RPF USER'S GUIDE V2R0M0

"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

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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 Library Functions (SCRATCH, RENAME EDIT, PRINT, BROWSE and assigning ALIAS), foreground assembly and link edit, VTOC and catalog listing, data set allocation and deletion and even a LIBRARIAN 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).
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1.1. RPF data set naming conventions.

All data set names entered in the RPF panels uses the standard TSO data set naming conventions.
If a data set name is entered enclosed in single quotes ('), the data set name is treated as fully qualified.
Data set names entered without quotes will be prefixed with the TSO prefix. The TSO prefix is defaulted to the UserID, but can be altered with the TSO command:

```
PROFILE PREFIX('new prefix')
```

E.g., It the name A.CNTL is entered and the TSO prefix is A0611, the data set name would be A0611.A.CNTL.
A data set name entered as 'SYS1.PARMLIB' remains unchanged.

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.

2.1. How to work with RPF.

If you start **RPF** a profile member will be read from a partitioned dataset with a record length of 80 with defaults for your UserID. The member name = @RPFPROF. If the member is not present, the member will be created by RPF.
The DD-statement ISPPROF in the TSO LOGON procedure should point to the profile data set. If omitted, RPF choose her own defaults.
You also can start RPF with an option. E.g., RPF 3.4 will go directly to DSLIST.
After RPF has started, the following main menu appears on the screen.

```
---------------------------- RPF Main menu ------------ (C)-1979-2025 Skybird
Option  ===> _
                                                 User ID - A0611
    0   DEFAULTS      Alter / Display session defaults    Time    - 11:27:47
                                                 System  - TK5R
    1   BROWSE        View or browse data sets or members  TSO-proc- ISPLOGON
                                                 Prefix  - A0611
    2   EDIT          Update or create data sets or members Terminal- CUU0C1
                                                 Release - V2R0M0
    3   UTILITY       Enter UTILITY                OS Rel  - 038

    4   ASSEMBLER     Foreground ASSEMBLER and LINK edit    February  2025
                                                 Su Mo Tu We Th Fr Sa
    5   USER          Execute RPF user routine                        1
                                                  2  3  4  5  6  7  8
    6   TSO           Execute TSO commands          9 10 11 12 13 14 15
                                                 16 17 18 19 20 21 22
    7   TUTORIAL      Display HELP information      23 24 25 26 27 28

    8   TEST          Enter TEST mode (Authorized)

    9   OPERATOR      Enter OPERATOR mode

    X   EXIT          Terminate RPF


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    │  RPF V2R0M0  Build: 2025-02-05T10:30+01          │
    │  Use of RPF is free, modifications in consultation│
    │  with me. Information: prin0096@gmail.com         │
    │  www.prince-webdesign.nl/rpf                     │
    └─────────────────────────────────────────────────┘
```

Figure 1, RPF main menu

3. Change session defaults.

The session defaults are placed in member @RPFPROF in the partitioned data set specified in the ISPPROF DD-statement of the TSO logon procedure or allocated with the TSO ALLOCATE command.
You can change the following defaults in the profile member:

1. The maximum number of lines for the editor. The minimum is 500 lines, and the maximum is 999,999 lines. Default is 7,000 lines.
   Note! Do not select many 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 AUTOSAVE=Y. With AUTOSAVE=N, EDIT will issue the message 'Enter SAVE, CANCEL or END'.
6. Replace = YES or NO. The parameter defaults the "Replace like members" in Move/Copy.
7. COLS = Y or N. Set or reset the scale line in EDIT.
8. Confirm = / or <blank>. Set 'Confirm member delete' in Library Functions and Archiver interface.
9. CAPS = AUT, ON or OFF. Set CAPS mode for EDIT. If AUT = specified, EDIT will automatically detect if lower case characters and sets CAPS to OFF. If no lower-case characters are detected, CAPS will be set to OFF.
   If CAPS = ON, EDIT will set CAPS to ON, no matter whether lower case characters are detected or not.
   If CAPS = OFF, EDIT will set CAPS to OFF, even if only upper-case characters are detected.
10. Default prefix. This is a field of maximum 17 bytes containing the default prefix in the data set list menu (opt. 3.4).
11. The default program name of the assembler. This name is used in the assembler menu (option 4).
12. 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 the ARCHIVER, the default Archive VSAM cluster can be specified.
13. Printer. Specify the remote printer. If nothing specified, the output will be routed to a LOCAL printer.
14. Assembler maclibs. Specify up to 6 maclibs.
15. Assembler parm. This is the default assembler parm in the foreground assembly.
16. Linkage editor parm. This is the default linkage editor parm.
17. Linkage editor control statements. 6 optional statements used by the linkage editor.
18. PFK settings: You can set the commands in the PFKs (1 to 24) The use of all PFKs is supported in EDIT, BROWSE Library Functions, LIBRARIAN maintenance and HELP functions. The use of the END PFK (PF03 or PF15) 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 profile data set 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, COLS attribute, and CONFIRM attribute. To change these defaults press ENTER after the changes made. To cancel the changes, use PF03/PF15.
With -2- you can change the line numbers and default allocations, LIBRARIAN and ARCHIVER allocations. To change these defaults, press ENTER after the changes made. To cancel the changes, use PF03/PF15.
With -3- you can change your PFK settings.
With -4- you can update the assembler program name. 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 press PF03/PF15.
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.

4. Browse data sets, members or load modules.

If you select -1- on the RPF main menu, a data entry screen will be displayed for selection of the to be browsed data set. After selection of this data set, the BROWSE function will be invoked.
You can select the data sets in two ways:

* Select the member name/data set name (and volume serial) in the allocation menu.
* Select 1 of the data sets in the data set selection menu, by placing the cursor in the line of the requested data set and hitting ENTER.

If '=n(.n)' is entered in the member name or data set name, RPF returns to the main menu and executes option n(.n).
After selection of this data set, the BROWSE function will be invoked, and the data set (and volume) will be placed in selection list. This selection list will be written in the RPF profile data set upon exit of RPF.
If you omit the member-name in the allocation menu, or you have selected a data set from the selection menu a member selection list will be displayed to select the to be browsed members. See 6.2. "Library Functions" for more information about the member selection list and the 'S' line command.
The following RPF browse primary commands are available:

Primary command	Function
ASCII	Toggle ASCII mode on or off. If in ASCII mode, the data will be translated to EBCDIC.
BOTTOM	Start display at the bottom of the data set. An alias of 'BOTTOM' is 'B'.
C nnn	Shift the display to column nnn. nnn should not exceed the record length of the data set.
DOWN	Scroll forward from the cursor position if the cursor is in the data. If the cursor is not in the data, 1 screen will be scrolled forward.
	If you use DOWN with a PFK and an 'M' in the command field the 'TOP' command will be executed.
END	Terminate BROWSE. RPF will go back to the utility allocation menu.
F 'string'	Search specified character string. All lines, which contain '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 starts from the current position in the data set. If no match can be found, the message **'Bottom of data reached'** will appear. The quotes (') around the string are optional, unless you specify a string with embedded blanks. An alias of F is 'FIND'.
F x'hhhh..'	Search for HEX character strings in the data set.
HEX	Toggle HEX mode of the browser on or off. In HEX mode, each record contains 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.

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).
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 data set into SYSOUT class x. If you omit the SYSOUT class, the default class will be taken.
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 data set with the TSO SUBMIT command.
TOP	Start display with the top of the data set. An alias of 'TOP' is 'T'.
TSO	Execute TSO commands. Module RPFTSO will be invoked.
UP	Scroll backward to the cursor position if the cursor is in the data. If the cursor is not in the data, 1 screen will be scrolled backward. If you use UP with a PFK and an 'M' in the command field the 'BOTTOM' command will be executed.

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 data set with the 'PRINT' command RPF will make header lines if the data set does not contain ASA or machine control characters. If the to be browsed input data set is a card image data set (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.
- If a RECFM=U data set is browsed/viewed, the output will be formatted on the screen. The output records fit 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.

5. EDIT a data set or PDS member.

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

1. The data entry screen. In this part of the screen, you can perform the allocation of the data set to be edited. If the allocations are alright, the data set or PDS member will be edited and the EDIT screen appears, otherwise the user will be prompted for retry.
2. The data set selection list. You can specify here up to 8 data sets (and volumes).

If you want to cancel the function, press PF03 or PF15.
You can select the data sets in two ways:
- Select the member name/data set name (and volume serial) in the allocation menu.
- Select 1 of the data sets in the data set selection menu, by placing the cursor in the line of the requested data set and hitting ENTER.

If '=n(.n)' is entered in the member name or data set name, RPF returns to the main menu and executes option n(.n).
After selection of this data set, the EDIT function will be invoked, and the data set (and volume) will be placed in selection list. This selection list will be written in the RPF profile data set, 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 6.2. "Library Functions" 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 the header, line will appear 'Input   mmmmmmmm'. 'mmmmmmmmm' is the data set name and (member) if present. If the data set or member exists: 'Input' is replaced by 'Edit'.
If the data set is edited, you can change your data in full screen mode. The screen is divided into 5 parts:
- The header, containing the data set name, the member name and the ISPF version/modification level (vv.mm) if available.
- The message area for the informational and error messages
- The BNDS field with the editor boundaries.
- The scroll amounts.
- 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 number 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' command will affect the last 8 columns of the data. In the COBOL mode columns 7-78 will be displayed if an 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.

If the data set or member contains line numbers in the last 8 columns or columns 1-6 (COBOL mode), manual modification of these columns is ignored.
In both cases, you can work with line-numbers in the commands, because the numbers on the screen are NOT in the data set.
If a data set does not contain line numbers, the editor will be entered in 'NONUM' mode.
If you do program development press the CAPS LOCK button, use the UC line command, or enter the CAPS ON command.
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 5.1. "EDIT primary commands.")
- Line commands entered in the line-number fields (see 5.2. "Edit line commands.")

