

HEWLETT  PACKARD

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# Computer Systems

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# Communicator

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# 250

issue no. 1

**HP Computer Museum**  
**[www.hpmuseum.net](http://www.hpmuseum.net)**

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# from the editor's desk

## The first issue is here ...

What is the **Communicator 250**? ... One might ask after having received it for the first time.

Simply stated, it is a customer magazine designed to convey information which HP feels will be helpful to its customers. It is also a vehicle for HP 250 customers to communicate information to other customers and to HP that would be of general interest to all readers.

The magazine will not approximate an issue of **Business Week** or **Datamation** in appearance, but the information within will most assuredly be pertinent to users of HP 250 Computer Systems. It will be published six (6) times per year with a subscription cost of \$48.00 per year. It is a major component of the HP 250 Software Notification Service (45130N). New HP 250 customers will receive **Communicator 250** at no charge during their first 90 days of installation.

Now that you've got an idea of the **Communicator's** basic intent, let's briefly go through how it is organized and give you an idea of what will be in it.

### From the Editor's Desk contains ...

- General comments (such as you are reading now)
- Solicitations for articles from customers with details on how to submit them.

### Contents contains ...

- Table of contents for the current issue.

### System Software contains ...

- Information and articles from HP regarding application techniques for HP 250 system software, operating procedures, performance data, etc.

### Application Software contains ...

- Information relative to HP developed applications software.

### Customer Corner contains ...

- Articles submitted to HP by existing customers for things like application techniques, descriptions of utility programs they have developed and/or who to contact for information regarding these kinds of programs.
- Customers can solicit information from other customers through this section.

### Catch All contains ...

- Questions from customers with HP's answer regarding such things as reference manual interpretations, intended HP software features, recommended enhancements, etc.
- Information which doesn't fit better elsewhere in the issue.

### Bulletins contains ...

- Information about documentation updates and how to receive them.
- Periodic summaries about available documentation.
- Periodic announcements of current HP software revision levels, how to receive updates, etc.
- Customer training course schedules for various parts of the country, costs, order information, etc.
- Availability of new HP 250 products.

### Order Forms contains ...

- Form for ordering additional subscriptions to **Communicator 250**.
- Form for ordering additional HP 250 reference manuals.

During these first few issues, some of the sections may be small or non-existent altogether until we get the momentum going. But with our growing HP 250 customer base it won't be long until the magazine is a "Number One Best Seller"!

So that's a brief description of how the magazine is organized. Hewlett-Packard Company does reserve the right to change its organization and content and hopes you, as a reader, will make suggestions as to how it can be improved ... since it is a customer magazine.

Please address your correspondence to:  
**Computer Systems / Communicator 250**  
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Fort Collins, CO. 80525

# customer support

## Customer Support Services for the HP 250

by Bill Cummings

Hewlett-Packard believes in trying to maximize a customer's success. That is what "Customer Satisfaction" is all about. If an OEM or an end-user can achieve their goals, HP will gain a reputation for satisfied customers and a follow-on business.

This *Communicator* magazine is part of the range of services available with the HP 250. In order to tailor support to meet individual requirements, three levels of software support services are available to HP 250 customers. These levels permit customers to select the "degree of support" which is necessary for their success based upon their expertise and experience with the HP 250. It's important that you consult with your systems engineer regarding which support level is best for you.

The services are summarized below:

1. 45130N Software Notification Service (SNS)  
\$150.00 per year (U.S. Prices)
  - Communicator magazine containing useful application data, abstracts and ordering information for new hardware/software, current revision codes of HP 250 software products, and the latest schedules of pertinent training courses.
  - Software Status Bulletin that discusses reported discrepancies in software and manuals and give any available temporary corrections or ways to avoid the symptoms of discrepancies, plus information relating to changes in software which HP has initiated.
  - No prerequisite.
2. 45130S Software Subscription Service (SSS) \$50.00 per month
  - SNS
  - Provides updates to software and manuals whenever changes are released by the factory.
  - Orderable in increments of 6 months (6 months minimum)
3. 45130T Comprehensive Software Support (CSS)  
\$150.00 per month
  - SNS
  - SSS
  - Phone-in Consulting Service (PICS) providing a specific telephone "hot-line", which can be used

to contact a trained HP System Engineer in regard to questions concerning the use of HP software. If considered necessary, a System Engineer may go on-site, for first-hand observation and assistance.

- 45103A or 45104A Training Course is a prerequisite.
- This service is available on an 8 AM to 5 PM basis during normal HP working days. Typical maximum response will be a return phone call within 4 hours during normal working hours by a Systems Engineer.
- Orderable in increments of 6 months (6 months minimum).

Two common questions and their answers:

Can the customer purchase lower priced services for the HP 250?

Yes. For multiple installations located in the same building, customers can purchase CSS at reduced rates via Option 002 with 45130T. He can also copy software updates free of charge.

Does an HP 250 customer receive CSS during the first 90 days after installation?

Yes. This happens automatically. Support services beginning after the 90th day must be ordered.

Remember: HP 250 + Support Services = Success

# HP 250

## systems software

### Special Function Keys

by Gretchen Snowden

The softkeys on the console are one of the more obvious features of the HP 250. These keys, along with the eight user definable keys on the keyboard, are referred to as Special Function Keys (SFKs). The keys on the keyboard can be defined in a regular and shifted mode, giving a total of 24 SFKs. The keys can be used in several ways and provide a powerful tool for the user.

One use of these keys is as typing aids. Any time a sequence of keystrokes is used fairly often, they can be stored under one of the keys. Then pressing that key will execute those keystrokes or recall the sequence to the display. If the softkeys are used, then the contents will be displayed above the key. This is probably a good technique for simple commands or for the person just starting. A more advanced user may be comfortable enough with the techniques he uses, that he will use the keyboard SFK, with or without a template. This then gives him 16 keys or 24 if he chooses to use both. Simple commands such as GET, RE-STORE, REN, AUTO, etc., or considerably more complex statements can be used. Display control keys can also be used to add further flexibility. Below are examples of keys that could be used and an explanation of the symbols used.

