Guide to a successful installation

The HP3000 Computer System

Preface

With the purchase of your HP 3000 you have not only acquired a powerful general purpose computer system, you have formed a working partnership with a company that is interested in your success.

This document reflects that interest by providing suggestions to assist you in managing your HP 3000 installation.

In addition to providing suggestions for planning, establishing, and maintaining your facility, this installation guide details the working relationship that Hewlett-Packard hopes to establish with you and your personnel.

HP's consulting services, training for your personnel, and the documentation available for use by them are described, as are the benefits of membership in the independent HP General Systems Users Group.

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www.hpmuseum.net

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Contents

Your system facility and personnel

Introduction

Through the Multiprogramming Executive (MPE) operating system, the HP 3000 Computer is capable of controlling processes entered from up to 63 terminals.

Because of this ability to control multiple processes, and because of the basically interactive nature of this system, its management differs greatly from systems that operate under a batch mode.

This document is designed to assist you in establishing and deriving optimum benefit from your HP 3000 data processing operation.

Setting Up Your Facility

Before establishing your system room, carefully consider your future growth potential and plan for additional equipment above your initial purchase. You may find it extremely difficult later to expand the facility because of extra space, power, temperature, and humidity considerations that may have to be modified. Here are some checklist items that should be considered when planning the facility.

Room security

- designed for restricted access to equipment and materials
- passcard entrance system
- locks and alarms installed to detect unauthorized entrance

Room size

- adequate for present equipment
- adequate for future expansion
- sufficient air conditioning
- enough work space for system operator and Customer
- Engineer

Safety precautions

- fire, earthquake, flood, evacuation plan
- fire extinguishing equipment
- personnel hazards (cables on floor)
- power down procedures
- data media precautions/backups/off site safes

Storage requirements

- manuals
- magnetic tapes
- disc packs
- line printer paper
- card stock

Consumable items to order

- magnetic tapes
- line printer paper
- spare disc packs
- hard copy terminal ribbons
- CRT cartridge tapes
- line printer ribbons
- card stock

Contact your nearest HP Sales Office for assistance in ordering any consumable supplies.

Complete site preparation instructions are contained in the Site Preparation Workbook, 30000-90086, and the Site Preparation Manual, 30000-90082.

Your Personnel and their Responsibilities

Three categories of personnel may be required to control the utilization of your HP 3000 system. HP has designated the categories as the System Manager, System Supervisor, and Console Operator. Depending on the size of the installation and the work being accomplished, one person might fulfill all requirements. or it could take several persons. An evaluation will have to be made for each site to determine the proper staffing for your operation.

HP views the duties and responsibilities of these positions as follows:

System Manager

This is the individual who directly interfaces with HP for reporting hardware and software problems. He should be thoroughly trained in the system capabilities and concepts, and must be able to communicate with many different levels of personnel. The System Manager is responsible for managing the overall system by creating accounts and defining the resources of each account.

Some of the functions he will be responsible for include:

- creation of new accounts and account managers,
- modification of account capabilities and status,
- deletion of entire accounts with associated groups, users, and files,
- system security
- listing of any or all files on the system,
- obtaining account reports of system usage and resources,
- storing/restoring on magnetic tape and/or disc packs any or all files on the system,
- isolating and identifying software problems,
- reviewing all software problems submitted to HP.

System Supervisor

A System Supervisor is essentially an Operations Manager, generally responsible for managing the entire system on a day-to-day basis.

This individual controls the general operation of the system by:

- creation of magnetic tapes and/or disc packs of all user files on the system for offline storage,
- creation of magnetic tapes and/or disc packs for backing-up and/or changing the system configuration,
- displaying certain system information for the purpose of determining the optimal performance of the system,
- exercising scheduling control over processes in order to obtain the best system performance,
- permanently allocating/deallocating programs in virtual memory,
- managing the system log files through the logging facility.

Console Operator

The Console Operator monitors and controls the day-to-day operation of the system using the system console.

The Console Operator may perform the following tasks:

- start up the system and shut it down,
- submit Batch jobs to the system,
- display job/session status,
- abort jobs/sessions when necessary,
- set peripheral devices on-line, off-line, or remove them from the configuration,
- control spooling facility,
- transmit messages to the users,
- control which devices may accept jobs, sessions, and data,
- mount tape volumes on devices which the operator allocates in response to user requests,
- distribute line printer output,
- back up user and system files,
- monitor and control non-sharable device allocation,
- set limits on the number of jobs or sessions which can run at one time,
- set job/session and output fences; only jobs/sessions and spooled device files with priorities greater than the fence will be processed.

For complete details of the System Manager and System Supervisor functions and capabilities, refer to the System Manager/Supervisor Reference Manual, 30000-90014.

System Operator Capabilities and functions are described in the Console Operator's Guide, 30000-90013.

Training and documentation

Effective training will eliminate many uncertainties about "what to do" and "when to do it" when managing the HP 3000 system. Training can be divided into two categories, Initial and On-Going.

Initial training

HP offers a variety of courses designed for your personnel, from system management to console operations. Your HP Sales Representative has a schedule of these classes for your selection.

We strongly urge that you schedule your personnel into these classes as early as possible, preferably before your system is installed. Consider sending your most qualified personnel to these classes.

Here is a list of courses currently being offered:

HP 3000: A Comprehensive Introduction. This is the basic HP 3000 user training course and is the prerequisite for all other HP 3000 training and consulting.

HP 3000: System Management and Operation. This is the basic course that your System Manager must attend in order to properly manage and control the HP 3000 system.

HP 3000: IMAGE, Data Base Management Training.

SPL/File System Introduction.

HP 3000: Series II and Series III Special Capabilities.

IBM System/3 to HP 3000 Conversion.

HP 3000: Data Entry Library (DEL).

KSAM (Keyed Sequential Access Method).

Distributed Systems/3000.

HP 3000 CX or Series I to Series II Conversion.

Figure 1 depicts a logical progression for attending the courses offered by HP.

On-going training

As new products are introduced, HP will make courses available to present this new subject matter. Here again, your local sales office will be able to provide complete details on course location, schedules, and availability.

To plan for training new users, operators, and programmers who will be using the system, consider establishing your own internal training sessions and documents. These courses and documents could be tailored to specifically cover your own installation with the policies and procedures that must be followed by your personnel. Some topics that might be included are:

