SEARCH LIST (SL)

8.13. SL—Searching Within Reports/Form Types from a List

What it does

▽▽▽**SEARCH LIST**▽▽▽ searches a report or result, or an entire form type, for search parameters listed in another report or result.

Such a report might look like this:

Search parameters in a report

```
LINE▶ /     FMT▶   RL▶      SHFT▶     HLD CHRS▶    HLD LN▶  ▶     LCS     ▶
.DATE 01 MAY 84  12:34:56  RID      1    01 APR 84  JDOE
*C.COST. FROM .   PART   .RV.          .COST.  TO  .   NEXT   .
*D.CNTR. ACCT .   NUMBER  .LV.QUANTITY.CNTR. ACCT . ASSEMBLY .
*=.====.======.==========.==.========.====.======.==========.
               3007501 00
   8731
   8740
.RANGE
   8750
*       666666
```

Try SEARCH (8.3) first.

NOTE: *SEARCH LIST scans the report or reports separately for all data and each item in the search list; use it with discretion. SEARCH LIST does not handle data in the full character set (FCS).*

searching from a list

How to search using a list

enter: SL

You get the function request message:

- To search the ***entire form type,*** leave the RID field blank.
- To search a ***result,*** enter – after RID.
- Leave the FORMAT field blank unless you want a format other than basic.

Enter the RID, type, and format (if applicable).

You get the function mask:

- Enter the options (use SEARCH options [Table 8–1]).
- Enter the report number of the report that has the search parameters; and
- ***if the mode number of report is different from that of the mask,*** enter **M** and the mode number first, then the password.

You can process a result (such as a search result), in which case you enter – and the alphabetic type for the report (e.g., **–C**).

Fast access: report on display

With the report on display,

enter: SL –

Fast access: report not on display

or, if the report is not on display,

enter: SL { *rt*|*t* }[*f*]

where:

–	report/result on display
rtf	RID, type, and format

You get the function mask: follow the procedure just described.

example

In this example, we're requesting a search using the search parameters in mode 16, password DEMO, report 3C:

Request

```
*C.COST. FROM .   PART   .RV.        .COST.  TO  .   NEXT   .
*D.CNTR. ACCT .  NUMBER  .LV.QUANTITY.CNTR. ACCT . ASSEMBLY .
*=.====.======.==========.==.========.====.======.==========.
 * **** ****** ********** ** ******** **** ****** **********
m 16demo 3c
```

Result

In the result, the data appears in the same order as in the search list.

SEARCH LIST UPDATE (SLU)

8.14. SLU—Updating a Report from a Search Result (List)

What it does

▽▽▽**SEARCH LIST UPDATE**▽▽▽ updates a report from a search result using search parameters listed in another report or result, and automatically transfers the changes made in the result to the report you want to update.

☞ *Read the notes under SEARCH LIST (8.13); these precautions also apply to SEARCH LIST UPDATE.*

updating from a search list result

How to update from a search result

enter: SLU

You get the function request message: enter the RID, type, and format (if applicable).

You get the function mask: enter the options (use SEARCH options [Table 8-1]) and parameters.

Fast access: report on display

With the report on display,

enter: SLU -

Fast access: report not on display

or, if the report is not on display,

enter: SLU {*rt*|*t*}[*f*]

where:

- `-` report/result on display
- *rtf* RID, type, and format

You get the function mask: enter the options and parameters.

You ***cannot process a result.*** You ***can*** update the report, delete lines in the result from the report, or resume without updating the report.

Deleting/extracting/updating

You can (1) enter **DEL** to delete the lines in the result from the report, (2) enter **EXT** to delete the lines in the result and redisplay the result, or (3) make changes in the report and enter **UPD** to blend the updated lines into the report (if the report has an update password, you must also enter the 1- to 6-character alphanumeric password after the call).

Resume to continue

To continue the search list update process without updating the report, resume. If you are searching multiple reports, the MAPPER processor displays results from one report at a time. Resume to exit the search result, leaving the report unchanged, and to display the search result of the next report.

10.3. RR—Starting a Run at Another MAPPER Site

What it does

REMOTE RUN starts a MAPPER run at another MAPPER site (only if your site has a remote run link).

☞ *Call your coordinator to see if you have access to REMOTE RUN.*

How to start a remote run

starting runs at other MAPPER sites

enter: RR *run-name*

Enter the name of the MAPPER run to start at the other MAPPER site.

You get the function request message: enter the information.

What happens next?

The activated MAPPER run places the report specified in the local field into the mode and type specified in the remote fields and accepts the report as input when executed.

Function request message

```
REMOTE RUN REQUEST

SITE
USERID
DEPT    PASSWORD

LOCAL
FORMAT    RID    TYPE

REMOTE
FORMAT   MODE      TYPE     PASSWORD
```

What goes where

where:	is:
SITE	number of other site (call your MAPPER coordinator for this number)
USERID	user sign-on at remote site
DEPT	user department number at remote site
PASSWORD	user sign-on password (if any) at remote site

Local fields	(LOCAL) FORMAT	format of local report (blank=basic format)
	RID	RID number of local report (blank=not sending report)
	TYPE	alphabetic form type of local report (blank=not sending report)
Remote fields		
	(REMOTE) FORMAT	format of report for input in remote run (you can change format of report being sent when it arrives; report being sent was defined in local fields)
	MODE	mode at remote site into which to place local report
	TYPE	form type to assign to local report when it arrives at remote site
	PASSWORD	mode password at remote site to give local report

NOTE: *If you do not specify a report in the local fields, you need not define one in the remote fields.*

10.4. PR—Printing Reports

What it does

PRINT queues MAPPER reports or results to a system printer.

Use the .EJECT command

As with the AUXILIARY function, to move the printer paper to the next home position, enter.**EJECT** in the first column of a line in the report or result you want to print (see under **special auxiliary commands** in 10.6).

How to print reports or results

printing

enter: PR

You get the function request message: enter the information.

Function request message

```
                MAPPER PRINT REQUEST

PRINT SITE                                  LOCATION
             NUMBER OF COPIES
                 LINE SPACING
 IGNORE LINE SEQUENCE NUMBERS
             SPECIAL FORMS ID
          PRINT ALL OF A TYPE
                      FORMAT
                         RID -
                        TYPE
```

What goes where

where:	is:
PRINT SITE	device number of any local or remote printer available to system (enter appropriate site-id; or blank=direct print to first available local printer)
LOCATION	(optional) delivery location for printout (appears on cover of printout)
NUMBER OF COPIES	number of copies up to four to print (blank=1 copy)
LINE SPACING	vertical spacing of output lines: blank=single; 1=single; 2=double; 3=triple

IGNORE LINE SEQUENCE NUMBERS	ignore (i.e., do not print) line sequence numbers and keep lines from truncating on right: **Y**, **N**, or blank (blank=**N**) (enter **Y** if you have a 132-character report and want all 132 characters to print without line sequence numbers)
SPECIAL FORMS ID	special forms identification: enter a form identifier of up to six characters; or blank (no special form)
PRINT ALL OF A TYPE	print contents of entire form type: **Y**, **N**, or blank (blank=**N**) (if **Y**, erase the - in the RID field following)
FORMAT	format number from 1 through 6 to print (blank=basic format)
RID	report to print (-=report/result on display; if you entered **Y** after ALL OF A FORM TYPE, erase the -)
TYPE	alphabetic form type (if you entered **Y** after ALL OF A FORM TYPE or if you entered a RID number or - after RID, enter the form type of the report or reports to print)

10.5. DEV—Listing Auxiliary Devices

What it does

DEVICE lists auxiliary devices and their status for a specified station.

How to list auxiliary devices

listing auxiliary devices

enter: DEV

You get the function request message: enter the information.

Fast access

enter: DEV,*station-number*

Enter the station number.

Sample entry

enter:	to list devices for:
dev,177	station 177

Function request message

```
AUXILIARY DEVICE INFORMATION

      STATION
  DEVICE TYPE          (C,T)
```

What goes where

where:	is:
STATION	station number
DEVICE TYPE	device type/types to list: **C** printers **T** tape cassettes/diskettes blank all devices

example

In this example, station 177 has two tape cassettes (TC2 and TC1) and one printer (COP) configured. The M in the status field stands for a Mannesmann printer.

MAPPER response for station 177

```
** AUXILIARY DEVICE INFORMATION **
        STATION ( 177 )

    DEV STATUS
    *** ******
    TC2
    TC1
    COP M
```

Press F2 to return

The cursor is in home position: from here, you can call any other MAPPER function, or press F2 to return to the report or result on display when you called DEVICE.

AUXILIARY (AUX)

10.6. AUX—Directing Output to Auxiliary Devices

What it does

AUXILIARY directs output to auxiliary devices connected to the terminals (e.g., COP, CQP, TD1).

Use DEVICE (10.5) to find out which auxiliary devices are connected to your station.

How to use an auxiliary device

using auxiliary devices

enter: AUX

You get the function request message: enter the information.

Function request message

```
                AUX DEVICE REQUEST

      STATION ▮                    DEVICE  COP
           ID                   TAB CODES
  TRANSPARENT               DELETE HEADERS
 LINE SPACING          DELETE 1ST CHARACTER
DELETE LINE NO. Y                    FORMAT
           CC                          RID -
                    TYPE
```

What goes where

where:	is:
STATION	terminal station or unit number
ID	identifier name for report being sent to cassette/diskette
TRANSPARENT	(***applicable only for tape cassettes/diskettes***) transfer data in print transparent format: **Y**, **N**, or blank (blank=**N**) (for reports having up to 132 characters per line)
LINE SPACING	number of line feeds desired following each line in report: **1**, **2**, **3**, or blank (blank=1, single spacing)

DELETE LINE NO.	delete line sequence numbers normally printed along left margin: **Y**, **N**, or blank (blank=**N**) (leave **Y** to print 132-character reports)
CC	control character control (see under **CC field--special printing controls** in this subsection)
DEVICE	3-character device name of device type to use (e.g., **COP**, **CQP**, **TC1**, **TD2**)
TAB CODES	translate tab characters to spaces: **Y**, **N**, or blank (blank=**N**)
DELETE HEADERS	delete report headers and END REPORT line in output: **Y**, **N**, or blank (blank=**N**)
DELETE 1ST CHARACTER	delete first character in each report line--normally character that indicates line type: **Y**, **N**, or blank (blank=**N**)
FORMAT	format number (**1** through **6**, or blank) (blank=basic format)
RID	RID number of report to process (enter - to write the report or result on display when you called the function)
TYPE	alphabetic form type

interrupting the printing

To temporarily interrupt the printing at an auxiliary device:

1. Press MSG WAIT.
2. Wait for station idle logo display (after the data on your screen is processed).
3. Sign on.
4. Process your reports.
5. Sign off: the auxiliary device resumes printing.

Printers/card punchers

To generate output on system printers, use PRINT (10.4); for card punches, use PUNCH (10.8).

CC field—special printing controls

Use these control characters in your report for special printing. Use the uppercase letter to start the special printing; use the lowercase letter to end it.

Control characters in report

enter:	for:
~ B & ~ b	bolding
~ H & ~ h	highlighting (currently used for UNADS input; future use for changing colors of ink)
~ U & ~ u	underlining
~ V & ~ v	vertical line (space and vertical line (|) [two spaces])
~ X & ~ x	striking through a character

To stop control characters from printing

Enter ~ in the CC field to stop these control characters from printing (if the printer cannot handle special characters). You can stop only the above-listed control characters from printing, not others (e.g., you cannot stop ~ C).

Printing control characters

Leave the CC field blank to print the control characters as they appear in your report.

Check with your coordinator for auxiliary device configuration

Devices such as 425 printers or correspondence quality printers (CQPs) can bold, underline, and strike through (you must use a back space command). However, the printer must be thus configured (BS in the format field of the coordinator's configuration report; or Q in the format field if the printer is connected to one of the UTS 4000 Series terminals). Printers configured with a Q in the status field cannot strike through characters.

COP and CQP runs

The COP and CQP runs simplify auxiliary print requests.

format

How to start the COP run

COP *station-number*[,*copies*,*format*]

where:

station-number	station number of auxiliary printer
copies	number of copies (up to 3)
format	print format (1 through 6) (default=basic format)

format

How to start the CQP run

CQP

You get a menu: make your selection.

special auxiliary commands

Table 10-1 lists special auxiliary commands that you can enter in a report to control printing on auxiliary devices. You may enter the .EJECT command in column 1. Enter all other commands anywhere ***after*** column 1. Enter commands in uppercase or lowercase.

Table 10-1. AUXILIARY: Special Commands

command:	action:
KIP *n*	skip *n* lines
TAB *n*	issue *n* tab positions (use only with the 0786 printer)
LPP *n*	print *n* lines per page (at most sites, default=60 lines per page)
HOM	home paper (i.e., go to top of next page)
.EJECT	same as HOM

where *n* is a number.

NOTE: *The printer handler loses the line count following a TAB command. To resynchronize the line counter, enter a HOM command before the end of the page. The handler automatically executes a HOM command at the end of the report.*

directives: SI, SQ, and SX

Three directives allow you to start, requeue, or stop output to an auxiliary device:

SI

- SI directive

  Start the output at another station, generally a screen bypass terminal.

SQ

- SQ directive

  Requeue output that was sent to the print device but failed because of a hardware error.

SX

- SX directive

  Stop output already queued for printing.

format

How to use the directives

To direct, requeue, or stop the output from a screen bypass terminal (and other terminals), sign on to any terminal and enter:

{SI|SQ|SX} ***station-number***

where ***station-number*** is the station number of the auxiliary device.

SQ & SX: if you are at the terminal

If you are at the terminal where the auxiliary device is connected:

1. Press MSG WAIT .
2. Wait until the station idle logo appears on your screen.
3. Sign on.

   ☞ *For SX, do not press* XMIT *while waiting!*

4. Enter **SQ** ***or*** **SX** .

As soon as the station idle logo appears on your screen, you are signed off. Anything else queued to the print device resumes printing. To requeue or stop further output, repeat these steps.

TAPE CASSETTE/DISKETTE (TCS)

10.7. TCS--Storing Data on Cassettes or Diskettes

What it does

TAPE CASSETTE/DISKETTE allows you to store data (i.e., read from or write to) cassettes or diskettes.

For a description of the Sperry tape cassette system, see the *Series 600 Tape Cassette System, Concept and Applications,* UP-8282 (current or applicable version).

How to use cassettes/diskettes

using cassettes/diskettes

enter: TCS

You get the function request message: enter the information.

Function request message

```
                TAPE CASSETTE REQUEST

          STATION                    DEVICE
         FUNCTION          BEGINNING ADDRESS
       EOT SWITCH                     TRACK
               ID                       EOD
      TRANSPARENT                 TAB CODES
   DELETE HEADERS               LINE SPACING
              RID                    FORMAT
                        TYPE
```

What goes where

where:	is:
STATION	station number to which tape cassette/diskette connected: blank=requestor's station (if this field has station number different from requestor's station number, processor rejects request if requested station not available)
DEVICE	3-character device name for cassette/diskette (e.g., **TC1**, **TD2**)

FUNCTION	mnemonic function command code for cassette/diskette operation: **BS** backspace one block **RA** report/address (MAPPER runs/remote cassettes) **RB** read single block; create result **RR** read and create result **RW** rewind **SR** search for address/identification supplied **WR** write
BEGINNING ADDRESS	starting tachometer or block address: **21** to **7000** cassette **0** to **7326** diskette **L** load point Make entry in this field to start high-speed search for address: with RB, RR or WR, executes search as combined search and read/search and write.
END OF TAPE SWITCH	***(not applicable for diskettes)*** end-of-tape switch designation: **Y**, **N**, or blank (blank=**N**) (if you enter **Y** and receive an END-OF-TAPE status message during read or write operations on track 1, processor rewinds cassette, switches to track 2, and continues)
TRACK	***(not applicable for diskettes)*** track number: **1**, **2**, or blank (blank = current track) (make entry in this field only if you intend to switch tracks)
ID	(optional) 12-character user identification entry for search operations (if entering this identification with WR command, precede it with underscore character and write it before report data: processor searches at read speed before read operation; if you make entry in BEGINNING ADDRESS field, processor searches at high speed to 20 address counts before address specified, then continues at read speed until it makes a find)
EOD	***(applicable only with WR command)*** (optional) 6-character entry to detect end-of-report (precede these characters with underscore character and write them in separate block following last block of report; later you can easily add reports to tape with a search and backspace)
TRANSPARENT	***(applicable only with WR command)*** transfer data in print transparent format: **Y**, **N**, or blank (blank=**N**) (allows transferring up to 132-character-per-line reports)

TAB CODES	***(applicable only with RB, RR, or WR command)*** insert tab characters: predefined line number, **Y**, **N**, or blank (blank=**N**) (with RB or RR command, **Y**=replace spaces in tab-stop columns defined in RID 0 with tab characters; predefined line number=number of line type to use for inserting tab characters; with WR command, **N**=translate all tab characters to spaces [required for offline COP listings and for some form types to compress data written to tape])
DELETE HEADERS	***(applicable only with WR command)*** delete report headers and END REPORT line: **Y**, **N**, or blank (blank=**N**)
LINE SPACING	***(applicable only with WR command in transparent format)*** number of line feeds desired following each line in report: **1**, **2**, **3**, or blank (blank=**1**, single spacing)
RID	***(applicable only with WR command)*** RID number of report to write to cassette/diskette (enter - in this field to write report/result on display when you called function)
FORMAT	***(applicable only with WR command)*** format number: **1** through **6** or blank (blank=basic format)
TYPE	***(required with RB, RR, or WR command)*** alphabetic form type

skip write operations (cassettes)

You can execute a software simulated skip write operation if three successive write recovery attempts fail. You need not be concerned with this during online operations; however, when reading a report offline that was written by TAPE CASSETTE/DISKETTE, you must execute the skip manually if skip write operations were used.

The screen indicates a skip by a small block consisting of two underscore characters followed by five decimal digits. These seven characters appear at home position; SEARCH rest of the screen is blank.

To execute a manual skip during offline read operations:

1. Press the SEARCH key on the tape cassette panel.
2. Type an SOE character and the number 1 over the two underscore characters.
3. Position the cursor beyond the 5-digit number.
4. Press PRINT.

If you are recording transactions offline to read later online and a parity error occurs, you can make a recovery attempt: press three keys in this order:

1. **<1 BLK**
2. **WRITE**
3. **PRINT**

If this keeps failing after a few attempts, execute this skip write operation:

1. Press the <1 BLK key. One backspace is usually enough. To ensure that the skip write indicator writes without a parity error, the machine backspaces two blocks. However, this destroys the last good block—you must recreate it after the skip executes.
2. Press the WRITE key.
3. Add a reasonable skip count to the tachometer address displayed on the tape cassette panel. Enter this value, preceded by two underscore characters in home position. For online skip write operations, the machine adds 75 for UNISCOPE 100 display terminals and 150 for UTS terminals. These relatively large skips are required in part because of the two backspaces.
4. Press PRINT to write the skip indicator on tape.
5. Press the SEARCH key on the tape cassette panel.
6. Type an SOE character and a zero over the two underscore characters.
7. Position the cursor beyond the 5-digit address.
8. Press PRINT. When the tape stops moving, it will have skipped past the bad spot.
9. Press the WRITE key.

PUNCH (PUNCH)

10.8. PUNCH—Punching Cards

What it does

PUNCH punches 80-column cards.

How to punch cards

punching cards

enter: PUNCH

You get the function request message: enter the information.

Function request message

```
SYSTEM PUNCH REQUEST

PUNCH SITE
SPECIAL CARDS
DELETE HEADERS
SKIP FIRST CHARACTER
FORMAT
RID
TYPE
```

What goes where

where:	is:
PUNCH SITE	site-id of any local or remote punch device available to system (blank=direct punch file to first available onsite card punch)
SPECIAL CARDS	1- to 6-character identifier for special cards (blank=standard 80-column cards)
DELETE HEADERS	delete headers: **Y**, **N**, or blank (blank=**N**)
SKIP FIRST CHARACTER	skip first character (usually line type indicator) in each report line: **Y**, **N**, or blank (blank=**N**)
FORMAT	format number from **1** through **6** to print (blank=basic format) (maximum=80-character punch per card)
RID	report to print (-=report/result on display)
TYPE	alphabetic form type

10.9. DLL—Downline Loading a Program

What it does

DOWNLINE LOAD loads a precompiled program stored in a MAPPER report into a UTS 400 master or UTS 40 display terminal.

How to downline load a program

downline loading programs

enter: DLL

You get the function request message: enter the information.

Function request message

```
DOWNLINE LOAD

AUX DEVICE MEM
PROGRAM LABEL
TRANSFER ADDRESS A018
RID -
TYPE
```

What goes where

where:	is:
AUX DEVICE	UTS auxiliary device to load with program (e.g., **MEM** [UTS memory], **TD1**, **TD2**)
PROGRAM LABEL	program label reference (use for loading program from auxiliary tape or diskette unit)
TRANSFER ADDRESS	address to which to transfer control after loading
RID	RID number of report where program resides
TYPE	alphabetic form type of report with program

MAPPER response

The processor loads the UTS 400 master or UTS 40 terminal with the program and turns over control to the program at the specified transfer address.

If you are loading the program to an auxiliary device, see the user manual for that device for the procedure for loading your terminal from that device.

11. Processing 1100 Operating System Files

This section describes the functions that let you process 1100 Operating System files: starting batch runs; copying and transferring files, getting in demand mode, and retrieving files from the 1100 Operating System.

In this section

BATCH START (START)

11.1. START—Starting a Batch Run

What it does

BATCH START executes a MAPPER runstream with Executive control statements as a batch run.

Batch applications are of lower priority than real-time applications.

BATCH START's primary purpose is to collect data in MAPPER reports and to use this data as input to batch runs, and to start batch runs that produce files which may or may not be returned to the MAPPER processor with RETRIEVE (11.6) or through the batch port.

Call your coordinator to see if you have access to BATCH START.

How to start a batch run

starting a batch run

First enter the runstream in a MAPPER report; then

enter: START

You get the function request message: enter the information.

Function request message

```
        BATCH MODE RUN

   RUNID /   ACCOUNT
     RID -       TYPE
INCLUDE OTHER MODES? N
```

What goes where

where:	is:
RUNID	(optional) overrides Executive @RUN control statement
ACCOUNT	batch run account number
RID	RID with runstream (enter - to start the runstream that is in the report or result on display)

TYPE	alphabetic form type of report with runstream (you ***must*** be in the same mode as the report that has the runstream data).
INCLUDE OTHER MODES?	$INCL$ image in runstream is to access data outside mode in which you are working (Y or N) (if you enter **Y**, this message appears below the request message after transmitting: MODE PASSWORD MODE PASSWORD MODE PASSWORD MODE PASSWORD enter the mode numbers and passwords of the other modes to access by $INCL$; if the processor finds the passwords acceptable, it sends the message: ⌜MODE PASSWORDS VERIFIED⌝ and transfers the runstream to Executive control)

special commands: keywords

Table 11-1 lists special commands (keywords) that you can use to control data in the report to transfer. Enter these commands on any line in the report; they take effect from that point in the data on.

To include more than one report or form type, use the **$INCL$** command.

Table 11-1. BATCH START: Special Commands (Keywords)

command:	action:	format:	example:
$CLRT$	Clear character and tab code translation initialized by $TRAN$ and $TRNA$; translate tab characters to spaces (default).	$CLRT$	$clrt$
$DATA$	Suspend any data translation by $TRAN$ and $TRNA$; i.e., use the original data (tab character translation by $TABA and $TABC$ not affected).	$DATA$	$data$
$DCML$	Delete all asterisk type lines ***except*** header lines.	$DCML$	$dcml$
$DFFL$	Delete all period type lines ***except*** header lines.	$DFFL$	$dffl$
$ICML$	Include all asterisk type lines.	$ICML$	$icml$
$IFFL$	Include all period type lines.	$IFFL$	$iffl$
$INCL$	Include reports in the runstream from numeric form type *nnnn*, RIDs *n,n* and *n–n* (any combination in any order).	$INCL$ [H] T*nnnn* R{*n,n,n–n* . . .|A} where H is a control character to pass report headers, *n* is a RID number (individual RID numbers separated by commas; a range of RIDs included with a hyphen), and A means include all reports in the type.	Include reports, with headers, from numeric form type 214, RIDs 3 through 6, 23, and 40 through 57: $incl$ h t214 r3–6,23,40–57
$TABA$	Translate tab characters to the character represented by ASCII code *nnn*, ***or*** to the character *y*.	$TABA$ {*nnn* |'*y*'} where *y* must be within apostrophes.	Translate tab characters to ampersands: $taba$ '&'
$TABC$	Translate tab characters to the character represented by Fieldata code *nn*.	$TABC$ *nn*	Translate tab characters to asterisks (Fieldata code 50): $tabc$ 50
$TRAN$	Translate character *x* to the character represented by Fieldata code *nn*, ***or*** reestablish translation previously suspended by $DATA$.	$TRAN$ {*x,nn* . . .|Δ.Δ} where Δ.Δ is a space–period–space (or may be blank to end of line) and reestablishes translation previously suspended by $DATA$.	Translate ampersands (&) to spaces (Fieldata code 05) and dollar signs ($) to pound signs (#) (Fieldata code 03): $tran$ &,05 $,03
$TRNA$	Translate character *x* to the character represented by ASCII code *nnn* and/or to the character *y* (any combination in any order), ***or*** reestablish translation previously suspended by $DATA$.	$TRNA$ {*x,nnn x,'y'* . . .|Δ.Δ} where *y* must be within apostrophes, and Δ.Δ is a space–period–space (or may be blank to end of line) and reestablishes translation previously suspended by $DATA$.	Translate ampersands (&) to spaces (ASCII code 040) and dollar signs ($) to question marks (?): $trna$ &,040 $,'?'

NOTE: *See Appendix B for Fieldata and ASCII codes.*

BPRUN$ command

The BPRUN$ command returns data from an SDF-formatted file to the MAPPER processor through the batch port.

Enter the BPRUN$ command in your file; then queue the file for output to the MAPPER interface with the Executive control statement:

@SYM ***file-name*** **..,1,** ***mapper.***

where:

file-name	name of file
mapper	name of MAPPER interface

The symbiont device must be available as a local device to the MAPPER processor. MAPPER software checks the device every six seconds.

format

BPRUN$ ***run-name,variables user-id,department, user-password*** **[** ***mode,mode-password,type, format,line-type,space*** **]** **BPERR ,** ***input-variables***

where:	is:
BPRUN$	batch run image
run-name	name of run to activate
variables	string of variables used by INPUT$ in run control report
user-id	user sign-on
department	user department number
user-password	user sign-on password (if one is required)
mode	mode number of returning data
mode-password	mode password of returning data
type	***alphabetic*** form type of returning data
format	format of returning data
line-type	line type for tab character insertion (enter **Y** to replace spaces with tab characters in those column positions defined in RID 0 as having tab characters; enter a predefined line type number instead of **Y** for a predefined line defined in RID 0)

What goes where

These subfields Identify the Returning result (-0) [not assumed]

space	line spacing (enter **Y** to prevent blank lines in the file from being deleted; enter **N** or leave blank to delete blank lines separating lines of data)
BPERR	name of run to execute if error occurs during batch processing (every site has a modified version of the BPERR run to handle batch port errors; call your MAPPER coordinator for further information)
input-variables	input variables captured by INPUT$ to the BPERR run (enter the station number to which to send the BPERR run error message in position one)

ENDRD$ command

The ENDRD$ command (or another BPRUN$ command) marks the end of data to include in the report and starts the run.

examples

Transferring data with a run

In this example, the DATA processor transfers data to file *file-name* in System Data Format (SDF).

The processor searches the file for the BPRUN$ image. Since the mode and type for the returning data is specified, the processor places the data between the BPRUN$ and ENDRD$ images in -0, type B, mode 0. When the runstream encounters the ENDRD$ command, it activates the run *run-name* and passes variables to the run to be picked up by **INPUT$**.

```
@RUN,A/R BATCH,account-number/password,project-id,,,S900
@ASG,CP file-name.,F/1/TRK/2
@DATA,IL file-name.
BPRUN$ run-name,variables JDOE,4,TEST 0,OPEN,B
    THIS DATA IS TO BE RETURNED
    THIS DATA IS TO BE RETURNED
    THIS DATA IS TO BE RETURNED
    THIS DATA IS TO BE RETURNED
ENDRD$
    MORE DATA NOT TO BE RETURNED
    MORE DATA NOT TO BE RETURNED
    MORE DATA NOT TO BE RETURNED
    MORE DATA NOT TO BE RETURNED
@END
@FREE file-name.
@SYM file-name.,,device-name
@SYM,D PRINT$
@FIN
```

Starting a MAPPER run without transferring data

```
@RUN,A/R BATCH,account-number/password,project-id, ,,S900
@ASG,CP file-name.,F/1/TRK/2
@XQT file-name.DOTHEWORK
@ASG,UP MESSAGE.
@BRKPT PRINT$/MESSAGE
@MSG,N ;
BPRUN$ run-name JDOE,4
ENDRD$
@BRKPT PRINT$
@FREE MESSAGE.
@SYM MESSAGE.,,device-name
@FIN
```

COPY (COPY)

11.2. COPY—Copying 1100 OS Files and Elements

What it does

COPY copies an 1100 OS program file or element, or a data file, from one site to another site through the remote run link.

If the receiving file does not exist, COPY assigns it with a maximum granularity of 6400 tracks.

Call your coordinator to see if you have access to COPY.

How to copy a file or element

copying 1100 OS files/elements

enter: COPY

You get the function request message: enter the information.