#### 1) $\overline{\text{BEEP!}}$ $\uparrow$

This series of strokes is used to delete a line of code. The beep is added for user appeal. The cursor is on the line to be executed when the key is pushed. The specific steps are as follows:

$\uparrow$  Shift carriage return – moves cursor to first position of line.

$\overline{\text{BEEP!}}$  Move cursor right 4 places past the line number (assumes all line numbers used are 4 digits).

$\overline{\text{BEEP!}}$  Control clear – clears rest of line.

$\overline{\text{BEEP!}}$  Enters line.

$\uparrow$  Move cursor up one line.

$\overline{\text{BEEP!}}$  Enters and executes beep.

$\uparrow$  Returns to BEEP line and deletes it.

#### 2) $\overline{\text{RE-STORE}}$ $\uparrow$ $\overline{\text{RE-STORE}}$ $\overline{\text{RE-STORE}}$

This series is used to restore a program. It assumes that the program name is stored in line 1010 starting in position 8. The specific steps are as follows:

$\overline{\text{RE-STORE}}$  Clears line – moves cursor to first of line.

$\overline{\text{RE-STORE}}$  Shift clear – clears rest of screen.

$\overline{\text{RE-STORE}}$   $\uparrow$  Brings line 1010 to the screen.

$\uparrow$  Moves cursor to displayed line 1010.

$\overline{\text{RE-STORE}}$  Shift carriage return – goes to start of line (necessary if line greater than 80 characters).

$\uparrow$  Move cursor to line that says FETCH 1010.

$\overline{\text{RE-STORE}}$  Delete FETCH line – Cursor is now on line 1010.

$\overline{\text{RE-STORE}}$   $\overline{\text{RE-STORE}}$   $\overline{\text{RE-STORE}}$  – Enters RE-STORE in first 7 positions of line 1010 which has the program name starting in position 8. It then does an insert character and adds the E and quote.

$\overline{\text{RE-STORE}}$   $\overline{\text{RE-STORE}}$  Shift the cursor right 6 positions past the program name – (  $\overline{\text{RE-STORE}}$  is shift arrow which moves 5 positions).

$\overline{\text{RE-STORE}}$  Control clear – clears rest of line.

$\overline{\text{RE-STORE}}$  Shift right 10 positions to allow for entry of a volume name.

$\overline{\text{RE-STORE}}$  Enter closing quote.

$\overline{\text{RE-STORE}}$  Shift left 11 positions – puts cursor at end of program name, ready to accept volume.

Another use of the keys could be to execute a program and enter fixed data. For example, a certain program is run daily, weekly and monthly with the only input being a control word such as DAILY, WEEKLY, or MONTHLY. Then three SFKs could be designed which would run the program and then enter the appropriate control word.

The final use of the SFKs is in a program. Following are several suggestions to facilitate the use of these keys. Once the keys are defined, the interrupt capability remains active until the keys are turned off. Hence, it is generally a good idea to execute an OFF KEY # as soon

as the transfer has taken place. If it is necessary that keys stay active, then the ENABLE, DISABLE statements can be used to protect a section of code from being interrupted.

If any ON KEY statements are active when the program branches to a subprogram, the interrupts for those keys are queued and handled after the return from the subprogram. If a CALL or GOSUB is used in the ON KEY statement to transfer control to the subprogram, then the active keys are given a higher priority. This means that if keys are used in the subprogram, they will not work unless they have a priority at least one greater than the keys in the main program. An alternative method is to use a GOTO in the ON KEY statement. Then the CALL or GOSUB could be executed in the statement that was branched to. Then the keys in the main program are queued but the priority is not changed.

There are a couple of conventions which are used in the 250 applications that the user may find helpful. Key 8 is generally used for an EXIT key. This allows the user to exit from a step if he got there by mistake. Also keys 9 through 16 are defined the same as the softkeys. This allows the user to push those keys which are closer rather than reaching for the softkeys on the terminal.

Following is a function which could be used to define the keys. The main program would contain a dimension for K\$(1:8) and one or more DATA statements with the key labels. One of the DATA statements might look like the following: DATA PRINT DEVICE, "", RESTART REPORT, "", SPOOL OFF, "", PRODUCE REPORT, EXIT. If a key is not used, it is assigned blanks.

```
10 DEF FNKey(K$(*))
20 CURSOR (1,20)
30 DISP "Please select a function"
40 FOR I=1 TO 8
50 IF LEN(K$(I)) THEN ON KEY #I:K$(I) GOTO Key
60 IF LEN(K$(I)) THEN ON KEY #I+8 GOTO Key
70 NEXT I
80 WAIT
90 Key: RETURN (CURKEY-1) MOD 8+1
100 FNEND
```

The Special Function Keys are a very useful tool and add to the overall flexibility of the HP 250.

## Data Base Utilities on Multi-volume Data Bases

by Gretchen Snowden

One factor to consider when designing a data base is the effect of the data base utilities when used with that design. This article will cover that subject and present some points to consider if you decide your data base should be on more than one volume.

Three of the utilities are stand-alone executable statements. These are DBCREATE, DBERASE and DBPURGE. These statements assume that all of the necessary volumes are mounted. If a data base is on more than one volume and all volumes are not mounted when one of these statements is executed, an error message will be displayed for each missing data set. This situation can be remedied by then mounting the missing volume or volumes and executing the utility again specifying either the set numbers on which the errors occurred or the missing volume spec. The volume containing the root file must always be mounted. Since the DBCREATE, DBERASE and DBPURGE statements execute fairly rapidly and multi-volumes can be handled quite easily, their overall effect on multi-volume design considerations is minor. One note of caution! If a DBERASE is being done on a corrupt data base, the data base is multi-volume and all volumes cannot be mounted at once, the corrupt flag will not be cleared. That utility has to know that all sets are erased before clearing that flag. A solution is to DBPURGE the sets on enough volumes to allow all volumes still containing sets to be mounted simultaneously. Then the DBERASE will clear the flag and the purged sets can be recreated with DBCREATE.

