RiScript

The PostScript® and PDF imaging package

Cerilica

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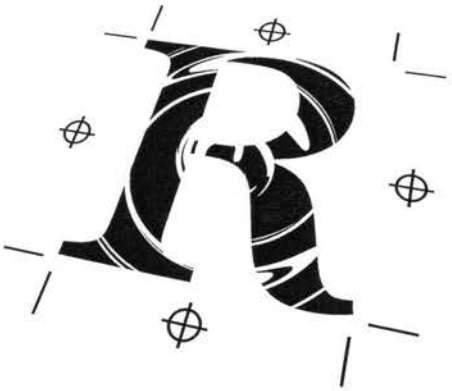

USER MANUAL

1st Edition

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Screenshots within may vary from the display on your system as each RISC OS desktop can be configured in many different visual manners.

RiScript is in a state of continuous development. Cerilica would like to hear about any comments or suggestions arising out of this manual. Please send these to:

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jpeglib	This software is based in part on the work of the Independent JPEG Group
zlib	Thanks to authors Jean-Loup Gailly and Mark Adler
MD5	The RSA Data Security Inc. MD5 Message Digest Algorithm

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Introduction

Welcome

Welcome to RiScript — *the* RISC OS PostScript and PDF imaging package. Not only is this product a perfect complement to Cerilica Vantage but is also a highly capable and useful product in its own right. It represents the only method of full PostScript interpretation, including the derivatives such as PDF, DSC and EPS, for the RISC OS platform where the end result maintains the vector data of the original.

"PostScript" can be a name that frightens many who have never dealt with it in the past mainly because without the use of RiScript it is hard to envisage what the file's contents represent. However, when you begin to use the package you will find that there is nothing to be afraid of and that PostScript is just the universally-accepted equivalent of the Drawfile which is used widely in RISC OS software and catered for with RiScript.

This manual does lower the accepted level of user's knowledge in an attempt to provide a useful reference to all users. If you have used previous versions of RiScript (the history of which is described later) then you will find the current product to have much greater levels of user-friendliness. This does not mean that the actual processing engine has been shunned from continuous development but rather that the technical aspects of dealing with PostScript has been better hidden where possible.

We hope you find as much use with this advanced and highly developed product as we have.

History of the product

"RiScript" will be a familiar name to many using RISC OS computers. This product actually began life in the early nineties with the freeware development of a package of the same name. As PostScript is such a complex and involved language the amount of time necessary to develop the product into a fully-functional application justified that the development should become commercial.

In 1997, Uniqueway of South Wales agreed to publish the greatly advanced product under the title of "RiScript Pro" in order to distinguish it from earlier freely-available versions.

At the end of 1999 Uniqueway realised that it was not able to cater for the needs of publishing this product and along with the authors agreed to seamlessly transfer the exclusive publishing rights to Cerilica Limited. To coincide with this transfer, "RiScript Pro" (which generically became referred to simply as RiScript) evolved to version 4. Along with this development came many visual and technical improvements to the package including a much more agreeable user-interface and usage model.

Whereas previously RiScript was supplied as four distinctive and essential applications (RiScript, ScripTerm, DSCript and PDFront), only the first two are now visible on the disc. RiScript is the interpretation engine which performs all the complex tasks of reading PostScript files and creating Drawfiles and PDFs from them. ScriptTerm is now an optional program which enables experienced users to access the RiScript engine.

About this manual

This manual assumes that you are familiar with RISC OS and its methods and standard terms of operation such as the three mouse button names (Select, Menu and Adjust). If you are not, please refer to your RISC OS computer's User and Welcome Guide.

Throughout this manual you may find the exclamation mark as depicted right. Any material next to this is deemed to be important and therefore special attention should be made to those sections.

Another symbol which is of interest is the information "i" as shown right. Whereas these sections are not essential, you may find the comments very useful to aid the use of this software.

System requirements

RiScript was originally developed to operate on an Acorn A5000 with as little as 4MB RAM and a minimal hard disc. However, whereas it is still technically possible to continue to do so, many PostScript and PDF files require a much higher specification machine, depending on their contents. Typically, if a file contains numerous bitmap images (equivalent to RISC OS' Sprites), their file size will be greater and therefore the requirements of RiScript will equally expand.

It is therefore recommended that RISC OS 3.5 and higher machines are used to operate RiScript. At the time of writing these include Acorn/Castle RiscPCs and A7000s, all RiscStations and Micos. Along with these machines comes the additional suggested minimum specification of:

- 8MB RAM (16 or higher recommended)
- 4MB of free hard disc space plus room for files
- 1.6MB floppy drive essential (ie. not A400/500s or A3000s)
- StrongARM machines are preferable but not essential

It is also essential that all versions of RISC OS are updated with Acorn's last general Boot structure release. This update should be supplied as standard with machines manufactures

manufactured in 1999 and beyond. If you are running an older machine or are uncertain as to the version you have, please see your local dealer about obtaining this freely available upgrade (although dealers may charge for installation and/or media). Alternatively, the upgrade which applies to all RISC OS 3.1 and higher variants was made generally available on Acorn User's 200th edition cover CD.

All RISC OS 4 users have no need to upgrade.

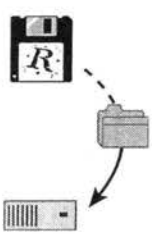
If you or your dealer are unable to locate an update disc, please contact RISC OS Limited:

www.riscos.com

We regret that Cerilica are unable to supply copies of this upgrade.

Installation

Before installing the software, ensure that you have read and agreed with the software license agreement and limited warranty at the back of this manual.



To install the software on your hard disc, insert the "Application Disc" into the computer's drive and copy **!RiScript** from within the Zip archive onto your hard disc. To open the archive, either use a decompressor already installed on your machine or **!SparkPlug** as supplied. Each copy should be automatically registered to yourself prior to receiving the product so there are no registration forms to complete.

If you also wish to place all support material on your hard disc, perform the above procedure once more but this time copying the contents of the "Support Disc". Once you have installed everything you wish, it is wise to store the original discs so that they are not altered in any way.

Using RISC OS !Help

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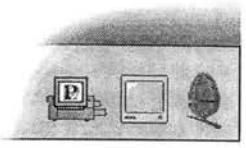
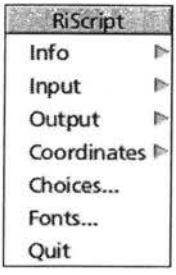
Before continuing, you may find it useful to learn that RiScript provides on-screen context-sensitive help if used in conjunction with the **!Help** program supplied with RISC OS.

Loading and terminology



To load RiScript, just double-click on the "!RiScript" icon on your hard disc in the standard RISC OS fashion. The !RiScript application icon will then install itself on your iconbar after the display of a RiScript banner in the centre of your screen.

As RiScript is capable of handling batches of work, it will not allow a second copy to be run and therefore dismisses any attempt to do so.



The RiScript icon only gives you a single option prior to any request to interpret a file:

Menu-click shows the iconbar menu (right)

By accessing the iconbar menu, it is possible to check the version number and license details of your uniquely-registered application by following on from **Info ▸**. Such details as !RiScript version number and date and license type and holder are displayed.

User licence details

Following **Iconbar icon menu ▸ Info ▸ Program ▸** gives information about RiScript's version and date of release and the licence type (for example, "single machine").

Following **Iconbar icon menu ▸ Info ▸ Licence ▸** gives further information about the user's licence including serial number (to be quoted when requesting upgrades), date of issue and the full user's name and address.

If the licence does not apply to you, please quit the application and contact Cerilica. If you have purchased the software second-hand from a previous user, you are required to contact Cerilica in order to transfer the licence details. Failure to do so is illegal! If you intend to resell the product, please ensure that you contact Cerilica about your intention as you will be held responsible for any violation of the licence even after the sale if you have failed to notify Cerilica of the package's new owner!

RiScript's purpose

Even though PostScript was designed to describe a page layout and contents graphically it is, in fact, a programming language. It is also *the* industry standard for transferring page descriptions between machines, regardless of whether the target machines are for designing or editing files or printing them. All commercial printers use machines which output printed material via devices designed to accept, interpret and print PostScript files.

Whereas it is easy to draw parallels between the RISC OS Drawfile as designed by Acorn and Adobe's PostScript, they only perform the same function superficially. The Drawfile is not a language but rather a file format and is therefore more restricted in what it is capable of doing.

RiScript was designed to accept and interpret PostScript files with a visual display or an alternative file format export being the result. This is a very complex process due to the nature of PostScript and therefore can require relatively large amounts of processing time and resources. To aid this fact, RiScript performs these functions in a multi-tasking manner allowing you to continue to use your desktop whilst RiScript is working.

