

9. Garbage error numbers are no longer generated.

DOCUMENTATION CHANGES

The manual for version 'B' also applies to version 'D'. The enhancements will appear in a subsequent version of the manual.

KNOWN PROBLEMS

In 2780 mode, irrecoverable errors may occur when receiving variable length output blocks separated by ITB's at line speeds greater than 2400 baud.

MISCELLANEOUS

1. The test file 'T00T130D' has been changed to conform to current host requirements.

2. The alternate telephone number for running the test file T00T130D over 208 (4800 baud) modems has been changed in the instruct file INSTRUCD from '738-0495' to '732-0495'.

3. The product identification has been changed from '30130B' to '30130D' to reflect the unbundling of the Emulator software from the hardware. Since there have been no maintenance file changes since the source files for version B.02.00 were released, existing source files will compile correctly with the new version 'D' maintenance files. To use the job files J00J130D, J01J130D, and J02J130D, it is necessary to RENAME the version 'B' source files S00S130B, S01S130B, and S02S130B to S00S130D, S01S130D, and S02S130D respectively.

RELEASE ISSUE OF THE SERIES I STANDALONE DIAGNOSTICS.

DATE CODE 1737, 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 1737

A. DIAGNOSTICS CHANGED

DIAGNOSTIC	FILE NAME	LEVEL	OCTAL FILE #
*SLEUTH	PD211A	02.01	(01)
SDUP	D217A	04.00	
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 MIT

B. CORRECTIVE SOFTWARE CHANGES

Stand alone SLEUTH diagnostic--A new type has been added to SLEUTH for the 7920 disc, which is 12. All commands valid for the 7905 are now valid for the 7920.

III. 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

Computer Museum

SERIES II SOFTWARE UPDATE

MULTIPROGRAMMING EXECUTIVE OPERATING SYSTEM SERIES II
****

CONTENTS OF MASTER INSTALLATION TAPE (MIT) DATE CODE 1737

PRODUCT NAME	PRODUCT NUMBER	LEVEL	DATE CODE	SUPPORT ACCOUNT CONTAINING CHANGES
*MPE	32002A	01.02	1737	N00N002A.HP32002
SPL	32100A	06.04	1709	
*BASIC	32101B	00.07	1737	N00N101B.HP32101
*FORTRAN	32102B	00.08	1737	N00N102B.HP32102
*BASIC COMPILER	32103B	00.07	1737	N00N103B.HP32103
*RPG	32104A	03.06	1737	N00N104A.HP32014
*APL/3000	32105A	00.04	1737	N00N105A.HP32105
BUILDINT	32150A	03.01	1623	
*DS/3000	32190A	01.00	1737	N00N190A.HP32190
*EDITOR	32201A	07.00	1737	N00N201A.HP32201
*SCIENTIFIC LIBRARY	32205B	00.02	1737	N00N205B.HP32205
*DEL/3000	32206A	01.05	1737	N00N206A.HP32206
*KSAM/3000	32208A	01.02	1737	N00N208A.HP32208
*COMPILER LIBRARY	32211D	00.06	1737	N00N211D.HP32211
*FCOPY	32212A	02.00	1737	N00N212A.HP32212
*COBOL	32213C	02.00	1737	N00N213C.HP32213
*SORT/MERGE	32214B	01.05	1737	N00N214B.HP32214
*IMAGE	32215A	04.04	1737	N00N215A.HP32215
QUERY	32216A	03.04	1709	
*TRACE	32222A	03.02	1737	N00N222A.HP32222
XA2100	32223A	01.02	1709	
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	00.01	1737	N00N130E.HP30130
CALCOMP PLOTTER	30126A	00.01	1640	
*DIAGNOSTICS	32230A	-- --	1737	N00N230A.HP32230

*Updated/changed by this MIT.

I. MPE 32002A.01.02

A. MODULES MODIFIED A.01.02

MODULE NAME	NO	CHANGE HISTORY A.01.XX												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
INITIAL	0	X													
SYSDUMP	1	X													
SEGPROC	2														
SEGDVR	3														
DISPATCH	4														
LOAD	5														
UCOP	7														
DEVREC	8														
PROGEN	9	X													
ININ	10	X	X												
MEMLOGP	11														
LOG	12		X												
IOPTRD0	13														
IOPTPN0	14		X												
IOPLOT0	15														
IOMDISC0	16														
IOFDISC0	17														
IOTAPE0	18	X	X												
IOLPRT0	19														
IOCDRD0	20														
IOTERM0	22	X	X												
IOPRPN0	24		X												
IOREM0	25														
IOMDISC1	27		X												
PFAIL	30														
FILESYS	50	X	X												
COMM'INT	51	X	X												
STORE/RESTORE	52	X													
DIRC	53														
ALLOCATE	54	X	X												
DISCSPC	55														
MMCORER	56	X	X												
MMDISKR	57	X	X												
ABORTRAP	58		X												
MESSAGE	59														
CROUTINE	60	X	X												

CLOCKIO	61	X	
NRIO	62	X	X
PCREATE	63		X
MORGUE	64	X	X
PROCMAIL	65		
PINT	66	X	X
DATASEG	67	X	X
CRIO	68	X	X
CHECKER	69		
UTILITY	70	X	X
SEGUTIL	71		
LOADER1	72		X
RINS	73		
JOBTABLE	74	X	X
DEBUG	75		
NURSERY	76		
STKDUMP	77		
FIRMWARESIM	78		
SPOOLING	79	X	X
SPOOLCOMS	80	X	X
MESSAGE CAT	--		

B. ENHANCEMENTS

1. CTRANSLATE was enhanced to support full 256 character code conversion tables for EBCDIC to ASCII, ASCII to EBCDIC, EBCDIK to JIS and JIS to EBCDIK.

2. PINT has been modified to use DDIV instructions rather than the firmware simulator instruction.

3. This version of MPE includes changes which allows the 3000 SERIES II to support Katakana characters (a Japanese character set) throughout the system software as data. That is, program comments, program character strings or literals, text files, etc. will accommodate Katakana characters. The Katakana character set is supported as a bit 8 extension of the ASCII code chart as defined by the Japanese Industrial Standard (JIS). Therefore, the modifications made to MPE enables the system to support the bit 8 code extension protocol as defined by ANSI 3.41. In general, the modification made to MPE modules allow parity checking and generation to be disabled when the "terminal type" is 12, thus, allowing bit 8 of a byte to be transparent to the I/O system in the same sense as bits 1 through 7. Other modifications to MPE allow for the capability of reading data cards encoded with Katakana/Hollerith

codes and for the support of a Roman/Katakana character line printer. All Katakana features are invoked through properly configuring the system during "system loading". See the SYSTEM SUPERVISOR/SYSTEM MANAGER reference manual configuration charts and tables.

C. CORRECTIVE SOFTWARE CHANGES

1. SMR# 2433 - JOBTAPE was modified to correct a condition that could give an out of bounds addressing problem.

2. a. IOTERM0 has been corrected to log only valid errors from a terminal (It was logging BREAK as an error).

   b. It has also been corrected to reset the ENQ ACK flag when returning TBUFS so a write will not be erroneously paused if a binary read occured last.

3. PINT has been modified to allow activate FATHER only when PIN=0 as specified in the manual.

4. SMR# 2041 - ALLOCATE has been corrected to avoid losing deferred processes on WARMSTART.

5. COMM'INT has been modified to disallow :DEALLOCATE in BREAK.

6. SMR# 1458 - LOG was corrected to allow any user to read closed LOG files as specified in the manual. Prior to this change, only the CREATOR could read the file.

7. The internal error handling detection was modified in IOMDISC1 to handle real correctable errors in an improved manner.

8. MPE 01.01 had an enhancement in IOTAPE0 to check for tape LOAD point. It did this by checking for READY which wasn't completely correct. IOTAPE0 has been modified to correct this.

9. NRIO has been modified to release IOQ's properly after PUTMSG is completed. Prior to this change, it could release an IOQ and leave a random IOQ LINK pointing to the free list. Changes were made to CRIO for this problem also.

10. IOPTPN0 was fixed to not cause an SF270 when a paper low condition existed and a call was made to IOMESSAGE for more tape.

11. The FILESYS has been corrected to avoid a system failure if an illegal buffer address is specified for column 1 control characters.

12. A problem introduced on the last MIT which can cause a system with two or more discs on the same controller to pause has been corrected.

13. SMR# 1652 - LISTF to a small disc file will no longer cause the system to crash with a SF 206.

14. SMR# 2433 - An MPE problem causing an SF 9 when running RJE has been resolved.

15. SMR# 2543 - The SPOOLER will no longer cause a SF 206 when running out of disc space.

16. SMR #'S 2213,2289 - The FILESYSTEM has been modified to allow backspace record to work properly now and added a parameter to TAPEFUNC to allow "ignore EOF".

17. SMR# 2406 - FORMSMSG is now limited to 50 characters.

18. SMR# 2577 - Programatic TELL & TELLOP's messages will no longer destroy the byte preceeding a message that starts on an odd byte boundary.

19. SMR# 2590 - MMCORER was modified to inhibit preparation of a process for dispatching while a segment is being locked. This eliminates a situation where the same memory could be allocated to two different processes at the same time.

20. SMR# 2878 - NRIO has been corrected to allow users to log on with TERM=1.

21. SMR# 2825 - SPOOLING has been modified to correct an intermittent situation where a byte could be lost when SPOOLED to a printer.

22. A problem caused by entering a character at the same time the LOGON timer timed out has been resolved. This problem would cause the TBUFF counter to go negative and result in the system pausing.

23. The 30119 Card reader/punch driver has been corrected to support any program that will either punch, read, or read and punch, but will not read and punch on the same card. The driver will now handle read check errors and invalid Hollerith by issuing a message to the console indicating which error occured. The operator will then have to physically place the OFFLINE/ONLINE switch in

the OFFLINE position, place it back in the ONLINE position, and make the unit READY. The card that had the error will have been gated to the same stacker that it was intended for if the error had not occured, and should be the last card in that stacker.

24. MAMIO has been modified to verify that the LDEV from the segment descriptor is valid before issuing an I/O request. You will now get an SF 136 if it is an invalid LDEV.

25. MORGUE has been modified to avoid destroying the JIT. Prior to this fix, EXPIRE would store the accumulated process time when a system process was terminated, even though "System Processes" do not have a "Job Accounting Table" entry.

26. DATASEG has been modified to pass status as a return when PXFIXED area of user stack cannot be expanded.

27. Abortrap has been modified to correctly check the validity of an arithmetic trap input from a process.

28. POWERON has been modified to ignore DS devices when releasing channel resources. (POWERON is located in segment ININ).

29. The SPOOLER module was modified such that the header and trailer printing will now skip single lines when printing. In the past, the skip was done using a slew to V.F.U. channel #3. This was causing the paper to "run away" when a customer had a special V.F.U. tape installed in his lineprinter.

D. DOCUMENTATION CHANGES

MANUAL	PART #	REF #
Error Messages & Recovery	30000-90015	1,8
Console Operators Guide	30000-90013	2,4
MPE Commands Reference Manual	30000-90009	3,7
System Manager/Sup. Manual	30000-90014	5
MPE Intrinsics Manual	30000-90010	6

1. On page 7-18, two error numbers have been added.

ERROR	PROCEDURE	CAUSE	ACTION
134	LINKFA	Invalid memory address.	Perform a cold dump.
135	DELINKFA	Invalid memory address.	Perform a cold dump.
136	MAMIO	Invalid LDEV.	Perform a cold dump.
137	EXCHANGDB	Invalid PCB pointer.	Perform a cold dump.

2. On page B-4, two error numbers have been added.

ERROR	PROCEDURE	CAUSE	ACTION
134	LINKFA	Invalid memory address.	Perform a cold dump.
135	DELINKFA	Invalid memory address.	Perform a cold dump.
136	MAMAIO	Invalid LDEV.	Perform a cold dump.
137	EXCHANGDB	Invalid PCB pointer.	Perform a cold dump.

3. On page 2-61, the :FREERIN command has been changed to read "Available Programatically? YES".

4. On page 3-5, the =ABORTJOB command has been changed to read "=ABORTJOB #Jnnn" or "#Snnn only".

5. On page 2-12, the :DEALLOCATE command has been changed to read "Available in BREAK? NO".

6. On pages 2-8, 2-9, 8-15, 8-16, there have been numerous changes in the wording of the .ALTDSEG intrinsic.

7. On page 2-72, the :JOB command has been changed under the note on output priority. It reads, Default: 8 if logging and spooling log record are enabled, otherwise 13.