Function request message

```
                FILE COPY REQUEST
   FROM                TO          OPTION
USER ID              DEPT              PASSWORD
      FROM QUALIFIER
                     FILE
                  ELEMENT
                  VERSION
             TO QUALIFIER
                     FILE
                  ELEMENT
                  VERSION
```

What goes where

where:	is:
FROM	site number of sending site
TO	site number of receiving site
OPTION	copy option (required if element specified): **A** absolute **O** omnibus **R** relocatable **S** symbolic

USER ID	user-id at receiving site
DEPT	user department number at receiving site
PASSWORD	user sign-on password at receiving site
FROM QUALIFIER	1100 OS file qualifier of sending file
FILE	file name of sending file
ELEMENT	(optional) element name of sending element (blank=send all elements)
VERSION	version of sending element
TO QUALIFIER	(optional) 1100 OS file qualifier of receiving file (blank=sending qualifier)
FILE	(optional) file name of receiving file (blank=sending file name)
ELEMENT	(optional) element name of receiving element (blank=sending element name)
VERSION	(optional) version of receiving element (blank=version unknown)

ELEMENT (ELT)

11.3. ELT—Copying MAPPER Report to 1100 OS File/Element

What it does

ELEMENT copies a MAPPER report to a standard 1100 OS program file or element, or to a data file.

You ***cannot*** use ELEMENT to copy data to a MAPPER file.

If the 1100 OS file is not currently assigned, ELEMENT assigns it with a maximum granularity of 6,400 tracks.

If you specify an element that already exists (i.e, by the same name and version), the processor deletes the current element and creates a new one in its place.

Call your coordinator to see if you have access to ELEMENT.

How to copy a MAPPER report

copying report to 1100 OS file/element

From the mode that has the data to copy,

enter: ELT

You get the function request message: enter the information.

Function request message

```
      CREATE FILE OR ELEMENT OF A PROGRAM FILE
QUALIFIER     *  FILE NAME (CYCLE)   .  ELEMENT    /   VERSION
     /
                MAPPER FORMAT  N          HEADERS N
           INCLUDE OTHER MODES N          CHAR SET F  (L,F,U)
                           RID -             TYPE
```

What goes where

where:	is:
QUALIFIER	1100 OS file qualifier
FILE NAME	1100 OS file name
CYCLE	1100 OS file cycle number (absolute, relative, or +1)

ELEMENT	1100 OS element name (if specified, file must be a program file) (blank=data file)
VERSION	1100 OS version name of element
MAPPER FORMAT	create file in MAPPER format: **Y**, **N**, or blank (blank=**N**)
INCLUDE OTHER MODES	$INCL$ image in started runstream is to access data outside current mode: **Y**, **N**, or blank (blank=**N**) a **Y** response prompts this message: MODE PASSWORD MODE PASSWORD MODE PASSWORD MODE PASSWORD enter the mode numbers and passwords of the other modes to access by $INCL$ and transmit; if the passwords are acceptable, the message ▽MODE PASSWORDS VERIFIED△ appears and the specified report or reports are copied.
RID	report/result identifier
HEADERS	include report headers in data: **Y**, **N**, or blank (blank=**N**)
CHAR SET	character set of file or element to create: blank ASCII **F** ASCII **L** Fieldata **U** ASCII, uppercase
TYPE	alphabetic form type of report to copy

Special commands: keywords

Use the same special commands (keywords) that you use with the BATCH START function to control data in the report to copy (see Table 11-1). Enter these commands on any line in the report; they take effect from that point in the data on.

To include more than one report or form type, use the **$INCL$** command.

ELEMENT DELETE (ELT-)

11.4. ELT- —Deleting an 1100 OS File/Element

What it does

ELEMENT DELETE deletes a standard 1100 OS program file or symbolic element, or a data file.

The file must be a sector-formatted file with no read- or write-only keys.

You ***cannot*** use ELEMENT DELETE to delete a MAPPER file.

☞ *Call your coordinator to see if you have access to ELEMENT DELETE.*

How to delete a file

deleting an 1100 OS file/element

enter: ELT-

You get the function request message: enter the information.

Function request message

```
        DELETE FILE OR ELEMENT OF A PROGRAM FILE

QUALIFIER      *  FILE NAME (CYCLE)   .  ELEMENT   /   VERSION
```

What goes where

where:	is:
QUALIFIER	1100 OS file qualifier
FILE NAME	1100 OS file name
CYCLE	cycle number (current: **0**, **+0**, **-0**; relative: **-1** through **-31**; absolute: **1** through **99**)
ELEMENT	1100 OS element name (blank=delete ***entire*** program or data file) [specify an element in this field if the file is a program file, in which case the processor marks the element for deletion in the file's table of contents, and does not release mass storage; to actually delete the element, you must pack the file externally with a @PACK statement]
VERSION	1100 OS version name of element

REMOTE SYMBIONT INTERFACE (RSI)

11.5. RSI--Using a MAPPER Terminal in Demand Mode

What it does

REMOTE SYMBIONT INTERFACE (RSI) lets you use a MAPPER display terminal in demand mode.

Call your coordinator to see if you have access to demand processing through RSI.

How to enter demand mode

getting into demand mode

enter: RSI

You get a series of 1100 OS sign-on messages: answer them and start your demand processing.

If using a Series 1100 system, the Terminal Security System controls the execution of demand mode runs. For further information, see the *Series 1100 Operating System, EXEC Level 39R2, Installation Reference,* UP-8486.9.

The user-Communications Control Routine (CCR) interface is similar to the 1100 OS UNISCOPE 100 display terminal-CCR interface with the restrictions listed in Table 11-2.

Table 11-2. RSI: MAPPER Communications Control Routine Commands

command:	interpretation:
@@END	turn off escape mode and full-screen mode and any other modes normally cancelled by @@END commands in the 1100 OS
@@ESC	turn on escape mode for input and output
@@ESC I	turn on escape mode for input
@@ESC O	turn on escape mode for output
@@FRZ *n*	roll normally from line *n* and change no data (if *n* =0 [assumed at sign-on time], roll entire screen)
@@FUL	turn on full-screen mode (implied @@INQ)
@@INS *n*	position SOE character for input solicitation (if *n* =0, place at assumed position at sign-on time [next-to-last line of screen]; ignore if *n* is larger than screen size)
@@NOPR †	turn off auxiliary print device
@@PMOD A	turn on special mode for UTS 400 and UTS 40 display terminals
@@PMOD C	turn on special mode for UTS 400 and UTS 40 display terminals
@@PMOD F	turn on special mode for UTS 400 and UTS 40 display terminals
@@PMOD V	turn on special mode for UTS 400 and UTS 40 display terminals
@@PMOD X	turn on special mode for UTS 400 and UTS 40 display terminals
@@PRNT *dvn*	turn on specified auxiliary print device, where *dvn* is the device name or number in the terminal configuration report (e.g., COP or 001) (the auxiliary print device must be directly connected to the display terminal or its controller unit)

(continued)

Table 11-2. RSI: MAPPER Communications Control Routine Commands (continued)

command:	interpretation:
@@RLD	roll screen downward
@@RLU	roll screen upward
@@TCI *dvn,n*	enter *n* blocks (both minimum and default values=512; continue receiving input until *n* blocks are read or a mark is encountered)
@@TCO *dvn,n* ‡‡	process block of data that has *n* images per block (the *n* defaults to 1 and must be less than or equal to the vertical screen size of the display terminal in use)
@@TCM	write mark on output and terminate output, or terminate input from cassette
@@TCS *trk,adr*	search for address *adr* on track *trk*, or on current track if *trk* not specified
@@TCT *dvn,n* ‡‡	position tape cassette with device name or number *dvn* (e.g., TC1 or 002) to top of track *n*, or to track 1 if *n* not specified

‡ *@@NOPR cancels all previous @@PMOD commands.*

‡‡ *When using the transparent tape cassette commands, specify the* **dvn** *parameter only on the first call; all subsequent calls assume* **dvn**. *The* **dvn** *parameter may be either the MAPPER name for the device or the logical unit number. The order of appearance of the auxiliary devices in the terminal configuration report determines logical unit numbers.*

NOTES:

1. *The WAIT light remains on as long as output to the display terminal is pending.*
2. *To submit an unsolicited image, press* MSG WAIT *. The CCR responds by returning an SOE character and turning off the WAIT light.*
3. *If an auxiliary printer is configured for the display terminal in the terminal configuration report, you can designate the printer for both input and output as it is passed between the 1100 OS and the display terminal. You can turn the auxiliary printer on or off during the time that the MAPPER 1100 CCR is soliciting input, i.e., when the SOE is at the bottom of the screen and the WAIT light is out.*
4. *The auxiliary print device turns off the WAIT light after printing a line. Also, the tape cassette unit turns off the WAIT light after a read or write operation.*

RETRIEVE [P] (RET P/RET)

11.6. RET [P]—Retrieving 1100 OS Program File/Data File

RET P — ◸◸◸**RETRIEVE P**◹◹◹ retrieves an SDF-formatted 1100 OS program file, or an element of a program file.

RET — ◸◸◸**RETRIEVE**◹◹◹ retrieves a system-qualified, SDF-formatted 1100 OS data file.

How to—

retrieve 1100 OS file/element

retrieving 1100 OS program file/element

To retrieve an 1100 OS program file or element of a program file,

enter: RET P

You get the function request message: enter the information.

retrieve 1100 OS data file

retrieving 1100 OS data file

To retrieve an 1100 OS data file,

enter: RET

You get the function request message: enter the information.

RET P: function request message

```
          RETRIEVE FILE OR ELEMENT OF A PROGRAM FILE

QUALIFIER     *  FILE NAME (CYCLE)  .  ELEMENT    /   VERSION

                     START LINE
                   LOCATE STRING
                    NO. OF LINES
                   MAPPER FORMAT
                         HEADERS
                            TYPE
```

What goes where

where:	is:
QUALIFIER	1100 OS file qualifier (if different from MAPPER program qualifier)
FILE NAME	1100 OS file name assigned to file when created
CYCLE	cycle number (if different from current cycle number)
ELEMENT	1100 OS element name in program file (blank=data file)
VERSION	1100 OS version name of element in program file (blank=data file)
START LINE	line number (no greater than 262K) of file from which to start retrieval (enter a number in this field only if you want part of a file or element; if you specify a string in the LOCATE STRING field, this line number is the starting point of that string)
LOCATE STRING	character string up to 12 characters to locate in file: retrieval starts on this line
NO. OF LINES	number of lines to retrieve (enter a number in this field only if you want to retrieve part of a file or element, or if you are retrieving a file exceeding 200 lines to assign an area large enough for the entire result; if you specify a string in the LOCATE STRING field, this field has the number of lines to retrieve after locating the string)
MAPPER FORMAT	file or element is in MAPPER format: **Y**, **N**, or blank (blank=**N**)
HEADERS	append headers to front of retrieved data: **Y**, **N**, or blank (blank=**N**)
TYPE	alphabetic form type of MAPPER report in which to store data

RET: function request message

```
        RETRIEVE FILE

     FILE NAME /
MAPPER FORMAT
     HEADERS
        TYPE
```

What goes where

where:	is:
FILE NAME	name assigned to 1100 OS data file when created (file must have MAPPER program qualifier)
MAPPER FORMAT	file is in MAPPER format: **Y**, **N**, or blank (blank=**N**)
HEADERS	append headers to front of retrieved data: **Y**, **N**, or blank (blank=**N**)
TYPE	alphabetic form type of MAPPER report in which to store data

Prior versions

To retrieve the prior version of a MAPPER report, enter RET R in the control line and transmit to display the function request message.

Want a permanent report?

To save the result, enter:

- XR to duplicate the result (7.1); or
- REP to replace the report with the result (7.10).

12. Word Processing and Office Automation

This section presents word and document processing, and office automation facilities.

In this section

12.1. What About MAPPER Word Processing?

What is word processing?

Word processing means collecting and processing textual data (in MAPPER software, in full character set [FCS] reports).

You use commands to prepare and structure your reports for printing, and to convert characters from uppercase to lowercase letters or vice versa. You use control parameters to structure the text's format on the page, and control characters in the body of the text to control the text's inner structure.

Interactive word processing

With interactive word processing, you get more versatility in processing words and documents through a more extensive assortment of commands and control characters. You can type in your data without stopping until you are ready to transmit.

12.2. Interactive Word Processing

What is it?

Interactive word processing implies typing in your text along with control characters and, if you wish, letting your lines of data wrap until you are ready to transmit.

Why get into interactive word processing?

Advantages—no SOE needed for updating text

- You don't need to enter an SOE (▶) to update your text (except whenever you are adding, deleting, duplicating, inserting, or moving lines, where you must use the SOE in the standard calls (e.g., ▶]1+, ▶]1–)).

Screen rolls automatically

- After updating, the screen automatically rolls and displays only the last line you entered. (You can use the SV command or the SV parameter if you want more lines to remain on the screen. You can read more about this later.)

Words wrap

- You can continue typing even when you reach the end of a line, and also when you reach the END REPORT line. You never need to press RETURN. Just keep typing and press XMIT whenever you want to.

Extra commands

- Several very useful commands are valid only in interactive word processing.

Downline loading

- If your terminal can downline load, you can use the DLLWP run to increase your speed in interactive word processing even more.

easy 10-step word processing exercise

Try it!

Before you read anything more about MAPPER word processing, why don't you try this easy exercise. It'll make understanding the rest of this section a lot easier.

1. Call your coordinator to make sure that your sign-on is open for word processing. Sign on.

Add a report

2. Add a report: enter **AR** *t*, where *t* is the type (A through I) in which to add a new report (e.g., **AR H** adds a report in type H).

   Write down the RID number of the added report.

> *Use a free-form full character set (FCS) form type. Free-form FCS types have no tab codes and allow both uppercase and lowercase letters. Type H in the demonstration mode is a free-form FCS type.*

Update

3. Using standard SOE updating (7.3), enter some kind of title or identifier for the report in line 2 (line 2 is the line below the .DATE line).

> *If you later decide to index (8.1) the form type to get the first few lines in each report in the type displayed, you can easily roll through the result or execute LOCATE and find your identifier word or words, as well as the report's RID number (should you forget it). To index a type, enter* **I nt**, *where* nt *are the number of lines to display from each report and the type (A through I) to index (e.g.,* **I 2H** *displays a result showing the first two lines of each report in type H.)*

Check control parameters

4. Look at the header in the new report (. and * lines). If you see any control parameters such as PRTSPACE, PAGETOP, and PAGEBODY, go to step 6.

Add some (if needed)

5. If the report has no control parameters, enter **WP PREP** to add some in the header. You get a result: to save it, enter **REP**. Then enter the RID number and type of the report in the message that appears on your screen.

Check their values

6. Check the control parameters in the header to see if you want to retain their standard values. What do the parameters mean?

PAGETOP	number of blank lines to be inserted at the top of each page: enter a zero to center text vertically (use a number between 1 and 10 for now)
PAGEBODY	number of lines of text body per page: enter a number no greater than 59
PRTSPACE	line spacing: 1, 2, 3, 4 (single, double, triple, quadruple)
MARGINS	normally **L**, for left justified (**E** means even margins [both left and right justified])

To change the values of the parameters, first enter an SOE in front of any changes, then tab to after the parameter and enter the value you want.

> *A tab character must immediately follow the control parameter. If you need to enter a tab character, press* TAB SET. *The parameters in the header should already have the necessary tabs.*

Enter interactive word processing

7. You are now ready to enter interactive word processing. With your report on display, enter **WP**.

Note that the far right entry in the control line reads:

```
WP CMD▶
```

The MAPPER processor is telling you that you are in interactive word processing.

Check for tab rack

8. Now that you are in interactive word processing, you can use special interactive commands and simply type in your text. But before starting, look to see if there is a tab rack near the top of the screen:

```
~.......[.....................................].....
```

If there is no tab rack:

- press TAB BACK to get to the WP CMD field;
- type in **TR**;
- press RETURN; and
- press XMIT.

The TR command inserts a tab rack wherever the cursor was positioned. The opening and closing brackets ([and]) in the tab rack are the left and right margin settings. You can change these settings if you want to.

If your report has tildes (~ ~), erase them as you type, or delete the blank lines from the report (leaving only the END REPORT line). Press ERASE TO EOL *before you type over the END REPORT line.*

Start typing your text

9. Start typing and don't press RETURN when you reach the end of a line--just keep typing. Transmit whenever you want to--just ***be sure to transmit eventually.***

To change control parameters in the header you ***must*** exit word processing. To exit interactive word processing, press F3.

For now, do not indent paragraphs; the processor leaves one blank line between them. Enter ~ ~ ~ ~ for a blank line and keep on typing.

Try some commands

Before you attempt the following commands, be sure to transmit the text you've been typing in.

Whenever you want to see how your text looks, tab back and enter **ADJ**. The ADJ command partially formats your text. You receive a result that you should keep, even if you want to make changes. Enter **REP** to replace your report with the result. (You can use the combination ADJ and REP command, **ADJREP**.)

If the text isn't just the way you want it, you can change the adjusted version, or you can resume typing where you left off, just as before. The next time you tab back and enter **ADJ** then **REP** (or **ADJREP**), the processor adjusts your changes and added text.

You should always adjust and replace your text before editing it.

Print it

10. Want to get a copy ready for printing? First make sure that you have adjusted your report.

If you are in interactive word processing, position your cursor somewhere in the control line (if it is not already there) and enter **PRT**. You get a result ready for a printer.

If you are not in interactive word processing, display your adjusted report and enter **WP PRT**.

Be sure to answer **Y** to DELETE HEADERS whenever you are sending your report to a printer. If you use the CQP run, the processor automatically deletes the headers and the END REPORT line.

Do ***not*** *replace your report with the* PRT *result--just roll through it to check it out or print it.*

tips on entering data

While typing in text:

- Make sure that your report is in a free-form full character set (FCS) type.
- Enter control characters as you type.
- Transmit at the end of the new data; the screen rolls automatically.
- When you reach the END REPORT line, erase it and keep typing. When you transmit; the processor automatically adds 99 lines along with the new data. The display returns with the last line of your input at the top ready for you to continue typing.
- Each time you transmit, your new data is directly updated into the report or result.
- Use regular functions for updating, adding, deleting, inserting; duplicating, and moving lines (SOE UPDATE, ADD LINE, DELETE LINE, INSERT LINE, DUPLICATE LINE, and MOVE LINE). You don't even need SOEs with SOE UPDATE, but you can use them to isolate data you have updated and want transmitted.
- Enter interactive word processing commands in any field in the control line, provided that you ***erase the rest of the control line.***
- If you press TAB BACK, the cursor ends up in the WP CMD field in the control line ready for you to enter a command--that is, if your data has no tab characters.

Exiting interactive word processing

Press F3 to exit interactive word processing. The standard MAPPER control line reappears along with the report or word processing result you had on display before starting interactive word processing.

HELP topics/error messages assistance

Topical HELP screens

At any time when you are in interactive word processing, you can enter:

HELP

to display a summary of all parameters, commands, and control characters. The top of the screen displays a menu of topics to choose from for special instructions. Enter the letter for the topic you want to read about. You get a paragraph or two about the topic at the top of the screen. Your report appears below this information; you can update your report even with the HELP topic on display. The HELP information disappears when you transmit. The first item on the menu are step-by-step instructions for creating a memo. Try it out by entering **A** after the interactive HELP screen appears. Simply follow the directions at the top of the screen.

Extra information about errors

If you get an error message and there is a ? in column 1 of the error message, press CURSOR TO HOME and transmit to display more details about the error and possible problems in your text. Press XMIT again to redisplay your report.

examples

Input report with text & control characters

```
LINE▶ 9     FMT▶    RL▶-7  SHFT▶     HLD CHRS▶     HLD LN▶     WP CMD▶
~.........[.............................................................].........
EXAMPLE OF A CENTERED HEADER~c Example of an expanded line~e Example of a left-j
ustified line~l Example of a right-justified line~r~~ ~iAaaaa b c dddd eeeeeee f
ff gggggg hhh iiiii jjjjjjj k lllllll mmmmmm nn ooooooppppp qqqqq rrrrrr ssss tt
u vvvvv wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc dddd eee f gg hh iiii jjjjjj k ll
lll mm nnn ooooo ppppp. Qqqq rr sssss ttt uu vvvvv w xxxxx y zzzzzzz aaa bbb ccc
ccc ddd ee f gg hhhhh.  Iiiii jjj kkkkkkk.  LllllI mm nnnnn ooooooo pppppp qqqq
rr sssssss tttttttt uuuuuu vvvv wwww w xx yyyyy zz aa bbbbbb ccc dddd eeeeee fff
ff g hhh iiii jjjjjj k kk lll mmmmm.
~~~~
~~
~~
~~
                        ..... END REPORT .....
```

Result after ADJ

```
line▶ 9     fmt▶    rl▶-7  shft▶     hld chrs▶     hld ln▶     WP CMD▶     ◤RESULT◥
~.........[.............................................................].........
                          EXAMPLE OF A CENTERED HEADER~c
          Example of an expanded line~e
          Example of a left-justified line~l
                                    Example of a right-justified line~r
         ~~
             ~iAaaaa b c dddd eeeeeee fff gggggg hhh iiiii jjjjjjj k
         lllllll mmmmmm nn ooooooppppp qqqqq rrrrrr ssss tt u vvvvv
         wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc dddd eee f gg hh
         iiii jjjjjj k llllll mm nnn ooooo ppppp.  Qqqq rr sssss ttt
         uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg
         hhhhh.  Iiiii jjj kkkkkkk.  LllllI mm nnnnn ooooooo pppppp
         qqqq rr sssssss tttttttt uuuuuu vvvv wwww w xx yyyyy zz aa
         bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll
         mmmmm.~~
         ~~
         ~~
         ~~
         ~~
                        ..... END REPORT .....
```

Result after PRT (rolled to last line)

```
line▸ 9    fmt▸    rl▸-4    shft▸    hld chrs▸    hld ln▸    ▸ ▾▾▾RESULT▾▾▾ ▸


                    EXAMPLE OF A CENTERED HEADER
Example          of          an          expanded          line
Example of a left-justified line
                                  Example of a right-justified line

     Aaaaa b c dddd eeeeeee fff gggggg hhh iiiii jjjjjj k
lllllll mmmmmm nn ooooooppp qqqqq rrrrrr ssss tt u vvvvv
wwwwww xxxxxx yyy z aaaaaa. A bbb ccc dddd eee f gg hh
iiii jjjjjj k llllll mm nnn ooooo ppppp. Qqqq rr sssss ttt
uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg
hhhhh. iiiii jjj kkkkkkk. Llllll mm nnnnn ooooooo pppppp
qqqq rr sssssss tttttttt uuuuuu vvvv wwww w xx yyyyy zz aa
bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll
mmmmm.


                    ..... END REPORT .....
```

WORD PROCESS (WP)

12.3. WP—Word Processing

What it does

▽▽▽**WORD PROCESS**▽▽▽ collects and processes textual data in free-form full character set (FCS) reports.

You enter control parameters, tabulation-margin indicator lines (tab racks), and control characters to format the text.

word processing

How to enter interactive word processing

If the report in which you want to do word processing has a read or write password, display and unlock it first.

If the report is not on display,

enter: WP

You get the function request message: enter the information.

You enter interactive word processing with your report on display at the first line following the header-divider (*=) line.

Fast access: report on display

With the report or result on display,

enter: WP

You enter interactive word processing with the report on display:

- at the first line following the header-divider line; ***or***
- at the line that was at the top of the screen before the call.

Fast access: report not on display

or, if the report is not on display,

enter: WP *rt*

where *rt* are the RID and type.

You enter interactive word processing with your report on display at the first line following the header-divider (*=) line.

Sample entries

enter:	to:
wp	get function request message or work in report/result on display
wp 5f	work in report 5F

Function request message

```
                    WORD PROCESS REPORT

                        RID
                      TYPE
                    COMMAND      <- ENTER HELP FOR ASSISTANCE
```

What goes where

where:	is:
RID	RID number of report where you want to process text
TYPE	form type
COMMAND	WORD PROCESS command (if you want one) or **HELP** (if you enter a word processing command, you won't enter interactive word processing; the processor processes the report as specified and displays the result)

control parameters WP control parameters

Control parameters, along with control characters, structure the text.

Enter control parameters anywhere in the report headers between the .DATE line and the header-divider (*=) line.

Basic parameters

These are the basic control parameters:

```
PAGETOP 01;PAGEBODY 50;MARGINS E;PRTSPACE 1;INDENT 5
```

Table 12-1 lists WORD PROCESS control parameters.

Table 12-1. WORD PROCESS: Control Parameters

parameter:	action:	default:
APPENDIX *x* *	next section (~ 1) is first appendix	n/a
BULLET *n*	tab character number *n* is left margin (use with ~ M)	1
CONTROL _ †	use underscore (_) as control character instead of tilde (~)	~
DOCUMENT *x,y,z, a,b,c* †	set document parameters: *x* =with title pages (**Y** or **N**); *y* =create index (**Y** or **N**); *z* =first section number; *a* =page breaks on chapter breaks (**Y** or **N**); *b* =level number through which to force titles to uppercase; *c* =level number through which to bold titles	Y, Y, 1
FOOTER *x*	include footer line: *x* =**Y** or **N**	Y
FORMAL *x,y,z,a,b,c* *	center level 1 titles, left-justify level 2 titles, omit section numbers; let TOC command create table of contents: *x* =with title pages (**Y** or **N**); *y* =create index (**Y** or **N**); *z* =first section number; *a* =page breaks on chapter breaks (**Y** or **N**); *b* =level number through which to force titles to uppercase; *c* =level number through which to bold titles	Y, Y, 1
GLOSSARY *rt* †	use glossary report in *rt:* *rt* =RID and type	n/a
HEADER *x*	include header lines: *x* =**Y** or **N**	Y
INDENT [-]*n*	indent line *n* spaces from left margin at ~ I control characters: *n* =number of characters	n/a
LPP *n*	*n* lines per page (device must be able to handle 60+ lines per page)	n/a
MARGINS *x*	*x* -justify text: *x* =L (left); R (right); E (even); F (freeze)	left**

(continued)

Table 12-1. WORD PROCESS: Control Parameters (continued)

parameter:	action:	default:
NOCR□*x*	use standard updating: insert no ~ ~ control characters in blank lines (for editing non-word processing reports): **Y** or **N**	N
OUTLINE□*	clear starting point for numbers (~ N) and letters (~ A), and start again at *1* and *a* (see also next table) (for documents, ~ *n* clears outlining)	clear
PAGE□*n*	first page is number *n:* *n* =page number (use for starting page other than 1)	1
PAGEBODY□*nn*	set page body to *nn* lines per page: *nn* =1- or 2-digit number	60
PAGETOP□*nn*	insert *nn* blank lines at top of each page: *nn* =1- or 2-digit number	0***
PRINTOFF□*x*	do ***not*** print text inside ~ O control characters: *x* =**Y** or **N** (see also ~ O in next table)	N
PRTSPACE□*n*	*n* -space between lines: *n* =1 (single); 2 (double); 3 (triple); 4 (quadruple)	1
SCREEN□*x* †	convert control characters to emphasis and FCC characters at entry to interactive word processing: *x* =**Y** or **N** (no need to press F15)	N
SECTION□*	clear section numbers: start again at 1 (see also ~ *n* in next table) (for documents, ~ *n* clears section numbers)	clear
SPACE□*x*	interpret character *x* as space (after processing with PRT command)	`
SV□*n* †	save *n* lines at top of display after each update (if *n* =0, do not roll on transmit)	0

(continued)

Table 12-1. WORD PROCESS: Control Parameters (continued)

parameter:	action:	default:
UNADS□*x* ‡	insert UNADS commands: *x* =**Y** or **N**	N
WCLIST□*rt* ‡	WORD CHANGE or WORD LOCATE target list: *rt* =RID and type	n/a
WORDWRAP□*x*	wrap lines: *x* =**Y** or **N**	N
*/	header data	n/a
*\	footer data	n/a

□ = *tab character.*

* *Insert this control parameter in a ~ P-line (see Table 12-2).*

** *The individual control characters ~ L, ~ R, and ~ C override this control parameter (see Table 12-2). Defaults to left as long as you have a tab rack; otherwise, text remains frozen.*

*** *0=center vertically on page.*

‡ *Must appear in header.*

tab racks

Whenever the ADJ command encounters a tab rack, it resets the margins for the text that follows.

Here's a standard tab rack:

Standard tab rack

```
~.......[.....t.....t.........................].....
```

where:

- `[` left margin
- `t` tab stop (to position text at tab stops, use ~ T control characters [see Table 12–2])
- `]` right margin

Up to 5 racks

You can define up to five tab racks directly below the header–divider line in the format:

```
~. n .......[.....t.....t.....................].....
```

where *n* is a number from 1 through 5.

~ .1 should have the margin setting that you want to use first in your text, since WORD PROCESS automatically assumes ~ .1 margins until you request another tab rack.

See Table 12–3 for how to use the TR *n* command to insert a numbered tab rack in the text.

TO RESTORE TABS TO LINES WHERE THEY HAVE BEEN DELETED, GO "TABTAB" IN LINE Ø. THEY WILL BE RESTORED (EXCEPT ON PERIOD LINES, WHICH ARE IGNORED).

control characters WP control characters

Control characters control the body of the text. Put control characters anywhere in the text of a report.

Control characters consists of a tilde (~) and another character. When entering control characters, be sure that the tilde and the associated character are on the ***same line***.

Table 12-2 lists WORD PROCESS control characters.

Table 12-2. WORD PROCESS: Control Characters

characters:	action:
~A ~a	alphabetize following paragraph with uppercase or lowercase letter as indicated
~B ~b	start and stop bolding: **B**=start; **b**=stop
~C	center preceding line within margins, then start new line
~E	expand line, then start new line
~F	freeze line (i.e., leave text as is)
~G,*n*	next *n* lines have figure (figure receives title after PRT and appears in table of contents)
~H ~h	start and stop highlighting: **H**=start; **h**=stop
~I	indent line as specified in INDENT control parameter
~L	left-justify preceding line, then start new line
~M	indent following paragraph at first tab stop (you can use these control characters to bullet items, e.g., []~ M*text* ~ ~ , where [] is a bullet)
~N	number following paragraph at left margin and start text at first tab stop
~*n*	number sections/subsections, where *n* is a heading level number from 1 to 5 (except for documents, numbers are left justified and are not preceded and followed by blank lines) (see also 12.9)

(continued)

Table 12-2. WORD PROCESS: Control Characters (continued)

characters:	action:
~O	omit (i.e., ***do not print***) word/words inside these control characters, if PRINTOFF parameter = Y
~P †	this line not part of text; line has changed control parameters and comments (invoked by PC command [see Table 12-3], or by entering ~ P starting in column 1; then parameters to change, a comment, or both)
~Q	next word is auxiliary command (not counted as data; must start in column 1)
~R	right-justify preceding line, then start new line
~T	start following text at next tab stop (as indicated by T in tab rack)
~U ~u	start and stop underlining: **U**=start **u**=stop
~V ~v	vertical lines: **V**=vertical line for boxes; **v**=corner of box (UTS 40 screen)
~X ~x	start and stop strike-through: **X**=start; **x**=stop
~Z,*n*	next *n* lines have table (table receives title after PRT and appears in table of contents)
~ *space*	insert edit bar (|) on this line in PRT result (must start in column 1, with a space in colum 2)
~~	start text on new line (if you want a blank line, use two consecutive new line control characters [~~~~])
~. †	this line is a tab rack (see also under **tab racks** in this subsection)
~/ †	start new page here
~*	break page here (invoked by PAGEBODY control parameter; executed by the ADJ command; ***you cannot enter these control characters manually***)
~- †	break chapter (***you cannot enter these control characters manually***)
~/[*nn*] †	conditionally break page: if the following *nn* lines won't fit on this page, start new page here

† *The tilde (~) must be in column 1. Do not enter textual data on these lines.*

Interactive: some commands interpret the control parameters and control characters entered in the report, and process the report as specified. Other commands convert uppercase letters to lowercase letters, or vice versa, or position the report to a specified page.

Enter interactive word processing commands in any field in the control line, being sure to ***press*** ERASE TO EOL after entering the command; or enter these commands in the WP CMD field.

Non-interactive: to process a report that already has control parameters and control characters, display the report and enter a WORD PROCESS command in the format:

Format

WP *command*

where *command* is one of the commands in Table 12-3.

Table 12-3. WORD PROCESS: Commands

command:	action:
ADJ *(ia)*	adjust text from control parameters and control characters
ADJDOC *(doc)*	execute ADJ and DOC commands in one step
ADJREP *(ia)*	execute ADJ and REP commands in one step
ADJPRT	execute ADJ and PRT commands in one step
BACKUP *(ia)*	display result showing report as it was at beginning of session
CHANGE *(ia)*	interface with CHANGE function
DGG,*x* *(ia)*	display item *x* from processor's global glossary
DOC *(doc)*	produce complete document with title pages, table of contents, main body text, and index
FRONT *(doc)*	create front page/pages
GG,*x* *(ia)*	insert item *x* from processor's global glossary at cursor position
GGI *(ia)*	create index of processor's global glossary items
G,*item* * *(ia)*	copy *item* from glossary
GI *(ia)*	create index of glossary items (press F2 to redisplay report)

(continued)

Table 12-3. WORD PROCESS: Commands (continued)

command:	action:
GLOSSARY,*rt* *(ia)*	establish/change glossary reference to *rt*, where *rt* are RID and type (*or* M *number-password*, where *number-password* are mode number and password, to define a glossary in another mode)
HELP	display summarized description of commands and control characters used in interactive word processing
INDEX *(doc)*	create index
INS,*n* * *(ia)*	insert *n* lines (up to 99)
LOC *target-string*	execute LOCATE: locate *target-string*
LOCATE*	interface with LOCATE function
LOWER*	convert text to lowercase [from front of display to cursor *(ia)*]
LPP,*n* *(ia)*	set lines per page to *n* (device must be able to handle 60+ lines per page)
NOCR *(ia)*	do not insert ~ ~ characters in blank line on update
PC* *(ia)*	insert parameter control line and comments
PG,*n*	position to top of page *n* (use only after the ADJ command has inserted page numbers)
PR	print report on system printer
PREP[,*x*]	prepare report for word processing: insert some basic control parameters, a tab rack, and control characters throughout report to save any blank lines that existed before PREP (optionally, insert type *x* control characters in every line in result, where *x* may be C [center]; F [freeze]; L [left]; R [right]; or E [expand])
PRT[,*n*|,*n-n*|,*c-n*|,*c-n-cc-nn*]	produce result to print (for documents, main body text): page *n*; pages *n* through *n*; chapter *c*, page *n*; chapter *c*, page *n* through chapter *cc*, page *nn*
REP *(ia)*	replace report

(continued)

Table 12-3. WORD PROCESS: Commands (continued)

command:	action:
RETURN *(ia)*	after a BACKUP, return to most recent version of report
SEC,*n.n...*	display document starting at section *n.n* (up to fifth level subsection number)
SV,*n* *(ia)*	save *n* lines at top of display after each update (default=23 lines)
TOC *(doc)*	create table of contents
TR[,*n*]* *(ia)*	insert tab rack number *n*
UPPER*	convert text to uppercase [from front of display to cursor *(ia)*]
WC,*x,y,...*	execute WORD CHANGE: change all *x* words to *y*
WCL[,*rt*] *(ia)*	execute WORD CHANGE: change words specified in *rt* (RID and type) or in WCLIST report
WCLREP[,*rt*] *(ia)*	execute WORD CHANGE: change words specified in *rt* (RID and type) and replace report
WL,*x,...*	execute WORD LOCATE: locate all occurrences of word *x*
WLL[,*rt*] *(ia)*	execute WORD LOCATE: locate all words specified in *rt* (RID and type) or in WCLIST report

* *After entering these commands, position the cursor in the text where the command is to be executed and transmit. (doc) = documents; (ia) = interactive.*

preparing existing report for word processing

If you already have a report that has text and want to justify and otherwise reformat the text, you can execute the PREP command (WP PREP) to insert some basic control parameters and a tab rack.

The processor also adds control characters throughout the report to save any blank lines that existed before PREP. Thereafter, you can use WORD PROCESS interactively (see 12.2). Whenever you insert control parameters in a report, be sure to check their default values. Change these values to suit your needs.

Set up a WP form type

You can have your MAPPER coordinator set up a word processing form type for you with headers and predefined lines like this:

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.        USER...        TITLE...
* PAGETOP□10;PAGEBODY□50;MARGINS□E;PRTSPACE□1;INDENT□5
*
*         1111111111222222222233333333334444444444555555555566666666667777777778
*234567890123456789012345678901234567890123456789012345678901234567890123456789O
*===============================================================================
~.........[.........................................................]..........
                       ..... END REPORT .....
```

The semicolons (;) between the control parameters are optional.

Disabling control parameters

To disable a control parameter, delete the tab character (□).

examples

Report with control parameters, tab rack, & control characters

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.         USER...         TITLE...
* PAGETOP 10;PAGEBODY 50;MARGINS E;PRTSPACE 1;INDENT 5
*
*         1111111111222222222233333333334444444444555555555566666666667777777778
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
*================================================================================
~.........[.............................................................].........

         EXAMPLE OF A CENTERED HEADER~c
                Example of a frozen line~f
         Example of an expanded line~e
         Example of a left-justified line~l
         Example of a right-justified line~r


~iAaaaa b c dddd eeeeeee fff gggggg hhh iiiii jjjjjj k lllllll mmmmmm nn oooooo
pppp qqqqq rrrrrr ssss tt u vvvvv wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc
dddd eee f gg hh iiii jjjjjj k llllll mm nnn ooooo ppppp.  Qqqq rr sssss ttt
uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg hhhhh.  Iiiii jjj kkkkkkk.
Llllll mm nnnnn ooooooo pppppp qqqq rr sssssss tttttttt uuuuuu vvvv wwww w
xx yyyyy zz aa bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll mmmmm.

~iAaaaaa aaa aaa aa aaa aaaa aaaaaaa aaaaa a aaaaa aaa aaaaa a aaaaaa aaa aa aaa
aaa a aaa aaaaaa aaaaaa a aaaaaaaa aa.  Aaa aaa aaa aaaaa aa aaaaa aaaaa aaa
aa aaa aaaaa a aaaaa aa aa aaaaaa a aaaa aaaaaa.  A aaa aaaa aa a aaaa aaa aa
aaaa aaa aaaaa aaaa aa aa aaaa aaaaa a aaa aaaa aa a aaaaa aaa aaaaaa.  Aaa aaa
aa aaaaa aaaaa a aaaaaa a aaaa aaaaa aaaa aaaaaa aa aa aaaaaa aa aaaaa a aaaa
aaaaa aa aaaaa aa aaaaa a aaaa aaa aaaa aa aaaaa aaaaa a aaa aaaaaa aaa aaa.
                        ..... END REPORT .....
```

Result after WP ADJ against preceding report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.        USER...        TITLE...
* PAGETOP□10;PAGEBODY□50;MARGINS□E;PRTSPACE□1;INDENT□5
*
*        111111111122222222223333333333444444444455555555556666666666777777777778
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
*===============================================================================
~.........[...........................................................].........
                               EXAMPLE OF A CENTERED HEADER~c
               Example of a frozen line~f
          Example of an expanded line~e
          Example of a left-justified line~l
                                  Example of a right-justified line~r
            ~iAaaaa b c dddd eeeeeee fff gggggg hhh iiiii jjjjjjj k
          lllllll mmmmmm nn oooooopppp qqqqq rrrrrr ssss tt u vvvvv
          wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc dddd eee f gg hh
          iiii jjjjjj k lllll mm nnn ooooo ppppp.  Qqqq rr sssss ttt
          uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg
          hhhhh.  lllll jjj kkkkkkk.  Lllll mm nnnnn ooooooo pppppp
          qqqq rr sssssss ttttttt uuuuuu vvvv wwww w xx yyyyy zz aa
          bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll
          mmmmm.~~
          ~~
            ~iAaaaaa aaa aaa aa aaa aaaa aaaaaaa aaaaa a aaaaa aaa
          aaaaa a aaaaaa aaa aa aaaaaa a aaa aaaaaa aaaaaa a aaaaaaaa
          aa.  Aaa aaa aaa aaaaa aa aaaaa aaaaa aaa aa aaa aaaaa a
          aaaaa aa aa aaaaaa a aaaa aaaaaa.  A aaa aaaa aa a aaaa aaa
          aa aaaa aaa aaaaa aaaa aa aa aaaa aaaaa a aaa aaaa aa a
          aaaaa aaa aaaaaa.  Aaa aaa aa aaaaa aaaaa a aaaaaa a aaaa
          aaaaa aaaa aaaaaa aa aa aaaaaa aa aaaaa a aaaa aaaaa aa
          aaaaa aa aaaaa a aaaa aaa aaaa aa aaaaa aaaaa a aaa aaaaaa
          aaa aaa.
                   ..... END REPORT .....
```

Result after WP PRT against preceding adjusted result

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE



                    EXAMPLE OF A CENTERED HEADER
          Example of a frozen line
Example          of          an          expanded          line
Example of a left-justified line
                                  Example of a right-justified line
     Aaaaa  b c dddd eeeeeee fff ggggg hhh iiiii jjjjjj k
lllllll  mmmmmm  nn ooooooppp qqqqq rrrrrr ssss tt u vvvvv
wwwwww xxxxxx yyy z aaaaaa. A bbb ccc dddd eee f gg hh
iiii jjjjjj k llllll mm nnn ooooo ppppp. Qqqq rr sssss ttt
uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg
hhhhh. Iiiii jjj kkkkkkk. Llllll mm nnnnn ooooooo pppppp
qqqq rr sssssss tttttttt uuuuuu vvvv wwww w xx yyyyy zz aa
bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll
mmmmm.

     Aaaaaa aaa aaa aa aaa aaaa aaaaaaa aaaaa a aaaaa aaa
aaaaa a aaaaaa aaa aa aaaaaa a aaa aaaaaa aaaaaa a aaaaaaaa
aa. Aaa aaa aaa aaaaa aa aaaaa aaaaa aaa aa aaa aaaaa a
aaaaa aa aa aaaaaa a aaaa aaaaaa. A aaa aaaa aa a aaaa aaa
aa aaaa aaa aaaaa aaaa aa aa aaaa aaaaa a aaa aaaa aa a
aaaaa aaa aaaaaa. Aaa aaa aa aaaaa aaaaa a aaaaaa a aaaa
aaaaa aaaa aaaaaa aa aa aaaaaa aa aaaaa a aaaa aaaaa aa
aaaaa aa aaaaa a aaaa aaa aaaa aa aaaaa aaaaa a aaa aaaaaa
aaa aaa.

          ..... END REPORT .....
```

CUT (CUT)

12.4. CUT—Moving Portions of Data in/Across Reports

What it does

CUT "cuts and pastes" (i.e., it positions your text) for you.

You can:

- cut and paste data within the same report;
- cut a portion of data from one report and paste it into another report; or
- cut data from a report and paste it into any MAPPER report (even into a different mode).

cutting

How to cut

If the report is not on display,

enter: CUT

You get the function request message: enter the RID and type to cut.

You enter cut control and display the report at line 1.

Fast access: report on display

With the report or result on display,

enter: CUT

You enter cut control and display the report at the line where you are positioned.

Fast access: report not on display

or, if the report is not on display,

enter: CUT *rt*

where *rt* are the RID and type.

You enter cut control and display the report at line 1.

Sample entries

enter:	to:
cut	get function request message or enter cut control in report/result on display
cut 5f	work in report 5F

How to cut

After getting cut control, start and end a cut with the cursor ( ). Position the cursor at the first line to cut and transmit. Then, ***if all the data to cut is on display,*** position the cursor at the end of the data and transmit.

If, however, the data to cut is ***beyond the end of the display:***

- roll to the end of the data to cut;
- position the cursor at the end of the data; and transmit.

How much can you cut?

You can identify up to 10 portions of data to cut by repeating this procedure; i.e., transmit ***before and after*** each portion.

Or, you can cut as little as a single character by placing the cursor on the same character twice and transmitting; or as much as an entire report by placing the cursor at the beginning of the report.

To cut all the data to the end of a report, place the cursor at the beginning of the data and transmit. You don't need to indicate the end of the cut.

Once you have identified a report to cut, you can enter only CUT commands (see Table 12–4).

Also, you cannot use the control line fields:

FMT, SHFT, HLD CHRS, and HLD LN

Cutting full lines

If you wish to cut full lines, indicate the end of the cut as column 1 of the next line. For example, to cut out all of lines 3 and 4, position the cursor to column 1 of line 3 and transmit. Then, position the cursor to column 1 of line 5 and transmit.

Exiting CUT

To exit CUT, press F3 .

commands CUT commands

Before exiting CUT, you can use a CUT command to further process the data (see Table 12-4).

Table 12-4. CUT: Commands

command:	action:	comments:
CHG	interface with CHANGE	valid only against LOOK RESULT
CLR	clear out any previous cuts	
DEL	delete cut data from report and produce result	replace report with result to make deletion permanent
MOVE	move cut data from one part of report or result and place it in another part of same report or result	after requesting **CUT**, enter **MOVE** to move data and delete it from its previous location; replace report with result to make move permanent
LOC	interface with LOCATE	
LOOK	display cut data	after examining data, you can call for more cuts (**CUT**); delete data (**DEL**); or execute PASTE command (press F3 to produce a result)
PASTE[,*rt*]	display report in which to paste data, where *rt* are RID and type if different from report or result on display	see under **pasting** in this subsection (replace report with result to make paste permanent)
PREP[,*x*]	interface with PREP command	valid only against LOOK RESULT
REP	replace CUT RID with CUT RESULT, or PASTE RID with PASTE RESULT	
WC	interface with WORD CHANGE	valid only against LOOK RESULT
WL	interface with WORD LOCATE	

Look at control line

The rightmost field of the control line indicates the CUT, MOVE, PASTE, or LOOK operation:

these words:	mean:
CUT RID	cutting report on display
CUT RESULT	cutting result on display; or result after MOVE or DEL
PASTE RID	pasting report on display
PASTE RESULT	pasting result on display; or result after PASTE
MOVE RID	report on display was pasted at least once; or result after MOVE or LOOK
LOOK RESULT	result on display of cut piece or pieces
MOVE RESULT	result after MOVE

pasting

You must have a report or result on display before entering the PASTE command. You can paste data that you have cut, or you can paste an entire report or result simply by not cutting.

pasting

How to paste

If the report is on display,

enter: PASTE

You redisplay the report:

- Move the cursor to where you want to paste the data (you can roll the report if you need to).
- Transmit to paste the data.

Fast access to a different report

To paste in a different report,

enter: PASTE *rt*

where *rt* are the RID and type where you want to paste.

You display the report at line 1. Paste as just described.

Fast access to a report in another mode

enter: PASTE M *number-password rt*

where:

number-password	mode number and mode password
rt	RID and type

You display the report at line 1. Paste as just described.

Cutting & pasting part of line

MAPPER software expands the report and inserts the data—but only whole lines. So, even if you cut out part of a line, the processor pastes the entire line.

If you position the cursor to a position other than column 1 or to the last column on the line, the processor splits that line into two parts and inserts the cut line or lines between the two split parts in their original column–character positions. The unused characters on the split lines are blank.

Saving the result

To retain this copy as an updated report, enter **REP**.

Exiting CUT

Press **F3** to exit CUT.

Adjusting the report

Adjust the report (enter **WP ADJ**) to eliminate the extra spaces.

examples

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.        USER...        TITLE...
* PAGETOP 10;PAGEBODY 50;MARGINS E;PRTSPACE 1;INDENT 5
*
*        1111111111222222222233333333334444444444555555555566666666667777777778
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
*================================================================================
~.........[.............................................................].........
```

Start of cut

```
   (start of cut)
            EXAMPLE OF A CENTERED HEADER~c
               Example of a frozen line~f
         Example of an expanded line~e
         Example of a left-justified line~l
         Example of a right-justified line~r
```

End of cut

```
   (end of cut)

~iAaaaa b c dddd eeeeeee fff gggggg hhh iiiii jjjjjjj k lllllll mmmmmm nn oooooo
pppp qqqqq rrrrrr ssss tt u vvvvv wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc
dddd eee f gg hh iiii jjjjjj k llllll mm nnn ooooo ppppp.  Qqqq rr sssss ttt
uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg hhhhh.  Iiiii jjj kkkkkkk.
Llllll mm nnnnn ooooooo pppppp qqqq rr sssssss tttttttt uuuuuu vvvv wwww w
xx yyyyy zz aa bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll mmmmm.

~iAaaaaa aaa aaa aa aaa aaaa aaaaaaa aaaaa a aaaaa aaa aaaaa a aaaaaa aaa aa aaa
aaa a aaa aaaaaa aaaaaa a aaaaaaaa aa.  Aaa aaa aaa aaaaa aa aaaaa aaaaa aaa
aa aaa aaaaa a aaaaa aa aa aaaaaa a aaaa aaaaaa.  A aaa aaaa aa a aaaa aaa aa
aaaa aaa aaaaa aaaa aa aa aaaa aaaaa a aaa aaaa aa a aaaaa aaa aaaaaa.  Aaa aaa
aa aaaaa aaaaa a aaaaaa a aaaa aaaaa aaaa aaaaaa aa aa aaaaaa aa aaaaa a aaaa
aaaaa aa aaaaa aa aaaaa a aaaa aaa aaaa aa aaaaa aaaaa a aaa aaaaaa aaa aaa.
                        ..... END REPORT .....
```

NOTE: *An end-of-cut cursor in column 1 of a line has the same effect as an end-of-cut cursor in the last column of the preceding line. This lets you cut full lines that exceed the screen size.*

Let's paste now:

- enter **PASTE** in the control line;
- transmit to display the words PASTE RID in the rightmost field of the control line;

- roll up the report to the line between the two paragraphs of sample text;
- position the cursor at the beginning of this line; and
- transmit to display this:

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.        USER...        TITLE...
* PAGETOP 10;PAGEBODY 50;MARGINS E;PRTSPACE 1;INDENT 5
*
*        1111111111222222222233333333334444444444555555555566666666667777777778
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
*================================================================================
~.........[............................................................].........

         EXAMPLE OF A CENTERED HEADER~c
                Example of a frozen line~f
         Example of an expanded line~e
         Example of a left-justified line~l
         Example of a right-justified line~r


~iAaaaa b c dddd eeeeeee fff gggggg hhh iiiii jjjjjjj k lllllll mmmmmm nn oooooo
pppp qqqqq rrrrrr ssss tt u vvvvv wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc
dddd eee f gg hh iiii jjjjjj k llllll mm nnn ooooo ppppp.  Qqqq rr sssss ttt
uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg hhhhh.  Iiiii jjj kkkkkkk.
Llllll mm nnnnn ooooooo pppppp qqqq rr sssssss tttttttt uuuuuu vvvv wwww w
xx yyyyy zz aa bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll mmmmm.

         EXAMPLE OF A CENTERED HEADER~c
                Example of a frozen line~f
         Example of an expanded line~e
         Example of a left-justified line~l
         Example of a right-justified line~r

~iAaaaaa aaa aaa aa aaa aaaa aaaaaaa aaaaa a aaaaa aaa aaaaa a aaaaaa aaa aa aaa
aaa a aaa aaaaaa aaaaaa a aaaaaaaa aa.  Aaa aaa aaa aaaaa aa aaaaa aaaaa aaa
aa aaa aaaaa a aaaaa aa aa aaaaaa a aaaa aaaaaa.  A aaa aaaa aa a aaaa aaa aa
aaaa aaa aaaaa aaaa aa aa aaaa aaaaa a aaa aaaa aa a aaaaa aaa aaaaaa.  Aaa aaa
aa aaaaa aaaaa a aaaaaa a aaaa aaaaa aaaa aaaaaa aa aa aaaaaa aa aaaaa a aaaa
aaaaa aa aaaaa aa aaaaa a aaaa aaa aaaa aa aaaaa aaaaa a aaa aaaaaa aaa aaa.
                    ..... END REPORT .....
```

Saving it

To retain this change, enter **REP**.

NOTE: *Had you entered* ***MOVE*** *instead of* ***PASTE****, the processor would have deleted the cut data from its previous location.*

Now let's cut a partial line and look:

- First, let's enter **CUT** with cursors positioned at the end of the first sentence of the sample text and at the end of the second sentence.
- Next, let's enter **LOOK** in the control line to see this:

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.        USER...        TITLE...
* PAGETOP□10;PAGEBODY□50;MARGINS□E;PRTSPACE□1;INDENT□5
*
*        1111111111222222222233333333334444444444555555555566666666667777777778
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
*================================================================================
                                                                    A bbb ccc
dddd eee f gg hh iiii jjjjjj k llllll mm nnn ooooo ppppp.
```

Let's paste a partial line (with the LOOK result on display):

- enter **PASTE** in the control line;
- transmit to display the words PASTE RID in the rightmost field of the control line;
- roll up to the second paragraph (***a***'s);

- place the cursor after the first sentence; and
- transmit to insert the cut sentence (color):

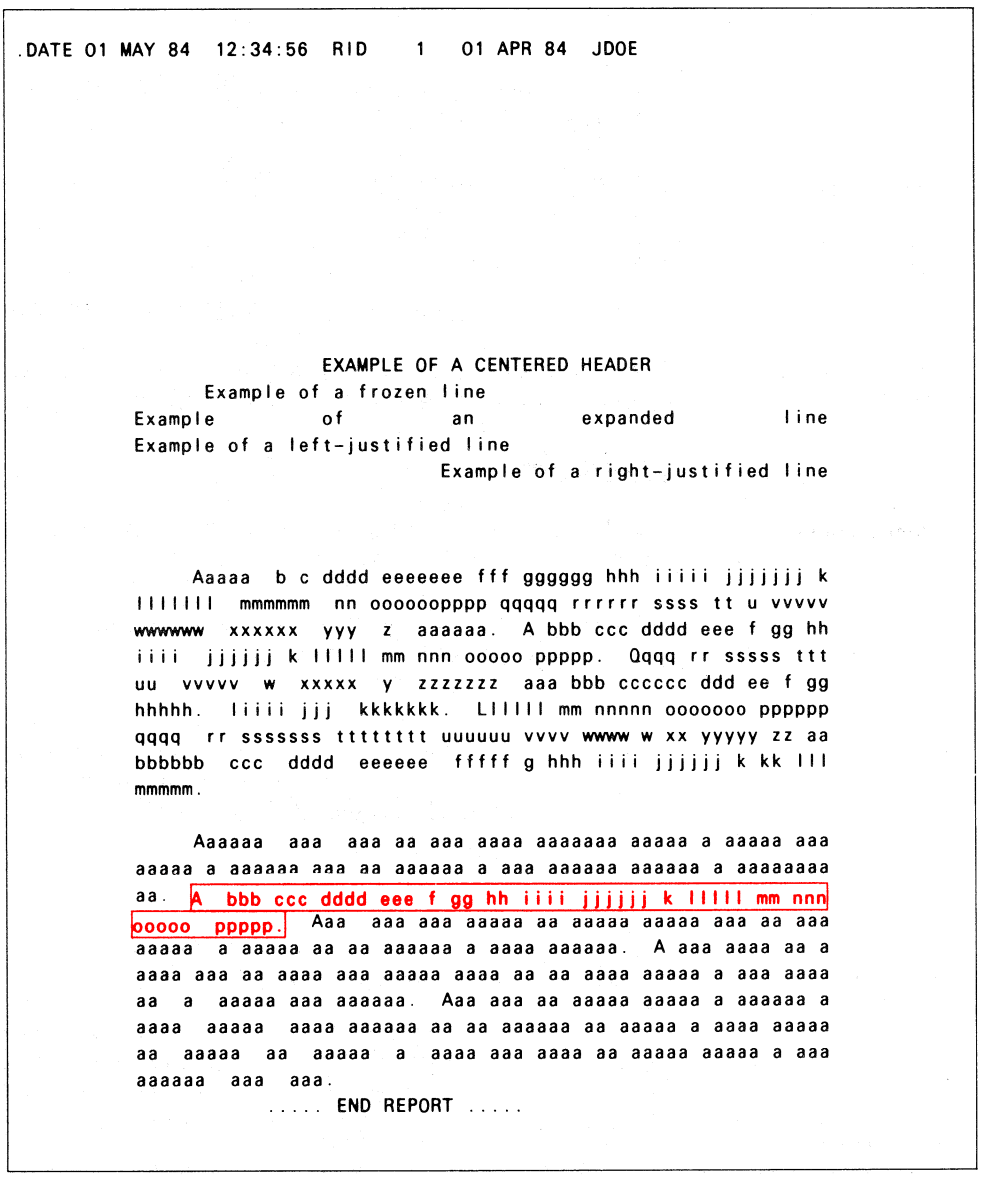
```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.        USER...       TITLE...
* PAGETOP 10;PAGEBODY 50;MARGINS E;PRTSPACE 1;INDENT 5
*
*        1111111111222222222233333333334444444444555555555566666666667777777778
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
*================================================================================
~.........[............................................................].........

         EXAMPLE OF A CENTERED HEADER~c
                Example of a frozen line~f
         Example of an expanded line~e
         Example of a left-justified line~l
         Example of a right-justified line~r


~iAaaaa b c dddd eeeeeee fff ggggggg hhh iiiii jjjjjjj k lllllll mmmmmm nn oooooo
pppp qqqqq rrrrrr ssss tt u vvvvv wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc
dddd eee f gg hh iiii jjjjjj k llllll mm nnn ooooo ppppp.  Qqqq rr sssss ttt
uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg hhhhh.  Iiiii jjj kkkkkkk.
Llllll mm nnnnn ooooooo pppppp qqqq rr sssssss ttttttttt uuuuuu vvvv wwww w
xx yyyyy zz aa bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll mmmmm.

~iAaaaaa aaa aaa aa aaa aaaa aaaaaaa aaaaa a aaaaa aaa aaaaa a aaaaaa aaa aa aaa
aaa a aaa aaaaaa aaaaaa a aaaaaaaa aa.
                                                          A bbb ccc
dddd eee f gg hh iiii jjjjjj k llllll mm nnn ooooo ppppp.
                                                Aaa aaa aaa aaaaa aa aaaaa aaaaa aaa
aa aaa aaaaa a aaaaa aa aa aaaaaa a aaaa aaaaaa.  A aaa aaaa aa a aaaa aaa aa
aaaa aaa aaaaa aaaa aa aa aaaa aaaaa a aaa aaaa aa a aaaaa aaa aaaaaa.  Aaa aaa
aa aaaaa aaaaa a aaaaaa a aaaa aaaaa aaaa aaaaaa aa aa aaaaaa aa aaaaa a aaaa
aaaaa aa aaaaa aa aaaaa a aaaa aaa aaaa aa aaaaa aaaaa a aaa aaaaaa aaa aaa.
                     ..... END REPORT .....
```

Press F3 to exit CUT.



.DATE 01 MAY 84 12:34:56 RID 1 01 APR 84 JDOE

EXAMPLE OF A CENTERED HEADER

Example of a frozen line

Example of an expanded line

Example of a left-justified line

Example of a right-justified line

Aaaaa b c dddd eeeeeee fff gggggg hhh iiiii jjjjjjj k lllllll mmmmmm nn ooooooppppp qqqqq rrrrrr ssss tt u vvvvv wwwwww xxxxxx yyy z aaaaaa. A bbb ccc dddd eee f gg hh iiii jjjjjj k llllll mm nnn ooooo ppppp. Qqqq rr sssss ttt uu vvvvv w xxxxx y zzzzzzz aaa bbb cccccc ddd ee f gg hhhhh. Iiiii jjj kkkkkkk. Llllll mm nnnnn ooooooo pppppp qqqq rr sssssss tttttttt uuuuuu vvvv wwww w xx yyyyy zz aa bbbbbb ccc dddd eeeeee fffff g hhh iiii jjjjjj k kk lll mmmmm.