5.1. EDIT primary commands.

The EDIT primary commands are described in alphabetic order below:

Primary command	Function
=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.
APPEND	Append another data set or member in the EDIT workspace. After entering 'APPEND', the data set menu will appear. Alter the allocations and press ENTER to append. With the END command the data will be saved in the data set/member which is initially edited.
AUTOSAVE ON/OFF	Turn on or off AUTOSAVE. With AUTOSAVE ON, the data will be automatically saved. With AUTOSAVE OFF and the data is changed, RPF EDIT will issue the message 'Enter SAVE, CANCEL or END'. If SAVE entered, the data will be saved, and the editor will terminate. If CANCEL entered, RPF stays in the editor. If END entered, EDIT will execute the primary command CANCEL. The initial value (ON or OFF) will be controlled by the AUTOSAVE parameter in the defaults (option 0.1).
BNDS n,m	With this command you can set the range of columns which will be used in 'C', T', 'FILL', 'UC' 'LC' and 'SORT' primary commands. If you enter this command without operands: 1. If COBOL is set to ON, the boundaries are column 7 to 72. 2. If the edited data set/member contains fixed records the boundary range covers the visible part of the data in the screen. If the data is numbered and the visible part is the end of the record or the complete record, the end boundary is record length - 8 3. If the edited data set/member contains variable records, the boundary range covers the visible part of the data in the screen. If the

	data is numbered the start boundary is set to 9, if the visible part of the data is positioned from the beginning. If the second operand = 999, the end boundary will be set to the record length of the data set or member. Another possibility to set the boundary range is changing the 'BNDS' value in the right corner of the EDIT screen.
BOTTOM	Display last screen of the data set. 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 be any character. Only character strings will be changed, which are in the column-range, that is set by the 'BNDS' primary command.
C /aa/bb/n,m	With this form of the 'C' command 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 upper-case.
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 upper-case.
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 upper-case. 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'. If changes are made, a warning message 'Discard changes?' will be given. A reply YES or NO is needed to discard the changes or not.
CAPS ON/OFF	Set the editor dynamically in CAPS mode with CAPS ON or in ASIS mode with CAPS OFF.
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.
COBOL ON/OFF	Set the editor from in COBOL mode if ON is specified or in standard mode if OFF is specified. if in COBOL mode the 'LEFT' and 'RIGHT' primary commands are disabled. If the editor was in 'NUM' mode before the 'COBOL ON' 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 'COBOL ON' command.
	If the editor was in 'NUM' mode before the 'COBOL OFF' command was given, RPFEDIT will do a numeric test for last 8 columns of the workspace. If not numeric RPFEDIT will come into the 'NONUM' mode after the 'COBOL OFF' command.
COLS	Toggle display of the scale line in EDIT.
COPY	Copy a data set or member after the line marked with an 'A' (after), 'TT' (before first line) or 'BB' (after last line). The data entry panel will appear to select the data set or member. After selecting, the data set or the member will be copied.
CREATE	Save a range of lines with line commands 'CC -- CC', CB or CT into a data set or member. An alias of CREATE is CRE.

Example:

To save the complete data in another data set or member:

Enter CREATE in the command field and CB in the first line of the data.

A SAVE menu will be displayed.

The SAVE menu has 5 options.

- Option 1, save into a PDS(E) or sequential data set (default).
- Option 2, save into a PDS(E) or sequential data set with the REPLACE option.
- Option 3, save into a LIBRARIAN masterfile.
- Option 4, save into an ARCHIVE VSAM cluster.

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 5.4. "LIBRARIAN update.")

Option '4' will perform saving upon an Archiver VSAM cluster. See 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:

member name	(8 bytes EBCDIC)
TTR	(3 bytes hex)
C	(1 byte binary X'0F' or X'14')

version	(1 byte binary unsigned)
modification	(1 byte binary unsigned)
flags	(1 byte hex)
seconds of time updated	(1 byte packed without sign)
date added	(4 bytes packed '0CyydddF')
date updated	(4 bytes packed '0CyydddF')
time updated	(2 bytes packed without sign 'hhmm')
number of records	(2 bytes binary unsigned)
initial number of records	(2 bytes binary unsigned)
modified number records	(2 bytes binary unsigned)
ID	(7 bytes EBCDIC)
blanks	(3 bytes EBCDIC)

If bit 2 of flags is set to 1 an extended area is present starting from the second byte in "blanks" and contains:

number of records	(4 bytes binary unsigned)
initial number of records	(4 bytes binary unsigned)
modified number records	(4 bytes binary unsigned)

Command	Description
CUT	Copy lines between CC (See 5.2. Edit Line commands), first line to CT or CB to last line to the clipboard file. Instead of the copy line commands, also the move line commands can be used (MM, first line to MT and MB to last line). The clipboard file is allocated with ddname RPFCTPST. The contents of the clipboard file can be pasted in any member or data set in the current RPF session. The clipboard will be deleted upon the 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 ':'.
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.
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 data set/member, if AUTOSAVE=Y. RPF will return to the EDIT allocation menu. If AUTOSAVE=N, the message 'Enter SAVE, CANCEL or END' will be issued and EDIT will not be terminated.
F 'String' (nnn) or F "String" (nnn)	
	Find a specified character string in the workspace. If the character string is found the cursor will be set on the found string. 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.
	If nnn is specified, FIND will be executed only in column nnn. E.g., F RPF 10 = find string RPF in column 10.
	The character string (and start column) will be remembered by RPF, so you can enter only 'F' to execute the last FIND command. Only character strings will be found, which are in the column-range, that is set by the 'BNDS' primary command.
	An alias of "F" is "FIND".
	If the repeat F is exhausted with message **Bottom of data reached**, and immediately a subsequent repeat F is given, search will start from the beginning.
F p'.' or F P'.' (nnn)	This is a special form of the F primary command. With this F primary command, 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..' (nnn)	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 'BNDS' primary 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 acquired during this command after successful hardcopy the message **'Hardcopy made'** will appear.
HAR xxxxxx,*,n	Print n lines on printer xxxxxx 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' (lutype 1) or 'DSC' (lutype 1 or 3) should be specified if the printer is cross domain used.
HELP	Invoke the RPFHELP facility. See 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 primary command) or submitted (with the SUBMIT primary command). This is the way 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', the command will be ignored.
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 data set, 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) within the EDIT boundaries. If x (and y) are omitted, translation will be done from the current line until the end of the workspace. After execution an implicit 'CAPS OFF' command will be executed.
LEFT	Scroll to the left of the screen depending on the SCROLL value (PAGE, HALF or CSR).
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.
NUMBER OFF **NUM OFF**	Set the editor in 'NONUM' mode without changing line numbers.
NUMBER ON **NUM ON**	Set the editor in Numbered mode. The data will be renumbered. See also the RENUMBER primary command.

NULLS ON/OFF	Replace the trailing blanks on the screen by terminal erase characters if ON is used. This provides an easy way to use the insert mode of the terminal. The phrase 'Nulls' will appear in the header. With NULLS OFF the erase characters will be replaced by blanks.
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 through o the blanks will be replaced with the characters of the same column of line m (the overlay function). Only the characters within the EDIT boundaries will be overlaid.
OUT	Invoke the RPF output processor. See 6.5 "RPF Output Processor" for more information.
PASTE	Copy the clipboard file after line marked with 'A' (see 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 primary command.
PFK	Display and/or alter PFK settings. Press ENTER to perform the changes If finished press PF03/PF15.
	Note
	The changed PFKs are only effective during this RPF session. To change the default PFKs use the session default menu (see 3. "Change session defaults.").
PRINT n,m or PRINT *,n or PRINT	
	Print lines n through 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.
PROF	Toggle display of the PROFILE-line in the editor.
	The PROFILE-line contains the status about Numbered YES or NO, Cobol ON or OFF, Caps ON or OFF, NULLS ON or OFF, and AUTOSAVE ON or OFF.
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 be 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'.
RENUMBER	Renumber the last 8 columns in the workspace starting with 100 and an increment of 100 if in standard mode, columns 01-06 in the workspace starting with 100 and a increment of 100 if in COBOL mode or columns 1-8 in the workspace starting with 100 and a increment of

	100 if the data set has variable records. Aliases of RENUMBER are 'REN', 'NUM' or 'RENUM'. If the data was not line numbered before the RENUMBER 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.
REPLACE	Save a range of lines with line commands 'CC -- CC', CB or CT into a data set or member with the REPLACE option. An alias of REPLACE is REP. See primary command CREATE for an explanation of the SAVE menu, that is displayed. The only exception is the default option. That will be option 2 (RE-USE).
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 in the profile data set with member name @RPFRTRV. 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.
RIGHT	Scroll to the right of the screen depending on the SCROLL value (PAGE, HALF or CSR).
SAVE	Save the workspace in a data set. The EDIT workspace will be saved in the same data set/member. No prompting will be done. To save the data with prompting, use the CREATE or REPLACE primary command. After SAVE, RPF stays in the editor.
SORT	Sort the workspace. The entire workspace is sorted; the sort field is set by the 'BNDS' primary 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'. The TSO command processor SUBMIT will be used to submit the job.
TOP	Display first screen of the data set. 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 8. "RPF TSO command processor."
UC x y	Translate the workspace to upper-case (between line x and line y) within the EDIT boundaries. If x (and y) are omitted, translate will be done from the current line until the end of the workspace.

UNNUM	Remove the line numbers in the last 8 columns if in standard mode, columns 1-6 if in COBOL mode or columns 1-8 if the data set contains variable records. The line numbers on the screen will NOT be removed.
	This command may be abbreviated as 'UNN' This primary command is only allowed if the editor is in 'NUM' mode, otherwise the primary command will be ignored with the message: WORKSPACE NOT NUMBERED After execution of 'UNNUM' the editor will be set in 'NONUM' mode.
UP	Scroll backward depending on 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.