8. On page 2-23, two previously undocumented Loader errors have been added:

MSGNO	MESSAGE
44	Illegal SL capability
45	Invalid entry point

E. KNOWN PROBLEMS

1. SYSTEM FAILURE TYPE

a. Some unexplained SF 19's and SF 21's are occurring due to destruction of the pointer to the PCB table in SYSGLOB. Please submit all dumps of this type until further notice.

b. SF 366 occurs when the printing reader punch driver (IOPRPN0) is configured as job and data accepting, spooled in and is the STREAMS device. A get around is to avoid making this device the STREAMS device.

c. Executing a FORTRAN program using the COMMAND intrinsic with no CR at the end causes a SF311.

d. It is possible to get an SF 270 when punching binary records on the paper tape punch.

e. It is possible to get an SF 353 by opening a STREAM'ed input file with domain=0. Use domain=01 as a work around.

2. FUNCTIONAL FAILURE TYPE

a. A session with an outstanding READ cannot be aborted until reception of a carriage return.

b. When logical records, plus overhead (byte count and EOBLOCK word) fit the computed block size exactly, the last record is written into the next block, thus wasting some space in the current block.

c. A session logging on with HIPRI can be logged off under certain conditions. You shouldn't be able to do this.

e. A subroutine containing multiple entry points with a different number of parameters cause a SEGMENTER error when they are in an RL. One can work around this by building an SL containing the subroutine instead of an RL.

f. Trying to use the ZIP mode feature of the 563 plotter won't work if the plotter is SPOOLED due to a FILESYSTEM problem. One can make it work by not spooling the plotter or by making the output buffer less than 527 words.

g. This version of the 30119 Card reader punch driver will not read a card and punch more data on the same card. A work around for this is to read the card into your own work area, append the data, then punch the new card.

h. Only SYSDUMP should be used to modify the system SL. Use of Segmenter to modify the SL results in the SL being left in an unpredictable state.

F. MISCELLANEOUS

1. A new System Failure (204) has been added to CRIO in an attempt to determine who is returning an IOQ that is already in the free list. Please forward all dumps of this type immediately.

2. Some recent unexplained occurences of SF9's have prompted us to add two new System Failures. They are SF134 and SF135 and will cause system failures if an invalid memory address is detected while trying to allocate or deallocate memory areas via MMCORER.

3. SF 137 is a new bug catcher to get additional infomation on some recently reported SF 19 & 21's.

4. The 30119 Card Reader/Punch has undergone a major overhaul, part of which is noted in the corrective software changes area. Some additional items should be noted. They are:

   a. The header and trailer cards are always picked from the front hopper and stacked in the left (stacker 2) stacker.

   b. Input spooled jobs pick from the rear hopper and output spooled jobs punch from the front hopper.

   c. The driver is not capable today of reading a card and punching on the same card. (See functional failure type 2g.)

II. SUPPORTED UTILITIES

A. UTILITIES MODIFIED A.01.02

UTILITY	CHANGE HISTORY A.01.XX													
	01	02	03	04	05	06	07	08	09	10	11	12	13	14
DISKED2	X	X												
DPAN2	X	X												
FREE2	X	X												
LISTDIR2	X													
LISTEQ2	X													
LISTLOG2	X	X												
PATCH	X	X												
MEMLOGAN	X	X												
MEMTIME	X	X												
SADUTIL	X													
SLPATCH	X													
SPOOK	X													
RECOVER2	X	X												

B. ENHANCEMENTS

1. DISKED2, FREE2, LISTLOG2, MEMLOGAN, MEMTIME and RECOVER2 have been enhanced to output consistent sign on messages.

2. The following enhancements have been made to DPAN2.

   a. Extended CST blocks are formatted immediately after the CST table.

   b. The DIT's for CS and DS are now formatted.

   c. DPAN2 may be run with an optional parameter. The allowable parameters are:

PARM	MEANING
0	Same as no PARM. Prints/formats whole dump.
1	Formats the front section only.
2	Prints bank 0 only.
3	Format, then print bank 0 only.
4	Print bank 1 only.
5	Format, then print bank 1 only.
6	Print bank 0 and 1 only.
7	Format, then print bank 0 and 1.
8	Print bank 2 only.
9	Format, then print bank 2 only.

```
10   Print bank 0 and 2 only.
11   Format, then print bank 0 and 2.
12   Print bank 1 & 2 only.
13   Format, then print bank 1 & 2 only.
14   Print bank 0,1 & 2.
15   Format, then print bank 0,1 &2.
16   Print bank 3 only.
17   Format, then print bank 3 only.
18   Print bank 0 & 3 only.
19   Format, then print bank 0 & 3 only.
20   Print bank 1 & 3 only.
21   Format, then print bank 1 & 3 only.
22   Print bank 0,1 & 3.
23   Format, then print bank 0,1 & 3.
24   Print bank 2 & 3.
25   Format, then print bank 2 & 3.
26   Print bank 0,2 & 3.
27   Format, then print bank 0,2 & 3.
28   Print bank 1,2 & 3.
29   Format, then print bank 1,2 & 3.
30   Print bank 0,1,2,3
31   Format, then print bank 0,1,2,3(same as no parm
                                     or PARM=0)
```

C. CORRECTIVE SOFTWARE CHANGES

1. The following changes have been made to DPAN2:

   a. When executing DPAN2 as a session, the program will print the DPAN2 title, version, update, fix level and the copywrite statement.

   b. The allocated DST printing has been extended to print the names of the following DST's:

Octal DST #	Name
54	FMAVT
55	INPUT DEV. DIRECTORY
56	OUTPUT DEV. DIRECTORY
57	WELCOME MSG #1
60	WELCOME MSG #2
61	CS/3000 DATA SEG
62	PROCESS/JOB CROSS REF.
63	SYSTEM JDT
64	COMMAND INTERPRETER LOG FILE
65	MOUNTED VOLUMES TABLE
66	VOLUME SET DEFINITION

c. The stack format preceding the octal dump of a stack has been fixed such that no extra stack markers will be printed. (A bug allowed several garbage markers on occasion.)

d. When DPAN2 was formatting certain tables, if a bad address was detected for the start of the table, the formatting of the table was skipped. A fix is now installed which will make some primitive comparisons of table starts to DST entries and/or absolute core locations. If an address is found to be somewhat reasonable a warning will be printed and an attempt will be made to print the table.

e. It was reported in MPE 01.01 that DPAN2 would now successfully rewind tape prior to beginning the read of the tape. Unfortunately, there was a case of not enough verification and the fix did not work for many cases. It is fully fixed in 01.02 and will work in all cases.

f. Conversion of a double number (such as disc addresses, table counts, etc.) was not correct for the high order word. This is now fixed.

g. If fixed low core memory addresses for CST, PCB base DST or ICS are destroyed/incorrect, a warning will be printed.

h. Several errors in the formatted PCB table printing have been corrected. This was mostly cosmetic in nature.

i. A few reported "Integer Overflows" have been fixed. At this point it is reasonable to infer that DPAN2 will not have any further "Integer Overflow" problems.

j. A problem in formatting the "SIR" table caused DPAN2 to go into an infinite loop which eventually filled a complete SPOOLFILE and then died. This is fixed.

k. The VDS bit map formatting was occasionally being formatted from an area in bank 1 of a dump. It will now correctly format from the current area in bank 0.

2. The utility PATCH was fixed such that it does not abort the user when the program is executed.

3. The utility RECOVER2 has been modified such that normal user files and privileged files.(such as those created by the IMAGE subsystem) will be recovered. It was also modified so that when the magnetic tape file cannot be opened, the program prints a warning message, prints the file information display and then terminates normally.

D. KNOWN PROBLEMS

SMR #2823 - Logical addressing of DISKED2 and DEBUG does not support full addressing of the 7920 disc.

BASIC/3000 HP32101B.00.07

DATE CODE 1737, N00N101B.HP32101.SUPPORT

CORRECTIVE SOFTWARE CHANGES

1. A BASIC program which wrote more than 32767 characters to the BASIC list device would softabort with a superfluous "INTEGER OVERFLOW" error.

2. Lower-case characters and square brackets ("[]") were up-shifted and converted to parentheses, respectively, in REM statements.

KNOWN PROBLEMS

The interpreter aborts with a stack underflow when control-Y is type in certain circumstances. This occurs most often when printing FREQ table. The problem may also arise in some cases when INVOKing or using the ABORT, CALLS, or FILES commands in BREAK-mode.

Work-around--Type control-Y and set a breakpoint at the next statement to be executed. Then enter the GO or RESUME command. When you break at the next statement, it will then be safe to use any BREAK-mode commands.

FORTRAN/3000 HP32102B.00.08

DATE CODE 1737, N00N102B.HP32102.SUPPORT

A. ENHANCEMENTS

1. Five spaces will be available to print a COMMON offset in the SYMBOL MAP rather than four spaces.

2. The SYMBOL MAP headings have been adjusted since an enhancement to the previous version caused some headings to be off by two spaces.

B. CORRECTIVE SOFTWARE CHANGES

1. SMR #2028 - Incorrect code was generated if a substring designator for a character value contained an expression which contained another character value: e.g., STR=CH[1:INDEX(CH," ")].

2. SMR #2192 - The message "PROGRAM UNIT XXX COMPILED" was not printed when the listfile was $STDLIST.

3. SMR #2248 - The displacement within a COMMON block for INTEGER*4 and four-word DOUBLE PRECISION arrays was not computed correctly in the SYMBOL MAP.

4. SMR #2314 - In certain cases $CONTROL CROSSREF ALL would cause a large compile to abort at location %10.%4354 with a bounds violation.

5. SMR #2601 - The compiler did not detect when $CONTROL CROSSREF occurred past the beginning of a program unit, thus causing an abort when it tried to process the cross reference. This has been changed such that a warning will be generated and the command will be ignored.

6. SMR# 2924 - The FORTRAN source could not be compiled using the SPLINTER.PUB.SYS file released on the last MIT. This was because an obsolete procedure was removed from the SPLINTER file and the unneeded reference to it in FORTRAN had not yet been removed, thus causing an unresolved external error during compilation. This reference has been deleted and, if desired, the FORTRAN source can be compiled.

C. DOCUMENTATION CHANGES

SMR# 2526 - The FORTRAN manual improperly states (page 6-18) that auxiliary input/output statements REWIND, BACKSPACE and ENDFILE will cause no action when specified for devices which do not have the capability to perform the request. These commands are valid only for non-spooled disc or tape devices and will otherwise cause a FILE SYSTEM error. The FORTRAN manual will be changed in a future update.

D. KNOWN PROBLEMS

The compiler, in most cases, improperly handles a fourword DOUBLE PRECISION number represented in octal format (e.g. DP=%64333D). A temporary solution would be to transfer such initializations to a DATA statement (e.g., DATA DP/%64333D/).

BASICOMP/3000 HP32103B.00.07

DATE CODE 1737, N00N103B.HP32103.SUPPORT

A. CORRECTIVE SOFTWARE CHANGES

1. A BASIC program which wrote more than 32767 characters to the BASIC list device would softabort with a superfluous "INTEGER OVERFLOW" error.

2. A bounds-violation abort would result in some cases when returning from a string-valued user-defined function. In rare cases, the return would yield anomalous results in the program (eg., aborts or incorrect results in seemingly unrelated parts of the program).

3. Erroneous code was generated for a string-tonumeric CONVERT statement which contained a nontrivial string expression and an error label. This caused an abort or invalid execution in a FOR-loop if no conversion error occurred at run-time.

4. The BASIC compiler aborted with a bounds violation when compiling an IF-statement which contained a CALLstatement in the THEN clause.

5. Erroneous code was generated for a NUM function whose argument was a string expression.

6. A program which contained a very large number of nonCOM variables caused either the superfluous run-time error "TOO MANY FILES" if the INIT option was not specified in a $CONTROL card or the error "INVALID STRING INPUT" if the INIT option was specified.

B. KNOWN PROBLEMS

1. When the base is type-REAL and the power is a typeLONG constant representable as an integer (eg., 9**(-2L0)), single precision rather than doubleprecision arithmetic is performed.

   Work-around--Replace type-LONG constant power with a variable.

2. The unary-minus operator preceding a constant is not always handled correctly. This causes the following two incorrect results (where "x" represents a constant and "y" represents any variable, constant or expression):

   a. "-x MOD y" is evaluated as "(-x) MOD y" instead of "-(x MOD y)"

   b. "-x**y" is evaluated as "(-x)**y" instead of "-(x**y)". [BR #2008]

   Work-around--Fully parenthesize expression.

3. Incorrect code is generated for I/O FOR-loops with a constant negative one STEP size.

   Work-around--Replace the constant STEP size with a variable.

