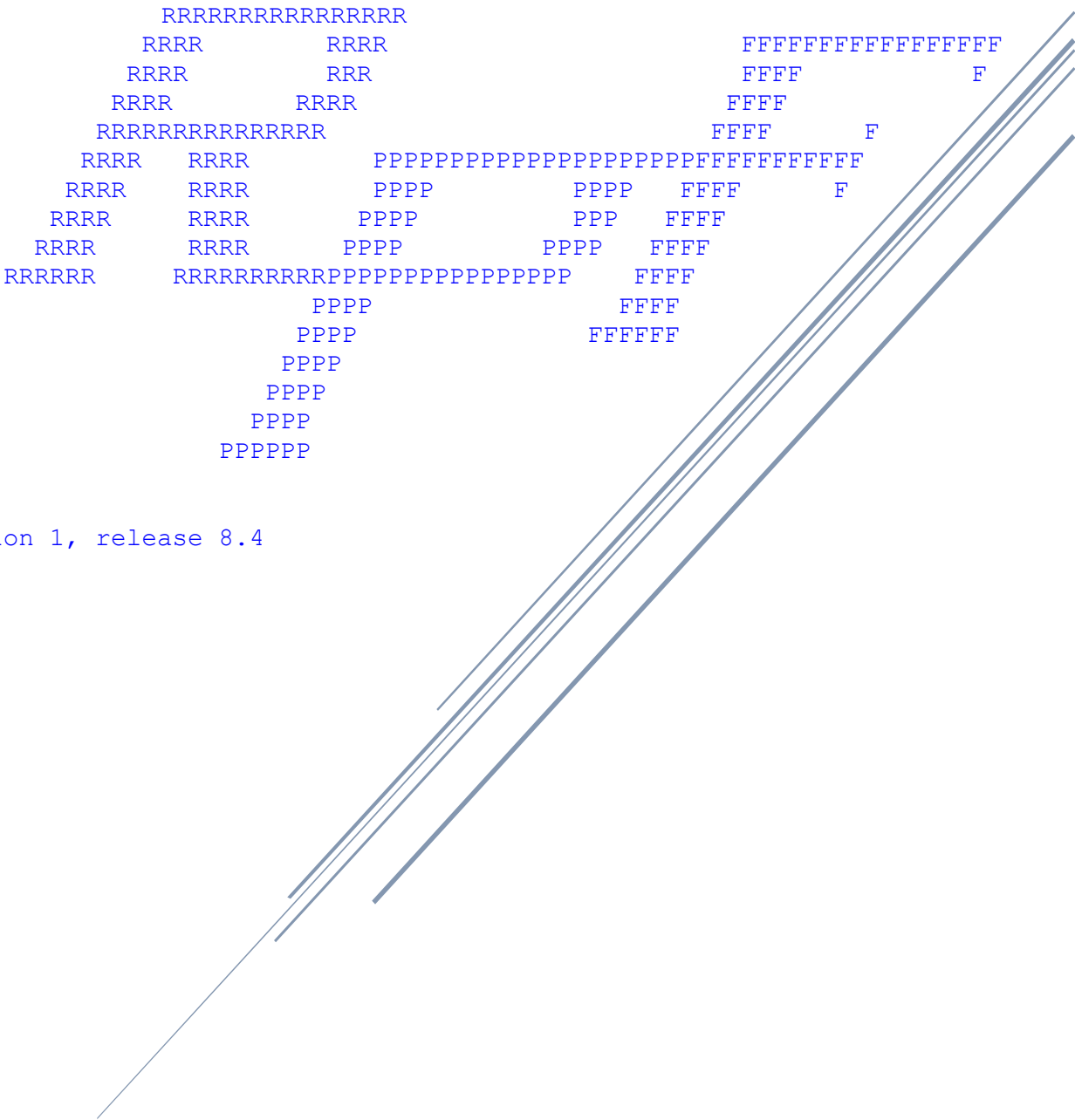# RPF USER'S GUIDE V1R8M4

"I would recommend installing RPF on all OS/390 and z/OS systems to help you recover, when ISPF will not come up. RPF is SOOOOOOOOOOO handy for that! I have used it many times in such circumstances"
Sam Golob

```
                RRRRRRRRRRRRRRR
           RRRR            RRRR                      FFFFFFFFFFFFFFFFFF
           RRRR            RRR                       FFFF              F
          RRRR            RRRR                        FFFF
         RRRRRRRRRRRRRRR                               FFFF        F
        RRRR    RRRR          PPPPPPPPPPPPPPPPPPPPPFFFFFFFFFFFF
       RRRR     RRRR          PPPP          PPPP    FFFF       F
      RRRR      RRRR          PPPP           PPP    FFFF
     RRRR       RRRR          PPPP          PPPP    FFFF
    RRRRRR      RRRRRRRRRRPPPPPPPPPPPPPPPP      FFFF
                      PPPP                      FFFF
                     PPPP                      FFFFFF
                    PPPP
                   PPPP
                  PPPP
                 PPPPPP
```

Version 1, release 8.4

Wormer, NL
Software

Table Of Contents

1.1 Introduction

RPF - Rob's Programming Facility.

RPF is a command processor under TSO, developed by Rob Prins member of the systems programming department of the ING Bank in Amsterdam. For program development the ING Bank used ROSCOE, but when the systems programming group started using TSO for maintenance, the need arose for a full-screen editor under TSO. At this point Rob decided to develop his own editor, not only because they needed an editor, but also for learning the internals of TSO. This resulted in the 'RPF' package. it is not only an editor, but it also includes functions like PDS maintenance (SCRATCH, RENAME EDIT, PRINT, BROWSE and assigning ALIAS), foreground assembly and link edit, VTOC and catalog listing, dataset allocation and deletion and even a LIBRARIAN, PANVALET and ARCHIVER interface to read and write modules on a disk master file and a TSO command processor to execute TSO commands in RPF. The main advantage of an inhouse developed package is, that the source is available, so that it can be tailored to the demands of the user. As the package became available to the users (the systems programmers) they very soon stopped using ROSCOE for program development, which indicated that it is a very useful product. RPF runs in a MVS38J, MVS/380, MVS/XA, MVS/ESA, OS/390 and z/OS operation system. Afterwards the RPF product became available for the members of the Hercules group.

RPF supports a lot of screen sizes. The minimum size = a 3270 model 2 (24 lines x 80 columns). The maximum size is 99 lines. The maximum screen width = 200 bytes. All sizes in between are supported (example: 99x132). The maximum buffer size (screen width x screen size) = 16384 (16K).

(C)-1979-2020 Skybird Systems, e-mail: rob.prins@quicknet.nl
Internet: www.prince-webdesign.nl/rpf

1.2 How to start RPF

RPF is a TSO command processor for full screen data editing and utility functions. RPF can be activated by entering the command 'RPF' on your TSO terminal.

1.2.1 How to work with RPF

If you start **RPF** a database record with defaults for your userid will be read. if the record is not present, that record will be created by RPF.
If you enter the TSO command 'RPF FAST' the database will not be included. RPF will choose his own defaults. The main advantage of 'RPF FAST' is that RPF will start very quick, but the database will not be searched.
After RPF has started, the following main menu appears on the screen

Figure 1. RPF main menu

1.3 Change session defaults

The session defaults are placed in a profile VSAM cluster. The name of the VSAM cluster is specified in the first record of member 'RPFKEY00' in the SYS1.PARMLIB

You can change the following defaults in the database:

1. The maximum amount of lines for the editor. The minimum is 500 lines and the maximum is 999,999 lines. Default is 6,000 lines. **Note!** Do not select a large number of lines in MVS38J, because no extended addressability is supported in MVS38J. A value of 30,000 lines will do.
2. Sysout class. The default is sysout class C. Sysout class will be used in the print commands of RPF.
3. Logging YES or NO. This default is for future use.
4. Nulls YES or NO. this default will set the RPF editor in NULLS mode or NONULLS mode.
5. AUTOSAVE Y or N. With this default the workspace will be saved automatically if Y or EDIT will give message 'Enter SAVE or CANCEL' if AUTOSAVE=N.

6. SUBMIT=TSO or RPF. With SUBMIT=TSO, the TSO command processor SUBMIT will be used if using the SUBMIT command in EDIT or Browse. With SUBMIT=RPF, Edit or Browse will submit the job directly to the JES2 internal reader.
7. Replace = YES or NO. The parameter defaults the "Replace like members" in Move/Copy.
8. COLS = Y or N. Set or reset the scale line in EDIT.
9. Default prefix. This is a field of maximum 17 bytes containing the default prefix in the dataset list menu (opt. 3.4).
10. The default program name of the assembler. This name is used in the assembler menu (option 4).
11. UPPERCASE=YES or NO. Default for uppercase or lowercase editing. default is UPPERCASE=YES.
12. Line numbers=YES or NO: EDIT a dataset with line numbers or not. Default is LINE NUMBERS=YES.
13. Default allocations. You can specify the default member name, data set name for EDIT, Browse, utility and assembler functions. For LIBRARIAN, the default module name and Librarian master file can be specified. For Panvalet, the default module name and Panvalet library can be specified and for the ARCHIVER, the default Archive VSAM cluster can be specified.
14. Printer. Specify the remote printer. If nothing specified, the output will be routed to a LOCAL printer.
15. Assembler maclibs. Specify up to 6 maclibs
16. Assembler parm. This is the default assembler parm in the foreground assembly.
17. Linkage editor parm. This is the default linkage editor parm.
18. Linkage editor control statements. 6 optional statements used by the linkage editor.
19. PFK settings: You can set the commands in the PFKs (1 to 24) The use of all PFKs are supported in EDIT, BROWSE PDS maintenance, LIBRARIAN maintenance and HELP functions. The use of the END PFK (PFK03 or PFK15) is supported in all selection menus. Meaning of the 'CON' attribute: CON=Y: The command in the PFK will set in the command area on the screen, but will not be executed. To execute the command you should press ENTER. CON=N: the command will be executed immediately. CON=X: the PFK has gotten the 'UNDEFINED' status.

All the changed defaults will be written on the VSAM RPF profile database if present.
If you select -0- on the main menu the default menu appears on the screen:

With selection -0- you can list the status of your RPF session. In this screen the date and time, session duration, EDIT options, default options, current allocation, workspace size and lines of the workspace in use are to be displayed. Press ENTER to leave this status screen.

With -1- you can change the workspace size, the logging, the SYSOUT class, Autosave, Submit, Replace, default prefix, assembler program and COLS attribute. To change these defaults press ENTER after the changes made. To cancel the changes, use PFK03/15.

With -2- you can change the uppercase, line numbers and default allocations, LIBRARIAN, Panvalet and ARCHIVER allocations To change these defaults press ENTER after the changes made. To cancel the changes, use PFK03/15.

With -3- you can change your PFK settings.

With -4- you can update the assembler MACLIB's, assembler and linkage editor parameters and the default linkage editor control statements. Press ENTER to make the changes effective

To leave the default menus enter an 'X' or press PFK03/15

It is also possible to select the default functions directly from the RPF main menu, without interference of the defaults menu (e.g. select 0.1 for increase workspace). If the function is terminated in this case, RPF always returns to the main menu.

1.4   View data sets, members or load modules.

If you select -1- on the RPF main menu, an allocation panel will be displayed for selection of the to be browsed dataset. After selection of this dataset, the BROWSE function will be invoked.
You can select the datasets in two ways:
- Select the member/dataset (and volume) in the allocation menu
- Select 1 of the datasets in the dataset selection menu, by entering a non-blank character in the selection field and specifying a dataset (and volume) if not already listed.

After selection of this dataset, the BROWSE function will be invoked and the dataset (and volume) will be placed in selection list. This selection list will be written in the RPF profile cluster upon exit of RPF.

If you omit the member-name in the allocation menu, or you have selected a dataset from the selection menu a member selection list will be displayed to select the to be browsed members. See 1.6.1 "PDS maintenance" for more information about the member selection list and the 'S' line command.

The following RPF browse/view commands are available:

Subcommand	Function
BOTTOM 'B'.	Start display at the bottom of the dataset. This command may be abbreviated as 'B'.
C nnn	Shift the display to column nnn. nnn should not exceed the record length of the dataset.
END	Terminate BROWSE. RPF will go back to the utility allocation menu
F 'string'	Search specified character string. All lines, which contains 'string' will be highlighted and the message 'CHARS string FOUND' will appear. If only an 'F' is entered, a repeat find of the previous specified string will be done. The find always start from the current position in the dataset. If no match can be found, the message 'TEXT NOT FOUND' will appear. The quotes (') around the string are optional, unless you specify a string with embedded blanks. An alias of F is 'FIND'.
HEX	Set Browse in HEX mode on or off. In HEX mode, each record contains of 4 lines: 1) The original line. 2) A hex line Containing the high-order nibbles. 3) A hex line containing the low-order nibbles. 4) A separator line. The HEX command will be ignored if a data set or member with RECFM=U is browsed.
L xxxx	Locate at label xxxx. This label should be previously assigned with the 'LABEL' command
LABEL xxxx	Assign label xxxx on this page of the dataset. The user will be notified. The maximum length of the label is 4 characters.

PFK	Display PFK screen and alter PFKs if you wish. These PFK changes are only effective during this RPF session. To change the PFK-s permanent use the defaults menu.
RETURN	Terminate BROWSE. RPF will go back immediately to the main menu.
=n or =n.n	Terminate BROWSE, return to MAIN and execute option 'n' or 'n.n'.
PRINT x	Print the dataset into SYSOUT class x. if you omit the SYSOUT class, the default class will be taken.
UP	Scroll 1 screen backward in the dataset. If you use UP with a PFK and an 'M' in the command field the 'BOTTOM' command will be executed.
DOWN	Scroll 1 screen forward in the dataset. If you use DOWN with a PFK and an 'M' in the command field the 'TOP' command will be executed.
LEFT	Scroll 1 screen to the left (80 bytes for screens model 2,3,4 and up to 200 bytes for a huge terminal or other).
RIGHT	Scroll 1 screen to the right (80 bytes for screens model 2,3,4 and up to 200 bytes for a huge terminal or other).
SUB(MIT)	Submit the dataset with the TSO SUBMIT command or directly to the JES2 internal reader depending of the SUBMIT parameter in the RPF defaults.
TOP	Start display with the top of the dataset. This command may be abbreviated as 'T'

Notes:
- All these commands can be set under a PFK. So you can use the PFKs instead of entering the commands on the screen
- If you print the dataset with the 'PRINT' command RPF will make header lines if the dataset does not contain ASA or machine control characters. If the to be browsed input dataset is a card image dataset (LRECL=80 and no control characters), a scale line will be printed after the header lines and after each record, the start column of the first non-blank character of that line will be printed. If the control characters are present RPF does not make headers.
- The maximum number of lines, which can be browsed are 2048 screen pages. That is 21*2048 lines for a 3270 model 2 screen, 29*2048 lines for a model 3, 40*2048 lines for a model 4 and 'nn'*2048 lines for a model 5 or other screen. RPF Browse supports large screens up to 16384 bytes, like a 81x200 screen or 99x132 screen. The value of 'nn' is up to 96 (99 – header line – command line – scale line). If RPF is running in addressing mode 31 (in MVS/XA or later), the maximum of screen pages is 15360.
- If a RECFM=U data set is browsed/viewed, the output will be formatted on the screen. The output records fits within the screen width and more records will be written if the RECFM=U data set has larger records. The output contains a HEX offset, the data line, a record with the high-order HEX nibbles, a record with the low-order nibbles and a HEX ruler.

1.5 EDIT a dataset or PDS member

If you select option '2' on the RPF main menu, the EDIT function will be performed. The EDIT entry screen contains of four parts:

1. The menu. In this menu you can select option '1' for EDIT of OS datasets, like a PDS or sequential card-image dataset. Use part 3 of the entry screen to EDIT the right dataset. If you select option '2', EDIT will be done from a LIBRARIAN master file via a LIBRARIAN read menu. (see 1.5.3, "Edit a LIBRARIAN module or index.") option '3' performs EDIT from a PANVALET library. (see 1.5.5, "Edit a PANVALET member or index.")

2. The options panel. In this part of the screen you can select UPPERCASE=YES or NO and NUMBERED=YES or NO for numbered or not numbered data.

3. The allocation panel. In this part of the screen you are able to perform the allocation of the OS dataset to be edited (Option 1 in the selection menu). If the allocations are alright, the dataset or PDS member will be edited and the EDIT screen appears, otherwise the user will be prompted for retry.

4. The dataset selection list. You can specify here up to 8 datasets (and volumes).

If you want to cancel the function, press PFK03 or PFK15.

You can select the datasets in two ways:
• Select the member/dataset (and volume) in the allocation menu
• Select 1 of the datasets in the dataset selection menu, by entering a non-blank character in the selection field and specifying a dataset (and volume) if not already listed.
After selection of this dataset, the EDIT function will be invoked and the dataset (and volume) will be placed in selection list. This selection list will be written in the RPF database, if you leave RPF.

If you omit the member-name in the allocation menu, a member selection list will be displayed to select the to be edited members. See 1.6.1 "PDS maintenance" for more information about the member selection list and the 'S' line command.

If the member does not exist, an input screen will be made with 1 screen blank lines and in de header line will appear 'Input   mmmmmmm'. 'mmmmmmmmm' is the data set name and (member) if present. If the data set or member exists: CREATE is replaced by EDIT.
If the dataset is edited you can change your data in full screen mode. The screen is divided into 5 parts:

• The header, containing the fields 'T' (Top), 'Lo' (Lowercase or ASIS) and 'Nul' (Nulls), These fields will be highlighted if in effect. If the edited data is a member in a PDS(E), the member name and the ISPF/RPF
version/modification level (vv:mm) will be present too.
• The message area for the informational and error messages
• The scope field with the editor boundaries.
• The scroll amount.
• The data area, containing the data to be edited.

The editor can be entered in standard or in COBOL mode and will be automatically detected. In the standard mode, the amount of columns to display is the width of the screen minus 8 or the complete record if the record fits in the screen. Example: if the LRECL of the data set is 133 and the width of the screen is 80, 72 columns will be displayed.
If the record of the data does not fit on the screen, the RIGHT and LEFT can be used to scroll.

The line-numbers if present or created by the 'RENUM' subcommand will affect the last 8 columns of the data. In the COBOL mode columns 7-78 will be displayed if a 80 column screen is used.
The line numbers (if present) or created by the 'RENUM' command will affect cols 1-6. COBOL mode works only if the record length of the data set = 80.

