

SYSTEM USERS GUIDE



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This manual was developed as a supplement to the manuals governing the operation of the Digital Equipment Corporation PDP-11/70 timesharing computer.

Ross Systems has subjected its own programs to extensive testing. However, Ross Systems makes no warranty, expressed or implied, as to the documentation, function or performance of its programs or those of Digital Equipment Corp.

No attempt has been made to give a complete description of all the options and features available for DEC PDP-11 commands. Rather, the purpose of this manual is to provide a summary of the most common uses of various commands and features.

The user of the programs is expected to make the final evaluation as to the usefulness of the programs in any particular environment.

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CHAPTER 1 THE TIMESHARING SYSTEM-----

The Ross Systems Timesharing System consists of several computers, each having the following parts:

Central Processing Unit (CPU)	
Memory	(CORE)
Disks	(Online storage)
Magnetic Tapes	(Offline storage)
Terminals	
Line Printers	

You can communicate with the computer by dialing the computer telephone number on a conventional telephone, and connecting the phone to your terminal. Terminals can be located anywhere that has access to a phone.

Each terminal is connected to a MODEM or DATASET, which converts terminal output into a signal that can be transmitted to the computer over the telephone lines. At the computer end, another dataset converts the signal back and feeds it to the CPU.

Many different users can be signed on to the computer at the same time, sharing the computer resources.

When you sign on to use the system, a part of the memory is assigned to you. Using your terminal and simple commands, you can tell the computer what to do with data that you have stored on the disks or on tapes. The commands you enter are processed in the memory. You can create data, modify it, save it, retrieve it, perform calculations, print reports, and perform many other functions. When you sign off of the computer, the part of memory that was assigned to you is made available to other users.

All data that you wish to save to use again at a future time is stored on the system disk, or, in some cases, on magnetic tape. Files that you create are assigned your unique account number, and are protected from unauthorized access by persons having other account numbers.

CHAPTER 2 OPERATING YOUR TERMINAL-----

THE TERMINAL

You should carefully study the operating manual that came with your terminal. It will explain in detail the purpose of all the switches and dials on the terminal. A few that you will need to locate are listed below:

ON/OFF switch	You must turn the terminal on before beginning! If the modem is separate from the terminal, it must also be turned on.
FULL/HALF duplex	Set your terminal(and modem) to FULL duplex.
ON LINE/LOCAL	Be sure you are ON LINE.
SPEED or BAUD	Set your terminal speed to 30 cps (300 baud) or 120 cps (1200 baud), depending on the features of your terminal and modem. (cps = characters per second)
AUTO LF	The automatic line-feed switch, if present, must be OFF.
PARITY	If your terminal has this switch, set it to MARK or NONE or OFF.

THE KEYBOARD

The terminal keyboard is similar to that of a typewriter. It contains keys for alphabetic and numeric characters, as well as some special characters, such as \$, +, ;, and so on.

It also has some special keys that you may not be familiar with. The following table summarizes some of the special characters on the terminal keyboard.

THE CONTROL KEY (CNTRL, CTL)

The CONTROL key (lower left on keyboard) is one of the special characters. It is always used in conjunction with another key, as indicated on the following table. To use the CONTROL key, first hold it down firmly with your left hand, and then strike the other key with your right hand. The CONTROL key usually prints at your terminal as an up-arrow (^).

ERASING MISTAKES

The RUBOUT key is used to erase characters you have typed. This key is sometimes called ERASE or DEL, and its use is described on the following table.

You must be careful not to confuse RUBOUT with BACKSPACE. If your terminal has a BACKSPACE key, it should NEVER be used to erase mistakes. In most cases, the BACKSPACE is never used for anything at all!

