

# 1.0 RPF User's Guide Version 1 Release 5.0

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Version 1, release 5.0

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# 1.1 Introduction

RPF - Robs's Programming Facility.

RPF is a command processor under TSO, developed by Rob Prins member of the systems programming department of the ING Bank in Amsterdam. For program development the ING Bank used ROSCOE, but when the systems programming group started using TSO for maintenance, the need arose for a full-screen editor under TSO. At this point Rob decided to develop his own editor, not only because they needed an editor, but also for learning the internals of TSO. This resulted in the 'RPF' package. It is not only an editor, but it also includes functions like PDS maintenance (SCRATCH, RENAME EDIT, PRINT, BROWSE and assigning ALIAS), foreground assembly and binding, VTOC and catalog listing, dataset allocation and deletion and even a LIBRARIAN and PANVALET 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 is using the MVS operation system. Afterwards the RPF product became available for the members of the Hercules group.

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# 1.2 How to start RPF

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

## 1.2.1 How to work with RPF

If you start **RPF** a database record with defaults for your userid will be read. If the record is not present, that record will be created by RPF.

If you enter the TSO command 'RPF FAST' the database will not be included. RPF will choose his own defaults. The main advantage of 'RPF FAST' is that RPF will start very quick, but the database will not be searched.

After RPF has started, the following main menu appears on the screen:

```
----- RPF MAIN MENU -----(C)-1979-2002 Skybird
Option  ===>

      0 Defaults      - Alter / Display session defaults      Userid  - Z531415
      1 View          - Display source data or output listings Time    - 10:59:54
      2 Edit          - Update / Create a member or dataset  System  - BSP1
      3 Utility       - Enter UTILITY                       TSO-proc- TSOLGN2
      4 Assembler    - Foreground ASSEMBLER and LINK        Release - V1R5M0
      5 User          - Execute RPF user routine
      6 TSO           - Execute TSO commands                October 2002
      7 Tutorial     - Display HELP information             Su Mo Tu We Th Fr Sa
      8 Test         - Enter TEST mode (Authorized)         1 2 3 4 5
      9 Operator     - Enter OPERATOR mode                  6 7 8 9 10 11 12
      X Exit         - Terminate RPF                       13 14 15 16 17 18 19
                                                    20 21 22 23 24 25 26
                                                    27 28 29 30 31

Hit PF03/15 to terminate RPF
```

```
|
| RPF Version 1 Release 5.0 Property of Skybird |
|
| Use of RPF is free, modifications are not allowed|
| Information: email rn.prins@quicknet.nl |
|
```

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Figure 1. RPF main menu

## 1.3 Change session defaults

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

You can change the following defaults in the database:

1. The maximum amount of lines for the editor. The minimum is 50 lines and the maximum is 59,999 lines. Default is 1,000 lines.
2. Sysoutclass. The default is sysoutclass C. sysoutclass will be used in the print commands of RPF.
3. Logging YES or NO. This default is for future use.
4. Nulls YES or NO. this default will set the RPF editor in NULLS mode or NONULLS mode.
5. AUTOSAVE Y or N. With this default the workspace will be saved automatically if Y or EDIT will give msg 'Enter SAVE or CANCEL' if AUTOSAVE=N.
6. UPPERCASE=YES or NO. Default for uppercase or lowercase editing. default is UPPERCASE=YES.
7. Append YES or NO: EDIT dataset or PDS member after another dataset or member yes or no. Default is APPEND=NO.
8. Linenumbers=YES or NO: EDIT a dataset with line numbers or not. Default is LINE NUMBERS=YES.
9. Default allocations. This is the default dataset or PDS member to be allocated for edit, foreground assembly, BROWSE and PDS functions. The LIBRARIAN master file, LIBRARIAN module and volume on which the LIBRARIAN master file resides are in this menu too. You can also change the PANVALET module, dataset and volume in this screen You can always change the allocation when you select these functions.
10. Printer. Specify the remote printer. If nothing specified, the output will be routed to a LOCAL printer.
11. Assembler maclibs. Specify up to 6 maclibs
12. Assembler parm. This is the default assembler parm in the foreground assembly.
13. Linkage editor parm. This is the default linkage editor parm.
14. Linkage editor control statements. 6 optional statements used by the linkage editor.
15. PFK settings: You can set the commands in the PFKs (1 to 24) The use of all PFKs are supported in EDIT, BROWSE PDS maintenance, LIBRARIAN maintenance and HELP functions. The use of the END PFK (PFK03 or PFK15) is supported in all selection menus. Meaning of the 'CON' attribute: CON=Y: The command in the PFK will set in the command area on the screen, but will not be executed. To execute the command you should press ENTER. CON=N: the command will be executed immediately. CON=X: the PFK has gotten the 'UNDEFINED' status.

All the changed defaults will be written on the VSAM RPF database if present.

If you select -0- on the main menu the default menu appears on the screen:

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

With -1- you can change the workspace size, the logging, nulls default, printername and the sysoutclass defaults. To change these defaults press ENTER after the changes made. To cancel the changes, use PFK03/15.

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

With -3- you can change your PFK settings.

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

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

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

## 1.4 BROWSE source data and output listings

If you select -1- on the RPF main menu, an allocation panel will be displayed for selection of the to be browsed dataset. After selection of this dataset, the BROWSE function will be invoked.

You can select the datasets in two ways:

- Select the member/dataset (and volume) in the allocation menu
- Select 1 of the datasets in the dataset selection menu, by entering a non-blank character in the selection field and specifying a dataset (and volume) if not already listed.

After selection of this dataset, the BROWSE function will be invoked and the dataset (and volume) will be placed in selection list. This selection list will be written in the RPF database, if you leave RPF.

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

The following RPF Browse commands are available:

<b>Subcommand</b>	<b>Function</b>
<b>BOTTOM</b>	Start display at the bottom of the dataset. This command may be abbreviated as ‘B’.
<b>C nnn</b>	Shift the display to column nnn. nnn should not exceed the record length of the dataset.
<b>END</b>	Terminate BROWSE. RPF will go back to the utility allocation menu
<b>FIND ‘string’</b>	Search specified character string. All lines, which contains ‘string’ will be highlighted and the message ‘CHARS string FOUND’ will appear. If only an ‘F’ is entered, a repeat find of the previous specified string will be done. The find always start from the current position in the dataset. If no match can be found, the message ‘TEXT NOT FOUND’ will appear. The quotes (‘) around the string are optional, unless you specify a string with embedded blanks.
<b>L xxxx</b>	Locate at label xxxx. This label should be previously assigned with the ‘LABEL’ command
<b>LABEL xxxx</b>	Assign label xxxx on this page of the dataset. The user will be notified. The maximum length of the label is 4 characters.
<b>PFK</b>	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.
<b>RETURN</b>	Terminate BROWSE. RPF will go back immediately to the main menu.
<b>=n or =n.n</b>	Terminate BROWSE, return to MAIN and execute option ‘n’ or ‘n.n’.
<b>PRINT x</b>	Print the dataset into sysoutclass x. if you omit the sysoutclass, the default sysoutclass will be taken.
<b>SCB</b>	Scroll 1 screen backward in the dataset. If you use SCB with a PFK and an ‘M’ in the command field the ‘BOTTOM’ command will be executed.
<b>SCF</b>	Scroll 1 screen forward in the dataset. If you use SCF with a PFK and an ‘M’ in the command field the ‘TOP’ command will be executed.
<b>SCL</b>	Scroll 1 screen to the left. (79 bytes for screens model 2,3,4 and 131 bytes for model 5)
<b>SCR</b>	Scroll 1 screen to the right. (79 bytes for screens model 2,3,4 and 131 bytes for model 5)
<b>SUB(MIT)</b>	Submit the contents of the dataset to the JES2 internal reader. The dataset should be a card-image file with a LRECL of 80
<b>TOP</b>	Start display with the top of the dataset. This command may be abbreviated as ‘T’

**Notes:**

- All these commands can be set under a PFK. So you can use the PFKs instead of entering the commands on the screen

- If you print the dataset with the 'PRINT' command RPF will make header lines if the dataset does not contain ASA or machine control characters. If the to be browsed input dataset is a card image dataset (LRECL=80 and no control characters), a scale line will be printed after the header lines and after each record, the start column of the first non-blank character of that line will be printed. If the control characters are present RPF does not make headers.
- The maximum number of lines, which can be browsed are 1024 screen pages. That is 21\*1024 lines for a 3270 model 2 screen, 29\*1024 lines for a model 3, 40\*1024 lines for a model 4 and 24\*1024 for a model 5 screen.

## 1.5 EDIT a dataset or PDS member

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

1. The menu. In this menu you can select option '1' for EDIT of OS datasets, like a PDS or sequential card-image dataset. Use part 3 of the entry screen to EDIT the right dataset. If you select option '2', EDIT will be done from a LIBRARIAN master file via a LIBRARIAN read menu. (see 1.5.3, "Edit a LIBRARIAN module or index.") option '3' performs EDIT from a PANVALET library. (see 1.5.5, "Edit a PANVALET member or index.")
2. The options panel. In this part of the screen you can select UPPERCASE=YES or NO, APPEND=YES or No for appending data at the end of the workspace and NUMBERED=YES or NO for numbered or nonum data.
3. The allocation panel. In this part of the screen you are able to perform the allocation of the OS dataset to be edited (Option 1 in the selection menu). If the allocations are alright, the dataset or PDS member will be edited and the EDIT screen appears, otherwise the user will be prompted for retry.
4. The dataset selection list. You can specify here up to 8 datasets (and volumes).

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

You can select the datasets in two ways:

- Select the member/dataset (and volume) in the allocation menu
- Select 1 of the datasets in the dataset selection menu, by entering a non-blank character in the selection field and specifying a dataset (and volume) if not already listed.

After selection of this dataset, the EDIT function will be invoked and the dataset (and volume) will be placed in selection list. This selection list will be written in the RPF database, if you leave RPF.

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

If the member does not exist, an input screen will be made with 1 screen blank lines and in de header line will appear 'CREATE mmmmmmm'. If the dataset is edited you can change your data in fullscreen mode. The screen is divided into 5 parts:

- The header, containing the fields 'TRUNC', 'XLATE', 'TOP', 'BOTTOM', 'NONUM', 'NULLS' and 'ASIS', These fields will be highlighted if in effect.
- The message area for the informational and error messages
- The scope field with the editor boundaries.
- The scroll amount.
- The data area, containing the data to be edited.

The editor can be entered in standard or in COBOL mode. In the standard mode columns 1-72 will be displayed or cols 9-80 if the 'SCR' subcommand has been given. The linenumbers if present or created by the 'RENUM' subcommand will affect cols 73-80. In the COBOL mode columns 9-78 will be displayed. The linenumbers if present or created by the 'RENUM' command will affect cols 1-6. if in COBOL mode the editor will display 'COBOL' in the scale line. If the suffix of the be edited dataset is 'COBOL', COBOL mode will be selected.

Both modes can be entered as 'NUM' or as 'NONUM' In 'NUM' mode columns 7 3-80 or columns 1-6 of the dataset ar numbered. In 'NONUM' mode the dataset is not line-numbered. In 'NONUM' mode the field 'NONUM' in the

header line will be highlighted.

In both cases, you can work with line-numbers in the subcommands, because the numbers on the screen are NOT in the dataset

If a dataset does not contain line numbers and 'LINENUMBERS=YES' is selected, the editor will be entered in 'NONUM' mode. If you select UPPERCASE=NO the typed in characters will not be translated to capitals. That is very handy if you do text processing with RPF.

If you select UPPERCASE=NO, the 'ASIS' field in the header line will be highlighted. If you do program development always select UPPERCASE=YES.

If the suffix of the to be edited dataset is 'TEXT', 'ASIS' will always be selected. RPF will test the dataset to be edited, if lower case characters are detected, 'ASIS' will always be selected. The subcommands in EDIT can be entered as 'command' or '&command'. If the ampersand is present before the command, the command will be repeated after execution.

If you have entered a wrong command or invalid command the command will be repeated too, so you can make easy your corrections.

There are two kinds of commands:

The primary commands entered in the 'command' field (see 1.5.1, "EDIT primary commands.")