Both modes can be entered as 'NUM' or as 'NONUM' In 'NUM' mode the last 8 columns or columns 1-6 (COBOL mode) of the dataset are numbered. In 'NONUM' mode the dataset is not line-numbered. If the data set or member contains line numbers in the last 8 columns, manual modification of these columns are ignored.
In both cases, you can work with line-numbers in the subcommands, because the numbers on the screen are NOT in the dataset
If a dataset does not contain line numbers and 'LINENUMBERS=YES' is selected, the editor will be entered in 'NONUM' mode. If you select UPPERCASE=NO the typed in characters will not be translated to capitals. That is very handy if you do text processing with RPF.
If you select UPPERCASE=NO, the 'Lo' field in the header line will be highlighted. If you do program development always select UPPERCASE=YES, or press the CAPS LOCK button or use the UC line command.
RPF will test the dataset to be edited, if lower case characters are detected, 'ASIS' will always be selected and the 'Lo' field will be highlighted.
The subcommands in EDIT can be entered as 'command' or '&command'. If the ampersand if present before the command, the command will be repeated after execution.
If the data contains unprintable characters, the lines with unprintable characters cannot be edited.
If you have entered a wrong command or invalid command the command will be repeated, so you can make easy your corrections.

There are two types of commands:
- The primary commands entered in the 'command' field (see 1.5.1, "EDIT primary commands.")
- Line commands entered in the line-number fields (see 1.5.2, "Edit line commands.")

1.5.1 EDIT primary commands
The EDIT primary commands are described in alphabetic order below:

Subcommand	Function
&	if the '&' (ampersand) is entered, the previous command will be set in the command area of the EDIT screen.
APPEND	Append another dataset or member in the EDIT workspace. After entering 'APPEND', the dataset menu will appear. Alter the allocations and press ENTER to append. With the END subcommand the data will be saved in the dataset/member which is initially edited.
ASIS	Set the editor dynamically in 'UPPERCASE=NO' mode (similar to 'UPPERCASE=NO in the allocation menu)
BOTTOM	Display last screen of the dataset. This command may be abbreviated as 'B'
C /aaa/bbb/(A)	With this command, you can change character strings throughout your entire workspace. if you do not specify the 'A' after the last delimiter, only the first

line on the screen will be changed, otherwise the first line till the end of the workspace will be changed. If you enter 'C /string//(A)' the character string will be deleted. With 'C //string/(A)' the character string will be inserted before the first character of the line, or all lines if 'A' is specified. The delimiter can he any character. Only character strings will be changed, which are in the column-range, that is set by the 'SCOPE' command.

C /aa/bb/n,m   With this form of the 'C' subcommand you can make changes in a specified line range (n,m). both numbers should be specified. If you want to change 1 line use first the 'L nnnn' command and after this command 'C /aaa/bbb/'. If n = '*' change will be done beginning with the current line. In this case the second number should be after the current line.

C /x'hh..'/bbb/n,m or
C /x'hh..'/bbb/(A)   Change HEX string 'hh..' into string 'bbb'. The 'x' can be specified in lower- or uppercase.

C /aaa/x'hh..'/n,m or
C /aaa/x'hh..'/(A)   Change string 'aaa' into HEX string 'hh..'. The 'x' can be specified in lower- or uppercase.

C /x'hh..'/x'jj..'/n,m or
C /x'hh..'/x'jj..'/(A)   Change HEX string 'hh..'into HEX string 'jj..' The 'x' can be specified in lower- or uppercase.
                                 Example 1: C /X'404040'/X'2020'/A change 3 blanks into 2x X'20'. C / /X'2020'/A is equivalent.

C /P'.'/bb/n,m or
C /P'.'/x'hh..'/(n,m) or (A) Change invalid characters into string 'bb' or into HEX string 'hh..'.
                                 Example 2: C /P'.'/ /A Change all invalid characters into a blank. C /P'.'/X'40'/a is equivalent.
                                 If a line is successfully changed, the line number will be reversed.

CANCEL   Terminate the RPF EDIT function, without saving the workspace. The command may be abbreviated as 'CAN'.

CAPS   Set the editor dynamically in 'UPPERCASE=YES' mode (similar to 'UPPERCASE=YES' in the allocation menu).

CO n,m,o   Copy line range n till m after line o. if you specify n=* the current line till line m will be copied. if 'o' is omitted line n will be copied after line m. If the CO command cannot be executed, a suitable error message will be displayed. After successful copy the workspace will be renumbered.

COB   Set the editor from standard in COBOL mode. if in COBOL mode the 'LEFT' and 'RIGHT' subcommands are not applicable. if the editor was in 'NUM' mode before the 'COB' command was given, RPFEDIT will do a numeric test for columns 01-06 of the workspace. if not numeric RPFEDIT will come into the 'NONUM' mode after the 'COB' subcommand.

COLS   Set the scale line in EDIT with columns On or Off.

CUT   Copy lines between CC (See 1.5.2. Edit Line commands), first line to CT or CB to last line to the clipboard file. The clipboard file is allocated with ddname RPFCTPST. The contents of the clipboard file can be pasted in any member or dataset in the current RPF session. The clipboard will be deleted upon end of the RPF session.

DEL n,m   Delete lines *n* until *m* or delete line *n* if *m* is omitted.

DEL *,n   Delete *n* lines starting with the first line on the screen. If *n* is omitted only the first line on the screen has been deleted.

$DOC   Add a date and timestamp after '//* last update: ' in the record. '//* LAST UPDATE: ' is also valid. Code this string exactly with a blank after '*' and a blank after ':'.

END   Terminate the RPF EDIT function and save the data if changes are made. No menu will be presented. The data will be saved in the same dataset/member, if AUTOSAVE=Y. RPF will return to the EDIT allocation menu. If AUTOSAVE=N, the message 'Enter SAVE or CANCEL' will be issued and EDIT will not be terminated.

F 'String',n,m or F "String",n,m
                 Find a specified character string in the workspace. If the character string is found, that line will be the first line on the screen. If line range n,m is specified, the find will only be done in that range. If the find is unsuccessful a suitable error message will be displayed and the command will be repeated. The delimiter (the quote or double quote) is optional, unless 'string' contains blanks. The character string will be remembered by RPF, so you can enter only 'FIND' to execute the last FIND command. Only character strings will be found, which are in the column-range, that is set by the 'SCOPE' subcommand.
                 An alias of "F" is "FIND".

F p'.' or F P'.'   This is a special form of the FIND subcommand. With this FIND subcommand you can search for invalid characters in the workspace. After a successful FIND P'.', the user will be notified which invalid character is found (message: Chars X'..' found).

F x'hhhh..' or F X'hhhh..'   Search for HEX character strings in the workspace.

FILL /string/   With this command you set a character string in each line starting with the current line till the end of the workspace. The character string will start in the column, which is set by the 'SCOPE' command. The data, which was there will be overwritten.

FILL /str/n,m   This FILL command will only affect the line range n,m

HAR xxxxxx,n,m   Print the lines *n* until *m* on printer with name xxxxxx. If *n* and *m* are omitted the lines on the current screen will be printed. The printer will be aquired

during this command after successful hardcopy the message **'Hardcopy made'** will appear.

HAR xxxxxx,*,n Print n lines on printer xxxxxxx starting with the first line on the screen. If n=99999999 the current line till the end of the workspace will be printed

HAR xxx,n,m, TITLE/NOTITLE, EJECT/NOEJECT, INDENT/NOINDENT, Cnn,Pnn, F='text', SCS,DSC

With 'EJECT' you can skip after every 'nn' lines (nn is value in the 'P' operand). 'EJECT is default.
With 'TITLE', you can print headers on each page default is 'NOTITLE'. With 'c=nn' you can print 'nn' copies (default 1).
With the keyword 'INDENT' the print will be shifted 8 positions to the right. Default is 'NOINDENT'.
The printer name and line numbers are positional parameters. the rest are keywords.
With f='text' a footnote will be printed at the bottom of each page. 'text' has a maximum length of 80 and should be specified between apostrophes.
'SCS' (lutypel) or 'DSC' (lutype 1 or 3) should be specified if the printer is cross domain used.

HELP Invoke the RPFHELP facility. See 1.9, "The RPF HELP facility." for more information concerning HELP

I m,n Insert n blank lines after line m or insert n lines after the first line on the screen (specify m=*). If n is omitted 1 line will be inserted after line m or current line if m=*. After a successful insertion the workspace will be renumbered and the cursor will be set in the first inserted line.
The line numbers of the inserted lines will be highlighted, until data is entered in an inserted line. You do not need to delete the unused lines. The highlighted lines (the inserted lines without data) will not be saved (with the END or SAVE subcommand) or submitted (with the SUBMIT subcommand). This is the way like VM XEDIT it does.

L +nnn/L -nnn Skip **nnn** lines forward or backward. if you are at the top of the screen and you enter 'L -nnn' or you are at the bottom of the workspace and you enter 'L +nnn', message 'Scroll had no effect' will appear and the command field will be blanked.

JCL Do a syntax check of the JCL if you are editing a member containing JCL. The usually used JCL parameters will be checked.

L nnn Locate the screen at line nnn. After execution of this command line nnn will be the first line on the screen (the current line). If line nnn does not exist in the dataset, an error message will be produced and the command ignored.

LC x y Translate the workspace to lower case (between line x and line y). If x (and y) are omitted, translate will be done from the current line until the end of the workspace

MO n,m,o   Copy line range *n* till *m* after line *o*.
                   If you specify n=* the current line until line *m* will be copied. The original lines
                   n till m will be deleted after successful copy. If *o* is omitted, line *n* will be
                   moved after line *m*.
                   If the MO command cannot be executed, a suitable error message will be
                   displayed. After successful move the workspace will be renumbered.

NOCOB   Set the editor from COBOL in standard mode. The 'LEFT' and 'RIGHT'
                   subcommands are after the 'NOCOB' subcommand available again.
                   If the editor was in 'NUM' mode before the 'NOCOB' command was given,
                   RPFEDIT will do a numeric test for columns 73-80 of the workspace. If not
                   numeric RPFEDIT will come into the 'NONUM' mode after the NOCOB
                   subcommand.

NONULLS   Reset the NULLS mode. Fill each line with trailing blanks.

NONUM   Set the editor in 'NONUM' mode without changing line numbers.

NULLS   Replace the trailing blanks on the screen by terminal erase characters. This
                   provides an easy way to use the insert mode of the terminal. The field 'Nul' in
                   the header line will be highlighted to notify the NULLS mode.

OVLY m,n(,o)   Copy line m over line m or over line range n - o. If you specify m=*, the
                   current line will be used. In the lines n thru o the blanks will be replaced with
                   the characters of the same column of line m (the overlay function). Only the
                   characters within the SCOPE boundaries will be overlaid.

OUT   Invoke the RPF output processor. See 1.6.5 "RPF Output Processor" for more
                   information.

PASTE   Copy the clipboard file after line marked with 'A' (see 1.5.2. EDIT line
                   commands for the line commands), or before the first line (line command TT)
                   or after the last line (line command BB). You can PASTE the clipboard file
                   multiple times until the next CUT subcommand.

PFK   Display and/or alter PFK settings. Press ENTER to perform the changes If
                   finished press PFK03/PFK15.

                   Note
                   The changed PFKs are only effective during this RPF session. To change the
                   default PFKs use the session default menu (see 1.3, "Change session
                   defaults.").

PRINT n,m or PRINT *,n or PRINT
                   Print lines n thru m to a temporary data set, print n lines from current line
                   (first line on screen) or print current screen if PRINT is issued without
                   operands. If n=99999999 in PRINT *,n, the current line until the end of data
                   will be printed.
                   After successful PRINT, Browse will be invoked. In BROWSE, you can print the
                   data to a SYSOUT class.

R m,n	Repeat line m, n times. If m=* the first line on the screen will be repeated n times. If n is omitted 1 line will he repeated behind line m or current line if m=*. After a successful repetition the workspace will be renumbered and the cursor will be set in the first repeated line. **Note** If n=99999999 the first line on the screen till the end of the workspace will be deleted. If the entire workspace is deleted, RPF will terminate EDIT'.
REN(UMBER)	Renumber the last 8 columns in the workspace starting with 10000 and a increment of 10000 if in standard mode or columns 01-06 in the workspace starting with 100 and a increment of 100 if in COBOL mode. this command may abbreviated as 'REN', 'NUM or as 'RENUM'. If the data was not line numbered before the RENUM command, a warning with text 'Data will be lost' will be issued. After hitting enter the message 'Renumber 'Yes' or 'No'' will be issued. Reply with indication action to renumber or not. **Note**: Renumber data with variable records is not possible.
RESET	Clear the pending line-commands and set the reversed line numbers to non-reversed. RESET may be abbreviated as RES.
RETRIEVE	Read the previous entered EDIT primary commands. The last 100 commands are saved. Any subsequent RETRIEVE will give you the previous command. The last entered primary command is the first command to be retrieved.
RETURN	Terminate the editor and always return to the main menu. The data will be saved if changes are made.
=n or =n.n	Terminate the editor, return the main and execute option 'n' or option 'n.n'. The data will be saved if changes are made.
SAVE (FORCE)	SAVE the workspace in a dataset. The user will be prompted with an allocation menu. You can alter the allocations and press ENTER. After SAVE the EDIT mode is ended. if you save in a PDS member that already exists and that member is not the same as the original member edited, the user will be prompted to replace the member or enter a 'newname', except if option '2' has been selected (SAVE RE-USE). If you select option '3' on the SAVE menu, the rest of the parameters are ignored and RPF will select the LIBRARIAN menu (see 1.5.4, "LIBRARIAN update.") Option '4' will perform saving upon a PANVALET library. See 1.5.6, "PANVALET update." Option '5' will perform saving upon an Archiver VSAM cluster. See 1.5.7, 'ARCHIVER' update. If the workspace is saved into a PDS member, RPF will update the statistics in the directory or add statistics if the statistics are not already present. The directory entry after save is built as follows: date added (3 bytes packed 'yydddF') date updated (4 bytes packed '00yydddF') time updated (2 bytes packed unsigned 'hhmm')

current # recs	(2 bytes signed binary)
# records	(2 bytes signed binary)
modified recs	(2 bytes signed binary)
userid	(10 bytes ebcdic trailing blanks)
member name	(8 bytes EBCDIC)
TTR	(3 bytes hex)
C	(1 byte binary X'0F')
version	(1 byte binary unsigned)
modification	(1 byte binary unsigned)
reserved	(3 bytes binary contains X'000000')

Note

If the workspace contains unprintable characters, the SAVE function will be rejected, unless 'SAVE FORCE' is specified.

UP   Scroll backward depending of the scroll value on the screen. The scroll value is described in the DOWN command.

If 'M' is entered in the command field and the 'UP' command is given by means of a PFK the 'TOP' command will be executed.

If you enter 'nnnnn' (max 5 positions 0-9) and the UP command by means of a PFK, 'nnnnn' lines will be scrolled backward.

DOWN   With this command you can scroll forward.

The scroll value is specified in the screen, which can be: 'PAGE' for a complete screen, 'CSR' for scroll on cursor position (if scroll forward, line on which the cursor is located, becomes the first line, If scroll backward, line on which the cursor is located, becomes the last line. If the cursor is in the command field, the number of lines on the screen minus 1 will be scrolled). 'HALF' for a half screen or 'LINE' for a single line. If you want to change this value you can alter this first character in this field ('C', 'H', 'P' or 'L')

If 'M' is entered in the command field and the 'DOWN' command is given by means of a PFK the 'BOTTOM' command will be executed.

If you enter 'nnnnn' (max 5 positions 0-9) and the DOWN command by means of a PFK, 'nnnnn' lines will be scrolled forward.

LEFT   Scroll 1 screen to the left (72 bytes for screens model 2,3,4 and up to 152 bytes for a very large screen). If the Scroll value is set to HALF, a half screen will be scrolled (36 for a model 2,3,4 terminal up to 76 for a very large screen).

SCOPE n,m   With this command you can set the range of columns which will be used in 'C', T', 'FILL', 'UC' 'LC' and 'SORT' subcommands.

If you enter this command without operands, the default scope range will be set (cols 1-xxx) in standard 'NUM' mode-, cols 01-xxx in standard 'NONUM' mode- or cols 07-72 if in 'COBOL' mode).

In NONUM mode, the value of xxx can be up to 255 and 247 in NUM mode, depending of the record length of the data set or member.

If the second operand = 999, the end Scope will be set to the value of the record length of the data set or member.

Another possibility to set the scope range is changing the 'SCOPE' value in the right corner
of the EDIT screen.

RIGHT	Scroll 1 screen to the right (72 bytes for screens model 2,3,4 and up to 152 bytes for a 3290 terminal or other). If the Scroll value is set to HALF, a half screen will be scrolled (36 for a model 2,3,4 terminal up to 76 for a 3290 terminal). It has no sense to change the last 8 columns on the screen, if you are in 'NUM' mode.
SORT	Sort the workspace. The entire workspace is sorted; the sort fields is set by the 'SCOPE' command. After successful sort, the workspace is renumbered.
SUB	Submit the workspace to the job execution queue. With this command you are able to execute jobs in the background. After successful submit the user will be notified with the message 'JOB jjjjjjjj SUBMITTED'. If the parameter SUBMIT=TSO, the TSO command processor SUBMIT will be invoked instead of the RPF submit. With this option all advantages of using the TSO SUBMIT exit can be used.
TOP	Display first screen of the dataset. 'T' will be highlighted in the header line of the EDIT screen. An alias of the TOP command is 'T'.
TSO	Invoke the RPF TSO command processor. With this command it is possible to enter TSO commands during edit. If you leave the TSO command processor with 'END', RPF will go back to the EDIT' mode. See 1.8, "RPF TSO command processor."
UC x y	Translate the workspace to upper case (between line x and line y). If x (and y) are omitted, translate will be done from the current line until the end of the workspace.
UNNUM	Remove the last 8 columns or columns 01-06 (COBOL mode) in the workspace. The line numbers on the screen will NOT be removed. This command may he abbreviated as 'UNN' This subcommand is only allowed if the editor is in 'NUM' mode, otherwise the subcommand will he ignored with the message: WORKSPACE NOT NUMBERED After execution of 'UNNUM' the editor will be set in 'NONUM' mode.