Data Processing Center Operations
HP 3000 Configuration
System Characteristics
System Capability
HP 3000 Subsystem Capability
Operating System (MPE)
  Input/Output Device Configurations
  Accounting and Security Structures
  Intrinsics (procedures)
Files
  File Characteristics
  Using Files
  File Operations
  Security
Programming and Languages
  BASIC
  FORTRAN
  COBOL
  SPL
  RPG
User
  Program Library
  Utilities
  Techniques
Emergency Evacuation Plans
  Personnel
  Equipment
    *
    *
    *
    etc.

```
                                              ┌────────────────────────┐
                                              │ HP 3000:               │
                                              │ Series II              │
                                          ┌──▶│ Conversion to          │
                                          │   │ Series III             │
                                          │   └────────────────────────┘
        ┌────────────────────────┐        │
        │ HP 3000:               │────┐   │   ┌────────────────────────┐
        │ System Management      │    │   │   │ IBM System/3           │
        │ and Operation          │────┼───┼──▶│ to HP 3000             │
        └────────────────────────┘    │   │   │ Conversion             │
                                       │   │   └────────────────────────┘
        ┌────────────────────────┐    │   │
        │ HP 3000:               │    │   │   ┌────────────────────────┐
        │ IMAGE                  │    │   │   │ HP 3000 CX or Series I  │
        │ Data Base              │    └───┴──▶│ to  Series II Conversion │
        │ Management Training     │            └────────────────────────┘
        └────────────────────────┘

┌──────────────────┐    ┌────────────────────────┐
│ HP 3000:         │    │ HP 3000:               │
│ A Comprehensive  │───▶│ (DEL)                  │
│ Introduction     │    │ Danta Entry Library    │
└──────────────────┘    └────────────────────────┘

                        ┌────────────────────────┐
                        │ KSAM                   │
                        │ (Keyed Sequential      │
                        │ Access Method)         │
                        └────────────────────────┘     ┌────────────────────────┐
                                                        │ HP 3000:               │
                                                    ┌──▶│ Series II and Series III│
                        ┌────────────────────────┐  │   │ Special Capabilities   │
                        │ SPL/File System        │──┤   └────────────────────────┘
                        │ Introduction           │  │
                        └────────────────────────┘  │   ┌────────────────────────┐
                                                    └──▶│ Distributed Systems/3000 │
                                                        └────────────────────────┘
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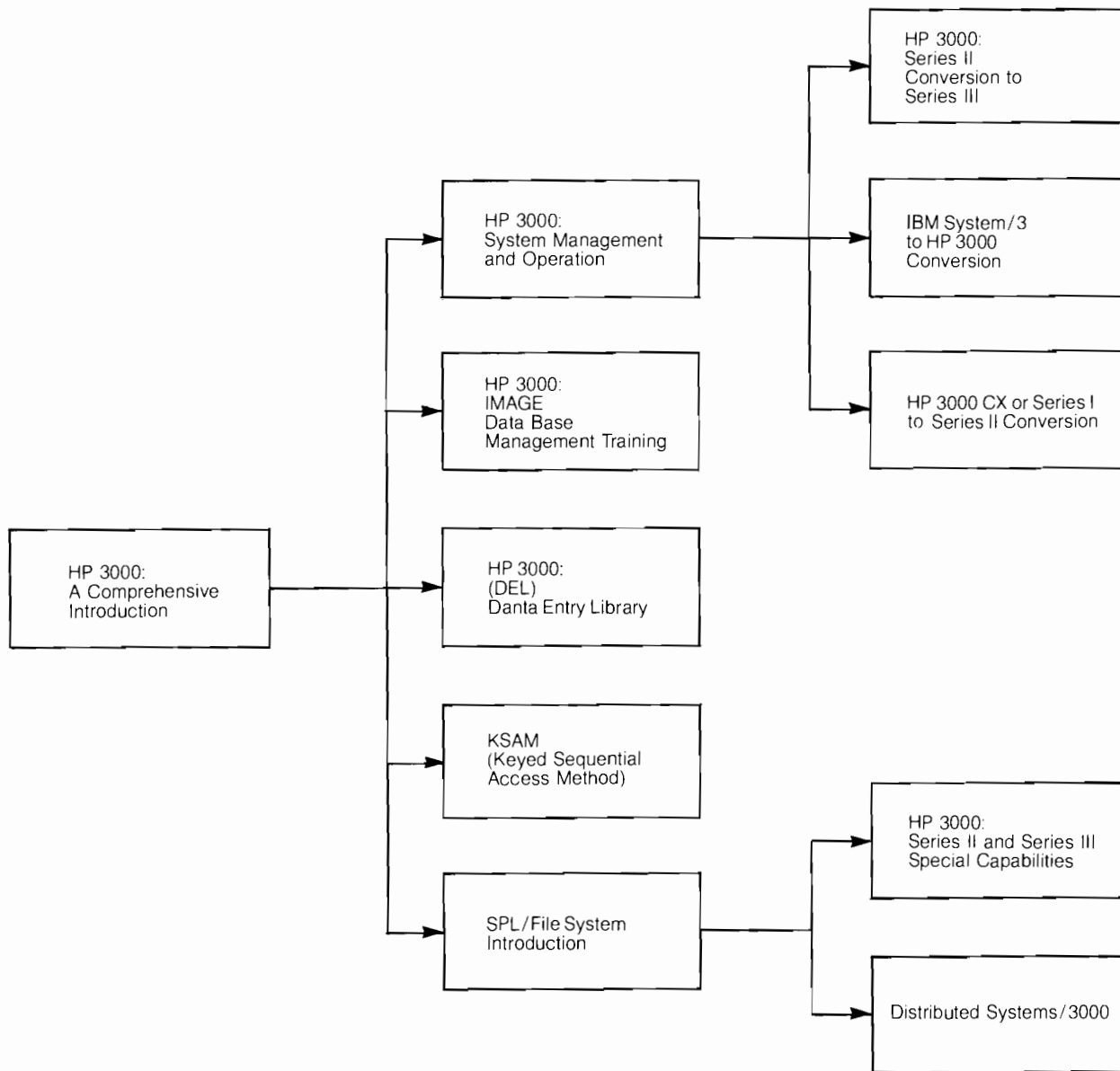
Figure 1

Documentation

When the HP 3000 system is ordered, one complete set of user manuals is supplied with the system. However, this quantity may be insufficient, depending on the number of personnel requiring system and programming information. Most likely additional manuals will be needed. Your HP Sales Representative will assist you in determining your manual requirements and ordering these documents.

A librarian should be assigned to monitor the distribution of all the manuals at the installation. This would be especially convenient when manual updates or revisions are received from HP. Much of this updated or revised material will be useful, or even critical, to a programmer developing a new application for use on the system. The librarian would then be responsible for ensuring that all documents are kept current, and knowing which personnel have manuals in their possession.

This same librarian could be responsible for knowing the location of your in-house training manuals that need to be corrected as policies and procedures are changed by management.

Figure 2 depicts the HP 3000 Computer System documentation and the categories of documentation available.

HP uses some terms and conventions for keeping their documentation current that may not be familiar to everyone. The following paragraphs explain these terms and the conventions used.

- UPDATE. An update is a modification to an existing manual and contains new or changed information. Manual updates are generally issued at the same time as the software is updated.

When successive udpates are issued, the latest update contains all the previous ones. This means that the latest update includes all amendments made since the last printing of the manual.

Update packages have no part number. They are numbered sequentially from the time the last edition of the manual was issued.

The first sheet of the update package is a yellow page that identifies the manual title, part number, and date the document was printed. It also identifies the update number and the date the update was printed.

The changed material in the update package is indicated by a black vertical "change bar" placed in the outer margin of the page, next to the material that changed. The date the material was changed is included at the bottom of the page.

The following two examples show a typical update cover sheet (yellow) (Figure 3) and a manual page containing changed material (Figure 4).

Updates are supplied upon request at no charge. When you purchase a manual, you receive the current edition of the manual and the current updates, if any.

- REVISION/NEW EDITION. When major changes are made to a manual, issuing an update package may be inappropriate or impractical. In this case, a revision is printed. This new edition obsoletes all previous versions of the manual and its updates. The Printing History page in every manual lists the dates of all previous editions and updates. The date on the title page and back cover is the printing date of the revised edition. The manual part number remains the same.

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

- REPRINTING. When stocks of a manual fall below a certain level, it is reprinted. If there are no updates outstanding at this time, the current edition is reprinted as it stands. The printing date of the edition remains the same on the title page and back cover, and the reprinting date is added to the back cover and Printing History page.

- UPDATE INCORPORATED. There are often outstanding updates to the manual when it is reprinted. Any previously existing updates may be incorporated into the reprinting at this time. THERE IS NO CHANGE TO THE CONTENT OF THE CURRENT VERSION OF THE MANUAL. An incorporated manual has precisely the same content as the current edition, plus the latest update.

Future updates required for this manual continue to be numbered sequentially from the last update. Such updates contain corrections to the current incorporated reprinted version of the manual.

Ordering manuals

When you contract for the Comprehensive Software Support or Software Subscription Service from HP, one of the services included is the updating of your system manual set; whenever a revision or update is made to a manual, a copy of that change in the form of an update package or new edition is automatically sent to your System Manager.

If additional copies of manuals are required, contact your HP Sales Representative for ordering information.

If additional copies of an update are needed, specify the manual part number, the update number, and submit your request to:

> Hewlett-Packard
> General Systems Division
> Software/Publications Distribution
> 5303 Stevens Creek Blvd.
> Santa Clara, CA. 95050

Be sure to include the title, part number of the manual to which the update applies, and the requested number of copies.

Update packages are also available to customers who do not have Comprehensive Software Support or a Software Subscription Service. Simply write to the above address and identify the manual for which the update is needed; a copy will be sent to you free of charge.

Category						
Overview	Guide to a Successful Installation 30000-90135	General Information Manual 30000-90008				
	Using the HP 3000 03000-90121	Using files 30000-90102				
HP 3000 Series II/III Hardware	Site Prep Manual 30000-90082	Site Planning Workbook 30000-90086	System Reference Manual 30000-90020	Machine Instruction Set 30000-90022	Instruction Decoding PG 30000-90057	
HP 3000 Series 33 Hardware	Site Prep Manual 30070-90007	Instruction Decoding PG 30070-90026				
MPE	Software Pocket Guide 30000-90049	System Manager/ System Supervisor 30000-90014	Series II/III Console Operator's Guide 30000-90013	MPE Commands 30000-90009	MPE Intrinsics 30000-90010	Series 33 Console Operator's Guide 30000-90025
	Segmenter 30000-90011	System Utilities 30000-90044	Debug/Stack Dump 30000-90012	Error Messages 30000-90015	Index to MPE 30000-90045	
Utilities	EDIT 03000-90012	FCOPY 03000-90064	SORT 32214-90001	Compiler Library 30000-90028	Scientific Library 30000-90027	
Languages	Using COBOL 32213-90003	RPG Listing Analyzer 32102-90002	FORTRAN Pocket Guide 32102-90002	BASIC Pocket Guide 03000-90050	BASIC Compiler 32103-90001	SPL Pocket Guide 32100-90001	APL Pocket Guide 32105-90003
	COBOL 32213-90001	RPG 32104-90001	FORTRAN 30000-90040	BASIC Interpreter 30000-90026	BASIC for Beginners 03000-90025	SPL 30000-90024	APL 32105-90002
					SPL Textbook 30000-90025		
Data Entry	Data Entry Library 30000-90050	Introducing VIEW 32209-90004	VIEW Reference Manual 32209-90001	VIEW Operator's Guide 32209-90003	VIEW Programmer's Pocket Guide 32209-90002	
Data Management	KSAM 30000-90079	IMAGE 32215-90003	QUERY 30000-90042			
Data Communications	Guidebook to Data Communications 5955-1715	Data Communications Pocket Guide 30000-90105	RJE/3000 30000-90047	DS/3000 32190-90001	DS/3000 to DS/1000 32190-90005	MRJE/3000 32190-90005	MTS/3000 32193-90002
Conversions	System/3 to HP 3000 Conversion 32104-90004	3000CX to Series II Conversion 30000-90046				

Figure 2

MANUAL UPDATE

MANUAL IDENTIFICATION

Part Number: 03000-90064

Print Date: February 1978

Title: FCOPY Reference Manual

UPDATE IDENTIFICATION

Update Number: 1

Print Date: June 1978

THE PURPOSE OF THIS MANUAL UPDATE
is to accumulate all changes to the current edition of the manual. Earlier updates, if any, are contained herein. This update consists of: this cover letter, a revised "List of Effective Pages," and all new and changed pages (backup pages are provided when necessary).

CHANGED PAGES ARE IDENTIFIED
by the date of the update at the bottom of the page and a vertical bar in the outside margin opposite the changed material.

NEW PAGES ARE IDENTIFIED
by the date of the update at the bottom of the page. "New" pages are those which were not present in the original edition of the manual.

TO UPDATE YOUR MANUAL,
replace change pages with the update pages and insert any new pages. Destroy all replaced pages.

HOW TO OBTAIN MANUAL UPDATES
If you need copies of this update, or any other update, please give the name of the manual, its part number, number of copies, and state clearly that you require the update, not the complete manual. There is no charge for manual updates. Send your request to:

Software/Publications Distribution (GSD)
Hewlett-Packard Company
5303 Stevens Creek Blvd.
Santa Clara, CA 95050

HEWLETT hp PACKARD

Figure 3

SUBSET

SUBSET =

2-28. SUBSET

The subset function makes it possible for you to perform copy operations using only a specified portion (subset) of a file. You may designate the file subset as being all records that contain a certain data item or as being a range of contiguous records.