TABLE OF SPECIAL CHARACTERS

RETURN CR NEW LINE ENTER	Enters a typed line into the system; results in a carriage return/line feed.
RUBOUT DEL ERASE	Deletes the last character typed on that line. Continuing to press the delete key causes prior characters to be deleted. Deleted characters are often echoed between backslashes (\) at your terminal.
LINE FEED LF CTL J	Used to continue the current logical line on an additional physical line. Used in cases where one line will not fit on a page, or to improve readability.
TAB CTL I	Performs a tabulation to the next tab stop on the line. Tab stops are 8 spaces apart.
FORM FEED FF CTL L	Ejects paper to the top of the next page. Only available if your terminal has form feed feature.
CTL C	Used to interrupt or stop any operation. Returns to READY level and awaits further commands.
CTL O	Used to suppress terminal output. Typing another CTL O causes output to start printing again. During the time between the two CTL O's, the program continues to run, but the output to your terminal is suppressed.
CTL U	Deletes the current line you are typing. Can be typed at any time prior to the carriage return.
CTL S	Interrupts printed output at your terminal until a CTL Q is typed.
CTL Q	Resumes terminal output that was interrupted with CTL S. The output resumes where it left off.
CTL Z	End of file character
CTL R	Shows all commands waiting to be processed. Useful if you have "typed ahead", or "rubbed out" characters, and wish to see exactly what commands are to be processed.
CTL T	Gives current status of your job. See appropriate technical manuals for description.

CHAPTER 3 LOGGING ON-----

DIALING THE COMPUTER AND LOGGING ON

1. Turn on the terminal and modem.
Set terminal switches as required:

```
FULL DUPLEX
ON LINE
```
2. Dial computer phone number.
Consult your RSI representative for Ross and Tymnet numbers.
3. Wait for high pitched sound.
Place phone in coupler, if you have a modem.
Press DATA button & replace receiver in cradle if using a dataset.
4. For Ross Systems numbers only:

```
Type a carriage return(CR).

COMPUTER: COMPUTER#?
RESPONSE: 1, 2 or 3 (Select computer #1, 2 or 3)
COMPUTER: 60

If nothings happens, or a line of 'garbage' prints,
type CTL A. This occurs if your terminal is set at
some other speed than 30 cps. Typing CTL A sets the
line speed correctly. Some terminals require typing
a G instead of CTL A.
```
5. For Tymnet numbers only:

```
COMPUTER: PLEASE TYPE YOUR TERMINAL IDENTIFIER
RESPONSE: A (No carriage return)

COMPUTER: PLEASE LOG IN
RESPONSE: C1ROSS or C2ROSS (Select computer #1 or 2)

COMPUTER: PASSWORD
RESPONSE: NETWORK (The password is either suppressed,
or prints over a blacked out area)
```
6. The computer will print the Ross Systems banner, and prompt you with a pound sign (#).

```
Type your account number in response to the pound
sign. Your account number is two numbers separated
by a comma, such as 18,22 or 100,8 .
```
7. The computer will prompt you to enter your password as supplied by Ross Systems. For security purposes, the password will not print as you type it.
8. If you make a mistake in step 6 or 7, the computer will return you to step 6. You will again be prompted with a pound sign and you must re-enter your account number and password.
9. After you have successfully logged on, the system may print an informative message.
10. Logging on is complete when the computer types READY.

LOGGING FROM ONE ACCOUNT TO ANOTHER

1. Type:
HELLO nnn,nnn (The account number)
2. The computer responds with:
PASSWORD:
3. Continue as in step 7 above.

DETACHED JOBS

Occasionally, your terminal may become disconnected from the computer while you are logged on. This can happen if you hang up the telephone before logging off, or if a power failure occurs, or if something interferes with the telephone line, or for some other reason.

When this happens, you should hang up the phone, and then dial in again, following the LOGGING ON procedures.

After you enter your password, the system will type a message informing you of the job number of the "detached" job.

JOB n IS DETACHED UNDER THIS ACCOUNT
JOB NUMBER TO ATTACH TO?

Respond with the detached job number. The system will then "attach" your terminal back to the detached job, printing the message

ATTACHING TO JOB n

You may now continue whatever you were doing before you became detached, as if there had been no interruption.

If your terminal was printing something at the time of the interruption, the printing may or may not continue. In other cases, it will appear as if nothing has happened. Type CTL T, if you wish, to see your job status.

CHAPTER 4 LOGGING OFF-----

ENDING YOUR TERMINAL SESSION

1. You can log off only after the terminal has typed READY.
2. There are various commands used to log off the system:
BYE Y Log off and print accounting information
BYE F Log off "fast"- no accounting info prints
BYE P Log off and request a PROJECT ID. You may type any one to six character PROJECT ID. The detail accompanying your monthly invoice from Ross Systems is then itemized by PROJECT ID.
3. Hang up the telephone!! This is especially important since you may unknowingly create a very large phone bill for yourself!