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 be inserted.
	The line numbers of the inserted lines will be highlighted (see also the I primary command)
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 be 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 be 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
D...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 the block of lines starting with the line to lower-case starting with the line marked with 'LCB' until the bottom line.
LCT	Translate the block of lines to lower-case starting with the top line until the line marked with 'LCT'.
UC	Translate this line to upper-case.
UCC...UCC	Translate the block of lines to upper-case.
UCB	Translate the block of lines to upper-case starting with the line marked with 'UCB' until the bottom line.
UCT	Translate the block of lines to upper-case starting with the top line until the line marked with 'UCT'.
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 can work together with the primary commands: BOTTOM, CREATE, CUT, DOWN, F, L, LEFT, M, PASTE, REPLACE, RESET, RIGHT, TOP and UP.

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 data set, the EDIT will be terminated and the message 'Workspace too small' will appear in the data set selection screen or PDS screen. To increase the workspace size, use the defaults menu.
6. If the data set contains unprintable characters the user will be notified with the message 'Invalid chars xlated' The translated characters will be changed into periods ('.'). the field. The translated line will be highlighted and protected.

5.3. 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 or 3) to ADD, REPLACE or DLM LIBRARIAN modules)
- 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 data set will 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 PF03/PF15 to escape from this screen.

5.4. ARCHIVER update.

If you select option 4 on the RPF save menu, the Archiver menu will be selected by RPF. The screen is divided into 6 parts.

- The header line.
- The item field.
- The item group field or blank.
- The item subgroup field or blank.
- The item type field or blank.
- The Archiver VSAM cluster data set name.

After having altered the fields and chosen the right option, the data set 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 PF03/PF15 to escape from this screen.

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. Library Functions.
- Option 2. Create or Delete data sets (data set functions).
- Option 3. Move/Copy sequential data sets or members of partitioned data sets.
- 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, rename 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 Library Functions). If the utility is terminated in this case, RPF always returns to the main menu.

```
-------------------------- RPF Utility menu --------------------------
Option  ===>
                                                       User ID - A0611
   0   RESET        Reset/Delete ISPF/RPF statistics

   1   LIBRARY      Library (PDS) Functions

   2   DATA SET     Create or Delete data sets

   3   MOVE/COPY    Move or copy data sets or members

   4   DS LIST      Perform VTOC and catalog functions

   5   LIBRARIAN    Perform LIBRARIAN maintenance

   6   OUTPUT       Invoke the output processor

   7   IMON         Interactive monitor of Greg Price

   8   SEARCH       Search data sets for strings of data

   9   ARCHIVER     Process archived members

   X   EXIT         Return to MAIN menu
```

Figure 2, RPF Utility menu

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, a data entry screen for the desired partitioned data set will be displayed.

You can specify a New User ID, a new ISPF/RPF version number and a new ISPF/RPF modification level and you can change the 'Data set name' and 'Volume serial' fields or select a data set from 1 of the 8 selection fields. If '=n(.n)' is entered in the data set name, RPF returns to the main menu and executes option n(.n).

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 PF03 or PF15 to cancel Reset statistics.

After successful allocation, the RPF Reset member list will be displayed.

To reset a member to the New User ID, 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.

If you want to see the member before reset or delete ISPF stats, select line command 'B' to browse the member.

See 6.2. Library Functions for more information concerning the member list.

6.2. Library Functions.

If you select '1' on the RPF utility menu or '3.1' on the RPF main menu, a data entry screen for the desired partitioned data set will be displayed. You can change the 'Data set name' and 'Volume serial' fields and set the attribute 'Confirm member delete' to / or to <blank>. If '=n(.n)' is entered in the data set name, RPF returns to the main menu and executes option n(.n).

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 PF03 or PF15 to cancel Library functions.

After successful allocation, the RPF Library Functions 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. Valid 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 for Browse if invoked from Browse in the main menu or from Library Functions in the utility menu. Select for EDIT if invoked from EDIT in the main menu.

- The member name. This field is protected.

- The new name 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.
  - Version:modification level. 5 bytes containing "vv:mm"
  - Date created. 10 bytes containing "yyyy/mm/dd".
  - Date last updated. 10 bytes containing "yyyy/mm/dd"
  - Time last updated. 8 bytes containing "hh:mm:ss"
  - Current number of records. 5 bytes.
  - Initial number of records. 5 bytes (if screen width = 92 bytes or more).
  - Modified numbers of records. 5 bytes (if screen width = 92 bytes or more).

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, refreshable, scatter load, overlay, not-executable, 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 the 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 Library Functions primary commands are:

Primary command Function

=n or =n.n	Terminate PDS, return to main and execute option 'n' or option 'n.n'.
BOTTOM	Display the last screen of the directory listing. This command may be abbreviated as 'B'.
DOWN	Display the next screen.
END or RETURN	Terminate Library Functions. RPF will go back to the utility menu with 'END' or main menu with the 'RETURN' command.
HELP	Display a screen with HELP information about the primary commands and line commands.

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 primary command). 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 string is specified, the command will be ignored and the message 'No string specified' is issued.
LEFT	Show the left part of the member entries on a narrow screen.
PFK	Display PFK screen. you can alter your PFK settings here. To alter the PFKs press ENTER. To leave PFK press PF03/PF15.
	Note
	The changed PFK settings are only valid during this RPF session. To change the PFKs in the RPF profile data set, 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 rebuilt, all queued members be reset, and the members deleted by an 'D' line-command will be removed.
RIGHT	Show the right part of the member entries on a narrow screen.
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 the PDS selection list has been entered from BROWSE or Library Functions (option 1 in the main menu or option 1 in the utility menu), 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.
SORT	Sort the members on member name (default).
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.
SORT SIZE	Sort the members on number of records instead of alphabetic order, so it is easy to find the smallest or biggest members. This sort is in DESCENDING order.
SORT TTR	Sort the members on TTR – order instead of alphabetic order, so it is easy to find the members and its associated aliases. This sort is in DESCENDING ORDER.
TOP	Start display with the top of the directory listing. An alias is T.
TSO	Execute TSO commands. Module RPFTSO will be invoked.
UP	Display the previous screen. 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.
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 or NJE38 installed.

Note

All these commands can be set under PFK's. Press the corresponding PFK to execute the command. If you enter a primary command and one or more-line commands in the member area, the line commands will be executed first.

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.
- **Access denied**, Update on PDS rejected by security system.
- **Newname omitted or invalid**, the newname is invalid or not specified.
- **STOW error**, 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.

B Display the member, BROWSE will be invoked. See 4. "BROWSE source data and output listings." for more information concerning browse. The following responses can appear:
- **Browsed**, successful display.
- **Member not found**; the member was deleted by a previous 'D' operation.
- **Browse not available**, the specified data set has a record length > 255.

D Delete the specified member. RPF will ask for confirmation if the attribute 'Confirm member delete' is set to '/', with the confirmation panel. If you press ENTER, delete will be performed. If the PF03 or PF15 key is used, the member won't be deleted.
If the attribute 'Confirm member delete' is set to <blank>, the member will be deleted unconditionally.
The possible responses are:
- **Deleted**, a successful delete.
- **Access denied**, Update on PDS rejected by security system.
- **Error in delete**, the delete is unsuccessful. (delete is confirmed).
- **Not deleted**, the confirmation panel is ended with PF03 or PF15.

E EDIT the member with the RPF editor. This member will be edited with the default options. See 5." EDIT a data set or PDS member." to get an explanation of the EDIT functions. After termination of the editor with the 'SAVE' or 'END' primary command in EDIT, RPF will return to the selection list, if the member is saved in the same member and data set the user data field will be updated upon return to the PDS member selection list 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).
- **Data set/member in use**; The data set and member name cannot be edited, because another TSO-user is busy with EDIT of the same data set 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 data set**; Library Functions are unable to save the workspace, because the allocation of the save data set 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 PF03/PF15.
- **ARCHIVER not installed.**

R   Rename the specified member. Type in the 'newname' field too. The response can be:
- **Renamed**, after successful rename,
- **Access denied**, Update on PDS rejected by security system.
- **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.
- **Alloc error SYSOUT**, severe error. contact RPF support.

S   Select the member from the member selection list, if the member selection list has been entered from BROWSE (option 1), EDIT (option 2), RESET (option 3.0) or Library (option 3.1) from the main menu.

V   Display the member, EDIT will be invoked in VIEW mode. See 5. "EDIT a data set or PDS member." for more information concerning view. The following responses can appear:

- **Viewed**, successful display.
- **Member not found**; the member was deleted by a previous 'D' operation.
- **Edit/View not available**, the specified data set has a record length > 255 or a RECFM of or NOT F(B) or NOT V(B).

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

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,S,V or X'** will be set in the comments field for that member.

Note!

If you terminate Library Functions, you can EDIT your member list with the editor in 'NONUM' mode you can do it as follows:
1. Terminate Library Functions with 'END'.
2. Terminate utility menu with 'X' (PF03/PF15).
3. Select -2- on main menu and change options, but always CLEAR the dsname field.
4. Press ENTER to EDIT the member list.

6.3. Data set functions

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

1. The option: Specify 'A' for allocation, 'D' for deletion or PF03/PF15 to return.
2. The prefix: The first qualifier of the TSO library.
3. The library: The second qualifier of the TSO library.
4. The type: The third qualifier of the TSO library.
5. Other data set: A fully qualified data set name. If this data set name is specified, PREFIX, LIBRARY and TYPE are ignored.
6. The unit name. The default is SYSDA.
7. The record format: specify F, FB, FBM, FBA, FBS, V, VB, VBM, VBA, VBS or U. If nothing specified FB is assumed.
8. Volume serial: The volume on which the data set must reside. if the volume is omitted, a storage volume will be used.
9. 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.
10. Space unit: Specify here 'CYL', 'TRK' or 'BLK'.
11. 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.
12. Primary: The primary space of the data set in cylinders, tracks or blocks.
13. Secondary: The secondary space of the data set or zero if you don't want a secondary space.
14. The number of directory blocks. if you specify zero a sequential data set will be created, otherwise a partitioned data set will be created.

For option 'D' (Delete) only the items 1 - 5 are used.

If you press ENTER the data set will be created or deleted, depending on the chosen option and the allocation panel will be redisplayed with the message: **'Data set allocated'** or **'Data set 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 data set. With PF12/PF24 the data set will be deleted. With PF03/PF15 the deletion will be rejected.