Line commands entered in the linenummer fields (see 1.5.2, "Edit line commands.")

## 1.5.1 EDIT primary commands

The EDIT primary commands are described in alphabetic order below:

<b>Subcommand</b>	<b>Function</b>
<b>&amp;</b>	if the '&' (ampersand) is entered, the previous command will be set in the command area of the EDIT screen.
<b>ASIS</b>	Set the editor dynamically in 'UPPERCASE=NO' mode (similar to 'UPPERCASE=NO' in the allocation menu)
<b>BOTTOM</b>	Display last screen of the dataset. 'BOTTOM' will be highlighted in the header line of the EDIT screen This command may be abbreviated as 'B'
<b>C /aaa/bbb/(A)</b>	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 'SCOPE' command.
<b>C /aa/bb/n,m</b>	With this form of the 'C' subcommand you can make changes in a specified line range (n,m). both numbers should be specified. If you want to change 1 line use first the 'L nnnn' command and after this command 'C /aaa/bbb/'. If n = '*' change will be done beginning with the current line. In this case the second number should be after the current line.
<b>CANCEL</b>	Terminate the RPF EDIT function, without saving the workspace. The command may be abbreviated as 'CAN'.
<b>CAPS</b>	Set the editor dynamically in 'UPPERCASE=YES' mode (similar to 'UPPERCASE=YES' in the allocation menu).
<b>CO n,m,o</b>	Copy linerange n till in 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.
<b>COB</b>	Set the editor from standard in COBOL mode. if in COBOL mode the 'SCL' and 'SCR' subcommands are not applicable. if the editor was in 'NUM' mode before the 'COB' command was given, RPFEDIT will do a numeric test for columns 01-06 of the

workspace. if not numeric RPFEDIT will come into the 'NONUM' mode after the 'COB' subcommand.

- COPY** Append another dataset or member in the EDIT workspace. After entering 'COPY', the dataset menu will appear with default 'APPEND=YES'. Alter the allocations and press ENTER to append. With the END subcommand the data will be saved in the dataset/member which is initially edited.
- 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.
- END** Terminate the RPF EDIT function and save the data if changes are made. No menu will be presented. The data will be saved in the same dataset/member, if AUTOSAVE=Y. RPF will return to the EDIT allocation menu. If AUTOSAVE=N, the message 'Enter SAVE or CANCEL' will be issued and EDIT will not be terminated.
- F /string/n,m** Find a specified character string in the workspace. If the character string is found, that line will be the first line on the screen. If linerange n,m is specified, the find will only be done in that range. if the find is unsuccessful a suitable error message will be displayed and the command will be repeated. The delimiter (in this example the slash) can be any character. The character string will be remembered by RPF, so you can enter only an 'F' to execute the last FIND command. Only character strings will be found, which are in the column-range, that is set by the 'SCOPE' subcommand.
- FILL /string/** With this command you set a character string in each line starting with the current line till the end of the workspace. The character string will start in the column, which is set by the 'SCOPE' command. The data, which was there will be overwritten.
- FILL /str/n,m** This FILL command will only affect the line range n,m
- HAR xxxxxx,n,m** Print the lines *n* until *m* on printer with name xxxxxx. If *n* and *m* are omitted the lines on the current screen will be printed. The printer will be 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 printername and linenumbers 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' (lutype1) or 'DSC' (lutype 1 or 3) should be specified if the printer is cross domain used.
- HELP** Invoke the RPFHELP facility. See 1.9, "The RPF HELP facility." for more information concerning HELP
- I m,n** Insert *n* blank lines after line *m* or insert *n* lines after the first line on the screen (specify m=\*). If *n* is omitted 1 line will be inserted after line *m* or current line if m=\*. After a successful insertion the workspace will be renumbered and the cursor will be set in the first inserted line.  
The linenumbers of the inserted lines will be highlighted, until data is entered in an inserted line. You do not need to delete unused lines. The highlighted lines (the inserted lines without data) will not be saved (with the END or SAVE subcommand) or submitted



(with the SUBMIT subcommand). This is the way like VM XEDIT it does.

<b>L +nnn/L -nnn</b>	Skip <b>nnn</b> lines forward or backward. if you are at the top of the screen and you enter 'L -nnn' or you are at the bottom of the workspace and you enter 'L +nnn', message 'SCROLL HAD NO EFFECT' will appear and the command field will be blanked.
<b>L nnn</b>	Locate the screen at line nnn. After execution of this command line nnn will be the first line on the screen (the current line). If line nnn does not exist in the dataset, an error message will be produced and the command ignored.
<b>LC x y</b>	Translate the workspace to lower case (between line x and line y). If x (and y) are omitted, translate will be done from the current line until the end of the workspace
<b>MO n,m,o</b>	Copy linerange <i>n</i> till <i>m</i> after line <i>o</i> . If you specify <i>n</i> =* the current line till line <i>m</i> will be copied. The original lines <i>n</i> till <i>m</i> will be deleted after successful copy. If <i>o</i> is omitted, line <i>n</i> will be moved after line <i>m</i> . If the MO command cannot be executed, a suitable error message will be displayed. After successful move the workspace will be renumbered.
<b>NOCOB</b>	Set the editor from COBOL in standard mode. The 'SCL' and 'SCR' subcommands are after the 'NOCOB' subcommand available again. If the editor was in 'NUM' mode before the 'NOCOB' command was given, RPFEDIT will do a numeric test for columns 73-80 of the workspace. If not numeric RPFEDIT will come into the 'NONUM' mode after the NOCOB subcommand.
<b>NONULLS</b>	Reset the NULLS mode. Fill each line with trailing blanks.
<b>NONUM</b>	Set the editor in 'NONUM' mode without changing linenumbers.
<b>NULLS</b>	Replace the trailing blanks on the screen by terminal erase characters. This provides an easy way to use the insert mode of the terminal. The field 'NULLS' in the header line will be highlighted to notify the NULLS mode.
<b>O /string/n,m</b>	Find the line, which does NOT contain the character string. If only an 'O' is entered, the string of the previous 'F' or 'O' (omit) command is used. If <i>n,m</i> is specified, the omit will only be done in line range <i>n-m</i> .
<b>OSSAVE</b>	If the editor has been invoked from LIBRARIAN maintenance, the SAVE function will be performed upon a librarian master file. Use OSSAVE if you want to save upon a PDS or sequential dataset. See the SAVE command for the available options.
<b>OUT</b>	Invoke the RPF output processor. See 1.6.5 "RPF Output Processor" for more information.
<b>PFK</b>	Display and/or alter PFK settings. Press ENTER to perform the changes If finished press PFK03/PFK15. <b>Note</b> The changed PFKs are only effective during this RPF session. To change the default PFKs use the session default menu (see 1.3, "Change session defaults.").
<b>R m,n</b>	Repeat line <i>m</i> , <i>n</i> times. If <i>m</i> =* the first line on the screen will be repeated <i>n</i> times. If <i>n</i> is omitted 1 line will be repeated behind line <i>m</i> or current line if <i>m</i> =*. After a successful repetition the workspace will be renumbered and the cursor will be set in the first repeated line. <b>Note</b> If <i>n</i> =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'.
<b>REN(UMBER)</b>	Renumber columns 73-80 in the workspace starting with 10000 and a increment of 10000 if in standard mode or coluns 01-06 in the workspace starting with 100 and a increment of 100 if in COBOL mode. this command may abbreviated as 'REN', 'NUM' or as 'RENUM'

<b>RESET</b>	Clear the pending line-commands.
<b>RETRIEVE</b>	Read the previous entered EDIT primary commands. The last 100 commands are saved. Any subsequent RETRIEVE will give you the previous command. The last entered primary command is the first command to be retrieved.
<b>RETURN</b>	Terminate the editor and always return to the main menu. The data will be saved if changes are made.
<b>=n or =n.n</b>	Terminate the editor, return the main and execute option 'n' or option 'n.n'. The data will be saved if changes are made.
<b>SAVE (FORCE)</b>	<p>SAVE the workspace in a dataset. The user will be prompted with an allocation menu. You can alter the allocations and press ENTER.</p> <p>After SAVE the EDIT mode is ended. if you save in a PDS member that already exists and that member is not the same as the original member edited, the user will be prompted to replace the member or enter a 'newname', except if option '2' has been selected (SAVE RE-USE). if you select option '3' on the SAVE menu, the rest of the parameters are ignored and RPF will select the LIBRARIAN menu (see 1.5.4, "LIBRARIAN update.")</p> <p>Option '4' will perform saving upon a PANVALET library. See 1.5.6, "PANVALET 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.</p> <p>The directory entry after save is built as follows:</p> <ul style="list-style-type: none"> <li>• date added (3 bytes packed 'yydddF')</li> <li>• date updated (4 bytes packed '00yydddF')</li> <li>• time updated (2 bytes packed unsigned 'hhmm')</li> <li>• current # reccs (2 bytes signed binary)</li> <li>• # records (2 bytes signed binary)</li> <li>• modified reccs (2 bytes signed binary)</li> <li>• userid (10 bytes ebcdic trailing blanks)</li> <li>• membername (8 bytes EBCDIC)</li> <li>• TTR (3 bytes hex)</li> <li>• C (1 byte binary X'0F')</li> <li>• version (1 byte binary unsigned)</li> <li>• modification (1 byte binary unsigned)</li> <li>• reserved (3 bytes binary contains X'000000')</li> </ul> <p><b>Note</b> If the workspace contains unprintable characters or is truncated, the SAVE function will be rejected, unless 'SAVE FORCE' is specified.</p>
<b>SCB</b>	<p>Scroll backward depending of the scroll value on the screen. The scroll value is described in the SCF command.</p> <p>If 'M' is entered in the command field and the 'SCB' command is given by means of a PFK the 'TOP' command will be executed.</p> <p>If you enter 'nnnnn' (max 5 positions 0-9) and the SCB command by means of a PFK, 'nnnnn' lines will be scrolled backward.</p>
<b>SCF</b>	<p>With this command you can scroll forward.</p> <p>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')</p> <p>If 'M' is entered in the command field and the 'SCF' command is given by means of a PFK the 'BOTTOM' command will be executed.</p> <p>If you enter 'nnnnn' (max 5 positions 0-9) and the SCF command by means of a PFK, 'nnnnn' lines will be scrolled forward.</p>

<b>SCL</b>	Display the columns 1-72 of the workspace on the screen.
<b>SCOPE n,m</b>	With this command you can set the range of columns which will be used in 'C', T', 'FILL', 'O', 'UC' 'LC' and 'SORT' subcommands. if you enter this command without operands, the default scope range will be set (cols 1-72 in standard 'NUM' mode-, cols 01-80 in standard 'NONUM' mode- or cols 07-78 if in 'COBOL' mode) another possibility to set the scope range is changing the 'SCOPE' value in the right corner of the EDIT screen.
<b>SCR</b>	Display the columns 9-80 of the workspace on the screen. it has no sense to change cols 73-80 on the screen, if you are in 'NUM' mode.
<b>SORT</b>	Sort the workspace. The entire workspace is sorted; the sort fields is set by the 'SCOPE' command. After successful sort, the workspace is renumbered.
<b>SUB</b>	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 jjjjjjj SUBMITTED'.
<b>TOP</b>	Display first screen of the dataset. 'TOP' will be highlighted in the header line of the EDIT screen. An alias of the TOP command is 'T'.
<b>TSO</b>	Invoke the RPF TSO command processor. With this command it is possible to enter TSO commands during edit. If you leave the TSO command processor with 'END', RPF will go back to the EDIT mode. See 1.8, "RPF TSO command processor."
<b>UC x y</b>	Translate the workspace to upper case (between line x and line y). If x (and y) are omitted, translate will be done from the current line until the end of the workspace.
<b>UNNUM</b>	Remove the linenumbers in cols 73-80 or 01-06 in the workspace. The linenumbers on the screen will NOT be removed. This command may be abbreviated as 'UNN' This subcommand is only allowed if the editor is in 'NUM' mode, otherwise the subcommand will be ignored with the message: WORKSPACE NOT NUMBERED After execution of 'UNNUM' the editor will be set in 'NONUM' mode.