1.5.2 EDIT line commands

The line commands should be entered in the line number fields of the lines, which should be manipulated with these commands. The line commands can be entered in any place in the line number field. The following line commands are available:

Line command	Function
Inn	Insert nn lines after the specified line. nn blank lines will be inserted and the cursor will be placed in the first inserted line. If only an 'I' is entered, 1 line will he inserted. The line numbers of the inserted lines will be highlighted (see also the I primary subcommand)

R nn	Repeat the specified line nn times and the cursor will be placed in the first repetition of that line. If only an 'R' is entered the line will be repeated once.
RR...RR	Repeat a block of lines between the lines marked with 'RR'. if only once 'RR' is entered the line command will wait for the second 'RR' and a pending message will be issued.
C...A	Copy line marked with 'C' after the line marked with 'A'. If the line command is not complete (only the 'A' or the 'C' is entered), the command will be set pending.
C.....O	Copy line marked with 'C' over the line marked with 'O'. If the line command is not complete (only the 'O' or the 'C' is entered), the command will be set pending.
C....OO...OO	Copy line marked with 'C' over the line range marked with 'OO -- OO'. If the line command is not complete (only the 'OO' or the 'C' is entered), the command will be set pending.
CC...CC...A	Copy the block of lines between 'CC' after line 'A'. The command will be set pending if it is not complete.
CC...CC...BB	Copy the block of lines between 'CC' after the last line. 'BB' can be placed in any line.
CC...CC...TT	Copy the block of lines between 'CC' before the first line. "TT" can he placed in any line.
CT	Copy the first line until the line marked with 'CT' after line 'A'.
CB	Copy the line marked with 'CB' until the bottom line after line 'A'.
M..A	Move line marked with 'C' after the line marked with 'A'. If the line command is not complete (only the 'A' or the 'N' is entered), the command will be set pending.
MM...MM..A	Move the block of lines between 'MM' after line 'A', The command will be set pending if it is not complete.
MM...MM...BB	Move the block of lines between 'MM' after the last line. 'BB' can be placed in any line.
MM...MM...TT	Move the block of lines between 'MM' before the first line. 'TT' can he placed in any line.
MT...A	Move the first line until the line marked with 'MT' after line 'A'.
MB...A	Move the line marked with 'MB' until the bottom line after line 'A'.
D	Delete specified line.
DD...DD	Delete the specified block of lines.

DT	Delete the block of lines starting with the top line until the line marked with 'DT'
DB	Delete the block of lines starting with the line marked with 'DB' until the bottom line.
LC	Translate this line to lower case
LCC…LCC	Translate the block of lines to lower case
LCB	Translate to lowercase from this line to the end
LCT	Translate to lowercase from top until this line
UC	Translate this line to upper case
UCC…UCC	Translate the block of lines to upper case
UCB	Translate to uppercase from this line to the end
UCT	Translate to uppercase from top until this line
RESET	Reset the pending line commands. 'RESET' is also valid as primary command.

Note

The block of lines specified, need not to be in the same screen. Example: You can enter 'CC' in the first screen, scroll 2 screens, enter the second 'CC', scroll again some screens and enter the 'A'.

Notes of EDIT

1. EDIT supports data sets or members with a record length from 40 bytes up to 255 bytes. Data sets and members with a record format of fixed or variable are supported.   .
2. You can set all your RPF EDIT commands in PFK's, so you can press the corresponding PFK to enter a command.
3. Line commands and primary commands cannot be issued together except if the primary command is set under a PFK or the 'F', the 'U and 'M' commands are used. Example: If a line command is pending only the PFK's can be used for scrolling.
4. Upon SAVE of the data, the empty inserted lines (marked with a red line number) are not saved.
5. If the workspace size is too small for the dataset, the EDIT will be terminated and the message 'Workspace too small' will appear in the dataset selection screen or PDS screen. To increase the workspace size use the defaults menu.
6. If the dataset contains unprintable characters the user will be notified with the message 'Invalid chars xlated' The translated characters will he changed into periods ('.'). the field. The translated line will be highlighted and protected.

1.5.3 EDIT a LIBRARIAN module or index

To activate the LIBRARIAN menu select '2' on the main menu. and select option 2 On the EDIT entry menu. An immediate selection with option '2.2' on the main menu is possible too

In the LIBRARIAN menu, you can alter 5 fields:

- The option field. Enter '1' to perform allocation or enter 'X' or press PFK03/15 to cancel this function
- UPPERCASE=YES or NO for uppercase or lowercase editing. If the LIBRARIAN modules contains lower case characters ASIS' will always be selected.
- The LIBRARIAN module name or blank, if a LIBRARIAN index is requested.
- The name of the LIBRARIAN master file.
- The volume on which the master file resides if the master file is not catalogued.

If ENTER is pressed the allocation will be done for the master file. Upon successful allocation RPF editor will be invoked. If the allocation is unsuccessful a suitable message will be displayed. Enter a '1' and alter the fields to retry or an 'X' to terminate LIBRARIAN and go back to the main menu. The editor can be entered in 'NUM' mode if the LIBRARIAN module contains card numbers in the card or in 'NONUM' mode if the card numbers are outside the card. See 1.5, "EDIT a dataset or PDS member."

Each line in the LIBRARIAN index contains: the module name, the programmers name, the description, number of records and the date and time last update.

1.5.4 LIBRARIAN update

The LIBRARIAN update menu is selected with option 3 on the SAVE menu. The screen is divided into 8 parts.

- The header line
- The menu (select 1,2,3 or x) to ADD,REPLACE,DLM LIBRARIAN modules or exit)
- The DESC field (only valid for ADD and REPLACE)
- The PGMR field (only valid for ADD and REPLACE)
- The LANG field (only valid for ADD and REPLACE)
- The LIBRARIAN module.
- The LIBRARIAN master file.
- The volume on which the master file resides.

If you have altered the fields and selected a function on the menu the dataset wili be allocated and the LIBRARIAN will be invoked.

After completion of the LIBRARIAN, RPF will BROWSE the LIBRARIAN output. It is recommended to check this output, but the 'OSJOB' error can be ignored.

If an error is detected by RPF a suitable message will be displayed and retry is possible. Press PFK03/PFK15 to escape from this screen

1.5.5 EDIT a PANVALET member or index

To activate the PANVALET menu select '2' on the main menu. and select option 3 on the EDIT entry menu. An immediate selection with option '2.3' on the main menu is possible too
In the PANVALET menu, you can alter 5 fields:

- The option field. Enter '1' to perform allocation or enter 'X' or press PFK3/15 to cancel this function
- UPPERCASE=YES or NO for uppercase or lowercase editing. if the PANVALET members contains lower case characters 'ASIS' will always be selected.
- The PANVALET member name or an asterisk ("*") if an index is requested.
- The name of the PANVALET dataset.
- The volume on which the dataset resides if the PANVALET dataset is not catalogued.

If ENTER is pressed the allocation will be done for the PANVALET file. After successful allocation the RPF editor will be invoked. If the allocation is unsuccessful a suitable message will be displayed. Enter a '1' and alter the fields to retry or an 'X' to terminate PANVALET and go back to the main menu. See 1.5," EDIT a dataset or PDS member.".

Each line in the PANVALET index contains: the member name, the programmers name, the description, number of records, the date and time last update and the version number

1.5.6 PANVALET update

If you select option 4 on the RPF save menu, the PANVALET menu will be selected by RPF. The screen is divided into 8 parts.

1. The header line
2. The menu (select 1,2 or X) to ADD,REPLACE PANVALET members or exit)
3. The DESC field
4. The PGMR field
5. The LANG field
6. The PANVALET member (10 pos.)
7. The PANVALET dataset.
8. The volume on which the PANVALET dataset resides.

After having altered the fields and chosen the right option, the dataset will be allocated and PANVALET will be invoked.

After completion PANVALET RPF will browse the PANVALET output. It is recommended to check this output. Both PGMR and DESC should be specified or none should be specified.
If an error is detected by RPF a suitable message will be displayed and retry is possible. Press PFK03/PFK15 to escape from this screen

1.5.7 ARCHIVER update

If you select option 5 on the RPF save menu, the Archiver menu will be selected by RPF. The screen is divided into 7 parts.

1. The header line.
2. The menu (option A, allocate Archive and option X, exit).
3. The item field.
4. The item group field or blank.
5. The item subgroup field or blank.
6. The item type field or blank.
7. The Archiver VSAM cluster data set name.

After having altered the fields and chosen the right option, the dataset will be allocated and Rick Fochtman's ARCHIVER will be invoked.

After completion of the Archiver, RPF will browse the Archiver output. It is recommended to check this output.
If an error is detected by RPF a suitable message will be displayed and retry is possible. Press PFK03/PFK15 to escape from this screen.

1.6   RPF utility functions

If you enter '3' on the RPF main menu, the utility menu appears. you can select the following functions:

- Option 0. Reset ISPF or RPF statistics.

- Option 1. Perform PDS maintenance
- Option 2. Create or Delete datasets (dataset functions)
- Option 3. Move/Copy members of partitioned datasets
- Option 4. Perform VTOC and catalog functions
- Option 5. Perform LIBRARIAN maintenance
- Option 6. Invoke the output processor
- Option 7. Invoke Greg Price' IMON processor
- Option 8. Search data sets for strings of data
- Edit, browse, print and delete ARCHIVER items. ARCHIVER is a component, that archives members and/or data sets into 1 VSAM archive cluster.

To leave the utility menu enter 'X' to go back to the main menu.

It is also possible to select the utility functions directly from the RPF main menu, without interference of the utility menu (e.g. select '3.4' for PDS-maintenance). If the utility is terminated in this case, RPF always returns to the main menu.

1.6.1 Reset/Delete ISPF or RPF statistics

If you select '0' on the RPF utility menu or '3.0' on the RPF main menu, an allocation screen for the desired partitioned dataset will be displayed

You can specify a New Userid, a new ISPF/RPF version number and a new ISPF/RPF modification level and you can change the 'DSNAME' and 'VOLUME' fields or select a data set from 1 of the 8 selection fields.
Press ENTER to perform the allocation. If the allocation is not successful an error message will be displayed in the message area and retry can be done. Press PFK03 or PFK15 to cancel Reset statistics

After successful allocation, the RPF Reset member list will be displayed.
To reset a member to the New Userid, new Version and new modification level, enter an 'S' before the member name.
You will be responded with the message **'Reset'** in the comments area.
To delete the ISPF or SPF statistics of a member, enter a 'D' before the member name.
You will be responded with the message **'ISPF/RPF stats deleted'** in the comments area.
See 1.6.2. PDS Maintenance for more information concerning the member list.

1.6.2 PDS Maintenance

If you select '1' on the RPF utility menu or '3.1' on the RPF main menu, an allocation screen for the desired partitioned dataset will be displayed. You can change the 'DSNAME' and 'VOLUME' fields. Press ENTER to perform the allocation. If the allocation is not successful an error message will be displayed in the message area and retry can be done. Press PFK03 or PFK15 to cancel PDS-maintenance.

After successful allocation, the RPF PDS maintenance selection panel will be displayed. This panel is divided into 5 parts:

- The header line.
- The message area.
- The command area for the commands.
- The PDS description field.

- The member area.

Each line of the member area contains the following fields:

The line command. This is an input field. The line-commands are:
1. 'A': Assign an alias to the member
2. 'B': Browse the member.
3. 'D': Delete the member.
4. 'E': Edit the member.
5. 'F': Archive the member in Rick Fochtman's ARCHIVER.
5. 'P': Print the member to the default sysout class.
6. 'R': Rename the member.
7. 'S': Select the member if PDS has been invoked from BROWSE or EDIT from the main menu.

The member name. This field is protected.

- The newname field for the 'A' and 'R' operation. this is an input field.
- The comments field. This is a protected field. This field contains the RPF statistics in the directory or a response to the operations entered in field 1. The RPF statistics are set by the 'SAVE' command in the RPF editor and are in the same format as the IBM's ISPF statistics. The statistics will only be set if they are not already present. if present then the modification level will be increased by 1. If the statistics are not present or a new member has been created, RPF will add statistics in the same format as IBM's ISPF statistics, and the version number is set to 01. The fields in the statistics are:

  - TTR of the member.
  - Owner of the member. 8 bytes containing the userid.
  - Date last updated. 10 bytes containing "yyyy/mm/dd"
  - Time last updated. 8 bytes containing "hh:mm:ss"
  - Number of records. 5 bytes.
  - Version:modification level. 5 bytes containing "vv:mm"
  - Date created. 10 bytes containing "yyyy/mm/dd".

If the member is a load module in a LOADLIB or program object library the following will be displayed:

  - TTR of the member.
  - C byte containing the length of the directory entry and some flags (Scatter load and Alias indicator).
  - The size of the load module in HEX.
  - The true name if the load module is an alias.
  - The authorization code (AC) of the load module.
  - The addressing mode of the load module (24, 31, 64 or ANY).
  - The residency mode of the load module (24 or ANY).
  - Additional attributes (re-entrant, re-usable, Scatter load and/or Entry Point Zero).

- The alias/update indicator. This is a protected field. The field contains 'ALIAS' if the member is an alias (with an exception of load modules) or blanks if not updated today or not an alias. If the member is updated today, the comment field (field 4) is highlighted.

The RPF PDS maintenance commands are:

Subcommand   Function

BOTTOM   Display the last screen of the directory listing. This command may be abbreviated as 'B'

END or RETURN   Terminate PDS maintenance. RPF will go back to the utility menu with 'END' or main menu with the 'RETURN' command

=n or =n.n   Terminate PDS, return to main and execute option 'n' or option 'n.n'.

L 'string'   Locate 'string' in the member name, TTR, date/time updated, or records. The to be compared field depends on the sort order of the workspace (See SORT subcommand). Specify 1-16 characters in the 'string' operand).
After successful execution of the command, RPFPDS will display the screen, where the first line contains the member, where the first occurrence of 'string' was found (highlighted). if no
match can be found the command will be ignored accompanied with the message:
TEXT NOT FOUND

PFK   Display PFK screen. you can alter here your PFK settings. To alter the PFKs press ENTER. To leave PFK press PFK03/PKF15.

Note
The changed PFK settings are only valid during this RPF session. To change the PFKs on the RPF database select the defaults menu. (0 on the main menu)

PRINT   Copy the member list in a temporary data set and invoke the browse processor. In browse you have the PRINT command to print this listing in a SYSOUT class.

RESET   Reset all outstanding messages. The member list will be rebuild, all queued members be reset and the members deleted by an 'D' line-command will be removed.

UP   Display the previous screen.
This command will be repeated in the command area. If '&UP' is entered. if you are on the first screen the message **'Scroll had no effect'** will appear and the command will be blanked.
If 'M' is entered in the command field and the 'UP' command is given by means of a PFK the 'TOP' command will be executed.

DOWN   Display the next screen.
This command will be repeated in the command area. If '&DOWN' is entered if you are on the last screen the message **'Scroll had no effect'** will appear and the command will be blanked.
If 'M' is entered in the command field and the 'DOWN' command is given by means of a PFK the 'BOTTOM" command will be executed.

S member   Edit the specified member. If the member does not exist, EDIT will be invoked with an input screen to create the member.

If PDS maintenance has been entered from BROWSE (option 1 in main), then the specified member will be browsed. If in this case the member is not found an error message will be displayed and the command will be repeated.
The member list should be on member-name order (See SORT subcommand).

SORT   Sort the members on member name order

SORT TTR   Sort the members on TTR – order instead of alphabetic order, so it is easy to find the members and it's associated aliases. This sort is in DESCENDING ORDER

SORT SIZE   Sort the members on number of records instead if alphabetic order, so it is easy to find the smallest or biggest members. This sort is in DESCENDING order.

SORT CHA   Sort the members on date/time last updated instead of alphabetic order, so it is easy to find the last changes. This sort is also in DESCENDING order.

TOP   Start display with the top of the directory listing.
The command will be repeated if '&TOP' is entered. An alias is T.

XMIT nje name/userid
Transmit the queued members (with the X line command) to NJE node/userid or Nickname.
The TSO command TRANSMIT or XMIT will be used to transmit the members. In the receiving node you can issue the TSO command RECEIVE to get the members. XMIT works only on systems with TSO/E and IDTF installed.

Note
All these commands can be set under PFK's. Press the corresponding PFK to execute the command. if you enter a command and an operation in the member area the operations will be executed first. RPF comes back with the responses on the operations and the message: **'Hit enter to exec Cmd.'** will be displayed. Press ENTER to execute indicated command.

Explanation of the line commands in the member area. The following commands can be issued:

A   Assign an alias. Type in the 'newname' field too. The response can be:

- **Alias assigned**, after successful assignment,
- **Newname omitted or invalid**, The newname is invalid or not specified.
- **STOW error RC=cccc,Reason=rrrr**, if the operation is unsuccessful. Possible errors are: member deleted by previous 'D', 'newname' already exists, insufficient space in directory, insufficient virtual storage or trying to assign an alias in a PDS/E. See IBM manual SC26-4911 DFSMS/MVS Macro Instructions for Data Sets, concerning the given return- and reasoncodes.

B or V   Display the member, BROWSE will be invoked. See 1.4, " BROWSE source data and output listings." for more information concerning browse. The following responses can appear:

- **Viewed**, successful display.
- **Member not found**, the member was deleted by a previous 'D' operation.

- **View not available**, The specified dataset has a record length > 255 and/or the RECFM is **not** F(B) or V(B).

D Delete the specified member. RPF will ask for confirmation with a confirmation panel. If you press
ENTER, delete will be performed. if the PFK03 or PFKI5 key is used, the delete will be rejected.
The possible responses are:

- **Deleted**, a successful delete
- **Error in delete**, The delete is unsuccessful. (delete is confirmed)
- **Delete rejected by user**, the confirmation panel is ended with PFK03 or PFK15.

E EDIT the member with the RPF editor. This member will be edited with the default options. See 1.5," EDIT a dataset or PDS member." to get an explanation of the EDIT functions. After termination of the editor with the 'SAVE' or 'END' subcommand in EDIT, RPF will return in PDS maintenance, if the member is saved in the same member and dataset the user data field will be updated upon return to PDS maintenance and the comments field will be highlighted..
After EDIT the following responses can be found in the comment field.