4. Incorrect code is generated for a FOR-loop which encloses both an ONEND statement with a destination outside the loop. This situation will cause spurious run-time aborts if an end-of-file is detected while inside the FOR-loop.

   Work-Around--Place a superfluous GOTO statement outside the FORloop with a destination inside the loop. The GOTO statement itself is not intended to be executed.

5. Lower-case characters are not recognized as format specifications in PRINT USING format string expressions.

6. A bounds violation or other anomalous results occur when a user-defined function is used within a subscript expression on the left-hand side of a LET statement. For example:

```
X(FNA(Y))=10
```

Work-around--Eliminated the reference to the userdefined function in the subscript expression by evaluating it in a preceding statement. For example:

```
Z=FNA(Y)
X(Z)=10
```

7. A file LINPUT statement cannot read past a null record.

RPG HP32104A.03.06

DATE CODE 1737, N00N104A.HP32104.SUPPORT

A. ENHANCEMENTS

RPG will now allow conversion from EBCDIK (extended KATAKANA) to JIS (Japanese Industrial Standard) and viceversa via the EBCDIK spec on the F card (column 54 on the File continuation card). Partial field translation is also supported with the EBCDIK version in the same fashion as it was supported in the past for EBCDIC conversion capability.

B. CORRECTIVE SOFTWARE CHANGES

1. Specifying option type ERROR on F spec followed by user-supplied routine name to allow this routine to handle input/output errors resulted in privileged instruction abort.

2. A numeric group sequence error was erroneously given at run-time if a numeric group was not optional and had N members.

3. A run-time integer overflow abort would sometimes occur at output time if there were control levels specified for an input file and there was EXCPT output.

4. Entering an L or R in the PACKED/BINARY field (column 44) of the OUTPUT spec for leading or trailing arithmetic sign always resulted in a plus sign irrespective of the sign of the source field.

5. Specifying half-adjust (H) on a Z-SUB calc operation resulted in a bounds violation.

6. Specifying the same field indicator in all three positions on INPUT specs resulted in a stack underflow abort at run-time.

7. Specifying an extremely large output record (>400 bytes) would sometimes result in a run time bounds violation.

8. Specifying an error response to run-time error 17 on the control record spec in column 71 resulted in a compile-time warning message which indicated that this column should be blank. The message has been changed to reflect columns 72 on.

9. Specifying option type field BYPASS on F spec did not bypass on an IO error, instead RPG continued with a bad record buffer, as though there had not been an error. RPG will now attempt correctly to process the next record for the file in question.

10. Specifying option field type BYPASS followed by a field name to be used as an IO error counter resulting in unpredictable action, usually a bounds violation. RPG will now update the error counter field correctly in the event of an IO error.

C. DOCUMENTATION CHANGES

1. Specifying option type field ERROR or RDEXIT on the F spec results in RPG calling the named SPL procedure. The procedure head must conform to the following:

```
PROCEDURE exitname (ptr,returncode);
 VALUE ptr;
 INTEGER POINTER ptr;
 INTEGER returncode;
 .
 .
 .
```

2. Specifying an external subroutine to be EXIT'ed to requires that all fields, tables and arrays (passed via RLABL to the routine) be declared as EXTERNAL BYTE POINTER's, whereas if an indicator is to be passed, it must be declared as an EXTERNAL INTEGER. A sample procedure declaration would be:

```
PROCEDURE exitname;
 BEGIN
  EXTERNAL BYTE POINTER rlabel;
  .
  .
  .
  EXTERNAL INTEGER INnn;
  .
  .
  .
```

D. KNOWN PROBLEMS

1. Defining an alphanumeric field in a subroutine after referencing it in the main routine sometimes results erroneously in a 671T error.

   Work-around--Define the field at first reference.

2. An error in the MPE FILE SYSTEM causes two extra lines to be output on the first page, which are not counted by RPG.

   Work-around--Back the printer carriage up two lines prior to printing the report.

APL HP32105A.00.04

DATE CODE 1737, N00N105A.HP32105.SUPPORT

A. CORRECTIVE SOFTWARE CHANGES

1. General

   a. Hitting the F5 soft key on an HP2641 terminal while running APL under)TERM HP would cause the terminal to lockup rather than generating control Y. APL was setting up the softkey wrong. This is corrected.

   b. When control Y was input just before printing a character matrix, the first line was always being printed out. This has been changed so that all printing is suppressed.

   c. Many of the systems tables which reside in the workspace have been reduced in size so that a minimum workspace is about 10,000 bytes instead of 24,410 bytes as in previous versions. Workspaces created under previous versions must be COPYed and reSAVed for the size reduction to take effect. This change will not affect the running of programs, except in the case of nested functions. The default level of nesting (which can be reset by)DEPTH) will be less.

   d. The left and right tack symbols were reversed in the translation tables for character pairing terminals causing a right tack to be stored when a left tack was input. This is corrected.

   e. When the ASCII equivalents in APL for the $ and # characters, "CN and "PD, were used, they were switched in APL so that the opposite character was printed out. This problem only occurred in ASCII mode and is fixed.

f. During an APL system error, it was possible for APL to go into an infinite loop when trying to recover. This can no longer happen.

g. If a program which did variable assignments had been run several times and then one of the assigned variables was redefined to be a function, shared variable, or label, APL would then crash. Now the proper error message comes back to the user with no crash.

h. When an internally stored real number was used in an expression whose result must be an integer, such as an indexed expression or the operand for monadic iota, the wrong integer was used if the real number was just slightly smaller than the resultant integer value (< []CT). This has been fixed.

i. Certain constructs caused unnecessary recomplies. The answers were correct, but execution was slower than necessary. For example, all uses of FORMAT, branching to expression times APV, and the use of real integers in cases requiring exact integers used to cause binding errors and force recompiles. This no longer happens.

2. Operators and Functions

a. The error message DOMAIN ERROR was being given for ARCSIN and ARCCOS when the argument was exactly 1 or -1. APL now returns the correct value for those arguments.

b. ROTATE was giving a RANK ERROR when a single element vector or matrix (including APVs) was given as a left argument. For example, (iota 1) ROTATE 1 2 3 or (1,iota 0) ROTATE 1 2 3 gave RANK ERRORs, but 1 ROTATE 1 2 3 did not. The correct answer is now returned.

c. CATENATE and LAMINATE would give DOMAIN ERROR or SYNTAX ERROR rather than the correct answer when single element vectors or matrices were used as coordinates. These problems have been corrected.

d. Subscripting a matrix or array with the last coordinates being null (unspecified) as in A[exp;] would cause system errors. This problem has been corrected.

e. Manipulation of an APV zero origin involving +, -, and TIMES occasionally produced incorrect results. It now works correctly.

f. Application of monadic + and - to an APV produced a non-APV which was not always the correct one. The correct APV is now produced.

g. There were some problems with the coordinate specification operator which caused it to handle certain single element vector or matrix coordinate expressions erratically; sometimes correctly, sometimes not. This is fixed.

h. RESHAPE of a beaten TAKE gave 'ghost' results. For example:

```
L<--1
R<--'XY'
ARG<--L DROP R
2 RHO ARG
XX      (instead of YY)
```

i. DYADIC IOTA has been considerably speeded up.

System Commands and Functions

a. Sometimes setting []VM would cause an APL system error. This has been fixed in all the situations we know about.

b. If []CR failed to generate the character matrix because the number of elements was >32767, the LENGTH ERROR message would show text from the function whose []CR was being generated rather than the function calling []CR. For example:

```
[0]  QP1
[1]  []CR 'A'
```

where A's []CR would take greater than 32767 elements would give the following result:

```
    QP1
LENGTH ERROR
QP1[1]  text of line 1 of A
```

This has been corrected so that the result of calling QP1 will be:

```
    QP1
LENGTH ERROR
QP1[1]  []CR 'A'
```

c. A new monadic system function, []RP (representation) has been added. Its syntax is:

result<--[]RP AX

where the result is a numeric scalar and AX is an arbitrary expression.

[]RP takes an arbitrary expression as its right argument and returns a numeric scalar indicating the internal representation of the evaluated expression. The value of the result exactly matches the value which would be needed by []CV as a left argument:

1 - character
2 - 16 bit integer
3 - (unused - reserved for future 32-bit integers)
4 - (unused - reserved for future 32-bit reals)
5 - 64-bit real

This might be used in conjunction with the shared variable file system as follows:

DATAO <-- ([]RP <expression>) []CV <expression>

Thus []RP provides an efficient means for determining the representation of data.

4. APLGOL

Certain combinations of constant vectors followed by comments would cause APL to abort. This is corrected.

B. KNOWN PROBLEMS

1. Function locking is not yet implemented.

2. Some singular matrices can be inverted.

3. APL characters can be compared with numerics, however they should never be equal. There are some cases where numbers compared with characters will return equal.

4. CONCATENATE does not do the proper checking for a vector exceeding 32767 elements. This causes an infinite loop in APL for programs with statements such as follows:

```
V<--30000 RHO 'A'
LOOP:V<--V,1000 RHO 'A'
-->LOOP
```

5. Dynamic file LOCKing may still not be possible. Check the MPE NOON file to see if locking can now be included in file equations.

6. Sometimes when the HP2641 terminal is being used for special displays the APL overstrike capability goes away. Sending a Control F to the system will straighten it out.

C. MISCELLANEOUS

1. In addition to the program file, APL requires the following:

   a. A set of PROMS mounted on the EIS board. These contain the extra instructions which APL executes. Without these instructions, an unimplemented instruction error will result.

   b. An addition to the system SL, APLSEG01. This is new with this MIT and will be added when APL is installed. Adding the SL segment was necessary to support future enhancements to APL/3000.

2. Helpful Definitions:

   a. Arithmetic Progression Vector (APV) -The data structure used to represent simple integer vectors. It consists of three integers -- start, increment, and length.

   b. Beaten Expression -- An expression for which the code was optimized by the APL compiler. TAKE, DROP, REVERSAL, TRANSPOSE, SUBSCRIPT and RESHAPE are the functions which are beaten.

DS/3000 HP32190A.01.00

DATE CODE 1737, N00N130A.HP32190.SUPPORT

A. CORRECTIVE SOFTWARE CHANGES

The following problems were fixed in this release:

1. REMOTE RJE now works.
2. Break in APL now works.
3. Control-Y in APL now works.
4. REMOTE REMOTE to a third 3000 in a network is now handled correctly.
5. An error when a remote user did a 'DSLINE; CLOSE' between between a local 'DSLINE ldev; OPEN' and a REMOTE HELLO has been fixed.
6. 'DSLINE @;CLOSE' and 'DSLINE; CLOSE' have been cleaned up to only ask the user to 'ABORT REMOTE?' when a remote session is active. Also, a 'NO' response to that is handled correctly.
7. A conflict between running a session on the system console and doing a '=DSLINE' has been resolved.
8. A HELLO from the REMOTE subsystem to a computer with no virtual terminals available now displays the error properly.
9. Break during the BYE messages now works properly.
10. Extremely large FWRITE's after an FOPEN with a small record size no longer crash the system.
11. Passwords on REMOTE HELLO now work.
12. Control-Y while in the REMOTE subsystem and reading now works.
13. Invalid logon from a session now returns the proper error.
14. Doing a REMOTE RUN of a PTOP slave program now returns the proper error.
15. Concurrent program to program and remote file access from the same program now works.
16. Passwords are now suppressed when running the REMOTE subsystem in a batch environment. NOTE: This does not effect 'REMOTE HELLO'.

17. The program name is now properly bounds checked during a POPEN.

18. An invalid 'REMOTE HELLO' from a batch job now prints the returned error message.

19. A problem which sometimes caused console lockout when a =DSLINE command was issued has been fixed.

20. Odd-byte READ's when using DS/3000 in a batch job now properly pad the remaining byte of the last word read with a blank or zero, depending on whether the read specifies ASCII or binary.

21. The right byte of the last parameter of an FWRITE or FWRITEDIR is no longer overlaid with an %15 when an odd number of data bytes are written.

B. KNOWN PROBLEMS

1. Using break while doing RFA from a remote program or subsystem occasionally results in an incorrect ERR 0.

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

3. After breaking a PTOP operation, 'REMOTE RESUME' hangs the terminal.

4. 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.

5. The file disposition specified in a local :FILE command (i.e., SAVE, DEL, or TEMP) to a remote file has no effect. The temporary work-around is to issue a :REMOTE FILE command to specify the disposition.

6. Executing a =DSLINE console command to enable or disable trace while the line is in use may cause a record to be lost. The result of this would normally be that both the local and remote session would "hang", since each would be waiting for communication from the other.

C. DOCUMENTATION CHANGES

When using PTOP, the slave program should issue a GET before terminating in order to ensure successful completion of master PTOP operations.