USING A TABLE OF PROJECT ID'S

It is possible to cause the computer to request a PROJECT ID every time anyone logs off your account, no matter which form of BYE is used.

To do this, create a file called PROJ.SYS in your account, using the Ross Systems Editor.

Type one line for each project code you would like to be used.

Save the file with RX/UN.

Once PROJ.SYS exists in your account, the system always requests a PROJECT ID when you log off, and verifies it against the list in PROJ.SYS.

CHAPTER 5 FILE SPECIFICATIONS-----

HOW FILES ARE NAMED

All files in the system are stored on disk or tape, and have names that uniquely identify them. No two files can have exactly the same name.

The complete name for a file is called the file specification, and takes the following form:

```
device:[project,owner]name.ext<prot>
```

The file specification is composed of four parts:

```
device:          file location
[project,owner] account number
name.ext         file name
<prot>          protection code
```

Most parts of the file specification have default values, and can be left out when accessing files. Usually, only the name is required.

FILE NAMES - name.ext

The name consists of from one to six alphabetic or numeric characters.

The extension consists of a dot(.) followed by from zero to three alphabetic or numeric characters. Some extensions are commonly used to indicate the file type:

```
.BAS          BASIC PLUS program, MAPS model
.BAC          Compiled BASIC PLUS program, MAPS logic
.B2S          BASIC PLUS 2 program
.TSK          Compiled BASIC PLUS 2 program
.RPT          Report file
.DAT          Data file
.CTL          Batch control file
.LOG          Output of a batch job
.INT          INTAC database file
.DEF          INTAC report definition file
.TMP          Temporary file(automatically
              deleted when you log off)
```

Often the extension can be omitted from the filename since in many cases, the default .BAS is assumed.

ACCOUNT NUMBERS - [Project,owner]

This part of the file specification identifies the account number that owns the file. If it is omitted, the owner is assumed to be the account you are logged into.

The entire account designation may be replaced by one of the special symbols listed below:

- # [Project,0], known as the library account for the project.
- % [1,4], System Library account
- \$ [1,2], System Library account
- ! [1,3], System Library account
- @ an assigned account (see Chapter 6)

PROTECTION CODES - <Prot>

You can assign protection codes to files you create in your account. Files are protected from three classes of users, based on the project and owner numbers of those trying to access the file. The three classes are:

- owner
- project (all users with same project as owner)
- others (all users not in owner's project)

COMMONLY USED PROTECTION CODES

PROTECTION CODES		WHO CAN READ	WHO CAN WRITE
REGULAR	COMPILED		
62	126	OWNER	NO ONE
60	124	OWNER	OWNER
56	120	PROJECT	OWNER
48	112	PROJECT	PROJECT
40	104	ANYONE	OWNER

FILE LOCATION - device:

The device code tells the system the location of the file you are trying to access. The location may be disk, tape, line printer, keyboard.

All devices in the system have been assigned logical names for this purpose.

The default device is SY:, which means "the system device". Normally, you should not specify a device for files, and the system will assign places for them on the system disk.

Some commonly used device specifications are:

SY:	The system device(disk)
LPO:	Line printer 0
LP1:	Line printer 1
DB0:	Disk drive 0
DB1:	Disk drive 1
MMO:	Magnetic tape drive
KB:	Terminal keyboard

Some of these device specifications are used as part of file names. Some are used in various commands to indicate the device used for files and reports.

CHAPTER 6 COMMONLY USED COMMANDS-----

COMMANDS SUMMARY

PDP-11 SYSTEM COMMANDS

COMMAND	FUNCTION
HELLO	Log on
SET	Set terminal characteristics
ASSIGN	Assign account to @
RUN	Run BASIC program
DIR	Print file directory
PIP	Copy, delete, rename files (General Utility)
QUE	Add, delete, list jobs in queues (Spooler)
BYE	Log off

ROSS SYSTEMS COMMANDS

COMMAND	FUNCTION
DL	Delete a file
RN	Rename a file
TIME	Print time and billings info for the account
TYPE	Print a file
EDT	Run the Ross Systems' EDITOR
MAPS	Run MAPS
INT	Run INTAC
SEND	Send mail to an account
MAIL	Print mail waiting in your account
PASSWORD	Change your password
CMD	Execute commands in a file
TAB	Allow physical tabbing at terminal

PDP-11 SYSTEM COMMANDS

SET command

Sets various terminal characteristics.