If the "from" file is on a disc, and the file does not fill the space designated for it, then when the SUBSET keyword is used, the "to" file is only as large as the actual contents of the "from" file. Thus, unused space is not copied. In addition, when the "from" file is a magnetic tape unit you may use the subset function (the keyword SUBSET by itself) to limit the FCOPY operation to a single file on that tape.

In addition, when the "from" file is a magnetic tape unit you may use the subset function (the keyword SUBSET by itself) to limit the FCOPY operation to a single file on that tape.

FCOPY selects magnetic tape subsets by logical record number. If physical block subsets are needed, they may be gotten by temporarily defining a logical record length equal to the physical record length for the duration of the copying operation.

The subset function has the following four formats:

    SUBSET="characterstring"[,[column] [,EXCLUDE]]
    SUBSET=#patternlist# [,[column] [,EXCLUDE]]
    SUBSET=(range[;range;...]])
    SUBSET

where: *characterstring* is a string of ASCII characters.

patternlist is a string of decimal and/or octal integers, each representing the bit pattern of one byte.

column is an integer specifying at which character position within each record the particular *characterstring* or *patternlist* is expected to begin. If omitted, the default value 1 (first character position) is assumed.

EXCLUDE specifies that the designated subset is to be excluded from the FCOPY operation (all of the file *except the subset* is to be used in the operation).

range is either of the form

> [*starting-record-number*] [,*number-of-records*]

or

> [*starting-record-number*] [:*last-record-number*]

and

starting-record-number is an integer record number specifying the start of the subset. If omitted, the default value 0 (first record) is assumed.

number-of-records is an integer specifying the size of the subset in records. If omitted, it is assumed that the subset consists of all records through the end of the file.

last-record-number is an integer record number specifying the last record in the subset. If omitted, the last record in the file is assumed.

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2-35

Figure 4
2-6

Consulting services

Specialized consulting by highly qualified HP 3000 professionals is available for you to obtain an analysis of your data processing applications and to help you plan and implement successful solutions.

Some of the subjects available for consultation are:

System Start-Up
Application Design
Data Communications
Data Management Design
System Utilization
Customer Software Problem Resolution

Getting a prompt and effective solution to a system problem is, of course, a very important reason for using the consulting service. However, you get the maximum benefit from an HP consultant by utilizing his services in the planning and design phases of your projects. This is when he can best focus his attention on your application needs and transfer his specialized knowledge to your staff. He can direct your staff to specialized sources of information and even help in the program implementation, but will not design, code, or convert your application. Project management and applications design decisions remain your responsibility.

System operation

Account Structure

The assignment of accounts on the system should be carefully and thoroughly examined before assignments are made. Planning can eliminate the need to restructure the account scheme at a later date, and save an enormous amount of work and confusion. This is an area your Systems Engineer investigates with you when you contract for Systems Start-Up consultation service.

A basic discussion of the accounting structure is presented in the HP 3000 Computer Systems General Information Manual, 30000-90008.

A complete discussion of the account structure with the information needed to establish and change accounts is presented in the System Manager/System Supervisor Reference Manual, 30000-90014.

Security

When accounts, groups, and users are created, capabilities are also assigned that withhold or grant access to the various features of the HP 3000 by default or by explicit commands. These capabilities allow users to perform functions determined by the security provisions assigned at the account, group, and file levels. These capabilities prevent unauthorized reading, purging, saving, and execution of programs and files. These security provisions prevent unauthorized access to information and also control the number of files users can create, indirectly controlling disc space utilization. Security attributes can be changed at any time by users assigned that capability.

Another security feature available on the system is the password. Passwords can be assigned to accounts, groups, and users. The use of passwords can prevent an unauthorized log-on to the account or group of a user.

The creator of a file has the capability of assigning and altering a lockword assigned to a file. This is another security feature that can prevent unauthorized access to a file if someone should manage to establish a successful log on to the system.

An evaluation should be made to determine the level of security required on your system. Will account, group, and user passwords all be required? Will lockwords be used? The data processing manager will have to delegate responsible persons to create and update passwords if they are used. A time interval should be established for updating passwords to prevent

unauthorized users from learning them. How are the new passwords going to be issued to the authorized users without broadcasting them to all users?

A complete description of HP 3000 security is contained in the System Manager/System Supervisor Reference Manual, 30000-90014.

Automatically Monitor System Usage

System Logging provides a record of certain resources by accounts, groups, and users on a job and session basis.

System Logging is managed by the System Supervisor. System Logging can be used for billing or for simply obtaining an overview of system usage. System Logging describes the system usage on a job and session basis; in fact, it provides the only means for doing so, and for monitoring certain dynamic resources. It creates a running log of actual events, correlated with the job and session that caused each event. The events monitored are:

- Job/session initiation
- Job/session termination
- Process termination
- File closings
- System shut-downs
- Spooling
- Line closings and line disconnects
- Private volume mounts and dismounts
- Private volume set logical mounts and dismounts
- Labeled tape mounts

The System Logging feature can be an invaluable aid for knowing who is doing what when a malfunction occurs. From the logging it could be determined that a certain process is causing system problems. That process could then be analyzed or deleted from the system to prevent the malfunctions.

The contents of log files—the individual log records—are not displayed or otherwise used by MPE. Since the contents of the log files is used in a multitude of different ways, HP does not provide any routines to extract this information. Each user provides his own analysis routines tailored for his individual requirements.

Your System Engineer can show you how to effectively use the System Logging feature when you contract for the System Utilization Consulting service.

A complete description of System Logging, its use, format, and configuration, is contained in the System Manager/ System Supervisor Reference Manual, 30000-90014.

Naming files

Many system users have adopted file naming conventions to be implemented by all users of the system. These conventions, when implemented, make it easy for a user to identify their files from those of other users, and also allow the System Manager to be aware of what accounts or groups are using disc resources to store their files. This may be especially important when several accounts have been granted unlimited disc space, and the available disc space remaining becomes critical.

Here is an example of one file naming convention you could use as a guide to formulate standards for your particular needs.

Where a maximum of eight characters is permitted to name a file, the following syntax is used:

XXXNNNNT

where XXX is an account identifier such as

MKT marketing
FIN finance
PER personnel
MFG manufacturing
ENG engineering
   *
   *
   etc.

NNNN is a unique program or entity identification such as

1000
2000
3000
   *
   *
   *
9000

T is a file designator type such as

C=stream file for program compilation
D=data file
J=stream file for program execution
L=linkage file used in creating prepared program files
   from two or more USL's
M=source code maintenance file
P=prepared executable program
R=report file, typically equated to printer
S=source code
U=USL file
V=stream file for program compilation using a
   maintenance file
W=work or sort file

Backing up files

The files on your system should be backed up at regular established intervals. Back up may be performed daily, or even twice daily. The back up may be a complete system back up or selective in nature.

The loss of file information could be caused by a hardware or software malfunction. If the work accomplished up to the time of the failure cannot be recreated by the system, the back up files could be reloaded into the system with users only missing the work accomplished for the interval since the back up. However, if no back up file is available, the entire file may have to be recreated.

Another management consideration is to plan for the security of the back up tapes or discs—where should they be kept, and for how long? Many system users consider their back up tapes so valuable that they are stored in bank vaults or the services of a commercial tape vault company are employed. Such security measures prevent the loss of the data on these tapes by fire, theft or negligence, and prevent unauthorized access to the data on the tapes.

Files can be backed up by writing to serial storage devices.

The HP 3000 system provides two methods for backing up disc files, SYSDUMP and STORE. The basic differences between SYSDUMP and STORE are:

1. SYSDUMP can be used to dump all files on the system, only those files most recently changed, or a specified file set, along with the current directory and accounting information. SYSDUMP is available only to users with the System Supervisor capability.

2. STORE is available to any standard user, and is used to back up any files to which the user is allowed read access.

In general, SYSDUMP could be used for daily backup of the system, since it provides a record of the latest accounting information. STORE can be used when it is desirable to back up only those files that belong to a particular set of groups or accounts. However, STORE can be used by a System Manger or System Supervisor to save any or all files on the system, provided the appropriate account, group, and user structures exist when these files are restored to the system.

When doing a SYSDUMP, all users should be logged off the system and may be restricted from using the system until the dump is complete. For this reason, any lengthy dumps are usually performed during minimal system usage hours (late evening, early morning). SYSDUMP provides the capability of specifying the dump of all files on the system, or only the files changed since a certain date.

STORE on the other hand is used to save a particular set of files. Files currently open for output, input/output, update, or append access cannot be acted upon by STORE. Files currently being stored or restored also cannot be acted upon by STORE.

However, files loaded into memory (currently running programs) and files open for input only can be stored, since their contents is not changing or being altered.

While a file is being dumped, it is locked by MPE so that it cannot be altered or deleted until safely copied.