Aaaaaa aaa aaa aa aaa aaaa aaaaaaa aaaaa a aaaaa aaa aaaaa a aaaaaa aaa aa aaaaaa a aaa aaaaaa aaaaaa a aaaaaaaa aa. A bbb ccc dddd eee f gg hh iiii jjjjjj k llllll mm nnn ooooo ppppp. Aaa aaa aaa aaaaa aa aaaaa aaaaa aaa aa aaa aaaaa a aaaaa aa aa aaaaaa a aaaa aaaaaa. A aaa aaaa aa a aaaa aaa aa aaaa aaa aaaaa aaaa aa aa aaaa aaaaa a aaa aaaa aa a aaaaa aaa aaaaaa. Aaa aaa aa aaaaa aaaaa a aaaaaa a aaaa aaaaa aaaa aaaaaa aa aa aaaaaa aa aaaaa a aaaa aaaaa aa aaaaa aa aaaaa a aaaa aaa aaaa aa aaaaa aaaaa a aaa aaaaaa aaa aaa.

..... END REPORT .....

Blended data after ADJ & PRT (or ADJPRT)

12.5. Using a Glossary

Glossary items

You can insert glossary items during interactive word processing. Glossaries may have such things as paragraphs and phrases that you might want to use often in various documents.

Create glossaries in standard MAPPER reports.

If you want to use a glossary, enter the control parameter:

GLOSSARY␣*rt*

for the glossary report (see Table 12-1) in the ***header*** of your word processing report;

or, while in interactive word processing, enter the command:

GLOSSARY,*rt*

to establish or change the glossary report reference (see Table 12-3).

Where are the items?

That portion of the data in a glossary that you can insert in the receiving report follows a tab type line and continues up to the next tab type line.

examples

In this glossary report, ***para1*** , ***para2*** , and ***memoh*** are on ***tab type*** lines and are glossary items.

Glossary items can be up to 16 characters of contiguous data following the tab character in the first column.

You can describe glossary items starting in column 18 of the tab type line. To get to column 18 fast, tab to after FMT in the control line. You benefit from describing your glossary items whenever you later get an index of them with the GI command (Table 12-3).

Item para1

Item para2

Item memoh

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.        USER...        TITLE...
* PAGETOP␣10;PAGEBODY␣50;MARGIN␣e;PRTSPACE␣1
*
*        1111111111222222222233333333334444444444555555555566666666667777777778
*2345678901234567890123456789012345678901234567890123456789012345678901234567890
*================================================================================
~.....[.....................................................................].......
␣para1          (sample description starting in column 18)
 Now is the time for all good men to come to the aid of their party.
␣para2          (list of items and numbers)
 This is a list of items that may fit in your data including some numbers~~
              item 1            part 1
              item 2            part 2
              item 3            part 3
              item 4            part 4
              item 5            part 5
              item 6            part 6
              item 7            part 7
              item 8            part 8
              item 9            part 9
␣memoh          (memo heading)
~~~~
        To: J. A. Smith                         From: J. Doe~f
~~
        cc: J. J. Jones                    Subject: ?          ~f
        cc: L. G. Johnson              ~f
                  ..... END REPORT .....
```

Request for item memoh

```
LINE▶ 9    FMT▶    RL▶      SHFT▶     HLD CHRS▶    HLD LN▶    WP CMD▶ g,memoh
~.........[.....................................................].........
▮XAMPLE OF A CENTERED HEADER~c Example of an expanded line~e Example of a left-j
ustified line~l Example of a right-justified line~r~~ ~iAaaaa b c dddd eeeeeee f
ff gggggg hhh iiiii jjjjjjj k lllllll mmmmmm nn ooooooppppp qqqqq rrrrrr ssss tt
u vvvvv wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc dddd eee f gg hh iiii jjjjjj k ll
lll mm nnn ooooo ppppp. Qqqq rr sssss ttt uu vvvvv w xxxxx y zzzzzzz aaa bbb ccc
ccc ddd ee f gg hhhhh.  Iiiii jjj kkkkkkk.  LllllI mm nnnnn ooooooo pppppp qqqq
rr sssssss tttttttt uuuuuu vvvv wwww w xx yyyyy zz aa bbbbbb ccc dddd eeeeee fff
ff g hhh iiii jjjjjj k kk lll mmmmm.
~~~~
~~
~~
~~
```

In the result, the data in the glossary item *memoh* appears ***before*** the line where the cursor was positioned:

```
LINE▶ 9    FMT▶    RL▶      SHFT▶     HLD CHRS▶    HLD LN▶    WP CMD▶
~.........[.....................................................].........
▮ ~~~
        To: J. A. Smith                        From: J. Doe~f
~~
        cc: J. J. Jones                    Subject: ?          ~f
        cc: L. G. Johnson                ~f
EXAMPLE OF A CENTERED HEADER~c Example of an expanded line~e Example of a left-j
ustified line~l Example of a right-justified line~r~~ ~iAaaaa b c dddd eeeeeee f
ff gggggg hhh iiiii jjjjjjj k lllllll mmmmmm nn oooooo pppp qqqqq rrrrrr ssss tt
u vvvvv wwwwww xxxxxx yyy z aaaaaa.  A bbb ccc dddd eee f gg hh iiii jjjjjj k ll
lll mm nnn ooooo ppppp.  Qqqq rr sssss ttt uu vvvvv w xxxxx y zzzzzzz aaa bbb cc
cccc ddd ee f gg hhhhh. Iiiii jjj kkkkkkk. LllllI mm nnnnn ooooooo pppppp qqqq r
r sssssss tttttttt uuuuuu vvvv wwww w xx yyyyy zz aa bbbbbb ccc dddd eeeeee ffff
f g hhh iiii jjjjjj k kk lll mmmmm.
```

Final report after ADJ and PRT

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE









        To: J. A. Smith                          From: J. Doe

        cc: J. J. Jones                        Subject: ?
        cc: L. G. Johnson
                          EXAMPLE OF A CENTERED HEADER
         Example         of         an         expanded          line
         Example of a left-justified line
                                  Example of a right-justified line

              Aaaaa b c dddd eeeeeee fff gggggg hhh iiiii jjjjjjj k
         lllllll  mmmmmm  nn oooooopppp qqqqq rrrrrr ssss tt u vvvvv
         wwwwww  xxxxxx  yyy  z  aaaaaa.  A bbb ccc dddd eee f gg hh
         iiii  jjjjjj k llllll mm nnn ooooo ppppp.  Qqqq rr sssss ttt
         uu  vvvvv  w  xxxxx  y  zzzzzzz  aaa bbb cccccc ddd ee f gg
         hhhhh.  liiii jjj  kkkkkkk.  Llllll mm nnnnn ooooooo pppppp
         qqqq  rr sssssss tttttttt uuuuuu vvvv wwww w xx yyyyy zz aa
         bbbbbb  ccc  dddd  eeeeee  fffff g hhh iiii jjjjjj k kk lll
         mmmmm.



                        ..... END REPORT .....
```

12.6. Header and Footer Lines

Enter header and footer lines before the header-divider (*=) line.

Use up to 3 headers

To create up to three header lines, enter an asterisk and a slant in the first two character positions of a header line, then the header data in free form:

** / header-data*

& 1 footer

To create one footer line, enter an asterisk and a reverse slant in the first two character positions of a footer line, then the footer data in free form:

**\ footer-data*

Header lines appear at the top of each page; the footer line at the bottom.

You probably want to use header and footer lines in documents (see 12.9).

12.7. Numbering Pages

Table 12-5 lists page formats. Put these in header or footer lines where you want page numbers to print. Page numbers start at the dollar sign ($).

Table 12-5. WORD PROCESS: Page Numbering Formats

enter:	to get:	example:
$P1	the absolute page number (*n*)	1
$P2	*-n-*	-1-
$P3	*n - total-pages*	1 - 10
$P4	*n* of *total-pages*	1 of 10
$P5	*section-number - page-number*	3 - 1
$P6	*chapter-number*	

12.8. Inserting Dates and Times in Header and Footer Lines

Table 12-6 lists date and time formats. Put these in header and footer lines wherever you want them.

Table 12-6. WORD PROCESS: Date and Time Formats

enter:	format:	example:
$D1	*YYMMDD*	840501
$D2	*DD MMM YY*	01 May 84
$D6	*MM/DD/YY*	050184
$D7	*Month DD, YYYY*	May 1, 1984
$T0	*HH:MM:SS*	12:59:59

12.9. Producing a Document

With the DOC command, you can produce a document that has title pages, a table of contents, numbered sections and subsections in the main body of the text, and an index.

If you want to produce a document, the header must have the DOCUMENT parameter.

Control parameters/ characters

Use standard control parameters and standard control characters (see Tables 12-1 and 12-2).

parts of the document

Title pages

Specify in the DOCUMENT control parameter whether or not the document has title pages. Enter title page data up to the first level-one heading (~ 1) (see below).

The first or title page is centered on the page from top to bottom; the pages that follow (e.g., abstract, prefix) start at line 10. To change these standard settings, use new line control characters (~ ~).

Table of contents

The table of contents follows any title pages and lists the sections and subsections and the page numbers where they start.

Sections/subsections

Number sections and subsections with the control characters:

~ *n*

where *n* is a section or subsection level number from 1 through 5:

~ 1 level one: new section starts on new page (e.g., **1. Introduction**).

~ 2 level two: new subsection (e.g., **1.2. General**).

All numbered headings print with a blank line preceding and following them.

Index

All section and subsection titles appear automatically in the index.

Unless you eliminate them

To eliminate a title from the index, enter opening and closing brackets between the title and the heading level control characters ~ *n* , as in this example:

```
Adjusting Your Reports~1General[]~2
```

Adjusting Your Reports is a level one heading and appears in the index. **General** is a level two heading under **Adjusting Your Reports,** but does ***not*** appear in the index.

Separate main items

To create separate main item entries for each word in the title, enclose the ordinal number of the word in brackets. In this entry, think of the word ***Adjusting*** as word 1, ***Your*** as word 2, and ***Reports*** as word 3. To produce an index item for each word, enter:

```
Adjusting Your Reports[1,2,3]~1
```

This appears in the index as:

```
Adjusting Your Reports
Reports, Adjusting Your Reports
Your, Adjusting Your Reports
```

Skipping words

You can also skip words and specify indexing on just the first and third words. For example, to eliminate the second word, ***Your,*** from the index, enter:

```
Adjusting Your Reports[1,3]~1
```

This appears in the index as:

```
Adjusting Your Reports
Reports, Adjusting Your Reports
```

Eliminating first word in title

To stop the automatic indexing of the first word in a title but retain the other words in the title in the index, enter the numbers of the title words you want in brackets, as in this example:

```
Adjusting Your Reports[3]~1
```

This appears in the index as:

```
Reports, Adjusting Your Reports
```

Special words

To index a special word (i.e., a word not found in the heading), include the special word in the brackets, as in this example:

```
Adjusting Your Reports[1,3,Text Processing]~1
```

This appears in the index as:

```
Adjusting Your Reports
Reports, Adjusting Your Reports
Text Processing, Adjusting Your Reports
```

Document-producing commands

See Table 12-3 for commands meant especially for producing documents.

examples

Source report after ADJ

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.EXAMPLE OF DOCUMENTATION VIA WORD PROCESSING
*  ABSTRACT OF REPORT
* DOCUMENT□Y,Y,1  PAGETOP□01;PAGEBODY□56;MARGINS□L;PRTSPACE□1;INDENT□2
*/ HEADER     |      EXAMPLE OF DOCUMENT PROCESSING     |   J. DOE     | $p5
*/ NUMBER     |             MAPPER Software             |   Author     | page
*/__________|_______________________________________|_____________|__________
*==============================================================================
~.....[................................................................].......
                                MAPPER 1100 SOFTWARE~c
       ~~
                              This is a sample document~c
       ~~
                                With standard defaults~c
~/      1  ***** LINES 5   *** FORCED BREAK END OF PAGE 1   *** PRINT LINES 5  **
                                      ABSTRACT~C
      ~~
      This document illustrates how documentation can be done using the
      MAPPER processor with the WORD PROCESS function.
~ ----- 0  -------------- BREAK END OF DOCUMENT(CHAPTER)------------------------
      INTRODUCTION~1
      GENERAL[]~2
      MAPPER software is for general-purpose report processing.~~
      MAPPER COORDINATION[1,2,DOCUMENT]~2
      MAPPER coordinators control the implementation and use of MAPPER
      software. They provide an interface between users and MAPPER
      service.
      ~~
      DATA BASE~2
      MAPPER software provides a data base structure called a report
      structured data base. This appears to the user as a system of
      electronic filing cabinets.
~ ----- 1  -------------- BREAK END OF DOCUMENT(CHAPTER)------------------------
      REPORT PROCESSING FUNCTIONS~1
      FUNCTIONS[]~2
      This chapter defines the concept of report processing functions.
      MANUAL FUNCTIONS~2
      A series of manually executable report processing functions are
      provided. These are executed as required to turn report data into
      information. Examples of these are:~~
    ~iSearch
    ~iSort
    ~iTotalize
    ~iEtc.~~
      RUN FUNCTIONS~2
      The manually executable report processing functions can also
      be defined as instructions in a run language for repetitive
      execution when this is needed.


                      ..... END REPORT .....
```

Adjusted report after WP TOC

```
.DATE           12:34:56  RID    1    01 APR 84   JDOE
HEADER    |       EXAMPLE OF DOCUMENT PROCESSING       |  J. DOE       | TOC-1
NUMBER    |               MAPPER Software              |  Author       | page
__________|____________________________________________|_______________|____________

                                                  TABLE OF CONTENTS

       1.   INTRODUCTION                                         1-1

            1.1. GENERAL                                         1-1

            1.2. MAPPER COORDINATION                             1-1

            1.3. DATA BASE                                       1-1

       2.   REPORT PROCESSING FUNCTIONS                          2-1

            2.1. FUNCTIONS                                       2-1

            2.2. MANUAL FUNCTIONS                                2-1

            2.3. RUN FUNCTIONS                                   2-1
                      ..... END REPORT .....
```

Adjusted report after WP INDEX

```
.DATE           12:34:56  RID  174   01 APR 84   JDOE
HEADER    |       EXAMPLE OF DOCUMENT PROCESSING       |  J. DOE       | INDEX-1
NUMBER    |               MAPPER Software              |  Author       | page
__________|____________________________________________|_______________|____________

                                                     PARAGRAPH PAGE

       COORDINATION, MAPPER COORDINATION                  1.2.   1-1
       DATA BASE                                          1.3.   1-1
       DOCUMENT, MAPPER COORDINATION                      1.2.   1-1
       INTRODUCTION                                       1.     1-1
       MANUAL FUNCTIONS                                   2.2.   2-1
       REPORT PROCESSING FUNCTIONS                        2.     2-1
       RUN FUNCTIONS                                      2.3.   2-1
       MAPPER COORDINATION                                1.2.   1-1
                      ..... END REPORT .....
```

Adjusted report after WP PRT

```
.DATE 01 MAY 84  12:34:56  RID  173   01 APR 84  JDOE
 HEADER   |     EXAMPLE OF DOCUMENT PROCESSING    |   J. DOE     | 1-1
 NUMBER   |            MAPPER Software            |   Author     | page
__________|_______________________________________|______________|_____________


                                                    1.  INTRODUCTION


     1.1. GENERAL

     MAPPER software is for general-purpose report processing.

     1.2. MAPPER COORDINATION

     MAPPER coordinators control the implementation and use of MAPPER
     software. They provide an interface between users and MAPPER
     service.


     1.3. DATA BASE

     MAPPER software provides a data base structure called a report
     structured data base. This appears to the user as a system of
     electronic filing cabinets.
.EJECT

 HEADER   |     EXAMPLE OF DOCUMENT PROCESSING    |   J. DOE     | 2-1
 NUMBER   |            MAPPER Software            |   Author     | page
__________|_______________________________________|______________|_____________


                                          2.  REPORT PROCESSING FUNCTIONS


     2.1. FUNCTIONS

     This chapter defines the concept of report processing functions.

     2.2. MANUAL FUNCTIONS

     A series of manually executable report processing functions are
     provided. These are executed as required to turn report data into
     information. Examples of these are:
       Search
       Sort
       Totalize
       Etc.

     2.3. RUN FUNCTIONS

     The manually executable report processing functions can also
     be defined as instructions in a run language for repetitive
     execution when this is needed.


                          ..... END REPORT .....
```

12.10. WL--Locating Data Using a Target List

What it does

WORD LOCATE locates words from a list of target words in an issuing report, or words specified in the call.

When the processor locates the target, the line having the target word appears below the control line with the cursor in front of the target word to make SOE updating easier.

Resume to continue

Press F1 to locate the next target.

Rules for issuing report

In the issuing report:

- There must be a header-divider (*=) line.
- Target words start in column 2 on tab type lines.
- Words may have alphanumeric characters **A** through **Z**; and = through **9**, with no embedded spaces.

Sample entries in issuing report

Here are some sample entries in an issuing report:

```
□girl
□woman
□boy
□man
```

locating words from a list

How to locate words from a list

First display the issuing report with the list; then

enter: WL *rt*

where *rt* are the RID and type of the receiving report.

Fast access

First display the receiving report; then

enter: WL *target-word*[,...]

where *target-word* is the target word (if you want to, add more target words and separate each one with a comma).

WORD CHANGE (WC)

12.11. WC--Locating/Changing Data (Target and Receiving List)

What it does

▽▽▽**WORD CHANGE**▽▽▽ changes words in a receiving report from a list of words in an issuing report, or words specified in the call.

Rules for issuing report

In the issuing report:

- There must be a header-divider (***=**) line.
- The first word is the target word; the second word is the replacement word, the word to which to change the target word in the receiving report.
- Words start in column 2 on tab type lines and ***always end with a comma.***
- Words may have alphanumeric characters **A** through **Z**; and = through **9**, with no embedded spaces.

Samples entries in issuing report

Here are some sample entries in an issuing report:

```
□girl,woman,
□boy,man,
```

In this example, the word "girl" changes to "woman", the word "boy" to "man" in the receiving report.

The processor adds a line in the receiving report in which to write any characters that might be dropped because of the addition of the new characters.

changing words from a list

How to change words from a list

First display the issuing report with the list; then

enter: **WC** *rt*

where *rt* are the RID and type of the receiving report.

Fast access

First display the receiving report; then

enter: **WC** ***target-word,replacement-word,[...]***

Enter as many target and replacement words as you want, separating each word with a comma.

Change abbreviations to full words

Use WORD CHANGE to change standard, easy-to-type abbreviations to full words and phrases. Here's a list of some that you might want to use:

```
□d,department,
□dp,data processing,
□m,mapper,
□sq,Systems & Quality Test,
□std,standard,
```

Make your own list of favorite abbreviations. Adjust (ADJ) the report to respace the text.

CHANGE vs. WORD CHANGE

CHANGE (7.11) locates target strings wherever they appear (even if they are part of another word), then changes the string to the replacement string. If the change expands the line to greater than 80 characters, all characters beyond the 80th in the line disappear from the report.

WORD CHANGE first locates words as you enter them, and does not locate target words that are part of another word. If the line expands to greater than 80 characters (in an 80-character form type), the extra characters wrap to the next line. You can remove the extra spaces with the ADJ command.

80- vs. 132-character reports

If the report is in a 132-character form type, the extra characters resulting from the expansion move into the right-hand columns (starting a column 81). If you don't plan to do further word processing using ADJ, fine. Most of the time, however, you use WORD CHANGE with reports that you are word processing. You should, then, do your word processing in 80-character instead of 132-character reports.

LIST MERGE (LM)

12.12. LM—Extracting/Merging Data (Into Receiving Report)

What it does

▽▽▽**LIST MERGE**▽▽▽ extracts lines or fields from an issuing report and merges them into a receiving report.

It creates a result that can have multiple documents: one document for each tab type line in the issuing report, with each document having different inserted information.

How to extract & merge data

extracting and merging

First display the issuing report; then

enter: **LM**

You get the function request message: enter the RID and type of the receiving report.

Fast access

First display the issuing report; then

enter: **LM** ***rt***

where *rt* are the RID and type of the receiving report.

The reports merge and create a result that is ready for further word processing (e.g., with ADJPRT).

Sample entries

enter:	to:
lm	get function request message
lm 5g	merge data on display into report 5G

control characters LM control characters

Insert the control characters in Table 12-7 in the ***receiving*** report to extract lines from the ***issuing*** report and merge them into the result.

Table 12-7. LIST MERGE: Control Characters

characters:	action/comments:	example:
~ =*cc*-*cq*[,*n*]	extract ***part of line*** starting at column *cc* for *cq* characters at line *n* beyond tab type line (line *n* must be 4 or less; to process the tab type line, omit the ,*n*)	extract data starting in column 2 for four characters from line 3 beyond the tab type line: ~ =2-4,3
~ =0,*y*-*z*	extract ***full lines*** starting at line *y* beyond tab type line for *z* lines; (number of full lines that can follow a tab type line is unlimited)	extract data starting at line 3 past the tab type line for four lines: ~ =0,3-4
~ &*cc*-*cq*	extract ***tab type lines*** starting at column *cc* for *cq* characters and produce one line for each line merged	extract data starting at column 2 for 17 characters: ~ &2-17

Freezing merged portions

If you want to freeze the merged portion of the text (i.e., you don't want to delete extra spaces), insert an **F** after the equal sign as in these examples:

```
~=f. . .

~=f0. . .
```

Using equal signs as fill characters

If you wish, use equal signs (===) as fill characters to fill in the required number of character positions for the data to be supplied. The processor throws out these fill characters after inserting the data.

examples

List merge issuing report

```
.DATE            12:34:56  RID    1   01 APR 84  JDOE
.LIST MERGE ISSUE REPORT EXAMPLE
*
* PAGETOP□00;PAGEBODY□55;MARGINS□L;PRTSPACE□1;GLOSSARY□3e
*
*                 .PHONE    .DATE OF                .MONTHLY.
*NAME             .NUMBER   .INSTALLATION           .RATE    .
*=================.========.====================.=======.======================
```

Tab type line:

```
□John Johnson       555-9889 JANUARY 30, 1980       16.50
*A GREEN TABLE PHONE
*a green table phone
```

Tab type line:

```
□James Jones        555-8765 JULY  4, 1981          28.00
*A BLUE TABLE PHONE WITH A WHITE EXTENSION
*a blue table phone with a white extension
```

Tab type line:

```
□John Jones         555-4765 MARCH 4, 1981          17.25
*A RED TABLE PHONE
*a red table phone
```

Tab type line:

```
□William Martin     555-2563 SEPTEMBER 22, 1977     15.50
*A BLACK WALL PHONE
*a black wall phone
~~
Our instruments show that you have a modem connected to your phone line.
This is illegal unless installed by the telephone vendor. Please remove
the modem within 30 days from today or else contact us.
                        ..... END REPORT .....
```

List merge receiving report

```
.DATE 01 MAY 84  12:34:56  RID    2   01 APR 84  JDOE
.LIST MERGE RECEIVING REPORT EXAMPLE
*
* PAGETOP□00;PAGEBODY□55;MARGINS□e;PRTSPACE□1;GLOSSARY□3e
*=============================================================================
~.........[.............................................................].........
~=2-17========~L
~~~~
~~
~~
We are verifying our records on your phone service.  Our records show you
have ~=2-79,1========== that has a
monthly rate of $~=51-6. Your phone was installed on ~=29-21========= by
our personnel. Your phone number is ~=20-8==. Please notify us if any of the
above information is incorrect. Others receiving this information
are:
~~~~~~~~
~f            NAME                PHONE          COST
~f     --------------------     --------       ------
~f     ~&2-17       ~&20-8        $~&51-6
~~~~~~
     ~=0,3-4
                                   TELEPHONE CONTROL~r
                                   -----------------~r
                        ..... END REPORT .....
```

Result after LIST MERGE

```
.DATE              12:34:56  RID    2   01 APR 84  JDOE
.LIST MERGE RECEIVING REPORT EXAMPLE
*
* PAGETOP 00;PAGEBODY 55;MARGINS e;PRTSPACE 1;GLOSSARY 3e
*=============================================================================
~.........[.............................................................].........
John Johnson~L
~~~~
~~
~~
We are verifying our records on your phone service.  Our records show you
have A GREEN TABLE PHONE that has a
monthly rate of $16.50. Your phone was installed on JANUARY 30, 1980 by
our personnel. Your phone number is 555-9889. Please notify us if any of the
above information is incorrect. Others receiving this information
are:
~~~~~~~~
~f            NAME                 PHONE          COST
~f      --------------------     --------       ------
~f      John Johnson             555-9889       $16.50
~f      James Jones              555-8765       $28.00
~f      John Jones               555-4765       $17.25
~f      William Martin           555-2563       $15.50
~~~~~~~~

                                    TELEPHONE CONTROL~r
                                    ------------------~r
~---------------------------- DOCUMENT BREAK -----------------------------------
~.........[.............................................................].........
James Jones~L
~~~~
~~
~~
We are verifying our records on your phone service.  Our records show you
have A BLUE TABLE PHONE WITH A WHITE EXTENSION that has a
monthly rate of $28.00. Your phone was installed on JULY 4, 1981 by
our personnel. Your phone number is 555-8765. Please notify us if any of the
above information is incorrect. Others receiving this information
are:
~~~~~~~~
~f            NAME                 PHONE          COST
~f      --------------------     --------       ------
~f      John Johnson             555-9889       $16.50
~f      James Jones              555-8765       $28.00
~f      John Jones               555-4765       $17.25
~f      William Martin           555-2563       $15.50
~~~~~~~~

                                    TELEPHONE CONTROL~r
                                    ------------------~r
~---------------------------- DOCUMENT BREAK -----------------------------------
~.........[.............................................................].........
John Jones~L
~~~~
~~
~~
We are verifying our records on your phone service.  Our records show you
have A RED TABLE PHONE that has a
monthly rate of $17.25. Your phone was installed on MARCH 4, 1981 by
our personnel. Your phone number is 555-4765. Please notify us if any of the
```

```
above information is incorrect. Others receiving this information
are:
~~~~~~~~
~f          NAME              PHONE        COST
~f    -------------------   --------      ------
~f    John Johnson            555-9889      $16.50
~f    James Jones             555-8765      $28.00
~f    John Jones              555-4765      $17.25
~f    William Martin          555-2563      $15.50
~~~~~~~~

                                TELEPHONE CONTROL~r
                                ----------------~r
~--------------------------- DOCUMENT BREAK ----------------------------------
~.........[.........................................................]..........
William Martin~L
~~~~
~~
~~
We are verifying our records on your phone service.  Our records show you
have A BLACK WALL PHONE that has a
monthly rate of $15.50. Your phone was installed on SEPTEMBER 22, 1977 by
our personnel. Your phone number is 555-2563. Please notify us if any of the
above information is incorrect. Others receiving this information
are:
~~~~~~~~
~f          NAME              PHONE        COST
~f    -------------------   --------      ------
~f    John Johnson            555-9889      $16.50
~f    James Jones             555-8765      $28.00
~f    John Jones              555-4765      $17.25
~f    William Martin          555-2563      $15.50
~~~~~~~~

~~
Our instruments show that you have a modem connected to your line.
This is illegal unless installed by the telephone vendor. Please remove
the modem within 30 days from today or else contact us.

                                TELEPHONE CONTROL~r
                                ----------------~r
                      ..... END REPORT .....
```

After WP ADJPRT against preceding result

```
.DATE 01 MAY 84  12:34:56  RID    2   01 APR 84  JDOE
LIST MERGE RECEIVING REPORT EXAMPLE



         John Johnson


         We  are  verifying  our records on your phone service.  Our
         records  show  you  have  A  GREEN  TABLE  PHONE that has a
         monthly rate of $16.50. Your phone was installed on JANUARY
         30,  1980  by our personnel. Your phone number is 555-9889.
         Please  notify  us  if  any  of  the  above  information is
         incorrect.  Others receiving this information are:



            NAME               PHONE        COST
     -------------------     --------     ------
     John Johnson            555-9889     $16.50
     James Jones             555-8765     $28.00
     John Jones              555-4765     $17.25
     William Martin          555-2563     $15.50



                                                    TELEPHONE CONTROL
                                                   -----------------
.EJECT



         James Jones


         We  are  verifying  our records on your phone service.  Our
         records  show  you  have  A  BLUE  TABLE PHONE WITH A WHITE
         EXTENSION that has a monthly rate of $28.00. Your phone was
         installed  on  JULY   4,  1981 by our personnel. Your phone
         number  is  555- 8765. Please notify us if any of the above
         information is incorrect. Others receiving this information
         are:



            NAME               PHONE        COST
     -------------------     --------     ------
     John Johnson            555-9889     $16.50
     James Jones             555-8765     $28.00
     John Jones              555-4765     $17.25
     William Martin          555-2563     $15.50



                                                    TELEPHONE CONTROL
                                                   -----------------
.EJECT
```

John Jones

We are verifying our records on your phone service. Our records show you have A RED TABLE PHONE that has a monthly rate of $17.25. Your phone was installed on MARCH 4, 1981 by our personnel. Your phone number is 555-4765. Please notify us if any of the above information is incorrect. Others receiving this information are:

NAME	PHONE	COST
John Johnson	555-9889	$16.50
James Jones	555-8765	$28.00
John Jones	555-4765	$17.25
William Martin	555-2563	$15.50

TELEPHONE CONTROL

.EJECT

William Martin

We are verifying our records on your phone service. Our records show you have A BLACK WALL PHONE that has a monthly rate of $15.50. Your phone was installed on SEPTEMBER 22, 1977 by our personnel. Your phone number is 555-2563. Please notify us if any of the above information is incorrect. Others receiving this information are:

NAME	PHONE	COST
John Johnson	555-9889	$16.50
James Jones	555-8765	$28.00
John Jones	555-4765	$17.25
William Martin	555-2563	$15.50

Our instruments show that you have a modem connected to your phone line.This is illegal unless installed by the telephone vendor. Please remove the modem within 30 days from today or else contact us.