Examples:

```

-----
SET WIDTH 132      Sets terminal width
SET FORM          Sets form-feed control
SET NOFORM        Disables form-feed control
SET LC INPUT      Allow lower case characters
SET NO LC INPUT   Use only upper case
SET TAB           Allow physical tabbing at terminal
SET SCOPE         For screens, causes RUBOUT to erase
                  deleted characters on the screen

```

ASSIGN [proj, owner]

Assign an account number to the @ symbol.

RUN program

Runs the program you name.

Examples:

```

-----
RUN LABEL
RUN [100,101]LABEL
RUN ZPEANUT

```

DIR name/option

Prints a directory of files in an account. If no name is specified, all files are listed. If a name is specified, 'wild cards' may be used to list groups of files. 'Wild cards' are question marks (?) and asterisks (*).

Options:

```

-----
/SU      Print summary only. Prints number of
         files and total blocks used.

/SL      Print 'slow' directory. Prints more
         information than the standard directory.

/W       Print 'wide' directory. Prints file
         names across the width of the page
         instead of one per line.

```

Examples:

```

-----
DIR      All files in this account
DIR PLAN.DAT  Only file PLAN.DAT
DIR PLAN  All files with the name PLAN,
         such as PLAN.DAT, PLAN.BAS, ...
DIR PL????  All files whose names begin with PL
DIR *.BAS  All files having an extension of BAS

```

PIP newname=oldname/options

General Utility Program that is used to copy, delete, and rename files.

Options:

/RE Rename option
/DE Delete option

COPY Examples:

PIP FILEA.BAS=FILEB.BAS	COPY FILEB to FILEA
PIP A.X=[100,101]B.Y	COPY B.Y from account [100,101] to A.X in this account.
PIP BUDGET.DAT	Print BUDGET.DAT on the terminal
PIP *.*=[100,102]PL??.DAT	Copy all files in [100,102] with names PL--.DAT to this account

RENAME Examples:

PIP FILX.BAS=FILY.BAS/RE	Change the name of FILY to FILX.
PIP PP01M.BAS<56>/RE	Change protection code to 56.

DELETE Examples:

PIP PLAN.DAT/DE	Delete PLAN.DAT
PIP *.DAT/DE	Delete files with extension DAT
PIP PL????.* /DE	Delete files with names starting with PL.

QUE/command queename:=filename/options, filename/options,...

Enters a request into a system queue file for subsequent processing by a spooling program.

Commands:

/Q Enter request into a queue(default)
/L List the requests in a queue
/K Kill a request in a queue

Queenames:

LP0: Line printer 0 (default, all computers)
LP1: Line printer 1 (San Francisco, 176 characters)
LP2: Line printer 2 (special request, 176 characters)

BA: Batch queue

Options:

/CO:n Prints n copies of file
/NH Don't print banner page between files
/DE Delete file after printing

QUEUE Examples:

QUE/Q LP0:=FILEX.RPT	Que FILEX.RPT to LP0
QUE FILEX.RPT	Same. Uses the defaults
QUE FILEX.RPT/CO:3	Same. Prints 3 copies
QUE BA:=JOB1.CTL	Enter JOB1.CTL into batch queue

LIST Examples:

QUE/L LP0:	List LP0 queue
QUE/L	Same. Uses defaults
QUE/L BA:	List batch queue

KILL Examples:

QUE/K LP0:=FILEX.RPT	Remove FILEX.RPT from LP0 que
QUE/K BA:=JOB1.CTL	Remove JOB1 from batch queue

ROSS SYSTEMS COMMANDS

DL filename

Deletes the file named. Default extension is BAS.

Examples:

```
DL FILEA           Deletes FILEA.BAS
DL FILEB.RPT      Deletes FILEB.RPT
DL FILEC.         Deletes FILEC. (no extension)
```

RN oldname, newname

Renames file with the oldname to the newname.