KSAM and STORE: When using STORE with KSAM files, an additional point must be remembered. A STORE by account or group presents no problems, but a STORE by individual file name must store the individual data file, and also specify a store of the KEY file. The KEY file is not automatically stored when the data file is stored.

These are factors to consider when deciding how to back up files on your system. Usually, the safest method to be used by new users is to SYSDUMP all files on a daily basis until all system users feel comfortable using the system.

Complete instructions for backing up your files are contained in the System Manager/System Supervisor Reference Manual, 30000-90014.

Establishing a tape library

In a very short time you may find the number of users increasing rapidly with a corresponding rise in the number of magnetic tapes your console operator must handle. Planning at an early stage can help alleviate some of the excessive tape handling.

Consider providing storage cabinets for the tapes and developing a numbering system to be assigned to each reel of tape. As users require tapes, assign the next available tape number. A file should be created that contains all these tape assignments so it may easily be updated. Copies of this file can be obtained during a SYSDUMP, providing a current hardcopy of all assigned tape reels.

When users request STORE or RESTORE operations, they can send a message to the console operator that includes their identification, tape number, density, whether or not a "write" ring is required, and other pertinent information. The console operator would then obtain the tape reel from the storage cabinet, mount it, and give the I/O request reply. The tape would then be placed back in the storage cabinet when the operation was complete.

This type of operation would prevent or eliminate the need for users to deliver and pick up tapes at the system room and provide a secure area for tape storage. It could also prevent unauthorized access to tapes since a user would only know his own tape reel number.

The ability to read and write tape labels on magnetic tape will also increase the number of tape reels your console operator must handle. Labeled tapes require a six character volume identifier. This might require that another identifying scheme be established if it is not compatible with the scheme you have chosen for identifying STORE tapes. Communication procedures should also be established for your console operator and system users to follow when labeled tapes are being used.

The console operator will have to know if a "write ring" required, tape density, if it is alright to overwrite an unexpired date, should a new blank tape be mounted, etc. A complete discussion of tape labels is presented in the MPE Commands Reference Manual, 30000-90009.

Establishing a disc library

Establishng a disc library is similar to establishing a tape library. Proper storage space is required and a system should be established for labeling the disc packs. Labels should be placed on the protective cover of the disc pack, and not on the disc surface.

A complete discussion of the private volumes facility is presented in the MPE Commands Reference Manual, 30000-90009.

Operations logs

Included in the System Support Log (03000-90017) is a Historical Records section that contains:

> System History Log
> Console Log
> Report of System Failures

The System History Log allows the system user, the Customer Engineer (CE), and the Systems Engineer (SE) to monitor the system reliability and to detect and correct any adverse trends that might be developing.

In addition to these logs, you may initiate your own record keeping logs to record such things as:

> Personnel on duty (System Room)
> Batch jobs submitted and completed (dates and times)
> Dates and times file backups performed
> Any operational events

When properly documented, these logs can serve as invaluable tools for determining operational patterns so that workloads can be readjusted. They also serve to indicate system performance trends. These logs will make you and your Customer Engineer (CE) and System Engineer (SE) aware of "who" is doing "what" during hours of system availability.

The installation tape (IT)

The Installation Tape (IT) is the medium used by HP to update the system software. This installation is performed by your Customer Engineer or Systems Engineer. Prior to installing the latest software, your System Manager should have examined the current issue of the HP 3000 COMMUNICATOR and discussed with your account Systems Engineer any ramifications that could result from installing the latest software. The HP 3000 COMMUNICATOR will describe what software products changed, and the changes that occured. The HP 3000 COMMUNICATOR sent to the System Manager, is one of the services provided by the Comprehensive Software Support and Software Subscription Service contracts. It contains operational tips, programming techniques, upcoming software enhancements, and other articles of interest.

Your System Manager should be aware of certain events that occur prior to, and during the IT installation.

1. It is mandatory that a full SYSDUMP be performed on your system prior to installing the Installation Tape. You will be notified at least one day in advance of the scheduled installation date. If the full SYSDUMP has not been performed prior to the arrival of your Customer Engineer or System Engineer, he will perform the SYSDUMP for you, and you will be charged for the time spent doing the SYSDUMP.

2. The system must be dedicated to the Customer Engineer upon his arrival. Since the update procedure requires bringing down the system, it is best to schedule a time for the update when no sessions or jobs are permitted.

3. The following four magnetic tapes should exist at your site:

   (i) Current SYSDUMP with SUBSYSTEMS. A SYSDUMP tape containing the current version of MPE and all subsystems files necessary to support the HP software and hardware products, and any files you may have stored in PUB. SYS. The tape will contain your I/O (Input/Output) configuration and the system segmented library (SL). (Customer segments will not be in the file SL. PUB. SYS.).

   (ii) Back up SYSDUMP with SUBSYSTEMS. Same as above, but contains the previous version of MPE and the subsystem files.

   (iii) CPU Standalone. A tape containing the CPU stand-alone diagnostics.

   (iv) I/O Standalone. A tape which contains the non-CPU standalone diagnostics (I/O, memory, SLEUTH).

4. Your System Manager must put on tape and remove all user files from the PUB group of the SYS account (PUB. SYS.) and the SUPPORT account. Failure to remove these files may result in their total loss during the update process. (Consider establishing a UTIL group in the SYS account (UTIL. SYS.) to keep all your special programs and routines. They would not have to be removed and replaced each time an update is performed if kept in UTIL. SYS. instead of PUB. SYS.).

5. Following the update, no user procedures will reside in either of the files SL. PUB. SYS. or SPLINTR. PUB. SYS. Your System Manager will have to reinstall any user segments to these files after the installation is complete.

6. The user files removed from the system may be replaced after the IT installation is complete.

7. The system disc must have enough free space to do a COLDLOAD using the UPDATE option. This will require approximately 250 (octal) sectors. If there is insufficient space, your System Manager will have to provide the file names that can be purged to make more disc space available.

The field Systems Engineering organization has the option to support two versions of the system software, the current version and the preceding version. General Systems Division will only support the current version of the system software. Therefore, if you fail to accept the current version of the system software, contact your account Systems Engineer to determine if your prior version will still be supported.

Preventive maintenance

You and your Customer Engineer should plan the preventive maintenance (PM) schedule for your system. The frequency of the PM schedule will depend on your system utilization and equipment room environment. The time of day when the PM is performed should not conflict with heavy system usage. Some PM's require that the system be devoted to the CE for running diagnostics. Some peripheral devices may not be available for use during PM visits. Plan your workload to have all high priority jobs completed before the PM is started.

Installing new software and hardware products

To expand the capabilities of your HP 3000 system, you may decide to obtain new software or hardware from HP. Your Sales Representative will assist you in your selection.

When the time comes to install the new products, plan your workload accordingly. Make sure that all critical jobs have been completed prior to starting the upgrade, and do not schedule any critical jobs to start immediately after the upgrade is completed. An upgrade may take longer than anticipated if problems develop. Here are some items that need consideration when installing new software and hardware products.

Software

Are your users trained to use the new product?

Does your System Manager know how to configure the system with the new product installed?

Is any program conversion needed before using the new product?

Do you have an adequate supply of manuals for your intended users?

Will you require Systems Engineering consultation before implementing the new product usage?

Do you have a test program or stream file to validate the new subsystem operation at your site?

Hardware

Is the equipment room suitable for the new product (space, power, air conditioning, etc.)?

Are any new supplies required to use the new product (paper, ribbons, tapes, discs, etc.)?

When problems arise

During the life of any computer system, problems occur. Knowing how to handle these problem situations keeps your operation functioning more smoothly. Should you experience an abnormally high incidence of software problems, application design or system utilization difficulties, consider contracting for Systems Engineering consultation services, or scheduling your personnel for additional training. This section describes the interface and responsibilities of your System Manager and HP when problems occur.
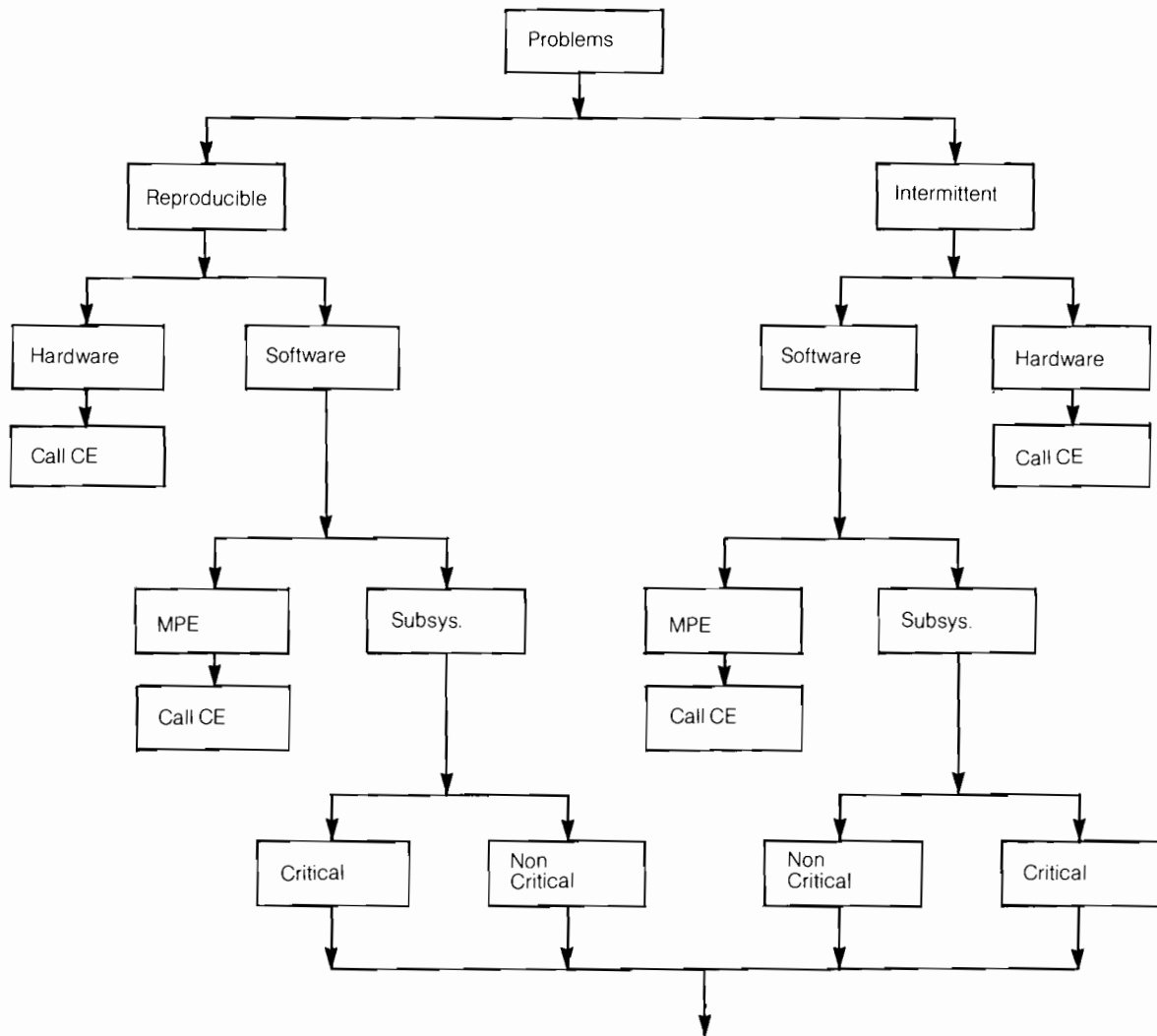
What Should Your System Manager Do When Problems Occur?

Problems may be broadly classified as reproducible or intermittent, occuring in hardware or software. Hardware problems are handled by contacting the Customer Engineer.

Many users develop contingency plans for dealing with certain types of hardware problems prior to the arrival of the Customer Engineer. When peripheral devices fail, they can be configured out of the system, permitting some processing to continue. For example, when a Line Printer fails, all printer output can be collected on a serial device and either be taken to another system for printing, or saved for running when the line printer is repaired. This could eliminate the need for large hard copy jobs to be run again. Examine the possibility of developing contingency plans for your system.

The origin of software problems is further complicated by the interaction of MPE and the various subsystems. Your System Manager must determine if a problem exists in using MPE or a subsystem. A call to the Customer Engineer will provide your System Manager with direction on what action will be taken when MPE is the suspect. The Customer Engineer is also the source for determining which hardware problems might also manifest themselves as MPE problems. The Customer Engineer will work with an Operating System Specialist (OSS) to solve MPE type problems. The OSS is a skilled specialist trained in the operation of MPE.

If it is determined that a subsystem is the cause of difficulty, the System Manager uses the following chart for the next course of action.