TELEPHONE CONTROL

..... END REPORT .....

12.13. Using UNADS with MAPPER Word Processing

For a high quality document, you can enter your text with MAPPER word processing, then process the text with the UNIVAC Automatic Documentation System (UNADS).

You should have someone who is familiar with 1100 OS control language and UNADS help you at first.

Use document format

Type your word processing report in document format (e.g., with ~ 1– and ~ 2–level headings, and include the DOCUMENT parameter in the header).

& UNADS parameter

With the UNADS parameter set to **Y**, the processor inserts special characters whenever you execute an INDEX, DOC, PRT, or TOC command. These characters appear in a UNADS runstream.

Even if you have the MARGINS parameter set to **E** (even), margins are left justified. The document is left justified in all cases.

UNADS macros

Specify these UNADS macros in the headers:

`*/[mprtoc,,$p1]`	table of contents
`*/[mprprt,$p5]`	body
`*/[mpridx,,$p1]`	index

The processor uses these macros whenever you have set the UNADS parameter to **Y**. Otherwise, it uses the regular header lines that follow.

P control characters

The ~P control characters followed by [...data...] pass only the brackets and data to UNADS, allowing you to enter UNADS commands in comment lines.

Tables & figures

Tables and figures are not sent to UNADS. You must write a UNADS micro or series of commands and specify them between the brackets after the ~P control characters for any tables, figures, or special characters.

Q control characters

Printer commands inserted after the ~Q control characters (including **.EJECT**) are not included in the output.

Footers

Footers are not allowed. UNADS header descriptions (which reside in the macros) control pagination and footers. To create footers, you must modify the UNADS macros.

The $P5 date code inserts a comma instead of a hyphen between the section number and the page number in the DOC command output; however, UNADS turns it back into a hyphen.

UNADS commands

The characters [T] and the page number follow items for the table of contents. The [T] is a UNADS command that right-justifies page numbers.

The characters [H] appear in the first three columns of all output lines. The [H] is a UNADS command that freezes text.

You can bold, underline, strike through, and highlight text. These are available:

^B	[Y1]	bold on
^b	[Y2]	bold off
^U	[Y3]	underline on
^u	[Y4]	underline off

In documents, you can specify bolding and uppercase titles in the fifth and sixth subfields of the DOCUMENT parameter, so you don't have to specify them individually.

UNADS runstreams

These runstreams are samples. You must modify the @RUN statement, UNADS file names and call, and your own file names. Have someone familiar with 1100 OS control language and UNADS help you.

Process the source report (WP DOC) and duplicate it so that it is a permanent report.

1: 1100 OS control statement

2-4: assign files for errors, proofer, finished version

5-7: assign UNADS file

8: for batch runs do following work in DOCERR file

11: octal type, RID number of UNADS macros (on release tape)

12: octal type, RID number of document-formatted report

13: end UNADS

```
1.  @run,d run-id,account-number/password,project-id
2.  @asg,up docerr.
3.  @asg,updocprf.
4.  @asg,up docfin.
5.  @asg,a unads*processor.
6.  @asg,a  unads*unadslibrary.
7.  @asg,a unads*new.
8.  @sym,d print$.
9.  @brkpt print$/docerr
10. @unads*processor.unads,eqir ,,docprf,docfin.,unadslibrary.
11. $incl$ type-number rid-number
12. $incl$ type-number rid-number
13. [endjob]
14. @brkpt print$
15. @free docerr.
16. @free docprf.
17. @free docfin.
18. @sym,d print$
19. @fin
```

This runstream should reside in a report. Start the run with BATCH START (enter **START**; enter the RID number and alphabetic form type that has the runstream).

When the run finishes, retrieve the DOCPRF file. This file shows you approximately how the document looks. You should also retrieve the DOCERR file to see if there are any UNADS errors. Make sure there are no errors before you copy the DOCFIN file to a tape.

To retrieve a file, enter:

RET P

In the function request message, type in the qualifier and filename for this proofer file. Tab to the TYPE field and enter the alpha type where the retrieved file should reside as a MAPPER result.

See also 11.6.

If the proofer looks good and you want to put the final version on tape, start the next runstream. You must modify the @RUN and @MSG statements, check file names, arrange to use a tape, and know the tape number.

1. `@run,d` *run-id,account-number/password,project-id*
2. `@asg,up docfin.,f33`
3. `@asg,up docerr.,f33`
4. `@sym,d print$.`
5. `@brkpt print$/docerr`

Ask for your tape

6. `@msg,w` *(ask for your tape by number)*

Use six slants

7. `@asg,tj tape.,u9v//////6,` *tape-number*
8. `@copy,vm docfin.,tape.`
9. `@free tape.`
10. `@brkpt print$`
11. `@free docerr.`
12. `@free docfin.`
13. `@sym,d print$`
14. `@fin`

Make microfilm from the tape. Make hardcopy from the microfilm.

DLLWP

12.14. DLLWP—Word Processing Assist Code

For easier word processing

To make word processing easier, you can downline load preprogrammed code into your UTS 400 master or primary slave, or UTS 40 Single Station display terminal. You can turn the code on and off independently at each UTS 400 terminal, and for both UTS 40 terminal screens.

To update your report once the code is loaded, you can use certain function keys (namely F5, F20, F21, and F22) to execute commands and transmit. Or, you can transmit as usual. Or, if you select the AUTO TRANSMIT AT END OF SCREEN option, the processor updates the report automatically whenever the cursor reaches the end of the screen (bottom right corner).

Whenever you press a function key to execute a function or command, the processor erases the control line except for the WP CMD field, executes the function or command, and restores the control line. Table 12–8 explains the use of function keys with the assist code.

How to load the code

To downline load the code (and display the WP assist menu screen), enter:

- **DLLWP**; or
- **esf,50** (you may need a password; see 12.15).

example

WP assist menu screen

```
                              WP ASSIST OPTIONS

                    AUTO WORD WRAP AT END OF LINE (Y OR N)  Y
                  AUTO TRANSMIT AT END OF SCREEN (Y OR N)  Y
                           RETURN = TILDE-TILDE (Y OR N)  Y
                        SPACE BAR (D=DESTRUCT, N=NORMAL)  D

                        SELECT OPTIONS AND PRESS CONTROL PAGE

                                FUNCTION KEY SUMMARY

F1 - WORD LOC NEXT ITEM      F9  - FREEZE LINE             F17 - LOOK
F2 - REPAINT THE SCREEN      F10 - TILDE-TILDE & RETURN    F18 - PASTE
F3 - EXIT WP OR CUT/PASTE    F11 - LEFT-JUSTIFY & RETURN   F19 - MOVE
F4 - NOT USED                F12 - CENTER & RETURN         F20 - XMIT & ADJ
F5 - XMIT & INSERT 1 LINE    F13 - RIGHT-JUSTIFY & RETURN  F21 - XMIT & PRT
F6 - INSERT TAB RACK         F14 - WP ASSIST ON OR OFF     F22 - XMIT & REP
F7 - PAGE*                   F15 - EMPHASIS DISPLAY ON OR OFF (UTS 40 ONLY)
F8 - PARAMETER COMMENT       F16 - CUT
DELETE LINE - DELETE 1 LINE IN THE REPORT
INSERT LINE - INSERT SPECIFIED NUMBER OF LINES WITHOUT INITIAL XMIT*
INSERT IN DIS - INSERT IN DISPLAY WITH WORD WRAP AT END OF LINE
REP ADR - REPORT ADDRESS, DISPLAY REPORT LINE NUMBERS
*YOU MUST ENTER A NUMBER AND TRANSMIT TO COMPLETE THE OPERATION
                  USE 'HELP WPASSIST' FOR ADDITIONAL INFORMATION
```

Here's what to do on this screen:

Options—Y?

- AUTO WORD WRAP AT END OF LINE (Y OR N)

  Leave **Y** if you want the words to wrap from one line to the next and want to update the report whenever you transmit. Change the **Y** to **N** if you don't want this.

Y?

- AUTO TRANSMIT AT END OF SCREEN (Y OR N)

  Leave **Y** if you want the processor to transmit for you whenever you type a character in the last column of the last line on the screen. The processor updates the report, rolls the screen, and positions the cursor for you for further typing. Change the **Y** to **N** if you don't want this.

Y?

- RETURN = TILDE-TILDE (Y OR N)

  Leave **Y** if you want the processor to insert a tilde–tilde (~ ~) whenever you press RETURN. Change the **Y** to **N** if you don't want this.

D?

- SPACE BAR (D=DESTRUCT, N=NORMAL)

  Leave **D** if you want the character under the cursor erased whenever you press the space bar. Change the **D** to **N** if you want the space bar to work as it normally does for your terminal. (The space bar on some terminals skips characters (nondestructive), on other terminals erases characters (destructive).

You can change these options now or any time later. Make your changes and press CONTROL PAGE.

Editing keys

Press UPPER FUNCTION and DELETE LINE to delete one line (▶]1–) in the report wherever the cursor is positioned.

Press UPPER FUNCTION and INSERT LINE to execute an INS command wherever the cursor is positioned. Enter the number of lines to insert (up to 99), position the cursor, and transmit.

Press INSERT IN DIS to move the text one position to the right for each key stroke wherever the cursor is positioned and to wrap the text from line to line. Transmit with the cursor at the end of the shifted text to update the report. (You must also select the AUTO WORD WRAP AT END OF LINE option if you want to use the INSERT IN DIS key in this manner; otherwise, the INSERT IN DIS key operates as it normally would on your keyboard.) Be careful not to shift data beyond the end of the display.

Getting line numbers

Press REP ADR to get line number indicators along the right margin of the display screen. Press REP ADR a second time to erase the numbers. The processor does not enter the line numbers on the screen when you transmit.

Activating the code

Press F14 to activate the code.

Now you can update your report or fill in the function request message

If you have a report on display, you can now update the report. If you had no report on display, the processor displays the function request message (see the **function request message** in 12.2.)

Table 12-8. Word Processing Assist Code: Using the Function Keys

key:	action:	procedure/action/comments:	transmit?*
F1	resume	press F1 to resume locating items with WORD LOCATE	no
F2	redisplay	press F2 to repaint screen	no
F3	exit	press F3 to terminate WORD PROCESS or CUT (PASTE)	no
F4	–	not used	–
F5	transmit and insert a line	position cursor in report to where you want to insert line and press F5 : (1) text preceding cursor is transmitted; (2) WP CMD field and letters INS appear in control line; (3) line is inserted; (4) report is updated; (5) cursor is positioned for entering data; and (6) control line reappears	no
F6	insert tab rack	press F6 to insert tab rack line in front of line cursor is on	no
F7	position to (locate) page (report must have page breaks produced by ADJ command)	with a report on display, press F7 : (1) control line disappears (2) WP CMD field and word PG appear in control line; (3) enter page number; (4) transmit; (5) report is positioned to page selected; and (6) control line reappears	no
F8	insert parameter control line	position cursor in report where you want to change control parameters and press F8 : (1) control line disappears; (2) WP CMD field and letters PC appear in control line; (3) a parameter control line appears preceding line cursor is on; (4) report is updated; (5) cursor appears in new parameter control line; and (6) control line reappears	no
F9	freeze line and return	enter data to be frozen and press F9 : control characters ~ F appear in front of line of data	yes
F10	insert tilde–tilde and return	press F10 to insert return control characters (~ ~) where cursor is positioned	yes
F11	left–justify and return	enter data in a line and press F11 : (1) left–justify data on screen; (2) insert left–justify control characters (~ L) immediately following text; and (3) position cursor to next line	yes

(continued)

Table 12-8. Word Processing Assist Code: Using the Function Keys (continued)

key:	action:	procedure/action/comments:	transmit?*
F12	center and return	enter data in a line and press F12: (1) center data on screen; (2) insert center text control characters (~ C) immediately following text; and (3) position cursor to next line	yes
F13	right-justify and return	enter data in a line and press F13: (1) right-justify data on screen; (2) insert right-justify control characters (~ R) immediately following text; and (3) position cursor to next line	yes
F14	turn word processing assist code on/off	press F14: if code is already on, turn it off and exit word processing; if it is off, turn it on; ***if a report is on display,*** WORD PROCESS control line appears and cursor appears in text area ready for entering data; ***if no report is on display,*** WORD PROCESS request message appears: enter appropriate information and transmit to display report at first line following header-divider (*=) line, where you can enter data	no
F15	display emphasis characters	convert control characters to emphasis and FCC characters on screen: bold (~ B), background (~ b), underscore (~ u or ~ U), strike-through (~ x or ~ X), and vertical line (~ v or ~ V)	**
F16	cut	display report to be cut and press F16 to execute CUT	no
F17	look	press F17 to execute LOOK command	no
F18	paste	press F18 to execute PASTE command	no
F19	move	press F19 to execute MOVE command	no
F20	transmit and adjust	press F20 to transmit and execute ADJ command and create an adjusted result	no
F21	transmit and print	press F21 to transmit and execute PRT command and create a result suitable for printing	no
F22	transmit and replace	press F22 to transmit and execute REPLACE	no

* *These changes appear on the display screen; however, you must transmit to update the report.*

** *Transmitting removes emphasis. To redisplay emphasis, press* F15.

ESF

12.15. ESF—Office Automation Facilities

What is it?

The ESF run is a model with "facilities" to aid in office administration and in the dissemination of information. The MAPPER coordinator and company ESF administrator may modify the ESF run to match their site's needs.

Company ESF administrators

A company ESF administrator's role in the ESF environment is similar to a MAPPER coordinator's role at a MAPPER site: the company ESF administrator registers all ESF run users, and can enable or disable some facilities by department and user. The company ESF administrator can also specify report quantities by department for ESF users (e.g., for Department X, 100 ticklers, 100 calendars, 100 mail items, etc.).

Department ESF administrators

Each department may have an ESF administrator to monitor ESF run use, train and assist new ESF users, and maintain preformatted departmental forms (e.g., letterheads and invoices). The department ESF administrator can enable or disable you to specific facilities within the limits assigned to your department. Whenever a department is disabled for a facility, all users in that department are likewise disabled.

facilities

Here are the facilities:

Want to do some accounting?

- ACCOUNTING

  The ACCOUNTING facilities group includes:

  - INTEREST COMPUTATIONS

    This facility allows you to enter a sum of money, an interest rate or amount, and a time period in days, months, or years. It then produces a result showing you how much money you have at the end of the period based on simple or daily, monthly, quarterly, semi-annual, or annual compound interest rates. You can also determine how much money to deposit now to attain a future sum.

  - DEPRECIATION SCHEDULE

    This facility accepts item and salvage values, and the number of years to depreciate an item. It then builds three depreciation schedules showing annual and accumulated depreciation, and the remaining book value of the item. The facility uses three depreciation schedules: straight line, double declining balance, and sum of the years' digits.

  - LOAN AMORTIZATION

    This facility determines monthly loan payments based on the amount borrowed, interest rate, and the period of the loan. The result includes the loan amount, period, total amount repaid, and, optionally, a schedule of the monthly payments that includes interest payable, principal, and remaining balance.

- ANNUITY

  This facility is similar to INTEREST COMPUTATIONS except that it assumes a deposit is made every period (weekly, monthly, etc.). It then produces a result showing how much money you have if the deposit is made each specified period at the specified interest rate for the specified length of time. Additionally, it tells you how much each deposit must be to accumulate a specified amount of money. The result shows the difference (whether determining a future amount or the size of a deposit required to accumulate a future amount) between making deposits at the beginning or end of each period.

- CASH FLOW

  This facility determines the rate of return and repayment period for an investment. You can determine these two figures of investment merit based on discrete or continuous cash flow, new product investment, facilities justification, contracts, and real estate (lease versus purchase).

Or send some bulletins?

■ BULLETIN

The BULLETIN facilities group maintains bulletins. A bulletin may have any kind of general information. The two types of bulletins are:

- Company bulletins: all ESF users can read them.
- Department bulletins: only ESF users in your department can read them.

Only company and department ESF administrators can enable or disable users to originate and modify company and department bulletins. Only the user who added a bulletin can change or delete it.

Or keep a calendar?

■ CALENDAR

The CALENDAR facilities group maintains your personal calendar. You can schedule meetings, vacations, mail-reading time, etc. You can allow other users access to your calendar, or keep it private. If you specify a calendar item as private, other users can see that your time is already scheduled but not what it is scheduled for.

These facilities always check new items against your current calendar entries to ensure that no conflict exists.

Or change a department?

■ DEPARTMENT

The DEPARTMENT facilities group adds, changes, and removes information, users, and departments. Only company and department ESF administrators can gain access to these facilities.

■ GENERAL

The GENERAL facilities group includes:

Or start a distribution list?

- DISTRIBUTION

  These facilities maintain distribution lists, with no limit to the number of lists or to how many people each list can have. Other users cannot gain access to your lists. A MAIL facility sends your mail items to the persons specified on your distribution list.

Or send reports in the mail?

- EXTERNAL MAIL

  This facility registers any MAPPER report under ESF to be distributed through a MAIL facility. You can register a report from your current mode or from a different mode. When registered, the processor places a save flag in the report and adds the report to your mail list.

Or use a standard form?

- FORMS

  These facilities maintain preformatted forms to be used for creating mail items. Use a standard form for mail items that adhere to a specific format (e.g., letterheads). You can also create mail items in a blank report.

  Each department maintains its own forms. Only department ESF administrators can add new forms or modify existing forms.

Or send a report as a message?

- MESSAGE

  This facility sends a report as a station-to-station message addressed to another ESF user (not to the station number).

Or keep track of meetings?

- SCHEDULE MEETING

  This facility sends a request to attend a meeting to whomever you specify (one or more persons) and updates their calendars with the meeting time and date. It also checks prospective attendees' calendars and displays a list of people who cannot attend because of a schedule conflict. You can: (1) schedule the meeting anyway; (2) cancel the meeting; or (3) change the meeting time and recheck attendees' calendars for conflicts. Wherever conflicts exist, the facility sends a TICKLER message notifying attendees of the conflict if you decide to schedule the meeting anyway.

Or let others share your data?

- USER REGISTRATION

  This facility registers other users to update ("share") your:

  ▸ mail items (except private items);

  ▸ personal calendar (except private items);

- personal tickler file; and
- phone/visitor log.

If you register another user or users to update your files, you are "sharing" the files. Users sharing your files may also have their own files.

Or really get into mailing?

- MAIL

The MAIL facilities group maintains reports having mail items placed in an ESF-controlled mode to ensure privacy. Mail items have business correspondence. You can register any MAPPER report--not just ESF-produced items--as a mail item (see EXTERNAL MAIL under GENERAL facilities).

With these facilities, you can add blank reports (i.e., reports having predefined blank forms), modify these reports later, delete them, and distribute them to one or more persons (with suspense dates, if you wish). You can also track the items and find out if addressees have read them.

You can file a mail item that you receive by groups of reports with the same name, notify the sender that you have read it, and forward it to other persons. You can also see other recipients' names.

You can register other persons to maintain or "share" (i.e., type, edit, and file) your mail items (see USER REGISTRATION under GENERAL facilities); or you can specify an item or items as private, in which case other persons cannot gain access to the items (within a "shared" file).

Or keep a telephone log?

- PHONE

The PHONE facilities group maintains a record of your telephone calls and visitors to your office. You can enter any information you wish, mostly in free form.

You can allow other persons access to your phone/visitor log, or keep it private. Anyone can add an item to the log, but only you or other registered persons can see it.

- SUPPORT

The SUPPORT facilities group includes:

Or downline load the word processing assist code?

- ESF LOAD

  This facility downline loads a UTS 400 master or primary slave or UTS 40 Single Station terminal with word processing assist code. (See also 12.14.)

Or find out who's using the facilities?

- LIST USERS

  This facility lists all ESF users, their phone numbers, and their internal mailing address.

Or let others know you moved?

- REGISTRATION CHANGE

  This facility allows you to change your name, phone number, internal mailing address, department number, and station number.

Or remind yourself about something?

- TICKLER

The TICKLER facilities group places up to 4-line messages in the system: you remind yourself to do something. A MAIL facility uses TICKLER facilities to exchange information. For example, Mr. Doe mails an item to you, but the processor does not copy the item. Instead, it makes an entry in your tickler file notifying you that Mr. Doe has mailed you an item. You read the item through a MAIL facility.

Or keep a suspense file?

- VIEW

The VIEW facility displays this "suspense file" information:

- Open/unanswered phone/visitor log items
- Open tickler messages
- Mail you received with a suspense date
- Mail you sent with a suspense date not yet read
- Appointments in your calendar
- Requests for your presence at a meeting

Using the facilities

You must be registered and use your ESF password whenever you wish to use the facilities.

The first time you call **ESF** each day, the processor displays a list of pending ESF activities such as meetings scheduled for the day, unread tickler items, and suspense file information.

The processor records this information about new ESF users when they are registered:

First name, middle initial, and last name
Private station
Business telephone number and extension
Internal business mailing address
ESF security password

Unless you register other users to read or change your files (except for those marked "private"), you alone have access to them.

Names

Whenever you want to send information or a message to another ESF user, enter the user's first name or initial and last name, e.g.:

```
john doe

j doe
```

Dates

Enter ***dates*** in the format:

YYMMDD

For example, **830130** is January 30, 1983.

Times

Enter ***times*** in one of these formats:

H x
HH x
HMMx
HHMMx

where:

H 1-digit hour

HH 2-digit hour

MM minutes

x ***a*** for AM; ***p*** for PM (omit the ***a*** or ***p*** for 24-hour clock format)

Sample time entries

enter:	for:
9a	9:00 AM
9p	9:00 PM
12a	midnight
12p	noon
130a 0130 0130a	1:30 AM
130p 1330 0130p	1:30 PM
0530	5:30 AM
1730	5:30 PM

Getting to facilities

All facilities are numbered and named: you can gain access to them by their name, the first letter of their name, or by their number or menu selection.

How to start the ESF run

To start the ESF run,

enter: ESF

You get a list of facility numbers and names:

- Roll through the list if you want to see all the facilities available.
- Press F1 to resume: the run solicits your ESF password.
- Enter your password.

You get a facility selection screen: enter your selection.

Fast access

enter: ESF,*name1*,*name2*,*name3*[,*password*]

where:

name1	number, main facilities group, or facility
name2	facilities subgroup or facility
name3	facility
password	your ESF password (must have at least one alphabetic character)

Sample entries

enter:	to get:
esf,*password*	main selection menu
esf,5,*password*	main facilities group MAIL, facility CREATE
esf,t,v,*password*	main facilities group TICKLER, facility VIEW
esf,general	main facilities group GENERAL selection menu
esf,general,distribution	main facilities group GENERAL, subgroup DISTRIBUTION selection menu
esf,general,distribution,view *or* esf,g,d,v	main facilities group GENERAL, subgroup DISTRIBUTION, facility VIEW

NOTE: *If you leave out your password, the ESF run solicits it.*

To create a new mail item, enter one of these:

Sample entries: creating new mail item

```
esf,mail,create[,password]

esf,m,create[,password]

esf,mail,c[,password]

esf,m,c[,password]

esf,5[,password]
```

getting things fast in ESF

Requesting a facility by number

To request a facility by number—anytime, on any screen—enter:

enter: F*n*

where *n* is the facility number.

For example, to create a mail item, enter:

```
f5
```

Getting help

Online help is available at every point along the way. Whenever you want more information about any facility—anytime, on any screen—enter a question mark or a facility selection number and a question mark, e.g.:

```
?

3?
```

examples

List of facility numbers & names

```
line▶ 2    fmt▶   rl▶    shft▶    hld chrs▶    hld ln▶ 7  ▶  ▸▸▸RESULT◂◂◂ ▶

              ~ ~ ~ MAPPER EXECUTIVE SUPPORT FACILITIES ~ ~ ~
                                                        DATE:11 FEB 83
                                                        TIME:12:34:56
 Here's a list of facility numbers and names.  Press F1 to continue.




 ** CALENDAR **          ** TICKLER **          ** PHONE/VISIT **
28 Calendar View        24 Tickler View        32 Phone View
29 Calendar Change      25 Tickler Change      33 Phone Change
30 Calendar Add         26 Tickler Add         34 Phone Add
31 Calendar Delete      27 Tickler Delete      35 Phone Delete
70 Calendar Weekly

Note that 28,31,32,35 can also have a third field called Current or History!
```

Facility selection screen

```
          ~ ~ ~ MAPPER EXECUTIVE SUPPORT FACILITIES ~ ~ ~
                        FACILITY SELECT           DATE: 14 SEP 82
                                                  TIME:09:30:20



        ENTER SELECTION NUMBER AND TRANSMIT.
       FACILITY NAME
    1. MAIL
    2. GENERAL
    3. VIEW SUSPENSE FILES
    4. SUPPORT
    5. TICKLER
    6. PHONE/VISIT
    7. CALENDAR
    8. BULLETINS
    9. ACCOUNTING/FINANCIAL AIDS

  ENTER SELECTION AND TRANSMIT ▮
```

Table 12-9 lists facility names and numbers.

Table 12-9. ESF Run: Office Automation Facilities

name1		name2	name3
no.	main group or facility	subgroup or facility	facility
74	ACCOUNTING	INTEREST	COMPUTATIONS
75	ACCOUNTING	DEPRECIATION	SCHEDULE
76	ACCOUNTING	LOAN	AMORTIZATION
77	ACCOUNTING	ANNUITY	
78	ACCOUNTING	CASH	FLOW
46	BULLETIN	VIEW	
47	BULLETIN	CHANGE	
48	BULLETIN	ADD	
49	BULLETIN	DELETE	
28	CALENDAR	VIEW	*
29	CALENDAR	CHANGE	
30	CALENDAR	ADD	
31	CALENDAR	DELETE	*
70	CALENDAR	WEEKLY	
1	DEPARTMENT	ADD	DEPARTMENT
2	DEPARTMENT	REGISTER	ADMINISTRATOR
3	DEPARTMENT	NEW	USER
37	DEPARTMENT	ADD	ADMINISTRATOR
38	DEPARTMENT	DISPLAY	LOG
39	DEPARTMENT	EMPTY	LOG
57	DEPARTMENT	CHANGE	ADMINISTRATOR
58	DEPARTMENT	CHANGE	USER
59	DEPARTMENT	LOG	ANALYSIS
60	DEPARTMENT	MODIFY	CALENDAR
61	DEPARTMENT	MODIFY	TICKLER
62	DEPARTMENT	MODIFY	PHONE
63	DEPARTMENT	MODIFY	DEPARTMENT
64	DEPARTMENT	MAIL	ANALYSIS
67	DEPARTMENT	ESF	ERRORS
73	DEPARTMENT	VIEW	ADMINISTRATOR
51	FILING	CATEGORY	LIST
52	FILING	ITEM	LIST
53	FILING	ITEM	MOVE
54	FILING	CATEGORY	CHANGE
55	FILING	ITEM	DISPLAY
72	FIRST	TIME	TODAY

name1		name2	name3
no.	main group or facility	subgroup or facility	facility
13	GENERAL	DISTRIBUTION	VIEW
14	GENERAL	DISTRIBUTION	UPDATE
15	GENERAL	DISTRIBUTION	COPY
16	GENERAL	DISTRIBUTION	REMOVE
17	GENERAL	DISTRIBUTION	ADD
18	GENERAL	MESSAGE	
19	GENERAL	FORMS	LIST
20	GENERAL	FORMS	ADD
21	GENERAL	FORMS	UPDATE
22	GENERAL	FORMS	COPY
23	GENERAL	FORMS	DISPLAY
36	GENERAL	USER	REGISTRATION
45	GENERAL	EXTERNAL	MAIL
56	GENERAL	SCHEDULE	MEETING
5	MAIL	CREATE	
6	MAIL	MAIL	
7	MAIL	UPDATE	
8	MAIL	PRINT	
9	MAIL	DUPLICATE	
10	MAIL	TRASH CAN	
11	MAIL	FORWARD	
12	MAIL	READ	
69	MAIL	SUMMARY	
32	PHONE	VIEW	*
33	PHONE	CHANGE	
34	PHONE	ADD	
35	PHONE	DELETE	*
50	SUPPORT	ESF	LOAD
66	SUPPORT	LIST	USERS
68	SUPPORT	REGISTRATION	CHANGE
71	SUPPORT	SUGGESTION	
24	TICKLER	VIEW	
25	TICKLER	CHANGE	
26	TICKLER	ADD	
27	TICKLER	DELETE	
65	VIEW		

* **name3** *may be* ***current*** *or* ***history.***

13. Color Graphics

This section describes the five kinds of MAPPER color charts and graphs—pie, line, bar, text, and scatter—and tells you how to create them. It tells you how to display them on your terminal and how to plot them. At the end, it describes how to use three special runs to assist you in graphing data from reports and building a list of reports that have graphics code.

In this section

13.1. What Is MAPPER Color Graphics?

It's a set of MAPPER runs that make single or multicolor charts & graphs

MAPPER color graphics is a set of MAPPER runs that provide graphic representations of MAPPER report data. With this feature, you can create either monochrome or multicolor charts and graphs for display on color terminals or for output to color plotters. You can plot charts and graphs either on paper or on overhead transparencies.

In the charts and graphs, you can vary the text, the foreground and background, and fill colors; and you can select various scales and grids.

Here are the five kinds of charts and graphs you can make:

Pie charts

- ***Pie*** charts can have exploded segments; each segment can have a different color and pattern. Figure 13–1 is a pie chart.