The next two utilities, DBSTORE and DBRESTORE, are contained in the binary program DBSTOR. These statements are used to backup a data base. The binary DBSTOR must be loaded before either statement can be executed. Once the binary has been loaded, the system disc is no longer needed. (If these statements are used in a program, then the binary must be stored with the program.) Then the backup file volume may be mounted in one drive and the root file volume in another (unless the backup file is on the data base volume). DBSTORE and DBRESTORE will then prompt for additional data base volumes and/or additional backup volumes as needed. Hence, for these two utilities, only two drives are needed regardless of the data base design.

The last two utilities, DBUNLD and DBLOAD are BASIC programs. Unlike the previous utilities, the data design can have quite an effect on the time necessary to run these. There are two general purposes for these utilities. The first of these is to make structural changes to a data base. To do this, the existing data in a data base is unloaded using DBUNLD. Then the schema is changed and the data reloaded using DBLOAD. The second purpose is data base cleanup or recovery. The cleanup involves doing the DBUNLD-DBLOAD in order to speed up access along the detail's primary path. (The DBUNLD is done in chained mode as explained later.) The recovery is done as a last ditch method in case of a corrupt data base. (Some data may be lost—note article on corruption.)

Both DBUNLD and DBLOAD involve the use of several program and form files. For this reason it is necessary to access the system disc periodically throughout the execution of both utilities. If more than one backup volume is required, the system will prompt for additional volumes, and only one at a time need be mounted.

The DBUNLD utility can be run in either serial or chained mode. In a serial mode, the entries are unloaded sequentially one at a time, set by set. For the purpose of this paper, the standard system configuration of two discs is assumed. If the backup file is on a volume other than the data base, it will be necessary to do some disc swapping in the DBUNLD. The system disc is required whenever one set is finished and another started. The most efficient procedure is to start with the system in one drive and the data base volume in the other. When the backup volume is requested, the data base volume should be replaced. When the data base volume is again requested, it should replace the system. After the first set is unloaded and the system is again needed, it should replace the data base. The system and data base volumes should continue to be swapped as each set is unloaded.

This process can be further complicated if the DBUNLD is done in the chained mode. This mode is required if the utilities are being used to clean up the detail sets. If any detail sets are linked to master sets on different volumes, additional disc swapping will be required. The system accesses the master set to locate the chain head, and then accesses the detail to locate all entries in that chain. Hence, if those sets were on different volumes, there would be one swap for each entry in the master set.

The DBLOAD utility, like the DBUNLD, must access the system disc as it starts loading each set when operating with a standard system configuration, a multi-volume data base and a separate backup volume. For this situation, if associated masters and details are on different volumes, the DBLOAD will be a very lengthy process. Each detail entry must be read from the backup file and then the volumes for the detail and associated masters must be mounted in order to put that entry into the detail. On a two disc drive system, this means one disc change for each entry in the detail. Needless-to-say, for a large detail set, this process could easily take many hours (and a lot of elbow grease!).

In normal usage, it should not be necessary to use the DBUNLD-DBLOAD utilities very often. Because of this the time necessary to run them may not figure heavily in your design considerations. If the user has three disc drives most of the disc swapping will not be necessary. For the two disc system, it may be possible to move the DBUNLD and DBLOAD utilities to one of the user's discs (using the ROUTIL program) which will also cut down on some of the disc swapping. These considerations should help the user to make the most efficient use of the utilities.

## Corrupt Data Base

by Gretchen Snowden

A corrupt data base is one in which a discrepancy exists between the root file and the data sets. Normally, this would mean inconsistent linkages. When a data base becomes corrupt, it can no longer be accessed in any way. A status error of -94 is returned when an attempt is made to open the data base or access the data in it.

Generally, the cause of a corrupt data base is hardware. A power failure or disc problem during an operation which is adding or deleting data set entries will very likely cause a corrupt data base. Removing a disc in the middle of this type of operation could also result in a corrupt data base. Correct programming can lessen the chances of getting a corrupt data base. The commands DOOR LOCK and DOOR UNLOCK should always be used when making data base modifications. This will prevent the accidental removal of a disc during an update procedure. If the data base is on more than one volume, and it is necessary to replace one volume, a Mode 4 DBCLOSE should be done before removing the disc. This will assure that all the buffers have been cleared and the sets and root file are updated before the disc is removed.

Once a data base is corrupt, the best recovery procedure is a DBRESTORE from the latest backup (after a DBPURGE has cleared the corrupt data base). All the transactions that were entered after the backup would then have to be re-entered. An alternative method if there is no current backup or the number of transactions is overwhelming, is DBUNLD and DBLOAD. This should be considered as a last ditch method as it may result in a loss of data. If the corruption occurred at such a point that the operator can be fairly sure of a particular set where the data loss may occur and that set can be easily verified after the DBLOAD, then the procedure is reasonable. If several sets could be involved in the corruption and the number of entries is difficult to verify, then this procedure is fairly risky. Loss of a data set entry may occur if, for example, the data base corruption resulted in the root file specifying 99 entries in a particular set when there were actually 100 entries. This could happen if a power outage occurred during a DBPUT, for example. When the DBUNLD is done, only the first 99 entries would be unloaded. The last sequential entry in the data set is not unloaded, and the user received no warning that an entry has been lost.

In review, most users will sometime encounter a corrupt data base. There are several ways of recovering from the situation. The best preventive medicine is frequent backups. This makes recovery from the situation fairly painless.





# applications

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# software products

## Application Software Products White Paper

by Sam Solt

The purpose of this "white paper" is to describe FCD's application software product strategy.

At FCD, application software packages for the HP 250 are treated as products. As such, they have product managers with all the associated functions and their success will be measured in terms of profit.