- **Edited.** Successful edit.
- **I/O error.** Unrecoverable error detected.
- **Updated/replaced**. Member updated due to EDIT (can be another member)
- **Created.** Member added due to EDIT (can be another member)
- **Member not found**, Member deleted by previous 'D' operation.
- **EDIT not available.** PDS has a record length > 255 bytes and/or the RECFM is **not** F(B) or V(B).
- **Dataset/member in use**, The dataset and member name cannot be edited, because another TSO-user is busy with EDIT of the same dataset and member with RPF or with the IBM product ISPF.
- **Workspace too small,** The EDIT is terminated due to this reason. Increase the workspace size in the defaults menu.
- **No temporary dataset**. PDS maintenance is unable to save the workspace, because the allocation of the save dataset is failed. This error is already detected upon start of RPF with the message: **'Init Error Rc= 0024'**

Note
It is possible, that both messages '**Edited**' and **'Created'** or '**Updated/Replaced**' are present in this PDS screen. This will be achieved by saving the edited member in another member in the same PDS. Example: member 'A' is selected with an 'E' before the member. In EDIT the member is saved into 'B', that was not present in this PDS. After completion, the message after member 'A' was '**Edited**' and member 'B' is now present in the directory, with the message '**Created**'.

F Archive the member in the VSAM Archive cluster. Possible responses are:
- **Archived**, member successfully saved onto the Archive.
- **Not Archived**, Archive menu exited with X or PF3/PF15.
- **ARCHIVER not installed.**

R   Rename the specified member. Type in the 'newname' field too. The response can be:

- **Renamed**, after successful rename,
- **Newname omitted or invalid**, The newname is invalid or not specified or
- **Error in Rename**, if the rename is unsuccessful. possible errors are: member deleted by previous 'D', 'newname' already exists, insufficient space in directory, or insufficient virtual storage.

P   Print the specified member in the default SYSOUT class. The responses can be:

- **Printed**, successful print of the member.
- **Member not found,** the member is deleted by a previous 'D' operation.
- **Print not available**, the specified dataset is not a card image library.
- **Alloc error SYSOUT**, severe error. contact systems programming.

X   Queue the member to the XMIT queue. You can queue more than 1 member. You will be notified with the response **Queued for transmission**

S   Select the member from the member selection list, if PDS maintenance has been entered from BROWSE (option 1) of EDIT (option 2) from the main menu. In this case, the 'S' line-command is the only valid command.

If the line command is not 'A', 'B', 'D', 'E', 'F', 'P', 'R', 'S', 'V', 'X' or blank the message: **'Select A,B,D,E,F,P,R,V or X'** will be set in the comments field for that member.

Note!
If you terminate PDS maintenance you can EDIT your member list with the editor in 'NONUM' mode you can do it as follows:
1. Terminate PDS maintenance with 'END'.
2. Terminate utility menu with 'X' (PFK03/15).
3. Select -2- on main menu and change options, but always CLEAR the dsname field.
4. Press ENTER to EDIT the member list.

1.6.3 Dataset functions

If you select '2' on the RPF utility menu or '3.2' on the RPF main menu, you get an allocation screen. You can change the following fields on the screen.

1. The option: Specify 'A' for allocation, 'D' for deletion or 'X' for return (or PFK03/PFK15)
2. The prefix: The first qualifier of the dataset.
3. The library: The second qualifier of the dataset.
4. The type: The third qualifier of the dataset.
5. The unit name. The default is SYSDA.
6. The record format: specify F, FB, FBM, FBA, FBS, V, VB, VBM, VBA, VBS or U. If nothing specified FB is assumed.
7. Volume: The volume on which the dataset must reside. if the volume is omitted, a storage volume will be used.
8. The LRECL: Specify a value between 18 and 32760. The value '0' is only allowed if RECFM=U. If LRECL=0 and RECFM is not U, LRECL will be defaulted to 80.
9. Space unit: Specify here 'CYL', 'TRK' or 'BLK'.

10. The BLKSIZE: Specify a value between 18 and 32767. BLKSIZE should be a multiple of LRECL if RECFM=F(B/A/M/S). If RECFM=V(B/A/M), the BLKSIZE should be at least LRECL+4. If BLKSIZE is omitted or '0', BLKSIZE has been defaulted to LRECL for fixed records, to LRECL+4 for variable records or to 6144 for RECFM=U.
11. Primary: The primary space of the data set in cylinders, tracks or blocks.
12. Secondary: The secondary space of the dataset or zero if you don't want a secondary space.
13. The number of directory blocks. if you specify zero a sequential dataset will be created, otherwise a partitioned dataset will be created.

For option 'D' (Delete) only the items 1 - 4 are used.

If you press ENTER the dataset will be created or deleted, depending on the chosen option and the allocation panel will be redisplayed with the message: **'DATASET CREATED'** or **'DATASET DELETED'** in the message area.
If an error occurs during allocation retry will be performed and a suitable error message will be displayed.
With option 'D', RPF will ask for confirmation of deleting the dataset. With PFK12/PFK24 the dataset will be deleted. With PFK03/PFK15 the deletion will be rejected.

The 'PREFIX', 'LIBRARY', 'SPACE UNIT' and 'PRIMARY' fields are required. The 'PREFIX', 'LIBRARY and 'TYPE' fields may contain more than 1 dataset level.

1.6.4 Move/Copy members in partitioned datasets

If you select '3' on the utility menu or '3.3' on the main menu, an allocation menu will be presented. In this menu you are able to specify the FROM partitioned dataset and the TO partitioned dataset. Both datasets should be partitioned an should have the same RECFM en LRECL. If the RECFM=U (usually for a LOAD library), the BLKSIZE of the TO dataset should be equal or larger than the BLKSIZE of the FROM dataset.
In this menu, you can specify the option (M for Move or C for Copy), the dataset names of both partitioned dataset and the volumes if the datasets are not catalogued.
The last parameter is "Replace like members YES/NO". You can alter this parameter to force replacement of the members yes or no. The default can be specified in the defaults menu of option 0.1.

If '(*)' is specified immediately after the dataset name of the FROM dataset, all members of this dataset will be copied/moved to the TO dataset, depending on the REPLACE parameter. The user will be notified how many members are copied or moved and the allocation screen will be re-displayed.

If no '(*)' is specified, a member selection list is displayed. Each line of the list contains the following.

- The line command. This is an input field. The only line command is:
  'S': Select the member for Move/Copy.

- The member name. This field is protected.

- The newname field to rename the member after Move or Copy.

- The comments field. This is a protected field. This field contains the ISPF/RPF statistics or the load module statistics in the directory or a response of the 'S' command entered in field 1. See "1.6.1 PDS Maintenance", for a description of the ISPF/RPF and load module statistics.

The RPF Move/Copy commands are:

Subcommand   Function

BOTTOM   Display the last screen of the directory listing. This command may be abbreviated as 'B'

END or RETURN   Terminate Move/Copy. RPF will go back to the allocation menu with 'END' or main menu with the 'RETURN' command

=n or =n.n   Terminate Move/Copy, return to main and execute option 'n' or option 'n.n'.

L 'string'   Locate 'string' in the member name.
                    After successful execution of the command, Move/Copy will display the screen, where the first line contains the member, where the first occurrence of 'string' was found (highlighted). if no match can be found the command will be ignored accompanied with the message: **Text not found.**

PFK   Display PFK screen. you can alter here your PFK settings. To alter the PFKs press ENTER. To leave PFK press PFK03/PKF15.

                    Note
                    The changed PFK settings are only valid during this RPF session. To change the PFKs on the RPF database select the defaults menu. (0 on the main menu)

UP   Display the previous screen.
                    This command will be repeated in the command area. If '&UP' is entered. if you are on the first screen the message **'Scroll had no effect'** will appear and the command will be blanked.
                    If 'M' is entered in the command field and the 'UP' command is given by means of a PFK the 'TOP' command will be executed.

DOWN   Display the next screen.
                    This command will be repeated in the command area. If '&DOWN' is entered if you are on the last screen the message **'Scroll had no effect'** will appear and the command will be blanked.
                    If 'M' is entered in the command field and the 'DOWN' command is given by means of a PFK the 'BOTTOM" command will be executed.

SORT CHA   Sort the members on date/time last updated instead of alphabetic order, so it is easy to move/copy the last changed members. This sort is in DESCENDING order.

TOP   Start display with the top of the directory listing.
                    The command will be repeated if '&TOP' is entered. An alias is T.

Note
All these commands can be set under PFK's. Press the corresponding PFK to execute the command. if you enter a command and an operation in the member area the operations will be executed first. RPF comes back with the responses on the operations and the message: **'Hit enter to exec cmd'** will be displayed. Press ENTER to execute indicated command.

With the line command 'S', you can get the following responses.

- **Copied**. The member has been successfully copied.
- **Moved**. The member has been successfully copied and has been deleted from the FROM dataset.
- **Replaced.** The member has been successfully copied or moved and member in TO dataset has been replaced.
- **Member not replaced.** A member with the same name has been found in the TO dataset and the parameter "Replace like members" was set to NO.
- **'S' is the only valid line command.** Another line command than 'S' was entered.
- **Error in Move, rc IEBCOPY=xxxx.** The move operation failed. The SYSPRINT output of IEBCOPY will be browsed.
- **Error in Copy, rc IEBCOPY=xxxx.** The copy operation failed. The SYSPRINT output of IEBCOPY will be browsed.
- **Unable to delete member.** The STOW operation to delete the member of the FROM dataset failed.

1.6.5 VTOC and catalog functions

If you select '4' on the utility menu or '3.4' on the main menu, you get an allocation menu for the desired volume and parm. The screen contains 4 input fields:

- The requested option (1, 2, V or X). If a blank is entered, option 1 is assumed.
- The dataset level (high level qualifier)
- The name of the volume, which VTOC should be listed.
- The parm; **'SHORT'** for a normal VTOC, **'LONG'** for a VTOC with an extra line with the full dataset name (44 pos.) and the startaddress of the specified dataset or **'VOL'** for VTOC without header and trailor lines and instead of the creation date the volume will be displayed. This parm is used in option 2 only.

After having altered the dataset level and/or volser and PARM press ENTER. If only a dataset level has been specified and option 1 is selected or defaulted, the catalog will be searched with the specified data set level.
If the volume (and dataset level) has been specified and the volume is online, the screen will be locked and the message 'VTOC running...' appears in the message area of the screen.

Note
- If PFK03 or PFK15 is pressed RPF will return to the VTOC menu or main menu if '3.3' was selected.

- If VTOC or catalog processing has finished RPF will invoke RPFVTOC1 for a member selection list in option 1 and will invoke the editor in NONUM mode for option 2. Here you have all the EDIT facilities. See 1.5, "EDIT a dataset or PDS member." For a description of the EDIT functions. If you terminate the dataset selection list or the editor RPF returns to the VTOC menu.

Option 1
In option 1, a dataset selection list will be presented. In this list the following information will be displayed for each dataset.

- The dataset name
- The creation date if a volume has been specified or the volume if only the dataset level has been specified.

- The last reference date.
- The dataset organization.
- The record format.
- The logical record length.
- The block length.
- The number of extents of the dataset (max 123).
- The allocated space in tracks.
- The free tracks inside the dataset.

In this dataset list you can issue the following primary or line commands.

Primary command	Function
BOTTOM	Display the last screen of the directory listing. This command may be abbreviated as 'B'
END or RETURN	Terminate the dataset selection list. RPF will go back to the VTOC menu with 'END' or main menu with the 'RETURN' command
=n or =n.n	Terminate VTOC, return to main and execute option 'n' or option 'n.n'.
L 'string'	Locate 'string' in the dataset name. After successful execution of the command, VTOC will display the screen, where the first line contains the dataset, where the first occurrence of 'string' was found (highlighted). If no match can be found the command will be ignored accompanied with the message: TEXT NOT FOUND
PFK	Display PFK screen. You can alter here your PFK settings. To alter the PFKs press ENTER. To leave PFK press PFK03/PKF15. **Note** The changed PFK settings are only valid during this RPF session. To change the PFKs on the RPF database select the defaults menu. (0 on the main menu)
UP	Display the previous screen. This command will be repeated in the command area. If '&UP' is entered. If you are on the first screen the message **'Scroll had no effect'** will appear and the command will be blanked. If 'M' is entered in the command field and the 'UP' command is given by means of a PFK the 'TOP' command will be executed.
DOWN	Display the next screen. This command will be repeated in the command area. If '&DOWN' is entered if you are on the last screen the message **'Scroll had no effect'** will appear and the command will be blanked. If 'M' is entered in the command field and the 'DOWN' command is given by means of a PFK the 'BOTTOM" command will be executed.
TOP	Start display with the top of the directory listing. The command will be repeated if '&TOP' is entered. An alias is T.

Before the dataset name you are able to enter line commands. The following line commands are possible:

B or V   Display the dataset, BROWSE will be invoked. See 1.4, " BROWSE source data and output listings." For more information concerning browse. The following responses can appear:
- **Viewed**, successful display.
- **No temporary dataset**. RPFVTC1 is not allocated in RPFINIT. VTOC is unable to save the workspace. This error is already detected upon start of RPF with the message: **'INIT ERROR RC= 0024'**
- **View not available**. The specified dataset has not a RECFM of FB or VB or does contain a record length longer than 255 bytes.
- **Error in view**. The dataset cannot be viewed due to an error, e.g. an authorization problem.

C   Catalog a dataset. The following responses are possible.
- **Catalogued**. The dataset has been succesfully catalogued
- **Dataset already catalogued**
- **VSAM dataset**. A VSAM component cannot be catalogued in this way. Usually a VSAM dataset is always catalogued.
- **Error in catalog processing**. The catalog function had abended for some reason.
- **Temporary dataset:** Temporary datasets should not be catalogued.

D   Delete the specified dataset. RPF will display a confirmation panel. If you press PFK12 or PFK24, delete will be performed. Pressing PFK03 or PFKI5 key will reject the deletion. The possible responses are:
- **Deleted**. A successful delete
- **Scratch error**. Dataset is uncatalogued, but cannot be scratched. Recatalog the dataset with the 'C' line-command or scratch the dataset with IEHPROGM.
- **VSAM dataset**. You try to delete a VSAM component.
- **Error in delete**. The delete is unsuccessful. (delete is confirmed)
- **Delete rejected by user**. The confirmation panel is ended with PFK03 or PFK15.

E   EDIT the dataset with the RPF editor. A member selection list will be displayed. See "1.5 Edit a dataset or a PDS member" for more information about EDIT. After EDIT, the following responses can be found in the comment field.
- **Edited.** Successful edit.
- **I/O error.** Unrecoverable error detected.
- **Edit not available.** Dataset has a record length > 255 bytes and/of RECFM = **not** F(B) or V(B).
- **Error in EDIT**. The dataset cannot be edited due to an error e.g. an authorization problem.
- **No temporary dataset**. VTOC is unable to save the workspace, because the allocation of the save dataset is failed. This error is already detected upon start of RPF with the message: **'INIT ERROR RC= 0024'**
- **Dataset/member in use**. The dataset and member name cannot be edited, because another TSO-user is busy with EDIT of the same dataset and member with RPF or with the IBM product ISPF.

I   Display additional information of the dataset. Information like DCB information, allocation type (ABSTR, BLOCK, TRACK or CYLINDER), number of tracks, free tracks in the dataset, volume and device type, number of allocated directory blocks (if a PDS), free directory blocks and number of members will be displayed. You can leave the information screen with ENTER, PFK03 or PFK15. The response of the 'I' line command is:
- **Info - I**. Information successfully displayed.

M   Perform PDS maintenance. A member selection list will be displayed. See "1.6.1 PDS maintenance" for more information about PDS-maintenance. After member list, the following responses can be found in the comment field.
- **Member list,** Memberlist successful processed.
- **Member list not available,** Dataset is not partitioned.
- **Error processing member list**, Member list cannot be created due to an error e.g. an authorization problem.
- **No temporary dataset**, VTOC is unable to save the workspace, because the allocation of the save dataset is failed. This error is already detected upon start of RPF with the message: **'INIT ERROR RC= 0024'**

R   Rename a dataset. A RENAME panel will be displayed. You can enter a valid newname. If you press ENTER, an attempt will be made to rename the dataset. Catalogued datasets will be recatalogued with the new name. Rename is not possible for a multivolume dataset or a VSAM dataset. In the rename panel a suitable message will be displayed if you enters a wrong newname. After RENAME, the following responses can be found in the comment field:
- **Renamed**. Dataset successfully renamed.
- **Error in RENAME**. The RENAME macro had suffered a nonzero return code. Possible cause: dataset in use or user is not authorized to RENAME the dataset.

U   Uncatalog the dataset. The following responses are possible.
- **Uncatalogued**. The dataset has been succesfully uncatalogued
- **Dataset not catalogued**
- **VSAM dataset**. A VSAM component cannot be uncatalogued.
- **Error uncatalog processing**. The uncatalog function had abended for some reason.

Z   Compress the dataset. IEBCOPY will be invoked to perform this function. The following responses are possible.
- **Compress RC=xxxx**. The dataset has been compressed, the return code is from IEBCOPY.
- **DYNALLOC error**, one or more workdatasets of IEBCOPY cannot be allocated. This can be caused by an abend of a previous RPF session or space problems on dasd.
- **Compress not available**. The dataset is not a PDS or you are trying to compress SYS1.LINKLIB
- **IEBCOPY abended**. The compress function had abended for some reason.

If the line command is not 'B', 'C', 'D', 'E', 'I', 'M', 'R', 'U', 'V', 'Z' or blank the message: **'Select B,C,D,E,I,M,R,U,V or Z'** will be set in the comments field for that dataset.

Note
All the primary commands can be set under PFK's. Press the corresponding PFK to execute the command. If you enter a command and an operation in the member area the operations will be

executed first. RPF comes back with the responses on the operations and the message: **'HIT ENTER TO EXEC CMD'** will be displayed. Press ENTER to execute indicated command.

Option 2.
The information is loaded in the EDIT workspace and the datasets are sorted in alphabetical order. The first 3 lines displayed are header lines. This 1st line shows the name of the volume, the Julian date and time, the used parm ('SHORT' or 'LONG') and the VTOC type (VTOC=IX for indexed or VTOC=OS for a standard VTOC). The second header line will give you the VTOC boundaries The VTOC indicators (DS4VTOCI, see debugging handbook), The number of directory blocks and the number of DSCBs on a track. The third line contains the number of tracks/cylinder, length of the track in bytes and the total number of cylinders on the volume. The last line of the workspace describes the empty space on the volume.