## 1.5.2 EDIT line commands

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

<b>Linecommand</b>	<b>Function</b>
<b>Inn</b>	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 linenumbers of the inserted lines will be highlighted (see also the I primary subcommand)
<b>R nn</b>	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.
<b>RR...RR</b>	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.
<b>C...A</b>	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.
<b>CC...CC...A</b>	Copy the block of lines between 'CC' after line 'A'. The command will be set pending if it is not complete.

<b>CC...CC...BB</b>	Copy the block of lines between 'CC' after the last line. 'BB' can be placed in any line.
<b>CC...CC...TT</b>	Copy the block of lines between 'CC' before the first line. 'TT' can be placed in any line.
<b>CT</b>	Copy the first line until the line marked with 'CT' after line 'A'.
<b>CB</b>	Copy the line marked with 'CB' until the bottom line after line 'A'.
<b>M...A</b>	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.
<b>MM...MM..A</b>	Move the block of lines between 'MM' after line 'A', The command will be set pending if it is not complete.
<b>MM...MM...BB</b>	Move the block of lines between 'MM' after the last line. 'BB' can be placed in any line.
<b>MM...MM...TT</b>	Move the block of lines between 'MM' before the first line. 'TT' can be placed in any line.
<b>MT...A</b>	Move the first line until the line marked with 'MT' after line 'A'.
<b>MB...A</b>	Move the line marked with 'MB' until the bottom line after line 'A'.
<b>D</b>	Delete specified line.
<b>DD...DD</b>	Delete the specified block of lines.
<b>DT</b>	Delete the block of lines starting with the top line until the line marked with 'DT'
<b>DB</b>	Delete the block of lines starting with the line marked with 'DB' until the bottom line.
<b>LC</b>	Translate this line to lower case
<b>LCC...LCC</b>	Translate the block of lines to lower case
<b>LCB</b>	Translate to lowercase from this line to the end
<b>LCT</b>	Translate to lowercase from top until this line
<b>UC</b>	Translate this line to upper case
<b>UCC...UCC</b>	Translate the block of lines to upper case
<b>UCB</b>	Translate to uppercase from this line to the end
<b>UCT</b>	Translate to uppercase from top until this line
<b>RESET</b>	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. You can set all your RPF EDIT commands in PFK's, so you can press the corresponding PFK to enter a command.
2. Line commands and primary commands cannot be issued together except if the primary command is set under a PFK or the 'F', the 'U and 'M' commands are used.  
Ex. If a line command is pending only the PFK's can be used for scrolling.
3. You can delete a line by means of setting the cursor in the first position of a line and then press the erase eof key. This way of deletion is only effective, If the workspace is 'SCL' or 'COBOL' aligned.
4. If the workspace size is too small for the dataset, the user will be notified with the message 'WORKSPACE TRUNCATED'. The field 'TRUNC' in the header line will be highlighted. To increase the workspace size use

the defaults menu

5. If the dataset contains unprintable characters the user will be notified with the message 'INVALID CHARS XLATED' The translated characters will be changed into colons (':') and the field 'XLATE' in the header line will be highlighted.

### 1.5.3 EDIT a LIBRARIAN module or index

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

In the LIBRARIAN menu, you can alter 5 fields:

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

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

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

### 1.5.4 LIBRARIAN update

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

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

If you have altered the fields and selected a function on the menu the dataset 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 PFK03/PFK15 to escape from this screen

### 1.5.5 EDIT a PANVALET member or index

To activate the PANVALET menu select '2' on the main menu. and select option 3 on the EDIT entry menu. An immediate selection with option '2.3' on the main menu is possible too

In the PANVALET menu, you can alter 5 fields:

1. The option field. Enter '1' to perform allocation or enter 'X' or press PFK3/15 to cancel this function
2. UPPERCASE=YES or NO for uppercase or lowercase editing. if the PANVALET members contains lower case characters 'ASIS' will always be selected.
3. The PANVALET member name or an asterisk ("\*") if an index is requested.

4. The name of the PANVALET dataset.
5. The volume on which the dataset resides if the PANVALET dataset is not catalogued.

If ENTER is pressed the allocation will be done for the PANVALET file. After successful allocation the RPF editor will be invoked. If the allocation is unsuccessful a suitable message will be displayed.

Enter a '1' and alter the fields to retry or an 'X' to terminate PANVALET and go back to the main menu. See 1.5," EDIT a dataset or PDS member."

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

## 1.5.6 PANVALET update

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

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

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

After completion PANVALET RPF will browse the PANVALET output. It is recommended to check this output. Both PGMR and DESC should be specified or none should be specified.

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

## 1.6 RPF utility functions

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

- Option 1. Perform PDS maintenance
- Option 2. Create or Delete datasets (dataset functions)
- Option 4. Perform VTOC and catalog functions
- Option 5. Perform LIBRARIAN maintenance
- Option 6. Invoke the output processor

The options 0,3,7,8,9 are reserved for future use.

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

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

### 1.6.1 PDS maintenance

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

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

- The header line.

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

Each line of the member area contains the following fields:

- The line command. This is an input field. The line-commands are:
  1. 'A': Assign an alias to the member
  2. 'B': Browse the member.
  3. 'D': Delete the member.
  4. 'E': Edit the member.
  5. 'P': Print the member to the default sysout class.
  6. 'R': Rename the member.
  7. 'S': Select the member if PDS has been invoked from BROWSE or EDIT from the main menu.
- The member name. This field is protected.
- The newname field for the 'A' and 'R' operation. this is an input field.
- The comments field. This is a protected field. This field contains the RPF statistics in the directory or a response to the operations entered in field 1. The RPF statistics are set by the 'SAVE' command in the RPF editor and are in the same format as the IBM's SPF 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 SPF statistics, but the version number is set to 80. The fields in the statistics are:
  1. TTRc of the member
  2. Owner of the member. 8 bytes containing the userid.
  3. Date last updated. 10 bytes containing "yyyy/mm/dd"
  4. Time last updated. 8 bytes containing "hh:mm:ss"
  5. Number of records. 5 bytes.
  6. Version:modification level. 5 bytes containing "vv:mm"

If the library is a loadlib, the TTRc and the first 16 bytes of the hexadecimal user data will be displayed.

- The alias/update indicator. This is a protected field. The field contains 'ALIAS' if the member is an alias, '**Updated today**' if the update is made by RPF on the thy that PDS maintenance was entered or blanks if not updated today or not an alias. If the member is 'Updated today', the comment field (field 4) is highlighted.

The RPF PDS maintenance commands are:

Subcommand	Function
<b>BOTTOM</b>	Display the last screen of the directory listing. This command may be abbreviated as 'B'
<b>END or RETURN</b>	Terminate PDS maintenance. RPF will go back to the utility menu with 'END' or main menu with the 'RETURN' command
<b>=n or =n.n</b>	Terminate PDS, return to main and execute option 'n' or option 'n.n'.
<b>L 'string'</b>	Locate 'string' in the member name, TTR, date/time updated, or records. The to be compared field depends on the sort order of the workspace (See SORT subcommand). Specify 1-16 characters in the 'string' operand. After successful execution of the command, RPF PDS will display the screen, where the first line contains the member, where the first occurrence of 'string' was found (highlighted). if no match can be found the command will be ignored accompanied with the message: TEXT NOT FOUND
<b>PFK</b>	Display PFK screen. you can alter here your PFK settings. To alter the PFKs press ENTER.

To leave PFK press PFK03/PKF15.

**Note**

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

<b>RESET</b>	Reset all outstanding messages. The member list will be rebuild, all queued members members be reset and the members deleted by an 'D' line-command will be removed.
<b>SCB</b>	Display the previous screen. This command will be repeated in the command area. If '&SCB' is entered. if you are on the first screen the message ' <b>Scroll had no effect</b> ' will appear and the command will be blanked. If 'M' is entered in the command field and the 'SCB' command is given by means of a PFK the 'TOP' command will be executed.
<b>SCF</b>	Display the next screen. This command will be repeated in the command area. If '&SCF' is entered if you are on the last screen the message ' <b>Scroll had no effect</b> ' will appear and the command will be blanked. If 'M' is entered in the command field and the 'SCF' command is given by means of a PFK the 'BOTTOM' command will be executed.
<b>S member</b>	Edit the specified member. If the member does not exist, EDIT will be invoked with an input screen to create the member. If PDS maintenance has been entered from BROWSE (option 1 in main), then the specified member will be browsed. If in this case the member is not found an error message will be displayed and the command will be repeated. The member list should be on member-name order (See SORT subcommand).
<b>SORT</b>	Sort the members on membername order
<b>SORT TTR</b>	Sort the members on TTR – order instead of alphabetic order, so it is easy to find the members and it's associated aliases. This sort is in DESCENDING ORDER
<b>SORT SIZE</b>	Sort the members on number of records instead if alphabetic order, so it is easy to find the smallest or biggest members. This sort is in DESCENDING order.
<b>SORT CHA</b>	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.
<b>TOP</b>	Start display with the top of the directory listing. The command will be repeated if '&TOP' is entered. An alias is T.

**Note**

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

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

- A** Assign an alias. Type in the 'newname' field too. The response can be:
- **ALIAS ASSIGNED**, after successful assignment,
  - **NEWNAME OMITTED OR INVALID**, The newname is invalid or not specified.
  - **STOW ERROR RC=cccc,REASON=rhhh**, if the operation is unsuccessful. Possible errors are: member deleted by previous 'D', 'newname' already exists, insufficient space in directory, insufficient virtual storage or trying to assign an alias in a PDS/E. See IBM manual SC26-4911 DFSMS/MVS Macro Instructions for Data Sets, concerning the given return- and reasoncodes.
- B or V** Display the member, BROWSE will be invoked. See 1.4, " BROWSE source data and output listings." for more information concerning browse. The following responses can appear:



- **Viewed**, successful display.
- **Member not found**, the member was deleted by a previous 'D' operation.
- **View not available**, The specified dataset is not a card image library.

**D** Delete the specified member. RPF will ask for confirmation with a confirmation panel. If you press ENTER, delete will be performed. If the PFK03 or PFK15 key is used, the delete will be rejected. The possible responses are:

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

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

- **Edited**. Successful edit.
- **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 is not a card image data set.
- **Dataset/member in use**, The dataset and membername cannot be edited, because another TSO-user is busy with EDIT of the same dataset and member with RPF or with the IBM product ISPF.
- **No temporary dataset**. PDS maintenance is unable to save the workspace, because the allocation of the save dataset is failed. This error is already detected upon start of RPF with the message: '**INIT ERROR RC= 0024**'

#### Note

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

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

- **RENAMED**, after successful rename,
- **NEWNAME OMITTED OR INVALID**, The newname is invalid or not specified or
- **ERROR IN RENAME**, if the rename is unsuccessful. possible errors are: member deleted by previous 'D', 'newname' already exists, insufficient space in directory, or insufficient virtual storage.

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

- **PRINTED**, successful print of the member.
- **MEMBER NOT FOUND**, the member is deleted by a previous 'D' operation.
- **PRINT NOT AVAILABLE**, the specified dataset is not a card image library.
- **ALLOC ERROR SYSOUT**, severe error. contact systems programming.

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

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

#### Note!

If you terminate PDS maintenance you can EDIT your member list with the editor in 'NONUM' mode you can do it as follows:

1. Terminate PDS maintenance with 'END'.
2. Terminate utility menu with 'X' (PFK03/15).
3. Select -2- on main menu and change options, but always CLEAR the dsname field.
4. Press ENTER to EDIT the member list.