### The Products

As with the design of the HP 250 hardware, the Application Software Products have been designed to make technical contributions to the market. Many of our application techniques and features are not currently available from other SBS vendors. IMAGE/250, FORMS/250, and REPORT WRITER/250, the application tools provided with the HP 250, are all used with the Application Software Products. The use of IMAGE/250 also allows the capabilities of QUERY/250 to be used. The design has also taken into consideration other country requirements which will result in the software having international scope.

These Application Software Products have design centers which are closely aligned to their target market (i.e., they do have some verticalization already). Design features will be discussed in more detail later in this paper. The important point to recognize here:

1. These products are not generalized and are not intended for customers that do not fit target market criteria.
2. The products will provide considerable integration within and between modules.

OM/250 – an order management system designed for the distribution function of distributors and manufacturers.

MFG/250 – a materials management system designed primarily for the discrete manufacturer.

### The Strategy

In order to verify the validity of design centers, quality, and performance characteristics, each product will

experience considerable QA and test site validation before release to production and actual product introduction. Introduction will **only** be through third parties. No attempt will be made to influence third parties on how to use the software. They may install the software turn-key, as an add-on/added-to, or modified. Modification or further verticalization is invited. The targeted design markets leave a lot of room for specialization. However, any support from HP (factory-to-field, field-to-customer) will be limited to standard unmodified software.

## OM/250 White Paper

by Mike Gossman

OM/250 is a software product designed for both manufacturers and hardgood distributors to solve the problems of order processing, inventory management, sales analysis, and accounts receivable. Special design consideration was given to the hardgood distributors' area due to the possible leveraging capability. That is, one software package may be used effectively for approximately ten unique hardgood distributors (i.e., electrical distributors, plumbing distributors, air condition/heating distributors, etc.). The manufacturer may use OM/250 equally as well as the hardgood distributor and most of the special features included for hardgood distributors may be disabled or are transparent to the operator.

### Definition

Order Management 250 is a group of application software modules designed to be on an HP 250 hardware system. Four modules compose OM/250, namely, Order Entry, Accounts Receivable, Inventory Control, and Sales Analysis. The four modules may be purchased and operated in the following manner:

1. AR stand-alone
2. AR and SA
3. IC stand-alone
4. AR/IC/SA
5. AR/SA/OE/IC

All modules are designed to be put on the system one at a time so an end user may convert a module, balance it in stand-alone mode and finally turn a switch in the control file to integrate that module with other modules. Most modules have been designed to run in either an integrated mode or stand-alone mode with the capability to pass General Ledger entries regardless of operating mode.

OM/250 uses both batch and on-line processing to accomplish its design goal. Within the Order Entry portion, on-line updating is performed in conjunction with Inventory so that parts ordered are immediately allocated. At the end of the processing day, certain batch update operations are performed. These batch updates include an Accounts Receivable update which posts all transactions to the master file; and a Sales Analysis update may be performed all in the same day.

#### Inventory

- LIFO or FIFO or Weighted Average costing method
- 99 product classes
- 5 discounts, 5 markups, 5 price breaks per part
- Calculated EOQ
- Calculated reorder point
- Multiple warehouse reporting
- Multiple company reporting
- Cycle counting

#### Accounts Receivable

- Balance Forward or Open Item statements for each customer
- Variable aging into five periods
- Sales dollars reported to General Ledger by order line item
- Full Truth in Lending compliance
- Over-the-counter Cash Sales Journal
- Credit Card Sales Journal
- Past due letters
- 15 cash discounts
- 11 customer classes
- Multiple company reporting

#### Sales Analysis

- Salesperson profitability reporting
- Customer profitability reporting
- Product profitability reporting
- Graphics reporting
- Quota reporting
- Commission calculation by product class for each salesperson
- 3 commission calculation methods
- Regional reporting
- Multiple company reporting
- Split sales reporting
- 5 year history on salespeople, customers, and products

#### Order Entry

- Post billing and pre-billing operation
- Picking lists (by warehouse or order)
- Acknowledgement letters

- Credit limit and past due checks at entry of order
- Cash sales/Credit card sales/Prepayments
- Automatic backordering with customer option
- Automatic backorder filling
- Stock reservation
- Anticipated picking report
- Automatic price extensions
- 3 tax categories
- Surcharge capability by line item
- 2 other optional charges, user defined
- Container charge credits

#### Availability

OM/250 is expected to be available in the 3rd quarter of calendar year 1979.

## MFG/250 White Paper

by Bill Sandras

MFG/250 is an applications software product that allows the small manufacturer to confidently leapfrog his company from manual materials control systems to proven computerized techniques. The data base, programming tools and production and inventory control techniques provided by MFG/250 were designed specifically to address the needs of the small manufacturer, while incorporating the most useful techniques developed in the industry in the last few years.

MFG/250 is designed for manufacturers that assemble a standard product line of finished goods, according to a forecast or production schedule, in discrete lots or according to production order quantities. While MFG/250 is specifically designed for discrete manufacturers, many of the needs of custom and process manufacturers are addressed by the software; as a result MFG/250, complimented with third party efforts, should prove very attractive to these types of manufacturers as well.

#### Definition

MFG/250 is designed to address the manufacturer's lifestream needs of materials control and product definition.

The data base consists of:

1. Information about each raw material, subassembly and finished goods part.
2. Information about the components comprising each finished item or subassembly and conversely, information about where each component and subassembly is used.
3. Information about all stockroom transactions and open backorders.

While addressing the lifestream needs of a manufacturer, an objective of the package was to maintain a simple transparency to the system. As a result the view the user receives of the package is organized around the various functions of the manufacturing business (i.e., en-

gineering, stockroom, accounting, production, and materials). Simply by pressing the appropriate department softkey, a menu of interest to that function will appear on the screen. And by indicating the number of the choice desired, the program will be called and executed. No program names or instructions are entered by the operator.

The reports may be obtained immediately or several reports (and transactions) may be selected to be executed and printed later via the user-oriented, automatically sequenced batched processing capability.

Strict coding standards were followed throughout all programs. Adding an input and/or output function was foreseen, and as a result, new transactions can be incorporated into the system with minimal modification required – only the input screen and output report need to be added.