The VTOC function of RPF supports the new indexed VTOC structure too. (data facilities/device support DF/DS) If a volume with an indexed VTOC is taken the following extra information will be displayed:
- The total number of free VTOC index records (VIRS)
- 'VTOC=IX' in the header line.

For the displayed datasets the following information is displayed:

- The DSNAME. (the first 26 positions if **PARM=SHORT/VOL** or blanks if **PARM=LONG**)
- The creation date or the volume if PARM=VOL is used
- The last reference date.
- The dataset organization.
- The record format.
- The logical record length.
- The block length.
- The number of extents of the dataset (max 123).
- The allocated space in tracks.
- The free tracks inside the dataset.

If the volume for which you requested a VTOC listing is not mounted the message 'VOLUME NOT AVAILABLE' appears in the message area and the allocation screen will be displayed with retry possibility. If you terminate EDIT with END, the VTOC menu will be displayed again.

Option V.
This option displays five summary lines on the VTOC menu. These lines contains VTOC and volume information and a summary of the free space on the volume. After execution, the VTOC menu re-appears.

1.6.6 LIBRARIAN maintenance

If you select '5' on the RPF utility or '3.5' on the RPF main menu, an allocation screen for the desired LIBRARIAN master file will be displayed.
You can change the 'DSNAME' and 'VOLUME' fields.
If option '1' is entered RPF LIBRARIAN maintenance expects a LIBRARIAN disk master file. With option '2' a LIBRARIAN tape master should be specified.
Press ENTER to perform the allocation. If the allocation is not successful an error message will be displayed in the message area. You can type in '1' or '2' and alter the fields or an 'X' (or press PFK03/PFK15) to leave the allocation menu.

After successful allocation RPF goes to the LIBRARIAN maintenance screen. The screen is divided into 5 parts:

- The header line.
- The message area.
- The command area for the commands.
- The LIBRARIAN description field.
- The LIBRARIAN module area.

Each line of the module area contains the following fields:

- The line command. This is an input field. The codes are:

  B: BROWSE the module.
  C: COPY the module
  D: Delete the module.
  E: EDIT the module.
  P: Print the module to the default sysout class.

- The module name. This field is protected.

- Date added/Date updated. If the master file is a tapemaster, date added will be shown. Date updated will be displayed if the master file is a disk-master.

- The description of the module. This field is protected field.

- The programmer name field, which contains the name of the creator of that module, or an response of an line command entered in field 1. If it is an response of a line command, this field will be highlighted.

The response can be:

*Browsed	successful display
*Copied	module copied to a PDS
*Deleted	successful delete
*COPY N/A	module not COPIED due to init error rc=0024
*EDIT N/A	module not EDIT due to init error rc= 0024
*Edited	successful EDIT
*Printed	successful print
*NOT-BROWSED	module deleted by previous DELETE
*NOT-COPIED	module deleted or RPFSAVE exited
*NOT-DEL	delete overruled by user
*Not-Edit	module deleted by previous DELETE
*WS too small	The EDIT workspace is too small. Increase in RPF option 0.1
*NOT-PRT	module deleted by previous DELETE
*S**el B,C,D,E or P**	Wrong command entered.

The RPF LIBRARIAN maintenance commands are:

Command   **Function**

=n/=n.n	Terminate LIBRARIAN mainternance. RPF will go back to the main and option 'n' or 'n.n' will be executed.
BOTTOM	Display the last screen of the directory listing, this command may be abbreviated as 'B'
END or RETURN	Terminate LIBRARIAN maintenance. RPF will go back to the utility menu with 'END' or main menu with the 'RETURN' command
L 'string'	Locate member 'string' or member name, that start with 'string' (specify 1-8 characters in the 'string' operand). After successful execution of the command, LIBRARIAN maintenance will display the screen, within the first line the LIBRARIAN module, where the first occurrence of 'string' was found (highlighted). If no match can be found the next module, wich contains the text next higher than the to be located string will be the first line on the screen.
PFK	Display PFK screen. You can alter here your PFK settings. To terminate the PFK screen enter 'END'. **Note!** The changed PFK settings are only valid during this RPF session. To change the PFKs on the RPF database select the defaults menu. (0 on the main menu)
UP	Scroll 1 page backward. This command will be repeated in the command area, if '&UP' is entered. If you are on the first screen the message 'Scroll had no effect' will appear and the command will be blanked.
DOWN	Scroll 1 page forward. This command will be repeated in the command area, if '&DOWN' is entered 'Scroll had no effect' will appear if you are trying to scroll forward the last screen.
TOP	Start display with the top of the directory listing. The command will be repeated if '&TOP' is entered. An alias of TOP is T.

1.6.7 The RPF Output processor

The RPF output processor is available if you select '6' on the utility menu or '3.6' on the main menu. The output panel contains the following fields:

- The option field.
- The selection possibilities
- The jobname to be entered
- The JES2 job-id to be entered
- The output class
- The status area

You can specify the following options:

0, display the job status. The status of the specified jobname will be displayed in the status area. If you specify only the user id (default), all the jobs starting with 'userid' + 1 jobname character will be displayed. If usermod ZP60016 has been applied in MVS38J, all the jobs starting with 'userid' +

1, 2 or 3 jobname characters will be displayed. The status of the specified jobname(s) will be displayed in the status area.

1, delete the held output from Spool.

2, requeue the output to another output class. Specify a new output class in the appropiate field.

3, print the held output.

4, display the output of the job. All the HELD output datasets of the job will be read from the JES2 Spool and the BROWSE processor will be invoked. See 1.4 "BROWSE Source data or Output listings" for more information concerning BROWSE.

X or PFK3/PFK15, terminate the output processor an go to the utility- or main menu.

1.6.8 The RPF SEARCH processor.

The SEARCH function is available, if you select '8' on the utility menu or '3.8' on the main menu. An allocation menu will be displayed to select a sequential or a partitioned dataset. In this menu also a search string should be specified. This entry menu is similar to the EDIT menu. The PDS should have a record format of Fixed or Variable records with record length with a maximum of 255.

After successful allocation the data set will be scanned for the specified string. After the scan the output will be browsed.

See chapter 1.4 BROWSE source data and output listings for more information about RPF Browse.

1.6.9 Archiver maintenance.

If you select '9' on the RPF utility or '3.9' on the RPF main menu, an allocation screen for the desired ARCHIVER VSAM cluster will be displayed.

ARCHIVER is a free component, written by Rick Fochtman and available on www.cbttape.org in file 147. With Archiver you can archive data sets and members in one VSAM cluster, called 'the Archive'. Members in the Archive are called 'items'.

You can change the Item (member name) and Archive DSNAME field.

Enter option 'A' and press ENTER to perform the allocation.

Enter 'X' (or press PFK03/PFK15) to leave the allocation menu.

After successful allocation an ARCHIVER item selection list is displayed.

The screen is divided into 4 parts:

- The header line.
- The message area.
- The command area for the commands.
- A list or ARCHIVER items.

Each line of the module area contains the following fields:

- The operation. This is an input field.
  The codes are:
    - o 'B', Browse the item.
    - o 'V', Alias of Browse.
    - o 'D', Delete the item. The RPF browser will be invoked to view the output.
    - o 'E', EDIT the item.
    - o 'P', Print the item to the default SYSOUT class.
- The item name, version, group, subgroup, type, DSORG- RECFM- LRECL and BLKSIZE of the original data set and number of records.
- The creation date of the item or a message.
  The message can contain the following:
    - o Browsed, successful display
    - o Deleted, successful delete

- o EDIT N/A, module not EDITed, because the RECFM is not Fixed, Variable or has a LRECL > 255.
- o Edited, successful EDIT
- o Truncated, EDIT workspace too small
- o Printed, successful print
- o Browse error, error in browse processing
- o Delete reject, PF3/PF15 pressed on confirm screen.
- o Delete error, an error occurs during delete processing.
- o Invalid cmd, wrong command entered.

The RPF ARCHIVER maintenance commands are:

Command	Function
BOTTOM	Display the last screen of the directory listing. An alias of 'BOTTOM' is 'B'.
END or RETURN	Terminate ARCHIVER maintenance.
L 'string'	Locate item 'string' or item name, that start with 'string' (specify 1-8 characters in the 'string' operand). If found, the item will be the first line of the item list.
PFK	Display PFK screen. You can alter here your PFK settings. To terminate the PFK screen enter 'END'. **Note!** The changed PFK settings are only valid during this RPF session. to change the PFKs on the RPF database select the defaults menu. (0 on the main menu).
UP	Scroll 1 page backward.
DOWN	Scroll 1 page forward.
REFRESH	Read again the archive and re-populate the screen with the Archiver items.
TOP	Start display with the top of the item listing. An alias of 'TOP' is 'T'.

1.7 Foreground assembler and linkage editor

If you enter '4' on the RPF main menu, you get the assembler panel. This screen contains many fields, which are described below:

The Sourcelib field.	In this field, the member name and library name should be specified. The dataset should be catalogued. Leave member name blank if the dataset is sequential.
The OBJECT lib field.	In this field, the member name and library of a object card image library should be specified. If the member name is omitted, the member name of the source lib will be used. If the library is omitted, a temporary dataset will be allocated if assembly is selected, or no dataset will be allocated if assembly is not selected.
The LOADLIB field.	In this field, the member name and library of a load library should be specified. If the member name is omitted, the member name of the object

library will be used. By default this field contains the name of the source lib. Only the suffix of the dataset name is changed into 'LOAD'.

The INCLUDE library field This field gives you the possibility to specify a DDNAME and a DSNAME of an extra OBJECT of LOAD library to perform extra inclusions of object or load modules during link-edit. Both DDNAME and DSNAME should be specified to perform the allocation of this dataset. The include of the object or load modules can be done, by using the control statements fields.

The MACLIB fields   This field contains 6 fields for maclibs to be allocated to the assembler. The defaults are the **'SYS1.MACLIB'** for the 1st field, the **'SYS1.AMODGEN'** for the 2nd field, and the dataset entered in the allocation menu in the 5th field, if the dataset is partitioned. If one or more maclib fields are blank, the field will be skipped.
Ex. If 1st maclib is specified, 2nd maclib is blank and 3rd maclib is specified, 2nd maclib will be skipped and 3rd maclib becomes 2nd maclib.

The assembler field.   You can specify here 'Y' or 'N' to assemble your source or not. Default is 'Y'.

The assembler output field.   This field contains 'P', 'T' or 'N'. Default is 'N' if you specify 'P' the SYSPRINT comes on the screen after assembly (and link edit), If you specify 'T' the SYSTERM output will be browsed.
With 'N' no browse will be invoked, except if the assembler has given a nonzero return code.

The additional assembler parm field. The default is blanks. You can specify here the the additional parameters for the assembler. The parameters 'NODECK', 'LOAD' and 'LINECOUNT(51)' are already specified.

The 'LKED EXEC' field.   You can specify here 'Y' or 'N' to link your assembler object deck or not. Default is Y.
The linkage editor parm field. You can specify here the linkage editor parm. Default is 'LIST,XREF,NCAL'.

The LKED output field.   Select 'Y' or 'N' to BROWSE the linkage editor output after BROWSE of the assembler output. Default is 'N' if the linkage editor has a return code of 0 and 'Y' if the link has a return code not equal 0.

The printer name   Specify here the name of the remote printer, which will receive the output is a "PRINT" subcommand has been given in the subsequent BROWSE. If no printer specified the output will be locally printed

The output class   Specify the output class for the listing.

The control statement fields. In these fields you can specify max 6 control statements for the linkage editor.

If you hit ENTER after changing the fields all the datasets will be allocated. After successful allocation of the all the assembler files the assembler will be invoked. The name of the assembler is the name

specified in the defaults menu. The start of the assembler will be indicated to the user with the message 'ASSEMBLER RUNNING.' in the message area of the screen.

If the return code is 4 or below, the linkage editor will be invoked (only if LKED EXEC=Y is selected on the screen). The start of the linkage editor will be indicated to the user by means of the message 'LINKEDITOR RUNNING…' in the message area.

If the assembler has ended with a return code higher than 4 the message 'RC ASM=xx' will appear and the linkage editor will not be executed.

If the assembler and/or link editor has ended, the message '(RC ASM=xx,) (RC LKED=xx)' will be displayed on the screen. You can change now only the assembler output field on the screen. Press ENTER to go to the output screen. The output screen is the BROWSE screen, see 1.4, "BROWSE source data and output listings." For more detailed information concerning BROWSE.

After completion of browse of the output of assembler end/or linkage editor the assembler menu will reappear.

Note
You can escape from the assembler screen with the command 'END' or the PFKs 3 or 15. RPF will go back to the main menu.

1.8 RPF TSO command processor

If you select function -6- on the RPF main menu the RPF TSO command processor will be attached. The TSO command processor screen contains an input field of 156 characters to type in the TSO command. With 'END' in the input field (or PFK3/PFK15), RPF returns to the main menu. Also the command '=n' or '=n.n' will terminate TSO and the option 'n' or 'n.n' will be executed from the RPF main menu. Almost each TSO command can be executed. RPF starts the output in line 10 on the screen and can be continued on the next screens. After completion of the TSO command, RPF displays the message 'RPFTSO: READY' together with three asterisks ('***'). Press ENTER to review the command processor screen with the last entered command.
The last 10 TSO commands will be saved in the screen from row 10 until row 19. To repeat a saved command, place the cursor on any place in the command and hit 'Enter'. The command will be placed in the input area. You can alter this command before execution.
After finishing RPF, the last 10 commands will be saved in the RPF Profile cluster.

If a command does not exist or it is not recommended to do that (like LOGON,LOGOFF and RPF) RPFTSO will come back with the message **'Command is not supported'**

1.9 The RPF HELP facility

If you select '7' on the RPF main menu the HELP menu will be displayed. On the HELP menu you can select the following numbers:

1. The RPF introduction. The introduction contains a short description of how RPF works.
2. The RPF commands. These screens contain a short description of the RPF commands.
3. The RPF return codes. These screens contain an explanation of the return codes, that are displayed in some RPF messages.
4. The RPF messages: These screens contain all the RPF messages.
5. The RPF Release notes. These screens contain the latest improvements made by the RPF developers.

X. Terminate the RPF HELP menu. RPF will go back to the main menu.

It is also possible to select the HELP functions directly from the RPF main menu, without interference of the HELP menu (e.g. select '7.5' for HELP-Release notes). If the function is terminated in this case, RPF always returns to the main menu.

Subcommands in the HELP panels.

For the subcommands of the HELP panels see 1.4," BROWSE source data and output listings."

1.10 The RPF TEST mode

The TEST mode is not intended for the normal RPF users. It is an authorized function for the RPF developers. If you enter '8' on the RPF main menu, the user must supply a password.

If you enter five wrong passwords, RPF will go back to the main menu.
If the password is correct, the RPF test menu will be displayed. You can select the following numbers.

1. Display the session status. Press ENTER to go back to the main menu.
2. The operator mode
3. Display the RPF control blocks and entry points. The entry points can be reloaded with the RELOAD 'modname' command.
4. Attach a program to be tested.
5. Display the RPF internal return codes.
1. X. (or PFK03 or PFK15) Terminate the RPF test menu.

1.11 The RPF operator mode

To enter the RPF operator mode you should enter '9' on the RPF main menu. The operator mode is in non-full screen mode. The operator mode is announced with a header line and the message **'RPFOPER: Enter function, 'HELP' OR 'END''**, which is displayed upon entry of RPFOPER or if the 'K' command has been given. The following commands are available.

Command	Function
A=ALL	Display all the executing tasks in the system. (batch, time sharing users, initiators and started tasks) Each line contains: the taskname, the address-space number in hex, the type (JOB, STC or TSU), 'N-TIMING' if no SMF timing is used, the dispatching priority and 'SWAPPED OUT if the task is swapped out.
A=JOB	Display only the batch jobs in the system.
A=STC	Display only the started tasks and the inactive initiators in the system.
A=TSU	Display only the time-sharing users in the system.
A=nnnn	Display addresspace id nnnn. Leading zeroes may be omitted.
J=all	Display all the tasks in the system, except the inactive initiators.
J='jobname'	Display job 'jobname' in the system.

D VOL=vvvvvv	Display the UCB of volume=vvvvvv the display of the UCB contains the following information: The address where the UCB is found. • The type of the UCB (DASD, COMM DEV, DISPLAY, TAPE, UNIT REC or UNKNOWN) • The first 48 bytes of the UCB index. • 'ONLINE' or 'OFFLINE' • The unit address of that volume • The volume serial number if available.
D UCB=dddd	Display the UCB of device dddd, This display contains the same information as the **'D VOL=vvvvvv'** command. Use always 4 characters for the device address.
K	Clear the screen. A header line will be displayed.
HELP	Display the commands of RPFOPER.
END or E	Terminate RPF operator mode. The message '**RPF OPER, All functions completed'** will be displayed together with three asterisks ('***') press ENTER to return to the RPF main menu.

Messages of the RPF operator mode.

1. **RPF OPER: A=nnnn, - Not found on the ASCB chain**
   Invalid addresspace id entered in 'A=nnnn' command.

2. **RPF OPER: J=jjjjjjjj , - Not found on the ASCB chain**
   Jobname jjjjjjjj not found in the system.

3. **RPF OPER: UCB not found**
   Volume in 'D VOL' or device address in 'D UCB' command not found in the system.

4. **RPF OPER: Invalid command entered**
   Not one of the above commands entered.

Note: RPFOPER can be run as a command on the native TSO terminal (the READY prompt). Enter the command RPFOPER to run this command.

1.12 RPF messages

1.12.1 messages of the RPF main processor

Invalid option
System Action: Function ignored.
Programmer Response: Select function 0-9 or X.

Save canceled by user
System Action: None
Programmer Response: PF3/PF15 pressed in Save menu or CANCEL subcommand given in EDIT.

Dataset/member saved
System Action: None
Programmer Response: None

RPFUSER1 not found
System Action: Function ignored.
Programmer Response: Your installation does not supply a RPFUSER1 exit. You have 2 possibilities:
1. Ignore the error
2. Write a RPFUSER1 exit

No workspace available
System Action: EDIT workspace NOT getmained. All options with the exception of option 0 are disabled.
Programmer Response:
1. Select option 0 – Defaults and select 1 to update the number of lines in the workspace.
2. Stop RPF by pressing PFK3/PFK15 and relogon with a larger REGION size
See chapter 1.3 Change session defaults for more information.

Unexpected return code
System Action: Unpredictable, severe error.
Programmer Response: Contact systems programming.