## 1.6.2 Dataset functions

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

1. The option: Specify '1' for allocation, '2' for deletion or 'X' for return (or PFK03/PFK15)
2. The prefix: The first qualifier of the dataset.
3. The library: The second qualifier of the dataset.
4. The type: The third qualifier of the dataset.
5. The unit name. The default is SYSDA.
6. The record format: specify F, FB, FBM, FBA, FBS, V, VB, VBM, VBA, VBS or U. If nothing specified FB is assumed.
7. Volume: The volume on which the dataset must reside. if the volume is omitted, a storage volume will be used.
8. The LRECL: Specify a value between 18 and 32760. The value '0' is only allowed if RECFM=U. If LRECL=0 and RECFM is not U, LRECL will be defaulted to 80.
9. Space unit: Specify here 'CYL' or 'TRK'.
10. The BLKSIZE: Specify a value between 18 and 32767. BLKSIZE should be a multiple of LRECL if RECFM=F(B/A/M/S). If RECFM=V(B/A/M), the BLKSIZE should be at least LRECL+4. If BLKSIZE is omitted or '0', BLKSIZE has been defaulted to LRECL for fixed records, to LRECL+4 for variable records or to 6144 for RECFM=U.
11. Primary: The primary space of the dataset.
12. Secondary: The secondary space of the dataset or zero if you don't want a secondary space.
13. The number of directory blocks. if you specify zero a sequential dataset will be created, otherwise a partitioned dataset will be created.

For option 2 (delete) only the items 1 - 4 are used.

If you press ENTER the dataset will be created or deleted, depending on the chosen option and the allocation panel will be redisplayed with the message: '**DATASET CREATED**' or '**DATASET DELETED**' in the message area.

If an error occurs during allocation retry will be performed and a suitable error message will be displayed.

With option 2, RPF will ask for confirmation of deleting the dataset. With PFK12/PFK24 the dataset will be deleted. With PFK03/PFK15 the deletion will be rejected.

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

## 1.6.3 VTOC and catalog functions

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

1. The requested option (1, 2, V or X). If a blank is entered, option 1 is assumed.
2. The dataset level (high level qualifier)
3. The name of the volume, which VTOC should be listed.
4. The parm; '**SHORT**' for a normal VTOC, '**LONG**' for a VTOC with an extra line with the full dataset name (44 pos.) and the startaddress of the specified dataset or '**VOL**' for VTOC without header and 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 dataset level and/or volser and PARM press ENTER. If only a dataset level has been specified and option 1 is selected or defaulted, the catalog will be searched with the specified data set level.

If the volume (and dataset level) has been specified and the volume is online, the screen will be locked and the message 'VTOC RUNNING...' appears in the message area of the screen.

### Note

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

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

### Option 1

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

1. The dataset name
2. The creation date if a volume has been specified or the volume if only the dataset level has been specified.
3. The last reference date.
4. The dataset organization.
5. The record format.
6. The logical record length.
7. The block length.
8. The number of extents of the dataset (max 123).
9. The allocated space in tracks.
10. The free tracks inside the dataset.

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

#### Primary command    Function

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

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

- B or V** Display the dataset, BROWSE will be invoked. See 1.4, “ BROWSE source data and output listings.” For more information concerning browse. The following responses can appear:
- **Viewed**, successful display.
  - **No temporary dataset**. RPFVTC1 is not allocated in RPFINIT. VTOC is unable to save the workspace. This error is already detected upon start of RPF with the message: ‘**INIT ERROR RC= 0024**’
  - **View not available**. The specified dataset has not a RECFM of FB or VB or does contain a record length longer than 255 bytes.
  - **Error in view**. The dataset cannot be viewed due to an error, e.g. an authorization problem.
- C** Catalog a dataset. The following responses are possible.
- **Catalogued**. The dataset has been successfully catalogued
  - **Dataset already catalogued**
  - **VSAM dataset**. A VSAM component cannot be catalogued in this way. Usually a VSAM dataset is always catalogued.
  - **Error in catalog processing**. The catalog function had abended for some reason.
  - **Temporary dataset**: Temporary datasets should not be catalogued.
- D** Delete the specified dataset. RPF will display a confirmation panel. If you press PFK12 or PFK24, delete will be performed. Pressing PFK03 or PFK15 key will reject the deletion. The possible responses are:
- **Deleted**. A successful delete
  - **Scratch error**. Dataset is uncatalogued, but cannot be scratched. Recatalog the dataset with the ‘C’ line-command or scratch the dataset with IEHPROGM.
  - **Use IDCAMS delete for VSAM**. You try to delete a VSAM component.
  - **Error in delete**. The delete is unsuccessful. (delete is confirmed)
  - **Delete rejected by user**. The confirmation panel is ended with PFK03 or PFK15.
- E** EDIT the dataset with the RPF editor. A member selection list will be displayed. See “1.5 Edit a dataset or a PDS member” for more information about EDIT. After EDIT, the following responses can be found in the comment field.
- **Edited**. Successful edit.
  - **Edit not available**. Dataset is not a card image data set.
  - **Error in EDIT**. The dataset cannot be edited due to an error e.g. an authorization problem.
  - **No temporary dataset**. VTOC is unable to save the workspace, because the allocation of the save dataset is failed. This error is already detected upon start of RPF with the message: ‘**INIT ERROR RC= 0024**’
  - **Dataset/member in use**. The dataset and membername cannot be edited, because another TSO-user is busy with EDIT of the same dataset and member with RPF or with the IBM product ISPF.
- I** Display additional information of the dataset. Information like DCB information, number of tracks, free tracks in the dataset, volume and devicetype, number of allocated directory blocks (if a PDS), free directory blocks and number of members will be displayed. You can leave the information screen with ENTER, PFK03 or PFK15. The response of the ‘I’ line command is:
- **Info - I**. Information successfully displayed.
- M** Perform PDS maintenance. A member selection list will be displayed. See “1.6.1 PDS maintenance” for more information about PDS-maintenance. After member list, the following responses can be found in the comment field.
- **Member list**, Memberlist succesful processed.
  - **Member list not available**, Dataset is is not partitioned.
  - **Error processing member list**, Member list cannot be created due to an error e.g. an authorization problem.
  - **No temporary dataset**, VTOC is unable to save the workspace, because the allocation of the save dataset is failed. This error is already detected upon start of RPF with the message: ‘**INIT ERROR RC= 0024**’
- R** Rename a dataset. A RENAME panel will be displayed. You can enter a valid newname. If you press ENTER, an attempt will be made to rename the dataset. Catalogued datasets will be recatalogued with the new name. Rename is not possible for a multivolume dataset or a VSAM dataset. In the rename panel a suitable message will be displayed if you enters a wrong newname. After RENAME, the following responses can be found in the comment field:

- **Renamed.** Dataset successfully renamed.
- **Error in RENAME.** The RENAME macro had suffered a nonzero return code. Possible cause: dataset in use or user is not authorized to RENAME the dataset.

**U** Uncatalog the dataset. The following responses are possible.

- **Uncatalogued.** The dataset has been successfully uncatalogued
- **Dataset not catalogued**
- **VSAM dataset.** A VSAM component cannot be uncatalogued.
- **Error uncatalog processing.** The uncatalog function had abended for some reason.

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

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

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

### Note

All the primary commands can be set under PFK's. Press the corresponding PFK to execute the command. If you enter a command and an operation in the member area the operations will be executed first. RPF comes back with the responses on the operations and the message: '**HIT ENTER TO EXEC CMD**' will be displayed. Press ENTER to execute indicated command.

### Option 2.

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

The VTOC function of RPF supports the new indexed VTOC structure too. (data facilities/device support DF/DS) If a volume with an indexed VTOC is taken the following extra information will be displayed:

- The total number of free VTOC index records (VIRS)
- 'VTOC=IX' in the header line.

For the displayed datasets the following information is displayed:

1. The DSNNAME. (the first 26 positions if **PARM=SHORT/VOL** or blanks if **PARM=LONG**)
2. The creation date or the volume if PARM=VOL is used
3. The last reference date.
4. The dataset organization.
5. The record format.
6. The logical record length.
7. The block length.
8. The number of extents of the dataset (max 123).
9. The allocated space in tracks.
10. The free tracks inside the dataset.

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

If you terminate EDIT with END, the VTOC menu will be displayed again.

### Option V.

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

## 1.6.4 LIBRARIAN maintenance

If you select '5' on the RPF utility or '3.5' on the RPF main menu, an allocation screen for the desired LIBRARIAN masterfile will be displayed.

You can change the 'DSNAME' and 'VOLUME' fields. The 'MODULE' field is a protected field, which always contain an '\*', because always a LIBRARIAN index has been requested. If option '1' is entered RPF LIBRARIAN maintenance expects a LIBRARIAN disk master file. With option '2' a LIBRARIAN tape master should be specified.

Press ENTER to perform the allocation. If the allocation is not successful an error message will be displayed in the message area. You can type in '1' or '2' and alter the fields or an 'X' (or press PFK03/PFK15) to leave the allocation menu.

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

1. The header line.
2. The message area.
3. The command area for the commands.
4. The LIBRARIAN description field.
5. 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:
  1. **B**: BROWSE the module.
  2. **C**: COPY the module
  3. **D**: Delete the module.
  4. **E**: EDIT the module.
  5. **P**: Print the module to the default sysout class.
- The module name. This field is protected.
- The description of the module. This field is protected field.
- The programmer name field, which contains the name of the creator of that module, or an response of an line command entered in field 1. If it is an response of a line command, this field will be highlighted.

The response can be:

- **\*BROWSED** successful display
- **\*COPIED** module copied to a PDS
- **\*DELETED** successful delete
- **\*COPY N/A** module not COPIED due to init error rc=0024
- **\*EDIT N/A** module not EDIT due to init error rc= 0024
- **\*EDITED** successful EDIT
- **\*PRINTED** successful print
- **\*NOT-BROWSED** module deleted by previous DELETE
- **\*NOT-COPIED** module deleted or RPFSAVE exited
- **\*NOT-DEL** delete overuled by user
- **\*NOT-EDIT** module deleted by previous DELETE
- **\*NOT-PRT** module deleted by previous DELETE
- **\*SEL B,C,D,E or P** Wrong command entered.

The RPF LIBRARIAN maintenance commands are:

Command	Function
<b>BOTTOM</b>	Display the last screen of the directory listing, this command may be abbreviated as 'B'
<b>END or RETURN</b>	Terminate LIBRARIAN maintenance. RPF will go back to the utility menu with 'END' or

main menu with the 'RETURN' command

- L 'string'** Locate member 'string' or member name, that start with 'string' (specify 1-8 characters in the 'string' operand). After successful execution of the command, LIBRARIAN maintenance will display the screen, within the first line the LIBRARIAN module, where the first occurrence of 'string' was found (highlighted). If no match can be found the next module, 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 on the RPF database select the defaults menu. (0 on the main menu)
- SCB** Scroll 1 page backward.  
This command will be repeated in the command area, if '&SCB' is entered. If you are on the first screen the message 'SCROLL HAD NO EFFECT' will appear and the command will be blanked.
- SCF** Scroll 1 page forward.  
This command will be repeated in the command area, if '&SCF' is entered 'SCROLL HAD NO EFFECT' will appear if you are trying to scroll forward the last screen.
- TOP** Start display with the top of the directory listing.  
The command will be repeated if '&TOP' is entered. This command may be abbreviated as T

## 1.6.5 The RPF Output processor

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

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

You can specify the following options:

- **0**, display the jobstatus. The status of the specified jobname will be displayed in the status area
- **1**, delete the held output from Spool.
- **2**, requeue the output to another output class. Specify a new output class in the appropriate field.
- **3**, print the held output.
- **4**, display the output of the job. All the HELD output datasets of the job will be read from the JES2 Spool and the BROWSE processor will be invoked. See 1.4 "BROWSE Source data or Output listings" for more information concerning BROWSE.
- **X** or PFK3/PFK15, terminate the output processor and go to the utility- or main menu.

## 1.7 Foreground assembler and linkage editor

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

**The Sourcelib field.** In this field, the membername and library name should be specified. The dataset should be catalogued. Leave membername blank if the dataset is sequential.

**The OBJECT lib field.** In this field, the membername and library of a object card image library should be specified. If the membername is omitted, the membername of the sourcelib will be used. If the library is omitted, a temporary dataset will be allocated if assembly is selected, or no dataset will be allocated if assembly is not selected.

**The LOADLIB field.** In this field, the membername and library of a load library should be specified. If the

membername is omitted, the membername of the object library will be used. By default this field contains the name of the sourcelib. Only the suffix of the datasetname is changed into 'LOAD'.