To minimize end-user support requirements, door locks are used and backup is required before updates. Backup rotation is programmed into the MFG/250 logic, and if power is lost before a transaction is completely processed during update, the data base is recognized as being corrupt and recovery automatically occurs under program direction when the user tries to continue the update. To minimize errors, all functions have a "terminate" option which allows the program to select a convenient stopping point when the user wants to halt a report or process.

In summary, MFG/250 had the objectives of:

1. Providing meaningful tools addressing manufacturer's lifestream needs.
2. Allowing the end-user to focus on the problem, not the computer.
3. Facilitating custom modification and expansion of capabilities.
4. Minimizing support requirements.

#### Features

1. Bills of Material lists (up to 30 levels deep)
2. Where Used report to show where parts are used
3. Product Cost reports with the ability to ask "What if" questions
4. Reorder reports using 5 reorder computation methods
5. A cycle counting subsystem to monitor inventory record accuracy
6. ABC Analysis to separate the vital few parts from the trivial many
7. Maintenance and reporting of part shortages (backorders)
8. Stock picking lists, and a "What if" or simulated picking lists
9. Engineering change control features
10. User defined data validation tables
11. Transaction history maintenance of all stockroom transactions

12. System controlled backup and recovery (with options) for data security and support minimization
13. Macro-edit/change features (e.g., change all instances of Part #A to show Part #B)
14. Extensive Implementation and User Guide and technical documentation

#### Availability

MFG/250 will be available in the 3rd quarter of calendar year 1979.

## HP 250 Products and Options

by Dick Hanson

The base HP 250 systems include: console containing processor, CRT, appropriate country keyboard, 128K bytes of system memory, 32K bytes user memory, HPIB channel, 1.2M byte flexible disc drive, HP Business BASIC interpreter operating system with IMAGE/250, QUERY/250, FORMS/250, REPORT WRITER/250 and complete operating and programming set. Site inspection and installation included.

#### Systems

- 45251A U.S. 110V 60 Hz
- 45252A French 220V 50 Hz
- 45253A German 220V 50 Hz
- 45254A British 220V 50 Hz
- 45255A Swedish 220V 50 Hz
- 45256A Spanish 220V 50 Hz
- 45257A Italian 220V 50 Hz

#### Memory Options

- 002 64K bytes total user memory

#### Flexible Disc Drive Options

- 010 Adds 2nd flexible disc drive (dual disc drive system)
- 011 Adds 2nd and 3rd flexible disc drives (triple disc drive system)

#### Power Options

The country specific system number will specify the standard voltage and frequency required for that country. For non-standard voltage and frequency options, use:

- 050 50 Hertz
- 055 220/240 Volts
- 056 110/120 Volts
- 060 60 Hertz

#### Accent Panel Options

Replaces the standard Palm Brown accent panel with ...

- 080 Marine Blue
- 081 Leaf Green
- 082 Sweet Potatoe
- 083 Leaf Gold

### Data Communications Options

- 120 RS232 Asynchronous data communication offering 5 channels of RS232 and/or 20ma current loop interface. Cable 45111A, 45112A or 45113A must be ordered for each terminal configured.

### MOS User Memory

- 45001A 32K byte memory board
- 45002A 64K byte memory board.

### Mass Storage Devices

- 45010A 1.2M byte flexible disc drive 60 Hz
- 45011A 1.2M byte flexible disc drive 50 Hz (International version)
- 7906M 20M byte fixed / removeable cartridge disc drive.
- 015 230V 50 Hz
- 100 HPIB interface card (required for HP 250)

### Data Communications

- 45120A RS232 asynchronous data communication offering 5 channels of RS232 and/or 20ma current loop interface. Cable 45111A, 45112, or 45113A must be ordered for each terminal configured.

### Printers

- 9871A 30 cps full character impact printer, 132 characters per line at 10 characters per inch, 96 character interchangeable daisy wheels
  - 001 HPIB interface (required for HP 250)
  - 800 European print daisy wheel
  - 801 ASCII print daisy wheel
- 98021A Form feed mechanism for 9871A
- 2631A 180 cps serial dot matrix printer, 136 characters per inch. Expanded and compressed print modes for 68 and 227 characters per line. Automatic bi-directional printing, underline, and display functions.
  - 009 European character set
  - 015 220V 48-62 Hz
  - 016 110V 48-62 Hz
  - 017 240V 48-62 Hz
  - 250 HPIB interface (required for HP 250)
- 26098A Boise pedestal for 2631A printer
  - 250 24V power relay, casters, paper catcher
- 45090A Printer stand and noise enclosure, with Palm Brown accent panel.
  - 080 Marine Blue accent panel
  - 081 Leaf Green accent panel
  - 082 Sweet Potatoe accent panel
  - 083 Leaf Gold accent panel

### Cables

- 45110A Standard Interface Bus cable 3.0m length (use for external disc drives)
- 45111A RS 232 Modern Cable 4.5m length
- 45112A 20ma Current Loop Cable 1.5m length
- 45113A RS 232 Direct Connection Cable 10.5m length

### Customer Services

- 45130N Software Notification Service (SNS) for HP 250 System Software. Provides information on software applications, problem resolution and updates.
- 45130S Software Subscription Service (SSS) for HP 250 System Software. Provides software and manual updates. Software Notification Service is included in SSS.
- 45130T Comprehensive Software Support (CSS) for HP 250 consisting of all services provided with 45130N and 45130S plus:
  - phone-in consulting service
  - on-site S.E. assistance
  - 002 Deletes 45130N and 45130S and part of S.E. support (for multiple installations only)
- 45120T RS 232 Asynchronous Software Support Service consisting of:
  - phone-in consulting service
  - on-site SE assistance (45130T is prerequisite)
  - 002 Multiple system support
- 45102A Software consulting provides on-site assistance in how to apply HP system software to specific customer application problems.
- 45103A 5 day comprehensive introduction to HP 250 given at HP Technical Center.
- 45104A 5 day comprehensive introduction to HP 250 given at customer site.