The 'SPACE UNIT' and 'PRIMARY' fields are required. If 'Other data set' is not specified, PREFIX and LIBRARY also are required.

The 'PREFIX', 'LIBRARY and 'TYPE' fields may contain more than 1 data set level.

6.4. Move/Copy sequential data sets or members of partitioned data sets

If you select '3' on the utility menu or '3.3' on the main menu, a data entry screen will be presented. In this menu you can specify the FROM data set and the TO data set. Both data sets should be partitioned or sequential and should have the same RECFM en LRECL. If the data set has a RECFM=U (usually for a LOAD library), the BLKSIZE of the TO data set should be equal or larger than the BLKSIZE of the FROM data set.

In this menu, you can specify the option (M for Move or C for Copy), the data set names of both data set and the volumes if the data sets are not cataloged.

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. This parameter is ignored if the data sets are sequential.

Sequential data sets will be immediately copied and a message with the number of records copied will be displayed and the allocation menu is re-displayed.

If '(*)' is specified immediately after the data set name of the FROM partitioned data set, all members of this data set will be copied/moved to the TO data set, depending on the REPLACE parameter. The user will be notified how many members are copied or moved and the data entry 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 "6.2. Library Functions", for a description of the ISPF/RPF and load module statistics.

The RPF Move/Copy commands are:

Primary command Function

BOTTOM	Display the last screen of the directory listing. This command may be abbreviated as 'B'.
DOWN	Display the next screen.
	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.
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 string is specified, the command will be ignored and the message 'No string specified' is issued.
PFK	Display PFK screen. you can alter here your PFK settings. To alter the PFKs press ENTER. To leave PFK press PF03/PF15.
	Note
	The changed PFK settings are only valid during this RPF session. To change the PFKs in the RPF profile data set, select the defaults menu. (0 on the main menu)
SORT	Sort the members on member name (default).
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.
SORT SIZE	Sort the members on number of records instead of alphabetic order, so it is easy to find the smallest or biggest members. This sort is in DESCENDING order.
SORT TTR	Sort the members on TTR – order instead of alphabetic order, so it is easy to find the members and its associated aliases. This sort is in DESCENDING ORDER.
TOP	Start display with the top of the directory listing. An alias is T.
UP	Display the previous screen.
	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.

Note

All these commands can be set under PFK's. Press the corresponding PFK to execute the 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 data set.
- **Not deleted, no update access**
  The delete of the member during MOVE processing is blocked by a security system like RACF.

- **Replaced.** The member has been successfully copied or moved and member in TO data set has been replaced.
- **Member not replaced.** A member with the same name has been found in the TO data set 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 IEBCOPY, see output.** The MOVE/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 data set failed.

6.5. VTOC and data set list functions.

If you select '4' on the utility menu or '3.4' on the main menu, you get a data entry screen for the desired data set qualifier, volume serial and parm. The screen contains 4 input fields:
- The requested option (1, 2 or V). If a blank is entered, option 1 is assumed.
- The data set level (a fuzzy qualifier). Example: SYS1 and SYS1.L are both valid.
- The name of the volume serial, which VTOC should be listed.
- The parm; **'SHORT'** for a normal VTOC, **'LONG'** for a VTOC with an extra line with the full data set name (44 pos.) and the start address of the specified data set or **'VOL'** for VTOC without header and trailer lines and instead of the creation date the volume will be displayed. This parm is used in option 2 only.

After having altered the data set level and/or volume and PARM press ENTER. If only a data set 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 serial (and data set 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.

Notes
- If PF03 or PF15 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 5. "EDIT a data set or PDS member." For a description of the EDIT functions. If you terminate the data set selection list or the editor RPF returns to the VTOC menu.

Option 1

In option 1, a data set selection list will be presented. In this list the following information will be displayed for each data set.
- The data set name.
- The creation date if a volume has been specified or the volume if only the data set level has been specified.
- The last reference date.
- The data set organization.
- The record format.
- The logical record length.
- The block length.

- The number of extents of the data set (max 123).
- The allocated space in tracks.
- The free tracks inside the data set.

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

Primary command	Function
=n or =n.n	Terminate VTOC, return to main and execute option 'n' or option 'n.n'.
BOTTOM	Display the last screen of the directory listing. This command may be abbreviated as 'B'
DOWN	Display the next screen. 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.
END or RETURN	Terminate the data set selection list. RPF will go back to the VTOC menu with 'END' or main menu with the 'RETURN' command.
HELP	Display a screen with HELP information about the primary commands and line commands.
L 'string'	Locate 'string' in the data set name. After successful execution of the command, VTOC will display the screen, where the first line contains the data set, where the first occurrence of 'string' was found (highlighted). If no string is specified, the command will be ignored and the message 'No string specified' is issued.
LEFT	Show left part on a narrow screen including data set name.
PFK	Display PFK screen. You can alter here your PFK settings. To alter the PFKs press ENTER. To leave PFK press PF03/PF15. **Note** The changed PFK settings are only valid during this RPF session. To change the PFKs in the RPF profile data set, select the defaults menu. (0 on the main menu)
REFRESH	The data set list or VTOC list will be refreshed with updated data.
RIGHT	Show right part on a narrow screen including data set name.
TOP	Start display with the top of the directory listing. An alias is T.
TSO	Execute TSO commands. Module RPFTSO will be invoked.
UP	Display the previous screen. 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.

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

A   Allocate a new data set, the allocation menu will be displayed. In this menu the data set name, SPACE parameters and DCB parameters are inherited from the data set in the data set list, where the line command is given. See chapter "1.6.3. Data set functions" for more information about allocation of data sets.

B   Display the data set, BROWSE will be invoked. If the low-level qualifier of the data set is '.ZIP', RPF will try to invoke the program MINIUNZ to UNZIP the data set. The output will be browsed. If MINIUNZ is not found or the low-level qualifier is not '.ZIP', the selected original data set will be browsed.

See "4. Browse data sets, members or load modules" for more information concerning browse.

The following responses can appear:
- **Browsed**, successful display.
- **Access denied,** No permission (RACF) to access.
- **No temporary data set**. 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'**
- **Browse/View not available**. The specified data set has a record length longer than 255 bytes (except if RECFM=U).
- **Error in view**. The data set cannot be viewed due to an error.

C   Catalog a data set. The following responses are possible.
- **Cataloged**. The data set has been successfully cataloged.
- **Data set already cataloged**
- **VSAM data set**. A VSAM component cannot be cataloged in this way. Usually, a VSAM data set is always cataloged.
- **Error in catalog processing**. The catalog function had abended for some reason.
- **Temporary data set:** Temporary data sets should not be cataloged.

D   Delete the specified data set. RPF will display a confirmation panel. If you press PF12 or PF24, delete will be performed. Pressing PF03 or PFKI5 key will reject the deletion.

The possible responses are:
- **Deleted**. A successful delete
- **Scratch error**. Data set is uncataloged but cannot be scratched. Re-catalog the data set with the 'C' line-command or scratch the data set with IEHPROGM.
- **VSAM data set**. 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 PF03 or PF15.

E   EDIT the data set with the RPF editor. A member selection list will be displayed. See "5. Edit a data set or a PDS member" for more information about EDIT. After EDIT, the following responses can be found in the comment field.
- **Edited.** Successful edit.
- **Access denied,** No permission (RACF) to access.
- **I/O error.** Unrecoverable error detected.
- **Edit not available.** Data set has a record length > 255 bytes and/of RECFM = **not** F(B) or V(B).
- **Error in EDIT**. The data set cannot be edited due to an error.

- **No temporary data set**. VTOC is unable to save the workspace, because the allocation of the save data set is failed. This error is already detected upon start of RPF with the message: **'INIT ERROR RC= 0024'**
- **Data set/member in use**. The data set and member name cannot be edited, because another TSO-user is busy with EDIT of the same data set and member with RPF or with the IBM product ISPF.

I   Display additional information of the data set. Information like DCB information, allocation type (ABSTR, BLOCK, TRACK or CYLINDER), number of tracks, free tracks in the data set, 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, PF03 or PF15. The response of the 'I' line command is:
- **Info - I**. Information successfully displayed.

M   Invoke Library Functions. A member selection list will be displayed. See "6.2. Library functions" for more information about Library Functions. After member list, the following responses can be found in the comment field.
- **Member list,** Member list successful processed.
- **Member list not available,** Data set is not partitioned.
- **Access denied,** No permission (RACF) to access.
- **Error processing member list**, Member list cannot be created due to an error.
- **No temporary data set**, VTOC is unable to save the workspace, because the allocation of the save data set is failed. This error is already detected upon start of RPF with the message: **'INIT ERROR RC= 0024'**

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

I   Display additional information of the data set. Information like DCB information, allocation type (ABSTR, BLOCK, TRACK or CYLINDER), number of tracks, free tracks in the data set, volume and device type will be displayed. Unlike the line command 'I', the involved data set will not be opened, so the last reference date remains untouched. You can leave the information screen with ENTER, PF03 or PF15. The response of the 'I' line command is:
- **Info - S**. Information successfully displayed.

U   Uncatalog the data set. The following responses are possible.
- **Uncataloged**. The data set has been successfully uncataloged
- **Data set not in catalog**

- **VSAM data set**. A VSAM component cannot be uncataloged.
- **Error uncatalog processing**. The uncatalog function had abended for some reason.

V   Display the data set, EDIT will be invoked in VIEW mode for sequential data sets and PDS (Browse and View) will be invoked for partitioned data sets. See 5.   EDIT a data set or PDS member. for more information about VIEW/EDIT. The following responses can appear:

- **Viewed**, successful display.
- **Access denied,** No permission (RACF) to access.
- **No temporary data set**. 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'**
- **Edit/View not available**. The specified data set has not a RECFM of FB or VB or does contain a record length longer than 255 bytes.
- **Error in view**. The data set cannot be viewed due to an error.

Z   Compress the data set. IEBCOPY will be invoked to perform this function. The following responses are possible.