```
                         Problems
                            │
          ┌─────────────────┴─────────────────┐
      Reproducible                         Intermittent
          │                                    │
     ┌────┴────┐                          ┌────┴────┐
  Hardware  Software                   Software  Hardware
     │         │                          │         │
  Call CE      │                          │      Call CE
               │                          │
          ┌────┴────┐                ┌────┴────┐
        MPE      Subsys.           MPE      Subsys.
         │          │               │          │
      Call CE       │            Call CE        │
                    │                           │
              ┌─────┴─────┐            ┌─────────┴─────┐
          Critical    Non          Non          Critical
                      Critical     Critical
```

1. Identify and isolate the problem using the chart illustrated above.
2. Check the latest copy of the Software Status Bulletin (SSB) to see if the problem has been reported and if there is a temporary solution.
3. Call the Phone In Consulting Service (PICS) center for any current information regarding the problem if you are covered by the Comprehensive Software Service.
4. Complete the Software Maintenance Request (SMR) form and gather all supporting documentation.

NOTE: CRITICAL PROBLEMS SHOULD BE DISCUSSED WITH YOUR SYSTEMS ENGINEER TO DETERMINE THE COURSE OF ACTION REQUIRED. CRITICAL PROBLEMS ARE THOSE THAT PREVENT YOU FROM ACCOMPLISHING MEANINGFUL WORK OR RENDER THE SYSTEM INOPERATIVE.

Figure 5

Your System Manager must identify, isolate, and completely document all software problems. If he has difficulty in this area, an HP Systems Engineer will help him deal with software problems effectively.

Isolating a Problem

Your System Manager can isolate a problem with the aid of the following steps:

1. Change the environment and execute only selected software modeles.
2. Determine if the software module has been executing in the past. If it has, determine what changes have been made to the module since the last successful execution.
3. Segment the software module into smaller programs and execute each independently to isolate the problem.
4. If your System Manager cannot isolate the problem, the Phone In Consulting Service (PICS) is available to discuss what on-site services are required when you have contracted for Comprehensive Software Support services.

Identifying a Problem

The identification process consists of selecting one of the following six categories:

1. User Programming Error
   The isolated problem was identified as being caused by an error in the user program.
2. Application Performance Problem
   The problem was identified as a result of computer system performance. Cause of the problem is related to the application design and use of the system.
3. Software Update Problem
   Since software status is expected to be the latest HP supported Version/Revision available from HP, the problem may be the result of running an earlier version.
4. HP Software Design Error
   The problem was identified as an HP software problem caused by one of the following:
   a. The software module does not produce the results stated in the Reference Manual and data sheets.
   b. The Reference Manual does not clearly state what results the software product should produce.
   c. An HP System Malfunction.

5. HP System Maintenance
   The problem was identified as an HP System Maintenance problem.
6. Enhancement Request
   If the problem does not fall into the previous categories, it will be identified as a potential software enhancement.

What is a software maintenance request (SMR)?

A Software Maintenance Request (SMR) is initiated by your System Manager to document any software difficulties encountered. It is the document the Systems Engineer will use to verify your particular difficulty and submit it to the factory. The Software Maintenance Request is essential in the factory effort to investigate the difficulty and to publish Known-Problem Reports in the Software Status Bulletin (SSB). A software malfunction is defined as software that does not comply with published specifications and/or causes unanticipated software aborts and halts the system. The Software Maintenance Request is used to report suspected software problems, report documentation errors, and to submit enhancement requests.

The Software Status Bulletin, published twice monthly and distributed to Systems Engineers, Operating System Specialists (OSS), and users with software maintenance contracts, lists known software problems, symptoms, workarounds, documentation errors, and fixes for software problems. The HP General Systems Division on-line Systems Engineers monitor the Software Maintenance Request reports and generates the Software Status Bulletin. HP General Systems Division has the responsibility of fixing all known software problems. Not all Software Maintenance Request reports will be found listed in the Software Status Bulletin. This is because not all Software Maintenance Requests submitted are in fact real software problems, and in addition, many of the real software problems reported are duplicates of previously submitted reports. The remaining Software Maintenance Requests are concerned with user misunderstandings, problems that cannot be duplicated, documentation errors, enhancement requests, and hardware problems.

The Software Maintenance Request forms can be obtained by running FORMGEN.PUB.SYS. This will produce twenty copies of the form on your line printer.

The following figures show a sample Software Maintenance Request form, a sample acknowledgement letter, an extract from the Software Status Bulletin (SSB) listing the SMR, and a final response letter classifying the problem.

HEWLETT-PACKARD SOFTWARE MAINTENANCE REQUEST FORM

DATE 8/1/78 SYSTEM 3000 SERIES III   REPORT NO. ___4001___
                eg(Series I,II)   (FOR HP USE)

PRODUCT NO. HP 32213C
          eg.HP32102 or HP22687

PRODUCT NAME COBOL/3000 _____ FIX LEVEL C·02·00

YOUR NAME JOHN DOE

CUSTOMER FIRM'S NAME ACME CORP.

ADDRESS(STREET) 4400 MAIN ST.

(CITY,STATE,ZIP) SMITHSVILLE, N.Y. 12345

PHONE (401) 123-4567

****

VERIFIED BY Sally Jones
            (FOR HP USE)

OFFICE H.P. Paramus, N.J.
          (FOR HP USE)
****
DESCRIBE PROBLEM (Include environment,symptoms,and any
                  other supporting information.)

WHAT WERE YOU TRYING TO DO? Appending Records to
an existing sequential file

_____

WHAT WENT WRONG? last record is overlaid by first
appended record. If the file to be appended to has
zero records the program aborts (611 write service
not granted) error #44

ANY OTHER INFORMATION? Attached stream job listing
illustrates test source program and sequential data
file contents before and after execution of the program.
Note the overlay of the last record the first appended
record. Attached magnetic tape includes test stream, source
and data files.

Figure 6

5-4

HEWLETT **hp** *PACKARD*

GENERAL SYSTEMS · 5303 Stevens Creek Blvd., Santa Clara, California 95050, Telephone 408 249-7020, TWX 910-338-0215

August 4, 1978

Mr. John Doe
Acme Corp.
4400 Main St.
Smithville, New York   12345

Dear Mr. Doe:

Thank you for sending your Software Maintenance Request (SMR),
which is attached. For processing purposes, we have identified
this request as SMR #4001.

We have forwarded your request to the appropriate software
engineer for investigation and will send you the results of
this investigation as soon as possible.

If you have further questions regarding this SMR or any other
matter concerning your HP 3000, please contact your local
Systems Engineer.

We appreciate the time you have taken to send us this request.
Such reports help us improve our products and increase customer
satisfaction.

Sincerely,

John Spooler
Product Support Manager

JS/fd

cc: Sally Smith
      HP/Paramus

Figure 7

5-5

        PRODUCT NAME: COBOL   DATE ENTERED: 04/07/78
      PRODUCT NUMBER: HP32213C.02.00   LAST UPDATE:
          SMR NUMBER: 3846   DATE CLOSED: OPEN

SYMPTOMS:
COMPILER GENERATES INCORRECT CODE FOR A SECOND GOTO DEPENDING
ON STATEMENT IF THE DEPENDING ON VARIABLE IS THE SAME IN BOTH
GOTO STATEMENTS.

WORKAROUND:
USE A DIFFERENT DATA ITEM FOR THE SECOND GOTO STATEMENT.

        PRODUCT NAME: COBOL   DATE ENTERED: 08/04/78
      PRODUCT NUMBER: HP32213C.02.00   LAST UPDATE:
          SMR NUMBER: 4001   DATE CLOSED: 08/09/78

DESCRIPTION:
A WRITE TO A DISC I-O FILE OVERWROTE THE LAST RECORD IN THE FILE
IF THE PREVIOUS ACCESS TO THE FILE WAS A READ THAT ENCOUNTERED THE
END-OF-FILE.

WORKAROUND:
UPON DETECTION OF END-OF-FILE ON A READ EXECUTE A WRITE OF THE
LAST RECORD READ TO FORCE AN UPDATE OF THE LAST RECORD.
SUBSEQUENT WRITE'S TO THE FILE WILL BE ADDED TO THE END-OF-THE-
FILE.

FIX
THIS PROBLEM WILL BE FIXED IN VERSIONS C.02.01 & B.03.01 OF COBOL.

        PRODUCT NAME: COBOL   DATE ENTERED: 04/07/78
      PRODUCT NUMBER: HP32213C.02.00   LAST UPDATE:
          SMR NUMBER: 3861   DATE CLOSED: OPEN

SYMPTOMS:
IN MOVING DATA FROM A RECORD IN THE FILE SECTION TO A RECORD
IN THE LINKAGE SECTION, THE COMPILER FAILED TO RECOGNIZE THE
DATA NAME QUALIFIERS (ERROR 21). THE LINKAGE SECTION RECORD WAS
REDEFINED. BOTH LINKAGE SECTION RECORDS CONTAINED A DATA ITEM
WITH THE SAME NAME.

WORKAROUND:
MOVE DATA TO THE REDEFINED RECORD IN THE LINKAGE SECTION.

COBOL   COBOL

Figure 8

5-6

HEWLETT **hp** *PACKARD*

August 9, 1978

Mr. John Doe
Acme Corp.
4400 Main St.
Smithville, New York 12345

Dear Mr. Doe:

Thank you for sending your Software Maintenance Request (SMR #4401)
regarding your COBOL program incorrectly appending records to an
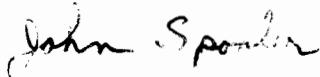existing sequential file.

We have determined that this problem is attributable to a de-
ficiency in our software. The problem is being investigated, and
we cannot presently state when it will be completely resolved.
Please consult future issues of the Software Status Bulletin for
further information regarding this problem.

In the meantime, you may use the following workaround: upon
detection of the End-of-File on a read, execute a write of the last
record read to force an update of the last record. Subsequent
write's to the file will be added to the End-of-File.

If you have any questions about this SMR or other matters concerning
your HP 3000, please contact your local Systems Engineer.

We appreciate the time you have taken to send us this request.
Such reports help us improve our products and increase customer
satisfaction.

Sincerely,

John Spooler

John Spooler
Product Support Manager

JS:fd

cc: Sally Jones
      HP/Paramus

Figure 9

5-7

How to Fill In a Software Maintenance Request (SMR)

Before a Software Maintenance Request can be filled in, the problem must be identified and isolated. A quick solution to your software problem depends on the quality of the Software Maintenance Request isolating the problem.

Each Software Maintenance Request submitted by your personnel should be reviewed by your System Manager. He should check to see whether the user has some misconception about the system which he can clarify. Since it is very difficult to solve non-reproducible problems, he should also determine whether the problem can be reproduced.

An isolated problem for a Subsystem is one that is reproducible and can be demonstrated, typically by ten or less lines of programming.

For an Operating System (MPE) problem, it may not be possible to reproduce the problem because of the many unknown elements contributing to the system environment. In this case, a memory (cold) dump listing is mandatory for the evaluation of the problem.

Part of the isolation process is to identify which HP software product is involved by providing the product number, version, update-level and fix level. This is necessary because the problem may only be duplicated with a particular level of the subsystem and MPE. For example, if the problem occurs with COBOL, the identification information can be found from the header on a compilation listing.

:COBOLGO COBTEST1
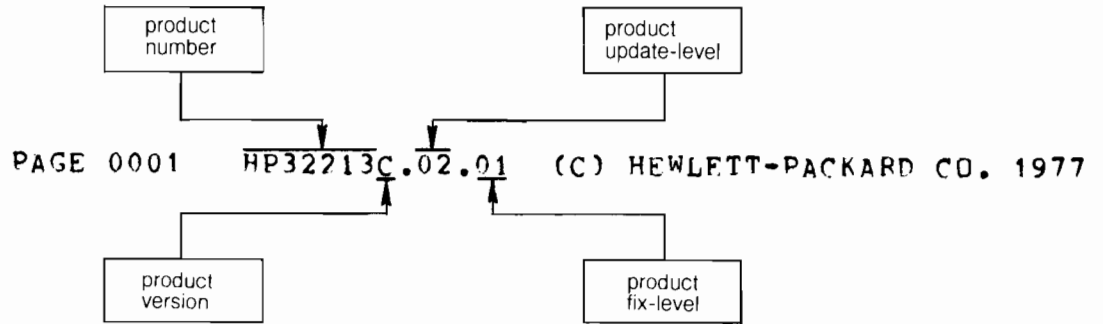
PAGE 0001   HP32213C.02.01   (C) HEWLETT-PACKARD CO. 1977