As an overview, RiScript is capable of importing the following files:

Filetype	Originator	RISC OS filetype name	RISC OS hex filetype	DOS extension
PostScript	*Adobe*	PoScript	&ff5	.PS
DSC	*Adobe*	PoScript	&ff5	.PS
PDF	*Adobe*	PDF	&adf	.PDF
EPS	*Adobe*	PoScript	&ff5	.EPS

Once imported, RiScript is capable of outputting the following:

Filetype	Originator	RISC OS filetype name	RISC OS hex filetype	DOS extension
Screen view	- — -	- — -	- — -	- — -
Drawfile(s)	*Acorn*	Drawfile	&aff	- — -
PDF	*Adobe*	PDF	&adf	.PDF
Text	*ASCII*	Text	&fff	.TXT

A description of each filetype is as follows:

PostScript

This is the overall language which all later derivatives were based on to varying degrees. As the language is not restrictive, pure PostScript files may be viewed as programs as opposed to filetypes.

DSC

Adobe's Document Structuring Convention documents the necessary comments, syntax and structure of a PostScript or EPS file. Therefore if a document is DSC compliant it follows Adobe's rules and can therefore be seen as a filetype as opposed to a program. When defined a multi-page DSC file is viewed by RiScript, the structure to which it was created allows RiScript (and any other PostScript interpreter) to randomly access any particular page. This is not the case with non-DSC compliant multi-page PostScript files.

PDF

The Portable Document Format has gained much popularity over recent years and in some cases has replaced PostScript as the format of choice. This has even extended to printers, some of which now only accept PDF files as a source from which to print material. PDF is a file format as opposed to a program due to its strict and rigid structure. Because of this defined structure it is multi-page capable and allows the inclusion of hyper-links which may be of great use for screen-only documentation. Many PDF files may be found on the internet as a method to convey laid-out documents.

EPS

Encapsulated Post Script has traditionally often been used to transfer page layouts and contents between design systems. As a subset of PostScript it does not present the full potential of its parent language but has the added advantage of being interpreted with greater ease – hence its implementation in many design and publishing packages such as Cerilca Vantage. EPS files were originally intended for use as their name suggests; to be *encapsulated* within other work. Any program which encapsulates an EPS file will automatically pass the contents of the EPS on in-tact to the printer or recipient within the full PostScript output. It is then up to the printer, or in this case RiScript, to determine what the contents of that EPS are and how to deal with it. Many design packages also allow interpretation of an EPS file but not necessarily PostScript.

RiScript used to have separate applications to handle each imported filetype (with DSC and EPS being subsets of PostScript). With the latest version of RiScript these components are transparent to the user by default and are now effectively built into !RiScript.

The RISC OS system has never differentiated between PostScript, DSC-compliant PostScript or EPS files. RiScript is able to automatically determine whether a file is DSC compliant and is therefore capable of presenting it as such with the option to move up and down pages if a multi-page file is being looked at.

A number of RISC OS packages are able to output EPS files independently of the printer drivers, namely Cerilica Vantage and Computer Concepts' ArtWorks. These programs can also import EPS files to varying degrees of success (usually dependant on how long ago they were last developed). Therefore you have to be careful that you do not attempt to import a full PostScript file into such packages without first being converted into a Drawfile. This problem is compounded by the fact the RISC OS desktop filetype and therefore icons for the variants are the same. If in doubt, use RiScript to load any PostScript settype files.

One method of checking whether a file is an EPS or full PostScript is to load it into a text editor such as Edit (as supplied with each RISC OS machine) or Zap (freely available). The first few lines state (typically) what type of file it is as demonstrated by the two examples, below.

Example of a full PostScript file header:

```
%!PS-Adobe-2.0
%%Creator: PostScript
 PDriver module 4.41
%%CreationDate:
 15:37:01 Mon,10 Jan
 2002
%%Pages: (atend)
%%BoundingBox:
 (atend)
%%DocumentFonts:
 (atend)
%%DocumentSuppliedFo-
 nts: (atend)
%%BeginProlog
```

Example of an EPS file header:

```
%!PS-Adobe-3.0 EPSF-
 3.0
%%Creator: Cerilica
 Vantage 1.02 (14-
 Jan-2002)
%%For: (Cerilica
 Limited) (Nicholas
 van der Walle)
%%Title: (DrawExp02a)
%%CreationDate: (01
 Dec 1999) (15:28:51)
%%DocumentData:
 Binary
%%BoundingBox: 0 27
```

Viewing & navigation

It is the case that the majority of RiScript users just wish to view all forms of PostScript and PDF files. Doing so couldn't be simpler.

To view on screen a PostScript or PDF settype file after having run RiScript or having let the filer first see it, simply double-click on the file in the RISC OS filer window or drag it onto the RiScript icon (if loaded) on the iconbar.

Having run the file, RiScript will start interpreting it and displaying the results in a window. Depending on the complexity of the file, the window will be updated in stages whilst operating on a multi-taking manner, thus allowing you to continue using the RISC OS desktop as normal for other tasks if you wish.

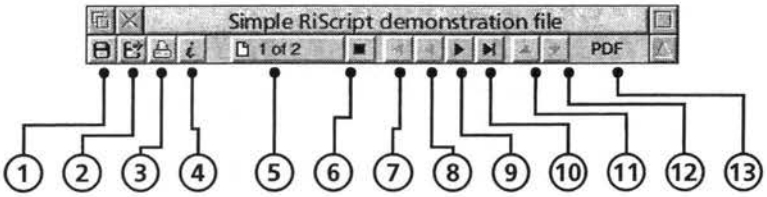
The screenshot, left, shows the result of running the example file "Demo01/PDF" supplied on the RiScript support disc. This is referred to as the "page window" and represents the view of file as if it were printed on a physical page.

This PDF file was created under RISC OS using Impression Publisher to PostScript print a two page document containing vector graphics and converted to PDF using RiScript. This process is explained later.

It may be wise to load this example file as it will be used to demonstrate how to view and navigate through single and multi-page documents.

The previous screenshot illustrates the window in which RiScript presents all interpreted files. What follows is a description of what each window control does. Unless indicated otherwise, the controls perform the same task regardless of whether the file is a PostScript, PDF or EPS.

The navigation bar



The navigation bar always resides at the top of the page window and contains quick-access features, navigation buttons for moving through multi-page documents as well as allowing movement through the interpretation history for the current session.

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The first four buttons are only available if the file author's permission allows them to be. See the section entitled "PDF file information — Permission" for more information.

① Save file

Save input file via standard RISC OS save box. This can be especially useful if the file was downloaded using a web browser and automatically viewed using RiScript.

Key press alternative: **F3**
Menu entry: **Menu ▸ File ▸ Save ▸**

② Export

Brings up **Export** window. See chapters "Drawfiles & Text export" and "Creating PDF files" for more information.

Key press alternative: **Shift-F3**
Menu entry: **Menu ▸ File ▸ Export...**

③ Print

Brings up RiScript's **Print** dialogue window. See the chapter entitled "Printing" for more information.

Key press alternative: **Print**
Menu entry: **Menu ▸ File ▸ Print...**

④ Document information

Displays information about the file.

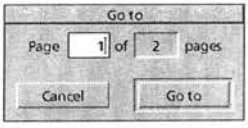
Key press alternative: **Shift-F1**
Menu entry: **Menu ▸ Document ▸ Info ▸**

⑤ Pages

If the file being interpreted is a multi-page document (as with many PDF files and numerous PostScript, DSC and even some EPS documents), RiScript will show in this button the current page being viewed and how many pages there are in total.

If the document is DSC compliant but does not specify the number of pages, this button's notations will state **unspecified**. This is likely to be the case when viewing EPS files.

The third state is when the document is not DSC-compliant. In this case, **Unknown** will be stated. Note that it is possible to have the DSC plugin activated when viewing non-DSC files.



Clicking on the button presents you with a method of quickly accessing specific pages without the need to travel through the document page by page via a dialogue window as shown left. The window allows you to enter a page in the writable box and the total number of pages available. Having entered the page you wish to view, click on **Go to**.

Key press alternative: **F5**

⑥ Stop interpretation

It is possible to stop the interpretation of a file by pressing this button. If the page is in the process of being constructed, this button will be greyed-out.

The result of pressing the stop button is that the document will be removed from the on-screen page view and the interpretation engine is effectively "cleared" ready for the next task.

Interpretation of a document will automatically be stopped if a new document is loaded into RiScript by either dragging the file into the page window or onto RiScript's iconbar icon.