EDIT/3000 HP32201A.07.00

DATE CODE 1737, N00N201A.HP32201.SUPPORT

A. ENHANCEMENTS: EDIT/3000 User Interface Procedures

To satisfy a number of needs for customizing EDIT/3000 in specific applications, several new interfaces are implemented. These interfaces are designed in a way that will allow programmers to tailor some of the externals of EDITOR to their requirements, and will minimize compatability problems with future releases of the current product. Following is the definition of the user interface procedures:

1. LOGICAL PROCEDURE HP32201'USERINIT
   STRING, LEN, USERSPACE, PROCSPACE);

   ```
   BYTE ARRAY STRING;
   INTEGER LEN;
   ARRAY USERSPACE, PROCSPACE;
   OPTION EXTERNAL;
   ```

   What is the Purpose of this Procedure?

   This will allow for a user written procedure to return a string to be executed as the first command record when an EDITOR process is begun. SET commands, for example, could be returned.

   When is this Procedure Invoked?

   This procedure will be called each time the user has created an EDITOR process. If the EDITOR is invoked from the ":EDITOR" command, only the system SL will be searched. When the EDITOR is :RUN, this procedure may loaded from any SL. If the EDITOR resides in a group outside PUB.SYS, the group SL, then the account PUBLIC SL, and then the system SL will be searched according to the ";LIB=G/P/S" parameter of the :RUN command. When the EDITOR is installed, this is a dummy procedure in the segment "HP32201'USERSEG" in the system SL. If a user wants to define this procedure, a procedure may replace the dummy one. Refer to the Install file (I00I201A.HP32201.SUPPORT), or to the SEGMENTER manual for details on how to install a procedure in an SL.

What are the Definitions of the Parameters?

STRING is a byte array containing the characters of a command input line. There may be up to 255 characters in an input line. An input line may contain multiple commands, separated by semicolons. The command input array must be terminated by an ASCII CR, %15. The first character in the command input array must be a semicolon (;).

LEN is the number of characters in the command.

USERSPACE is a 10 word array that will be available for user "global" storage. This space is shared with the other user procedures. The first two words contain the EDITOR command input and output MPE file numbers, in that order. These file numbers could be used for diagnostic messages, etc., by these interface procedures. The rest of the array will be initialized to binary zeros when the EDITOR is invoked and will not be changed by the EDITOR between calls to user procedures.

PROCSPACE is a 20 word array that is shared with the EDIT/3000 PROCEDURE command. It will be initialized to binary zeros.

What Value Should be Returned?

TRUE should be returned if the other user interface procedures are to be invoked. If FALSE is returned, calls to other user interface procedures will not be executed.

2. LOGICAL PROCEDURE HP32201'USERCOMMAND
(STRING, LEN, USERSPACE, PROCSPACE);

```
BYTE ARRAY STRING;
INTEGER LEN;
ARRAY USERSPACE, PROCSPACE;
OPTION EXTERNAL;
```

What is the Purpose of this Procedure?

This will allow for a user written procedure to scan EDITOR command records, perhaps changing a userdefined command to a standard EDITOR command sequence, or screening the syntax of EDITOR commands.

When is the Procedure Invoked?

This procedure will be called each time the user has entered a command line into the EDITOR.

What are the Definitions of the Parameters?

STRING is a byte array containing the characters of a command input line. There may be up to 255 characters in an input line. An input line may contain multiple commands, separated by semicolons. If Z:: has been input, then it has already been replaced with the Z::= string. Command line continuation (&) and subsequent multiple reads have been processed. The command input array is terminated by an ASCII CR, %15.

LEN is the number of characters in the command. If the user defined procedure changes the effective length of the command line then it must also change the value of LEN accordingly. It also must insure that the terminating CR is still effective if it changes the line.

USERSPACE and PROCSPACE: same as above.

What Value Should be Returned?

If the procedure returns the value FALSE, the input will be rejected and the user will be prompted (with a /) to re-enter the line. It is the interface procedures responsibility to inform the user that the input was not accepted and to issue any diagnostic messages.

3. LOGICAL PROCEDURE HP32201'USERADD
(STRING, LEN, USERSPACE, PROCSPACE);

```
BYTE ARRAY STRING;
INTEGER LEN;
ARRAY USERSPACE, PROCSPACE;
OPTION EXTERNAL;
```

What is the Purpose of this Procedure?

This procedure will be called each time the user has entered a line of text using ADD.

What are the Definitions of the Parameters?

STRING is a byte array containing the characters of a command input line. There may be up to 255 characters in an input line. Input line continuation (&) and subsequent multiple reads have been processed. If TABS are in use, they have not yet been expanded.

LEN is the number of characters in the line. If the user-defined procedure changes the effective length of the line then it must also change the value of LEN accordingly.

USERSPACE and PROCSPACE: same as above.

What Value Should be Returned?

If the procedure returns the value FALSE, the input will be rejected. The user will be prompted with the line number unless ADDQ was used. It is the interface procedure's responsiblity to inform the user that the input was not accepted and to issue any diagnostic messages.

B. CORRECTIVE SOFTWARE CHANGES

1. ERROR 72 (INVALID TAB OPTION) is issued for the following conditions:

   a. Tab stops not within LEFT and RIGHT margins.
   b. Tab stops not specified in increasing order.
   c. Number of tab stops exceeds 12.
   d. More than one character in TABCHAR string.
   e. Syntax error in SET TABS [= (col,col...)] command.
   f. Syntax error in SET TABCHAR [= "char"].

2. FIND; or VERIFY ALL; no longer causes an abort when the pointer is to the left of LEFT.

3. An error within a USE file sets the FLAG to FALSE and subsequent commands are skipped. When the outermost level is reached, the FLAG is reset to TRUE, and command execution is resumed.

4. There may be more than one BEGIN on a command line if separated by semicolons from other commands.

C. KNOWN PROBLEMS

1. Exhausting available work file space during a GATHER, INSERT, or JOIN command will cause a file error.

2. The command JOIN (#recnum/#recnum) counts records beginning from one, but TEXT (#recnum/#recnum) counts from zero.

3. Use of the CONTROL Y during a MODIFY is ambiguous: it may be interpreted to restart the MODIFY using the origional line value; also, it may be interpreted to exit from the command.

4. Re-setting the SIZE value may inhibit texting a file in its entirety, if SIZE is smaller than the TEXT file length.

5. Under special circumstances, a request to INSERT between lines previously created by an INSERT can cause a file error.

6. If an INSERT exhausts available line numbers between prexisting lines, the character string being carried forward by INSERT is lost.

7. The value of LAST used as a column position in a CHANGE command is the column position of the last non-blank character in the current line before the CHANGE command was entered rather than the line to which the CHANGE command is directed.

8. Using the CHANGE ("old string" TO "new string") command after doing a SET RIGHT=value (where value is some number less than 72) may yield inconsistant and incorrect results.This problem occurs primarily when trying to compress blanks.

SCIENTIFIC LIBRARY/3000 HP32205B.00.02

DATE CODE 1737, N00N205B.HP32205.SUPPORT

CORRECTIVE SOFTWARE CHANGES

SMR# 2400--The STAT procedure, causing a bounds violation in certain applications, has been fixed.

DEL/3000 HP32206A.01.05 (FORMAINT)

DEL/3000 HP32206A.01.05 (LIBRARY PROCEDURES)

DATE CODE 1737, N00N206A.HP32206.SUPPORT

A. ENHANCEMENTS

DEL/3000 has been modified for BLOCK MODE/PAGE as well as BLOCK MODE/LINE operation. The mode of operation depends on the internal configuration of the terminal used. Typical performance improvement can be about 50%; in some cases more. That is, response time in BLOCK MODE/PAGE May be half that in BLOCK MODE/LINE, and better, for some applications. The features of this enhancement are described below.

The terms BLOCK MODE/LINE and BLOCK MODE/PAGE refer to various modes of operation of a 264x terminal. DEL/3000 operates primarily in BLOCK MODE with FORMAT on. (See A.3. below for further discussion.)

1. CHANGES TO VALUES IN COMMAREA

COMMAREA (zero-origin)	USAGE	CHANGES
0	STATUS	New values.
1	MPE FILE NUMBER FOR TERMINAL	No change.
2	TERMINAL MODE INFORMATION	New values.
3	TERMINAL ALLOCATION INFO	
4	DATA OVERRUN LOGGING	
5	READ TIMEOUT LOGGING	
6	OTHER DATA ERROR LOGGING	
7	MAXIMUM NUMBER OF RETRIES	
8	SUPPRESS MESSAGES IN OPENTERM AND CLOSETERM, AND ENABLE AUTOREAD FEATURE IN READTERM	
9	ENVIRONMENT INFORMATION	
10	RESERVED	

a. TERMINAL MODE INFORMATION

bits:

0	1	2	3	4 5 6 7 8 9 10 11 12	13 14 15
P	E	F	x	TERMTYPE from logon	B G D
				0=2640A	
				1=2640B	
				2=2644A	
				3=2645A	
				3=2641A	

P: 0=allow 2645 programmatic switch settings;
1=use 264x physical switch settings

E: 0=echo was on before OPENTERM, now off;
1=echo was off

F: 0="DEV=..." used in file equate, not $STDIN;
1=file is $STDIN/$STDLIST

B: 1=Block Mode key down at last status request in OPENTERM; 0=Block Mode key up.

G: 1=strap G out (required for block mode/page)
0=strap G in (required for block mode/line)

D: 0=strap D out (required for block mode/page)
1=strap D in (required for block mode/line)

x: reserved

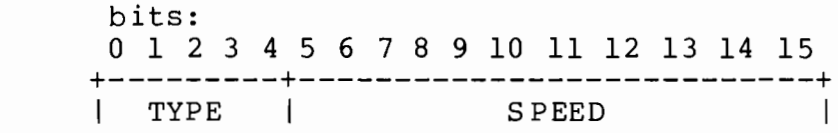
If this word is negative when OPENTERM is called, the automatic setting of the BLOCK MODE key and BLOCK MODE/PAGE straps for a 2645A is bypassed, and the 2645A is handled as if it were a 2640B in this respect (i.e. the physical switch settings are used, no programmatic settings will be done). To use the 2645 programmatic features, this word should be zero or positive whenever OPENTERM is called.

The only portion of this word that is controllable by the user program is the sign bit (P, above). All the other bits are set by OPENTERM.

After OPENTERM is called, this word in COMMAREA has been set to the values described above. READTERM and CLOSETERM make use of these values. OPENTERM sets the devicefile TERMTYPE to 10 unless this default is overridden.

Upon normal termination in CLOSETERM, the ECHO, MPE SETMSG, and logon MPE TERMTYPE values will be restored, if the file is $STDIN/$STDLIST.

b. TERMINAL ALLOCATION INFORMATION

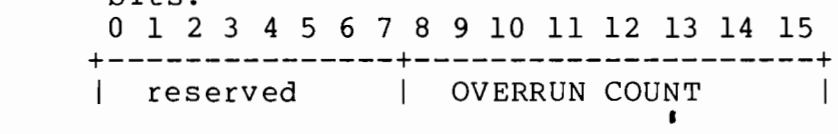


TYPE is the MPE TERMTYPE for a terminal ALLOCATED by OPENTERM. SPEED is the input/output speed for a terminal ALLOCATED by OPENTERM (in characters per second).

If TYPE or SPEED is zero when OPENTERM is called, then defaults will be used (default TYPE is 10, default SPEED is 240 characters per second).