- **Compressed**. The data set has been successfully compressed.
- **Error during compress**. IEBCOPY suffers an unsuccessful return code.
- **Access denied,** No permission (RACF) to access.
- **DYNALLOC error**, one or more work data sets 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 data set is not a PDS or you are trying to compress SYS1.LINKLIB
- **IEBCOPY not APF authorized**. RPF runs not authorized.

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

Note

All the primary commands can be set under PFK's. Press the corresponding PFK to execute the command.

Option 2.

The information is loaded in the EDIT workspace and the data sets 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/cylinders, 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 data sets 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 data set organization.
- The record format.
- The logical record length.
- The block length.
- The number of extents of the data set (max 123).
- The allocated space in tracks.
- The free tracks inside the data set.

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 data entry 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 contain VTOC and volume information and a summary of the free space on the volume. After execution, the VTOC menu re-appears.

6.6. LIBRARIAN maintenance.

If you select '5' on the RPF utility or '3.5' on the RPF main menu, a data entry screen for the desired LIBRARIAN master file will be displayed.

You can change the 'Master file' and 'Volume serial' 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 press PF03/PF15 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.
    - **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 tape master, 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's 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 a 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 SAVE menu 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,D,E or P**	Wrong command entered.

The RPF LIBRARIAN maintenance commands are:

Primary command	Function
=n/=n.n	Terminate LIBRARIAN maintenance. 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. An alias of BOTTOM is B.
DOWN	Scroll 1 page forward.
END or RETURN	Terminate LIBRARIAN maintenance. RPF will go back to the utility menu with 'END' or main menu with the 'RETURN' command.
INDEX	Edit a LIBRARIAN index. The RPF editor will be invoked.
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, which 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 in the RPF profile data set, select the defaults menu. (0 on the main menu)

TOP Start display with the top of the directory listing. An alias of TOP is T.

UP Scroll 1 page backward.

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:

L, 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.

D, delete the held output from SPOOL.

P, print the output into a data set with the name 'userid.RPFOUT.Dyyddd.Thhmmss.OUTLIST'. This data set will be allocated with RECFM=VB,LRECL=255,BLKSIZE=6100 and cataloged. You can process this data set afterwards.

R, requeue the output to another output class. Specify a new output class in the appropriate field.

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

PF03/PF15, terminate the output processor an go to the utility- or main menu.

If one or more errors occurs, a suitable message will be displayed with retry possibility.

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.

A data entry screen will be displayed to select a sequential or a partitioned data set. In this menu also a search string should be specified, and the 'Skip numbers' and 'Ignore case' options are present. This entry menu is like the EDIT menu.

The data set should have a record format of fixed or variable records with record length with a maximum of 255

If 'Skip numbers' = 'Y' the last 8 bytes of the records of fixed data will be excluded for SEARCH or the first 8 bytes of variable data will be excluded for SEARCH.

If 'Skip numbers' = 'C' the last 8 bytes, and the first 6 bytes of card image fixed data will be excluded for SEARCH. If not fixed and/or card image the value 'Y' is assumed.

If 'Skip numbers' = 'N' the entire record will be searched.

If 'Ignore case' = 'Y' the string will be matched not matter if the data is upper-, lower- or mixed case.

If 'Ignore case' = 'N' the string should exactly match.

If '=n(.n)' is entered in the data set name, RPF returns to the main menu and executes option n(.n).

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

See chapter 4. BROWSE source data and output listings for more information about RPF Browse.

6.9. Archiver maintenance.

If you select '9' on the RPF utility or '3.9' on the RPF main menu, a data entry 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'.

In the data entry screen, you specify the data set name of the ARCHIVER VSAM cluster and filters for ITEMS, GROUPS, SUBGROUPS and ITEMS. If these filter fields are blank, all items in the ARCHIVE cluster are selected.

The field 'Confirm item delete' can be set to '/' or <blank> to unconditionally delete the ITEM or not.

In the filter fields, you can use wildcards '*' for 1 or more characters and/or '%' for a single character.

Example: select the items starting with ABC of group SOURCE with subgroup V2R1M1 and V2R1M2 and type ASM.

```
- Item        = ABC*
- Group       = SOURCE
- Subgroup    = V2R1M%
- Type        = ASM
```

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 'D', Delete the item. The RPF browser will be invoked to view the output. If the attribute 'Confirm item delete' is set to '/', a confirmation screen will be displayed. With value <blank>, the item will be deleted unconditionally.
  - o 'E', EDIT the item.
  - o 'N', Browse the NOTES of an Archiver item if present. Check the '*' after the VERSION.
  - o 'P', Print the item to the default SYSOUT class.
  - o 'R', Rename the item with the Archiver ALTER function.
  - o 'V', View the item.
- The item name, version, "*" or "A", group, subgroup, type, DSORG- RECFM- LRECL and BLKSIZE of the original data set and number of records.
  If an '*' is present after the version, the ITEM contains notes, which can be listed with the line command 'N'.
- If an 'A' is present after the version, this ITEM is an alias. The true name, true name GROUP, true name SUBGROUP, true name TYPE and true name VERSION are displayed instead of the date and DCB info. The alias is not selectable for line commands.
- The creation date of the item or a message.
  The message can contain the following:
  - o Browse error, error in browse processing.
  - 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 NOTES listed, successful browse of the item notes.
  - o Printed, successful print.
  - o Renamed, successful ALTER.
  - o Alloc error, an error occurs during delete or NOTES processing.
  - o Not deleted, PF03/PF15 pressed on confirm screen.
  - o Not renamed, PF03/PF15 pressed on RENAME screen.
  - o No NOTES, The item does not contain NOTES data.
  - o Rename error, Allocation Archiver data sets failed.
  - o Invalid sel., invalid line command entered.
  - o Truncated, EDIT workspace too small.
  - o View N/A, module not viewed, because the RECFM is not Fixed, Variable or has a LRECL > 255.
  - o Viewed, successful VIEW.

The RPF ARCHIVER maintenance commands are:

Primary Command	Function
BOTTOM	Display the last screen of the directory listing. An alias of 'BOTTOM' is 'B'.
DOWN	Scroll 1 page forward.
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.
LEFT	Scroll to the left part of the screen on narrow screens.
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 in the RPF profile data set, select the defaults menu. (0 on the main menu).
REFRESH	Read again the archive and re-populate the screen with the Archiver items.
RIGHT	Scroll to the right part of the screen on narrow screens.
TOP	Start display with the top of the item listing. An alias of 'TOP' is 'T'.
UP	Scroll 1 page backward.

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 Source lib field.   In this field, the member name and library name should be specified. The data set should be cataloged. Leave member name blank if the data set 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 data set will be allocated if assembly is selected, or no data set 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 library. Only the last qualifier of the data set 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 data set. 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 data set entered in the allocation menu in the 5th field, if the data set 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 'Y', or 'N'. Default is 'N' if you specify 'Y' the SYSPRINT comes on the screen after assembly (and link edit), With 'N' no browse will be invoked, except if the assembler has given a nonzero return code. Then the SYSTERM output will be browsed.

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" primary command 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 data sets 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 'nnnnnnnn RUNNING.' in the message area of the screen (nnnnnnnn = the name of the assembler program).

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 'IEWL   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 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.

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 PF03/PF15), 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 data set with member name @RPFTSO.

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'.**

9.   The RPF HELP facility.

If you select '7', press PF01 or PF13 on the RPF main menu, or the HELP command in EDIT, the HELP menu will be displayed. On the HELP menu you can select the following options:

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.

9.1. Primary commands in the HELP panels.

For the primary commands of the HELP panels see 4." BROWSE source data and output listings."

RPF also have 2 TSO HELP members, named RPF and RPFED. These members belong in a HELP data set specified in the //SYSHELP DD-statement in your TSO logon procedure. These members givea brief description about RPF and the stand-alone TSO command processor RPFED. The members RPFHELP1, RPFHELP2, RPFHELP3, RPFHELP4 and RPFHELP should also be present in one of the libraries in the //SYSHELP concatenation.

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.
X. (or PF03 or PF15) Terminate the RPF test menu.

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 task name, 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 address space 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.

Command	Function
D UCB=ddd or dddd	Display the UCB of device ddd or device dddd, This display contains the same information as the **'D VOL=vvvvvv'** command. Use 3 or 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.

11.1. Messages of the RPF operator mode.

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

RPF OPER: J=jjjjjjjj , - Not found on the ASCB chain
Jobname jjjjjjjj not found in the system.
RPF OPER: UCB not found
Volume in 'D VOL' or device address in 'D UCB' command not found in the system.

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.

12. TSO command processor RPFED.

In native TSO, there is a TSO command processor available. You can use the TSO commands RPFED to edit a data set or member, RPFBR to browse a data set or member, RPFPD to invoke Library Functions or RPFST to perform RESET of ISPF statistics.
Syntax:

```
RPFED data setname/data set name(member) VOLUME(vvvvvv)LINES(nnnnn)
RPFBR data setname/data set name(member) VOLUME(vvvvvv)LINES(nnnnn)
RPFPD data setname/data set name(member) VOLUME(vvvvvv)LINES(nnnnn)
RPFST data setname/data set name(member) VOLUME(vvvvvv)LINES(nnnnn) +
      NEWUSER(new userid) VERSION(nnnn)
```

The VOLUME keyword is optional and can be used if the 'data set name' is not cataloged.
The LINES keyword specified the maximum lines to process and should be a value between 200 and 50,000. The default is 7,000 lines.
If RPFED/RPFBR/RPFPD and RPFST runs in addressing mode 31, the number of lines will be automatically multiplied by 10.
The NEWUSER and VERSION keywords are optional and only used if the RPFST (Reset ISPF stats) command verb is used.   The default value for NEWUSER is your TSO userid. The default for VERSION = 0100 (ISPF vv + ISPF mm).
RPFED will invoke the RPF editor or the Edit member selection list.
RPFBR will invoke the RPF browser or the Browse member selection list.
RPFPD will invoke RPF Library Functions. If using RPFPD, 'data set name' should be a partitioned data set.
RPFST executes the RESET ISPF stats function. 'Data set name' should be a partitioned data set.
The normal TSO rules are in effect. If omitting the data set name, the command processor will prompt you for the data set. If you put the data set name between apostrophes, the data set is treated as fully qualified. If no apostrophes are used, the data set name will be prefixed with your user id.
See 5." EDIT a data set or PDS member" for a description of the editor and the Edit member selection list or 1.4 "View data sets, members or load modules" for a description of the browser and the Browse member selection list, 6.1. "Reset/Delete ISPF or RPF statistics', or 6.2. "Library Functions" for a description of the PDS functions.