# customer corner

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## Dear Reader...Please Reply!!

by Gretchen Snowden

To get customer content into the HP 250 **Communicator** as quickly as possible, we'd like to solicit timely articles for the next issue concerning helpful **Utility Programs** you may have developed to make your program development efforts easier or your application software perform better. Things like cross-reference lists, subprograms for performing standard file maintenance tasks, or softkey-driven routines for editing tasks.

We'd really like to tell other customers about the great ideas you've come up with. If the program is short, we'll even include a listing of it if you wish. Otherwise, we'll be glad to refer readers to you for additional information. Of necessity, we'll have to limit the amount of "commercializing" we can do about your software or ideas.

Contributing articles like these to the HP 250 **Communicator** can provide a resource for you and other readers. So please take the time to tell other HP 250 users what you've been doing.

To get things going in the Customer Corner section of the HP 250 **Communicator**, we've asked one of our lab engineers who is developing application software to write a short article which follows.

## Using Forms with OM/250 Software

by Al Silverstein

During the development of Order Management/250, a number of user interface standards evolved and were formalized by our applications development group. Among these was a particularly difficult subject: deciding how to best make use of the FORMS/250 capability for our user interactions. We developed a set of guidelines including the following key points:

- The ENTER key behaves like the TAB key in that it moves the cursor forward from field to field. It acts differently in that, when the last field of a form is reached, control is returned to the managing program. Also, SHIFT ENTER does not back up the way SHIFT TAB does (it still goes forward).

- When a form is completed by pressing ENTER, the user is asked below the form "Is all information correct? (Y/N)". Entering a blank line (using LINPUT, of course) is always equivalent to answering YES. A positive response allows the program to proceed, but a negative one returns the cursor to the first field of the form.
- A key entitled PROCESS DATA (usually on keys #7 and #15) causes the entire form to be read and accepted immediately by the program (if it contains no input errors), without requesting verification from the user.
- Errors in data entered by the user are countered with an error message below the form and the cursor is placed in the field where the error occurred.
- Also, I/O field enhancements are standardized as follows:  
INPUT and INPUT/OUTPUT fields are marked in inverse video, and appear one space to the right of prompts with no punctuation.  
OUTPUT fields are marked with an underline (unless the user would not recognize them as such, in which case they're unmarked).

In the process of coding the Order Entry module of OM/250, I had to decide how to implement the above standards. Writing the first programs in the module which did form I/O, I developed a typical series of BASIC statements. These were used as a conceptual outline in the creation of all later form manager programs in Order Entry.

It was left open for each module designer to decide whether to have the user confirm the correctness of the current form before or after the managing program read and checked the input data. I chose to have the Order Entry module do user verification after system verification. This was not much harder to implement than the other way, and has the following benefits:

- The user never "confirms" only to receive an error message right afterwards (due to a bad input value).
- Data which is altered in any way by the system upon entry is shown to the user as modified, so most times he really is verifying something. For instance, strings are often trimmed and/or upper-cased; dates are put in standard format; values

may be rounded; look-up keys (such as Credit Terms Code) are replaced by literal equivalents; fields left blank are replaced by "0.00" or some other default; percentages are calculated

- Output fields (such as Item Description) to be filled out based on user input data (such as Item Number) can be completed and shown to the user to guide him in his verification.

Given familiarity with the conceptual outline developed for Order Entry, I found that generating new form I/O programs was faster and easier than before. Moreover, the resulting code was easier to debug and document.

This listing shows the typical method by which form I/O was coded:

```
Clr: DISABLE
  Errfld=1
  CURSOR OF#1
  DISP <defaults or blanks>
  CALL Message("Please
    complete this form.",1,1,1)
```

```
Menu: CURSOR IF#1,CF#Errfld
  Accept=0
  FOR I=0 TO 8 STEP 8
    ON KEY #4+I:"[CLEAR/RESET]
      FORM" GOTO Clr
    ON KEY # <other keys>
    ON KEY #7+I:"PROCESS DATA"
      GOTO Acc
    ON KEY #8+I:"EXIT" GOTO Exit
  NEXT I
  ENABLE:
In:INPUT
  ON 1+(TFNUM=<max field>)
    GOTO In,Ent
```

```
Acc: Accept=1
Ent: OFF KEY #
  ENTER <variable list>

  <analyze list>

  <example:>
  Errfld=5*(TRIM$(Buf$(5))="")
  IF Errfld THEN Err5
```

### CLEAR FORM

This block turns off the softkeys (defined below), resets the Errfld number to the first INPUT field, displays output-only and default data and/or blanks on the form, and requests the user to complete the form. Note that CLEAR FORM could be used in place of CURSOR OF # and DISP if all fields are to be blank.

### MENU - FORM <name>

The "Menu:" section puts up needed softkeys and handles the user input state. The CURSOR statement sets IF # for the ENTER (below), but leaves the cursor in the field where the error occurred (if any). Softkey definitions are repeated on matching UDF keys near the keyboard using the FOR/NEXT loop. An ENABLE must be done to reverse the DISABLE above. Finally, the INPUT loop implements the standard whereby the ENTER key acts as a TAB key until the last field of the form is reached.

### ENTER/CHECK DATA

Branching to "Acc:" sets the Accept flag to prevent user verification below. Then at "Ent:" all softkeys are turned off to prevent interrupts. The ENTER statement gets all input data from the form, usually reading all data (including numbers) into strings for analysis. Errors may be generated, with Errfld number always being set (either here, as a branch condition) or in the error handling code (below). Note that this method also separates error and exception handling code from the normal code sequence.

```
CURSOR UF#<n>
DISP <accepted values>
IF Accept THEN Form_done
  CALL Message("Is all
    information correct?
    (Y/N)",1,1,1)
IF NOT FYesno THEN Done
  CALL Message("Please make
    desired corrections
    and re-enter.",1,1,1)
  Errfld=1
  GOTO Menu
```

Done: <continue>

```
Err5: CALL Message("BLANK INPUT
  NOT ALLOWED. Please
  re-enter.",3,3,0)
  GOTO Menu
```

### ACCEPT FORM

The program gets to this point only if all input data has been checked and is acceptable (to the program). Any data altered by the program or generated based on input data is [re-]displayed. If the Accept flag is set, the remainder of this block is skipped. Otherwise, the user is given a chance to confirm that the data as shown now is acceptable to him. The FYesno utility segment handles user response to the Y/N question, returning 0 for YES (form is done). A negative reply (returns 1) causes a special message to be given and the Errfld number to be reset, and the program returns to "Menu:".