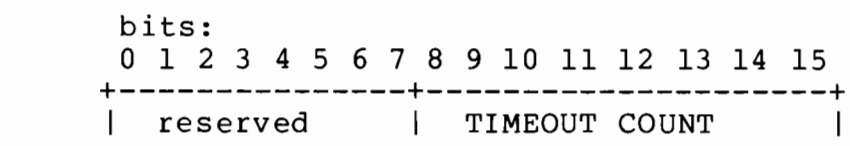
These apply only if the device being used is not $STDIN/$STDLIST; i.e., a :FILE...;DEV=... was used.

c. DATA OVERRUN LOGGING



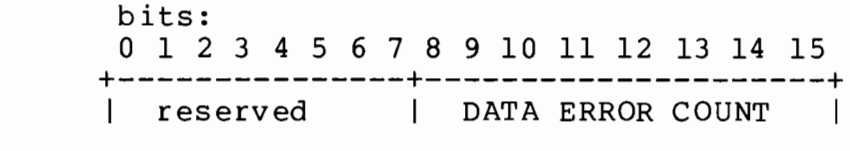
OVERRUN COUNT is the number of data overruns that were encountered in the previous call to READTERM.

d. READ TIMEOUT LOGGING



TIMEOUT COUNT is the number of read timeouts that were encountered in the previous call to READTERM.

e. OTHER DATA ERROR LOGGING



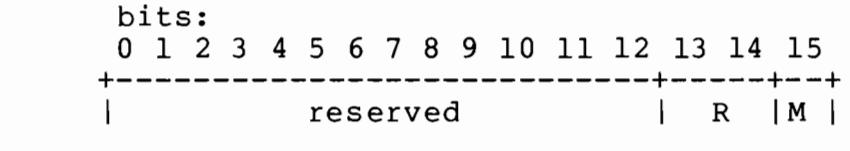
DATA ERROR COUNT is the number of recoverable errors other than data overruns and read timeouts that were encountered in the previous call to READTERM.

f. MAXIMUM NUMBER OF RETRIES

value = 0 : use default value (4 retries)
value > 0 : use this value as maximum
value < 0 : do not perform any retries

Up to the given number of data overruns, read timeouts, and other errors may occur with automatic recovery. After the last retry, the appropriate MPE file error number is returned in the STATUS word in COMMAREA. If the retry recovery attempt(s) were successful, the value returned in the STATUS word is 0 if no other errors were detected, and the number of retries are reported in COMMAREA(4), COMMAREA(5), AND COMMAREA(6) (zero-origin).

g. SUPPRESS MESSAGES IN OPENTERM AND CLOSETERM, AND ENABLE AUTOREAD FEATURE IN READTERM.



M: 0=display mode messages.
   1=suppress mode messages.

R: 00=suppress AUTOREAD special feature.
   01=enable AUTOREAD special feature.

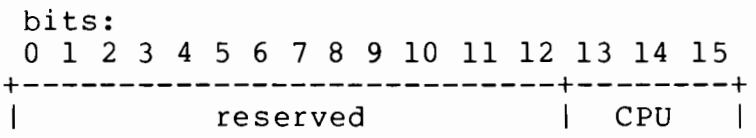
If this value is odd (M=1) when CLOSETERM is executed, then the message "REMEMBER TO UNLATCH THE BLOCK MODE KEY." will not be given by CLOSETERM. If this value is even (M=0) when CLOSETERM is executed, then the message will be displayed.

If this value is odd (M=1) when OPENTERM is executed, then the mode set message will not be given by OPENTERM. If this value is even (M=0) when OPENTERM is executed, then the message will be displayed. The mode set message will be either "BLOCK MODE/PAGE IS SET." or "BLOCK MODE/ LINE IS SET.".

If R is binary 01 when READTERM is executed, then the AUTOREAD feature will be used by READTERM; otherwise, the normal data entry mode will be used. The AUTOREAD feature will cause an "ESCd" to be sent to the terminal by READTERM instead of waiting for the ENTER key to be pressed. This feature allows for performance measurements to be taken.

To invoke the default conditions, set this word to zero. The upper bits of this word are reserved for future use and should always be set to zero. Examples: 0=> M=0, R=0. 1 => M=1, R=0. 2 => M=0, R=01. 3 => M=1, R=01.

h. ENVIRONMENT INFORMATION



CPU: 0=CX or Series I, 1=Series II

2. CHANGES TO VALUES RETURNED IN THE STATUS WORD

New error conditions that can be detected are:

a. Some terminal strapping errors.
b. Terminal configuration errors in OPENTERM or CLOSETERM.
c. MPE COMMAND (SETMSG OFF, SETMSG ON) errors.
d. Some conditions that would indicate the terminal was malfunctioning or that the user did not supply a large enough buffer area.

The new values are given below (all are negative to distinguish from MPE error codes):

-1001 Length of buffer for READTERM data is insufficient for BLOCK MODE/PAGE read. Minimum required length is the number of characters of data plus the number of fields

plus one character. Action: Increase buffer size, or set TERMINAL MODE INFORMATION to a negative value before calling OPENTERM and insure that the terminal is strapped for BLOCK MODE/LINE (strap D in or closed). Note that the third parameter to READTERM is the buffer length, not the expected read length. The buffer must be at least as large as the number of characters to be read but may be larger. After calling READTERM, the third parameter contains the actual length of data read.

-1002 The terminal is incorrectly strapped. The terminal must not be strapped for BLOCK MODE/PAGE if it is connected to a CX or Series I. The H strap may not be removed. When the D strap is removed, it is recommended that the G strap also be removed. Action: Insure that the terminal is correctly strapped for the desired mode. If operating on a Series I or a CX and the terminal is a 2641, 2645, or 2648, insure that TERMINAL MODE INFORMATION is set to a negative value before calling OPENTERM.

-1003 Status request sent to 264x terminal before READTERM was called. Action: Use TERMSTATUS to obtain the terminal status information. Do not send "ESC^" (terminal status request) before calling READTERM.

-1004 On a CX or Series I, the requested read length exceeds 216 characters, which is not allowed by MPE C. Action: Limit the read to 216 characters or less on a CX or Series I.

-2001 During a BLOCK MODE/PAGE read in READTERM, a DC2 character was expected but some other character was received (264x problem).

-2002 After a BLOCK MODE/PAGE read in READTERM, a BLOCK TERMINATION character was expected but some other character was received (264x problem).

-2003 After a BLOCK MODE/PAGE read in READTERM, the number of FIELD SEPARATION characters received was not the number expected (264x problem).

-2004 After a BLOCK MODE/PAGE read in READTERM, the number of characters received was not the number expected (264x problem).

-2005 During STATUS read in TERMSTATUS, a DC2 character was expected but some other character was received (264x problem).

-2006 Programmatic MPE command ":SETMSG" failed. (MPE problem).

-2007 Invalid ESCAPE sequence received in READTERM (264x problem).

3. HOW BLOCK MODE/PAGE AFFECTS DEL/3000 APPLICATIONS AND USERS

The terminal strapping options used should be transparent to most application programs. When using BLOCK MODE/PAGE the required buffer size for READTERM is at least as large as the number of data characters to be read, plus the number of fields to be read, plus one character. Also, COMMEREA should be initialized to binary zeros before calling OPENTERM. An HP 2641, 2645, or 2648 terminal will automatically be set for BLOCK MODE/PAGE by OPENTERM. If operating on a Series I or a CX and the terminal may be a 2641, 2645, or 2648, insure that TERMINAL MODE INFORMATION is set to a negative value before calling OPENTERM. The MPE READ (or COBOL ACCEPT) intrinsic can not be used with a terminal set for BLOCK MODE/PAGE operation. These are the only major external programming differences involved in this software update.

To use BLOCK MODE/PAGE, the D and G strapping options on the keyboard interface printed circuit board (labeled KEYBD I/F) inside the terminal must be open. The 2640A has these straps, but the G strap has no effect. Due to this fact, BLOCK MODE/PAGE is not supported on the 2640A at this time. The 2640B, 2641A, 2644A, and 2645A all may be used in either BLOCK MODE/LINE or BLOCK MODE/PAGE.

The 2645A terminal has the capability to have the strapping options and latching keys set programmatically. DEL/3000 now makes use of this feature by setting BLOCK MODE and BLOCK MODE/PAGE strapping in OPENTERM. If the application program needs to suppress this feature, the value of the TERMINAL MODE INFORMATION word (in COMMAREA(2), described above) must be negative. A positive value will cause automatic BLOCK MODE and straps to be configured programmatically. If the automatic configuration was used, then the terminal will be restored to normal modes when CLOSETERM successfully executes.

Other new features include preventing messages (:TELL) from being displayed onto forms. On the Series II, the MPE TERM-TYPE is set to 10 by OPENTERM if the logon TERMTYPE was not 10, or if the configuration default is not 10. The logon TERMTYPE is restored when CLOSETERM succesfully executes. It is recommended that the user logon with TERM=10 on the CX or Series I, since this cannot be altered programmatically on these systems. A devicefile other than $STDIN/$STDLIST can be used on the Series II by giving a file equation to an

available terminal, using the name passed to OPENTERM as the formal filename. Use the "DEV=" parameter to assign a logical device number. If the terminal (non-$STDIN/$STDLIST) is to operate at a speed other than 240 characters per second (2400 baud), or a speed other than its configured default speed, then use the TERMINAL ALLOCATION word (see 1. b. above). If the configuration value is nonzero and the TERMINAL ALLOCATION word is zero, then the configuration value will override the OPENTERM default of 240 characters per second.

When BLOCK MODE/PAGE is used, the size of the buffer supplied to READTERM must be at least as large as the number of characters to be read from the form, PLUS the number of fields in the form, PLUS one.

The MPE READ (COBOL ACCEPT) intrinsic can not be used in BLOCK MODE with a terminal that is strapped for BLOCK MODE/PAGE operation. This is due to the input termination characters used by the terminal in BLOCK MODE/PAGE.

During BLOCK MODE/PAGE operation, the input terminators are DC2 and RS. These ASCII characters replace CR as the input line terminators. The 264x keystroke for DC2 is "CNTL R". If the terminal will not respond to a RETURN in DEBUG or if the process is in BREAK, try using the CNTL R to terminate input. Use "ESC:" to turn echo on, or switch the terminal to half duplex if echo is off. Use "ESC;" to turn echo back off before resuming.

When there are many terminals simultaneously transmitting data in BLOCK MODE/PAGE, there is a small chance that a data overrun error could occur. DEL/3000 can detect that this has occurred, and retry the read operation automatically, if the user has not overridden this feature by specifying a negative value for the MAXIMUM NUMBER OF RETRIES in COMMAREA (7) (zero origin). During a BLOCK MODE/PAGE read when the G strap is open, the data transfer from terminal to computer within READTERM is timed. If the duration of the read exceeds a computed value, a synchronization problem between the terminal and the computer has occurred. When this condition is detected, the read can be automatically retried in READTERM. The number of error recovery retries attempted by READTERM is reported in COMMAREA(4), (5), or (6) (zero-origin). Since the cause of the data overrun error or timeout error is transient, one or two retires should be sufficient in most cases. The default value is 4 retries to handle extreme cases.

4. FURTHER NOTES ON DEL/3000, FORMAINT, AND 264X TERMINALS: PRESENT LIMITATIONS.

The HP 3000 CX or Series I supports only BLOCK MODE/LINE at this time, it does not support BLOCK MODE/PAGE. This version of OPENTERM will insure that the terminal is correctly strapped for the host system in this respect.

The current version of FORMAINT.PUB.SYS does not allow the use of a terminal in BLOCK MODE/PAGE (keyboard interface strap D out). If 2645A's are being used, this will present no problem, since the D and G straps are programmatically opened in OPENTERM and closed in CLOSETERM by using an ESCAPE sequence (unless overridden by the use of COMMAREA(2) as described above). However, in order to use the BLOCK MODE/PAGE feature of DEL/3000 on a non-2645 type (i.e., 2640B, 2644A), the D and G straps must be physically removed (switched to open) when a data entry application is using BLOCK MODE/PAGE. On some 264x terminals, the D strap/switch is labeled "4" and the G strap/switch is labeled "7". When these are being altered, the terminal's power should be off. Changing the setting of these straps (switches) is not effective until a power-up or a full RESET. These straps (switches) are located on the keyboard interface (KEYBD I/F) printed circuit board in the 264x terminal. Both the D (4th) and the G (7th) strap (switch) must be removed (set to open) on the 2640B, 2644A , 2641A, and 2645A terminals. The 2640A should not be used in BLOCK MODE/PAGE operation with this version of DEL/3000. Any 264x terminal can still be used in BLOCK MODE/LINE operation (i.e., STRAPS D and G in or closed). If the straps (switches) are physically set for BLOCK MODE/PAGE for data entry, they must be reconfigured for BLOCK MODE/LINE before FORMAINT may be used. This will be corrected in a subsequent version of FORMAINT.

5. EDIT PROCEDURE PERFORMANCE IMPROVEMENTS

Several performance improvements have been made in the DEL/3000 editing procedures. These changes are primarily associated with numerous calls to the intrinsic BINARY and with replacing some BYTE moves with WORD moves.

B. CORRECTIVE SOFTWARE CHANGES

1. NRANGE and CNRANGE will now accept signed as well as unsigned range values. CNRANGE converts the signed value, if a sign is present, to DISPLAY representation.

2. OPENTERM has been modified to correctly handle a DS/3000 pseudoterminal. Use of a DS/3000 pseudoterminal can require a ":FILE...; REC=-n" command, where n = maximum number of characters that will be considered for forms, if the number of characters to be read or written is to exceed 2000.

C. KNOWN PROBLEMS

1. When using FORMAINT with a CX or Series I, during form input for form creation or modification, any line longer than 216 bytes will cause a read timeout. This timeout is recognized by FORMAINT and an appropriate error message is generated. This condition will not affect Series II operation.