13. TSO command processor RPFV

In native TSO, the TSO command processor RPFV is available. You can use the TSO command RPFV to create an RPF data set list (RPF 3.4).
Syntax:

```
RPFV {PREFIX(dsn-prefix) | PREFIX(NONE) VOLUME(volser) LINES(nnnnn)}
```

Default for PREFIX is the UserID. Default for VOLUME = blanks.
The PREFIX is a fuzzy prefix. Prefixes like 'SYS1' or 'SYS1.L' are both valid.
If the volume serial is specified, only the data sets with this prefix are selected.
If PREFIX(NONE) is specified, a volume serial is required to create a data set list of all data sets of that volume.
The LINES keyword specified the maximum lines to process and should be a value between 200 and 50,000. The default is 7,000 lines.
If RPFV runs in addressing mode 31, the number of lines will be automatically multiplied by 10.
See 6.5. "VTOC and data set list functions" (option 1) for more information about the DSLIST function.

14. RPF messages.

14.1. messages of the RPF main processor.

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

//ISPPROF not found
System Action: RPF choose her own defaults.
Programmer Response: Specify an ISPPROF DD-statement in the TSO logon procedure or allocate the profile data set with the ALLOCATE command.

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

Data set/member saved.
System Action: None.
Programmer Response: None.

I/O error
System Action: EDIT or Browse function terminated.
Programmer Response: Examine the involved data set or select another data set.

Init. Error RC= xxx
System Action: Session defaults not retrieved from the RPF profile data set (except rc=24).
Programmer Response:
- If rc=04, the profile data set cannot be opened. Contact RPF support.
- If rc=12, RPF was unable to allocate a temporary data set under DDNAME=RPFEDT1, RPFCTPST 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 Library Functions and LIBRARIAN maintenance and the BROWSE, EDIT and Member List in VTOC are not available.
  3. If no solution can be found, contact RPF support.
- If rc=16, the EDIT workspace cannot be GETMAIN'ed. Increase the REGION size of the TSO session.

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

No workspace available
System Action: EDIT workspace NOT getmained. All options except for 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 PF03/PF15 and re-logon with a larger REGION size.
See chapter 3. Change session defaults for more information.

Not saved: RC= nn
System Action: The profile member is not updated.
Programmer Response:
- If rc=4, open error on profile data set, try to select the defaults menu several times, If you have no success, contact RPF support.
- If rc=08, one of the members in the profile data set were not found. Restart RPF. The members will be created.
- If rc=20, error caused by initialization error. See the initialization error message.
- If rc=24, the EDIT workspace cannot be FREEMAIN'ed.

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.

Save canceled by user.
System Action: None
Programmer Response: PF03/PF15 pressed in Save menu or CANCEL primary command given in EDIT.

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

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

14.2. Session default messages.

AUTOSAVE not Y or N
System Action: AUTOSAVE value ignored.

Programmer Response: Specify the correct value.

COLS not Y or N
System Action: COLS value ignored.
Programmer Response: Specify the correct value.

CAPS not AUT, ON or OFF
System Action: CAPS value ignored.
Programmer Response: Specify the correct value.

Confirm not ' ' or /
System Action: Confirm value ignored.
Programmer Response: Specify the correct value.

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

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

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.

No profile data set
System Action: Defaults not saved.
Programmer Response: The profile data set was not allocated to //ISPPROF.

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

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

14.3. BROWSE messages.

Allocation error SYSOUT
System Action: 'PRINT' primary command terminated.
Programmer Response: Severe error, contact RPF support.

Bottom of data reached
System Action: F primary command executed, but no match found.
Programmer Response: Scroll to correct position or re-enter the F primary command with another string.

BROWSE substituted
System Action: Browse entered after trying to EDIT a RECFM=U data set.
Programmer Response: None.

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

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

Invalid character string
System Action: 'F' primary command not executed.
Programmer Response: Specify correct string.

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

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

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

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

PFK definition invalid

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

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

SUBMIT failed
System Action: TSO SUBMIT command failed.
Programmer Response: Contact the RPF support.

Truncated to LRECL=255
System Action: Data sets with large records browsed but truncated.
Programmer Response: None.

14.4. EDIT messages.

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

Abendx37 in RPFSAVE
System Action: EDIT workspace recovered and EDIT not left.
Programmer Response: Save data in another data set with the CREATE of REPLACE primary command.

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

Bottom of data reached
System Action: 'F' command is ignored.
Programmer Response: Re-enter the 'F' command with a valid character string.

System Action: F primary command executed, but no match found.
Programmer Response: Scroll to correct position or re-enter the F primary command with another string.

Boundary too small
System Action: 'F, 'C', or 'FILL' command ignored.
Programmer Response: The character string in the command is longer than the boundary range. Use shorter character strings or reset the boundary range with the 'BNDS' primary command.

Characters X'..' found
System Action: FIND P'.' successful executed.

Programmer Response: None.

Command not executed
System action: COBOL ON primary command ignored.
Programmer Response: The record format of the data set is variable, or the record length is not 80. Edit a card-image data set with fixed records.

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).

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

Data saved
System Action: The workspace is successfully saved after the primary command 'SAVE'.
Programmer Response: None.

Data set created/repl
System Action: The range of lines is succesfully saved after the primary command 'CREATE'.
Programmer Response: None.

Data set is empty
System Action: not executed, because appended data is empty.
Programmer Response: APPEND another data set or member.

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.

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

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'.

Enter "RETRY" or "END"

System Action: This message appears after the message **'Input convert failed'**.
Programmer Response: Execute the indicated action.

Enter SAVE, CANCEL or END
System Action: The END primary command has been given with AUTOSAVE=N. Edit will not terminate. SAVE will save the data, CANCEL stays in EDIT and END will terminate EDIT without saving (after a warning message).
Programmer Response: Execute indicated action or continue with EDIT.

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

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 RPF support.

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

Invalid boundaries
System Action: BNDS primary command ignored, set to last correct value.
Programmer Response: Re-enter the command with right columns.

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

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

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

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.

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.

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.

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

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.

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

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.

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.

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

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

Number of lines invalid
System Action: Screen changes and command ignored.

Programmer Response: Trying to insert more than 999,999 lines with an 'I' or an 'R' primary command.

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 data set.

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

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

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

Save rejected in VIEW
System Action: SAVE command and END command with changes made not executed.
Programmer Response: EDIT the data set or member with EDIT instead of VIEW or use the primary commands CREATE or REPLACE to save the data.

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

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

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

Workspace not numbered
System Action: UNNUM primary command ignored.
Programmer Response: Enter the 'RENUM' primary command first before clear columns 73-80 or 01-06 of the workspace or ignore the message.

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

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).

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

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

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

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

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

14.5. EDIT hardcopy messages.

ACB open err. xxxxxxxx
System Action: Hardcopy aborted, 'ACB' cannot be opened.
Programmer Response: Investigate the open error code and retry.

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

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

Copies not numeric

System Action: 'HAR' command ignored.
Programmer Response: Re-enter the command with numeric copy number.

Hardcopy failed xxxx
System Action: Hardcopy aborted, 'SEND', 'OPNDST' or 'INQUIRE' failed.
Programmer Response: This can be a malfunction of the printer, contact RPF support. Investigate 'xxxx' (RC, FDBK2) and contact RPF support.

Hardcopy made
System Action: Hardcopy executed successful.
Programmer Response: None.

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

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

VTAM CB error
System Action: Hardcopy aborted.
Programmer Response: Error caused 'GENCB' error. Contact RPF support.

14.6. LIBRARIAN messages.

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

Alloc. error xxxx on DS
System Action: LIBRARIAN 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.

Data set not in catalog
System Action: LIBRARIAN update: Function ignored. Retry screen displayed.
Programmer Response: Specify another master file or supply the volume.

Data set not on volume
System Action: LIBRARIAN update: Function ignored. Retry screen displayed.
Programmer Response: Specify another master file or volume.

Invalid option
System Action: LIBRARIAN update: Function ignored.
Programmer Response: Select function 1,2 or 3.

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

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 RPF support to add an entry in the userid/name table (RPFLIB02)

14.7. Archiver update messages.

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

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

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

Data set not in catalog
System Action: Retry screen displayed.
Programmer Response: Specify a cataloged Archive VSAM cluster

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

14.8. Messages of the RPF utility processor.

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

I/O error

System Action: Reset, PDS or SEARCH not executed.
Programmer Response: Examine the involved data set or select another data set.

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

Not APF Authorized
System Action: Output processor not executed.
Programmer Response: Authorize the library, where RPF resides.

14.9. Reset ISPF/RPF messages

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

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

Invalid new User ID
System Action: Retry RESET data entry screen displayed.
Programmer Response: Specify a new user id with the syntax of a user id (starts with an alphabetic character or national character).

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

14.10 Library Functions messages.

BROWSE substituted
System Action: Selection list set in BROWSE mode if trying to EDIT a RECFM=U partitioned data set.
Programmer Response: None.

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

Member not found
System Action: S member command ignored.
Programmer Response: The member selection list has been invoked from option 1 (Browse). Specify an existing member.

No string specified
System Action: 'L' command ignored.
Programmer Response: Specify a string in the 'L' primary command.

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

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

Truncate 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 invoke the member selection list again or accept this truncation.

14.11. Data set functions messages.

Access denied
System Action: Data set not created. Rejected by a security system like RACF.
Programmer Response: Use another data set name or created an access rule.

Allocation RC=xx, Err=yyyy
System Action: Data set creation terminated.
Programmer Response: Refer for the code xxx to 'TSO Guide to writing a Terminal Monitor Program or a Command Processor' chapter 'Using DAIR'. Correct the error and retry.