```
001100 IDENTIFICATION DIVISION.
001200 PROGRAM-ID. COBOL-TEST1.
001300 AUTHOR. YOUR NAME.
001400 ENVIRONMENT DIVISION.
001500 DATA DIVISION.
001600 WORKING-STORAGE SECTION.
001700 77   EDIT-FIELD      PIC $Z,ZZ9.99.
001800 77   TOTAL-COST      PIC 999V99.
001900 77   COST-OF-SALE    PIC 99V99.
002000 77   TAX             PIC 99V99.
002100 77   Y-N             PIC X.
002200

002300 PROCEDURE DIVISION.
002400 ENTER-ROUTINE.
002500      MOVE ZEROS TO TOTAL-COST.
002600      DISPLAY SPACE.
002700      DISPLAY "ENTER COST OF SALE (BEFORE TAX) NO
               DECIMAL PT"
002800      DISPLAY "(4 DIGITS MAX) INCLUDE LEADING
               ZEROS!".
002900      ACCEPT COST-OF-SALE.
003000      COMPUTE TAX = COST-OF-SALE * .06.
003100      ADD COST-OF-SALE, TAX TO TOTAL-COST.
003200      MOVE TOTAL-COST TO EDIT-FIELD.
003300      DISPLAY "TOTAL-COST TO EDIT-FIELD.
003400      DISPLAY "ARE YOU FINISHED? (Y OR N)".
003500      ACCEPT Y-N.
003600      IF Y-N = "N" GO TO ENTER-ROUTINE.
003700      STOP RUN.
```

DATA AREA IS %000341 WORDS.
CPU TIME = 0:00:01. WALL TIME = 0:00:10.
END COBOL/3000 COMPILATION. NO ERRORS. NO WARNINGS.

END OF COMPILE

END OF PREPARE

ENTER COST OF SALE (BEFORE TAX) NO DECIMAL PT
(4 DIGITS MAX) INCLUDE LEADING ZEROS!

If there is doubt about the version and level, you should ask your local HP office or consult the most recent issue of the HP 3000 COMMUNICATOR that describes the Installation Tape date code being used.

After you isolate the suspected problem, consult the latest copy of the Software Status Bulletin. If you find the problem reported in the Software Status Bulletin, you can be assured that HP General Systems Division is aware of the problem and the appropriate steps are being taken to alleviate the situation. A workaround may also have been reported and entered in the Software Status Bulletin.

If you have purchased Comprehensive Software Support services and do not find the problem or workaround in the Software Status Bulletin, then call your local Phone In Consultation Service center and determine if more recent information on the problem is available.

Additional Documentation

The materials needed to duplicate the problem should accompany the Software Maintenance Request. Complete and accurate documentation is very critical to a quick response.

Additional documentation may include:

- A compiled listing of the program(s) with a PMAP location. (REQUIRED when user program is involved).
- A listing of the actual execution showing the indicated problem (REQUIRED) with all the dialogue and sequence of events leading to the problem.
- A STREAM file that will reproduce the problem, or a menu of commands and input/output for reproducing the problem. (REQUIRED when user program is involved).
- A magnetic tape with the STREAM file, program source, USL, RL, SL, or program files and any data files needed to reproduce the problem. The originator's name and mailing address must be put on the tape to insure its return. (REQUIRED when programs larger than 10 lines of code are needed to isolate the problem.)
- If the problem was a system failure, then a complete memory dump (cold dump) and load map listing must be included. (REQUIRED).

Two files, DUMPJOB and FORMGEN, help provide documentation for reporting problems by the System Manager. Complete details on the use of these two files is contained in Appendix A.

Submitting a Software Maintenance Request (SMR)

The System Manager forwards the Software Maintenance Request to the Phone In Consulting Service center at the local HP sales office. The Systems Engineer signs the Software Maintenance Request after verifying the problem and forwards it to HP General Systems Division if he is unable to solve the problem. This enables the local support organization to be completely aware of any problems you may be experiencing.

The local support organizlation is also in the best position to quickly respond to the problem if it involves a misunderstanding of the software and/or documentation, or if it is a known problem with an existing workaround or fix. The local support organiation will typically be the area Phone In Consulting Service center. However, exceptions to this may be determined in the field.

If the Software Maintenance Request is received without sufficient documentation to recreate the problem, you will be contacted for more explicit information.

What happens to your software maintenance request (SMR)?

When the Software Maintenance Request is received at HP General Systems Division, it is immediately assigned a unique reference number. The number is included in a Short acknowledgement letter sent to you, with a copy to your Systems Engineer. All future correspondence and inquiries as to the status of the SMR must reference this number.

When the problem is fixed by HP General Systems Division, you and your Systems Engineer are notified by letter what version of the software will contain the solution and any intermediate workaround discovered. This information will also be reflected in the Software Status Bulletin until the release of the Installation Tape following the Installation Tape in which the corrected software appeared.

The corrected software will be distributed on a regularly scheduled release of the Installation Tape only after undergoing the normal testing and Quality Assurance procedures. Since the current Installation Tape cycle is 3 months, it may be as long as 6 months after submission of the Software Maintenance Request before the revised software is available in the field.

HP will make exceptions to the above mentioned procedure in certain circumstances when you are experiencing critical problems. A critical problem is one in which your primary application(s) is significantly impaired. If this is the case, contact your local Systems Engineering Support Manager with all pertinent details. While each critical problem will take a different length of time to correct, be assured that HP will make every effort necessary to obtain a satisfactory resolution.

The above mentioned procedure should be followed both for users on Comprehensive Software support and those on a Software Subscription Service with the following exception:

Since the less encompassing Software Subscription Service does not entitle you to individualized attention, you will not receive replies specific to the submission of your Software Maintenance Request. Your Software Maintenance Request will be routed to the proper channels and the same attention will be given to resolve the problem. However, you will not receive any correspondence regarding the disposition of the Software Maintenance Request.

Enhancement requests are submitted in the same manner as problem reports (via the SMR). HP continuously enhances its products and considers all the suggestions submitted by its customers. However, not all enhancement requests are implemented.

What can HP do when problems occur?

A range of maintenance services tailored to your needs is available to ensure that your system runs smoothly and reliably. The services provided by the Customer Maintenance Agreement provide preventive maintenance visits, emergency repairs, and an update service to keep the operating system current.

For the first 90 days after installation, an on-site warranty provides parts and labor, and the basic services that are part of the Customer Maintenance Agreement. After the warranty period, service is continued under the Customer Maintenance Agreement. The cost is determined by your configuration and the type and frequency of service best suited to your company's needs.

Three types of software support services are available: Comprehensive Software Support, Software Subscription Service, and Self Supported Service. Software Subscription Service and Self Support Service is only available after the expiration of a Comprehensive Software Support agreement.

Comprehensive software support

Comprehensive Software Support is a set of services which will assist your System Manager to support his HP software. This support is provided to the designated System Manager or his alternate. A prerequisite to this service is satisfactory completion of the HP Comprehensive Introduction and System Management and Operations Courses by the person you select as your System Manager.

The services offered under this comprehensive plan include:

- SOFTWARE COMMUNICATION. A publication called the "HP 3000 COMMUNICATOR" will be sent periodically to your System Manager. This publication contains operational tips, programming techniques, upcoming software enhancements, available HP documentation, and other articles of general interest.

- SOFTWARE PROBLEM DOCUMENTATION. The System Manager will receive the "HP 3000 Software Status Bulletin" (SSB) twice each month. These bulletins will include information regarding software enhancements, current software design errors, and interim programming solutions.

- REFERENCE MANUAL UPDATES. The System Manager will receive the appropriate software reference manuals updates and/or enhancements as HP makes them available.

- SOFTWARE UPDATES/ENHANCEMENTS. As software enhancements are made or permanent solutions are developed for known problems, they will be incorporated into a "Installation Tape" (IT). An Hp Customer Engineer or Systems Engineer will install this latest version of the appropriate software shortly after release (normally at Preventive Maintenance time). If any problems develop with these updates, support would be as defined in SOFTWARE PROBLEM SUPPORT described below.

- SOFTWARE PROBLEM SUPPORT. All software problems should be submitted in writing on the SOFTWARE MAINTENANCE REQUEST (SMR) form. These requests may be written by the customer (forwarded to the local HP office), the telephone Systems Engineer at the PICS (Phone In Consulting Service) office, or the Account Systems Engineer. Local assistance will be as defined in TELEPHONE ASSISTANCE or ON-SITE ASSISTANCE described below. These requests will be analyzed and, where practical, listed in the Software Status Bulletin, then fixed and finally incorporated into the next cycle of the software update release.

- TELEPHONE ASSISTANCE. The System Manager will receive telephone numbers for the nearest Phone In Consulting Service (PICS) office to assure contact with an HP Systems Engineer to discuss questions and provide advice to resolve HP software or operational problems. This service is available from 8:30 AM to 5 PM, local time at the HP facility, Monday through Friday, exclusive of HP holidays. Maximum response time is four hours, but typically will be less than two hours from major support offices. HP will assist in identifying, verifying, and reporting problems which have been isolated by the System Manager. Every effort will be made to resolve the problem with a "work around". Additionally, the System Engineer may investigate the problem by communicating via terminal from the HP site. In the event that the problem cannot be resolved on the phone, or if it is of a critical nature, on-site assistance may be required. The System Manager and the HP Systems Engineer will make this decision.