Examples:

```
RN FILEA.BAS, FILEB.BAS  Rename FILEA.BAS as FILEB.BAS
RN X.DAT, Y.DAT         Rename X.DAT as Y.DAT
```

TIME/options

Prints time and dollars accumulated for the account.

Examples:

```
TIME/$           Current session
TIME/M/$        Month to date, excluding current session
```

TYPE filename/options

Prints a file on your terminal or the line printer.
See Chapter 7 for details.

EDT filename/options

Allows you to edit the file you name. Editing a file includes creating, changing, and deleting data from the file. See Chapter 8 for details.

MAPS

Run MAPS, Ross System's financial modeling system.
See MAPS Users Guide for details.

INT

Run INTAC, Ross System's data base management system. See INTAC Users Guide for details.

SEND

Leave a message in someone's account. The message can contain a maximum of 256 characters, on one or more lines.

Example:

```
SEND 22,1
Type your message...end with CONTROL Z
```

```
TO DEPT Q: TIMESHEETS DUE TODAY!
^Z
```

Ready

MAIL

Print a message sent to your account via the SEND command.

Example:

```
HELLO 22,1
PASSWORD:

MAIL WAITING (TYPE "MAIL" TO RECEIVE IT)
```

Ready

```
MAIL
21-Dec-79 03:09 PM
FROM:(22,0)
```

```
TO DEPT Q: TIMESHEETS DUE TODAY!
```

Ready

PASSWORD

Change the password for your account. You are asked to type the new password twice. The password does not echo at your terminal.

Example:

```
PASSWORD
ENTER NEW PASSWORD?
ENTER IT AGAIN?
```

Ready

CMD filename

Execute the commands found in the file named. The file must be an unnumbered file containing valid system commands and responses. The total number of characters in the file cannot exceed 128. The default extension for the filename is .CMD.

TAB width

Sets the width of your terminal to the width specified and generates physical tabs. Used if your terminal has hardware tabbing feature to speed up long printouts.

CHAPTER 7 ROSS SYSTEMS TYPE COMMAND-----

The TYPE command is used to print files. It can be used to print programs, data files, or report files. TYPE has a number of options that speed up printing and improve readability. The TYPE command may not be used to print files that do not contain printable character data.

TYPE COMMAND FORMAT

The format for the TYPE command is:

TYPE filename/option/option...

The filename may be any valid file name, as described in Chapter 5. An extension of .BAS is assumed on the filename if none is given.

More than one option can be used in a single command, and more than one file can be printed with a single command. To print multiple files, enter a list of names separated by commas.

TYPE COMMAND OPTIONS

/HE

Print a set of instructions on the TYPE command.

/DL

Delete the file after printing it. You will be prompted to confirm that the file should be deleted.

/FST

Use horizontal tabbing on the terminal for faster printing. In order for this option to be effective, your terminal must be equipped with hardware horizontal tabs, and the TAB command must have been executed. Printing speeds can be improved from 20% to 50% with this option.

/'sss'

Start printing the file at the line containing the first occurrence of the string "sss".

/LOG

May be used when printing a log file, to suppress the date and time on each line, if desired. See Batch Processing.

/HD

Print a title and page number on each page of the report.

/n

Skip n lines of the file before printing.

/LP

Print the file on the line printer, if it is available.

It is not a good practice to use this method of printing on the line printer. To print files on the line printer, use the QUE command (Chapter 6).

/Lnn

Print nn lines per page. Only meaningful in conjunction with HD option. The default is 66 lines per page.

/C>strings

Put 'strings' in core common. Used in conjunction with /F option.

/F>strings

Chain to the program specified when TYPE is finished.

/NF

Indicates that your terminal does not have the form-feed feature. Used in conjunction with /HD and /Lnn.

EXAMPLES

TYPE EMPL	Prints the file EMPL.BAS.
TYPE EMPL/HD	Prints EMPL.BAS with headings.
TYPE BUDGET.LOG/LOG	Prints the log file for a batch job named BUDGET, and suppresses the date and time on each line.
TYPE OUT.RPT/100	Prints the file OUT.RPT, skipping the first 100 lines.
TYPE FILE1,FILE2,FILE3/HD	Prints 3 files with headings.