Line charts

- ***Line*** charts can have various line styles and colors. Figure 13–2 is a line chart.

Bar graphs

- ***Bar*** graphs can be 3-dimensional, vertical, or horizontal, and can display stacked or comparative bars with different colors and patterns. Figure 13–3 is a bar graph.

Text charts

- ***Text*** charts can have centered titles, bullet and dash lines, and numbered pages. Figure 13–4 is a text chart.

Scatter charts

- ***Scatter*** charts can have varying point indicators in different colors. Figure 13–5 is a scatter chart.

You can use standard field-formed MAPPER reports as input to graphics, which is similar to entering options and data in a function mask. Alternatively, you can use specially formatted graphics reports (called preformatted input reports) for entering new data.

CHART runs

CHART runs produce results that have graphics code. (You don't have to concern yourself with the code.) You can retain these results in MAPPER reports for repeated use; thus, you don't have to recreate the graphics code.

13.2. CHART—Creating Charts and Graphs

Let's look at the graphics menu first:

CHART run menu

```
                    CHART GRAPHICS DISPLAY MENU
          **** TAB TO THE DESIRED FUNCTION AND TRANSMIT ***
OR TAB TO A SELECTION, TYPE IN '?' AND TRANSMIT FOR HELP WITH THAT SELECTION

 ▶ PIE CHART          (PIEG)          ▶ LINE CHART          (LINEG)
 ▶ BAR GRAPH          (BARG)          ▶ TEXT CHART           (TEXT)
 ▶ SCATTER CHART      (SCAT)
 ▶ LOAD GRAPHICS CODE      (G)        ▶ HELP INFORMATION      (H)
 ▶ DISPLAY EXAMPLE CHARTS (E)         ▶ DETERMINE TYPE OF TERMINAL
 ▶ DISPLAY CODE ON SCOPE   (C)
 ▶ SEND CODE TO PLOTTER    (P)
```

getting the graphics menu

How to get the menu

enter: CHART

You get the CHART run menu—do one of these things:

- Tab to the desired position.
- Tab to a selection and enter **?** for help.

Fast access

- ***If you're ready to create a chart,***

enter: [CHART,]*type*

where *type* is the type of chart in parentheses in the upper half of the menu (PIEG, LINEG, BARG, TEXT, or SCAT).

Something else?

If you want to do one of the other things; or if you need help or other information,

enter: CHART,*letter*

where *letter* is a single letter in parentheses in the lower half of the menu.

Sample entries

enter:	to:
pieg	create a pie chart
chart,pieg	create a pie chart
chart,g	load graphics code
chart,h	get help

preformatted reports

CHART runs use preformatted reports where you enter the data to be graphed. Your MAPPER coordinator can set up a form type for these reports.

Here's a sample preformatted input report for a pie chart:

Preformatted pie chart input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.PIE CHART FOR JDOE
.▶             ◤PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED◥
.TITLE -------->
.SUBTITLE ----->
.INCLUDE LEADING '$'? ----->
.DISPLAY PERCENTAGE ONLY? ->
.DISPLAY TOTAL? ------------>
.                                      FOREGROUND BACKGROUND
*NAME          VALUE         EXPLODE? COLOR      COLOR      PATTERN
*=============.=============.========.==========.==========.=======.==============

                              (blank report)

                          ..... END REPORT .....
```

easy 5-step graphics exercise

Try it

Before you read anything more about MAPPER color graphics, why don't you try this easy exercise. It'll make understanding the rest of this section a lot easier.

1. Load the graphics code: enter **CHART,G**.
2. Get help if you need it: enter **CHART,H**.
3. Look at examples: enter **CHART,E** (or tab to DISPLAY EXAMPLE CHARTS in the menu and transmit).
4. In the examples:
   - Roll through the list.

- Tab to the example you want and transmit to display the input report for that chart.
- Press F1 to resume and produce the chart.
- Press F1 again to resume and return to the list of examples.

5. To create a chart:
   - Enter **CHART** to display the graphics menu.
   - Tab to the chart you want and transmit to display this message:

```
IF YOUR DATA ALREADY EXISTS THEN ENTER THE RID AND TYPE OTHERWISE
ENTER JUST THE TYPE AND A NEW RID WILL BE ADDED FOR YOU ---------->
```

   - Enter the RID number and type (or enter just the type if you need a new preformatted report).
   - ***Or,*** enter **PIEG**, **LINEG**, **BARG**, **TEXT**, or **SCAT** to display the same request.
   - ***Or,*** to directly access a previously created preformatted report, enter:

     {**PIEG**|**LINEG**|**BARG**|**TEXT**|**SCAT**},*rt*

     where *rt* are the RID and type of the preformatted report.
   - Transmit to display the specified preformatted report.

See CHART HELP INFORMATION (CHART,H--tab to GENERAL CHART) for details on how to include even more variable information in your CHART run call.

filling in the input report

Fill in the input report, then press F1 to resume and display the request:

```
IF YOU WOULD LIKE ADDITIONAL OPTIONS TO CUSTOMIZE YOUR GRAPH,
ENTER A 'Y' HERE -> N
```

This request appears only if you requested a bar graph or line chart (**BARG** or **LINEG**).

Position the cursor after **N** (no) and transmit: you get these messages:

```
<< NOTE:  IF YOU WOULD LIKE A TERMINAL DISPLAY RATHER THAN A HARD COPY
FROM A PLOTTER OR PRINTER, SIMPLY TRANSMIT

IF YOU WOULD LIKE TO HAVE YOUR GRAPH PLOTTED ON THE 'HP' PLOTTER
INSTEAD OF DISPLAYED ON YOUR SCREEN, ENTER YOUR PLOTTER STATION NUMBER
HERE -> 000

IF YOU WOULD LIKE YOUR PLOTTED GRAPH TO BE ON A FULL SHEET OF PAPER
(11" X 17") RATHER THAN A HALF SHEET OF PAPER (8-1/2" X 11"),
ENTER A Y HERE -> N

IF YOU WILL BE PLOTTING ON TRANSPARENCY SLIDES FOR THE OVERHEAD
PROJECTOR, ENTER A Y HERE -> N

TRANSMIT WHEN DONE
```

Plotting?

If you are plotting, make the appropriate entries.

> *If you are plotting transparencies, change the plotter pens to pens made especially for transparencies. Don't let grease marks or fingerprints get on transparencies.*

Not plotting?

If you are not plotting, transmit or press F1 to resume and display the chart.

Bypassing plotting messages

If you just want to display a chart on your screen, you can bypass the plotting messages by:

- displaying a preformatted report and updating it (if you want to); and
- entering the call for the type of chart you want (**PIEG**, **LINEG**, **BARG**, **TEXT**, or **SCAT**).

Saving the graphics code

While the chart is on display, press F1 to resume and display the chart's code as a result. You can use this result as input to the DISPLAY run (see 13.11).

Entering apostrophes

In ***text*** charts, enter one apostrophe for each apostrophe in your text. ***In all other charts and graphs,*** if you want an apostrophe in your text, enter ***two*** apostrophes at that point. For example, to produce the possessive ***John's,*** enter:

You might need two

```
JOHN''S
```

Using CHART in MAPPER runs

You can call a CHART run in one of your own MAPPER runs to create charts and graphs. To use this capability, you must be a MAPPER run designer. (See the *MAPPER Software Run Designer's Reference* , UP-9662 [see Preface].)

13.3. Colors, Patterns, Lines, and Markers

You can use these marker symbols in ***scatter*** charts:

no.	symbol:
1	.
2	+
3	*
4	○
5	X
6	-
7	I
8	□
9	●
10	■

Symbols 6 through 10 vary from device to device.

See Table 13–1 for the colors, patterns and line styles available for ***pie, bar, line, and text*** charts and graphs.

Table 13-1. Pie, Bar, Line, and Text: Colors, Patterns, and Lines

item	code			
	pie/bar	line	text	pen stall
colors:				
black	black	black	0	1
red	red	red	1	3
green	green	green	2	4
yellow	yellow	yellow	3	5
blue	blue	blue	4	2
magenta	magenta	magenta	5	7
cyan	cyan	cyan	6	2
white	white	white	7	1
gray	gray	gray	8	1
tan	tan	tan	9	5
aqua	aqua	aqua	10	8
lime	lime	lime	11	6
violet	violet	violet	12	7
hot pink	hot pink	hot pink	13	3
turquoise	turquoise	turquoise	14	8
pink	pink	pink	15	3
patterns:				
solid	0	–	–	–
45-degree left (\\\\)	1	–	–	–
45-degree right (////)	2	–	–	–
horizontal	3	–	–	–
vertical	4	–	–	–
vertical & horizontal crosshatch	5	–	–	–
45-degree crosshatch	6	–	–	–
line styles:				
solid	–	1	–	–
short dashes	–	2	–	–
dots	–	3	–	–
dashes & dots	–	4	–	–
very short dashes	–	5	–	–
medium dashes	–	6	–	–
long dashes	–	7	–	–
dash & 2 dots	–	8	–	–
widely spaced dots	–	9	–	–

Which colors are available?

The availability of colors varies depending on the device and terminal you are using. On a 4-pen plotter, you can enter only black, blue, red, or green. (But you can use any color--just put the colors you want in the penholders.) If you specify a color not available on your terminal or plotter, the processor selects another color for it.

13.4. PIEG—Pie Charts

Pie charts graph data as percentages of a whole (100%) and look like a sliced pie.

Preformatted pie chart input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.PIE CHART FOR JDOE
.▶            ▽PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED▽
.TITLE -------->
.SUBTITLE ----->
.INCLUDE LEADING '$'? ----->
.DISPLAY PERCENTAGE ONLY? ->
.DISPLAY TOTAL? ----------->
.                                    FOREGROUND BACKGROUND
*NAME          VALUE         EXPLODE? COLOR      COLOR      PATTERN
*============.============.========.==========.==========.=======.==============

                          (blank report)

                      ..... END REPORT .....
```

selections PIEG selections

Table 13–2 lists pie chart selections.

Table 13–2. PIEG: Pie Chart Selections

after:	enter:
TITLE	title up to 60 characters
SUBTITLE	subtitle up to 60 characters
INCLUDE LEADING '$'?	**Y** if you want currency symbol ($) in front of each value
DISPLAY PERCENTAGE ONLY?	**Y** if you want to display only percentages of the whole
DISPLAY TOTAL?	**Y** if you want total of all values presented in lower right corner

Names

Each line below the header–divider (*=) line represents a slice of the pie. If you want to, you can specify a name for each slice in the NAME field.

Values

You ***must*** enter a value for each slice in the VALUE field. If you want a slice to be offset from the pie's center, enter **Y** (**Y**=yes; **N** or blank=no) under EXPLODE?.

Colors

In the color fields, you can specify both foreground and background colors: the FOREGROUND color includes the text and border for the slice; the BACKGROUND color is the background of the pattern.

Thus, if you want a solid color for a slice, specify the same color under FOREGROUND COLOR and BACKGROUND COLOR; or, specify 1 under PATTERN, which is a solid fill.

If you specify a pattern but no background color, you get black background.

Patterns

See Table 13–1 for a choice of patterns.

some tips and suggestions

Even though there is no absolute limit to the number of slices you may have in your pie, after a certain point the slices become so small that the text overwrites other slices, or it is just too small to be effective.

Experiment with colors and patterns to get an esthetically pleasing mix of solids and patterns.

If your slices are overwriting one another, try rearranging the order of the slices: put a large slice between small slices instead of putting all the small slices together. The order of the slices in your input report determines their order in your pie chart.

Here's a completed input report:

Completed input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.PIE CHART FOR JDOE
.▶            ◤PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED◥
.TITLE --------> EXAMPLE PIE CHART
.SUBTITLE -----> FOR JDOE
.INCLUDE LEADING '$'? -----> Y
.DISPLAY PERCENTAGE ONLY? -> N
.DISPLAY TOTAL? -----------> Y
.                                    FOREGROUND BACKGROUND
*NAME          VALUE         EXPLODE? COLOR      COLOR      PATTERN
*============.============.========.==========.==========.=======.==============
 SEGMENT A     40            N        RED                   3
 SEGMENT B     35            N        GREEN                 4
 SEGMENT C     25            Y        BLUE                  6
                      ..... END REPORT .....
```

With the input report displayed, enter **PIEG** to produce a pie chart; or press **F1** to resume if you entered the report through **CHART** or **PIEG** earlier.

Figure 13–1 is the pie chart produced by this report.

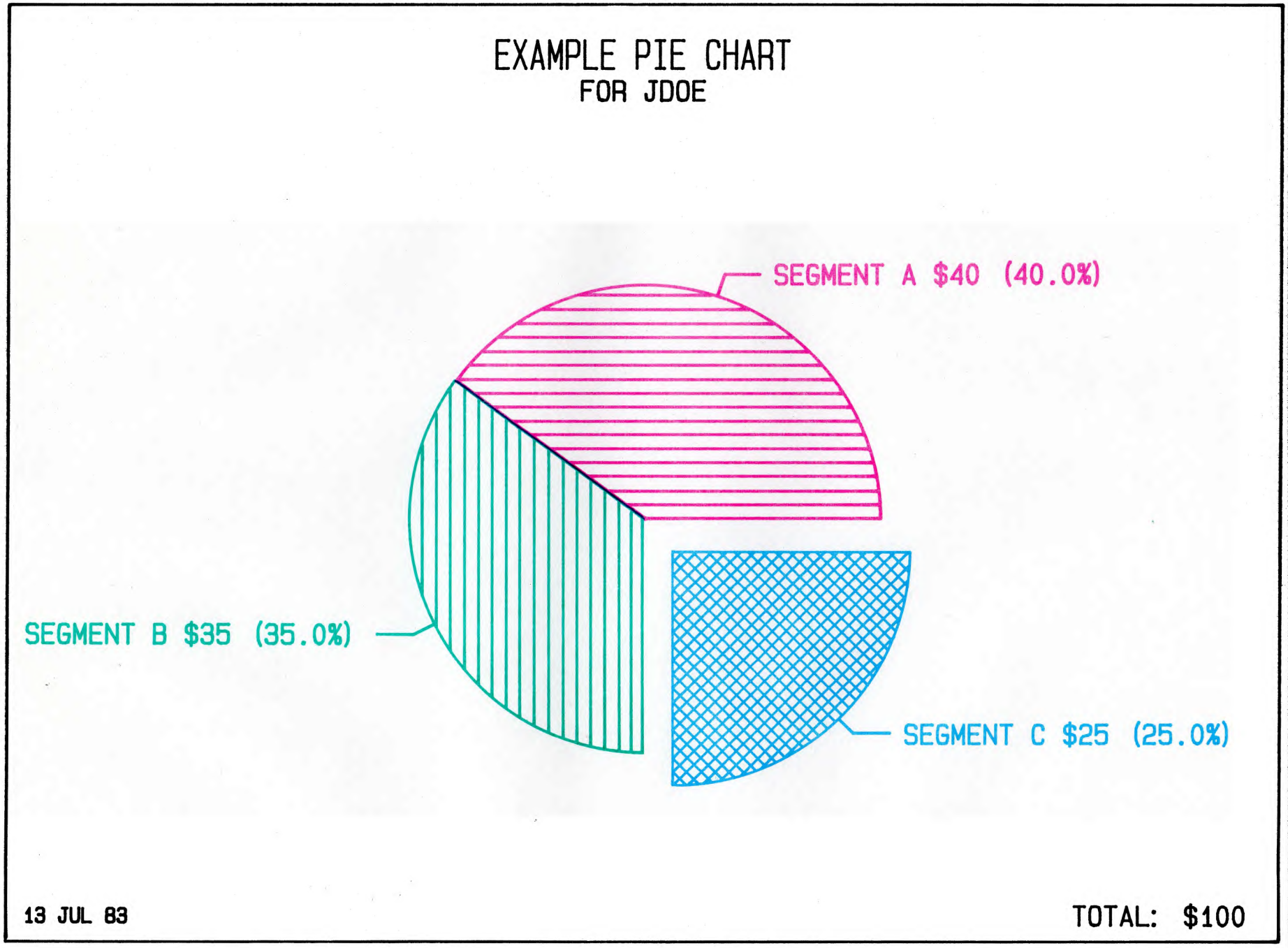


Figure 13-1. Pie Chart

13.5. LINEG—Line Charts

Line charts graph data with a variety of representative lines.

Preformatted line chart input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.LINE CHART FOR JDOE
.▶            ▿PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED▿
.TITLE -------->
.X AXIS TITLE ->
.Y AXIS TITLE ->
.            .    1    .    2    .    3    .    4    .    5    .    6    .
.            .---------.---------.---------.---------.---------.---------.
.CAPTIONS -->
*LABELS
*============.==========.==========.==========.==========.==========.==========.

                          (blank report)

                        ..... END REPORT .....
```

selections LINEG selections

Table 13-3 lists line chart selections.

Table 13-3. LINEG: Line Chart Selections

after:	enter:
TITLE	title up to 60 characters
SUBTITLE*	a subtitle up to 60 characters
X AXIS TITLE	title up to 60 characters centered over horizontal scale
Y AXIS TITLE	title up to 60 characters centered over vertical scale
MINIMUM/ MAXIMUM Y*	your own values (i.e., enter values if you do not want automatic scaling; note that the scale along the vertical [*y*] axis of your chart may not necessarily be your minimum and maximum, in which case the processor rounds the values to a suitable interval; if you choose values for MINIMUM Y, the processor truncates all values in your data that are less than the minimum to that minimum; similarly, if you choose a MAXIMUM Y value, the processor changes all values in your data that are greater than the maximum to that maximum)

(continued)

Table 13–3. LINEG: Line Chart Selections (continued)

after:	enter:
BASE LINE*	base line value other than zero (default) for a solid horizontal base line (all values greater than this value appear above the base line; all values less than this value appear below it)
MARKER DOTS?*	**Y** if you want marker dots at each coordinate in line
OFFSET LINES?*	Y for offset filled lines: each line solid filled under line, down to bottom of the chart; each line offset by a proportional amount, depending on how many lines you want drawn and how many selections you make (the last (sixth) line is nearest the top, the next line to the left and down some, etc. [this is a good selection for determining trends])
DISPLAY GRID LINES?*	**Y** if you want grid lines displayed
NUMERIC X SCALING?*	**Y** if you want numeric entries in LABELS column scaled like *y* axis
COLOR*	colors: see Table 13–1
PATTERN*	patterns: see Table 13–1
SOLID FILL*	**Y** to solid fill any or all lines in your chart (this selection produces a solid fill under the line in the color you specify for the line down to the bottom of the chart—each line is drawn in order from one to six; thus, the solid fill may overwrite some of the values if they dip below the solid filled lines drawn previously)
CAPTIONS	lines you want captioned on left side of chart similar to a road map legend (you must have at least one caption; wherever you do not supply a caption, the processor ignores all data in that particular column; you may select up to six captions; each value in this column is a *y* axis value that matches an *x* axis value, thus forming a pair with a label)
LABELS	points on *x* axis (you must have at least two labels and two values)

* *Additional selections if you answer Y to the ADDITIONAL OPTIONS message.*

After making your selections, press F1 to resume and display the message:

```
IF YOU WOULD LIKE ADDITIONAL OPTIONS TO CUSTOMIZE YOUR GRAPH,
ENTER A 'Y' HERE -> N
```

Answer **Y** if you want the run to scan the headers of your input report and display a list of selections that were not available to you (if you added a report through a CHART run).

Remember that the CHART run offered these selections:

TITLE
X AXIS TITLE
Y AXIS TITLE
CAPTIONS *(at least one required)*

By answering **Y**, you can now choose from among these additional selections:

```
PLEASE FILL IN AS MANY OF THESE EXTRA OPTIONS AS YOU WISH.  TRANSMIT
WHEN DONE.  FOR MORE INFORMATION, RUN 'CHART,HELP'.

.SUBTITLE ----->
.MINIMUM Y ---->
.MAXIMUM Y ---->
.BASE LINE ---->
.MARKER DOTS? ->          (Y OR N)
.OFFSET LINES?->          (Y OR N)
.DISPLAY GRID LINES? - >  (Y OR N)
.NUMERIC X SCALING? -- >  (Y OR N)
.            .   1   .   2   .   3   .   4   .   5   .   6   .
.            .-------.-------.-------.-------.-------.-------.
.COLOR ----->
.PATTERN --->
.SOLID FILL->
.            .-------.-------.-------.-------.-------.-------.
```

some tips and suggestions

You can use the same report or result for a bar graph that you use for a line chart. The run ignores selections unique to the other type.

Also, you can experiment by displaying the same data in your line chart in the various types of bar graphs. Change colors and patterns to get the desired visual effect.

Here's a completed input report with MARKER DOTS and DISPLAY GRID LINES selected:

Completed input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.LINE CHART FOR JDOE
.▶             ▿PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED▿
.TITLE --------> EXAMPLE LINE CHART
.SUBTITLE -----> FOR JDOE
.X AXIS TITLE -> X VALUES
.Y AXIS TITLE -> Y VALUES
.MARKER DOTS? -> Y
.BASE LINE ->
.OFFSET LINES?-> N
.DISPLAY GRID LINES? -> Y
.NUMERIC X SCALING? -- > N
.            .    1    .    2    .    3    .    4    .    5    .    6    .
.            .---------.---------.---------.---------.---------.---------.
.COLOR -----> BLUE      RED       GREEN
.PATTERN ---> 1         1         1
.SOLID FILL->
.CAPTIONS --> CAPTION 1 CAPTION 2 CAPTION 3
*LABELS
*============.==========.==========.==========.==========.==========.==========.
 LAB A        10         10         30
 LAB B        30         20         10
 LAB C        60         30         50
 LAB D        40         40         40
 LAB E        80         50         30
 LAB F        50         60         60
 LAB G        90         70         70
 LAB H        60         80         50
 LAB I        80         90         90
 LAB J        100        100        100
                  ..... END REPORT .....
```

With the input report displayed, enter **LINEG** to produce a line chart; or press F1 to resume if you entered the report through **CHART** or **LINEG** earlier.

Figure 13–2 is the line chart produced by this report.

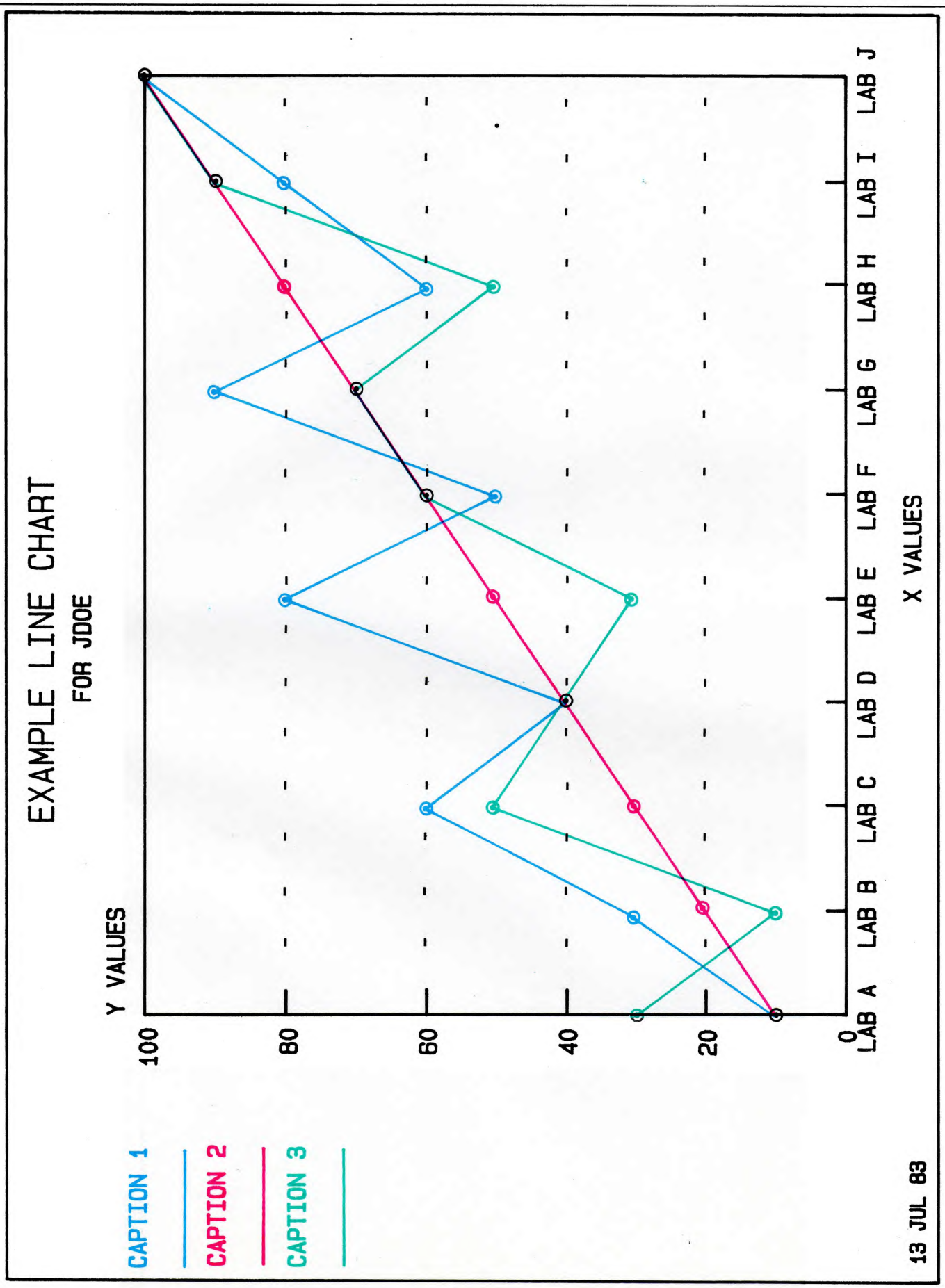


Figure 13-2. Line Chart

13.6. BARG—Bar Graphs

Bar graphs show data with a variety of representative bars.

Kinds

These are the five basic kinds of bar graphs:

- **Stacked Horizontal**

  The values stack one on top of another, producing one ***horizontal*** bar for each label. Answer **Y** to DISPLAY GRID LINES to produce solid ***vertical*** grid lines for locating points on each bar. The processor ignores the answer **Y** to 3D BARS. See also under ***3-Dimensional Comparative Vertical*** charts in this list.

- **Stacked Vertical**

  The values stack one next to another, producing one ***vertical*** bar for each label. Answer **Y** to DISPLAY GRID LINES to produce solid grid lines ***behind*** the bars for locating points on each bar. The processor ignores the answer **Y** to 3D BARS. See also under ***3-Dimensional Comparative Vertical*** charts in this list.

- **Comparative Horizontal**

  This graph has thin, horizontal bars, close together, with vertical grid lines (if selected). You can select BASE LINE. The processor ignores the answer **Y** to 3D BARS. See also under ***3-Dimensional Comparative Vertical*** charts in this list.

- **Comparative Vertical**

  This graph has comparative vertical bars next to one another with optional horizontal grid lines. You can select BASE LINE.

- **3-Dimensional Comparative Vertical**

  This chart is like the comparative vertical chart, except that the bars are boxes rather than flat bars to give the illusion of depth. All other selections (except BASE LINE) apply.

Preformatted bar graph input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.BAR GRAPH FOR JDOE
.▶            ▽DEPRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED◥
.TITLE -------->
.X AXIS TITLE ->
.Y AXIS TITLE ->
.            .    1    .    2    .    3    .    4    .    5    .    6    .
.            .---------.---------.---------.---------.---------.---------.
.CAPTIONS -->
*LABELS
*============.==========.==========.==========.==========.==========.==========.

                          (blank report)

                        ..... END REPORT .....
```

selections BARG selections

Table 13-4 lists bar graph selections.

Table 13-4. BARG: Bar Graph Selections

after:	enter:
TITLE	title up to 60 characters
SUBTITLE*	subtitle up to 60 characters
X AXIS TITLE	title up to 60 characters centered over horizontal scale
Y AXIS TITLE	title up to 60 characters centered over vertical scale
MINIMUM/ MAXIMUM Y*	your own values (i.e., enter values if you do not want automatic scaling; note that the scale along the vertical [*y*] axis of your chart may not necessarily be your minimum and maximum, in which case the processor rounds the values to a suitable interval; if you choose values for MINIMUM Y, the processor truncates all values in your data that are less than the minimum to that minimum; similarly, if you choose a MAXIMUM Y value, the processor changes all values in your data that are greater than the maximum to that maximum)

(continued)

Table 13–4. BARG: Bar Graph Selections (continued)

after:	enter:
BASE LINE*	base line value other than zero (default) for a solid horizontal base line (all values greater than this value appear above the base line; all values less than this value appear below it; not applicable for stacked bar graphs)
3D BARS?*	**Y** if you want 3-dimensional bars; ***available only with comparative vertical bars***
DISPLAY GRID LINES?*	**Y** if you want grid lines displayed
STACKED OR COMPARATIVE BARS?*	**S** or **C** (see explanation following this table)
HORIZONTAL OR VERTICAL BARS?*	**H** or **V** (see explanation following this table)
COLOR*	colors: see Table 13–1
PATTERN*	patterns: see Table 13–1
CAPTIONS	lines you want captioned on left side of chart similar to a road map legend (you must have at least one caption; wherever you do not supply a caption, the processor ignores all data in that particular column; you may select up to six captions; each value in this column is a ***y*** axis value that matches an ***x*** axis value, thus forming a pair with a label)
LABELS	points on ***x*** axis (you must have at least two labels and two values)

* *Additional selections if you answer **Y** to the ADDITIONAL OPTIONS message.*

After making your selections, press F1 to resume and display the message:

```
IF YOU WOULD LIKE ADDITIONAL OPTIONS TO CUSTOMIZE YOUR GRAPH,
ENTER A 'Y' HERE -> N
```

Answer **Y** if you want the run to scan the headers of your input report and display a list of selections that were not available to you (if you added a report through a CHART run).