- ON-SITE SOFTWARE SERVICE. HP will provide on-site software services for customer's facilities located within a 100-mile radius of HP Computer Systems service facilities. Locations outside this 100-mile radius may be subject to travel charges. On-site services are available during the hours of 8 AM to 5 PM, local time at the HP facility, Monday through Friday, exclusive of HP holidays.

An HP Systems Engineer will normally arrive within eight working hours after the decision to go on-site. HP will assist the System Manager in identifying, verifying, isolating, and reporting problems associated with the HP Software product. Every effort will be made to identify a "work-around".

If the problem reported is not associated with an HP software design error, documentation error, or system malfunction, the on-site services are considered outside the scope of Hewlett-Packard's software support service and subject to a time and materials charge.

HP is not obligated to provide any on-site services for HP software products which have been modified by the customer.

This service is intended to resolve software problems and not to be used for customer training. For customer training, HP offers a comprehensive set of courses described in the Customer Support Services brochure, 5953-0552.

- RESPONSIBLE SYSTEM ENGINEER. A Systems Engineer will be assigned to be technically responsible for each customer's account. Typical Systems Engineering functions are:

    periodically review application progress,

    be kept abreast of all communication between his customer and the telephone assisting Systems Engineer or Customer Engineer,

- watch for adverse trends reported through telephone assistance,

- become involved with a major problem after being alerted by the telephone-assisting Systems Engineer,

- provide or coordinate the on-site HP resources to solve a problem,

- follow up on submitted "Software Maintenance Requests",

- alert his customer of any anticipated problems before a new software release is installed,

- maintain a file of software and hardware configuration along with support history,

- inform his customer of any training or consulting that would help shorten an appliclation development, increase productivity or increase system performance,

- insure that all Comprehensive Software Support services are used to maximize his customer's success.

Software Subscription Service

A direct mail Software Subscription Service is available when you determine that Systems Engineering support is no longer required for your site.

The Software Subscription Service provides you with:

- SOFTWARE COMMUNICATION. A publication called the "HP 3000 COMMUNICATOR" will be issued periodically to your System Manager. This publication contains operational tips, programming techniques, upcoming software enhancements, and other articles of interest.

- SOFTWARE PROBLEM DOCUMENTATION. The System Manager will receive the "HP 3000 Software Status Bulletin (SSB) twice each month. These bulletins will include information regarding software enhancements, current software design errors, and interim programming solutions.

- REFERENCE MANUAL UPDATES. The System Manager will receive the appropriate software reference manual updates and/or enhancements as HP makes them available.

- SOFTWARE UPDATES/ENHANCEMENTS. As software enhancements are made or permanent solutions are developed for known problems, they will be incorporated into a "Installation Tape" (IT). An HP Customer Engineer or Systems Engineer will install this latest version of the appropriate software shortly after release (normally at Preventive Maintenance time). If any problems develop with these updates, support would be as defined in SOFTWARE PROBLEM SUPPORT described below.

- SOFTWARE PROBLEM SUPPORT. All software problems should be submitted in writing by the customer on a "Software Maintenance Request" forwarded to the local HP office. Local assistance will be provided, if required, as defined in TELEPHONE ASSISTANCE or ON-SITE ASSISTANCE paragraphs below. These requests will be analyzed and, where practical, listed in the "Software Status Bulletin", then fixed and finally incorporated into the next cycle of the software update release.

- TELEPHONE ASSISTANCE. Telephone assistance is beyond the scope of the Software Subscription Service, however, telephone assistance can be provided on a time and materials basis, one-half day minimum, by the Phone In Consulting Service (PICS) office, subject to the availability of a Systems Engineer.

- ON-SITE ASSISTANCE. The on-site assistance is beyond the scope of the Software Subscription Service, however, on-site assistance can be provided on a time and materials basis, one-half day minimum, by your local sales office, subject to the availability of a Systems Engineer.

Self supported service

A customer selecting this service after the expiration of the Comprehensive Software Support service, should plan to assume responsibility for all software installed on his system. No SE will be assigned, but assistance will be available on a time and materials basis. Systems·Engineering support is subject to local availability.

Unsupported products

Unsupported Products

There may be occasions when you want to interface a non Hewlett-Packard product to an HP 3000. Support for the foreign device and system modifications required to drive it are the responsibility of the customer. If the system exhibits problems resulting from the foreign device, the system must be reconfigured to its original Hewlett-Packard configuration, with the current supported version of the operating system, before service can be rendered under the Customer Maintenance Agreement. Hewlett-Packard will not warrant compatibility of operating systems, user subsystems, or modifications to the HP hardware necessitated by design updates with any non-HP product attached to an HP 3000 Computer System.

Support for privileged mode users

After consulting with your HP Sales Representative and Systems Engineer, you may decide you need to use special sections of the operating system and system hardware normally protected from users. Use of this area of the operating system is referred to as Privileged Mode. Since Privileged Mode allows you or your programs to access all code and data areas in central memory and to use all features of the system hardware, this capability entails special responsibilities.

There are no mechanisms to prevent a Privileged Mode program or user from damaging the environment of other users, or from damaging the operating system itself. As a result, this mode is not covered under any of the three software support services.

If Privileged Mode is required in your application, your HP Sales Representative or Systems Engineer outlines the training provided by Hewlett-Packard for Privileged Mode users. As a general rule, all investigation of problems resulting from use of Privileged Mode, and all consulting on its use, are provided on a time and material basis.

The HP general systems users group

The HP General Systems Users Group, Inc. is an international body, providing its members with services such as a technical journal, contributed software library, international meetings, membership rosters, and access to the collective knowledge of many experienced HP 3000 users. The HP General Systems Users Group (HPGSUG) is financed by membership fees and meeting registration fees, Leadership and direction for the group are provided by a seven member board of directors. While HPGSUG is completely independent from Hewlett-Packard, it works very closely with, and has a great deal of support from, Hewlett-Packard at all levels.

Regional users group

Regional users groups typically evolve around a Hewlett-Packard office. The services provided by a Regional Users Group (RUG) are periodic technical meetings, occasional seminars and training sessions, and a membership roster. RUG's are financed by meeting registration fees, while the seminars and training sessions can be hosted by HP. Direction and leadership for RUG's is provided by a volunteer committee comprised of local users.

Activities

A board of directors, selected yearly by the voting members, guides various programs and committees.

INTERFACE — Responsibility for primary interface with HP. Periodic questionnaire response and member input provide consensus for discussion of user interests with HP: coordinates joint actiity with HP and transmits their inquiries to the Group.

LIBRARY — Coordination of user contributions to the Contributed Library and its distribution to "Installation Members;" establishment of form and format requirements for contributions; review and indexing of contributions; software availability information to users.

MEETINGS — International. Each year, a meeting is held to provide the entire membership with a chance to exchange ideas in person as well as listen to noted technical presentations. Regular meeting activity also includes:

- Special interest sessions/groups
- User techniques and problems panel
- Interface with HP — questions and responses
- Users' Survey results
- Committee meetings
- Displays
- Demonstrations

PUBLICATIONS — Responsible for the Journal of the HP General Systems Users Group and production of meeting proceedings and other special publications.

Membership types

INSTALLATION — Each site owning or leasing an HP general purpose computing system is eligible, one membership per system. Each separate membership carries the right to designate one voting representative with the following privileges:

- Participation in all Users Group activities
- May be elected to office
- Receives subscription to Journal of the HP General Systems Users Group (published bi-monthly)
- Receives Contributed Library, plus updating (magnetic tape) documentation and index
- Proceedings of international meeting

GENERAL — Any person who uses an HP general purpose computing system is eligible for individual, non-voting membership with the following benefits:

- Participation in all Users Group activities
- May be elected to office
- Receives subscription to Journal of the HP General Systems Users Group (published bi-monthly)

Membership application

Individual users not designated in the site memberships may take advantage of membership opportunities through payment of a minimal fee.

Customers located outside the United States can contact the Executive Director to obtain the address of their nearest Regional Users Group. For information, contact:

Executive Director
HP General Systems Users Group, Inc.
P.O. Box 18313
Baltimore-Washington International Branch
Baltimore, Md. 212400