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

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

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

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

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

**The 'LKED EXEC' field.** You can specify here 'Y' or 'N' to link your assembler object deck or not. Default is Y.

**The linkage editor parm field.** You can specify here the linkage editor parm. Default is 'LIST,XREF,NCAL'.

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

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

**The output class** Specify the output class for the listing.

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

If you hit ENTER after changing the fields all the datasets will be allocated. After successful allocation of the all the assembler files the IFOX00 Assembler will be invoked. The start of the assembler will be indicated to the user with the message 'ASSEMBLER RUNNING.' In the message area of the screen.

If you specify 'HASM' in the command area, the Assembler H version 2 will be invoked instead of IFOX00 assembler. RPF issues now the message 'HASSEMBLER RUNNING..'

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

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

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



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

#### **Note**

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

## **1.8 RPF TSO command processor**

If you select function -6- on the RPF main menu the RPF TSO command processor will be attached. The TSO command processor screen contains an input field of 255 characters to type in the TSO command. With 'END' in the input field, RPF returns to the main menu. Almost each TSO command can be executed. RPF starts the output in line 11 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.

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

## **1.9 The RPF HELP facility**

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

1. The RPF introduction. The introduction contains a short description of how RPF works.
2. The RPF commands. These screens contain a short description of the RPF commands.
3. The RPF returncodes. These screens contain an explanation or the returncodes, that are displayed in some RPF messages.
4. The RPF messages: These screens contain all the RPF messages.
5. The RPF latest improvements. 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-IMPROVEMENTS). If the function is terminated in this case, RPF always returns to the main menu.

#### **Subcommands in the HELP panels.**

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

## **1.10 The RPF TEST mode**

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

If you enter three 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.

0. Display the session status. Press ENTER to go back to the main menu.
1. The operator mode
2. Display the RPF control blocks and entry points.
3. Attach a program to be tested.
4. Display the RPF internal return codes.
9. Set RPF in a terminal wait. Enter 'exit' to resolve the wait
- X. (or PFK03 or PFK15) Terminate the RPF test menu.

## **1.11 The RPF operator mode**

To enter the RPF operator mode you should enter '9' on the RPF main menu. The operator mode is in non fullscreen mode. The operator mode is announced with a header line and the message '**RPF OPER: 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.

<b>Command</b>	<b>Function</b>
<b>A=ALL</b>	Display all the executing tasks in the system. (batch, time sharing users, initiators and started tasks) Each line contains: the taskname, the addressspace 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.
<b>A=JOB</b>	Display only the batch jobs in the system.
<b>A=STC</b>	Display only the started tasks and the inactive initiators in the system.
<b>A=TSU</b>	Display only the time-sharing users in the system.
<b>A=nnnn</b>	Display addressspace id nnnn. Leading zeroes may be omitted.
<b>J=all</b>	Display all the tasks in the system, except the inactive initiators.
<b>J='jobname'</b>	Display job 'jobname' in the system.
<b>D VOL=vvvvvv</b>	Display the UCB of volume=vvvvvv the display of the UCB contains the following information: <ul style="list-style-type: none"> <li>• The address where the UCB is found.</li> <li>• The type of the UCB (DASD, COMM DEV, DISPLAY, TAPE, UNIT REC or UNKNOWN)</li> <li>• The first 48 bytes of the UCB index.</li> <li>• 'ONLINE' or 'OFFLINE'</li> <li>• The unit address of that volume</li> <li>• The volume serial number if available.</li> </ul>
<b>D UCB=ddd</b>	Display the UCB of device ddd, This display contains the same information as the ' <b>D VOL=vvvvvv</b> ' command.
<b>K</b>	Clear the screen. A header line will be displayed.
<b>HELP</b>	Display the commands of RPF oper.
<b>END</b>	Terminate RPF operator mode. The message ' <b>RPF OPER, ALL FUNCTIONS COMPLETED</b> ' will be displayed together with three asterisks ('***') press ENTER to return to the RPF main menu.

#### **Messages of the RPF operator mode.**

1. **RPF OPER: A=nnnn, - NOT FOUND ON THE ASCB CHAIN**  
Invalid addressspace id entered in 'A=nnnn' command.
2. **RPF OPER: J=jjjjjjj, - NOT FOUND ON THE ASCB CHAIN**  
Jobname jjjjjjj not found in the system.
3. **RPF OPER: UCB NOT FOUND**  
Volume in 'D VOL' or device address in 'D UCB' command not found in the system.
4. **RPF OPER: INVALID COMMAND ENTERED**  
Not one of the above commands entered.

## **1.12 RPF messages**

### **1.12.1 messages of the RPF main processor**

#### **INVALID OPTION**

**System Action:** Function ignored.

**Programmer Response:** Select function 0-9 or X.

#### **RPFUSER1 NOT FOUND**

**System Action:** Function ignored.

**Programmer Response:** Your installation does not supply a RPFUSER1 exit. You have 2 possibilities:

1. Ignore the error
2. Write a RPFUSER1 exit

#### **NO WORKSPACE AVAILABLE**

**System Action:** EDIT workspace NOT getmained.

**Programmer Response:** Relogon your TSO session with a larger region size or decrease the workspace size. See chapter 1.3 Change session defaults for more information.

#### **UNEXPECTED RETURN CODE**

**System Action:** Unpredictable, severe error.

**Programmer Response:** Contact systems programming.

#### **NO HELP DATASET**

**System Action:** HELP menu not displayed.

**Programmer Response:** Allocate the HELP dataset under ddname RPFHELP or add 'HELP=dsname' in the second record of the RPFKEY00 member in SYS1.PARMLIB

#### **UNACCEPTABLE FORMAT**

**System Action:** EDIT function terminated.

**Programmer Response:** Select 'LINE NUMBERS=YES' or 'NO' on the EDIT dataset menu.

#### **WORKSPACE FULL**

**System Action:** EDIT function terminated.

**Programmer Response:** SAVE your workspace and increase the size.

**RC = x**

**System Action:** The SAVE function executed.

**Programmer Response:** None.

#### **ABEND xxx DETECTED**

**System Action:** RPF abended, ESTAE exit entered and retry successful

**Programmer Response:** if the abend code is severe (like 0Cx abends) contact systems programming.

#### **INIT. ERROR RC= xxx**

**System Action:** Session defaults not retrieved from the RPF database. (except rc=24)

**Programmer Response:**

- If rc=4, SYS1.PARMLIB cannot be allocated, contact systems programming.
- If rc=8, contact systems programming to create the member RPFKEY00 in the SYS1.PARMLIB.
- If rc=12, allocation error of the RPF database. Contact systems programming.
- If rc=16, database could not be opened, try to sign on several times, if you have no success, contact systems programming.
- If rc=20, write error on the database. Contact systems programming.
- If rc=24, RPF was unable to allocate a temporary dataset under ddname RPFEDT1 and/or RPFVTC1. The following actions can be tried:
  1. Stop RPF, free RPFEDT1 and RPFVTC1 with the TSO command 'FREE' and restart RPF.
  2. Accept the error but the EDIT function of PDS maintenance and LIBRARIAN maintenance and the BROWSE, EDIT and Member List in VTOC are not available.
  3. If no solution can be found, contact systems programming.

#### **NOT SAVED: RC= nn**

**System Action:** The database record is not updated.

**Programmer Response:** if rc=4, allocation error on database, contact systems programming.

- If rc=8, open error on database, try to select the defaults menu several times, if you have no success, contact systems programming.
- If rc=12, record not found, contact systems programming.

- If rc=16, write error on database, contact systems programming.
- If rc=20, error caused by initialization error or the user has entered 'RPF FAST'. See the initialization error message or start RPF without the 'FAST' operand

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**System Action:** None

**Programmer Response:** None, successful sign on to RPF.

**SELECT -0- TO INCR. WS**

**System Action:** None.

**Programmer Response:** This message appears after a 'WORKSPACE TRUNCATED'. Increase the workspace size or EDIT another dataset.

**DATASET/MEMBER IN USE**

**System Action:** EDIT canceled, return to main menu.

**Programmer Response:** This will happen if the dataset and member is edited or being save by another TSO user with RPF or the IBM product SPF. Wait for availability of the member or EDIT another member.

**ABENDxxx IN BROWSE**

**System Action:** BROWSE terminated, main menu displayed.

**Programmer Response:** Contact systems programming if a severe abendcode (like 0Cx abends).

## 1.12.2 Session default messages.

**FOR FUTURE USE**

**System Action:** function ignored.

**Programmer Response:** do not select the functions 4,5,6,7,8,9

**GETMAIN FAILED, RETRY**

**System Action:** Workspace not allocated. RPF will not leave the defaults menu.

**Programmer Response:** Decrease the size of the workspace.

**INVALID OPTION**

**System Action:** Function ignored.

**Programmer Response:** Select the right number on the menu

**INVALID WORKSPACE SIZE**

**System Action:** Workspace size ignored.

**Programmer Response:** Enter a numeric number of lines with a minimum of 50 and a maximum of 59,999.

**FREEMAIN FAILED, STOP**

**System Action:** Workspace not freemained.

**Programmer Response:** Severe error. Sign off and contact systems programming

**INVALID SYSOUT CLASS**

**System Action:** Sysout class ignored

**Programmer Response:** Enter sysoutciass A-Z or 0-9.

**UPD. SIZE DESTOYS WS**

**System Action:** Current workspace no longer valid.

**Programmer Response:** None.

## 1.12.3 BROWSE messages.

**INVALID COMMAND**

**System Action:** Command ignored.

**Programmer Response:** Enter a valid command.

**INVALID COLUMN NUMBER**

**System Action:** Column number is not numeric or exceeds LRECL of dataset. Command ignored.

**Programmer Response:** Enter a valid column number in the 'C' command.

**ALLOC. ERROR SYSOUT**

**System Action:** 'PRINT' subcommand terminated.

**Programmer Response:** Severe error, contact systems programming.

**PFK NOT DEFINED**

**System Action:** PFK ignored.

**Programmer Response:** Define the PFK or hit another PFK.

**PFK DEFINITION INVALID**

**System Action:** PFK ignored.

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

**LISTING MADE, SYSOUT=x**

**System Action:** SPIN OFF SYSOUT dataset created.

**Programmer Response:** None.

**LABEL xxx NOT FOUND**

**System Action:** 'L xxx' command not executed.

**Programmer Response:** Define label 'xxxx' with the LABEL command

**LABEL xxxx ASSIGNED**

**System Action:** LABEL xxxx command executed.

**Programmer Response:** None.

**INVALID CHAR. STRING**

**System Action:** 'F' subcommand not executed.

**Programmer Response:** Specify correct string.

**TEXT NOT FOUND**

**System Action:** F subcommand executed, but no match found

**Programmer Response:** Scroll to correct position or reenter the F subcommand with another string

**CHARS string FOUND**

**System Action:** F subcommand executed. All matches are highlighted.

**Programmer Response:** None.

**NO STORAGE AVAILABLE**

**System Action:** SCF or BOTTOM subcommand terminated.

**Programmer Response:** Decrease EDIT workspace (option 0.1) or relogon to TSO with a larger REGION size.

**SUBMIT FAILED**

**System Action:** SUBMIT not executed due to an allocation error of the internal reader

**Programmer Response:** Contact the RPF developer.

**NO JCL DATASET:**

**System Action:** SUBMIT not executed.

**Programmer Response:** Specify a card-image dataset with JCL.

**JOB jjjjjjj SUBMITTED**

**System Action:** Contents of dataset submitted to the JES2 internal reader

**Programmer Response:** None.

## 1.12.4 EDIT messages.

**WORKSPACE TRUNCATED**

**System Action:** Dataset is truncated in workspace.

**Programmer Response:** Increase workspace size with the defaults menu. (option 0.1)

**UNEXPECTED RETURN CODE**

**System Action:** unpredictable.

**Programmer Response:** severe error, contact systems programming.

#### **SCROLL HAD NO EFFECT**

**System Action:** 'SCB', 'SCF', 'L +n', 'L -n', 'SCL', or 'SCR' command will be ignored and the command will be blanked

**Programmer Response:** none.

#### **NOT VALID IN COB MODE**

**System Action:** 'SCL' or 'SCR' command ignored

**Programmer Response:** Do not enter the 'SCR' or 'SCL' subcommands in the COBOL mode.

#### **INVALID COMMAND**

**System Action:** Command ignored.

**Programmer Response:** Enter a valid command or 'HELP' to list the commands.

#### **LOGIC ERROR RC=xxx**

**System Action:** Screen changes and command ignored.

**Programmer Response:**

- Rc= 0302, too many characters are received. This is a severe error, contact systems programming.
- Rc= 0303, overflow during skip. This is a severe error, contact systems programming.
- Rc= 0304, more than nn lines have been received. This is a severe error, contact systems programming. Note: 'nn' can be 21, 29 or 40 lines depending of the model of the screen.
- Rc= 0305, an overflow was detected during an 'I' or an 'R' command. This is a severe error, contact systems programming.