The interpretation process may also be halted whilst a page is still being constructed by pressing **Escape** if RiScript has the RISC OS input focus (the page window's titlebar is coloured cream rather than grey). To give the RiScript page view the input focus, click anywhere in the window itself.

Menu entry: **Menu ▸ File ▸ Close**

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The following four buttons are only given as an option if appropriate. They are otherwise greyed-out. All key-press variants given only apply if the page view window has the input focus.

⑦ Jump to first page

If you are viewing a multi-page document and are viewing an page beyond the first, this button allows you to return to page one.

Key press alternative: **Home**
Menu entry: **Menu ▸ Page ▸ First**

⑧ Previous page

Again, if you are viewing any page beyond page one, pressing this button will allow you to view the previous page.

Key press alternative: **Page Up**
Menu entry: **Menu ▸ Page ▸ Previous**

⑨ Next page

If there are any further pages to be viewed in the document, pressing this button will allow you to see the next page.

Key press alternative: **Page Down**
Menu entry: **Menu ▸ Page ▸ Next**

Using the supplied example document "Demo01/PDF", you are able to move between the two pages using the Previous and Next buttons. Also, as there are only two pages, the jump to start/end buttons perform the same tasks.

Page one and two of "Demo01/PDF" are shown, right.

⑩ Jump to last page

If you are viewing a multi-page document and are viewing a page other than the last, this button allows you to jump to it.

Key press alternative: **End**
Menu entry: **Menu ▸ Page ▸ Last**

⑪ Previous selected page

If a number of pages or documents have been processed within a single session of running RiScript (ie. it has not been quit since the last processed page or file), this button allows you to return to the previously interpreted one. This is regardless of whether the interpretation process for that previous page or document has been halted or not.

This feature effectively offers a "view history" list and allows you to navigate back to all previous pages.

⑫ Next selected page

Only having returned to a previous page or document using the **Previous selected page** button will RiScript present you with the option to return to the "next" page or document.

The **Previous** and **Next selected page** buttons can be likened to the "undo" and "redo" buttons found on many software packages except that in this case they refer to the sequence of pages loaded into RiScript.

PostScript

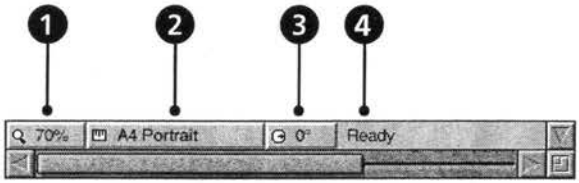
PostScript DSC

PDF

⑬ Plug-in being utilized

This section provides information as to the documents being viewed which includes "PostScript", "PostScript DSC", "PostScript EPSF", "PostScript Binary Font" and "PDF".

The viewbar

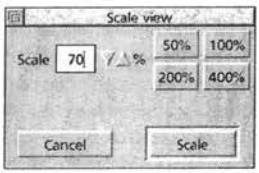


On the lower end of the page window, the viewbar provides access to various page viewing options. These settings do not affect the contents of the file but just allows presentation of the contents to the user to be altered to suit.

All settings on the viewbar are applicable to all documents, be they multi or single page.

❶ Scale

This button states the current scale view of the page. This setting is very similar to the scale view offered by many design and publishing packages in that it allows you to see more detail by zooming in or look at the overall page by zooming out.
When delivered, RiScript's default zoom setting is set at 70%. This may be altered at any moment by clicking on the button (see next) or determining a new default setting by altering the choices settings (see the "Choices" chapter).



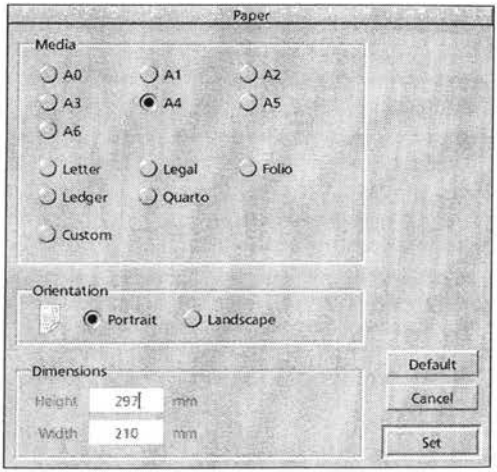
Upon clicking on this button, the standard style RISC OS **Scale view** window is shown allowing you to enter any scale value or use one of the four pre-selected values (50, 100, 200 and 400%). Once your choice has been entered or selected, click on **Scale** to action it.

The up and down arrow button to the right of the writable scale entry box allows the scale factor to be increased or decreased by 5% respectively. These incremental steps are only acted upon by clicking **Scale**.

❷ Paper size and setting

RiScript will display any pages using the paper size specified by the document, if any. For example, many PDF files found on the internet will use A4 or the American's Letter sizes. If no page size is specified within a document, RiScript will resort to using the currently selected page size.

You may find it useful to alter the paper size and setting (landscape/ portrait) when viewing any document. One such occasion may be that you feel a larger paper size will allow you to see material that seems to be placed beyond the given paper size.



Clicking on the paper size button brings up the **Paper** menu as seen left.

Many of the standard paper sizes are presented within the section entitled **Media**, including the widely used "A" series. To change the currently selected page size, just click on the associated radio button.

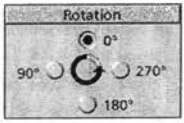
Custom allows you to specify a paper size not listed. When opted for, the lower **Dimensions** section ungreys to allow you to enter the **Height** and **Width** values in millimetres.

The **Orientation** section (not to be confused with the following rotation view setting) determines whether the page should be shown in landscape or portrait.

Clicking on **Set** will cause the page view window to update with the specified paper size and setting. **Default** will revert the paper size to that determined in the settings of RiScript's choices (see later), including the scale view level and rotation (next).

❸ Rotation

Sometimes documents are interpreted to be shown on their side. This is how the files was created and hence RiScript displays it as such.

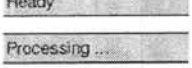


To change the view rotation of a page, click on the rotation button to bring up the **Rotation** window, right. Click on any of the four angles, each rotating the page by 90° steps (anticlockwise). Any choice is represented instantly in the page view.

Page two of the "Demo01/PDF" example file as originally viewed at 0° (far left). After setting the rotation to 90°, the on-screen page view became as shown left.

Note the original file has not been altered in any manner, only the visual representation.

A quick alternative method to rotating the page view is to press **F11** (when RiScript has the input focus) which will cause the page to rotate counter-clockwise by 90°. Conversely, **Shift-F11** rotates the view by 90° clockwise.



❹ Interpretation status

The viewbar gives continuous information with regards to the process currently being undertaken by RiScript. Such tasks being undertaken may include processing and font conversion.

Re-interpret page

It is possible to make RiScript re-interpret the current page by either pressing **Enter** if the page view window has the input focus or by following **Menu ▸ Page ▸ Current**.

View panning

If a full page view is not possible in the window size and scale view level set, it is possible to pan around the page conventionally using the RISC OS scroll bars. However, if the document view has the input focus (highlighted window furniture), the following key presses are available:

Stepped scrolling: **Arrow keys**
Scroll-jump to extremes: **Ctrl-Arrow keys**

PDF bookmarks and hyperlinks

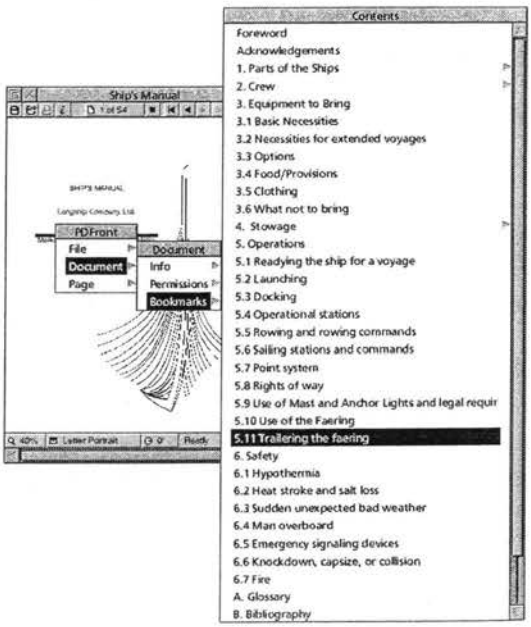
The PDF format was created with hypertext abilities. Hypertext is a generic term for being able to move between pages of a document, more grandly known as being "interactive". A good example of this are HTML internet pages where certain words may represent a link to another page if clicked on.