Remember that the CHART run offered these selections:

TITLE
X AXIS TITLE
Y AXIS TITLE
CAPTIONS *(at least one required)*

By answering , you can now choose from among these additional selections:

```
PLEASE FILL IN AS MANY OF THESE EXTRA OPTIONS AS YOU WISH.  TRANSMIT
WHEN DONE.  FOR MORE INFORMATION, RUN 'CHART,HELP'.

.SUBTITLE ----->
.MINIMUM Y ---->
.MAXIMUM Y ---->
.BASE LINE ---->
.3D BARS? ----->          (Y OR N)
.DISPLAY GRID LINES? - >  (Y OR N)
.STACKED OR COMPARATIVE BARS? (S OR C) ->
.HORIZONTAL OR VERTICAL BARS? (H OR V) ->
.          .   1   .   2   .   3   .   4   .   5   .   6   .
.          .-------.-------.-------.-------.-------.-------.
.COLOR ----->
.PATTERN --->
.          .-------.-------.-------.-------.-------.-------.
```

some tips and suggestions

Even though there is no absolute limit to the number of labels (bars) you may have in your graph, as you add more labels, your bars become thinner and thinner. Try a stacked rather than a comparative bar graph to give you more room for your data; or try a line chart if you have a large number of points.

If your labels are very long, you might get better results with a horizontal bar graph, which gives you more room for labels.

You can use the same report or result for a bar graph that you use for a line chart. The run ignores selections unique to the other type.

Also, you can experiment by displaying the same data in a line chart, or by displaying various types of bar graphs.. Change colors and patterns to get the desired visual effect.

Here's a completed input report with DISPLAY GRID LINES selected for a 3-dimensional, vertical bar graph:

Completed input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.BAR GRAPH FOR JDOE
.▶             ▽DEPRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED◁
.TITLE --------> EXAMPLE BAR CHART
.SUBTITLE -----> FOR JDOE
.X AXIS TITLE -> X VALUES
.Y AXIS TITLE -> Y VALUES
.MINIMUM Y ----> 0
.MAXIMUM Y ----> 50
.3D BARS? -----> Y
.DISPLAY GRID LINES? -> Y
.STACKED OR COMPARATIVE BARS? -> C      (S OR C)
.HORIZONTAL OR VERTICAL BARS? -> V      (H OR V)
.          .    1     .    2     .    3     .    4     .    5     .    6     .
.          .----------.----------.----------.----------.----------.----------.
.COLOR -----> BLUE       RED        GREEN
.PATTERN ---> 5          3          6
.CAPTIONS --> CAPTION 1  CAPTION 2  CAPTION 3
*LABELS
*===========.==========.==========.==========.==========.==========.==========.
 LABEL 1      10         20         30
 LABEL 2      20         30         40
 LABEL 3      30         40         50
                  ..... END REPORT .....
```

With the input report displayed, enter **BARG** to produce a bar graph; or press **F1** to resume if you entered the report through **CHART** or **BARG** earlier.

Figure 13-3 is the bar graph produced by this report.

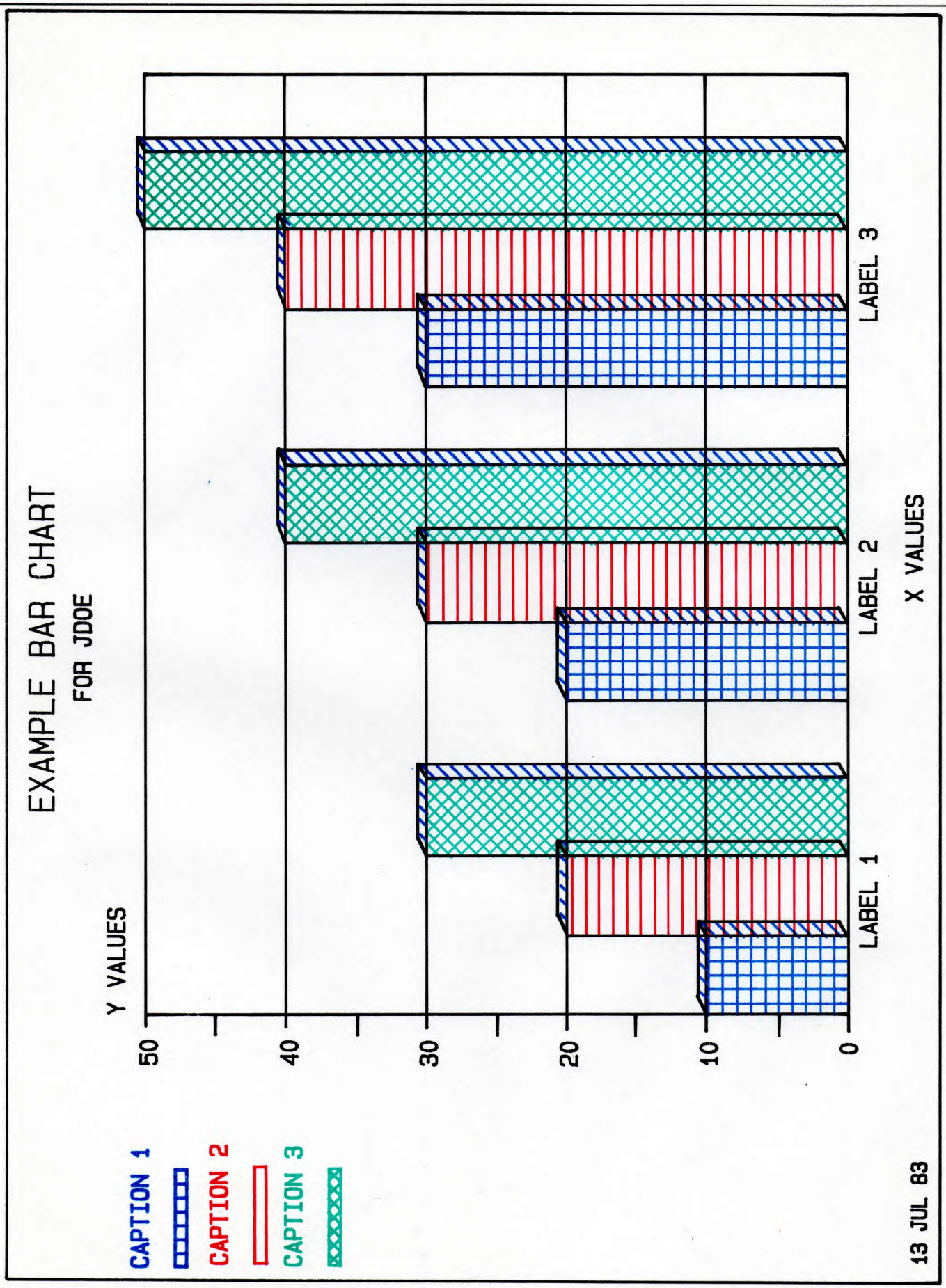


Figure 13-3. Bar Graph

13.7. TEXT—Text Charts

Text charts graph textual data vividly for presentations, and are especially useful for creating transparencies for overhead projectors.

Making transparencies?

If you are plotting your text chart onto transparencies, be sure to replace the regular plotter styluses with pens made especially for transparencies.

The ink used for transparencies takes about 15 minutes to dry: do not allow anything to come in contact with them for at least that long. Also, keep the transparency masters free from grease, including fingerprints.

Preformatted text chart input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.TEXT CHART FOR JDOE
.▶              ▸PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED◂
.LINE TYPE: T, *, -, &, D, I, B, P
.COLORS: 0-BLACK, 1-RED, 2-GREEN, 3-YELLOW, 4-BLUE, 5-MAGENTA, 6-CYAN, 7-WHITE,
.8-GRAY, 9-TAN, 10-AQUA, 11-LIME, 12-VIOLET, 13-HOT PINK, 14-TURQUOISE, 15-PINK
*T.C .                            TEXT
*=.==.======================================================================

                          (blank report)

                     ..... END REPORT .....
```

Line types

In column 2 under T, enter a line type code. These codes are listed in one of the header lines in the report. See them? See also the following list of line types with their description.

8 line types

Here are the line types that you can use:

- ***Title*** (T)

  Title lines print in large type (22-point); are centered and underlined; and are preceded by an extra line feed (double-spaced), except when they are a continuation (&) of a title line. Enter no more than 54 characters, including spaces.

- ***Bullet*** (*)

  Bullet lines print in medium type (18-point); start at the left margin; and are preceded by a bullet, except when they are a continuation (&) of a bullet line.

- ***Dash*** (-)

  Dash lines print in small type (16-point); are indented from the left margin; and are preceded by a dash, except when they are a continuation (&) of a dash line.

- ***Continuation*** (**&**)

  Continuation lines are in the same size type as the line type of which they are a continuation; however, they are indented somewhat more. Use continuation lines whenever the text for your line exceeds 54 (titles) or 73 (all others) characters. You may change the color of a continuation line.

- ***Blank*** (**B**)

  Blank lines are just that--blank. Use them if you want more vertical spacing.

- ***Date*** (**D**)

  Date lines print the current date in small type (11-point) in the lower corner of the chart in the MAPPER format *DD MMM YY* if not otherwise specified in the first nine character positions of the text field (columns 7 through 15). You can enter a date line anywhere in the report, but it always appears in the lower left corner. Also, you have your choice of colors.

- ***Initials*** (**I**)

  Initials lines print any three characters (usually used for initials) in small type (11-point) at the bottom center of the chart. You can enter an initials line anywhere in the report, but it always appears at the bottom center. Pick your color.

- ***Page number*** (**P**)

  Page numbers print up to three characters (usually page numbers) in small type (11-point) in the lower right corner of the chart. Enter up to three characters in the first three characters positions of the text field (columns 7 through 9). You can enter a page number line anywhere in the report, but it always appears in the lower right corner of the chart. Choose a color.

Colors

In columns 4 and 5 under C, enter a color code. These codes are also listed across two header lines. See them? Black (color code 0) is not visible on a black screen.

Entering text

In columns 7 through 80, enter the text. Titles may not exceed 54 characters.

You must have a minimum of one line type and its text.

Here's a completed input report:

Completed input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.TEXT CHART FOR JDOE
.▶            ◤PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED◥
.LINE TYPE: T, *, -, &, D, I, B, P
.COLORS: 0-BLACK, 1-RED, 2-GREEN, 3-YELLOW, 4-BLUE, 5-MAGENTA, 6-CYAN, 7-WHITE,
.8-GRAY, 9-TAN, 10-AQUA, 11-LIME, 12-VIOLET, 13-HOT PINK, 14-TURQUOISE, 15-PINK
*T.C .                              TEXT
*=.==.=============================================================================
 T 4  THIS IS A TITLE LINE
 * 1  THIS IS A BULLET LINE (USED FOR MAIN POINTS)
 & 1  THIS IS A CONTINUATION OF THE PRECEDING BULLET LINE
 - 2  THIS IS A DASH LINE (USED FOR MINOR POINTS)
 & 2  THIS IS A CONTINUATION OF THE PRECEDING DASH LINE
 * 1  THIS IS ANOTHER BULLET LINE
 B    THIS IS A BLANK LINE (COLOR AND TEXT IGNORED)
 - 2  DASH LINE SEPARATED FROM PRECEDING BULLET BY A BLANK LINE
 D 4  99 DEC 31 (1ST 6 DIGITS OF TEXT IS USED OR CURRENT DATE IS SUPPLIED)
 I 1  JDO
 P 2  1
                      ..... END REPORT .....
```

With the input report displayed, enter **TEXT** to produce a text chart; or press **F1** to resume if you entered the report through **CHART** or **TEXT** earlier.

Figure 13–4 is the text chart produced by this report.

THIS IS A TITLE LINE

- THIS IS A BULLET LINE (USED FOR MAIN POINTS)

  THIS IS A CONTINUATION OF THE PRECEDING BULLET LINE

  - THIS IS A DASH LINE (USED FOR MINOR POINTS)

    THIS IS A CONTINUATION OF THE PRECEDING DASH LINE

- THIS IS ANOTHER BULLET LINE

  - DASH LINE SEPARATED FROM PRECEDING BULLET BY A BLANK LINE

13.8. SCAT—Scatter Charts

Scatter charts are special-purpose graphs for marking off points on a numeric *x* and *y* scale, and are especially useful for pairs of related values.

Preformatted scatter chart input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.SCATTER CHART FOR JDOE
.▶            ▽PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED▽
.TITLE -------->
.SUBTITLE ----->
.X AXIS TITLE ->
.Y AXIS TITLE ->
.X MINIMUM ---->
.X MAXIMUM ---->
.Y MINIMUM ---->
.Y MAXIMUM ---->
.MARKER SYMBOL->
.DISPLAY GRID LINES? ->
.           .----------.-----------------------------------------------------.
.COLOR ----->.          .
*     X      .    Y     .
*============.==========.=====================================================.

                        (blank report)

                    ..... END REPORT .....
```

selections SCAT selections

Table 13-3 lists scatter chart selections.

Table 13-5. SCAT: Scatter Chart Selections

after:	enter:
TITLE	title up to 60 characters
SUBTITLE	subtitle up to 60 characters
X AXIS TITLE	title up to 60 characters centered over horizontal scale
Y AXIS TITLE	title up to 60 characters centered over vertical scale

Table 13-5. SCAT: Scatter Chart Selections (continued)

X MINIMUM/ X MAXIMUM Y MINIMUM/ Y MAXIMUM	your own values (i.e., enter values if you do not want automatic scaling; note that the scale along the vertical [*y*] axis of your chart may not necessarily be your minimum and maximum, in which case the processor rounds the values to a suitable interval; if you choose values for MINIMUM Y, the processor truncates all values in your data that are less than the minimum to that minimum; similarly, if you choose a MAXIMUM Y value, the processor changes all values in your data that are greater than the maximum to that maximum)
MARKER SYMBOL	code number from 1 through 10 for marker symbol you want (default=1 [single dot]; see 13.3)
DISPLAY GRID LINES?	Y if you want grid lines displayed
COLOR	colors: default=yellow (see Table 13-1)
X Y	points on the *x* and *y* axes (you must have at least one pair of *x* and *y* points; enter as many as you wish)

Here's a completed input report:

Completed input report

```
.DATE 01 MAY 84  12:34:56  RID    1   01 APR 84  JDOE
.SCATTER CHART FOR JDOE
.▶              ◤PRESS F1 OR ENTER 'RSM' WHEN REPORT IS UPDATED◥
.TITLE --------> EXAMPLE SCATTER CHART
.SUBTITLE -----> FOR JDOE
.X AXIS TITLE -> TITLE X
.Y AXIS TITLE -> TITLE Y
.X MINIMUM ---->
.X MAXIMUM ---->
.Y MINIMUM ---->
.Y MAXIMUM ---->
.MARKER SYMBOL-> 5
.DISPLAY GRID LINES? -> Y
.            .----------.-----------------------------------------------------.
.COLOR -----> BLUE      .
*     X      .     Y     .
*============.==========.=====================================================.
 1            2
 2            4
 3            6
 4            9
 5            14
 6            21
 7            33
 1            33
 2            21
 3            14
 4            9
 5            6
 6            4
 7            2
                    ..... END REPORT .....
```

With the input report displayed, enter **SCAT** to produce a scatter chart; or press F1 to resume if you entered the report through **CHART** or **SCAT** earlier.

Figure 13-5 is the scatter chart produced by this report.

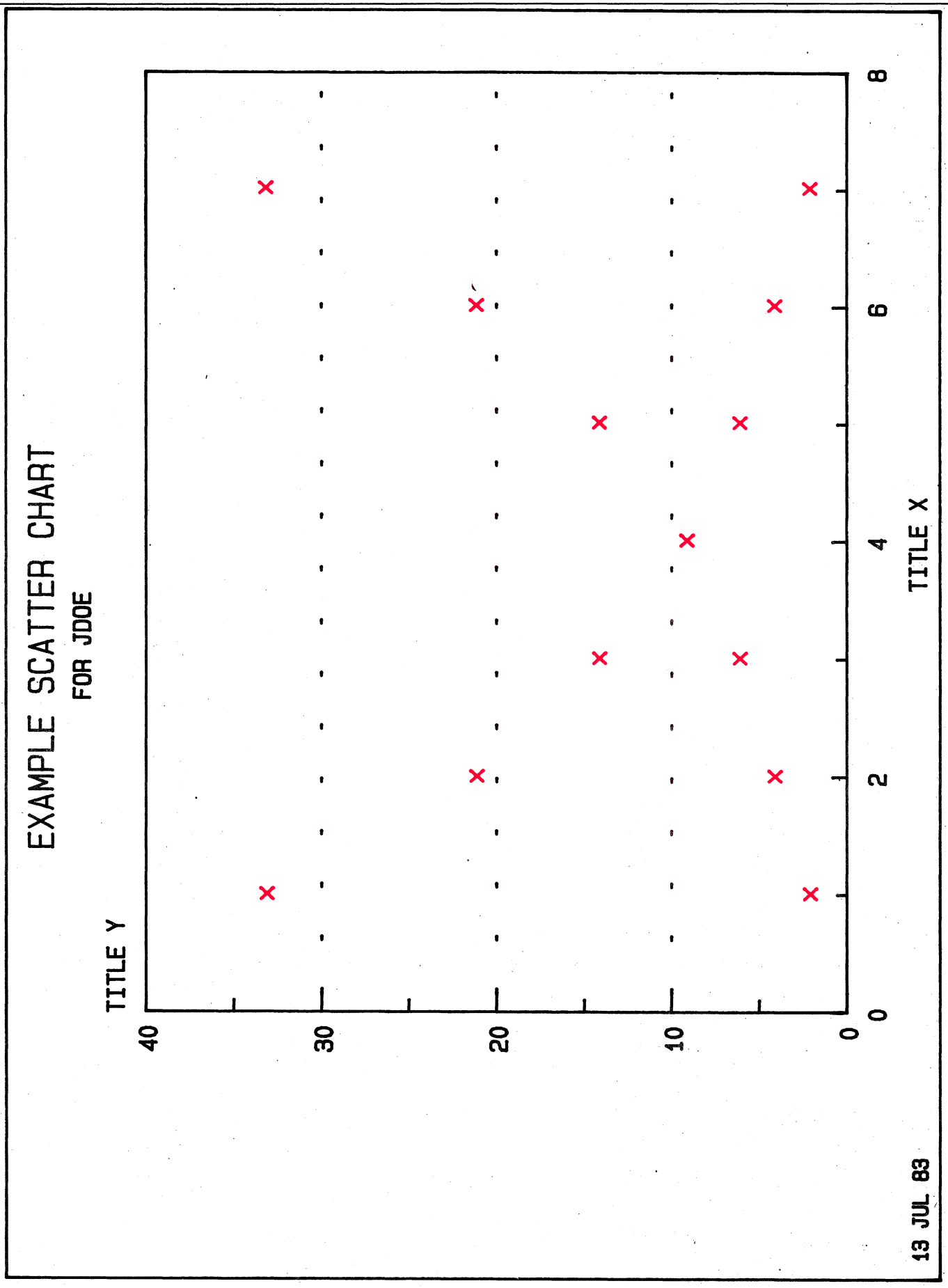


Figure 13-5. Scatter Chart

13.9. GR—Graphing Data in Column-formed Reports on Screen

What it does

The GR run produces a terminal display from data in column-formed reports.

starting the GR run

How to start the GR run

First display the report or result you wish to graph; then

enter: GR

You get the function mask derived from the headers of the report on display.

Enter the options:

- B comparative bar graph
- F filled line chart
- H horizontal bar graph or line chart
- P pie chart
- S stacked bar graph

Enter ***no*** option if you want a vertical line chart.

Enter the parameters:

- L ***x*** axis labels
- X get data from this field
- S key field to subtotal (use only with + parameter)
- \+ add (use only with S parameter)

Specifying your own patterns & colors

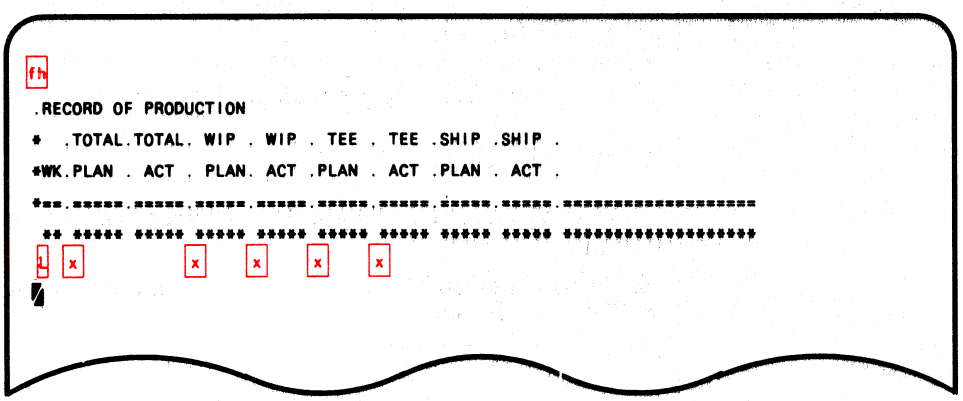
You can also specify your own patterns and colors:

- Specify patterns in the second line below the mask under the X's.
- Specify colors in the third line below the mask under the X's (see Table 13-1; use the ***number*** for the color under the heading "text").

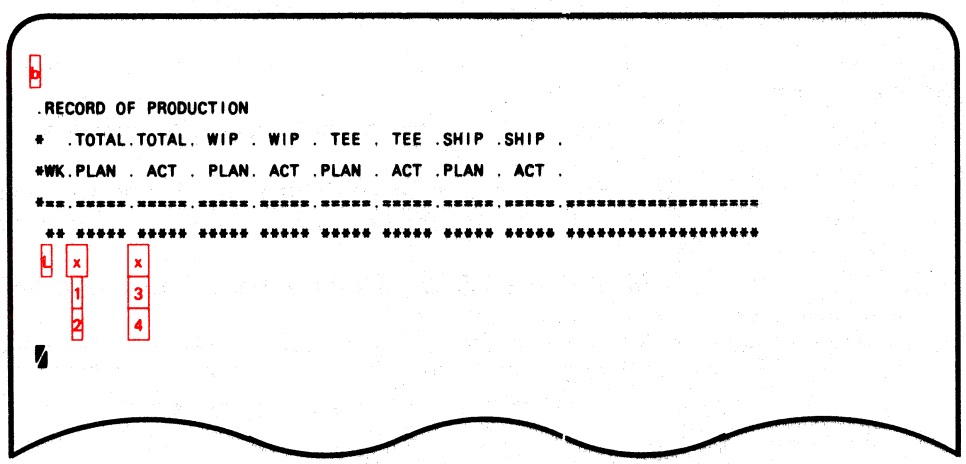
Do not specify a pattern or color in the label (L) field.

examples

In this example, we have entered the F and H options to request a filled horizontal line chart. The WK field has the *x*-axis labels (L); the **X**'s are in the fields from which to obtain data.



In the next example, we have entered the B option to request a comparative vertical bar graph with patterns 1 and 3, colors 2 and 4:



experimenting with the GR run

Try it

Try this to see what the GR run can do for you:

1. Sign on as JDOE.
2. Display report 2C.
3. Request the TOTALIZE function: enter **TOT*** and transmit.
4. In the function mask, enter:
   - **O** and **S** (options);
   - **S** in the CLASS field; and
   - **+** in the QUANTITY field.
5. Return the cursor, then transmit to create the result.
6. In the result, enter:
   - **GR** in one of the control line positions; and
   - transmit to display the function mask.
7. In the function mask, enter:
   - **B** above the mask;
   - **L** in the CLASS field; and
   - **X** in the QUANTITY field.
8. Transmit to display the graph.

Repeat these steps, varying the type of graph, patterns, and colors.

13.10. GRID—Graphing Data from MAPPER Reports

What it does

The GRID run lets you graph data from MAPPER reports.

GRID vs. GR

How is the GRID run different from the GR run? The GRID run extracts data from selected fields in your report and produces a preformatted line or bar graph input report (which is a ***result***).

You can duplicate or replace the result into your own form type for future use with the CHART runs LINEG and BARG.

How to start the GRID run

starting the GRID run

With the report or result on display,

enter: GRID

or, if the report is not on display,

enter: GRID,*rt*

where *rt* are the RID and type.

You get the function mask:

- Enter the options.
- Enter the parameters:

L	label: choose column for labeling to produce ***x***-axis labels (if you do not enter an **L**, the processor gives you a choice of several labels such as FISCAL MONTH, QUARTER, or WEEK)
S	subtotal: (use only with + parameter)
+	add (use only with S parameter)
numbers 1 through 6	numbers for lines or bars (select these numbers in sequence from 1 to 6 and place them in the fields in the order you want your lines or bars to appear; the headings for these fields become the captions)

- Press F1 to resume and produce the preformatted input result.
- Duplicate the result.
- Use a CHART run to display or plot it.

examples

Here's a preformatted input result mask:

```
. RECORD OF SALES
*  .TOTAL.TOTAL. WIP . WIP . TEE . TEE .SHIP .SHIP .       .
#WK.PLAN . ACT . PLAN. ACT .PLAN . ACT .PLAN . ACT .WORKER.
#==.======.======.======.======.======.======.======.======.============
 **.******.******.******.******.******.******.******.******.************
```

No *= line?

If your report has no header-divider (*=) line, you get an error message: the GRID run depends on column-formatted data.

```
. RECORD OF SALES
*  .TOTAL.TOTAL. WIP . WIP . TEE . TEE .SHIP .SHIP .       .
#WK.PLAN . ACT . PLAN. ACT .PLAN . ACT .PLAN . ACT .WORKER.
#==.======.======.======.======.======.======.======.======.============
 **.******.******.******.******.******.******.******.******.************
L      3    1    4         2    5
```

```
. RECORD OF SALES
*  .TOTAL.TOTAL. WIP . WIP . TEE . TEE .SHIP .SHIP .       .
#WK.PLAN . ACT . PLAN. ACT .PLAN . ACT .PLAN . ACT .WORKER.
#==.======.======.======.======.======.======.======.======.============
 **.******.******.******.******.******.******.******.******.************
   H                                                 S
```

13.11. DISPLAY—Building a List of Reports Having Graphics Code

What it does

The DISPLAY run lets you build a list of reports that have captured graphics code.

How to start the DISPLAY run

setting up/displaying graphics code

enter: **DISPLAY,NEW,*t***

or:

enter: **DISPLAY,{ADD / CYC / RUN},*rt***

where:

NEW	add new report in form type specified for building list of coded graphics reports (note the RID number supplied for future reference)
t	form type where you want list
ADD	add result on display to already existing list in RID and form type specified (remember that the CHART run produces graphics code; after viewing a chart, press F1 to resume and display the code as a result)
CYC	cycle (i.e., run through) list in RID and form type specified (created by **DISPLAY,NEW,*t*** and built by **DISPLAY,ADD,*rt***), sequentially, at 3-second intervals
RUN	run through list in RID and form type specified, sequentially, waiting until user presses F1 to resume before going on to next chart
rt	RID and type of list

Let's summarize:

To summarize:

1. If you don't have a list yet, enter **DISPLAY,NEW,*t*,** where *t* is the form type. Skip this step if you have a list.
2. Produce a chart with one of the CHART runs: PIE, LINE, BAR, TEXT, or SCAT.
3. When the chart is complete, press F1 to resume and display the code.
4. To add the result to your list, enter **DISPLAY,ADD,*rt*,** where *rt* are the RID and type of the list.
5. To run through the list, enter **DISPLAY,CYC** (or **RUN,**)***rt*,** where *rt* are the RID and type of the list.

14. Designing Applications

This section tells you how to design and generate a new form type for a new application.

In this section

14.1. What to Do

To design an application, you must:

1. Design a new form type.
2. Create an experimental report in which to lay out your new form type.
3. Have your MAPPER coordinator generate and define the new form type.

14.2. Application Authorization and Justification Form

To have a new form type generated, submit a form similar to the Application Authorization and Justification form illustrated in Figure 14-1 to your MAPPER coordinator.

This form presents an estimate of the size of your data base and how often certain functions might be used. It also defines the new form type's potential impact on the processor, its economic benefits, and the general plan for its use. The MAPPER coordinator uses this information to monitor reports and to determine how closely the new form type's actual use agrees with its planned use.

Resubmit this form if you change the application, or if it deviates significantly from your plan.

MAPPER

Application Authorization & Justification

DATA ORIGINATED	REQUESTER	EXT.	ORGANIZATION NAME	APPROVING MGR. & DATE

APPLICATION ☐NEW ☐MOD. ☐REJUST.	ASSIGNED MODE	ALPHA TYPE	NUMERIC TYPE	FILE NO.	LINE LENGTH	RESP. NO	DATE GENERATED

1. State title and describe application.

2. Describe any alternative to MAPPER software as a method to do this task. If requesting computer runs, key punching, or printer listings, estimate costs/week.

3. Estimate weekly man-hours needed:

ALTERNATE METHOD	ON MAPPER SYSTEM	DIFFERENCE	RATE	YEARLY HOURS

4. What kind of historical access is required for this data base?

5. Describe any interfaces between this application and other processors.

6. Estimate these:

		COSTS/VAR
1. Total lines of data in the proposed data base.	_____	- _____
2. Number of reports in the data base.	_____	
3. Average number of lines of data in each MAPPER report.	_____	
4. Number of reports updated each day.	_____	
5. Number of SEARCHes/LOCATEs per week.	_____	+ _____
6. Number of TOTALIZEs/DATEs per week.	_____	+ _____
7. Number of online SORTs per week.	_____	+ _____
8. Number of MATCHes per week.	_____	+ _____
9. Number of Runs per week.	_____	+ _____
10. Number of auxiliary printer listings per week.	_____	+ _____
11. Number of high-speed printouts per week.	_____	+ _____
12. Number of BATCH STARTs/RETRIEVEs/REMOTE RUNs.	_____	+ _____

COMMENTS:

$-value of man-hours saved/week	_____
Total savings/week	_____
A) Annual savings	_____
B) Real-time rating	_____
C) Average lines updated/day	_____
Application Merit Rating (AxB/C)	_____

IF DIAL-IN REQUIREMENTS, ESTIMATE:

1. Number of terminals. _____
2. Number of dial-ins per week. _____
3. Average duration of time per dial-in. _____

NOTE: Areas within heavy lines to be filled in by coordinator.