No HELP dataset
System Action: HELP menu not displayed.
Programmer Response: Allocate the HELP dataset under ddname RPFHELP or add 'HELP=dsname' in the second record of the RPFKEY00 member in SYS1.PARMLIB

Unacceptable format
System Action: EDIT function terminated.
Programmer Response: Select 'LINE NUMBERS=YES' or 'NO' on the EDIT dataset menu.

I/O error
System Action: EDIT function terminated.
Programmer Response: Unrecoverable error. Edit a different data set or member.

Workspace full
System Action: EDIT function terminated.
Programmer Response: SAVE your workspace and increase the size.

RC = x
System Action: The SAVE function executed.
Programmer Response: None.

ABEND xxx Detected
System Action: RPF abended, ESTAE exit entered and retry successful
Programmer Response: if the abend code is severe (like 0Cx abends) contact systems programming.

Init. Error RC= xxx
System Action: Session defaults not retrieved from the RPF database. (except rc=24)
Programmer Response:

- If rc=4, SYS1.PARMLIB cannot be allocated, contact systems programming.
- If rc=8, contact systems programming to create the member RPFKEY00 in the SYS1.PARMLIB.
- If rc=12, allocation error of the RPF database. Contact systems programming.
- If rc=16, database could not be opened, try to sign on several times, if you have no success, contact systems programming.
- If rc=20, write error on the database. Contact systems programming.
- If rc=24, RPF was unable to allocate a temporary dataset under ddname RPFEDT1 and/or RPFVTC1. The following actions can be tried:

1. Stop RPF, free RPFEDT1 and RPFVTC1 with the TSO command 'FREE' and restart RPF.
2. Accept the error but the EDIT function of PDS maintenance and LIBRARIAN maintenance and the BROWSE, EDIT and Member List in VTOC are not available.
3. If no solution can be found, contact systems programming.

Not saved: RC= nn
System Action: The database record is not updated.
Programmer Response: if rc=4, allocation error on database, contact systems programming.
- If rc=8, open error on database, try to select the defaults menu several times, If you have no success, contact systems programming.
- If rc=12, record not found, contact systems programming.
- If rc=16, write error on database, contact systems programming.
- If rc=20, error caused by initialization error or the user has entered 'RPF FAST. See the initialization error message or start RPF without the 'FAST' operand

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System Action: None
Programmer Response: None, successful sign on to RPF.

Workspace too small
System Action: EDIT terminated
Programmer Response: Increase the workspace size or EDIT another dataset.

Dataset/Member in use
System Action: EDIT canceled, return to main menu.
Programmer Response: This will happen if the dataset and member is edited or beeing save by another TSO user
with RPF or the IBM product SPF. Wait for availability of the member or EDIT another member.

ABENDxxx in Browse
System Action: BROWSE terminated, main menu displayed.
Programmer Response: Contact systems programming if a severe abendcode (like 0Cx abends).

1.12.2 Session default messages.

No profile data set
System Action: Defaults not saved
Programmer Response: RPF FAST entered, so not profile data set available

GETMAIN failed, retry
System Action: Workspace not allocated. RPF will not leave the defaults menu.
Programmer Response: Decrease the size of the workspace.

Invalid option
System Action: Function ignored.
Programmer Response: Select the right number on the menu

Invalid workspace size
System Action: Workspace size ignored.
Programmer Response: Enter a numeric number of lines with a minimum of 500 and a maximum of 999,999.

FREEMAIN failed, stop
System Action: Workspace not freemained.
Programmer Response: Severe error. Sign off and contact systems programming

Invalid SYSOUT class
System Action: Sysout class ignored
Programmer Response: Enter sysoutciass A-Z or 0-9.

Upd. size destroys WS
System Action: Current workspace no longer valid.
Programmer Response: None.

SUBMIT not TSO or RPF
System Action: Screen not exited, waiting for the correct parameter
Programmer Response: Enter the correct value.

NULLS/CAPS/NUMBERED/REPLACE not YES or NO
System Action: Screen not exited
Programmer Response: Correct this value.

1.12.3 BROWSE messages.

Invalid command
System Action: Command ignored.
Programmer Response: Enter a valid command.

Invalid column number
System Action: Column number is not numeric or exceeds LRECL of dataset. Command ignored.
Programmer Response: Enter a valid column number in the 'C' command.

Alloc. error SYSOUT
System Action: 'PRINT' subcommand terminated.
Programmer Response: Severe error, contact systems programming.

PFK not defined
System Action: PFK ignored.
Programmer Response: Define the PFK or hit another PFK.

PFK definition invalid
System Action: PFK ignored.
Programmer Response: Redefine that PFK. The 'CON' attribute was not 'N', 'Y' or 'X'

Listing made, SYSOUT=x
System Action: SPIN OFF SYSOUT dataset created.
Programmer Response: None.

Label xxx not found
System Action: 'L xxx' command not executed.
Programmer Response: Define label 'xxxx' with the LABEL command

Label xxxx assigned
System Action: LABEL xxxx command executed.
Programmer Response: None.

Invalid char. string
System Action: 'F' subcommand not executed.
Programmer Response: Specify correct string.

Text not found
System Action: F subcommand executed, but no match found
Programmer Response: Scroll to correct position or re-enter the F subcommand with another string

CHARS string FOUND
System Action: F subcommand executed. All matches are highlighted.
Programmer Response: None.

No storage available
System Action: DOWN or BOTTOM subcommand terminated.
Programmer Response: Decrease EDIT workspace (option 0.1) or re-logon to TSO with a larger REGION size.

SUBMIT failed
System Action: SUBMIT not executed due to an allocation error of the internal reader
Programmer Response: Contact the RPF developer.

No JCL dataset
System Action: SUBMIT not executed.
Programmer Response: Specify a card-image dataset with JCL.

JOB jjjjjjjj SUBMITTED
System Action: Contents of dataset submitted to the JES2 internal reader
Programmer Response: None.

1.12.4 EDIT messages.

//* last update nt fnd
System Action: String '//* last update: ' not found in workspace
Programmer Response: Specify this string (without quotes) in the data.

Date/Time cannot added
System Action: No timestamp after '//* last update: ' added.
Programmer Response: Specify at least 12 bytes after this string to contain the timestamp.

APPEND not executed
System Action: not executed, because workspace is too small.
Programmer Response: increase the workspace size with option 0.1

I/O error
System Action: APPEND function terminated.
Programmer Response: Unrecoverable error. Append a different data set or member.

Workspace too small
System Action: EDIT terminated. RPF returns in the data entry menu.
Programmer Response: Increase workspace size with the defaults menu. (option 0.1).

Scroll had no effect
System Action: 'UP', 'DOWN', 'L +n', 'L −n', 'LEFT', or 'RIGHT' command will be ignored and the command will be blanked.
Programmer Response: none.

Command not executed
System action: 'COB' or 'SCR' command ignored
Programmer Response: The screen contains the complete record, so RIGHT and COB are ignored.

Invalid command
System Action: Command ignored.
Programmer Response: Enter a valid command or 'HELP' to list the commands.

Overflow
System Action: Screen changes and command ignored.
Programmer Response:
- An overflow was detected during an 'I' or an 'R' command or calculation in LINE routine, contact the RPF builders.

Lines not numeric
System Action: Command ignored.
Programmer Response: One or more lines were not numeric. Enter numeric lines.

Invalid scroll value
System Action: Scroll field reset to last value.
Programmer Response: The first character entered in the scroll value was not a 'C', 'H', 'L' or a 'P'. No action is needed; RPF will reset the last correct value.

No card image data set
System Action: JCL or SUB(MIT) command ignored.
Programmer Response: Use a data set or member with a record length of 80.

Scope range is invalid
System Action: SCOPE subcommand ignored, set to last correct value
Programmer Response: Re-enter the command with right columns.

Scope too small

System Action: 'F, 'C', or 'FILL' command ignored
Programmer Response: The character string in the command is longer than the SCOPE range. Use shorter character strings or reset the SCOPE range with the 'SCOPE' subcommand.

xxxx lines filled
System Action: 'FILL' subcommand executed successfully.
Programmer Response: None.

xxxx lines xlated
System Action: 'UC' or 'LC' subcommand executed successfully.
Programmer Response: None.

Delete failed
System Action: 'DEL' command ignored.
Programmer Response: Do not delete more lines, than are present from the start line till the end of the workspace. If you want to delete until the end of the workspace use '99999999' in the second operand or use the line command 'DB'.

Input terminated
System Action: 'I' command ignored.
Programmer Response: 1. Input fewer lines or 2. Save the workspace, increase workspace and re-EDIT the dataset.

Invalid line number
System Action: 'L' command ignored.
Programmer Response: Line number not numeric or line number not found in workspace. Enter the right line number

Submit failed
System Action: Submit terminated.
Programmer Response: Check if the 'JCL' attribute is present in the TSO 'SYS1.UADS' dataset. If the JCL attribute is present, then it is a severe error. Contact systems programming If the JCL attribute is not present, you are not authorized to submit jobs. Contact systems programming to add the JCL attribute.

No JOB statement found
System Action: Submit not executed.
Programmer Response: Check the job statement, add this and resubmit.

Line-x invalid
System Action: Command ignored.
Programmer Response: Enter a line number that exists in the workspace.

Line-x not found
System Action: Command ignored.
Programmer Response: Enter the right line number in the command.

PFK not defined
System Action: PFK ignored.
Programmer Response: Define the PFK or hit another PFK.

PFK definition invalid
System Action: PFK ignored.
Programmer Response: The 'CON' attribute of the PFK is not 'N', 'Y' or 'X'. redefine that PFK.

Copy terminated
System Action: 'CO' or 'MO' command ignored.
Programmer Response: SAVE the workspace, increase the workspace and re-EDIT the dataset.

Invalid copy range
System Action: 'CO' or 'MO' command ignored.
Programmer Response: Try to copy or move a line range into that same range, enter a correct CO or MO command.

Text not found
System Action: 'C' or 'F command is ignored.
Programmer Response: Re-enter the 'C' or 'F' command with a valid character string.

Chars X'..' found
System Action: FIND P'.' successful executed.
Programmer Response: None.

Invalid char. string
System Action: 'C' ,'F' or 'FILL' command is ignored.
Programmer Response: Re-enter the command with a valid character string.

Input convert failed
System Action: Screen not displayed. Message '**Enter "RETRY" or "END"**' appears after pressing ENTER.
Programmer Response: Enter 'RETRY' or 'END' and contact systems programming.

Enter "RETRY" or "END"
System Action: This message appears after the message **'Input convert failed'**.
Programmer Response: Execute the indicated action.

Data will be lost
System Action: Message 'Renumber 'Yes' or 'No'' appears after pressing ENTER.
Programmer Response: Enter 'Yes' or 'No' to renumber/not renumber.

Renumber 'Yes' or 'No'
System Action: This message appears after the message **'Data will be lost'**.
Programmer Response: Execute the indicated action.

Use 'SAVE FORCE'
System Action: 'SAVE' command ignored.
Programmer Response: Workspace contained unprintable characters. Specify 'SAVE FORCE' to force the save function.

Workspace not numbered
System Action: UNNUM subcommand ignored.

Programmer Response: Enter the 'RENUM' subcommand first before clear columns 73-80 or 01-06 of the workspace or ignore the message.

Workspace renumbered
System Action: Successful execution of RENUMBER subcommand.
Programmer Response: None.

Job jjjjjjjj submitted
System Action: Workspace submitted.
Programmer Response: None

Invalid characters xlated
System Action: Invalid characters xlated into periods
Programmer Response: none.

xxxxx changes made
System Action: Successful 'C' command. User will be notified of the number of changes made by RPF.
Programmer Response: None.

Nothing to RETRIEVE
System Action: No commands retrieved. Possible the first command entered in the RPF session.
Programmer Response: None.

Enter SAVE or CANCEL
System Action: The END command has been given with AUTOSAVE=N. EDIT will not terminate.
Programmer Response: Execute indicated action or continue with EDIT.

Conflicting commands
System Action: Primary and (pending) line commands ignored. RPF will blank the command field and will issue an implicit 'RESET to reset the pending line-commands.
Programmer Response: Do not enter line commands and primary commands other than 'F , 'L' or 'M' together or do not enter confliction line commands (like CC - CC - DD).

No clipboard file
System Action: RPFCTPST was not allocated due to some reason.
Programmer Response: Check empty space on disk volumes with use attribute "storage" or "public" and restart RPF.

Xxxxx records cut
System Action: RPF has xxxxx records written to the clipboard file
Programmer Response: None. Use PASTE to paste the clipboard in another dataset or member.

Use CUT before PASTE
System Action: The clipboard file is empty.
Programmer Response: Use a CUT command to add records to the clipboard.

PASTE buffer too large
System Action: Records of clipboard not pasted.
Programmer Response: Increase workspace size (option 0.1) or paste the records into another dataset.

xxxxx records pasted
System Action: The clipboard has been successfully pasted.
Programmer Response: None.

RENUMBER not allowed
System Action: The RENUM subcommand is not executed.
Programmer Response: Renumber of data with variable records is not possible.

Abendx37 in RPFSAVE
System Action: EDIT workspace recovered and EDIT not left.
Programmer Response: Save data in another dataset.

1.12.5 EDIT hardcopy messages.

VTAM CB error
System Action: Hardcopy aborted.
Programmer Response: Error caused 'GENCB' error. Notify systems programming.

Printer in use, retry
System Action: Hardcopy aborted.
Programmer Response: Someone else is using that printer. Wait for completion or specify another printer.

Hardcopy failed
System Action: Hardcopy aborted, 'SEND' failed.
Programmer Response: This can be a malfunction of the printer, contact systems programming

ACB in use, retry
System Action: Hardcopy aborted, 'ACB' cannot be opened.
Programmer Response: Retry the 'HAR' command.

Unexpected return code
System Action: Hardcopy aborted. Severe error.
Programmer Response: Contact systems programming.

Copies not numeric
System Action: 'HAR' command ignored.
Programmer Response: Re-enter the command with numeric copy number.

Copies invalid
System Action: 'HAR' command ignored.
Programmer Response: Re-enter the command with a right copy number.

LU=xxxxxxxx invalid
System Action: 'HAR' command ignored
Programmer Response: The printer-name specified do not exist in the network. Specify another printer name.

Hardcopy made
System Action: Hardcopy executed successful.

Programmer Response: None.

Alloc error xxxx PRINT
System Action: Hardcopy: temporary dataset not allocated, refer to MVS Job management or z/OS MVS Programming: Authorized Assembler Services for the error code.
Programmer Response: Contact the RPF builders.

1.12.6 LIBRARIAN messages.

Invalid option
System Action: LIBRARIAN read/upd: Function ignored.
Programmer Response: Select function 1,2,3 or X.

Specify Masterfile
System Action: LIBRARIAN read: RPF waits for action
Programmer Response: Execute indicated action.

ALLOC. ERROR xxxx ON DS
System Action: LIB read/update: Function ignored retry screen displayed.
Programmer Response: Refer to 'MVS/ESA Authorized Assembler Programming' chapter 'Dynamic allocation services' to get an explanation of the error code. Correct this error and retry.

Open error code= x
System Action: LIBRARIAN read aborted. Retry screen displayed.
Programmer Response: Refer for code 'x' to the LIBRARIAN documentation (LIB FAIR codes). Correct this error and retry.

Workspace too small
System Action: EDIT terminated
Programmer Response: Increase the workspace size with option 0.1.

MODULE NOT ON MASTER
System Action: LIBRARIAN read: Function ignored. Retry screen displayed.
Programmer Response: Specify another module name.

Error in READ, code=x
System Action: LIBRARIAN read aborted. Retry screen displayed.
Programmer Response: Refer for code 'x' to the LIBRARIAN documentation (LIB FAIR codes). Correct this error and retry.

Dataset not in catalog
System Action: LIB read/update: Function ignored. Retry screen displayed.
Programmer Response: Specify another master file or supply the volume.

Dataset not on volume
System Action: LIB read/update: Function ignored. Retry screen displayed
Programmer Response: Specify another master file or volume.

Alloc. error work ds.
System Action: LIBRARIAN write function has been aborted.
Programmer Response: Press ENTER to return to the main menu and contact systems programming.

Userid not in table
System Action: LIB update: User id set in 'PGMR' field instead of the name of the owner of the userid.
Programmer Response: Contact systems programming to add an entry in the userid/name table (RPFLIB02)

1.12.7 PANVALET messages.

Invalid option
System Action: PANVALET read/upd: Function ignored.
Programmer Response: Select function 1,2 or X.

Specify library
System Action: PANVALET read: RPF waits for action
Programmer Response: Execute indicated action.

PANVALET not installed
System Action: PANVALET read: module PAM not found.
Programmer Response: Install PANVALET or press PFK3/PFK15.

ALLOC. ERROR xxxx
System Action: PANVALET read/update: Function ignored. Retry screen displayed.
Programmer Response: Refer to 'MVS/ESA Authorized Assembler Programming' chapter 'Dynamic allocation services' to get an explanation of the error code. Correct this error and retry.

NOT A PANVALET LIBRARY
System Action: Retry screen displayed.
Programmer Response: Specify a PANVALET library

ERROR READ, CODE=PVxxx
System Action: Retry screen displayed.
Programmer Response: Refer for code PVxxx the PANVALET manuals. Correct the error and retry.

DATASET NOT IN CATALOG
System Action: PANVALET read/update: Function ignored. Retry screen displayed.
Programmer Response: Specify another dataset or supply the volume.

DATASET NOT ON VOLUME
System Action: PANVALET read/update: Function ignored. Retry screen displayed
Programmer Response: Specify another dataset or volume.

ALLOC. ERROR WORK DS
System Action: PANVALET write function has been aborted.
Programmer Response: Press ENTER to return to the main menu and contact systems programming.

USERID NOT IN TABLE
System Action: PANVALET update: userid set in 'PGMR' field instead of the name of the owner of the userid.
Programmer Response: Contact systems programming to add an entry in the userid/name table (RPFLIB02).

LANG REQUIRED WITH ADD
System Action: PANVALET update: RPF waits for action.
Programmer Response: Specify the 'LANG' field

SPECIFY PGMR AND DESC.
System Action: PANVALET update: RPF waits for action.
Programmer Response: Specify both fields or none.

1.12.8 Archiver update messages

Invalid option
System Action: Function ignored.
Programmer Response: Enter option A or option X.