#### **LINES NOT NUMERIC**

**System Action:** Command ignored.

**Programmer Response:** One or more lines were not numeric. Enter numeric lines.

#### **INVALID SCROLL VALUE**

**System Action:** Scroll field reset to last value.

**Programmer Response:** The first character entered in the scroll value was not a 'C', 'H', 'L' or a 'P'.

No action is needed; RPF will reset the last correct value.

#### **SCOPE RANGE INVALID**

**System Action:** SCOPE subcommand ignored, set to last correct value

**Programmer Response:** Reenter the command with right columns.

#### **SCOPE TOO SMALL**

**System Action:** 'F', 'C', 'O' or 'FILL' command ignored

**Programmer Response:** The character string in the command is longer than the SCOPE range. Use shorter character strings or reset the SCOPE range with the 'SCOPE' subcommand.

#### **Xxxxx LINES FILLED**

**System Action:** 'FILL' subcommand executed successfully.

**Programmer Response:** None.

#### **Xxxx LINES XLATED**

**System Action:** 'UC' or 'LC' subcommand executed successfully.

**Programmer Response:** None.

#### **DELETE FAILED**

**System Action:** 'DEL' command ignored.

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

#### **INPUT TERMINATED**

**System Action:** 'I' command ignored.

**Programmer Response:** 1. Input fewer lines or 2. Save the workspace, increase workspace and reEDIT the dataset.

**INVALID LINE NUMBER**

**System Action:** 'L' command ignored.

**Programmer Response:** Line number not numeric or line number not found in workspace. Enter the right line number

**SUBMIT FAILED**

**System Action:** Submit terminated.

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

**NO JOB STATEMENT FOUND**

**System Action:** Submit not executed.

**Programmer Response:** Check the job statement, add this and resubmit.

**LINE x INVALID**

**System Action:** Command ignored.

**Programmer Response:** Enter a line number that exists in the workspace.

**LINE-x NOT FOUND**

**System Action:** Command ignored.

**Programmer Response:** Enter the right line number in the command.

**PFK NOT DEFINED**

**System Action:** PFK ignored.

**Programmer Response:** Define the PFK or hit another PFK.

**PFK DEFINITION INVALID**

**System Action:** PFK ignored.

**Programmer Response:** The 'CON' attribute of the PFK is not 'N', 'Y' or 'X'. redefine that PFK.

**COPY TERMINATED**

**System Action:** 'CO' or 'MO' command ignored.

**Programmer Response:** SAVE the workspace, increase the workspace and re-EDIT the dataset.

**INVALID COPY RANGE**

**System Action:** 'CO' or 'MO' command ignored.

**Programmer Response:** Try to copy or move a line range into that same range, enter a correct CO or MO command.

**TEXT NOT FOUND**

**System Action:** 'C', 'O' or 'F' command is ignored.

**Programmer Response:** Reenter the 'C', 'O' or 'F' command with a valid character string.

**INVALID CHAR. STRING**

**System Action:** 'C', 'F', 'O' or 'FILL' command is ignored.

**Programmer Response:** Reenter the command with a valid character string.

**INPUT CONVERT FAILED**

**System Action:** Screen not displayed. Message 'ENTER "RETRY" OR "END"' appears after press ENTER.

**Programmer Response:** Enter 'RETRY' or 'END' and contact systems programming.

**ENTER "RETRY" OR "END"**

**System Action:** This message appears after the message 'INPUT CONVERT FAILED'.

**Programmer Response:** Execute the indicated action.

**USE 'SAVE FORCE'**

**System Action:** 'SAVE' command ignored.

**Programmer Response:** Workspace contained unprintable characters or is truncated by a 'WORKSPACE TRUNCATED' specify 'SAVE FORCE' to force the save function or reEDIT the dataset with a larger workspace size if the error occurred due to truncation.

**WORKSPACE NOT NUMBERED**

**System Action:** UNNUM subcommand ignored.

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

#### **WORKSPACE RENUMBERED**

**System Action:** Successful execution of RENUMBER subcommand.

**Programmer Response:** None.

#### **JOB jjjjjjj SUBMITTED**

**System Action:** Workspace submitted.

**Programmer Response:** None

#### **INVALID CHARACTERS XLATED**

**System Action:** Invalid characters xlated into colons

**Programmer Response:** none.

#### **Xxxxx CHANGES MADE**

**System Action:** Successful 'C' command. User will be notified of the number of changes made by RPF.

**Programmer Response:** None.

#### **Nothing to RETRIEVE**

**System Action:** No commands retrieved. Possible the first command entered in the RPF session.

**Programmer Response:** None.

#### **Enter SAVE or CANCEL**

**System Action:** The END command has been given with AUTOSAVE=N. EDIT will not terminate.

**Programmer Response:** Execute indicated action or continue with EDIT.

#### **CONFLICTING COMMANDS**

**System Action:** Primary and (pending) line commands ignored. RPF will blank the command field and will issue an implicit 'RESET' to reset the pending line-commands.

**Programmer Response:** Do not enter line commands and primary commands other than 'F', 'L' or 'M' together.

#### **CONFLICTING LINE CMDS**

**System Action:** All line commands ignored. An implicit 'RESET' to reset the pending line-commands will be issued.

**Programmer Response:** Do not enter conflicting line commands (e.g. CC...MM...A).

## **1.12.5 EDIT hardcopy messages.**

#### **VTAM CB ERROR**

**System Action:** Hardcopy aborted.

**Programmer Response:** Error caused 'GENCB' error. Notify systems programming.

#### **PRINTER IN USE, RETRY**

**System Action:** Hardcopy aborted.

**Programmer Response:** Someone else is using that printer. Wait for completion or specify another printer.

#### **HARDCOPY FAILED**

**System Action:** Hardcopy aborted, 'SEND' failed.

**Programmer Response:** This can be a malfunction of the printer, contact systems programming

#### **ACB IN USE, RETRY**

**System Action:** Hardcopy aborted, 'ACB' cannot be opened.

**Programmer Response:** Retry the 'HAR' command.

#### **UNEXPECTED RETURN CODE**

**System Action:** Hardcopy aborted. Severe error.

**Programmer Response:** Contact systems programming.

#### **COPIES NOT NUMERIC**



**System Action:** 'HAR' command ignored.

**Programmer Response:** Reenter the command with numeric copy number.

#### **COPIES INVALID**

**System Action:** 'HAR' command ignored.

**Programmer Response:** Reenter the command with a right copy number.

#### **LU=xxxxxxx INVALID**

**System Action:** 'HAR' command ignored

**Programmer Response:** The printer-name specified do not exist in the network. Specify another printer name.

#### **HARDCOPY MADE**

**System Action:** Hardcopy executed successful.

**Programmer Response:** None.

## **1.12.6 LIBRARIAN messages.**

#### **INVALID OPTION**

**System Action:** LIBRARIAN read/upd: Function ignored.

**Programmer Response:** Select function 1,2,3 or X.

#### **SPECIFY MASTERFILE**

**System Action:** LIBRARIAN read: RPF waits for action

**Programmer Response:** Execute indicated action.

#### **ALLOC. ERROR xxxx ON DS**

**System Action:** LIB read/update: Function ignored retry screen displayed.

**Programmer Response:** Refer to 'MVS/ESA Authorized Assembler Programming' chapter 'Dynamic allocation services' to get an explanation of the error code. Correct this error and retry.

#### **OPEN ERROR CODE= x**

**System Action:** LIBRARIAN read aborted. Retry screen displayed.

**Programmer Response:** Refer for code 'x' to the LIBRARIAN documentation (LIB FAIR codes). Correct this error and retry.

#### **MODULE NOT ON MASTER**

**System Action:** LIBRARIAN read: Function ignored. Retry screen displayed.

**Programmer Response:** Specify another module name.

#### **ERROR IN READ, CODE x**

**System Action:** LIBRARIAN read aborted. Retry screen displayed.

**Programmer Response:** Refer for code 'x' to the LIBRARIAN documentation (LIB FAIR codes). Correct this error and retry.

#### **DATASET NOT IN CATALOG**

**System Action:** LIB read/update: Function ignored. Retry screen displayed.

**Programmer Response:** Specify another masterfile or supply the volume.

#### **DATASET NOT ON VOLUME**

**System Action:** LIB read/update: Function ignored. Retry screen displayed

**Programmer Response:** Specify another masterfile or volume.

#### **ALLOC. ERROR WORK DS**

**System Action:** LIBRARIAN write function has been aborted.

**Programmer Response:** Press ENTER to return to the main menu and contact systems programming.

#### **USERID NOT IN TABLE**

**System Action:** LIB update: Usend set in 'PGMR' field instead of the name of the owner of the userid.

**Programmer Response:** Contact systems programming to add an entry in the userid/name table (RPFLIB02)

## 1.12.7 PANVALET messages.

### INVALID OPTION

**System Action:** PANVALET read/upd: Function ignored.

**Programmer Response:** Select function 1,2 or X.

### SPECIFY LIBRARY

**System Action:** PANVALET read: RPF waits for action

**Programmer Response:** Execute indicated action.

### ALLOC. ERROR xxxx

**System Action:** PANVALET read/update: Function ignored. Retry screen displayed.

**Programmer Response:** Refer to 'MVS/ESA Authorized Assembler Programming' chapter 'Dynamic allocation services' to get an explanation of the error code. Correct this error and retry.

### NOT A PANVALET LIBRARY

**System Action:** Retry screen displayed.

**Programmer Response:** Specify a PANVALET library

### ERROR READ, CODE=PVxxx

**System Action:** Retry screen displayed.

**Programmer Response:** Refer for code PVxxx the PANVALET manuals. Correct the error and retry.

### DATASET NOT IN CATALOG

**System Action:** PANVALET read/update: Function ignored. Retry screen displayed.

**Programmer Response:** Specify another dataset or supply the volume.

### DATASET NOT ON VOLUME

**System Action:** PANVALET read/update: Function ignored. Retry screen displayed

**Programmer Response:** Specify another dataset or volume.

### ALLOC. ERROR WORK DS

**System Action:** PANVALET write function has been aborted.

**Programmer Response:** Press ENTER to return to the main menu and contact systems programming.

### USERID NOT IN TABLE

**System Action:** PANVALET update: usend set in 'PGMR' field instead of the name of the owner of the userid.

**Programmer Response:** Contact systems programming to add an entry in the userid/name table (RPFLIB02).

### LANG REQUIRED WITH ADD

**System Action:** PANVALET update: RPF waits for action.

**Programmer Response:** Specify the 'LANG' field

### SPECIFY PGMR AND DESC.

**System Action:** PANVALET update: RPF waits for action.

**Programmer Response:** Specify both fields or none.

## 1.12.8 Messages of the RPF utility processor.

### INVALID OPTION

**System Action:** Function ignored.

**Programmer Response:** Select function 1-9 or X.

### FOR FUTURE USE

**System Action:** Function ignored

**Programmer Response:** Do not select function 0,3,7,8,9.

### UNEXPECTED RETURN CODE

**System Action:** Unpredictable.

**Programmer Response:** Severe error, contact systems programming.

## 1.12.9 PDS maintenance messages

### **SCROLL HAD NO EFFECT**

**System Action:** 'SCF' or 'SCB' command ignored and the command field will be blanked.

**Programmer Response:** None.

### **INVALID COMMAND**

**System Action:** Command ignored.

**Programmer Response:** Enter a valid command.

### **LOGIC ERROR, RC= 0401**

**System Action:** Command and changes on the screen ignored.

**Programmer Response:** Do not use the ERASE EOF, ERASE INPUT or the DELETE key on the terminal.

### **DATASET NOT PARTITIONED**

**System Action:** RPF PDS maintenance exited.

**Programmer Response:** Press ENTER, select again '4' on the utility menu and specify a partitioned dataset in the allocation menu.