Phone (301) 789-7933

Appendix A

Documentation Tools

Documentation for submitting Software Maintenance Requests is provided by two files in the PUB group of the SYS account. The first is a STREAM job file to help you give the information Hewlett-Packard needs to help with MPE type problems. The second tool is a program file which will reproduce the Software Maintenance Request (SMR) forms to report subsystem problems, documentation errors, and enhancement requests.

DUMPJOB.PUB.SYS

The first file called "DUMPJOB", when STREAMed will:

1. Generate a Software Maintenance Request form.
2. Obtain a copy of the loadmap from the file LOADMAP in the PUB group of the SYS account. This is an absolute MUST item for the Operating System Specialist to attempt to analyze a cold dump listing.

You must obtain a hardcopy 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. Note that this section of the program will abort as part of its normal operation.

You must also RUN DPAN2.PUB.SYS to obtain a listing of the cold dump of the problem on systems using MPE III. (DPAN for MPE-C operating systems).

CAUTION — If the cold dump to be taken using this STREAM file was not physically taken on the host machine, the LOADMAP and I/O configuration will be incorrect. Proper administrative procedures must be taken to assure that the LOADMAP and I/O configuration are the correct ones for the cold dump in question.

This STREAMed job logs onto the account SYS using the name MANAGER as user. Passwords must be removed from this account/user or the STREAM file DUMPJOB must be modified using the EDITOR subsystem.

FORMGEN.PUB.SYS

The second file (program file) is called FORMGEN. This program generates twenty copies of the Software Maintenance Request form for reporting subsystem problems, documentation errors, and enhancement requests. 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.

Example:

:FILE LIST;DEV=$STDLIST

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

Glossary

account	The basic unit to which resources are assigned and the major billing entity to which system resources such as central processor time, on-line connect time and file space are allocated and charged.
account security	The file access modes and types of users to whom they are available as specified by the system manager when the account is created.
account librarian	A user who is granted special file-access modes by the account manager for maintenance of files within the account.
account manager	A user who manages the account by defining valid users and file groups and specifying resource-use limits (if any) for them.
allocation	The system process of locating and reserving disc space to be used for a particular file.
back up	Typically refers to copies of disc files residing on magnetic tape or disc resulting from a SYSDUMP or STORE operation.
batch mode processing	A technique of submitting to the system, as a single unit, commands requesting various MPE operations such as program compilation and execution, file manipulation, or utility functions. Each unit is called a job.
closing a file	Terminating access to a file after completing all input/output operations with the file. Accomplished by calling the FCLOSE intrinsic or terminating program execution.
cold load	The process of loading MPE system from the system disc to memory. This is the standard operating procedure for starting a system after it has been shut down.
command	A key word that directs MPE, a subsystem, or a utility to perform a specific operation.
CPU time	The amount of time a user, group, or account has used the central processing unit.
creator, file	User who creates file with the :BUILD command or FOPEN intrinsic (identified by user name, account, and log-on or home group).
Customer Engineer	(CE) An HP technical hardware specialist.
data base	A collection of logically-related files containing both data and structural information.
defaults	Values for parameters or various system characteristics that take effect if a parameter is omitted or a characteristic is not specified.
fence	A priority number between 0 (lowest priority) and 14 (highest priority) entered in the system by the console operator that permits or denies session/job access to the system. The session/job must have a priority equal to, or greater than the system JOBFENCE to initiate a session/job.
file	A collection of related records treated as a unit. An HP 3000 file may be an MPE disc or device file, a KSAM disc file, or an IMAGE data set.
file level security	The file access modes and types of users to whom they are available. These are determined by default when the file is created and may be changed by the file creator using the :ALTSEC command which is described in the MPE Commands Reference Manual.
File System	The part of the MPE operating system that automatically handles user access to input/output devices and data blocking, buffering, data transfers, and deblocking.

group	A bookkeeping facility that partitions some of an account's file domain and resources into a private sub-domain. The on-line connect-time, and disc-file space that you use and are charged to your long-on group as well as account.
group level security	The file access modes and types of users to whom they are available as specified by the account manager when the group is created.
group user	A user who is logged on to a particular group, or who is assigned the group as a home group.
hard-wired terminal	A terminal directly connected to the computer system.
home group	The group assigned to a user by the account manager when he defines the user name. This group is the user's default log-on group name if a group name is not specified with the :HELLO or :JOB commands.
intrinsic	An operating system procedure used to access and alter files, as well as to perform other operations.
job	A single unit of commands that request various MPE operations such as compiling and executing programs, manipulating files, or performing utility functions, submitted by the user to the HP 3000.
KSAM	Keyed Sequential Access Method, a file access method for the HP 3000 computer system in which records may be accessed sequentially or randomly by primary or alternate keys.
lockword	A word assigned to a file when it is created that must be supplied to access the file in any way. The word may be from one to eight alphanumeric characters long and must begin with an alphabetic character.
log on	The process of initiating a session with the MPE operating system by using the :HELLO command or initiating a job with the :JOB command.
memory dump	The process of copying the contents of memory to magnetic tape.
MPE	The Multiprogramming Executive operating system of the HP 3000 computer systems.
offline state	The state of a device when it is not available to the system.
Opening a file	Initiating access to a file before beginning input/output operations with the file. Accomplished by calling the FOPEN intrinsic.
output priority	A number in the range of 1 (lowest priority) to 13 (highest priority) assigned to a file with the :FILE command. It is used to determine which spooled device file of all those waiting for a specific printer or card punch should be selected.
parameter	A variable assigned a constant value for a particular purpose or process, used in commands and procedure calls to request specific action.
password	A word, consisting of at most 8 alphanumeric characters beginning with an alphabetic character, assigned to an account, group, or user name when it is defined. A password must be supplied when accessing an account or group, or logging on with a user name for which a password is defined.
PUB group	A special group (public group) that exists in each account whose files are normally accessible in some way to all users within the account.
security	The provisions made by MPE to protect accounts, groups, files, and user names from unauthorized use.
session	A mode of using the HP 3000 interactively, entering commands and data through a keyboard terminal and receiving immediate responses to your input. A single session begins when a :HELLO command is entered and ends when a :BYE command is entered.

SLEUTH	A stand-alone diagnostic program written in Systems Programming Language (SPL) that the CE uses to generate unique test programs that isolate system problems to peripheral devices and the I/O system.
spooling	A facility to assist in the sharing of devices. The data coming from or going to a spooled device is copied by MPE to a disc and, in case of output files, directed to the device when it is free. The records of spooled input devices are read in immediately, written to disc, and made available to the program as it requests them.
stream, job	A set of job control commands and data delimited by a :JOB command record and an :EOJ command record, read into the system and scheduled for execution by using the :STREAM command.
subsystem	A term referring to software packages that perform specific functions such as compiling programs or editing text.
SYS account	A special account that is present on the system when it is delivered. It contains system files, the system Segmented Library, and supported subsystems such as the compilers.
system configuration	The process of configuring the operating system provided by the factory to suit the needs of your installation. (See the System Manager/System Supervisor Reference Manual for a description of this process.)
system console	A terminal through which an operator initializes and monitors the MPE operating system and requests various operations such as allocating devices, sending messages to user terminals, and shutting down the system.
system manager	A person who manages the overall system by creating accounts and defining resource-use limits for each account.
system supervisor	A person who manages the system on a day-by-day basis, scheduling queues, altering the system configuration, maintaining the system library, and displaying various items of system information.
Systems Engineer	An HP technical software specialist.
utility programs	Programs provided by MPE to perform specific functions for you. (See the MPE Systems Utilities Reference Manual for a description of these programs.)

READER COMMENT SHEET

Guide To A Successful Installation
First Edition
September 1978

We welcome your evaluation of this manual. Your comments and suggestions help us improve our publications. Please use additional pages if necessary.

Is this manual technically accurate?   Yes ☐ No ☐   (If no, explain under Comments, below.)

Are the concepts and wording easy to understand?   Yes ☐ No ☐   (If no, explain under Comments, below.)

Is the format of this manual convenient in size,   Yes ☐ No ☐   (If no, explain or suggest improvements
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Comments:

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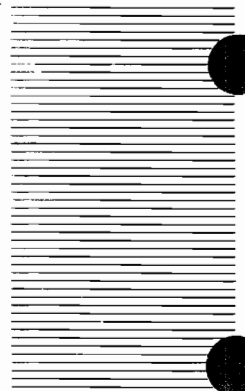   _____