The "Longship" PDF file, above, is © the Longship Company Limited and was downloaded from:

http://www.wam.umd.edu/~eowyn/Longship/

Even though at the time of writing there is no method for RISC OS applications to create PDF files with hyperlinks or bookmarks, many PDF files available off the internet have such links.

The example file shown right is of a PDF file taken off the internet. When first loading the document into RiScript, page 1 of 54 is shown, so the author provided a large list of bookmarks to enable readers to quickly move to sections of interest.



To access the bookmarks list, if any, follow **Menu ▸ Document ▸ Bookmarks ▸**. Clicking on any entries will prompt RiScipt to show the page associated with the link.

The other manner of moving around documents, if the author has allowed, is to click on hyperlink

words just as when navigating HTML internet pages. When you move your mouse pointer to a linked word, the pointer shape alters to indicate that clicking on the word it covers will perform an action.

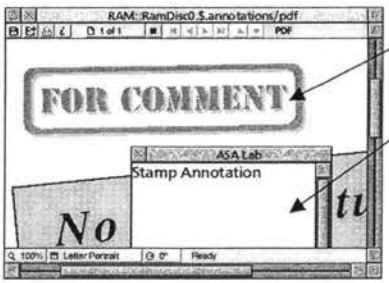
PDF contains a number of possible functions that may take place upon clicking on a hyperlinked word with the most common being *GoTo* which just transports you to the linked page.

Unsupported or broken PDF hyperlinks

RiScript will display an error message if a link is clicked on that either requests an operation as yet unsupported or if the hyperlink refers to an external document that is not present.

PDF annotations

PDFs created on alternative systems may have notes applied to certain objects or areas of a page. When double-clicked on, a text message note will appear in a window as shown below. These notes are not very common and RiScript can not support some forms of notes such as file links (due to system variations) but it is incorporated into this product to enrich some user's PDF viewing experience.



A section of RiScript's choices are dedicated to how notes are displayed. Please refer to the "Choices" chapter for full details.

Document information

RiScript provides a selection of information about each document being processed. The information available depends upon whether the file being processed is pure PostScript, DSC-compliant PostScript or a PDF. For the sake of this chapter, EPS files are handled in the same manner as DSC-compliant PostScript files.

Titlebar

The titlebar of the RiScript page view window provides immediate information about the file being processed. If available within the file, the document's internally stored title will displayed. If this information is not available within the file, the filer's path is shown.

PostScript file information

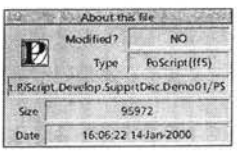
PostScript files do not contain the same information subjects that are defined into the PDF file format. RiScript is, however, able to show some other information.

You will find an example PostScript file on the contents disc, entitled "Demo01/PS" and was the file used by RiScript to create "Demo01/PDF".

Please note this file does not contain any fonts.

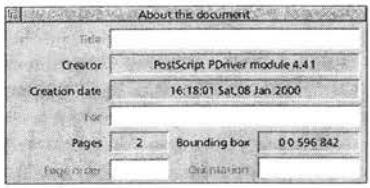
File information

By following **Menu ▸ File ▸ Info ▸**... a file information box will be brought up entitled **About this file**, similar to the one shown, right. This window states the modification status, RISC OS filetype, file's filer path, size in bytes and the file's filer date stamp (not necessarily the creation date).



Document information (DSC and EPS only)

Unlike the previous file information, the document information is able to show any information stored within the DSC-compliant PostScript or EPS file.

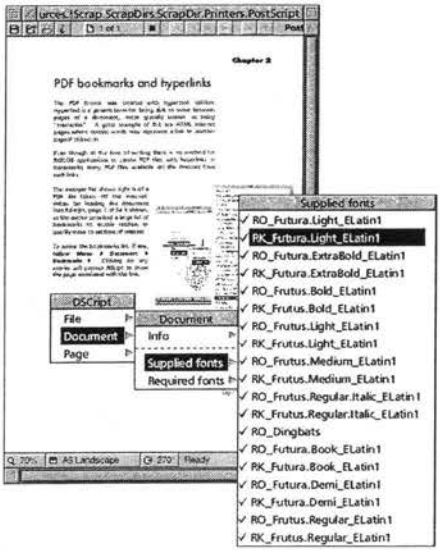


The window shown left is brought up following **Menu ▸ Document ▸ Info ▸**... and states details (if available) like title, which application created the file, the actual creation date, who/what the file is for, total number of pages, bounding box (see later), page order and orientation (if applicable).

Fonts supplied and required (DSC-only)

If the DSC-compliant PostScript uses fonts in any way, RiScript is able to list the fonts supplied within the file and those required by the document (not all fonts supplied may be needed and not all fonts required may be present).

Font usage is described in chapter 4.



To list the fonts supplied in the file, follow **Menu ▸ Document ▸ Supplied fonts ▸**... If the font is ticked, the supplied font is also required within the file to execute text rendering. If unticked, the font is present within the file but not necessary.

To list the fonts required by the document, follow **Menu ▸ Document ▸ Required fonts ▸**... Again, if ticked, the required font is present within the file and if unticked, it is lacking. If a font that is required is missing from the file, it is up to the interpreter system (in this case RiScript running under RISC OS) to supply the font if possible. If not present, the font will have been substituted in order to allow RiScript to render the text contents.

Reference in the following chapter about adding font mappings may be of use if a required font is missing.

Page information

The only piece of information outstanding is that of the bounding box area. The bounding box is the imaginary box that encapsulates all of the page contents.

To view the bounding box information, follow **Menu ▸ Page ▸ Info ▸...** which brings up the **About this page** window. The numbers on display represent the lower x, lower y, higher x and higher y coordinates relative to the page's origin.

PDF file information

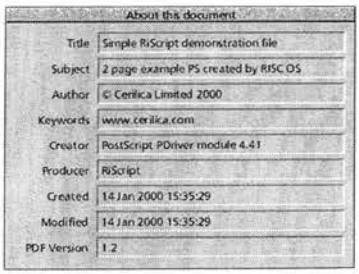
The PDF file format provides a different set of information within the file as compared to PostScript files. This section lists the variations over PostScript.

File information

See the PostScript description about this information window.

Document information

PDF files can potentially contain four key creator's notes. The window shown right, brought up by following **Menu ▸ Document ▸ Info ▸...** is of the example file "Demo01/PDF" and shows the four topics; Title, Subject, Author and Keywords. There is no restriction by the file format as to what exactly the author should write within any of these fields.



The information window also provides details about the software used to create and produce the file, date of creation and modification and PDF version.

Permissions

Using certain PDF creation tools, the author of a PDF file may specify four "permission" states. These are; Print, Edit, Copy and Annotate. If **Print** is not ticked, RiScript will not allow the document to be printed and is **Copy** is not ticked, RiScript will disallow you from exporting the document.

The status of each permission can not be altered directly.

Fonts used

As a range of font information may be stored in PDFs, RiScript's presentation of the information differs from the previously described PostScript supplied/required format.

Having loaded a PDF file, select **Menu ▸ Document ▸ Fonts...** to bring up the **Font Information** window as shown to the left.

Before you continue, you may wish to select **Scan document** which will force RiScript to look through the entire file for the complete range of font information.

The pull-down menu top right of the window allows you to list all fonts associated with that particular PDF. On selecting a font from the menu the main window will display the characteristics of that fonts. Note that the **Used** entry is only filled in for fonts processed by RiScript.

Page information

Please refer to the description under PostScript.

Font handling

RiScript has two methods, which may be utilized simultaneously, for dealing with and displaying fonts used in a document for text rendering. Both methods mean that the anti-aliased RISC OS font system is used to display documents and therefore provides a high quality view of the page which is easy to read even at a text small size.

Conversion of embedded Type1 and 2 fonts

By default, RiScript automatically converts any included Type 1 and 2 fonts that may be present within a PostScript or PDF file into RISC OS fonts. RiScript then uses these RISC OS font conversions to display the text. This method (if available to RiScript) is the most accurate as the fonts converted are the same as the ones used by the author ensuring identical matching.

All converted fonts are stored in RiScript's generated fonts directory that normally resides within !RiScript and may easily be opened by clicking on **Iconbar menu ➧ Fonts...** The directories within this !Generated.Fonts location are standard RISC OS font directories and may be used by all RISC OS applications. Upon loading, RiScript automatically updates the system-wide font listing so that all other applications have instant access to these fonts.

If at any time whilst using RiScript you wish to ensure that RISC OS is aware of any newly converted fonts, double-click on the !Generated font directory icon (right) to be found within !RiScript. Resources.