Specify Archive
System Action: Retry screen displayed.
Programmer Response: Specify an Archiver VSAM cluster.

Dataset not catalogued
System Action: Retry screen displayed.
Programmer Response: Specify a catalogued Archive VSAM cluster

Alloc error xxxx
System Action: Retry screen displayed.
Programmer Response: Archive cluster cannot be allocated. Specify another Archiver cluster.

Alloc. error work DS
System Action: Retry screen displayed.
Programmer Response: severe error, contact RPF builders.

Item name is required
System Action: Retry screen displayed.
Programmer Response: enter a valid item (member) name.

1.12.9 Messages of the RPF utility processor.

Invalid option
System Action: Function ignored.
Programmer Response: Select function 1-9 or X.

Unexpected return code
System Action: Unpredictable.
Programmer Response: Severe error, contact systems programming.

ARCHIVER not installed
System Action: module ARCHIVER not found
Programmer Response: install ARCHIVER (file 147 on www.cbttape.org)

1.12.10 Reset ISPF/RPF messages

Invalid new userid
System Action: Retry RESET allocation screen displayed.

Programmer Response: Specify a new user id with the syntax of a user id. (starts with an alphabetic character or national character).

Invalid ISPF version
System Action: Retry RESET allocation screen displayed.
Programmer Response: Specify a value between 01 and 99 (always enter 2 numbers).

Invalid ISPF mod level
System Action: Retry RESET allocation screen displayed.
Programmer Response: Specify a value between 00 and 99 (always enter 2 numbers).

S=Reset,D=Delete stats
System Action: None, informational message in option 3.0.
Programmer Response: None.

1.12.11 PDS maintenance messages

Scroll had not effect
System Action: 'DOWN' or 'UP' command ignored and the command field will be blanked.
Programmer Response: None.

Invalid command
System Action: Command ignored.
Programmer Response: Enter a valid command.

Dataset not a PDS(E)
System Action: RPF PDS maintenance exited.
Programmer Response: Press ENTER, select again '0' or '1'on the utility menu and specify a partitioned dataset in the allocation menu.

Open of dataset failed
System Action: RPF PDS maintenance exited.
Programmer Response: Severe error, press ENTER to return to the utility menu and contact systems programming.

To return to RPF UTIL presss 'ENTER'
System Action: RPF wait for response from the user.
Programmer Response: This message is accompanied with one of the two previous messages. Execute the indicated action.

Trunc to xxxx entries
System Action: The first xxxx members are in the member area.
Programmer Response: Increase the size of the workspace with the defaults menu and reissue PDS maintenance or accept this truncation.

PFK not defined
System Action: PFK ignored.
Programmer Response: Define that PFK or press another PFK.

PFK definition invalid
System Action: PFK ignored.

Programmer Response: Redefine that PFK. The 'CON' attribute of the PFK must be 'N', 'Y' or 'X'.

Text not found
System Action: 'L' command ignored.
Programmer Response: Field 'string' or field that start with 'string' not found. Enter a right string in the 'L' command.

Hit enter to exec Cmd
System Action: RPF waits for response.
Programmer Response: Screen changes are executed but RPF waits to notify the changes to the user. Press ENTER to execute command.

Not sorted on MEMBER
System Action: 'S member' command ignored.
Programmer response: Sort list on member name order with the SORT command (without operands)

Member not found
System Action: S member command ignored.
Programmer Response: PDS maintenance has been invoked from option 1 (Browse). Specify a existing member.

1.12.12 Dataset functions messages.

PREFIX not specified
System Action: Dataset creation ignored.
Programmer Response: Enter a '1' in the command area and a prefix in the prefix area.

LIBRARY not specified
System Action: Dataset creation ignored.
Programmer Response: Enter a '1' in the command area and a library in the library area.

DATASET ALREADY EXISTS
System Action: Creation of dataset ignored.
Programmer Response: Specify another data set name.

Space not CYL/TRK/BLK
System Action: Creation of dataset ignored.
Programmer Response: Re-specify space unit and retry.

Space values not numeric
System Action: Dataset creation ignored.
Programmer Response: Change these fields and retry.

Allocation error xxxx
System Action: Dataset creation terminated.
Programmer Response: Refer for the code xxx to 'MVS/ESA Authorized Assembler Programming' chapter 'Dynamic allocation services'. Correct the error and retry.

Invalid option
System Action: Function ignored.
Programmer Response: Select '1', '2' or 'x' on the retry menu.

Invalid RECFM
System Action: Function ignored.
Programmer Response: Specify RECFM=F, FB, FBM, FBA, FBS, V, VB, VBM, VBA, VBS or U

Invalid LRECL
System Action: Function ignored.
Programmer Response: Specify a numeric value.

Invalid BLKSIZE
System Action: Function ignored.
Programmer Response: Specify a numeric value.

LRECL > BLKSIZE
System Action: Function ignored.
Programmer Response: Correct LRECL or BLKSIZE.

LRECL > 32760
System Action: Function ignored.
Programmer Response: Decrease LRECL.

LRECL < 18
System Action: Function ignored.
Programmer Response: Increase LRECL.

BLKSIZE > 32767
System Action: Function ignored.
Programmer Response: Decrease BLKSIZE.

BLKSIZE < 18
System Action: Function ignored.
Programmer Response: Increase BLKSIZE.

LRECL+4 > BLKSIZE
System Action: Function ignored.
Programmer Response: Correct LRECL or BLKSIZE. This will happen if RECFM=V(B/M/A).

BLK not mult. of LRECL
System Action: Function ignored.
Programmer Response: Correct LRECL or BLKSIZE. This will happen if RECFM=F(B/M/A/S).

Dataset allocated
System Action: Successful allocation of a new dataset.
Programmer Response: None.

Dataset not in catalog
System Action: Dataset not deleted.
Programmer Response: Retry. Enter the right dataset name.

Dataset not on dasd

System Action: Dataset not deleted.
Programmer Response: Do not specify tape datasets.

UNCATLG error dataset
System Action: Dataset not deleted.
Programmer Response: Check in the catalog listing if the dataset is correctly catalogued or mount catalog pack.

SCRATCH error dataset
System Action: dataset uncatalogued, but not scratched.
Programmer Response: SCRATCH dataset with IEHPROGM.

Dataset deleted
System Action: Dataset uncatalogued and scratched.
Programmer Response: None.

1.12.13 Move/Copy messages.

Scroll had no effect
System Action: 'DOWN' or 'UP' command ignored and the command field will be blanked.
Programmer Response: None.

Invalid command
System Action: Command ignored.
Programmer Response: Enter a valid command.

FROM/TO dataset not PO
System Action: Allocation menu re-displayed
Programmer Response: Both FROM and TO datasets should be partitioned (DSORG=PO), Correct the dataset name in error.

No FROM/TO dataset
System Action: Allocation menu re-displayed
Programmer Response: Specify the dataset (and volume) of both FROM and TO datasets

Conflicting DCB parms
System Action: Allocation menu re-displayed
Programmer Response: The RECFM of both dataset should be the same. If RECFM = F(B) or V(B), the LRECL should be the same. If RECFM=U, the BLKSIZE of the TO dataset should be equal or larger than the BLKSIZE of the FROM dataset.

FROM/TO dataset not on volume
System Action: Allocation menu re-displayed
Programmer Response: Specify the right volume name or omit the volume if the dataset is catalogued.

FROM and TO are the same
System Action: Allocation menu re-displayed
Programmer Response: Specify different datasets/volumes for FROM and TO dataset.

REPLACE not YES or NO

System Action: Allocation menu re-displayed
Programmer Response: Correct this value.

FROM/TO data alloc error
System Action: Allocation menu re-displayed
Programmer Response: Specify a different dataset name and/or volume for the dataset in error.

No members in FROM ds
System Action: Allocation menu re-displayed
Programmer Response: Do not specify empty partitioned datasets.

IEBCOPY error
System Action: Browse invoked to browse the SYSPRINT output of IEBCOPY and allocation menu re-displayed afterwards.
Programmer Response: IEBCOPY had a non-zero return code during copy of all members. See the IEBCOPY output.

Hit enter to exec Cmd
System Action: RPF waits for response.
Programmer Response: Screen changes are executed but RPF waits to notify the changes to the user. Press ENTER to execute command

PFK not defined
System Action: PFK ignored.
Programmer Response: Define that PFK or press another PFK.

PFK definition invalid
System Action: PFK ignored.
Programmer Response: Redefine that PFK. The 'CON' attribute of the PFK must be 'N', 'Y' or 'X'.

Text not found
System Action: 'L' command ignored.
Programmer Response: Member starting with 'string' not found. Specify a valid 'string'

xxxxx members copied/moved
System Action: Allocation menu re-displayed
Programmer Response: None

Abend xxx detected
System Action: Allocation menu re-displayed in case of an x37 or 913 abend, otherwise the RPF main menu will be displayed.
Programmer Response: Compress the dataset in case of a x37 abend, Change the authorization profiles in case of a 913 abend or report the problem to the RPF builders in case of other abends.

1.12.14 VTOC and catalog messages.

Volume not specified
System Action: Function ignored.
Programmer Response: Specify volume or exit (X)

Volume not available

System Action: Function ignored.
Programmer Response: Specify an ONLINE volume.

Invalid option
System Action: Function ignored.
Programmer Response: Select function '1' or 'X'.

INVALID PARM
System Action: Retry screen displayed
Programmer Response: Specify PARM=SHORT, LONG or VOL and re-enter.

No datasets found
System Action: Retry screen displayed
Programmer Response: No datasets found in the catalog with this level, specify a different level.

Severe error RPFLISTC
System Action: Retry screen displayed
Programmer Response: Contact the RPF developer, RPFLISTC cannot allocate its work datasets.

VTOC running…
System Action: The keyboard is locked and RPF is busy with reading the VTOC
Programmer Response: Wait for completion.

Scroll had no effect
System Action: 'DOWN' or 'UP' command ignored and the command field will be blanked.
Programmer Response: None.

Invalid command
System Action: Command ignored.
Programmer Response: Enter a valid command.

PFK not defined
System Action: PFK ignored.
Programmer Response: Define that PFK or press another PFK.

PFK definition invalid
System Action: PFK ignored.
Programmer Response: Redefine that PFK. The 'CON' attribute of the PFK must be 'N', 'Y' or 'X'.

Text not found
System Action: 'L' command ignored.
Programmer Response: Dataset that start with 'string' not found. Enter a right string in the 'L' command.

Hit ENTER to exec CMD
System Action: RPF waits for response.
Programmer Response: Screen changes are executed but RPF waits to notify the changes to the user. Press ENTER to execute command.

1.12.15 LIBRARIAN maintenance messages.

SCROLL HAD NO EFFECT
System Action: 'DOWN' or 'UP' command ignored and the command field will be blanked.
Programmer Response: None.

Specify Masterfile
System Action: RPF waits for action.
Programmer Response: Specify a valid LIBRARIAN master file.

Invalid command
System Action: Command ignored.
Programmer Response: Enter a valid command.

OPEN ERROR CODE= x
System Action: LIBRARIAN maintenance aborted, RPF will return to utility menu.
Programmer Response: Refer for code 'x' to the LIBRARIAN documentation (LIB FAIR codes). Correct the error and retry.

Module not on MASTER
System Action: LIBRARIAN read: function ignored.
Programmer Response: None.

Error in READ, code x
System Action: LIBRARIAN read aborted
Programmer Response: Refer for code 'x' to the LIBRARIAN documentation (LIB FAIR codes). Correct the error and retry.

PFK not defined
System Action: PFK ignored.
Programmer Response: Define that PFK or press another PFK.

PFK definition invalid
System Action: PFK ignored.
Programmer Response: Redefine that PFK. The 'CON' attribute of the PFK must be 'N', 'Y' or 'X'.

Enter Locate string
System Action: RPF waits for indicated action
Programmer Response: Specify locate string (1 or more characters)

1.12.16 SEARCH messages

Alloc error xxxx PRINT
System Action: SEARCH: temporary dataset not allocated,
refer to MVS Job management or z/OS MVS Programming: Authorized Assembler Services for the error code.
Programmer Response: Contact the RPF Builders.

Open data set failed
System Action: Severe error, contact the RPF builders.
Programmer Response: Contact the RPF Builders.

1.12.17 Archiver maintenance messages

Invalid option
System Action: Retry screen displayed.
Programmer Response: Specify option A or option X.

Alloc error SYSOUT
System Action: Retry screen displayed.
Programmer Response: Contact RPF builders.

Specify Archive
System Action: Retry screen displayed.
Programmer Response: Specify an Archiver VSAM cluster.

Dataset not catalogued
System Action: Retry screen displayed
Programmer Response: Specify a catalogued Archive VSAM cluster

Scroll had no effect
System Action: None, top or bottom of list reached.
Programmer Response: none.

Invalid command
System Action: none, command ignored.
Programmer Response: enter a valid command.

PFK not defined
System Action: PFK ignored.
Programmer Response: Define that PFK or press another PFK.

PFK definition invalid
System Action: PFK ignored.
Programmer Response: Redefine that PFK. The 'CON' attribute of the PFK must be 'N', 'Y' or 'X'.

Enter Locate string
System Action: RPF waits for indicated action
Programmer Response: Specify locate string (1 or more characters)

1.12.18 Assembler monitor messages

Data set name missing
System Action: Retry screen displayed.
Programmer Response: Specify an existing source library.

No card image data set
System Action: Retry screen displayed
Programmer Response: Specify a source library with a record length of 80.

Alloc. error workds
System Action: Assembler screen exited.
Programmer Response: Severe error, press ENTER to return to the main menu and contact systems programming.

Allocation RC=xxxx
System Action: Assembler redisplayed and cursor set in source lib field.
Programmer Response: See chapter 12.13 the message 'ALLOCATION FAILED RC xxxx' for the return code, Re-enter the sourcelib and/or member depending of the return code.

Member not found
System Action: Assembler redisplayed and cursor set in source lib field.
Program Response: Specify an existing member

Alloc code xxxx on (x)
System Action: RPF waits for response of the user and set the cursor on the DSNAME in error (DSNAME (x))
Programmer Response: Refer for code xxxx 'MVS/ESA Authorized Assembler Programming' chapter 'Dynamic allocation services'. Change the dsname field '(x)' and press ENTER or escape with the 'END' command.

Dynalloc error SYSLIB
Programmer Response: Severe error. Press ENTER to leave the assembler screen and contact systems programming.

RC ASM= xx (RC LKED= xx)
System Action: assembler (and linkage editor) executed.
Programmer Response: press ENTER to browse the output.

xxxxxxxx not found
System Action: Assembler screen exited.
Programmer Response: Press Enter and go to option 0.1 to specify a different assembler program name.

ASSEMBLER running..
System Action: RPF locks the keyboard and RPF bas invoked the Assembler.
Programmer Response: Wait for completion.

LINKEDITOR running..
System Action: RPF locks the keyboard and RPF has invoked the linkage editor.
Programmer Response: Wait for completion.

DS (x) same as DS (y)
System Action: RPF stops processing, sets cursor in the DSNAME (y) field and waits for action.
Programmer Response: Specify a different dataset name.

Invalid key pressed
System Action: All input ignored.
Programmer Response: Hit only the ENTER, PFK03 or PFK15 key

1.12.19 TSO command processor messages.

Invalid command name
System Action: Input ignored (IKJSCAN)
Programmer Response: Do not enter only TSO command separators

Command name syntx err
System Action: Input ignored (syntax error IKJSCAN)
Programmer Response: Enter a right command name

Command not supported
System Action: Command ignored
Programmer Response: This TSO command does not exist or is not authorized, enter a valid command.

RPF-TSO: ATTACH for processor failed
System Action: Severe error. Will be recovered.
Programmer Response: Contact systems programming.

RPF-TSO: Ready
System Action: TSO command executed.
Programmer Response: Press ENTER to continue.

RPF-TSO: Interrupt received
System Action: Recovered from 'ATTENTION' interrupt
Programmer Response: Press ENTER to continue

RPF-TSO: Abended completion code=ccc
System Action: Abend detected in the TSO command processor, recovery successful.
Programmer Response: Contact systems programming (severe error).

RPF-TSO: Command abended CC= ccc
System Action: Abend detected in a TSO command, recovery successful
Programmer Response: If the code is severe (like 0Cx abends) contact systems programming.

RPF-TSO: Command not found
System Action: None, BLDL failed
Programmer Response: Enter a valid TSO command

1.12.20 RPF HELP messages.

Invalid option
System Action: Function ignored.
Programmer Response: Select function 0-9 or X.

No member RPFHELP. (..=1,2,3,4,5)
System Action: Function ignored.
Programmer Response: Allocate the right HELP dataset before entering RPF. The HELP dataset should contain the members RPFHELP1, RPFHELP2, RPFHELP3, RPFHELP4 and RPFHELP5 The second possibility is to specify the right HELP dataset in the RPFKEY00 member.

1.12.21 Allocation, PFK and SAVE messages.

Invalid option
System Action: Function ignored on the retry screen.
Programmer Response: Select one of the functions displayed on the screen.

ARCHIVER not installed
System Action: module ARCHIVER not found
Programmer Response: install ARCHIVER (file 147 on www.cbttape.org) or specify another option.

LIBRARIA not installed
System Action: module LIBRARIA not found
Programmer Response: install LIBRARIAN or specify another option.

PANVALET not installed
System Action: module PAN#1 not found
Programmer Response: install PANVALET or specify another option.

LRECL>255 not allowed
System Action: Browse dataset ignored
Programmer Response: Specify a dataset with a LRECL of 255 or lower

Dataset not in catalog
System Action: Entry screen and SAVE: menu re-displayed
Programmer Response: Specify a catalogued data set or specify a volume.

Dataset not on volume
System Action: Entry screen and SAVE: menu re-displayed
Programmer Response: Specify an existing data set.

Alloc. failed, RC xxxx
System Action: SAVE: retry screen displayed.
Programmer Response:
- If rc=12, allocation error, possible errors can be: 1. Dataset allocated to another user with DISP=OLD, MOD or NEW. 2. Invalid dataset name. 3. Required volume not mounted. Correct the problems and retry.
- If rc=16, the dataset cannot be unallocated, this is a severe error. Contact systems programming.
- If rc=20, specify a data set with LRECL < = 255 and a RECFM of F(B) or V(B). (edit, save and browse).
- If rc=28, enter a dataset with DSORG=PS or PO.
- If rc=36, the authorization is failed, access has been rejected by a security system like RACF.