### FORM DONE

Now the program might save the new data and then EXIT FORM or perhaps return to let the user fill out another page.

### ERRORS

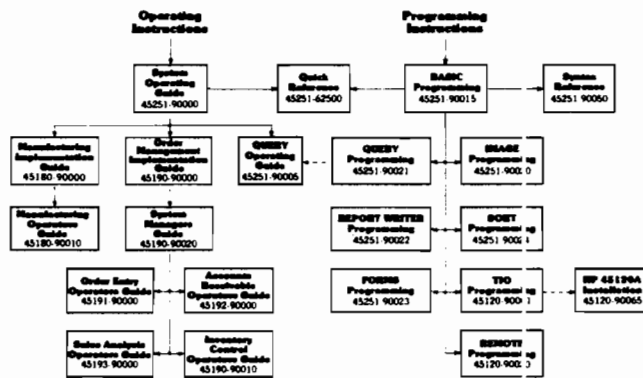
Further down in the program, this section handles exceptional conditions and may do more than just give an error message and return to "Menu:".

# bulletin announcements

## HP 250 User Documentation

by Al Jackson

Most computer systems support users with widely varied backgrounds, from the operator who enters data and runs out reports to the system programmer who must know every detail of the operating system. HP 250 manuals have been written for each end of the user spectrum: there are small, easy-to-read guides for the operator and standard sized, tabbed reference manuals for the programmer. The operator even has a tabbed quick reference covering daily operations, while the programmer has a pocket-sized syntax reference. The user manual scheme is outlined in the next figure.



HP 250 DOCUMENTATION SCHEME

Manuals can be purchased either separately or in sets directly from HP Corporate Parts Center, Mountain View, CA. Most of the manuals supplied with the HP 250 are available by ordering the Documentation Kit:

<b>Documentation Kit (45251-87901)</b>	<b>\$120.00</b>
System Operators Guide (45251-90000)	10.00
QUERY/250 Operators Guide (45251-90005)	10.00
Programming Manuals Kit (see below)	

The Programming Manuals Kit contains a full set of operating system reference manuals:

<b>Programming Manuals Kit (45251-87902)</b>	<b>\$100.00</b>
BASIC Programming (45251-90015)	40.00
IMAGE/250 Programming (45251-90020)	20.00

QUERY/250 Programming (45251-90021)	\$ 5.00
REPORT WRITER/250 Programming (45251-90022)	10.00
FORMS/250 Programming (45251-90023)	10.00
SORT/250 Programming (45251-90024)	10.00
Manual Index (45251-90045)	5.00
Syntax Reference Booklet (45251-90050)	5.00
Binder, BASIC (9282-0685)	10.00
Binder, System Software (9282-0686)	10.00

General operating instructions and all error codes are collected for the system operator on a set of tabbed, plastic cards. The cards and operating system discs are kept in a binder called the Quick Reference:

<b>Quick Reference (45251-62500)</b>	<b>\$40.00</b>
Card Set (45251-90070)	30.00
O.S. Disc Envelope (9222-0654)	2.00
O.S. Disc Card (45251-90071)	1.00
Binder (9282-0688)	10.00

Each customer receives a site selection workbook to help plan for system installation:

<b>Site Selection Workbook (45251-87903)</b>	<b>\$10.00</b>
Site Selection Guide (45251-90040)	5.00
Folder (45251-90041)	5.00

The new HP 45120A Data Comm Interface allows the HP 250 to control remote terminals and printers, and allows communicating with HP 3000 systems. These manuals are supplied:

TIO/250 Programming (45120-90001)	\$10.00
45120A Interface Installation Note (45120-90001)	5.00

### Keeping Up With Software

HP periodically updates the HP 250 operating system (system software) by expanding the existing language or adding new software modules. The affected user documentation is also updated at the same time by the User Documentation Update Kit (HP Part Number 45251-90200). Each kit may contain new replacement pages for existing manuals, new information to be added to operators guides, or, perhaps, an entirely new manual.



If you currently are enrolled in HP 250 Software Notification Service, you'll be notified of changes in both software and manuals. Enrolling in a more complete service, either Software Subscription or Comprehensive Software Support, guarantees that you'll receive both the latest software updates and the documentation update kit. Contact your HP Sales Representative for more details on System Software Support Services.



## Current Revision Level of HP 250 System Software

by Don Porter

The current HP supported version of HP 250 system software is denoted Revision C. This revision of the HP 250 system disc contains the following DROM modules and utility programs:

File Name	Description	Documentation
SYSTEM	BASIC operating system	BASIC Programming Manual
EUROPE	European character sorting	N/A
PACK	DROM files	See appropriate System Software Manual.
IMAGE		
SORT		
REPORT.		
FORMS		
TIO	DROM file (rev. 1C)	TIO/250 Programming Manual
TRACE	DROM files	BASIC Programming Manual
TRIG		
CONFIG		
MFIG	System configuration utilities	BASIC Programming Manual