If you wish to have more permanent use of any converted fonts, just copy these converted font directories into your RISC OS !Fonts resource directory. Please refer to RISC OS documentation for more information about this process.

Please note that all converted fonts retain the original copyright status and you may be acting illegally in using any converted fonts without a licence to do so. If in doubt of the copyright status, delete the converted fonts.

Font mapping

RiScript is able to map fonts to ones that are equivalent and already exist on your system in the RISC OS font format. The advantage of mapping fonts as opposed to converting embedded ones is that the process is much quicker and does not require extra storage space to hold any converted fonts.

One of the drawbacks of font mapping is that there is no way of ensuring that the mapped fonts are identical (and in reality often differ subtly) and therefore the document display may differ from the author's intentions. This may cause critical problems with layouts and mean the results are unwanted.

Three fonts are hardwired as being mapped within RiScript as they are very commonly used and are typically well matched.

PostScript (Type1) font name	RISC OS equivalent
Times	Trinity
Helvetica	Homerton
Courier	Corpus

All three equivalent fonts are built into each RISC OS product and are therefore ensured of being present at each session with the computer.

RiScript is able to map both Type1 (the oft-used PostScript format) and TrueType™ fonts (commonly used on Windows™ systems) and by default has the following fonts mapped:

Type1 font name	RISC OS equivalent
[Symbol]	[Sidney]
[ZapfDingbats]	[Selwyn]

(Font names within [square brackets] *are not shown in their typeface as they are symbol or special fonts.)*

TrueType™ font name	RISC OS equivalent
TimesNewRoman {Times}	Trinity
Arial {Helvetica}	Homerton
CourierNew {Courier}	Corpus

(TrueType™ fonts are actually mapped to Type1 equivalents which are denoted in the {curly brackets} *which are in turn mapped to RISC OS fonts.)*

All mapped Type1 fonts listed on the previous page beyond the three hardwired fonts (Times, Helvetica and Courier) have their RISC OS equivalent supplied with each RISC OS system (usually on RISC OS support discs). You may also have access to these fonts via other resources you have bought.

RiScript also has mapping definitions for five commonly used fonts but are temporarily commented out (see next section) as their RISC OS equivalent are not supplied as standard and may not therefore be present.

Type1 font name	RISC OS equivalent
AvantGarde	AvantGarde
NewCenturySchlbk	NewHall
Palatino	Pembroke
Garamond	Garamond
Bookman	Bookman

If you have access to these four RISC OS fonts ("AvantGarde" may also be known as "AvantG" under RISC OS), you may wish to remove the PostScript comments to activate the mappings.

Adding extra font maps

!

Recommended only for users very familiar with RISC OS systems.

It is possible to manually add further font mappings to RiScript. The process involves editing resource files within RiScript and therefore if you do not feel confident about performing such tasks it is recommended that this section is avoided.

Before commencing, remember to only edit your installed copy on your hard disc and ***not*** *the original RiScript installation disc! Keep the original floppy discs write-protected and stored safely so that it is possible to re-install the software if corrupted beyond repair.*

RiScript's resources contains one file that is the master listing of font mappings. This PostScript filetyped file is to be found in **!RiScript.Resources.Font** and is entitled **FontFiles**. To edit the file, load it into your favourite text editor such as Edit (as supplied with each RISC OS machine) or an alternative such as Zap (freely available advanced editor). Upon loading the file, you will find that it contains the mapping data of the fonts previously listed in a human-editable format. The file is as follows on the next page and may differ slightly.

```
%
% -- RiScript Font Resource File Mappings (16/12/98) --
%

% Type1 Fonts

% Type3 Fonts

% Multiple Master Fonts

% Type1 Font Mappings

%/AvantGarde-Book                    (AvantGarde.Bk)
%/AvantGarde-BookOblique             (AvantGarde.BkOb)
%/AvantGarde-Demi                    (AvantGarde.Dm)
%/AvantGarde-DemiOblique             (AvantGarde.DmOb)

%/NewCenturySchlbk-Roman             (NwCntSchBk.Rm)
%/NewCenturySchlbk-Italic            (NwCntSchBk.It)
%/NewCenturySchlbk-Bold              (NwCntSchBk.Bd)
%/NewCenturySchlbk-BoldItalic        (NwCntSchBk.BdIt)

%/Palatino-Roman                     (Palatino.Rm)
%/Palatino-Italic                    (Palatino.It)
%/Palatino-Bold                      (Palatino.Bd)
%/Palatino-BoldItalic                (Palatino.BdIt)

%/Bookman-Light                      (Bookman.Lt)
%/Bookman-LightItalic                (Bookman.LtIt)
%/Bookman-Demi                       (Bookman.Dm)
%/Bookman-DemiItalic                 (Bookman.DmIt)

%/Garamond-Italic                    (Garamond.It)
%/Garamond-Bold                      (Garamond.Bd)
%/Garamond-BoldItalic                (Garamond.BdIt)

/Symbol                             (Symbol.Map)
/ZapfDingbats                       (ZapfDing.Map)

% TrueType Font Mappings

/TimesNewRoman                      (TimesNew.Rg)
/TimesNewRoman,Italic               (TimesNew.It)
/TimesNewRoman,Bold                 (TimesNew.Bd)
/TimesNewRoman,BoldItalic           (TimesNew.BdIt)

/Arial                              (Arial.Rg)
/Arial,Italic                       (Arial.It)
/Arial,Bold                         (Arial.Bd)
/Arial,BoldItalic                   (Arial.BdIt)

/CourierNew                         (CourierNew.Rg)
/CourierNew,Italic                  (CourierNew.It)
/CourierNew,Bold                    (CourierNew.Bd)
/CourierNew,BoldItalic              (CourierNew.BdIt)
```

Common to all PostScript files, any lines beginning with the "%" sign represents a remark line (equivalent to "REM" in Basic) which will be ignored. This includes the five font families that can not be assured will be on your system. If you have access to these RISC OS fonts, you may wish to remove the appropriate "%" characters at the start of each line. The change will only take affect upon quitting and restarting RiScript.

To add another Type1 font map, insert another line after the **/ZapfDingbats** line and follow the format of the following example.

For this example, we shall add a fictitious Type1 font called **Cerilifontist** which exists under RISC OS as **Certifax** and comes in the four weights of:

Type1 font weight	**RISC OS font equivalent**
Cerilifontist-Regular	Certifax.Medium
Cerilifontist-RegularItalic	Certifax.Medium.Italic
Cerilifontist-Bold	Certifax.Bold
Cerilifontist-BoldItalic	Certifax.Bold.Italic

(Note the use of the minus (-) sign to separate font name and wight/style in Type1 and the standard RISC OS method of using the filer's directory to separate name, weights and styles.)

With RiScript's **FontFiles** resource file open, add the lines:

```
/Cerilifontist-Regular        (Certifax.Rg)
/Cerilifontist-RegularItalic  (Certifax.RgIt)
/Cerilifontist-Bold           (Certifax.Bd)
/Cerilifontist-BoldItalic     (Certifax.BdIt)
```

These lines point RiScript at a corresponding PostScript mapping file with the **!RiScript.Resources.Font** structure. Within this directory, create a new directory entitled **Cerilifax**. Open this newly-created directory.

Using your text editor, create a new "PoScript" settype file (if using Edit, bring up **Iconbar menu ▸ Create ▸** and at the bottom of the menu enter "PoScript" and press **Return**). Now enter the following into the new PostScript file (with the only two line returns between "%!" and "/Cerili...").

```
%!

/Cerilifontist-Regular /Certifax.Medium Standa
rdEncoding mapfont
```

Save this file as **Rg** within the newly created **Certifax** directory.

Repeat this last stage of creating a small PostScript mapping file three times with the following contents and save each one in the newly created **Cerilifax** directory.

File name: **RgIt**

```
%!

/Cerilifontist-RegularItalic /Certifax.Medium.
Italic StandardEncoding mapfont
```

File name: **Bd**

```
%!

/Cerilifontist-Bold /Certifax.Bold StandardEnc
oding mapfont
```

File name: **BdIt**

```
%!

/Cerilifontist-BoldItalic /Certifax.Bold.Itali
c StandardEncoding mapfont
```

That is all that is required to set the new font mapping. To activate this new information, you first have to quit and then restart RiScript.

Notes:

1 *Ensure that you only map fonts which you are certain to have on your system. If you map fonts to RISC OS ones which aren't present, RISC OS may be liable to produce erroneous error messages.*

2 *In the example given, the original Type1 font name was greater than the maximum file name length (pre-RISC OS 4) allowed (10 characters). Due to this, the font mapping directory created was named after the RISC OS name of "Cerilifax". However, this directory name and references to in the "FontFiles" file are arbitrary and could be anything.*

3 *Other mappings and their associated mapping directories within the "!RiScript.Resources.Font" structure provides further examples of how mapping work.*

Recommended only for users familiar with RISC OS systems.