CHAPTER 8 ROSS SYSTEMS EDITOR-----

The Ross Systems editor can be used to edit existing files or to create new files. Files to be edited can be data, programs or text files. All editing is based upon line numbers. For programs or MAPS models, the line numbers already exist in the file. For unnumbered files, the editor assigns numbers when the editing starts, and optionally strips the line numbers off when editing is complete.

STARTING THE EDITOR

To start the editor, type one of the following commands:

```
EDT filename
EDT filename/UN
```

The filename may be any valid file name as described in Chapter 5. If no extension is given for the filename, the editor first assumes .BAS, and if no file is found with that name, .B2S is assumed.

The /UN option causes the editor to number the lines in the file, starting with line number 10, and incrementing by 10.

If the file exists, then the entire file is pulled into working storage and a message giving the number of records is printed. If the file does not exist, then the message 'NEW FILE' is printed. The message 'NEW FILE' requires no response. If the file contains no line numbers, or contains line numbers that are out of sequence, then the /UN option is assumed and a message is printed.

In all cases, the editor then responds with the prompting character: '>' to indicate that it is ready to accept a command.

EDIT COMMANDS DESCRIPTION

In the following command descriptions, notation such as ln1 and ln2 represent line numbers in the file. They should be replaced with actual line numbers from the file, or with the letters F or L to represent the first and last lines, respectively. The notation s1 and s2 represent character strings, and should be replaced with actual character strings. [CR] indicates a carriage return.

EDIT COMMANDS

ln1

Delete line number ln1.

ln1 data

Add the line of data to the file if the line does not exist; replace the line if it already exists.

AP filename

Merge the file 'filename' with the current file. The incoming file must have sequential line numbers. Any line numbers that correspond to lines in the current file are replaced. All lines are inserted in numeric sequence.

CH ln1/s1/s2/ln2

Change all occurrences of string1 (s1) to string2 (s2) in lines ln1 thru ln2.

If ln1 is omitted, then the starting line number is the current line.

If ln2 is omitted, only the first occurrence in ln1 is changed. If an * or a L is used in place of ln2, then the change is applied to the entire file.

While '/' is the normal delimiter used in this command, any non-numeric character can be used. This feature is useful in cases where '/' is part of string1 or string2.

CL ln1 k

Puts the Editor into collect mode. While in collect mode, you are prompted with line numbers, starting with the line after ln1 and incrementing by k.

The default for ln1 is 10. If END is entered for ln1, the line numbers start at the end of the existing lines.

The default for k is 10.

To exit collect mode, type a carriage return in response to a line number prompt.

CN ln1/s1/s2/ln2

Same as CH except changed lines are not printed.

DL ln1-ln2

Delete the range of lines specified.

DP ln1-ln2

Duplicate ln1 at ln2. ln1 must exist in the file and ln2 must not exist.

DP ln1;ln2-ln3/k

Duplicate the range of lines ln1 thru ln2 starting at ln3 and incrementing the new lines by k. ln1 and ln2 must exist in the file, while ln3 must not exist. If /k is omitted, the default increment is 10.

EX

Exit the editor and DO NOT save any files.
The working copy of the file is lost!!

FL

Print the name of the current working file.
This is the name that the file will have when it is saved
using the RP, RR, or RX command.

LC ln1/s1/ln2

Locate and print all occurrences of string1 (s1)
in the range of lines ln1 thru ln2. If ln1 is omitted,
the search begins at the start of the file. If ln2 is
omitted, only the first occurrence is located.

LI

Print the current number of lines in the file.

LS ln1-ln2

List lines ln1 thru ln2 in the file. The printing can
be interrupted by typing a CTL C. The letters F and L can
be used for ln1 and ln2. Line ln2 may be omitted to print
a single line. If ln1 and ln2 are both omitted, the entire
file is printed.

MD ln.m

The modify command is used to perform detailed modification
of a line or a sub-line in a line containing multiple lines.
Sub-lines are separated with line-feeds or with %[CR].

In the MD command, ln is the line number and m is the
sub-line number. The default for m is 1.