2. DEL may not run properly on CX or Series I systems at 2400 baud with some 264x terminals when there is very sparse activity in the job/session mix. This is due to the fact that the CX and Series I terminal driver does not use ENQ/ACK when sending over 80 characters before more characters are sent, thus can overload the terminal's internal buffer. When there is enough activity in the mix, this problem will not occur. WORK AROUND: change baud rate to 1200 baud when using CX or Series I stand-alone. The logon TERM=10 must be used.

3. A problem with using non-$STDIN/$STDLIST devicefiles was found in version A.01.05 after it was too late to correct on this MIT. Please contact an HP Systems Engineer if you need to use this feature. The problem has been corrected in A.01.5D and subsequent revisions.

4. A problem with using message suppression and autoread was found in version A.01.05 after it was too late to correct on this MIT. Please contact an HP Systems Engineer if you need to use these features. The problem has been corrected in A.01.5K and subsequent revisions.

D. DOCUMENTATION CHANGES

Changes to the DEL/3000 Reference Manual are as follows:

1. Disregard the NOTE at the top of page 3-15.

2. Add the following notes to page 6-1:

   a. The first 10 words of COMMAREA should be initialized to binary zeros before calling OPENTERM if the default values for block mode terminal usage are desired.

   b. TERMFILE name is an MPE filename that can be equated (via :FILE command) to a terminal. If the name is not given, then the file defaults to $STDIN/$STDLIST. The name must end with a blank, per MPE file name conventions.

c. If any form is larger than 2000 bytes, a file equation for the terminal must be used, and the file equation must specify REC=-n, where n is the maximum form size in bytes (e.g. :FILE aterm; REC=-3500). In this example, "aterm" is the name given in the TNAME parameter of OPENTERM.

3. Add the following note to page 7-4:

The edit specification given in FORMAINT as well as the data input to the form may be signed or unsigned. If the data is signed, it must be a leading plus (+) or a leading minus (-). Blanks are allowed between the sign and the number, as well as between the beginning of the field and the sign. If CNRANGE is being used, a signed value is converted to DISPLAY representation.

4. Add the following to appendix H-2:

PROCEDURE	VALUE RETURNED	MEANING
OPENTERM	-1	Devicefile not a 2640/41/44/45, or terminal strapping error
	-1002	Terminal strapping error
READTERM	< 0	-1 thru -8: Function Keys
	< -1000	Block mode protocol error

(see A. 2., above, for further details)

E. MISCELLANEOUS

Previous updates of DEL/3000 Library Routines resided in the segment DATALIB01 in SL.PUB.SYS. In the present update, the Library Routines reside in the following four segments: DEL'TERM'I'O, DEL'FORM'I'O, DEL'OPEN'CLOSE, and DEL'EDITS.

KSAM/3000 HP32208A.01.02

DATE CODE 1737, N00N208A.HP32208.SUPPORT

CORRECTIVE SOFTWARE CHANGES

1. CKREAD and CKDELETE combination returns End-of-File indication too soon.

2. Under certain condition, FPOINT will go into a loop.

3. FLOCK a read-only KSAM file, under certain condition, will destroy the last block of data just added to that KSAM file.

4. FGETINFO without AOPTIONS paramenter destroys data in user's stack.

COMPILER LIBRARY/3000 HP32211D.00.06

DATE CODE 1737, N00N211D.HP32211.SUPPORT

CORRECTIVE SOFTWARE CHANGES

1. SMR# 1639 - If an error was encountered during a sequential access READ (e.g. Tape parity error), which had specified the option ERR=lab, control was not transfered to the statement label lab as expected.

2. SMR# 2604 - When using a user trap routine to analyze or recover from an arithmetic error, the parameter to this routine is a reference parameter of the result of the operation which caused the trap to be invoked. It has previously been assumed that this result will always be on TOS and thus the parameter to the trap routine has been set up accordingly. This was a problem when the last instruction executed prior to the trap was either INCM or DECM since the result was not on TOS. This has been changed so as to detect this circumstance and set up the parameter to the trap routine properly.

FCOPY/3000 HP32212A.02.00

DATE CODE 1737, N00N212A.HP32212.SUPPORT

A. ENHANCEMENTS

The previously announced enhancement for HP2644A terminals applies only to the HP3000 SERIES II because of dependencies upon enhancements to MPE in the file system.

FCOPY was enhanced with the addition of the following keywords: KANA; CLEAR; EBCDIKIN and EBCDIKOUT.

The KANA and CLEAR keywords are analogous to the CHAR keyword. They are, also, used in the same manner or context as the CHAR keyword. The KANA keyword causes a display, character by character, of displayable characters in the JIS code and causes decimal points to be displayed for non-displayable characters. The CLEAR keyword causes a display, character by character, of all codes in a file, i.e., no character code is replaced by that of a decimal point. The graphic representation of each code is strictly a function of how the displaying device interpretes the code, i.e., as a command, displayable character or nondisplayable character. Note that, if a code was interpreted as a command, no graphic would be displayed unless a 'display functions' mode was invoked.

The EBCDIKIN and EBCDIKOUT keywords are analogous to the EBCDICIN and EBCDICOUT keywords. The EBCDIKIN keyword causes a translation from EBCDIK code to JIS code of the file specified in the 'FROM=' statement. The EBCDIKOUT keyword causes a translation from JIS to EBCDIK code of the file specified in the 'FROM=' statement.

B. CORRECTIVE SOFTWARE CHANGES

1. The BCDICIN option does not work properly.

2. When input is from a cartridge, a line feed occurs after each and every record read.

3. FCOPY from an ASCII file to $HARD, using a 9871 printer on the 2645 now works properly.

4. FCOPY using FROM=;TO=$CTUL now closes to file properly.

5. Title now appears properly at top-of-page in dump.

C. KNOWN PROBLEMS

When reading from a cartridge, blank lines are not read correctly.

COBOL C HP32213C.02.00

DATE CODE 1737, N00N213C.HP32213.SUPPORT

A. ENHANCEMENTS

1. Subprograms can now be segmented by using priority numbers with the Section name. The technique is the same as for main programs.

2. The code generated for a GO TO statement which branches to a paragraph within the same section has been improved so that it will execute faster.

3. Programs which declare items in the Data Division which are not referenced in the Procedure Division will not allocate space for descriptive information in the runtime data stack for such items. Storage for the data items themselves will still be allocated, however.

4. If a newfile is created at compile time and both the textfile and masterfile are Editor Cobol Formatted files (Code=1052), then the newfile will also be given a file code of 1052.

B. CORRECTIVE SOFTWARE CHANGES

1. A SEARCH statement with multiple WHEN clauses left extra word(s) on the stack causing a stack overflow condition at run time.

2. A GO TO statement as the first statement in a section which had no paragraph names caused an abort at run time.

3. An ON SIZE ERROR in a COMPUTE statement which contained division sometimes generated an Error 211--Multiply or Undefined Internal Label.

4. Passing a paragraph/section name as an actual parameter in a CALL statement was not detected as an error.

5. A table larger than 65K bytes was not detected as an error.

6. Using a table element as a subscript was not detected as an error.

7. Using a file-name, a paragraph/section name, or an index-name in a DISPLAY statement was not detected as an error.

8. Corresponding elements which had 88-level condition names associated with both the sending and receiving items were not handled properly in a MOVE, ADD, or SUBTRACT CORRESPONDING statement.

9. A READ...INTO statement did not check for proper sequential/ random access mode.

10. A VALUE clause starting with a + or - sign and a decimal point and followed by all zeroes generated an erroneous error message. For example, PIC S9V99 VALUE +.00, generated an error message.

11. The ON SIZE ERROR option did not work properly when the result was a COMP item containing less than 5 digits with no digits to the right of the decimal point.

12. A WORKING-STORAGE Section consisting only of 77-level items and which contained one or more 88-level condition names caused a run time abort.

13. Moving an item declared as unsigned but which contained a negative value to an unsigned field sometimes moved the negative value instead of the absolute value.

14. An 01-level REDEFINE in the LINKAGE SECTION did not work if the item being redefined was also an 01-level REDEFINE in the LINKAGE SECTION.

15. A READ statement with a bad file-name aborted the compiler with a bounds violation.

16. A COMPUTE ROUNDED statement with an intermediate result greater than 24 digits aborted at compile time.

17. A program with more than about 1020 Procedure Calls in one segment aborted at PREP time.

18. A SET statement where the item being set was an indexdata-name which was a table element did not work.

19. A SEARCH statement with a compound condition sometimes generated an erroneous Error 100 message, Illegal Arithmetic Operand.

20. Using a REDEFINE clause after an Empty Group (Warning 52) sometimes aborted the compiler.

21. Using a numeric literal in the VALUE clause of an 88-level condition name associated with an alphanumeric item caused an Error 201--Bad Pass 1 Operand.

22. A COMPUTE statement with only 1 operand did not detect an illegal numeric operand.

23. A multiply of two numbers which contained a total of 28 digits or more to the right of the decimal point did not work.

24. Multiple index-names in an INDEXED BY clause were sometimes handled improperly in large programs.

25. Arithmetic statements with numeric literals sometimes produced erroneous diagnostics at compile time in large programs.

26. An item being REDEFINED occasionally did not get put into the symbol table properly in large programs causing erroneous compile-time diagnostics or bad object code.

27. The following Corrective Software Changes have been made in version 4.07 of the Cobol Library.

    a. A SEARCH ALL statement with a Descending Key looped.

    b. Raising a number with an absolute value less than .31 to a non-integer power sometimes produced erroneous results.

    c. Moving a literal to an alphanumeric edited item which was longer than the literal caused the literal to be propagated instead of blank filling on the right.

28. Storing a value in a COMP-3 field with an even number of digits did not zero out the unused half-byte at the beginning of the number if the sending field was shorter than the receiving field or had a different number of digits to the right of the decimal point.

C. DOCUMENTATION CHANGES

ERROR 133 has been deleted due to the enhancement mentioned above concerning subprogram segmentation (Page C-26 of the COBOL/3000 COMPILER Reference Manual).

D. KNOWN PROBLEMS

The base shown in the symbol table map for an index-name in an INDEXED BY clause in the LINKAGE SECTION is shown as LINK when it should be OWN for non-dynamic subprograms.

E. MISCELLANEOUS

The source file for this product has been resequenced with this MIT. If you have the source for version C.01.00 and wish to create a new source for version C.02.00, stream the file J00J213C.HP32213.SUPPORT using the C.01.00 source for file S00S213C. After the job is completed, the new source will be in file TEXT.HP32213.SUPPORT. The job also requires file M00M213C.HP32213.SUPPORT from MIT 1737 to be present. A new maintenance file (M00M213C) should be started for future compilations which will use version C.02.00 source. This file must consist of at least one record. A $CONTROL NOLIST record is sufficient for this purpose.

SORT/3000 HP32214B.01.05

DATE CODE 1737, N00N214B.HP32214.SUPPORT

A. ENHANCEMENTS

1. The number of extents for the SORT scratch file has been increased to the maximum allowed by the system.

2. The Logical Device Number (LDEV) is now included in the request for next reel message when a MERGE output file reaches the end-of-tape.

3. Two new user-callable procedures have been added for printing the contents of the statistics array on $STDLIST. The declarations are:

```
PROCEDURE SORTSTAT(STATISTICS);
INTEGER ARRAY STATISTICS;
```

and

```
PROCEDURE MERGESTAT(STATISTICS);
INTEGER ARRAY STATISTICS;
```

The STATISTICS array is described in the SORT/3000 Reference Manual.

4. A new procedure SORTINITIALF has been added to allow FORTRAN programmers to call SORTINITIAL without equivalencing arrays. The parameters are the same as for SORTINITIAL except that KEYS and STATISTICS are Integer Arrays instead of Logical Arrays.

B. CORRECTIVE SOFTWARE CHANGES

The STATISTICS array did not contain the proper values after an I/O error in MERGE.

IMAGE/3000 HP32215A.04.04

DATE CODE 1737, N00N215A.HP32215.SUPPORT

A. ENHANCEMENTS

Previously, DBLOAD insisted on aborting whenever a 'soft' DBPUT error was encountered (such as missing masters, full chains, or full sets). It now will print the offending entry in ASCII and continue to execute the load.

B. CORRECTIVE SOFTWARE CHANGES

An error causing DBLOAD to abort with the error code

TRACE/3000 HP32222A.03.02

DATE CODE 1737, N00N222A.HP32222.SUPPORT

A. ENHANCEMENTS

Procedure HP32222 has been added to identify the current version of TRACE on a system. This may be called as an external procedure.