Attribute list failed
System Action: Data set not created.
Programmer Response: Contact RPF support.

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

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

BLKSIZE smaller than 18
System Action: Function ignored.
Programmer Response: Increase BLKSIZE.

Data set allocated
System Action: Successful allocation of a new data set.
Programmer Response: None.

Data set not on DASD
System Action: Data set not deleted.
Programmer Response: Do not specify tape data sets.

Data set deleted
System Action: Data set uncataloged and scratched.
Programmer Response: None.

Data set already exist
System Action: Creation of data set ignored.
Programmer Response: Specify another data set name.

Data set not in catalog
System Action: Data set not deleted.
Programmer Response: Retry. Enter the right data set name.

Delete rejected
System Action: Data set not deleted (PF03/PF15 entered on confirm screen)
Programmer Response: None

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

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

Invalid option
System Action: Function ignored.
Programmer Response: Select 'A' or 'D' 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

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

LRECL exceeds 32760
System Action: Function ignored.

Programmer Response: Decrease LRECL.

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

LRECL smaller than 18
System Action: Function ignored.
Programmer Response: Increase LRECL.

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

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

SCRATCH error data set
System Action: data set uncataloged, but not scratched.
Programmer Response: SCRATCH data set with IEHPROGM.

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

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

UNCATLG error data set
System Action: Data set not deleted.
Programmer Response: Check in the catalog listing if the data set is correctly cataloged or mount catalog pack.

14.12. Move/Copy messages.

xxxxxxx blocks copied
System Action: Sequential data set successfully copied.
Programmer Response: None.

Access denied
System Action: Cursor set in data set name in error.
Programmer Response: Grant access or specify another data set.

Abend xxx detected

System Action: Allocation menu re-displayed in case of a x37, 913 or B0A abend. Press ENTER to leave the MOVE/COPY menu.

Programmer Response: Compress the data set in case of a x37 abend, change the authorization profiles in case of a 913 abend, or authorize the RPF load library in case of a B0A abend.

Contact RPF support in case of another abend.

Conflicting DCB parms

System Action: Allocation menu re-displayed.

Programmer Response: The RECFM of both data set 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 data set should be equal or larger than the BLKSIZE of the FROM data set.

Data set allocation error

System Action: Allocation menu re-displayed.

Programmer Response: Specify a different data set name and/or volume for the data set in error.

Data set name missing

System Action: Allocation menu re-displayed.

Programmer Response: Specify the data set (and volume) of both FROM and TO data sets

Data set not in catalog

System Action: Allocation menu re-displayed.

Programmer Response: Specify a volume or a correct data set name.

Data set not on volume

System Action: Allocation menu re-displayed.

Programmer Response: Specify the right volume name or omit the volume if the data set is cataloged.

Data set not PS or PO

System Action: Allocation menu re-displayed.

Programmer Response: Both FROM and TO data sets should be partitioned or sequential (DSORG=PO or DSORG=PS), Correct the data set name in error.

FROM and TO are the same

System Action: Allocation menu re-displayed.

Programmer Response: Specify different data sets/volumes for FROM and TO data set.

I/O error input

System Action: MOVE/COPY not executed.

Programmer Response: Retry with another FROM data set.

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.

Invalid command

System Action: Command ignored.

Programmer Response: Enter a valid command.

No members in FROM data

System Action: Allocation menu re-displayed.

Programmer Response: Do not specify empty partitioned data sets.

No string specified

System Action: 'L' command ignored.

Programmer Response: Specify a string in the 'L' primary command.

PFK definition invalid

System Action: PFK ignored.

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

PFK not defined

System Action: PFK ignored.

Programmer Response: Define that PFK or press another PFK.

REPLACE not YES or NO

System Action: Allocation menu re-displayed.

Programmer Response: Correct this value.

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

14.13. VTOC and data set list messages.

Invalid command

System Action: Command ignored.

Programmer Response: Enter a valid command.

Invalid option

System Action: Function ignored.

Programmer Response: Select function '1', '2' or 'V'

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

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

No string specified
System Action: 'L' command ignored.
Programmer Response: Specify a string in the 'L' primary command.

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

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

Volume not available
System Action: Function ignored.
Programmer Response: Specify an ONLINE volume.

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

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

14.14. LIBRARIAN maintenance messages.

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

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.

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

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

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.

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

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

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

14.15. SEARCH messages.

Alloc error xxxx PRINT
System Action: SEARCH: temporary data set 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.

Ignore case not Y or N
System Action: wait for the correct response.
Programmer Response: specify the correct value.

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

Skip numbers not Y/C/N
System Action: waits for the correct response.
Programmer Response: specify the correct value.

14.16. Archiver maintenance messages

<ddname> alloc error
System Action: Retry screen displayed.
Programmer Response: Look if <ddname> is already allocated onto the TSO session. If allocated, use the FREE command to free that dd-name.

Data set not in catalog
System Action: Retry screen displayed.
Programmer Response: Specify a cataloged Archive VSAM cluster

Confirm not ' ' or /
System Action: Confirm value ignored.
Programmer Response: Specify the correct value.

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

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

No items meet criteria
System Action: data entry screen redisplayed.
Programmer Response: Specify filters to meet the criteria.

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

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

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

14.17. Assembler monitor messages.

Alloc. error work data
System Action: Assembler screen exited.

Programmer Response: Severe error, press ENTER to return to the main menu and contact RPF support.

Allocation RC=xxxx
System Action: Assembler re-displayed and cursor set in source lib field.
Programmer Response: See chapter 14.12. the message 'ALLOCATION FAILED RC xxxx' for the return code, Re-enter the source lib and/or member depending on the return code.

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

Data set not in catalog
System Action: Retry screen displayed.
Programmer Response: Specify an existing maclib, source library, include library, object library or load library.

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

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 data set name.

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

Invalid key pressed
System Action: All input ignored.
Programmer Response: Hit only the ENTER, PF03 or PF15 key

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

nnnnnnnn abended ccc
System Action: Assembler screen exited.
Programmer Response: The assembler or linkage editor had abended. Press ENTER to return to the main menu.

nnnnnnnn not found
System Action: Assembler screen exited.

Programmer Response: Press Enter and go to option 0.1 to specify a different assembler program name.

nnnnnnnn running..
System Action: RPF locks the keyboard and RPF bas invoked the assembler with program name 'nnnnnnnn'.
Programmer Response: Wait for completion.

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

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

Rc=xx Err=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 the return code and error code to manual 'Writing a terminal monitor program or a command processor'. Change the dsname field '(x)' and press ENTER or escape with the 'END' command.

Rc=xxxx Attribute lst
System Action: Normally this should not occur. Assembler screen re-displayed.
Programmer Response: Issue TSO command FREE FILE(ASMMACLB) to circumvent this problem.

14.18. TSO command processor messages.

Command name syntax 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.

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

RPF-TSO: Abended completion code=ccc
System Action: Abend detected in the TSO command processor; recovery successful.
Programmer Response: Contact RPF support (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 RPF support.

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

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

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

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

14.19. RPF HELP messages.

Alloc. error work data
System Action: No HELP members displayed.
Programmer Response: Severe error. Report this to RPF support.

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: Copy the members RPFHELP1, RPFHELP2, RPFHELP3, RPFHELP4 and
RPFHELP5 to an HELP library, which is present in the //SYSHELP DD-statement in the TSO
logon procedure, or concatenate the RPF HELP library on the //SYSHELP DD-statement.

14.20. Data entry, PFK and SAVE messages.

Abend ccc detected.
System Action: abend caused by an OPEN abend. processing ignored.
Programmer Response: Refer to the System Codes manual for an explanation of the
completion code 'ccc'.

Access denied.

System Action: Access rejected by a security system like RACF.

Programmer Response: specify another data set or create an access rule in the security system.

Allocation failed, RC xxxx

System Action: SAVE: retry screen displayed.

Programmer Response:

- If rc=12, allocation error, possible errors can be: 1. Data set allocated to another user with DISP=OLD, MOD or NEW. 2. Invalid data set name. 3. Required volume not mounted. Correct the problems and retry.
- If rc=16, the data set cannot be unallocated, this is a severe error. Contact RPF support.
- 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 data set with DSORG=PS or PO.
- If rc=36, the authorization is failed, access has been rejected by a security system like RACF.

ARCHIVER not installed

System Action: module ARCHIVER not found.

Programmer Response: install ARCHIVER (file 147 on www.cbttape.org) or specify another option.

Confirm not ' ' or /

System Action: Confirm value ignored.

Programmer Response: Specify the correct value.

Data set name missing

System Action: Data set entry and SAVE: retry screen displayed.

Programmer Response: Specify an existing data set (and volume)

Data set not in catalog

System Action: Entry screen and SAVE: menu re-displayed.

Programmer Response: Specify a cataloged data set or specify a volume.

Data set not on volume

System Action: Entry screen and SAVE: menu re-displayed.

Programmer Response: Specify an existing data set.

Data set not partitioned

System Action: Data set entry: retry screen displayed.

Programmer Response: Specify a partitioned data set for option 3.0 or 3.1.

Data set/member in use

System Action: SAVE: retry screen displayed and save ignored, because the same data set 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 data set.

I/O error
System Action: Data set not edited or saved, BLDL fails with RC=8.
Programmer Response: Repair data set or specify another data set.

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

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

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.

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

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.

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

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 data set or member.
- Press PF03/PF15 to abort the save.

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

TEMPRPF restricted

System Action: Save not executed, retry screen displayed.

Programmer Response: Enter another member name. (TEMPRPF is used in the internals of RPF).

Workspace empty

System Action: Edit current workspace not executed.

Programmer Response: None.

15. Module list.

See Table 1 for the module list.