Figure 14-1. MAPPER Application Authorization and Justification Form

14.3. Designing a New Form Type

Guidelines

When designing a new form type, follow these guidelines so that all report processing functions perform consistently:

Size

- When planning and justifying your new form type, indicate your intentions regarding line length, total lines in the form type, and the size of the reports. Line length and total lines per form type significantly affect processing time: generally, shorter line length and fewer lines per report are best.

- Break apart form types exceeding 500 lines into logically useful reports, usually fewer than 500, and in no case more than 1000, lines each. Only one user can update a report at one time. Thus, if there are more reports in a form type, more users can update that type simultaneously.

- Generally, reports having fewer lines process faster. The processor processes the entire report whenever someone changes the number of lines in the report. Wherever you expect frequent changes in the number of lines, keep these reports relatively small, e.g., 200–500 lines.

Fields

- Present those fields first that you plan to use frequently, starting at the left side of the form. The leftmost 80 characters are basic format.

- Left-justify data in description fields; right-justify whole numbers; and align numbers having decimals on the decimal point.

- To save character positions, limit fields having a fixed number of characters (e.g., serial numbers and birth dates) to the number of characters required.

Mode & type

- Select a mode and related form type designation. Select the mode after considering your security needs. The form type is usually the next available form type within the mode.

Line 1

The processor provides the standard line 1.

date formats

Selecting one

When selecting date formats, consider the format that best meets your needs; i.e., select a format that displays the most significant characters first (see Table 14–1).

Consider also your sorting and searching-in-range requirements, for which we recommend code B: format *YYMMDD*.

Table 14-1. New Applications: Date Formats

symbol:	format:	result:	date:
A	*YMMDD*	41231	December 31, 1984
B	*YYMMDD*	841231	December 31, 1984
C	*DD MMM YY*	31 DEC 84	December 31, 1984
D	*YDDD*	4366	December 31, 1984
E	*YYDDD*	84366	December 31, 1984
F	*DDMMYY*	311284	December 31, 1984

header lines

Guidelines

When preparing header lines, follow these guidelines:

Use period & asterisk type lines

- All header lines are period or asterisk type lines; they must have a leading period or asterisk.

Header lines

- Enter at least one header line (not counting line 1, the .DATE line); you may enter up to eight header lines (including a header-divider line).

Period type lines

- Period type header lines may not exceed 80 characters; they do not shift.

Asterisk type lines

- Asterisk type header lines shift: use them as mask headers (from 80 to 132 characters). Because of double mask screen requirements, do not use more than three asterisk type comment lines in the headers.

Header-divider line

- Use a header-divider (*=) line to effectively separate report data from field headers. Insert periods in the field headers and the header-divider line in the character positions that have tab characters in column-formed lines. (Tab characters in tab type lines are not visible.)

> *You **must** have a header-divider line separating headers from data for form types that are to be processed with SEARCH, SORT, TOTALIZE, or similar functions. These functions key on the header-divider line to determine where headers end and data begins.*

data fields

Guidelines

For data fields, follow these guidelines:

Fields

- Separate fields with tab characters.

Line types

- In column-formed reports that are to be processed with general processing functions such as MATCH, SEARCH, SORT, and TOTALIZE, make each line one of the four common MAPPER line types (see 1.5).

Input edit codes

- Table 14-2 gives the codes to define character positions.

Table 14-2. New Applications: Input Edit Codes

code:	defines:
blank	no editing
0	a tab position
1	a numeric (required; cannot be blank)
2	a numeric or blank
3	an alphabetic (required; cannot be blank)
4	an alphabetic or blank
5	content (must have data; cannot be blank)
6	a blank (may not have data)
7	Kanji characters
8	Kanji characters or blank

experimental reports

Creating

To create an experimental report under the JDOE sign-on, first enter TYPE to display the relative mode screen (see 5.8). Next, find the form type called EXPERIMENTAL REPORTS and add a report to that form type (XR [7.2]).

Characteristics

Essentially, an experimental report includes:

- from one to eight header lines following the processor-generated standard line 1 (see under **header lines** in 14.3).

- up to six predefined lines, unless you used fewer than eight header lines, in which case you can add predefined lines to make up the difference:

  header lines + predefined lines = 14 maximum

  see 7.4;

- one line defining input edit codes (see under **data fields** in 14.3); and

- from one to six format lines denoting up to six formats with an **X** in column 1 and **X**'s in the character positions to be included in the format.

Use this example of an experimental report as a guide for designing your own report:

```
.DATE 01 MAY 84  M16 F1 132C            01 APR 84         JDOE
.CORPORATE ORDER STATUS                 BY:                          D0206
*ST.ORDER . PRODUCT .ORD.CUST.  UNIT   .EXTENDED.REQ'D .SALE.
*CD.NUMBER.  TYPE   .QTY.CODE. RETAIL . RETAIL .DELIVR.REP .    CUSTOMER      .    ADDRESS     .     CITY     .STATE. ZIP .
*==.======.=========.===.====.========.========.======.====.=================.===============.==============.=====.=====.
0 0     0        0  0   0       0       0     0   0                 0              0             0    0    0
X                                                           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X  XXXXXXX               XXXXX                         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                                                      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXX                 XXXXXXXXX                              XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                                      XXXXXXXXX            XXXXXXXXXXXXXXXXXX
```

Line 1 The first line is the standard line 1 (.DATE line).

Line 2 The second line is a period type line having the title of the report.

Lines 3 & 4 The third and fourth lines are asterisk type lines, which define the fields in the report.

Line 5 The fifth line is a header-divider line, an asterisk line followed by equal signs with periods separating the fields.

Line 6 The sixth line defines input edit codes (see under **data fields** in 14.3).

This example has no predefined lines.

Lines 7 through 12 The last six lines are format lines, where **X**'s denote character positions to include in each of the formats (1 through 6). The first format line is format 1, the second is format 2, etc. Formats include fields from the basic report format going from left to right. You cannot interchange field positions, so be sure to consider your formatting requirements carefully when you lay out the basic format.

Do some experimenting Do not lay out proposed new form types on paper. Experiment with your new form type in your experimental report: add a few lines of data, then display and manipulate the data. Show the online report or a printout of screens to your coordinator, who might suggest improvements. If you design a new form type with care, you might never have to modify it.

14.4. Generating a New Form Type

RID 0

MAPPER coordinators generate new form types with the GENERATE function. GENERATE creates a control RID 0, which has the function mask; the blank report layout with headers; any predefined lines; input edit codes; and format definitions for the new form type. Your MAPPER coordinator gets this information from your experimental report.

using RID 1 to define a form type

Use RID 1 of the form type to define the form type. RID 1 defines the fields, the coding system, the form type organization, input edit codes, available formats, and any special use rules for infrequent users.

Here's RID 1 of form type B:

```
LINE▶ 1▼      FMT▶   RL▶       SHFT▶     HLD CHRS▶    HLD LN▶    ▶      LCS      ▶
.DATE 01 MAY 84  12:34:56  RID      1    01 APR 84  JDOE
.@991231          CORPORATE PRODUCTION STATUS              B0022
*ST.STATUS.BY. PRODUCT .SERIAL.PRODUC.ORDER.CUST.PRODUC.PRODUC. SHIP .SHIP .SPC.
*CD. DATE .IN.  TYPE   .NUMBER. COST .NUMBR.CODE. PLAN .ACTUAL. DATE .ORDER.COD.
*..******.**.*********.******.******.*****.****.******.******.******.*****.***.
*XX STATUS CODE: OR = ORDERED, SC = SCHEDULED, IP = IN PROCESS, SH = SHIPPED
*   XXXXXX STATUS DATE (YYMMDD)
*          XX INITIAL OF PERSON REPORTING STATUS
*             XXXXXXXXX PRODUCT TYPE NUMBER
*                       XXXXXX UNIT SERIAL NUMBER
*                              XXXXXX PRODUCTION COST
*                                     XXXXX CUSTOMER ORDER NUMBER
*                                          XXXX CUSTOMER CODE
*                    PRODUCTION PLAN DATE YYMMDD XXXXXX
*                         PRODUCTION DATE YYMMDD ACTUAL XXXXXX
*                                    SHIP DATE YYMMDD XXXXXX
*                                       ORDER TO SHIP NUMBER XXXXX
*                                             SPECIAL SEARCH CODES XXX
 SH 840109 LS BLACKBOX1 455660        74536 NASA 840103 840107 84010  S4572
*SH 840109 LS BLACKBOX1 455661        74536 NASA 840103 840107 840109 S
.THE ABOVE LINE IS AN EXAMPLE ITEM WHICH DENOTES:
.SH  THAT THE STATUS OF THE ITEM IS SHIPPED
.THE STATUS WAS REPORTED ON JAN 9, 1984 BY L. S.
```

extensive field or header modification

Extensive changes? create new form type

Instead of making extensive changes in form design to an existing form type, create a new form type. You can move any data from the old form type to the new form type with REFORMAT (see 8.12), or in a MAPPER run with an @RDC (READ CONTINUOUS) statement (see the *MAPPER Software Run Designer's Reference*, UP-9662 [see Preface]). Call your MAPPER coordinator to help you determine the best procedure.

Appendix A. Summaries: Functions, Fast Access, Options

This appendix has three tables:

- *Table A-1 (alphabetical list of MAPPER functions)*
- *Table A-2 (summary of fast access calls to functions)*
- *Table A-3 (summary of options by function)*

Table A-1. Summary of MAPPER Functions

function:	call:	what it does:
ABORT	MSG WAIT	Terminate MAPPER function in process
ADD LINE	]*n* +[*p*]	Add line/lines
ADD ON*	ADON	Append report to displayed report/result
ADD REPORT	AR	Add new report in specified form type
ADD TO*	ADTO	Append displayed data to another report
ARITHMETIC*	A	Do computations using arithmetic expressions
AUXILIARY	AUX	Queue data to auxiliary device
BATCH START	START	Start batch run
BINARY FIND**	BF	Split reports, find/display data
CALCULATE*	CAL	Do complex computations/conditional evaluations
CALCULATE UPDATE*	CALU	Do complex computations/conditional evaluations for update
CHANGE*	CHG	Change character string to new image
COPY	COPY	Copy 1100 OS file/element to another site
CUT*	CUT	Cut/paste text
DATE*	DATE	Do computations on dates
DELETE***	DEL	Delete lines in result of update function from report
DELETE LINE	]*n* -	Delete line/lines
DELETE REPORT	DR	Delete report
DEVICE	DEV	List auxiliary devices/status
DISPLAY	D	Display report
DOWNLINE LOAD	DLL	Downline load UTS 400/40 terminal
DUPLICATE LINE	]*n* X[*g*]	Duplicate line/lines
DUPLICATE REPORT	XR	Duplicate report
ELEMENT	ELT	Copy MAPPER report to 1100 OS file/element
ELEMENT DELETE	ELT-	Delete 1100 OS file/element
EXTRACT***	EXT	Delete lines in result of update function/redisplay result
FIND	F	Find/display data
FUNCTION	FUN	Display common functions/calls

(continued)

Table A-1. Summary of MAPPER Functions (continued)

function:	call:	what it does:
INDEX*	I	Index form type
INSERT LINE	]*q* I*s*[,*n*]	Insert line/lines
LANG	LANG	Display MAPPER messages in another language
LINE CONTROL	L	Restore control line (see 6.1)
LINE ZERO	LZ	Display line 0 information
LIST MERGE*	LM	Extract/merge data
LOCATE †	LOC	Locate/display character string
MATCH*	MA	Compare/match/move data
MATCH UPDATE*	MAU	Match data for update
MODE	M	Select mode
MOVE LINE	]*q* M*s*[,*n*]	Move line/lines
PAINT	F2 /PNT	Redisplay (see 8.2)
PASSWORD	PSW	Assign/change/clear report password; unlock report for updating
PRINT	PR	Queue data to system printer
PUNCH	PUNCH	Punch 80-column cards
READ PASSWORD	RPSW	Assign/change/clear read protect password/read access lock
REFORMAT*	RF	Move columns of data
RELEASE	^	Release display
REMOTE RUN	RR *run-name*	Start MAPPER run at another MAPPER site
REMOTE SYMBIONT INTERFACE	RSI	Enter demand mode at MAPPER terminal
REPLACE	REP	Replace report with displayed report/result
RESUME	F1 /RSM	Resume executing interrupted function
RETRIEVE*	RET	Retrieve MAPPER report or 1100 OS file/element
RUN	*run-name*	Start MAPPER run
SEARCH*	S	Search for data
SEARCH LIST*	SL	Search using parameters list in another report
SEARCH LIST UPDATE*	SLU	Search list report for update
SEARCH UPDATE*	SU	Search report for update
SEND REPORT*	SEND	Send report/result to another station
SIGN OFF	X	Release control of display terminal
SIGN ON	]*user-id, dept. no., password*	Sign on to MAPPER terminal
SOE UPDATE	▶	Change data between SOE (▶) and cursor (◪)
SORT*	SORT	Rearrange order of lines of data
STATION-TO-STATION MESSAGE*	SS	Send message (up to full screen) to another station
TAPE CASSETTE (DISKETTE)	TCS	Read from/write to cassettes/diskettes
TOTALIZE*	TOT	Do arithmetic/move operations
TYPE	T	Display available form types in mode
UPDATE***	UPD	Blend lines in result of update function into report
WORD CHANGE*	WC	Locate/change words from list
WORD LOCATE	WL	Locate words from list
WORD PROCESS*	WP	Collect/process textual data

* *Creates a result.*

** *Creates a result with N or O option.*

*** *Use with update functions: CALCULATE UPDATE, CHANGE (with OU option), LOCATE (with OU option), MATCH UPDATE, SEARCH LIST UPDATE, and SEARCH UPDATE.*

† *Creates a result with O or OU option.*

Table A-2. Fast Access Summary

function:	call:
ADD ON	ADON *rt*
ADD TO	ADTO *rt*
ADD REPORT	AR *t*
ARITHMETIC	A *rt*
BINARY FIND	BF{ *rt*|*t* } [*f*]
	BF -
CALCULATE	CAL *rt* [*f*]
CALCULATE UPDATE	CALU *rt* [*f*]
CHANGE	CHG [*rt*];/ *target-string* / *replacement-string* / *options*
	CHG *rt f*
DATE	DATE *rt* [*f*]
DISPLAY	*rt* [*f*]
DUPLICATE REPORT	XR *rt*
FIND	F { *rt*|*t* } [*f*]
	F -
INDEX	I *number-of-lines-&-type*
LANG	LANG *n*
LINE ZERO	LZ *rt*
	LZ -
LIST MERGE	LM *rt*
LOCATE	LOC *target-string*
	LOC [*rt*];/ *target-string* / *options*
	LOC *rt f*
SEARCH	S { *rt*|*t* } [*f*]
	S -
SEARCH LIST	SL { *rt*|*t* } [*f*]
	SL -
SEARCH LIST UPDATE	SLU { *rt*|*t* } [*f*]
	SLU -
SEARCH UPDATE	SU { *rt*|*t* } [*f*]
	SU -
SEND REPORT	SEND *station-number* [,Y]
SORT	SORT *rt* [*f*]
TOTALIZE	TOT *rt* [*f*]
WORD CHANGE	WC *target-string,replacement-string,* [. . .]
WORD LOCATE	WL *target-string* [,. . .]
WORD PROCESS	WP *rt*

where:

rt = RID & type*

t = alphabetic form type

f = format

\- = report or result on display

n = language number

Y = yes, acknowledge (assumes N if comma and Y omitted)

**For ARITHMETIC, RID & type having predefined equations; for LIST MERGE, receiving RID & type (issuing report must be on display).*

Table A-3. Function Options

Option	Purpose	Function										
		BFN	CAL	LCH (1)	DAT	FND	LOC (1)	MCH	RET	SOR	SRH	TOT
A	process all line types		X	X	X	X	X			X	X	X
B	build index	X										
Bn (2)	back up *n* lines after locate						X					
B	blend issuing & receiving reports							X				
B[(n)]	stop search after *n* th find (default=first find)										X	
C (3)	character set control	X		X		X	X	X		X	X	X
C	conditionally display specific result lines		X									
D	omit match/search information lines from result							X			X	
E	display last item found (if item appears more than once), not first item	X										
E	erase fields (fill with spaces) if value = 0		X									
E	count entries											X
F	process all line types; locate/change full character string			X			X					
F	don't fill move fields on a no-match condition							X				
F	search for floating-point numbers										X	
H	display only header lines from first report in multiple report search										X	
H	cumulate horizontally											X
I[n]	use index in RID *n* (default=RID 2)	X										
I	produce integer results		X									
I (2)	issuing report on display							X				
I	ignore header restrictions											X
J(x)	numerically justify result value to *x*: *x* = c, l, r, x, or z		X									X
K	verify that reports are sorted in ascending order	X										
Kn	initialize value label to *n*		X									
L	list value label names/values in result		X									
L(x)	omit line type *x* from result										X	
M (1)	treat first character of target string as line type designator			X			X					
M	display only matched lines in result							X				
N	create separate line per item & item count in result	X										
Nn	substitute numeric value *n* for nonnumeric fields (default=0)		X									
N	display lines not meeting match/search parameters							X			X	
O	create result having items found	X		X			X					
O	omit data lines from result; include headers, value labels/totals		X									X
OU	create updatable result			X			X					
P	include period type lines in result (valid only with N option)	X										
P	issuing & receiving reports are presorted							X				
P	retrieve 1100 OS program file or element								X			
P	process paragraphs										X	
Q	quick-find a single item	X										
Q[(n)]	stop scan after *n* th paragraph (default=first paragraph; use P option)										X	
Rx{-y{,y{ (4)	scan range of reports: RIDs *x* through *y*; scan RIDs *x,y*	X				X					X	
Rn	round answers to nearest *n*		X									X
R	retrieve prior version of MAPPER report								X			
S	scan each report separately	X										
Sx{-y{,n}	start scan at line *x*: through line *y*; scan *n* lines			X			X					
S	display matched/found lines in issuing report/search parameter order							X			X	
S	place subtotals in vertical operation fields											X
T	include processed & unprocessed lines in result		X									
Tx	set *x* to transparent character			X			X					
T	convert time in field to decimal hours & move field				X							
T[(x)]	include last *x* type line in result (default=tab type line)										X	
U	set update lock	X										
U (2)	resume scan beyond lines on display						X					
U[(x)]	search within data unit; include unit in result (default=tab type line)										X	
W	determine day of the week				X							
n	specify *n* workdays in week				X							
@	find/search for blank characters (spaces)	X				X					X	
/	find/search for slant as data	X				X					X	
=x	change column 1 to *x*											X
*	omit error flag (*) in subtotaling operations											X
*	flag invalid results with asterisk		X									

(1) *LCH=CHANGE manual function; M option not applicable for manual CHANGE and LOCATE functions.*
(2) *Not applicable in MAPPER runs.*
(3) *Character set option C varies with function.*
(4) *For BFN (BINARY FIND): R* x-y *only.*

Appendix B. Character Sets

MAPPER software processes Fieldata and ASCII character sets. You cannot use certain characters as data (namely, those characters used as control characters in report processing.) The Fieldata character set used in MAPPER software is called limited character set (LCS); the ASCII character set is called full character set (FCS). Also, you can store and process FCS report data in uppercase alphabetic characters only—called full character set upper(case) (FCSU).

Whenever a report is on display, the character set identification in the rightmost field of the ***control line*** is not FCS, FCSU, and LCS (as they are identified in this text) but as follows:

fcs	full character set
FCSU	full character set, uppercase alphabetic characters only
LCS	limited character set

The hierarchy, i.e., the relationship of characters to one another, is different between the LCS and FCS character sets. Since the MAPPER processor actually processes the data as represented by the Fieldata and ASCII codes, the order of the Fieldata or ASCII codes determines the character hierarchy. For example, in LCS, numeric characters have higher values than alphabetic characters. Therefore, in sort or search-in-range processes, alphabetic characters come before numeric characters. On the other hand, in the FCS character set, alphabetic characters have higher values than numeric characters. Consider these intercharacter relationships carefully, especially when processing between form types that use different character sets.

C option

Under normal report or result processing, the functions assume that you want to process the characters according to their native code order. Use the C option to process data with intercharacter relationships different from their native code order:

C(F)	full character set (ASCII)
C(L)	limited character set (Fieldata)
C(S)	strict: based on character set of the report (i.e., either Fieldata or ASCII)

Tables B-1 and B-2 show how the C option affects intercharacter order.

Note that when sorting with no option, the MAPPER processor sorts lowercase and uppercase letters the same: the letters ***a*** and ***A*** appear together in sort order.

When sorting with the C(S) option, the FCS report is sorted in the strict order of the ASCII codes: uppercase with uppercase and lowercase with lowercase.

These differences also affect a range search. For example, a range search from ***a*** to ***z*** with no options produces ***a*** through ***z*** and ***A*** through ***Z***. In the same range search with the C(S) option, the uppercase letters ***A*** through ***Z*** are not included in the result.

Table B-1. Limited Character Set (Fieldata)

Basic or Sorted C(L) or C(S)	Internal Octal Code	Sorted FCS C(S)	Sorted FCS C(F)
@	00	@	tab
tab	01	tab	space
space	05	space	!
A	06	A	$
B	07	B	%
C	10	C	&
D	11	D	'
E	12	E	(
F	13	F	)
G	14	G	*
H	15	H	+
I	16	I	,
J	17	J	-
K	20	K	.
L	21	L	/
M	22	M	0
N	23	N	1
O	24	O	2
P	25	P	3
Q	26	Q	4
R	27	R	5
S	30	S	6
T	31	T	7
U	32	U	8
V	33	V	9
W	34	W	:
X	35	X	;
Y	36	Y	<
Z	37	Z	=

(continued)

Table B-1. Limited Character Set (Fieldata) (continued)

Basic or Sorted C(L) or C(S)	Internal Octal Code	Sorted FCS C(S)	Sorted FCS C(F)
)	40	)	>
-	41	-	?
+	42	+	@
<	43	<	A
=	44	=	B
>	45	>	C
&	46	&	D
$	47	$	E
*	50	*	F
(	51	(	G
%	52	%	H
:	53	:	I
?	54	?	J
!	55	!	K
,	56	,	L
\	57	\	M
0	60	0	N
1	61	1	O
2	62	2	P
3	63	3	Q
4	64	4	R
5	65	5	S
6	66	6	T
7	67	7	U
8	70	8	V
9	71	9	W
'	72	'	X
;	73	;	Y
/	74	/	Z
.	75	.	\

Table B-2. Full Character Set (ASCII)

Basic or Sorted C(F)	Internal Octal Code	Sorted C(S)	Sorted C(L)
tab		tab	@
space	40	space	tab
!	41	!	[
"	42	"	]
#	43	#	#
$	44	$	space
%	45	%	A
&	46	&	a
'	47	'	B
(	50	(	b
)	51	)	c
*	52	*	C
+	53	+	d
,	54	,	D
-	55	-	e
"	56	"	E
/	57	/	f
0	60	0	F
1	61	1	g
2	62	2	G
3	63	3	H
4	64	4	h
5	65	5	I
6	66	6	i
7	67	7	J
8	70	8	j
9	71	9	K
:	72	:	k
;	73	;	l
<	74	<	L
=	75	=	m
>	76	>	M
?	77	?	n
@	100	@	N
A	101	A	o
a	102	B	O
b	103	C	p
B	104	D	P
c	105	E	q
C	106	F	Q
d	107	G	r
D	110	H	R
E	111	I	s
e	112	J	S
F	113	K	T
f	114	L	t
g	115	M	u
G	116	N	U

(continued)

Table B-2. Full Character Set (ASCII) (continued)

Basic or Sorted C(F)	Internal Octal Code	Sorted C(S)	Sorted C(L)
h	117	O	v
H	120	P	V
I	121	Q	w
i	122	R	W
J	123	S	x
j	124	T	X
K	125	U	y
k	126	V	Y
L	127	W	z
l	130	X	Z
m	131	Y	)
M	132	Z	-
n	133	[	+
N	134	\	<
o	135	]	=
O	136		>
P	137	-	&
p	141	a	$
q	142	b	*
Q	143	c	(
r	144	d	%
R	145	e	:
s	146	f	?
S	147	g	!
t	150	h	,
T	151	i	\
u	152	j	0
U	153	k	1
V	154	l	2
v	155	m	3
W	156	n	4
w	157	o	5
x	160	p	6
X	161	q	7
Y	162	r	8
y	163	s	9
Z	164	t	'
z	165	u	;
[	166	v	\
\	167	w	.
]	170	x	"
_	171	y	_
	172	z	
{	173	{	{
|	174	|	|
}	175	}	}
~	176	~	~

Appendix C. Dial-in Data Sets

C.1. Sperry Data Sets

These steps describe how to use a Sperry 201 Modem to sign on to a MAPPER terminal. For further details about the modem's features, see the *U-201 Synchronous Modem, Component Description,* UP-8132 (current or applicable version).

1. Have your MAPPER coordinator register terminal equipment.

2. Turn on the display terminal.

3. Press CURSOR TO HOME and ERASE TO EOF. If the display terminal has the protected format feature, clear the protected positions of memory. Protected format control keys are at the right side of the UNISCOPE 200 keyboard. If you use a UTS 400 display terminal, push the PROTECT/FCC switch on the controller unit to the FCC position.

4. Press the WAIT button or KEYBOARD UNLOCK. The WAIT light should go out and stay out.

5. Pick up the handset (receiver). If you hear a dial tone, go to step 6. Otherwise, pull the white data set switchhook (exclusion key) all the way up. Dial the site's telephone number for one of three responses:

   - Busy signal: dial another number or wait and dial again.
   - Unanswered ring: wait and dial again, or follow the installation procedures. For some reason, the computer is not accepting calls.
   - Continuous tone response: the computer has answered.

6. If the white switchhook is half way up, pull it all the way up. If it is all the way up, tap it down half way. Put the telephone handset down, but not in its cradle. The terminal is now connected to the computer.

7. Enter ∧.

8. Press XMIT and wait up to one minute for the transmission to be picked up. With a successful transmission, the MAPPER station idle logo appears on your screen. Sign on (see 4.2). If you get a different response, the telephone line may be connected improperly to the display terminal. Repeat steps 3 through 7. If you continue to receive no response, call your MAPPER coordinator.

C.2. Non-Sperry Data Sets

These steps describe how to use a Bell 201C Dataphone®.* Other non-Sperry data sets may have different features.

1. Have your MAPPER coordinator register terminal equipment.

2. Turn on the display terminal.

3. Press CURSOR TO HOME and ERASE TO EOF. If the display terminal has the protected format feature, clear the protected positions of memory. Protected format control keys are at the right side of the UNISCOPE 200 keyboard. If you use a UTS 400 display terminal, push the PROTECT/FCC switch on the controller unit to the FCC position.

4. Press the WAIT button or KEYBOARD UNLOCK. The WAIT light should go out and stay out.

5. Put the data set on TALK and dial the data set number at the MAPPER computer center. You hear the data set ring at the receiving end and hear a high-pitched tone signifying that the data set is connected. Listen to the tone until you hear a beeping pattern. This signifies that the processor is operational.

6. Press the DATA button. If the data link is correct, the DATA light goes on and stays on. Hang up the handset.

7. Enter ^.

8. Press XMIT and wait up to one minute for the transmission to be picked up. If the transmission is successful, the MAPPER station idle logo appears on the screen. Sign on (see 4.2). If you receive no response, repeat steps 2, 3, 6, and 7. If you continue to receive no response, the telephone line may be connected improperly to the display terminal. Repeat steps 2 through 7. If you continue to receive no response, call your MAPPER coordinator.

* *Dataphone is a registered service mark of American Telephone & Telegraph Company.*

C.3. Delayed Response

If the processor fails to respond after being in use for some time, it may be because of one of these conditions:

- A disconnected telephone line
- An inoperative display terminal
- An inoperative MAPPER processor

To check that the processor is operational, press TALK on the handset and listen for the polling beeps signifying that the processor is operational and polling. If you hear nothing, wait at least 10 minutes before calling your MAPPER coordinator. The MAPPER processor has rapid recovery techniques and resolves most of its problems in 10 to 15 minutes.

Appendix D. MARS Run: Make a Run Statement

If you're looking here, you must be ready to write a MAPPER run.

If you are using a series of manual functions repeatedly, you can use the MARS run to capture these functions in a run control report. A run control report is a MAPPER report having sequential run control statements of step-by-step instructions—functions and other operations—for processing reports and results.

The MARS run creates MAPPER run control statements and places them in a run control report. If you don't have a run control report, the MARS run adds one for you.

To execute the MARS run, first display a run control report (if you have one), and enter:

```
MARS
```

You get a menu of functions:

- tab to the function you want and transmit; or
- enter the function call at the top of the menu and transmit.

If you need help:

- tab to a statement;
- enter ?; and
- transmit.

Resume to return to the menu.

Or, enter:

```
MARS,HELP
```

The MARS run leads you through a simulated manual execution of the function. It writes the MAPPER run control statement for the function into the run control report at the first blank line.

You're probably ready for the *MAPPER Software Run Designer's Reference*, UP-9662 (see Preface).