Removing mappings

Although this section is not as involved as adding extra mappings, you still require a basic knowledge of how to edit files under RISC OS. Again, if you feel that you are not sure about the procedures, it may be wise to ignore this section.

Before commencing, remember to only edit your installed copy on your hard disc and ***not*** *the original RiScript installation disc! Keep the original floppy discs write-protected and stored safely so that it is possible to re-install the software if corrupted beyond repair.*

You may wish to remove mappings that were supplied as default or have been later added. One possible reason for this is that the font required may be present with the document file and you wish to be absolutely certain that a complete and accurate match is achieved compared to what the author created.

Note that Times (Trinity), Helvetica (Homerton) and Courier (Corpus) may not be removed from mapping as they are hardwired into RiScript.

To temporarily remove a mapping, load **!RiScript.Resources.Font.FontFiles** into a text editor such as Edit or Zap and place "%" symbols at the start of each line referring to the font map in question. An example of this in the **FontFiles** file supplied with RiScript is the temporary unmapping of the "Bookman" font as all variants of weight for this font have the "%" sign inserted at the start of each line.

To reinstate a mapping, just delete the "%" symbol(s).

Note that for any unmapping or mapping to take effect, RiScript must first be quit and restarted.

Font type issues

There are four main font types that can be embedded or mapped to within PostScript and PDF files; Type 1, Type 2, Type 3 and TrueType™. As previously covered in this chapter, RiScript can automatically convert Type 1 and 2 fonts to RISC OS ones which may be used by the font manager to provide a high quality anti-aliased display. However, RiScript does not currently extend this facility to Type 3 and TrueType™ fonts due to various technical issues.

In order to render Type 3 fonts, RiScript has two main options; map the font specified within the file to a previously installed RISC OS equivalent (allowing for on-screen anti-aliasing) or secondly by rendering each character's outline as done with vector profiles. By mapping the font there is always the risk of inaccuracies between the author's version and the RISC OS equivalent. On the positive side, the screen view quality is good and the rendering is fast.

The second method of rendering the profiles of each character has the advantage of being absolutely faithful to the author's intentions. On the negative side, this process is very time consuming due to the process' very nature and the display is lower quality due to the lack of anti-aliasing. However, the print quality will not be affected and has always got the added advantage of being completely accurate.

To force RiScript to map known Type 3 fonts, the **Substitute Type 3 fonts** option must be ticked in the **Choices, Objects** window (se the chapter "Choices"). Unticking this option will ensure RiScript renders each character's profile regardless of whether a font map has been specified.

TrueType™ fonts , which are used less frequently with PostScript files, may only be mapped to currently RISC OS fonts.

Chapter 4

PDF creation font issues

The overall process of PDF creation is covered is discussed in the later "Creating PDF files" chapter.

With the advent of version 4.10, RiScript was given the added ability of embedding font data found within the original PostScript file into the exported PDF document. This major advance brings the significant benefit of minimising PDF file size if you wish to ensure layout and design accuracy whilst allowing the recipient to receive the document with the text in tact.

The process of embedding fonts within and exported PDF is transparent to the user. The only requirement when doing so through a file generated by the standard RISC OS PS printer driver is that the original font remains installed for reference by RiScript. Therefore when creating the original PS file, export it as a PDF in RiScript in the same session.

It is possible to exclude fonts from being automatically being embedded by forcing RiScript to automatically convert all fonts to paths (see font choices details on page 44). This can vastly increase the resultant file size but absolutely ensures that what is in the original document will be translated over without any font issue concerns on alternative systems. It is also the only method presented if font copyright is at risk of being breached.

Please note that RiScript does not differentiate between printer driver output with fonts mapped or substituted with Type 3 fonts (both options controlled by !FontPrint as supplied with all RISC OS machines). In both cases, RiScript will embed fonts in the PDF by converting the original RISC OS font data to PostScript Type 1 fonts.

Using fonts with pre-made Type1 variants

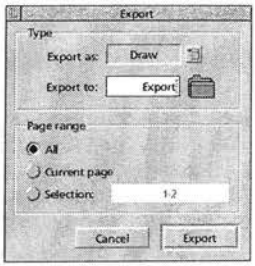
Certain professional RISC OS fonts, such as those supplied by EFF (`www.eff.co.uk`), have professional Type1 variants of the font within the font directory. These variations are desirable due to their likely feature of crafted hinting, etc. Therefore RiScript automatically detects their presence and embeds this data rather than convert the RISC OS original.

Drawfiles & Text export

RiScript maintains all document data in its original form. Therefore profiles (constructed of lines and/or curves), bitmaps (sprites) and text are all preserved. These objects may all be converted into their Drawfile equivalent and saved out in this format for ready use across many RISC OS applications, including Cerilica Vantage. Alternatively the text may be extracted into a plain text file.

Drawfile export

When interpreting PostScript or PDF document, it is possible to export all (or if the document is DSC-compliant or PDF, a selection of) pages or the current page as individual Drawfiles. As standard Drawfiles are single page documents, a range of individual pages would be saved into a directory.



To export as Drawfiles click on the navigation bar's export button, press **Shift-F3** or select **Menu ▸ File ▸ Export...** to open the **Export** window shown, right. Ensure that the **Export as:** text states **Draw**. If not, select this option from the pull-down menu or use the key short-cut of **Ctrl-D**.

The **Page range** section of the window allows which page(s) is to be exported. Note that a selection is not possible if the document being viewed is a non-DSC compliant PostScript or EPS.

Key short-cuts to select page ranges are as follows:
Ctrl-A (All)
Ctrl-C (Current)
Ctrl-S (Selection)

Text export

Text export may be found from the same **Export** window as with Drawfile export, above. To export as a single plain text file, select **Text** from the pull-down menu or use the key short-cut of **Ctrl-T**.

Further export options

PDF export is covered separately in the following chapter. However, RiScript export allows a number of options if the current document loaded is a multi-page DSC-compliant PostScript or a PDF file.

There are additional Text export options to be found in the "Choices" chapter (8).

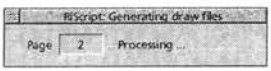
Page range

This allows you to specify whether you wish to export all pages (**Ctrl-A**), the current page (**Ctrl-C**) or a page selection (**Ctrl-S**).

If you click on the **Selection:** radio button, the writable area is ungreyed and you are able to give any appropriate range. For example, if you wished to save pages 8 to 15, inclusive, of a 36 page document, you would enter **8-15**. Note the use of the negative sign to separate the page numbers (no spaces).

Starting the export process

Once you are satisfied with all export options, enter the name in which the directory containing the range of Drawfiles or single text file will be saved in the writable icon to the right of **Export to:** and drag the directory icon onto a filer window.



The process of interpreting and saving the Drawfiles and text files may take some time depending on the speed of your computer and the size and complexity of the original document.

If you have already exported a document and wish to repeat the process (ie. a filer path is already shown), click on **Export**.

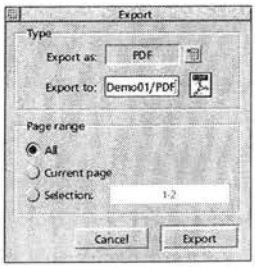
Creating PDF files

RiScript is able to create PDF files from PostScript files, such as ones created by the standard RISC OS PostScript printer driver. This facility allows you to create full multi-page PDF files that are viewable on many platforms such as PCs and Apples that retain layout, contents and fonts mappings or profiles (see notes at the end of this chapter).

The process is very easy and comparable to exporting multi-page Drawfiles except that you are able to place author's information within the file itself which may be discovered by any recipient.

Exporting PDFs

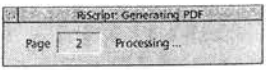
To begin the creation of a PDF file, you first need an appropriate PostScript file on which the PDF is based. For more information about the method of creating a PostScript file through the RISC OS printer manager, please refer to the manufacturer's documentation and the "PSPrnt/PDF" file found on the support disc.



Drag the DSC-compliant PostScript file into RiScript to begin the interpretation process. You can check that the file is appropriate if it states **PostScript DSC** on the page view's navigation bar. Next, click on the navigation bar's export button, press **Shift-F3** or select **Menu ▸ File ▸ Export...** to open the **Export** window shown, right (just as with exporting multi-page Drawfiles).