B. CORRECTIVE SOFTWARE CHANGES

SMR# 2204 - DOUBLE PRECISION array values were printed incorrectly on the SERIES II since TRACE was assumming the length of a DOUBLE PRECISION variable to always be three words rather than four words. TRACE has been changed to check whether one is running with three or four-word DOUBLE PRECISION variables.

C. KNOWN PROBLEMS

TRACE does not properly handle batch files.

RJE/3000 2780/3780 EMULATOR

HP30130E.00.01 (CS A.01.02)

DATE CODE 1737, N00N130E.HP30130.SUPPORT

A. ENHANCEMENTS

For user output procedures, the HP3000 carriage control byte is now available at Q-6. It is NOT, however, a formal parameter; the calling sequence is unchanged.

B. CORRECTIVE SOFTWARE CHANGES

1. A value for the local timeout is no longer specified when the line is opened. The configured value will now apply.

2. 3780 output routed by component select is now properly routed on blocks ending in ETX.

3. Spurious PROC ERR's on user input and output procedures will no longer occur.

4. Receiving an RVI sequence no longer causes an incorrect termination.

C. MISCELLANEOUS

The product identification has been changed from '30130C' to '30130E' to reflect the unbundling of the Emulator software from the hardware. The source S00S130E was created by:

1. Changing the product identification in the maintenance file M00M130C from 'C.00.03' to 'E.00.00' in lines .2 and 5, i.e.:

```
  .2      RJE - E.00.00 - 8/2/77 - 14:00
 5.0            "E.00.00"
```

2. Compiling the maintenance file against the source file S00S130C, as follows:

```
:SPL M00M130C,,,S00S130C,S00S130E
```

SERIES II DIAGNOSTICS HP 32230A

DATE CODE 1737,N00N230A.HP32230.SUPPORT

I. MAGNETIC TAPES ASSOCIATED WITH HP32230A

Source	32230-1X001
Maintenance	32230-1X002
CPU Coldload	30000-1X016
NON-CPU C/L	30000-1X017

II. MANUALS ASSOCIATED WITH HP 32230A

32230-60001
32230-60002

III. CPU DIAGNOSTICS 30000-1X016 DATE CODE 1623

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

IV. STAND-ALONE DIAGNOSTICS 30000-1X017, DATE CODE 1737

A. DIAGNOSTICS CHANGED

DIAGNOSTIC	FILENAME	LEVEL	OCTAL FILE #
*SLEUTH	PD411A	01.02	(01)
*SDUPII	PD417A	01.02	
CART DISC-7905A	PD419A	01.04	(02)
MEMORY PATTERN	PD421A	01.00	(03)
MULTIPLEXOR CHAN	PD422A	01.00	(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	01.00	(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	01.01	(17)
*UI DIAG	PD435A	01.01	(20)
TERMINAL CONTROL	PD438A	01.00	(21)
CALCOMP PLOTTER	PD439A	01.01	(22)

*UPDATED/CHANGED BY THIS MIT

B. CORRECTIVE SOFTWARE CHANGES

1. SLEUTH Stand-Alone Diagnostic

The type listing has been changed to specify the line printers by product numbers. This should eliminate the confusion of the two types for line printers.

NOTE

A change has been made in SDUPII to correct the "control A" problem as described in the SDUPII note below. there is still a problem with "control A" not always breaking SLEUTH out of a loop.

2. SDUPII Stand-Alone Diagnostic

This fix level has corrected the problem of "control A" not being recognized. Formerly if a character other than "control A" was entered any "control A" character that followed would not be recognized.

3. UI Stand-Alone Diagnostic

The diagnostic has been fixed to properly test the card/reader/punch interface card.

This release of the diagnostic will also check the UI card to insure the changes made to the interrupt circuit are correct. the datecodes are 1504 for the UI cards and 1452 for the card reader/punch interface.

V. ONLINE DIAGNOSTICS

A. DIAGNOSTICS CHANGED

DIAGNOSTIC	FILENAME	LEVEL	COMMENTS
CARD READER	PD465A	01.00	
LINE PRINTER	PD466A	01.00	
2617J LINE PRINTER	PD466J	01.00	New release
2640 TERMINAL	PD469A	01.00	
TERM-2762A/B	PD475A	01.00	
TERM-2645K	PD476A	00.00	New release
DISPLAY TERMINAL 2644	PD477A	01.00	
TERM-2615A	PD478A	01.00	
CARD-READ/PUNCH	PD479A	01.00	
OPTICAL MARK READER	PD480A	00.00	

B. CORRECTIVE SOFTWARE CHANGES

1. 2617J LINE PRINTER ONLINE VERIFIER

This verifier is for the Katakana line printer supplied by Tokyo Juki via YHP, exclusively. The verifier manual will also be supplied by YHP.

2. HP2645K TERMINAL ONLINE VERIFIER

This terminal supports the Roman and the Japanese Katakana character sets.

DOCUMENTATION

The tables in this section list currently available customer manuals for HP 3000 Systems products. This list supersedes the list in the last issue of the COMMUNICATOR 3000.

Copies of manuals and updates can be obtained from your local Sales and Service office. The address and telephone number of the office nearest to you are listed in the back of all customer manuals. Prices are subject to change without notice.

Update packages are free of charge. If you require an update package complete the Update Order Form in the rear matter of the COMMUNICATOR 3000.

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 Part and Supplies form in the rear matter.

TERMS

A few words about documentation terms:

NEW — A new manual refers only to the first printing of a manual. When first printed, a manual is assigned a part number.

REVISED — A revised manual is a printing of an existing manual which incorporates new and/or changed information in its contents. For example, a manual is revised when an update package is incorporated into the manual: the manual gets a new print date and the update package disappears. Note that a revision to a manual effectively obsoletes the previous version of the manual.

UPDATE — An update package is a supplement to an existing manual which contains new and/or changed information. Updates are issued when information must get to customers, yet it is inappropriate to issue a revised manual. An update has no part number; it is automatically included when you order the manual with which it is associated.

COMMUNICATOR BACK ISSUES

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

Issues #4, 5, 8, 9, 11, 12 and 13

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

NEW FORM FOR ORDERING CONTRIBUTED SOFTWARE

When ordering contributed software by direct mail, please use the Contributed Software form, not the Parts and Supplies form. A copy of this new form is included in the rear matter.

Contributed software may also be ordered through your local HP Sales Office. NO direct mail order can be shipped outside the U.S.A.

NEW MANUALS

USING FILES: A GUIDE FOR NEW USERS OF HP 3000 COMPUTER SYSTEMS

A new two-color, 9" by 8 1/2", spiral bound guide is now available. USING FILES shows you which commands, subsystems, and utility programs can help you manipulate files on HP 3000 computer systems. It defines basic file terminology and explains the concept of device-files, the general structure of files, and group and account file security.

Most of the manual consists of examples of specific tasks with an emphasis on typical commercial data processing needs. These examples illustrate various ways to:

- Create, delete, and rename files.
- Copy data to and from devices.
- Copy and combine files including moving them to other groups and accounts.
- Use files in production jobs.
- Sort files.
- Perform backup and recovery of files.
- List information about files, groups, and accounts.

A few KSAM examples are also included. The guide contains an extensive glossary of HP 3000 computer system terms.

The part number is 30000-90102 and the price is $4.50.

GUIDEBOOK TO DATA COMMUNICATIONS

In terms of growth and ultimate potential, data communications--the union of computers and telecommunications to allow data processing at a distance--is one of the world's most dynamic industries.

In less than 100 pages, the GUIDEBOOK to DATA COMMUNICATIONS will take you through each aspect of this industry. It is directed at those with a background in digital equipment and computers, and it describes the data communications machinery, methods and modes for moving digital data. Some of the topics covered are:

- A basic network and its components.
- Configurations of communications lines.
- Line protocols.
- Codes.
- Minicomputer roles in networks.
- Communications common carriers, traditional and specialized, and typical costs.

First printed in January, 1977 as an HP internal training manual, it is now available to the general public. The part number is 5955-1715 and the price is $4.50.

INDEX/3000 REFERENCE MANUAL

This manual provides all reference specifications and describes how to use the Indexed file organizations, a file access method that allows pre-CX,CX, Series I or Series II users to access files index by a single key. Access to Index files can be in RPG, COBOL, FORTRAN, or SPL. All four language interfaces are described. (NOTE--INDEX was developed from the contributed program RSAM.) The part number is 30000-90095 and the price is $10.00.

NEW EDITIONS

USING THE HP 3000: GUIDE FOR THE TERMINAL USER

This new edition contains a new section for RPG, plus miscellaneous corrections such as terminal type codes. The part munber is 03000-90121 and the price is $6.00.

FORTRAN POCKET GUIDE

Corrected errors and converted pocket guide for use with pre-CX,CX, Series I and Series II. The part number is 32102-90002 and the price is $1.50.

SOFTWARE POCKET GUIDE

Contains new DS/3000 and Editor commands and parameters, and a new file access and default chart. The part number is 30000-90049 and the price is $3.50.

UPDATED MANUALS

FCOPY REFERENCE MANUAL

Update documents new commands: KANA, CLEAR, EBCKIKIN, and EBIDICOUT used when HP 3000 is configured as a Japanese language system The part number is 03000-90064 and the price is $5.00.

RPG REFERENCE MANUAL

Update documents use of RPG when the HP 3000 is configured as a Japanese language system. The part number is 32104-90001 and the price is $22.00.

HP 3000 SERIES II COMPUTER SYSTEM

SYSTEM MANUALS

Manual Title	Part Number	Price	Printed	Updated
Console Operator's Guide	30000-90013	$ 7.00	6/76	4/77
Error Messages and Recovery Manual	30000-90015	21.50	6/76	5/77
General Information Manual	30000-90008	6.50	6/77	
Index to MPE Reference Documents	30000-90045	5.50	6/76	
Instruction Decoding Pocket Guide	30000-90057	1.00	6/76	
Machine Instruction Set	30000-90022	7.00		
MPE Commands Reference Manual	30000-90009	12.50	6/76	*3/77*
MPE Intrinsics Reference Manual	30000-90010	17.00	2/77	4/77
MPE Segmenter Reference Manual	30000-90011	4.00	2/77	
MPE Debug/Stack Dump Reference Manual	30000-90012	7.50	9/76	6/77
MPE System Utilities Reference Manual	30000-90044	5.00	6/77	
Software Pocket Guide	30000-90049	3.50	9/77	
System Manager/System Supervisor Manual	30000-90014	10.00	6/76	*3/77*
System Reference Manual	30000-90020	9.50	6/76	1/77
Using Files	30000-90102	4.50	7/77	
Using the HP 3000: Guide for the Terminal User	03000-90121	6.00	8/77	

LANGUAGE MANUALS

Manual Title	Part Number	Price	Printed	Updated
APL Reference Manual	32105-90002	$12.50	11/76	
APL Pocket Guide	32105-90003	1.50	11/76	
BASIC Interpreter Manual	30000-90026	11.50	6/76	
BASIC Compiler Reference Manual	32103-90001	2.45	11/74	*6/76*
BASIC/3000 Pocket Guide	03000-90050	.75	9/74	
BASIC for Beginners	03000-90025	4.50	11/72	
COBOL Reference Manual	32213-90001	12.50	6/76	6/77
FORTRAN Reference Manual	30000-90040	9.50	5/77	*2/77*
FORTRAN Pocket Guide	32102-90002	1.50	9/77	
RPG/3000 Compiler Reference Manual	32104-90001	22.00	2/77	8/77
RPG Listing Analyzer	32104-90003	.20	2/77	
SPL Pocket Guide	32100-90001	2.00	11/76	
System Programming Language Reference Manual	30000-90024	17.50	9/76	2/77
System Programming Language Textbook	30000-90025	11.00	6/76	*1/77*

When a date in the "Updated" column is enclosed by asterisks, it means that the update has been incorporated in subsequent printings of the manual.