Table 1: Module list			
Module	**Function**	**AMODE**	**Attributes**
RPFMAIN	RPF Main processor (alias RPF)	31	RENT, REUS
RPFALLOC	RPF data set functions	31	RENT, REUS
RPFARCH	Archiver maintenance processor	31	RENT, REUS
RPFARSVE	Save member or data set into Archiver cluster	31	RENT, REUS
RPFASM	RPF Assembler and Linkage editor processor	31	RENT, REUS
RPFASM00	ISPF interface for RPF foreground assembly and link	31	RENT, REUS
RPFBRO	BROWSE processor	31	RENT, REUS
RPFCHNG	Module to process the 'C' command	N/A	RENT, REUS
RPFCNVDT	Module to convert a Julian date to a Gregorian date	N/A	RENT, REUS
RPFC3270	Module to compress the 3270 data stream in EDIT and Browse	N/A	RENT, REUS
RPFDAIR	RPF Dynamic allocation processor	N/A	RENT, REUS
RPFDATAL	Allocation menu for EDIT and utilities	N/A	RENT, REUS
RPFDEF	Session defaults processor	31	RENT, REUS
RPFDOC	Add timestamp after //* LAST UPDATE:	31	RENT, REUS
RPFED	RPF Browse/Edit/RESET/PDS TSO command processor with aliases RPFBR, RPFPD and RPFST	24 or 31	RENT, REUS
RPFEDIT	The RPF EDIT processor	N/A	RENT, REUS
RPFEDITL	Load data set in EDIT workspace	N/A	RENT, REUS
RPFEND	RPF clean up routine	31	RENT, REUS
RPFFILL	Module for the 'FILL'. 'UC' and 'LC' primary command	N/A	RENT, REUS
RPFFIND	Module for the 'F' primary command	N/A	RENT, REUS
RPFHCPY	RPF hardcopy processor	31	RENT, REUS
RPFHELP	RPF HELP processor	31	RENT, REUS
RPFINIT	Housekeeping of RPF	31	RENT, REUS
RPFJCL1	JCL checking routine part 1	31	
RPFJCL2	JCL checking routine part 2	31	
RPFLIB	LIBRARIAN maintenance (Inc. LIBFAIR)	31	RENT, REUS
RPFLIB01	LIBRARIAN update processor	31	RENT, REUS
RPFLIB02	Userid/name table for RPFLIB01	24	
RPFLISTC	Search the catalog for a certain data set level	31	RENT, REUS
RPFMVCPY	RPF Move/Copy processor	31	RENT, REUS
RPFOPER	RPF Operator mode	31	RENT, REUS
RPFOUT	The output processor	31	RENT, REUS

RPFPDS	Library processor	31	RENT, REUS
RPFPFK	PFK definition processor	N/A	RENT, REUS
RPFSAVE	SAVE workspace processor	N/A	RENT, REUS
RPFSRCH	Search data set processor	31	RENT, REUS
RPFSTAT	RPF session status	31	RENT, REUS
RPFSUB	RPF job submitter	N/A	RENT, REUS
RPFTEST	RPF TEST processor	31	RENT, REUS
RPFTSO	RPF TSO command processor	31	RENT, REUS
RPFUTIL	RPF utility menu	N/A	RENT, REUS
RPFV	TSO command processor to create a DSLIST.	31	RENT, REUS
RPFVTOC	VTOC read processor	31	RENT, REUS
RPFVTOC1	VTOC data set selection list processor	N/A	RENT, REUS

Table 1, RPF module list

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 11 user macros and 3 copy members:
  1. CALLTS: general IKJDAIR execution routine (copy code).
  2. CSR: convert SBA to row/column,
  3. DSNPARS: copy member to parse the data set names (copy code).
  4. JCLCOMM: used in the JCL processor,
  5. RCTOSBA: calculate a row/column to SBA,
  6. RPFCOMM: macro to define the RPF common area,
  7. RPFPROF: mapping macro of the @RPFPROF member,
  8. RPFSA24:   to switch to AMODE 24 and
  9. RPFSA31:   to switch conditionally to AMODE 31.
  10. RPFSORT: sort the EDIT workspace on a certain field.
  11. SUBR: call subroutines in RPFJCL1.
  12. SYCONVHX: the convert hex to EBCDIC macro,
  13. SYSVARS: contains environment variables. Examine this member and change the values according to your environment. This is only needed if you assemble the sources.
  14. TPUTS: copy code for terminal I/O

- Special for MVS38J and MVS/380 user's 2 dummy macros called AMODE and RMODE 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.
- 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.V200.MACLIB 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.

16. Installation and requirements.

RPF will be distributed as 7 zipped XMI data sets. You will find these files on
www.prince-webdesign.nl/rpf

- File 1. rpf200mv.zip, the MVS38J and MVS380 load modules.
- File 2. rpf200os.zip, the OS/390 and z/OS load modules.
- File 3. rpf200he.zip, the RPF HELP library.
- File 4. rpf200jc.zip, the RPF JCL library.
- File 5. rpf200as.zip, the RPF source library.
- File 6. rpf200pn.zip, the RPF ISPF panel library.
- File 7. rpf200s1.zip, the RPF macro library (for MVS38J and MVS380 only).
- File 8. rpf200svas.zip, the RPF source library for OS/VS2 rel. 1 (SVS).
- File 9. rpf200vsld.zip, the SVS load modules.

Files 1-4 are required to install RPF. Files 5 and 6 are optional.
After unzip, the files should be uploaded to your system with IND$FILE. After upload use
the utility RECV370 or the TSO command RECEIVE INDATASET.
For Hercules or Hyperion user's, the DASDLOAD function is available.
A sample job of RECV370 is below:

```
//LOADRPF  JOB 01,'RPF LOAD',REGION=2048K,MSGCLASS=X,CLASS=A
//RECV370 EXEC PGM=RECV370
//STEPLIB  DD  DISP=SHR,DSN=load-lib-of-RECV370
//XMITPRT  DD  SYSOUT=*
//RECVLOG  DD  SYSOUT=*
//*
//XMITIN   DD  DISP=SHR,DSN=uploaded-XMI-file
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  DUMMY
//SYSUT1   DD  DSN=&&SYSUT1,
//             UNIT=SYSALLDA,
//             SPACE=(CYL,(8,4),RLSE),
//             DISP=(,DELETE)
//SYSUT2   DD  DSN=RPF-library,
//             UNIT=SYSALLDA,VOL=SER=vvvvvv,
//             SPACE=(CYL,(8,4,25),RLSE),
//             DISP=(,CATLG)
```

Figure 3, Sample RECV370 job

An alternative way to install RPF is obtaining RPF from www.cbttape.org. RPF is available in file 415 and will be distributed as 1 zipped XMIT file, which can be obtained with a Hyperion/Hercules dasdload function, with the RECV370 utility of Jim Morrison (file 571 on www.cbttape.org) or with the TSO/E RECEIVE INDATASET command. After obtaining file 415, read the member @INSTALL carefully.
The job AMODE31 is optional.

- Member AMODE31 in the JCL library to set the correct addressing mode. This job is optional. Run this job against SYS2.CMDLIB.

16.1. TSOKEYxx in SYS1.PARMLIB

RPF needs the following minimum buffers in member TSOKEYxx in SYS1.PARMLIB:
```
HIBFREXT=16384
LOBFREXT=8192
```

16.2. SMS support and Indexed VTOC's

RPF has the possibility to support indexed VTOC's and some SMS facilities like PDS/E support and large volumes in OS/390 and z/OS systems.

Use the file rpf200os.zip to install the OS390 or z/OS load modules. With this support the package RPF/E has become obsolete.

If using indexed VTOC's in older systems like MVS/XA with DFP installed, no large volumes are supported.

Update member SYSVARS in the source library and set the variables &SMS and &LARGE both to 0. Assemble and link RPFVTOC afterwards. RPFVTOC should be linked with the RENT attribute.

16.3. Clean up.

After RPF has been installed into SYS2.CMDLIB or equivalent with job $CMDLIB in the JCL library, you can delete the optional data sets if you wish:

1. RPF.V200.ASM
2. RPF.V200.LOAD or RPF.V200.ZOSLOAD
3. RPF.V200.JCL
4. RPF.V200.MACLIB

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 data set name and confirm the deletion with PF12 of PF24.

16.4. Other requirements.

All the RPF modules can be assembled and linked separately.

The default unit name of existing not-cataloged data sets is SYSALLDA. The default unit name of newly created and temporary work data sets 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 module RPFLIB needs the file access interface routines of the LIBRARIAN package. Upon link edit of RPFLIB, the following modules should be included from the LIBRARIAN load library 1. FAIROPN. 2. FAIRMOD. 3. FAIRREC. 4. FAIRCLS.

Note

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

If you want to use the HAR primary command 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 COMMAND OF RPF */
```

Figure 5, Define RPFHCPY.

In the main menu (option 5) is an user exit available. The name of the user exit 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 bytes message into the field 'COMMPRM' 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 6, Example how to write the exit.

Example how to allocate the RPF profile data set. This job is in member $PROFILE in the JCL library. Run this job only if you install RPF for the first time.

```
//PROFILE  JOB 01,RPF,CLASS=A,MSGCLASS=X,REGION=0K,NOTIFY=Z531415
//***************************************************************
//*
//* DESC: INSTALL RPF PROFILE DATA SET.
//*
//***************************************************************
//PROFILE EXEC PGM=IEFBR14
//PROFILE  DD  DSN='UserID'.ISP.PROF,UNIT=SYSDA,
//             SPACE=(CYL,(1,,5)),DISP=(NEW,CATLG),
//             DCB=(RECFM=FB,LRECL=80,BKSIZE=multiple of 80)
```

Figure 7, Example how to define the RPF profile data set.

The name of the profile data set should be specified in the //ISPPROF DD-statement in the TSO logon procedure or allocated with the TSO ALLOCATE command (in the startup CLIST). RPFLIB01 (the LIBRARIAN update processor) loads the module RPFLIB02 if present. RPFLIB02 contains a table, which contains UserID/name entries. This module should be updated according to 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 bytes name field.
Note.
Do not code blanks inside the name field. See example of RPFLIB02 below.

```
RPFLIB02 CSECT    *)
*       *)
* LICENSED MATERIAL (C)-2025 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 8, RPFLIB02

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

17. 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=7,000 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 profile data set if available.