File Name	Description	Documentation
RFIG	Configuration utility (rev. 1C)	BASIC Programming Manual
EDITOR	Text editor program	IMAGE / 250 Programming Manual
EDERRS		
SCHEMA	Schema processor files	IMAGE / 250 Programming Manual
SCHOV2		
SCHOV3		
SCHERR		
CFORM		
CFRM	FORMS utility files	FORMS / 250 Programming Manual
MFORM		
MFRM		
DBUNLD		
DBULD	DBUNLD utility files	IMAGE / 250 Programming Manual
UNERRB		
DBFM1B		
DBFM2B		
DBLOAD		
DBLOD	DBLOAD utility files	IMAGE / 250 Programming Manual
LDERRB		
DBFM3B		
DBFM4B		
DBFM5B		
INIT	System utility programs	BASIC Programming Manual
DUPL		
ROUTIL		
CATBIN		
LK3000	TIO utility program	TIO / 250 Programming Manual
WORK	SORT utility program	SORT / 250 Programming Manual
DBSTOR	Advanced IMAGE statements	IMAGE / 250 Programming Manual
PFORM	FORMS utility files (rev. 1C)	FORMS / 250 Programming Manual
PFRM		
PFORMA		
TEST	System test programs	System Operators Guide HP 250 On-Site Service Handbook
DISPLY		
ALIGN		
MMTEST		
2631A		
9871A		
LBLTXT		
LABEL		
ADDLBL		
EDTLBL		
LSTLBL		
LBLFRM		
LBSRT		
WFILE		
fndsrt		
LABELS		
LABELS		
LABELS		
QUERY	QUERY / 250 files	QUERY / 250 Operators Guide QUERY / 250 Programming Manual
QRMN01		
QRUT01		
QRUT03		
QRCI01		
QRCI02		
QRCP01		
QRPR01 thru QRPR08		
QREX01 thru QREX05		
QRda01 thru QRda05		
QRfm01 thru QRfm05		
QRfm07		
QRfm09 thru QRfm17		

Enhancements which have been added in Revision C are as follows:

- TIO, a terminal handling hardware/software product, requires HP 45120A.
- LK3000, a utility which allows the HP 250 to emulate an RS232 terminal on the HP 3000 for program development and program/data file transfers.
- RFIG, a utility for configuring a system with TIO.
- CONFIG has been modified to allow direct branching to RFIG.
- PFORM, a utility for listing FORM/250 attributes to a printer.

Software problems which Revision C corrects are as follows:

- Using European and line-drawing characters in FORMS/250.
- Sorting on array elements within IMAGE/250.
- Using synthetic link option in SORT/250.
- Erroneous parity error during FIND operations with TRACE/250 configured in system.
- Erroneous door open error during DOOR LOCK, ASSIGN and SPOOLING operations.
- Incorrect lexical string comparisons during FIND operations in QUERY/250.
- Not specifying re-ordering option in DBLOAD during restructuring process resulted in lost data.

Revision C of HP 250 system software is totally compatible with programs and data developed and used on HP 250 systems operating under previous Revisions A or B. No modifications are required to run on Revision C.

As of December 18, 1978, all HP 250 systems are shipped with Revision C. All installed customers of record at that time were sent a Revision C update package. If for some reason you do not currently have Revision C of the HP 250 system software, please contact your local HP System Engineer.

As new updates are released, and your system is still covered under HP 90-day Warranty, you will be mailed the update automatically. Also, if you have purchased HP 250 System Subscription Service or Comprehensive Software Support, you will receive updates automatically. Otherwise, you can purchase an on-time HP 250 System Software update package (45131-87901 U.S. Version) consisting of an operating system disc, a complete set of HP 250 reference manuals and update instructions.

## HP 250 Customer Training Course ... Is Born!

by Gretchen Snowden

FCD, in conjunction with the SEO, has completed giving the HP 250 training course to customers for the third time.

During this period we have had an opportunity to thoroughly QA the materials, content and approach and now have a well-tested training course for our customers. Quite frankly, we thought the course reviews given by those customers attending these first three classes were too kind, since it was in a developmental stage throughout. At any rate, based upon the reviews, we feel the course is on the "right track" in meeting HP 250 customer training needs.

These preliminary materials have been transformed into final copy (professional slides, printed student workbook, student guide, instructor's narrative, data sheet), are kitted and available to local sales offices and SE centers. The course material became available April 16, 1979. (HP 250 customer courses are scheduled at the Systems Engineering Center in Cupertino every other month and in other locations in the U.S., Europe, Australia, and Venezuela.)

# service information

## Service Contracts

by Bill Cummings

The HP250 can be covered under the Computer Systems Group Service Contract. The Service Contract provides the customer:

- A fixed cost maintenance plan
- Priority Response  
The C.S.G. Service Policy provides for zone 1 (within 100 miles of HP office) standard response time of: 8 hours
- Extended coverage service plans are available in selected areas. (i.e., 2 hours response; 7 days a week coverage; 24 hour one day coverage)

## REPAIR METHOD

The HP250 is repaired thru a board exchange program. The HP250 has been designed for serviceability

- roll-out card cage for easy access
- Self-test hardware diagnostics to help locate hardware failures
- interactive operating system diagnostics to help isolate hardware and software problems
- modularity in design for quick part replacement
  - logic
  - keyboard
  - power supply
  - CPU board

## Nice And Easy Does It ...

by John Forman

Before moving your HP 250 system, take a few minutes to properly protect the floppy drives. Each floppy drive has two floating read/write heads that can easily be damaged during a move if they are not protected.

To protect the floppy drive heads during a move, insert the thin "Caring for your Discs" paper card into each drive and close the drive door. If you can't come up with the original card, a disc inserted in each floppy and the floppy door closed will provide some protection.

Insert disc carefully.

Do not expose to magnetic fields (e.g., equipment). Data will be lost.

Avoid smoke and odors.

Periodically backup data and programs on a second disc to ensure against data loss.

Do not write on label with pencil or ballpoint. Use only felt-tip.

Do not touch or clean disc surface; contamination causes errors.

Do not bend.

Remove disc when not in use. Protect in envelope. Avoid temperature extremes.

Do not write on label with pencil or ballpoint. Use only felt-tip.

NOTE  
Insert this card in disc drive and close door before moving system to new location.

Ordering Information:  
• Ten double-sided discs with envelopes and box 9164-0100  
• Ten single-sided discs with envelopes and box 9164-0105  
• Spare envelopes 9230-0420  
• Spare box 9211-2748

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### Caring for Your Discs