The MD command is a 2-stage command. First the MD command
is given, and the particular line or sub-line is printed.
When the line is printed, all tabs, line-feeds, and
carriage-returns are shown as up-arrows(^). Then you may
type the desired MD commands below the printed line.

The D(delete), R(replace), and I(insert) MD commands
involve positioning the print head or cursor under the
portion of the line to be modified. Tabs, spaces, or
asterisks may be used to position the print head. The
other commands do not require moving the print head.

MD commands:

Ftext	Add the text to the front of the sub-line.
Ltext	Add the text to the end of the sub-line.
DDD...	Delete the strings of characters directly above the string of D's. Only one string of characters may be deleted at a time.
Rtext	Replace the characters above the text with the text. The R must be positioned under the character preceding the text to be replaced.
Itext	Insert the text in front of the character above the I.
/	Delete the sub-line.
[CR]	Do not modify the sub-line.

MV ln1-ln2

Move ln1 to ln2. Line ln1 is deleted.

MV ln1;ln2-ln3/k

Move ln1 thru ln2 to ln3, incrementing the new lines by k. This command is similar to the DP command, except lines ln1 thru ln2 are deleted.

RN filename

Rename the current working file to the name specified. An extension of .BAS is assumed if none is given. The RN command does not save any data. It only serves to rename the temporary copy of the file.

RP/option

Replace the current working copy of the file on the disk. Then continue editing the file. The options are:

- /UN Strip line numbers from the file before replacing it on the disk. DO NOT use this option on BASIC programs or MAPS models.
- /PT Set the protection code of the file so that only the user may access the file. The file is then protected from further modification or deletion.
- /nn Set the protection code of the file to nn.

RR/option

Replace the current working copy of the file on the disk. The editor is then cleared, and you are prompted to enter the name of another file to edit. The options are the same as those described above for the RP command.

RX/option

Replace the current working copy of the file on the disk. Then, exit from the editor. Equivalent to the two commands RP and EX. The options are the same as for the RP command.

SK n/m

Skip n lines from the current line and print the next m lines. 'n' can be either a positive number, negative number or zero. The default for n and m is 1.

SU filename

Save the current working file under the file name specified. The name of the working file remains unchanged. The filename specified must not already exist.

CHAPTER 9 BATCH PROCESSING-----

Batch processing allows you to set up a stream of commands to be run automatically by the system. These commands duplicate the commands that you would type at the terminal to run a program or a series of programs and commands.

Use of batch processing eliminates the need to remember a long series of commands required to run a job. It also allows you to run longer jobs without being logged into a terminal.

Using the batch processor involves the following steps:

- Establish a batch control file
- Initiate the job
- Print the results of the job.

SETTING UP A BATCH CONTROL FILE

A batch control file is a file created with the editor that contains the commands you would normally type at your terminal. The filename should have an extension of .CTL. The file must be unnumbered, which is accomplished by using RX/UN when saving the file. (See Editor)

The first line in a batch control file is

```
$JOB/CCL/LIMIT=nn
```

nn is the time limit for the job in minutes. The default time limit is 10 minutes.

Follow this line with all the commands and responses necessary to run the job.

The last line is:

```
$EOJ
```

SAMPLE BATCH CONTROL FILE

```
$JOB/CCL
SET WIDTH 132
MAPS
START DEMO
PRINT OFF DEMO.RPT
CORPORATE
MAY 1980
STOP
QUE DEMO.RPT
$EOJ
```

INITIATING A JOB

Use the QUE command to put your batch control file in the batch queue. (See Chapter 6)

```
QUE BA:=PAYRL
```

In this example, PAYRL.CTL is the name of a batch control file.

CHECKING THE STATUS OF A JOB

Use the QUE command to list the batch que and check the status of your job.

```
QUE/L BA:
```

PRINTING THE RESULTS

All batch jobs create an output file called jobname.LOG, where jobname is the name of the batch control file. This LOG contains a record of all that happened when the job was running. You may use the TYPE or QUE commands to print out the log file.

```
TYPE PAYRL.LOG           (print at your terminal)
TYPE PAYRL.LOG/LOG      (suppress date & time on lines)
QUE PAYRL.LOG           (print on the line printer)
```

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