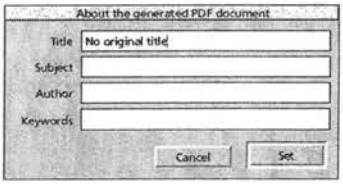
For details about the page range options, please refer to the previous chapter and the section entitled "Page range".

Click on the pull-down menu button to the right of the text **Export as:** and select **PDF** or press **Ctrl-P**. Then enter the file name you wish to save the PDF as and drag the icon onto a filer window.



The export process, which may take some time depending on the complexity of the file, will commence with the status being shown in a window similar to the one, right.

Document information



The PDF format allows the author to place four items of information within the file itself. These include title, subject, author and keywords. There is no absolute limit as to what may be placed within each section, but it is advised that it is kept short and an attempt is made to follow the headings.

Once as many of the boxes have been filled out as you wish, click on **Set** to finish the PDF creation process.

Demonstration

It is possible to try the process of creating PDFs by using the "Demo01/PS" file supplied with RiScript on the support disc. Drag this file into RiScript and follow the previous guide. The end result should be similar to the example file "Demo01/PDF" as this itself was created using this process.

Notes about the creation of PDF files

1 Please read the section entitled "PDF creation font issues" on page 36 as it contains useful information for creating successful PDF files.

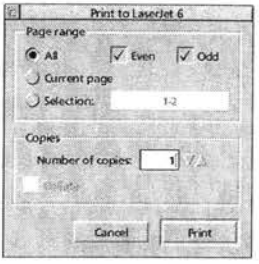
2 RiScript does not allow the user to set the four permission status tags (print, edit, copy or annotate) as described in the section entitled "PDF file information". Also, due to the lack of information present in the original DSC-compliant PostScript, it is not possible to specify hyperlinks or bookmarks. It may be possible with further development that Cerilica Vantage-created PostScript files may contain such data that could be translated into RiScript-generated PDFs as Cerilica Vantage is multi-page and hyperlink capable.

3 If you intend to pass the created file on to PC (Windows™) or Apple Mac™ users via a PC-formatted disc or via the internet, don't forget to append "**/PDF**" to the end of the file name.

Printing

There is no need to export a document as a Drawfile in order to print the contents. RiScript allows direct printing of PostScript and PDF files.

In order to print a document, or a section of, load the file and click on **Menu ▸ File ▸ Print...** to open the print dialogue window as shown, right or press the **Print** key.



Please note that the RISC OS printer driver needs to first be loaded before this dialogue box may be brought up.

Page range

This allows you to specify whether you wish to print all pages (**Ctrl-A**), even or odd (if applicable), the current page (**Ctrl-C**) or a page selection (**Ctrl-S**).

If you click on the **Selection:** radio button, the writable area is ungreyed and you are able to give any appropriate range. For example, if you wished to print pages 8 to 15, inclusive, of a 36 page document, you would enter **8-15**. Note the use of the negative sign to separate the page numbers (no spaces).

Copies

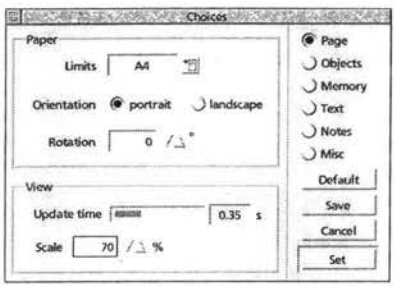
The up and down arrows increase and decrease the number of copies you wish printed, respectively. Alternatively, you are able to type the number of copies you wish in the writable box.

If you specify more than one copy, the option to collate the results is ungreyed. If ticked, the pages will be printed in the order of 1, 2, 3,... 1, 2, 3,... If unticked, the pages will be produced in batches like 1, 1, 1,... 2, 2, 2,... 3, 3, 3,...

Click on **Print** to start printing.

Choices

The RiScript choices window allows the user to determine permanent settings describing how the application should operate in the current and future sessions.

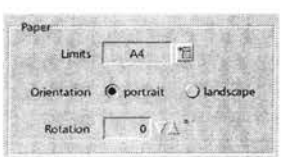


To access RiScript's choices click on **Iconbar menu ▸ Choices...** which brings up the window, left. The choices available are split into four sections and made available by clicking on the appropriate radio buttons; **Page**, **Objects**, **Memory** and **Misc**. By default as soon as the window appears, the **Page** option is shown.

In every case, clicking on **Default** reverts the options back to the "factory settings", **Save** saves the new changes which will be used in future sessions, **Cancel** closes the window whilst ignoring any alterations and **Set** actions any changes to the settings for the current session only.

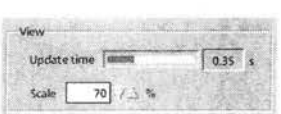
Page

Paper



The paper settings are described fully in the chapter entitled "Viewing and navigation" (2). To summarise, the **Limits** determines the viewable area of the RiScript page window in terms of standard page sizes. (Custom page sizes are possible per interpretation from the RiScript viewbar.) Page rotation and rotation (in steps of 90°) may also be specified. Note that none of these settings affect the actual contents of any document being viewed.

View



When interpreting a larger/complex document, you will notice that the page view updates in stages and not continuously in a smooth manner. The interval (in seconds) between each screen update may be altered by sliding the **Update time** bar. The greater the amount of time, the more RiScript allows the RISC OS desktop to operate as normal.

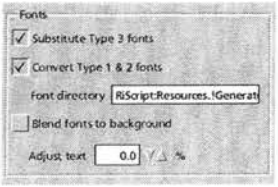
Objects

Images

Any bitmaps within PostScript or PDF files are converted into sprites for display in the RiScript page window or for export. The colour depth to which these original bitmap images are converted to depends on the **Colours** setting. Note that only RISC OS 3.5 and higher hardware is capable of displaying the higher colour depths of 32,000 and 16 million colours.

Increasing the **Buffer size** setting may allow RiScript to operate faster. This can be particularly the case when dealing with PostScript files produced by the RISC OS printer driver. 16Kb is seen as the minimum. Depending on the limits of the hardware being used, you may find a setting of 128Kb or higher beneficial.

Fonts



The option and consequence to **Substitute Type 3 fonts** is covered in the "Choices" chapter under both "Font type issues" and "PDF creation font issues".

The option to automatically **Convert Type1 & 2 fonts** is set as default and is advised that it remains this way.

If either option is unticked, the character profiles will be interpreted which is more time-consuming (and not anti-aliased on screen) but more accurate in some cases. Note that unticking the **Substitute Type 3 fonts** will force RiScript to output PDF files with all characters converted to paths rather than embedding the font data within the exported PDF file.

Converted fonts are normally placed within the **!Generated** directory found, by default, within !RiScript. It is possible to specify an alternative filer path (and therefore font storage loaction) in the writable icon next to **Font directory**.

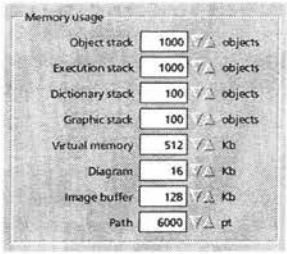
From RISC OS 3.5 and onwards, it was made possible for the font manager's anti-aliasing to blend in with the background (ie. the background colour on which the font is placed is taken into account rather than being assumed as white). By ticking the **Blend fonts to background** option, it is possible to switch this facility on and increase the page view quality.

Finally, it is possible to alter the **Adjust** option. The adjust parameter is a quality value. It makes a trade-off between the number of objects in the resulting diagram (which adversely influences memory usage and speed) and the accuracy with which width-adjusted textual objects are rendered.

If the exact placement of each character is critical this number is to be set to zero. If the best result in terms of editability is desired, the value should be 100. 10% is deemed as a maximum if you wish to view the document to a fair degree of accuracy.

Memory

Memory usage



Interpreting PostScript (and PDF) files can be quite a memory-intensive operation and the amount of memory RiScript has to use is a case of "the more, the better". By allocating more stack and path memory to RiScript, the more file can be interpreted.

As default, RiScript is set to run on what should be seen as a minimum memory requirement. As many RISC OS machines now have beyond 16Mb of RAM, it is possible to adjust these values to allow larger files to be processed with ease. One of the key adjustments to be made for pre-RiscPC hardware, if you do have access to sufficient memory, is to increase RiScript's **Virtual memory** to 2Mb or higher as well as increasing the **Diagram** allocation. These two setting have no affect on RISC OS 3.5+ hardware.