### **OPEN OF DATASET FAILED**

**System Action:** RPF PDS maintenance exited.

**Programmer Response:** Severe error, press ENTER to return to the utility menu and contact systems programming.

### **TO RETURN TO RPF UTIL PRESS 'ENTER'**

**System Action:** RPF wait for response from the user.

**Programmer Response:** This message is accompanied with one of the two previous messages. Execute the indicated action.

### **TRUNC TO xxxxx ENTRIES**

**System Action:** The first xxxxx members are in the member area.

**Programmer Response:** Increase the size of the workspace with the defaults menu and reissue PDS maintenance or accept this truncation.

### **PFK NOT DEFINED**

**System Action:** PFK ignored.

**Programmer Response:** Define that PFK or press another PFK.

### **PFK DEFINITION INVALID**

**System Action:** PFK ignored.

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

### **TEXT NOT FOUND**

**System Action:** 'L' command ignored.

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

### **HIT ENTER TO EXEC CMD**

**System Action:** RPF waits for response.

**Programmer Response:** Screen changes are executed but RPF waits to notify the changes to the user. Press ENTER to execute command.

### **NOT SORTED ON MEMBER**

**System Action:** 'S member' command ignored.

**Programmer response:** Sort list on membername order with the SORT command (without operands)

### **MEMBER NOT FOUND**

**System Action:** S member command ignored.

**Programmer Response:** PDS maintenance has been invoked from option 1 (Browse). Specify a existing member.

## 1.12.10 Dataset functions messages.

### **PREFIX NOT SPECIFIED**

**System Action:** Dataset creation ignored.

**Programmer Response:** Enter a '1' in the command area and a prefix in the prefix area.

### **LIBRARY NOT SPECIFIED**

**System Action:** Dataset creation ignored.

**Programmer Response:** Enter a '1' in the command area and a library in the library area.

### **DATASET ALREADY EXISTS**

**System Action:** Creation of dataset ignored.

**Programmer Response:** Specify another data set name.

### **SPACE NOT CYL OR TRK**

**System Action:** Creation of dataset ignored.

**Programmer Response:** Respecify space unit and retry.

### **SPACE VALUES NOT NUMERIC**

**System Action:** Dataset creation ignored.

**Programmer Response:** Change these fields and retry.

### **ALLOCATION ERROR xxxx**

**System Action:** Dataset creation terminated.

**Programmer Response:** Refer for the code xxx to 'MVS/ESA Authorized Assembler Programming' chapter 'Dynamic allocation services'. Correct the error and retry.

### **INVALID OPTION**

**System Action:** Function ignored.

**Programmer Response:** Select '1', '2' or 'x' on the retry menu.

### **INVALID RECFM**

**System Action:** Function ignored.

**Programmer Response:** Specify RECFM=F, FB, FBM, FBA, FBS, V, VB, VBM, VBA, VBS or U

### **INVALID LRECL**

**System Action:** Function ignored.

**Programmer Response:** Specify a numeric value.

### **INVALID BLKSIZE**

**System Action:** Function ignored.

**Programmer Response:** Specify a numeric value.

### **LRECL > BLKSIZE**

**System Action:** Function ignored.

**Programmer Response:** Correct LRECL or BLKSIZE.

### **LRECL > 32760**

**System Action:** Function ignored.

**Programmer Response:** Decrease LRECL.

### **LRECL < 18**

**System Action:** Function ignored.

**Programmer Response:** Increase LRECL.

### **BLKSIZE > 32767**

**System Action:** Function ignored.

**Programmer Response:** Decrease BLKSIZE.

### **BLKSIZE < 18**

**System Action:** Function ignored.

**Programmer Response:** Increase BLKSIZE.

**LRECL+4 > BLKSIZE**

**System Action:** Function ignored.

**Programmer Response:** Correct LRECL or BLKSIZE. This will happen if RECFM=V(B/M/A).

**BLK NOT MULT. OF LRECL**

**System Action:** Function ignored.

**Programmer Response:** Correct LRECL or BLKSIZE. This will happen if RECFM=F(B/M/A/S).

**DATASET ALLOCATED**

**System Action:** Successful allocation of a new dataset.

**Programmer Response:** None.

**DATASET NOT IN CATALOG**

**System Action:** Dataset not deleted.

**Programmer Response:** Retry. Enter the right dataset name.

**DATASET NOT ON DASD**

**System Action:** Dataset not deleted.

**Programmer Response:** Do not specify tape datasets.

**UNCATLG ERROR DATASET**

**System Action:** Dataset not deleted.

**Programmer Response:** Check in the catalog listing if the dataset is correctly catalogued or mount catalog pack.

**SCRATCH ERROR DATASET**

**System Action:** dataset uncatalogued, but not scratched.

**Programmer Response:** SCRATCH dataset with IEHPROGM.

**DATASET DELETED**

**System Action:** Dataset uncatalogued and scratched.

**Programmer Response:** None.

## 1.12.11 VTOC and catalog messages.

**VOLUME NOT SPECIFIED**

**System Action:** Function ignored.

**Programmer Response:** Specify volume or exit (X)

**VOLUME NOT AVAILABLE**

**System Action:** Function ignored.

**Programmer Response:** Specify an ONLINE volume.

**INVALID OPTION**

**System Action:** Function ignored.

**Programmer Response:** Select function '1' or 'X'.

**INVALID PARM**

**System Action:** Retry screen displayed

**Programmer Response:** Specify PARM=SHORT, LONG or VOL and reenter.

**No datasets found**

**System Action:** Retry screen displayed

**Programmer Response:** No datasets found in the catalog with this level, specify a different level.

**Severe error RPFLISTC**

**System Action:** Retry screen displayed

**Programmer Response:** Contact the RPF developer, RPFLISTC cannot allocate its work datasets.

**VTOC RUNNING...**

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

#### **SCROLL HAD NO EFFECT**

**System Action:** 'SCF' or 'SCB' command ignored and the command field will be blanked.  
**Programmer Response:** None.

#### **INVALID COMMAND**

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

#### **LOGIC ERROR, RC= 0601**

**System Action:** Command and changes on the screen ignored.  
**Programmer Response:** Do not use the ERASE EOF, ERASE INPUT or the DELETE key on the terminal.

#### **PFK NOT DEFINED**

**System Action:** PFK ignored.  
**Programmer Response:** Define that PFK or press another PFK.

#### **PFK DEFINITION INVALID**

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

#### **TEXT NOT FOUND**

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

#### **HIT ENTER TO EXEC CMD**

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

## **1.12.12 LIBRARIAN maintenance messages.**

#### **SCROLL HAD NO EFFECT**

**System Action:** 'SCF' or 'SCB' Command ignored and the command field will be blanked.  
**Programmer Response:** None.

#### **INVALID COMMAND**

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

#### **LOGIC ERROR, RC= 0501**

**System Action:** Command and changes on the screen ignored.  
**Programmer Response:** Do not use the ERASE EOF, ERASE INPUT or the DELETE key on the terminal.

#### **OPEN ERROR CODE= x**

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

#### **MODULE NOT ON MASTER**

**System Action:** LIBRARIAN read: function ignored.  
**Programmer Response:** None.

#### **ERROR IN READ, CODE x**

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

**PFK NOT DEFINED**

**System Action:** PFK ignored.

**Programmer Response:** Define that PFK or press another PFK.

**PFK DEFINITION INVALID**

**System Action:** PFK ignored.

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

**ENTER LOCATE STRING**

**System Action:** RPF waits for indicated action

**Programmer Response:** Specify locate string (1 or more characters)

## 1.12.13 Assembler monitor messages

**ALLOC. ERROR WORKDS**

**System Action:** Assembler screen exited.

**Programmer Response:** Severe error, press ENTER to return to the main menu and contact systems programming.

**ALLOCATION RC=xxxx**

**System Action:** Assembler redisplayed and cursor set in sourcelib field.

**Programmer Response:** See chapter 12.13 the msg 'ALLOCATION FAILED RC xxxx' for the returncode, Reenter the sourcelib and/or member depending of the returncode.

**ALLOC CODE xxxx ON (x)**

**System Action:** RPF waits for response of the user and set the cursor on the DSNAME in error (DSNAME (x))

**Programmer Response:** Refer for code xxxx 'MVSIESA Authorized Assembler Programming' chapter 'Dynamic allocation services'.

Change the dsname field '(x)' and press ENTER or escape with the 'END' command.

**DYNALLOC ERROR SYSLIB**

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

**RC ASM= xx (RC LKED= xx)**

**System Action:** assembler (and linkage editor) executed.

**Programmer Response:** press ENTER to browse the output.

**HASSEMBLER RUNNING..**

**System Action:** RPF locks the keyboard and RPF has invoked the assembler-H version 2.

**Programmer Response:** Wait for completion.

**ASSEMBLER RUNNING..**

**System Action:** RPF locks the keyboard and RPF has invoked the XF Assembler.

**Programmer Response:** Wait for completion.

**LINKEDITOR RUNNING..**

**System Action:** RPF locks the keyboard and RPF has invoked the linkage editor.

**Programmer Response:** Wait for completion.

**DS (x) SAME AS DS (y)**

**System Action:** RPF stops processing, sets cursor in the DSNAME (y) field and waits for action.

**Programmer Response:** Specify a different dataset name.

**INVALID KEY PRESSED**

**System Action:** All input ignored.

**Programmer Response:** Hit only the ENTER, PFK03 or PFK15 key

## 1.12.14 TSO command processor messages.

**INVALID COMMAND NAME**

**System Action:** Input ignored (IKJSCAN)

**Programmer Response:** Do not enter only TSO command separators

**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.

**RPF-TSO: ATTACH FOR PROCESSOR FAILED**

**System Action:** Severe error. Will be recovered.

**Programmer Response:** Contact systems programming.

**RPF-TSO: READY**

**System Action:** TSO command executed.

**Programmer Response:** Press ENTER to continue.

**RPF-TSO: INTERRUPT RECEIVED**

**System Action:** Recovered from 'ATTENTION' interrupt

**Programmer Response:** Press ENTER to continue

**RPF-TSO: ABENDED COMPLETION CODE=ccc**

**System Action:** Abend detected in the TSO command processor, recovery successful.

**Programmer Response:** Contact systems programming (severe error).

**RPF-TSO: COMMAND ABENDED CC= ccc**

**System Action:** Abend detected in a TSO command, recovery successful

**Programmer Response:** If the code is severe (like 0Cx abends) contact systems programming.

**RPF-TSO: Command not found**

**System Action:** None, BLDL failed

**Programmer Response:** Enter a valid TSO command

## 1.12.15 RPF HELP messages:

**INVALID OPTION**

**System Action:** Function ignored.

**Programmer Response:** Select function 0-9 or X.

**FOR FUTURE USE**

**System Action:** Function ignored.

**Programmer Response:** Do not select functions 0,6,7,8,9.

**NO MEMBER RPFHELP. (.=1,2,3,4,5)**

**System Action:** Function ignored.

**Programmer Response:** Allocate the right HELP dataset before entering RPF. The HELP dataset should contain the members RPFHELP1, RPFHELP2, RPFHELP3, RPFHELP4 and RPFHELP5 The second possibility is to specify the right HELP dataset in the RPFKEY00 member.

## 1.12.16 Allocation, PFK and SAVE messages.

**INVALID OPTION**

**System Action:** Function ignored on the retry screen.

**Programmer Response:** Select one of the functions displayed on the screen.

**LRECL>255 NOT ALLOWED**



**System Action:** Browse dataset ignored

**Programmer Response:** Specify a dataset with a LRECL of 255 or lower

#### **ALLOC FAILED, RC xxxx**

**System Action:** SAVE: retry screen displayed.

**Programmer Response:**

- If rc= 4, dataset not catalogued, select a catalogued dataset
- If rc= 8, dataset not on volume, correct the dsname field or the volume field.
- If rc=12, allocation error, possible errors can be: 1. Dataset allocated to another user with DISP=OLD, MOD or NEW. 2. Invalid dataset name. 3. Required volume not mounted. Correct the problems and retry.
- If rc=16, the dataset cannot be unallocated, this is a severe error. Contact systems programming.
- If rc=20, specify a card image dataset. (edit, save, assembler and browse).
- If rc=24, clear the member field, the dataset is not a PDS
- If rc=28, enter a dataset with DSORG=PS or PO.
- If rc=32, the member cannot be found, specify another member name (assembler, BROWSE and EDIT with 'LOAD APPEND=YES' option).