ADDITIONAL MANUALS

Manual Title	Part Number	Price	Printed	Updated
2780/3780 Emulator Reference Manual	30000-90047	8.50	6/77	
Compiler Library Reference Manual	30000-90028	12.00	11/76	
Cross Assembler for 2100 Computers Reference Manual	03000-90047	12.00	5/76	
Data Entry Library Mnl	30000-90050	6.50	3/77	3/77
DS/3000 Reference Manual	32190-90001	13.50	3/77	5/77
EDIT Reference Manual	03000-90012	6.25	8/75	5/77
FCOPY Reference Manual	03000-90064	5.00	6/76	8/77
Guidebook to Data Communications	5955-1715	4.50	1/77	
HP 2894A Card Reader Punch Operating Manual	30119-90009	11.50	10/76	
HP 3000 Cross Loader for HP 2100 Computers	03000-90107	4.50	10/74	1/77
HP 3000 CX to HP 3000 Series II Program Conversion Guide	30000-90046	4.00	6/76	
IBM System/3 to HP 3000 Conversion Guide	32104-90004	5.75	12/75	
IMAGE Data Base Management Reference Manual	30000-90041	4.50	12/76	
Instruction Decoding Pocket Guide	30000-90057	1.00	6/76	
KSAM Reference Manual	30000-90079	13.00	1/77	*5/77*
Line Printer Operating and Programming Manual	30209-90008	6.00	6/76	
Machine Instruction Set Reference Manual	30000-90022	7.00	6/76	

Programmable Controller Reference Manual	30000-90066	6.00	6/76	10/76
QUERY Reference Manual	30000-90042	6.50	6/76	
Real-Time Programmable Controller Reference	30000-90067	7.50	6/76	
Scientific Library Reference Manual	30000-90027	5.00	6/76	2/77
Site Preparation Manual	30000-90082	7.50	2/77	6/77
Site Planning Workbook	30000-90086	10.00	2/77	
SORT Reference Manual	32214-90001	4.30	8/76	
Student Assignment System Reference Manual	32901-90001	15.50	7/75	8/76
Student Assignment System Technical Manual	32901-90005	10.50	7/75	
Student Information System Reference Manual	32900-90001	13.00	9/74	8/76
Student Information System Technical Mnl	32900-90005	15.00	3/75	
Trace Reference Manual	03000-90015	5.00	6/76	

When a date in the "Updated" column is enclosed by asterisks, it means that the update has been incorporated in subsequent printings of the manual.

SYSTEM MANUALS

Manual Title	Part Number	Price	Printed	Updated
Console Operator's Guide	30000-90090	$11.00	4/77	
General Information Mnl	30000-90091	9.00	4/77	
MPE Intrinsics Reference Manual	30000-90087	20.00	4/77	
MPE Commands Reference	30000-90088	20.00	4/77	
MPE/3000 Operating System, System Utilities	32000-90008	2.05	10/75	
Software Pocket Guide	03000-90126	2.70	7/75	
System Manager/System Supervisor Manual	30000-90089	13.00	4/77	
Systems Reference Manual HP 3000 Computer	03000-90019	15.00	9/73	3/77
Using Files	30000-90102	4.50	7/77	
Using the HP 3000: Guide for the Terminal User	03000-90121	6.00	6/75	

LANGUAGE MANUALS

Manual Title	Part Number	Price	Printed	Updated
BASIC Interpreter Reference Manual Pre-Series II	03000-90008	$ 9.75	7/75	
BASIC/3000 Pocket Guide	03000-90050	.75	9/74	
BASIC Compiler Reference	32103-90001	2.45	11/74	6/76
BASIC for Beginners	03000-90025	4.50	11/72	
COBOL Reference Manual	32213-90001	12.50	7/75	*6/76*
FORTRAN Reference Manual	32102-90001	10.00	3/76	

RPG Compiler Reference and Application Manual	32104-90001	22.00	2/77	
RPG Listing Analyzer	32104-90003	.20	2/77	
System Programming Language Reference Manual	30000-90024	17.50	9/76	2/77
System Programming Language Textbook	30000-90025	11.00	6/76	1/77

ADDITIONAL MANUALS

Manual Title	Part Number	Price	Printed	Updated
2780/3780 Emulator Subsystem Reference Mnl	30130-90001	6.50	12/74	2/76
Compiler Library Reference Manual	03000-90009	11.50	2/76	
Cross Assembler for 2100 Computers	03000-90047	12.00	5/76	
Data Entry Library Mnl	30000-90050	6.50	6/76	
EDIT Reference Manual	03000-90012	6.25	8/75	
FCOPY Reference Manual	03000-90064	5.00	6/76	*12/76*
HP 2894A Card Reader Punch Operating Manual	30119-90009	11.50	10/76	
HP 3000 Cross Loader for HP 2100 Computers	03000-90107	4.50	10/74	*6/76*
IBM 1130/1800 to HP 3000 FORTRAN Conversion Gd	36995-90013	4.70	2/75	5/75
IBM System/3 to HP 3000 Conversion Guide	32104-90004	5.75	12/75	
IMAGE Data Base Management Reference Manual	30000-90041	4.50	12/76	
Index/3000 Reference Ml	30000-90095	10.00	6/77	
Programmable Controller Reference Manual	30300-90002	12.50	4/76	1/77

QUERY Reference Manual	30000-90042	6.50	6/76	
Real-Time Programmable Controller Reference	30301-90002	7.75	2/75	7/76
Scientific Library Reference Manual	03000-90010	5.75	7/75	
Site Planning Workbook	30000-90100	5.00	4/77	
Site Preparation Manual	30000-90096	5.00	4/77	
SORT Reference Manual	32214-90001	4.30	8/76	
Student Assignment System Reference Manual	32901-90001	15.50	7/75	6/76
Student Assignment System Technical Manual	32901-90005	10.50	7/75	
Student Information System Reference Manual	32900-90001	13.00	9/74	6/76
Student Information System Technical Mnl	32900-90005	15.00	3/75	
Trace Reference Manual	03000-90015	5.00	6/76	

When a date in the "Updated" column is enclosed by asterisks, it means that the update has been incorporated in subsequent printings of the manual.

BAUD LINE

IMPROVING RESPONSE TIME BY USING SPLIT BAUD RATES

Tom Benedict
HP Eastern Technical Center
Rockville, MD

On some heavily loaded HP 3000 systems, data can be lost (if user program does not request retransmission) when many asynchronous terminals are transmitting data to the CPU at 2400 baud. This is especially true when using the ENTER key on a 264X terminal. By lowering the transmit speed of the 264X, lost data will be eliminated and the overall response time of the HP 3000 will improve. This is because peak loading of the CPU caused by transmitting terminals will be greatly reduced.

REDUCING TRANSMIT SPEED

There are two ways to reduce the transmit speed of the 264X:

- Move baud rate switch to a lower setting. This method will lower both the transmit and receive speed of the terminal.
- Keep the receive speed of the terminal at 2400 baud, but lower the transmit speed. This can be done by using split baud rates. The requirements are as follows:

Split Baud Rate Requirements

Terminal : HP 264X		
Duplex : Half		
Communication Interface : Asynchronous (Extended)		
Terminal Transmit Rate : 300	1200	
Switch Settings on Communications PCA HP13260B	CBE : Open	Closed
	S0 : Open	Closed
	S1 : Open	Closed
	S2 : Closed	Open

SPLIT BAUD RATE OPERATION

Following is an example for terminal receive at 2400 baud and terminal transmit at 300 baud.

1. Set BAUD RATE switch on keyboard to 300.

2. Sign on to HP 3000.

3. Set DUPLEX switch to HALF.

4. Type ESC: (2 characters)

5. Type in MPE speed command: SPEED 30, 240

6. Set BAUD RATE switch on keyboard to 2400.

7. You are now transmitting at 30 CPS and receiving at 240 CPS.

NEW UTILITY CFCOPY (UNSUPPORTED)

Don Van Pernis
HP General Systems Division

GENERAL

FCOPY/3000 is a utility program within an MPE operating system environment that makes it possible to copy data from one file to another. With the advent of DS/3000, FCOPY capabilities were extended (three changes in the File System) to copy files from one system to another while operating under a DS/3000 environment. Although FCOPY does perform as stated under DS/3000, the overall transfer of files between systems is rather slow, some of the causes for this anomaly being buffering techniques, mode of transfer, file systems involvement, DS/3000 overhead, etc.

To improve the transfer time of files between systems, a new unsupported utility CFCOPY has been written to take the place of FCOPY when transferring files under DS/3000. CFCOPY will transfer a specified file that is fixed, variable or undefined in length between a Master and a Slave node. The major advantages of CFCOPY over FCOPY are that:

- This program uses PTOP rather than RFA to transfer between systems.

- It packs many records into a buffer and transmits the entire buffer rather than a record at a time.

Large savings in line costs, when using modems, result from the greatly reduced transfer time: preliminary testing has indicated CFCOPY is about 75% faster than FCOPY when using a Bell 208 modem. Similarly, time savings are apparent with other modems and the Hard-wired Serial Interface (HSI) link.

OPERATIONAL SPECIFICATIONS

CFCOPY PROGRAM - Must reside on both the Master and Slave nodes as this program contains both the Master and Slave processes in one outer block.

- CFCOPY must exist on the Slave side in the :REMOTE log-on account.

TRANSFERS - File transfer is one-way, from Slave to Master. This insures that the requester (Master) is the individual to bear the line costs of the involved modems.

BUFFER SIZE - Optimum buffer size internally specified is 2048 words. To insure maximum thruput, the system configured CS BUFFER SIZE must be >2048 as well as the DSLINE "LINEBUF=" parameter (if specified).

FILE NAMES - Are not to be fully qualified if the local account name is not the same as the remote log-on account name. Target files do not have to reside in remote log-on account to be eligible for transfer.

The one limitation is that only one file can be transferred per program run, imposed since DS/3000 cannot do RFA after a POPEN. This is a subsystem error and when corrected the utility will handle more than one file per run.

DISTRIBUTION OF CFCOPY

Presently this utility is unsupported with no intent in the immediate future to add it to the list of current utilities. However, if the demand is such as to warrant full support, then this can be implemented. In the interim a copy of the program may be obtained from your local HP 3000 SE.

USING REMOTE FILE EQUATIONS WITH DS/3000.

Mike Philben
HP General Systems Division

Those of you who are using DS/3000 are aware of the use of the file equation to specify that a file resides on a remote computer. There is also a variation of the file equation which applies only to the remote side and allows a file to be specified even though the device name (or logical device number) of the communication link is not known. This situation will occur most often when establishing a connection over switched lines where the remote computer is answering with a rotary answering device. In this case any of several lines may actually answer and there is no easy way to determine which line is in use. The following example shows how to specify a device connected to the local computer but accessed from the remote computer:

```
:REMOTE HELLO U.ACCT;DSLINE=PHONE1
< SESSION MESSAGES >

:REMOTE
#FILE LP;DEV=#LP
#EDITOR *LP
/TEXT SOURCE;L ALL,OFFLINE;EXIT
#:
:
```

The EDITOR is run on the remote computer and will TEXT a local file. This file is then listed on the device called LP on the local system. Note that there is no requirement that the connection be made by phone lines; the syntex is valid for any use of the remote file equation.

OUT-OF-THIS-WORLD DS/3000

Larry Hartge
HP General Systems Division

Hewlett-Packard has been chosen as the computer systems network supplier for an advanced communications experiment, known as PROJECT PRELUDE. This experiment will be conducted at six U.S. sites in the fourth quarter of this year by Satellite Business Systems (SBS), in cooperation with three major business organizations and six equipment suppliers. HP customers may attend presentations arranged at each site.

The PROJECT PRELUDE experiments will use the NASA Communications Technology Satellite (CTS) in stationary orbit at 22,000 miles altitude, to test emerging concepts for intra-company communications, including high-speed data transmissions, teleconferencing, and facsimile transmissions. Wideband transmission of high-speed digitized communications will be in the 12 and 14 Gigahertz bands.

During the experiments, the six participating manufacturers will install equipment at two widely separated locations of each of three different business organizations. When operating, each location will have an HP 3000 and a small portable earth station. The companies, their two participating locations, and main period of operation are:

1. Rockwell International Corporation (November)

    a. Headquarters in Pittsburgh, PA.
    b. A corporate facility in Seal Beach, California near Los Angeles

2. Texaco, Inc. (December)

    a. Executive offices in Harrison, New York.
    b. A regional facility in Bellaire, Texas, near Houston.

3. Montgomery Ward and Co., Inc. (January)

    a. Headquarters in Chicago, Illinois.
    b. A regional facility in Catonsville, Maryland, near Baltimore.

DS/3000 will be an integral part of the three on-going presentations that are oriented toward top management, data processing management and document distribution management of the three participating business organizations. Some of these same presentations will be given to a limited number of HP customers. Attendance at a presentation can be arranged through the local HP Sales Office.

The PROJECT PRELUDE experiment is under the overall direction of SBS, which is a partnership formed by wholly-owned subsidiaries of COMSAT General Corporation, IBM, and the Aetna Casualty and Surety Company. SBS has been authorized by the Federal Communications Commission to establish an all-digital, 12/14 GHz satellite system to serve businesses, government agencies, and other large communications users. The SBS system, planned for commercial operation beginning in January 1981, will provide switched, private networks for users with small fixed earth terminals sited on the users' premises.

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 hp 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 _____ **Title** _____

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 bi-monthly systems support publications available from Hewlett-Packard on an annual (6 issues) 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.
   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.

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.

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Part No. 5951-6113