Data set name missing
System Action: Data set entry and SAVE: retry screen displayed
Programmer Response: Specify an existing data set (and volume)

Member not found
System Action: Data set entry and SAVE: retry screen displayed.
Programmer Response: Specify an existing member

Invalid record length
System action: Data set or member not processed.
Programmer Response: EDIT a data set or member with a LRECL of at least 40 and no more than 255.

LRECL input > output
System action: Save not executed, retry screen displayed.

Programmer Response: Specify a data set with a LRECL equal or larger than the input data set to avoid truncation of data.

EOF or DEL key used
System Action: PFK: screen changes ignored.
Programmer Response: Do not use the erase EOF, erase input and delete key.

PFK's reset
System Action: Changes of PFKs executed.
Programmer Response: None.

Member xxxxxxxx exists
System Action: SAVE: retry screen displayed.
Programmer Response:

- Enter '2' to reuse the member.
- Enter '1' and change the allocations to save in another dataset or member.
- Enter 'X' to abort the save.

Member name invalid
System Action: SAVE not executed, retry screen displayed.
Programmer Response: Enter a valid member name.

TEMPRPF restricted
System Action: Save not executed, retry screen displayed.
Programmer Response: Enter another member name. (TEMPRPF is used in the internals of RPF).

Dataset/member in use
System Action: SAVE: retry screen displayed and save ignored, because the same dataset and member is processed by an RPF of another TSO user
Programmer Response: Wait for availability of the ds/member or save the data in another member or dataset.

1.13 Module list and installation requirements.

1.13.1 Module list.

See Table 1 for the module list.

Table 1: Module list		
Module	**Function**	**AMODE**
RPFMAIN	RPF Main processor (alias RPF)	31
RPFALLOC	RPF dataset functions	31
RPFARCH	Archiver maintenance processor	31
RPFARSVE	Save member or data set into Archiver cluster	31
RPFASM	RPF Assembler and Linkage editor processor	31
RPFASM00	ISPF interface for RPF foreground assembly and link	24
RPFBRO	BROWSE processor	31
RPFCHNG	Module to process the 'C' command	N/A
RPFCNVDT	Module to convert a Julian date to a Gregorian date	N/A

RPFC3270	Module to compress the 3270 data stream in EDIT and Browse	N/A
RPFDAIR	RPF Dynamic allocation processor	N/A
RPFDATAL	Allocation menu for EDIT and utilities	N/A
RPFDEF	Session defaults processor	31
RPFEDIT	The RPF EDIT processor	N/A
RPFEDITL	Load dataset in EDIT workspace	N/A
RPFEND	RPF clean up routine	31
RPFFILL	Module for the 'FILL'. 'UC' and 'LC' subcommand	N/A
RPFFIND	Module for the 'F subcommand	N/A
RPFHCPY	RPF hardcopy processor	31
RPFHELP	RPF HELP processor	31
RPFINIT	Housekeeping of RPF	31
RPFJCL1	JCL checking routine part 1	31
RPFJCL2	JCL checking routine part 2	31
RPFLIB	LIBRARIAN maintenance (Inc. LIBFAIR)	31
RPFLIB00	LIBRARIAN read processor (inc. LIBFAIR)	31
RPFLIB01	LIBRARIAN update processor	24
RPFLIB02	Userid/name table for RPFLIB01/RPFPAN01	24
RPFLISTC	Search the catalog for a certain dataset level	31
RPFMVCPY	RPF Move/Copy processor	31
RPFOPER	RPF Operator mode	31
RPFOUT	The output processor	31
RPFPAN00	PANVALET Read processor	31
RPFPAN01	PANVALET Update processor	31
RPFPDS	PDS maintenance processor	31
RPFPFK	PFK definition processor	N/A
RPFSAVE	SAVE workspace processor	N/A
RPFSRCH	Search data set processor	31
RPFSTAT	RPF session status	31
RPFSUB	RPF job submitter	N/A
RPFTEST	RPF TEST processor	31
RPFTSO	RPF TSO command processor	31
RPFUTIL	RPF utility menu	N/A
RPFVTOC	VTOC read processor	31
RPFVTOC1	VTOC dataset selection list processor	N/A

Notes

- The modules with AMODE N/A are loaded and called, so the addressing mode will be inherited from the caller.
- All the RPF programs are written in Assembler-XF.
- RPF uses eight user macros: SYCONVHX the convert hex to EBCDIC macro, SYALLOC the dynamic allocation macro, JCLCOMM used in the JCL processor, RCTOSBA copy code for calculation a row/column to SBA, RPFCOMM macro to define the RPF common area, GAMOS to switch to AMODE 31, GAMAPP to switch to AMODE 31/32/64 and SETUP to setup the AMODE environment. GAMOS, GAMAPP and SETUP are created by Paul Edwards.

- Special for MVS38J and MVS/380 user's 4 dummy macros called AMODE, RMODE, BSM and MVCLE are made to get correct assemblies with the Assembler-XF. If Assembler-H (IEV90) or HL-ASM (ASMA90) are used, do not use these macros. BSM and MVCLE are macro's, which expands the correct machine instructions.
- For MVS38J and MVS/380 user's, 2 modified macros (GETMAIN and IHBOPLST) are made. You can copy these macros to SYS1.MACLIB. Use job COPYMAC in the RPF JCL library. See chapter below. A better way is to include RPF.V1R8M4.SYS1MAC as first library in the SYSLIB concatenation of the assembly of RPF (MVS38J only). The modifications on GETMAIN and IHBOPLST are made by Paul Edwards.

1.13.2 Installation and requirements.

RPF will be distributed on a magnetic tape with a density of 6250 bpi and standard labels.

The volume serial is RPF184 and contains the following files:

- File 1, The assembler source library of RPF, DSN=TAPE.V1R8M4.SRPFASM
- File 2, The RPF load modules, DSN=TAPE.V1R8M4.SRPFLOAD
- File 3, The RPF HELP members, DSN=TAPE.V1R8M4.SRPFHELP
- File 4, The RPF JCL members, DSN=TAPE.V1R8M4.SRPFJCL
- File 5, The modified macro's to achieve 31 and 64 bit addressability. DSN=TAPE.V1R8M4.SYS1MAC
- File 6, The RPF objects, DSN=TAPE.V1R8M4.SRPFOBJ

Run the JCL below to obtain the installation JCL library.

```
//INSTALL JOB (ACCT),PGMR,MSGLEVEL=1
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//SYSUT3 DD UNIT=SYSDA,SPACE=(6144,(400,400))
//SYSUT4 DD UNIT=SYSDA,SPACE=(6144,(400,400))
//IN DD DSN=TAPE.V1R8M4.SRPFJCL,DISP=SHR,UNIT=TAPE,
//        VOL=(,RETAIN,SER=RPF184),LABEL=4
//OUT DD DSN=RPF.INSTJCL,DCB=SYS1.MACLIB,
//        UNIT=SYSDA,VOL=SER=volser,SPACE=(CYL,(1,1,5)),
//        DISP=(NEW,CATLG,DELETE)
//SYSIN DD *
 COPY INDD=IN,OUTDD=OUT
/*
```

Figure 3. Obtain JCL dataset

After obtaining the JCL library run the following job:
- Member INSTRPF to install RPF. This job does the complete installation.

The jobs below are optional.
- Member COPYMAC to copy the modified macros to SYS1.MACLIB. Run this job only in a MVS38J or MVS/380 system. If you place RPF.V1R8M4.SYS1MAC as first macro library in the SYSLIB concatenation of the assemblies, skip this job.
- Member AMODE31 to set the correct addressing mode. This job is optional. Run this job against SYS2.CMDLIB.

1.13.3 TSOKEYxx in SYS1.PARMLIB

RPF needs the following minimum buffers in member TSOKEYxx in SYS1.PARMLIB:

```
HIBFREXT=16384
LOBFREXT=8192
```

1.13.4 SMS support and Indexed VTOC's

RPF has the possibility to support indexed VTOC's and some SMS facilities like PDS/E support in OS/390 and z/OS systems.
Run job **ASMRPFE** to re-assemble RPFASM00, RPFDAIR, RPFOPER, RPFVTOC and RPFLISTC with SYSPARM(RPFE) to obtain this support. Run this job ONLY in an OS/390 or z/OS system. After this job re-run job LKEDRPF and CMDLIB to install this support. With this support the package RPF/E has become obsolete.

Another possibility is to install RPF normally and run a foreground assembly with RPF option 4 of the modules RPFASM00, RPFDAIR, RPFLISTC, RPFOPER and RPFVTOC. See figure below.

```
 RPF Foreground assembler (And linkage editor)--------------------------------
 Cmd =>                         Enter 'END' or press PFK3/PFK15 to terminate
 (1) Src-lib MEM= rpfdair  ,DSN= RPF.V1R8M4.SRPFASM
 (2) Obj-lib MEM=          ,DSN=
 (3) Loadlib MEM=          ,DSN= RPF.V1R8M4.srpfload
 (4) INC-lib DDN=          ,DSN=

 (5) Maclib1 DSN= SYS1.MACLIB
 (6) Maclib2 DSN= SYS1.MODGEN
 (7) Maclib3 DSN= RPF.V1R8M4.SRPFASM
 (8) Maclib4 DSN=
 (9) Maclib5 DSN=
 (A) Maclib6 DSN=
 ASM  Y/N: Y ,Output Y/N: N ,Parm: sysparm(rpfe) <=== specify !!!
 LKED Y/N: Y ,Output Y/N: N ,Parm: XREF,LIST,NCAL
 Printer:          ,CLASS= X
 Optional lked   control statements, DDNAME loadlib is RPFAUT
 1>
 2>
 3>
 4>
 5>
 6>
```

Figure 3. Assemble with SYSPARM(RPFE) in the foreground

1.13.5 Clean up

After RPF has been installed into SYS2.CMDLIB or equivalent, you can delete the optional datasets if
you wish:

1. RPF.V1R8M4.SRPFASM
2. RPF.V1R8M4.SRPFLOAD
3. RPF.V1R8M4.SRPFOBJ
4. RPF.V1R8M4.SRPFJCL
5. RPF.V1R8M4.SYS1MAC

Start RPF on your TSO terminal and enter option 3.4 (data set list) and specify 'RPF' (without quotes)
in the PREFIX field. Place a D before the dataset name and confirm the deletion with PFK12 of PFK24.

1.13.6 Other requirements

All the RPF modules can be assembled and linked separately.

The default unit name of existing not-catalogued datasets is SYSALLDA. The default unit name of
newly created and temporary work datasets is SYSDA. These defaults can be changed by applying the
following ZAP

```
//ZAPUNIT JOB (acct),pgmr
//ZAP01 EXEC PGM=AMASPZAP,PARM='IGNIDRFULL'
//SYSPRINT DD SYSOUT=*
//SYSLIB DD DSN=rpf.loadlib,DISP=SHR
//SYSIN DD *
NAME RPFMAIN COMMAREA
VER 0018 E2E8E2C4C1404040  * C'SYSDA'
REP 0018                   * replacement of SYSDA
VER 0020 E2E8E2C1D3D3C4C1  * C'SYSALLDA'
REP 0020                   * replacement of SYSALLDA
/*
```

Figure 4. Changing defaults

The modules RPFLIB and RPFLIB00 need the file access interface routines of the LIBRARIAN package. Upon link edit of RPFLIB and RPFLIB00 the following modules should be included from the LIBRARIAN loadlibrary: 1. FAIROPN. 2. FAIRMOD. 3. FAIRREC. 4. FAIRCLS.

The module RPFPAN00 needs the PANVALET access method (PAM). This module should be available and will be dynamically loaded. PAM is a part of Panvalet and not included in RPF.

Note
The RPF common area can be mapped, by using the 'RPFCOMM' macro.

If you want to use the HAR subcommand of RPF, then include the application 'RPFHCPY' in application major node of your VTAM definition library. Example how to define RPFHCPY follows below:

```
RPFHCPY APPL AUTH=(ACQ)  /* HAR SUBCOMMAND OF RPF */
```

Figure 5. define RPFHCPY

If RPF is installed, add RPFKEY00 in the SYS1 PARMLIB in the next example:

```
//RPFKEY00 JOB (ACCT),MSGLEVEL=1
//CREATE EXEC PGM=IEBUPDTE,PARM=NEW
//SYSPRINT  DD SYSOUT=*
//SYSUT2    DD DSN=SYS1.PARMLIB,DISP=SHR
//SYSIN     DD *
./ ADD LIST=ALL,NAME=RPFKEY00
./ NUMBER NEW1=10000,INCR=10000
name.of.RPF.database                  * specify right dataset-name
HELP=name.of.RPF.helpdataset          * specify right dataset-name
/*
```
Figure 6. RPFKEY00

In the main menu (option 5) is an user exit available. The name of the userexit should be RPFUSER1. Each function in RPFUSER1 is allowed; e.g. filling the workspace, link and call other RPF routines. The entry points of the following RPF routines are available. The entry points can be found in the 'RPFCOMM' area.

1. RPFEDIT   (field named EPEDIT)
2. RPFDATAL   (field named EPDATAL)
4. RPFDAIR   (field named EPDAIR)
5. RPFCHNG   (field named EPCHNG)
6. RPFFIND   (field named EPFIND)
7. RPFEDITL   (field named EPEDITL)
8. RPFUTIL   (field named EPUTIL)
9. RPFVTOC1   (field named EPVTOC1)
10. RPFCNVDT   (field named EPCNVDT)
11. RPFC3270   (field named EPC3270)
12. RPFFILL   (field named EPFILL)
13. RPFSUB   (field named EPSUB)
14. RPFPFK   (field named EPPFK)

The other RPF routines can be obtained by the 'LINK' macro. In register 1 in RPFUSER1 is placed an address of a full word containing the address of the 'RPFCOMM' area, which can be mapped by using the 'RPFCOMM' macro.

It is recommended to use register 11 for the address of 'RPFCOMM" and to user register 13 as the base register (don't forget to define a 72 bytes save-area in the beginning of the module).

If you want to display a message in the main menu upon exit of the RPFUSER1 routine, place a 25 byte message into the field 'CMDAREA' of the 'RPFCOMM' area. If you have no RPFUSER1 exit in your installation, RPF will ignore the exit and will give the message 'RPFUSER1 NOT FOUND'.

Example how to write the exit.

```
RPFUSER1      CSECT
              BALR  15,0           Clean Entry Point register
              USING *,15           Get temporary addressability
              SAVE  (14,12),,*     Save registers
              LA    11,SAVEAREA    Get save area
              ST    11,8(0,13)     Forward pointer in SA-chain
              ST    13,SAVEAREA+4  Backward pointer SA-chain
              LR    13,11          Pickup save area
              B     START          Branch around save area
              DS    0H
SAVEAREA      DC    18F'-1'        Declare the save area
START         DS    0H
              DROP  15             Kill temporary addressability
              USING SAVEAREA,13    Use register 13 as base
              L     11,0(1)        Pickup parameter
              USING COMMAREA,11    Address 'RPFCOMM' area
              ...                  )
              ...                  )   Your own coding
              ...                  )
              ...                  )
              ...                  )
              LINK  EP=RPFPDS,PARAM=((11)) (Example how to LINK)
              ...
              L     15,EPEDIT
              CALL  (15),((11))    Example how to call
              ...
COMMAREA      RPFCOMM,             Dsect
              END
```

Figure 7. Example how to write the exit.

Example how to allocate the RPF database. This job is in member ALLOCDB in the JCL library.

```
//DEFBASE  JOB (ACCOUNT INFO),MSGLEVEL=1
//DEFDB    EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=A
//REPROIN  DD *
99999999    seed record for the RPF database
/*
//SYSIN    DD *
  DEF CL(NAME('clustername') VOL(volume) FREESPACE(20 10) -
    RECORDSIZE(1750 1750) INDEXED IMBED KEYS(8 0) RECORDS(100 10) -
    UNIQUE) -
```

```
   DATA(NAME('datacomponent name') SHR(3 3)) -
   INDEX(NAME('indexcomponent name') SHR(3 3)) -
   CATALOG('catalog name')
  IF LASTCC = 0 THEN REPRO INFILE(REPROIN) OUTDATASET('clustername')
/*
```

Figure 8. Example how to define the RPF database

The name of the database should be specified in member RPFKEY00 in SYS1.PARMLIB.
If another library has been used to keep member RPFKEY00, please update module RPFINIT.

RPFLIB01 and RPFPAN01 (the LIBRARIAN- and the PANVALET update processor) loads the module
RPFLIB02 if present. RPFLIB02 contains a table, which contains userid/name entries. This module
should be updated according the standards in your installation. You should specify the names of the
inhouse TSO-userid's. A skeleton member called RPFLIB02 is added. The entry is 22 bytes long, 7
bytes userid followed with a 15 byte name field.

Note.
Do not code blanks inside the name field. See example of RPFLIB02 below.

```
RPFLIB02 CSECT                              *)
*                                           *)
* LICENSED MATERIAL (C)-2020 Skybird Systems *)
*                                           *)
$LENGTH     EQU 22 LENGTH OF ENTRY        *)
SENTRIES    DC A(($STOP-$START)/$LENGTH) NUMBER ENTRIES     *)
            DC CL7'TSOUSER',CL15'CHARLIE_TSO'
            DC CL7'IBMUSER',CL15'JOHN.CE'
$LAST       DC 22X'FF' SHOULD BE THE LAST ENTRY   *)
SSTOP       EQU *                          *)
            END                            *)
```

Figure 9. RPFLIB02

Note.
The statements flagged with a '*)' are in the skeleton deck.

1.14 RPF default PFKs and workspace size

The default PFKs contain the following commands:

Table 2. default PFK's		
PFK	Command	CON
01	HELP	N
02	not-defined	X
03	END	Y
04	RETURN	N
05	FIND	N
06	not defined	X
07	UP	N
08	DOWN	N
09	not defined	X
10	LEFT	N
11	RIGHT	N
12	RETRIEVE	N
13	HELP	N
14	not-defined	X
15	END	Y
16	RETURN	N
17	FIND	N
18	not defined	X
19	UP	N
20	DOWN	N
21	not defined	N
22	LEFT	N
23	RIGHT	N
24	RETRIEVE	N

The default workspace size=6,000 lines.

Note
All these defaults can be overruled by the user. Select '0' on the main menu to change the defaults.
The defaults for the user are written on the RPF database if available.