#### **EOF OR DEL KEY USED**

**System Action:** PFK: screen changes ignored.

**Programmer Response:** Do not use the erase eof, erase input and delete key.

#### **PFK's RESET**

**System Action:** Changes of PFKs executed.

**Programmer Response:** None.

#### **MEMBER xxxxxxxx EXISTS**

**System Action:** SAVE: retry screen displayed.

**Programmer Response:**

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

#### **MEMBER NAME INVALID**

**System Action:** SAVE not executed, retry screen displayed.

**Programmer Response:** Enter a valid member name.

#### **TEMPRPF RESTRICTED**

**System Action:** Save not executed, retry screen displayed.

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

#### **DATASET/MEMBER IN USE**

**System Action:** SAVE: retry screen displayed and save ignored, because the same dataset and member is processed by an RPF of another TSO user

**Programmer Response:** Wait for availability of the ds/member or save the data in another member or dataset.

## **1.13 Module list and installation requirements.**

### **1.13.1 Module list.**

See Table 1 for the module list.

<b>Module</b>	<b>Function</b>
RPFMAIN	RPF Main processor (alias RPF or RPF)
RPFALLOC	RPF dataset functions
RPFASM	RPF Assembler and Linkage editor processor
RPFBRO	BROWSE processor
RPFCHNG	Module to process the 'C' command
RPFENVDT	Module to convert a Julian date to a Gregorian date

RPFDAIR	RPF Dynamic allocation processor
RPFDATAI	Allocation menu for EDIT and utilities
RPFDEF	Session defaults processor
RPFEDIT	The RPF EDIT processor
RPFEDITL	Load dataset in EDIT workspace
RPFEND	RPF cleanup routine
RPFILL	Module for the 'FILL' subcommand
RPFIND	Module for the 'F' subcommand
RPFISTC	Search the catalog for a certain dataset level
RPFHCPY	RPF hardcopy processor
RPFHELP	RPF HELP processor
RPFINIT	Housekeeping of RPF
RPFJCL1	JCL checking routine part 1
RPFJCL2	JCL checking routine part 2
RPFLIB	LIBRARIAN maintenance (Inc. LIBFAIR)
RPFLIB00	LIBRARIAN read processor (inc. LIBFAIR)
RPFLIB01	LIBRARIAN update processor
RPFLIB02	Userid/name table for RPFLIB01/RPFAN01
RPFISTC	Search the catalog for a certain dataset level
RPFOPER	RPF Operator mode
RPFOUT	The output processor
RPFAN00	PANVALET Read processor (inc. PAM)
RPFAN01	PANVALET Update processor
RPFPS	PDS maintenance processor
RPFPFK	PFK definition processor
RPFSAVE	SAVE workspace processor
RPFSTAT	RPF session status
RPFSUB	RPF job submitter
RPFTEST	RPF TEST processor
RPFSTO	RPF TSO command processor
RPFUTIL	RPF utility menu
RPFVTOC	VTOC read processor
RPFVTOC1	VTOC dataset selection list processor

### Note

All the RPF programs are written in assembler-XF. RPF uses three user macros SYCONVHX the convert hex to EBCDIC macro, SYALLOC the dynamic allocation macro and RPF COMM macro to define the RPF common area.

## 1.13.2 Installation and requirements.

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

The volume serial is RPF001 and contains the following files:

- File 1. The installation job of RPF, DSN=INSTALL
- File 2. The RPF load modules, DSN=RPFLoad
- File 3. The RPF HELP members, DSN=HELP
- File 4. (optional) The RPF source, macro's DSN=SOURCE documentation and assembler/linked JCL File 1 contains the following JCL stream.

```
//INSTALL JOB (ACCT) ,PGMR,MSGLEVEL=1
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//SYSUT3 DD UNIT=SYSDA,SPACE=(6144,(400,400))
//SYSUT4 DD UNIT=SYSDA,SPACE=(6144,(400,400))
//IN DD DSN=RPFLoad,DISP=SHR,UNIT=TAPE,VOL=(,RETAIN,SER=RPF001),
// DISP=OLD,LABEL=2
//OUT DD DSN=SYS1.LINKLIB,DISP=SHR ** OR OTHER LIBRARY
//SYSIN DD *
```

```

COPY INDD=IN, OUTDD=OUT
//STEP2 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//SYSUT3 DD UNIT=SYSDA,SPACE=(6144,(400,400))
//SYSUT4 DD UNIT=SYSDA,SPACE=(6144,(400,400))
//IN DD DSN=HELP,DISP=SHR,UNIT=TAPE,VOL=(,RETAIN,SER=RPF001),
// DISP=OLD,LABEL=3
//OUT DD DSN=SYS1.HELP,DISP=SHR ** OR OTHER LIBRARY
//SYSIN DD *
COPY INDD=IN,OUTDD=OUT
//STEP3 EXEC PGM=IEBCOPY ** ONLY IF FILE 4 PRESENT
//SYSPRINT DD SYSOUT=*
//SYSUT3 DD UNIT=SYSDA,SPACE=(6144,(400,400))
//SYSUT4 DD UNIT=SYSDA,SPACE=(6144,(400,400))
//IN DD DSN=SOURCE,DISP=SHR,UNIT=TAPE,VOL=(,RETAIN,SER=RPF001),
// DISP=OLD,LABEL=4
//OUT DD DSN=RPF.SOURCE,UNIT=SYSDA,SPACE=(6320,(100,200,50)),
// DISP=(NEW,CATLG) *** CHANGE DSNAME IF NECESSARY
//SYSIN DD *
COPY INDD=IN,OUTDD=OUT
/*

```

Figure 2. File 1

File 1 can be obtained with the following job:

```

//FILE JOB (ACCT),PGMR,MSGLEVEL=1
//STEP1 EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=*
//SYSUT1 DD DSN=INSTALL,UNIT=TAPE,VOL=SER=RPF001,LABEL=1,
// DISP=OLD
//SYSUT2 DD DSN=. . . . .(member),DISP=SHR
//* DO NOT FORGET MEMBERNAME
//SYSIN DD DUMMY

```

Figure 3. Obtaining file 1

### 1.12.3 Other requirements

All the RPF modules can be assembled and linked separately. If you have no security system (like RACF or ACF2) RPFTSOEX should not be included.

The default unitname of existing not-catalogued datasets is SYSALLDA. The default unitname of newly created and temporary workdatasets 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 08B3 E2E8E2C4C1404040 * C'SYSDA'
REP 08B3 * replacement of SYSDA
VER 08BB E2E8E2C1D3D3C4C1 * C'SYSALLDA'
REP 08BB * replacement of SYSALLDA
/*

```

Figure 4. Changing defaults

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

The module RPFAN00 needs the PANVALET access method (PAM). Please include module 'PAM' from the PANVALET library upon bind of RPFAN00.

For RPFTSO is an exit possibility. The name should be 'RPFTSOEX'. RPFTSOEX is a TSO command validation

exit. In register 1 is placed a address of a fullword, that contains the address of the RPF common area. In the field 'CMDAREA' of the RPF common area, the TSO command to be validated has been placed. If you accept the TSO command, zero must be set in the 'RTNCODE' field of the common area. If you want to reject the TSO command, set a nonzero value in 'RTNCODE' RPFTSOEX can be binded in the RPF target library, if RPFTSOEX is not present, all the TSO commands are accepted.

#### Note

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

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

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

Figure 5. define RPFHCPY

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

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

Figure 6. RPFKEY00

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

- |              |                       |
|--------------|-----------------------|
| 1. RPFEDIT   | (field named EPEDIT)  |
| 2. RPFATAL   | (field named EPATAL)  |
| 4. RPFDAIR   | (field named EPDAIR)  |
| 5. RPFCHNG   | (field named EPCHNG)  |
| 6. RPFIND    | (field named EPFIND)  |
| 7. RPFEDITL  | (field named EPEDITL) |
| 8. RPFUTIL   | (field named EPUTIL)  |
| 9. RPFVTOC1  | (field named EPVTOC1) |
| 10. RPFENVDT | (field named EPCNVDT) |

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

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

If you want to display a message in the main menu upon exit of the RPFUSER1 routine, place a 25 byte message into the field 'CMDAREA' of the 'RPF COMM' 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
SAVE (14,12), , * SAVE RESISTERS
USING RPFUSER1,15 GET TEMPORARY ADDRESSABILITY
LA 11,SAVEAREA GET SAVEAREA
ST 11,8(0,13) FOREWARD POINTER IN SA-CHAIN
ST 13,SAVEAREA+4 BACKWARD POINTER IN SA-CHAIN
LR 13,11 PICKUP SAVEAREA AND BASE
B START BRANCH AROUND
DS 0H
```

```

SAVEAREA      DC      18F'-1'          DECLARE THE SAVEAREA
START         DS      0H
              DROP    15              KILL TEMPORARY ADDRESSABILITY
              USING   SAVEAREA,13     USE REG.13 AS BASE
              L       11,0(1)        PICKUP PARAMETER
              USING   COMMAREA,11     ADDRESS 'RPF COMM' AREA
              ...                    )
              ...                    )   YOUR OWN CODING
              ...                    )
              ...                    )
              ...                    )
              LINK    EP=RPF PDS,PARAM=((11)),VL=1   (EXAMPLE HOW TO LINK)
              ...
              L       15,EPEDIT
              ST      11,PARMLST      EXAMPLE HOW TO CALL RPF MODULES
              LA      1,PARMLST      BUILD PARMLIST
              BALR    14,15           BRANCH TO RPFROUTINE
              ...
COMMAREA      RPF COMM,              DSECT
              END

```

Figure 7. Example how to write the exit.

Example how to allocate the RPF database.

```

//DEFBASE JOB (ACCOUNT INFO),MSGLEVEL=1
//DEFDB EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=A
//REPROIN DD *
99999999 seed record for the RPF database
/*
//SYSIN DD *
DEF CL(NAME('clustname') VOL(volume) FREESPACE(20 10) -
RECORDSIZE(1750 1750) INDEXED IMBED KEYS(8 0) RECORDS(100 10) -
UNIQUE) -
DATA(NAME('datacomponent name') SHR(3 3)) -
INDEX(NAME('indexcomponent name') SHR(3 3)) -
CATALOG('catalog name')
IF LASTCC = 0 THEN REPRO INFILE(REPROIN) OUTDATASET('clustname')
/*

```

Figure 8. Example how to define the RPF database

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

RPFLIB01 and RFPAN01 (the LIBRARIAN- and the PANVALET update processor) loads the module RPFLIB02 if present. RPFLIB02 contains a table, which contains userid/name entries. This module should be updated according the standards in your installation. You should specify the names of the inhouse TSO-userid's. A skeleton member called RPFLIB02 is added. The entry is 22 bytes long, 7 bytes userid followed with a 15 byte name field.

**Note.**

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

```

RPFLIB02 CSECT                                *)
*                                              *)
* LICENSED MATERIAL (C)-2002 Skybird Systems *)
*                                              *)
$LENGTH EQU 22 LENGTH OF ENTRY              *)
SENTRIES DC A((($STOP-$START)/$LENGTH) NUMBER ENTRIES *)
          DC CL7' TSOUSER',CL15' CHARLIE_TSO'
          DC CL7' IBMUSER',CL15' JOHN.CE'

```

```

$LAST      DC 22X'FF' SHOULD BE THE LAST ENTRY *)
SSTOP     EQU * *)
          END *)

```

Figure 9. RPFLIB02

**Note.**

The statements flagged with a ‘\*’) are in the skeleton deck.

## 1.14 RPF default PFKs and workspace size

The default PFKs contain the following commands:

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

The default workspace size=1,000 lines.

**Note**

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