What follows is a table of suggested adjustments to RiScript's memory allocation upon the occurrence of various errors:

Error	Suggested solution
stackoverflow	Increase **Object** stack size
dstackoverflow	Increase **Dictionary** stack size
estackoverflow	Increase **Execution** stack size
limitcheck (...gsave/save)	Increase **Graphic** stack size
limitcheck (...moveto, lineto curveto, closepath)	Increase **Path** size

i

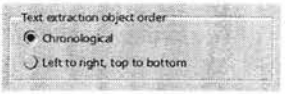
Note that memory usage changes have no effect until RiScript is quit and run once more.

Text

The following Text choices control the behaviour in which text is exported from RiScript (**Menu ▸ File ▸ Export...** [as: text]).

All text options are effective immediately by clicking on **Set** or **Save**. There is no need to save the settings, quit and reload RiScript.

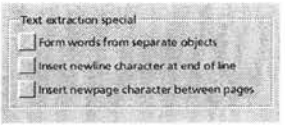
Text extraction object order



The order in which text and paragraphs visibly appear on the page in a PDF or PostScript file is not necessarily the order in which they occur within the file chronologically. For example, if a user enters a number of lines of text in !Draw and then moves the lines up and down the object stack (Front and Back), the order in which they will occur in the document and therefore be PS printed will also alter accordingly.

This RiScript text export toggle option allows the user to make a decision whether the text exported should be chronologically (as it occurs in the document) or in a visual manner of left to right, top to bottom. If you export text and the paragraphs seem to be in a jumbled order, toggle this option, **Set**, and try again.

Text extraction special



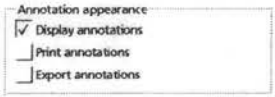
Three further text export options determine how the exported text will be presented. Just as with text order, how PostScript and PDF files visually appear do not necessarily mean the text components are incorporated in the same manner within the file.

Form words from separate objects is a useful option if the exported text appears with spaces between each character. This would be due to the characters being placed in the document individually rather than in pre-formatted paragraphs. RiScript "glues" these characters back together with this option ticked.

Insert newline character at the end of line will ensure lines returns are maintained as displayed in the document. In addition to this, **Insert newpage character between pages** inserts a special "new page" character code as commonly found on alternative systems.

Notes (PDF annotations)

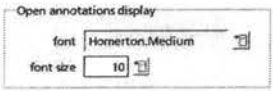
Annotation appearance



Display annotations is a general toggle option to allow or disallow annotations to be displayed.

When appropriate, the option to **Print annotations** allows prints from RiScript to produce annotation appearances. Associated with this, the option to **Export annotations** will carry over annotation appearances when appropriate.

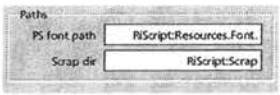
Open annotations display



Both options are self-explanatory and control the font and font size used when displaying annotations

Misc

Paths



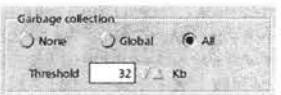
PS font path determines where RiScript looks for PostScript font data, as described in the "Font handling" chapter. It is advised that this remains as supplied.

By default, RiScript uses the standard RISC OS **!ScrapDir** (typically within the **!Boot.Resources** directory) to store temporary files when processing documents. This can be changed when specific non-standard system setups require this or when attempting to speed scrap directory usage up by utilising the RAM disc. If you are not confident with the implications of the previous comments, it is advised this option remains as supplied.

Autoload plugins

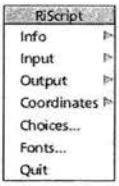
It is advised that this section remains as supplied.

Garbage collection



It is advised that this section remains as supplied.

Iconbar menu



Some of the entries on RiScript's iconbar menu have not been covered previously.

Quit

Clicking on this option quits RiScript and discards any interpreted files regardless of whether the process was completed or only part-way through. No warning is given if any interpreted files are not exported.

Input

Following the **Input** ▸ entry is virtually redundant with this version of RiScript as the application now automatically decides how to process any given PostScript, DSC-compliant or PDF file.

Each entry allows the user to alter RiScript's mode of operation. If both the DSC and PDF plugins are loaded (see "Choices, Autoload plugins") then **RiScript, DSC-plugin** and **PDF-plugin** options will be available. Clicking on any of these will alter RiScript's processing state as indicated by the text in the page view's navigation bar.

Input ▸ **Executive** is only given as an option if !ScripTerm (see later) is previously run.

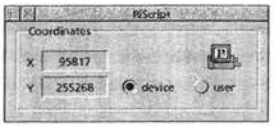
Output

It is possible to specify what RiScript does with any interpreted documents. By default, and logically, it displays any results in the page view window from where the document may be exported and printed.

However, it is possible to specify by following **Output** ▸ which form of output is required. If the RISC OS printer driver is loaded, the options are **None, Window, Drawfile, PDF** and **Printer**. Selecting **Drawfile** or **PDF** requires that you first drag the output file to a filer destination. Selecting **Printer** will automatically print any file loaded into RiScript.

Coordinates

To experience the function provided by this feature, it is advised that you load a PostScript or PDF file into RiScript first (such as "Demo01/PDF" as supplied on the support disc).



Following **Coordinates ▸** gives one possible entry; **Show (Shift-F9)** with two others greyed out. With RiScript's page view showing a loaded file, click on **Coordinates ▸ Show** (or press **Shift-F9** if the RiScript page view has the input focus). By doing so, the RiScript coordinate window will be displayed as shown, left.

When you place the pointer over the RiScript page view, the **X** and **Y** coordinates in this window will animate constantly showing you the position relative to the page's origin (normally lower left corner).

Two coordinate types are given as an option; **device** and **user**. To toggle between either, press **Shift-F10** if the RiScript window has the input focus or click on the coordinate window's radio buttons or follow **Iconbar menu ▸ Coordinates ▸**.

Note that the page view scale and rotation (controlled through the viewbar options) are taken into account when showing the coordinates. For example, if you rotate the page view by 90°, the origin will appear to be the lower right corner of the page.

ScripTerm

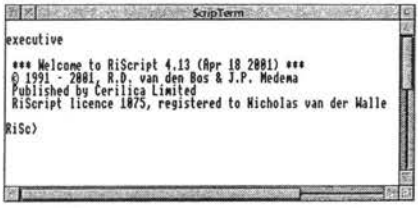
Recommended only for users very familiar with the PostScript language.

This additional application supplied with RiScript is only intended for users very familiar with the PostScript programming language as it allows direct access to RiScript's interpretation engine. ScripTerm can prove very useful for developing and debugging PostScript.

ScripTerm allows the entering of PostScript commands that will be interpreted immediately. Furthermore, messages of the PostScript interpreter are displayed in the ScripTerm window. Hence it functions as a simple terminal that is connected to the interpreter.

!ScripTerm may be loaded before or after !RiScript but only becomes active if RiScript is operational. Upon loading, you are presented with the **ScripTerm** interactive dialogue window, below right (although the exact start-up text may differ).

Upon loading of !ScripTerm, the RiScript input mode automatically switches to "Executive". Changing back to any other mode such as DSC and PDF takes place when a document is loaded into RiScript (by either dragging the file onto RiScript or by double-clicking on it) or if another mode is selected from **Iconbar menu ▸ Input ▸**.



If you are already using RiScript for viewing documents in a manner described throughout this manual, you may switch back to Executive mode (and enable use of the ScripTerm interface) by clicking on **Iconbar menu ▸ Input ▸ Executive**. This can only take place if !ScripTerm is running.

If ScripTerm is disconnected from RiScript, it maintains its contents.

ScripTerm Options

Logging

The ScripTerm window only allows a certain amount of lines

to be displayed which is where logging may prove useful. In order to commence logging of all ScripTerm activity (including feedback from the RiScript engine), drag the text file found by following **ScripTerm menu ▸ Logging ▸ Log to ▸** to a filer window. Alternatively, this save window may be opened by pressing **Ctrl-F3** if the ScripTerm window has the input focus. To stop logging, click on **ScripTerm menu ▸ Logging ▸ Stop**.

Sideways scrolling

This option may be toggled on and off by clicking on **ScripTerm menu ▸ Sideways Scroll** and determines whether the terminal window is automatically scrolled to maintain a view of the text cursor.

Quit

To quit ScripTerm, click on **ScripTerm iconbar menu ▸ Quit**. This will automatically remove "Executive" as an option for RiScript's input.

Loading file onto ScripTerm

Dragging a PostScript file onto the ScripTerm terminal window or double-clicking on the file runs the file through ScripTerm and allows it to remain connected to the RiScript interpreter.

Coordinate feedback

When ScripTerm is connected to RiScript, and the coordinates (see previous chapter) are shown, clicking in the main window will enter coordinate information in ScripTerm. This may be useful for interactively contructing paths.

Appendices

PostScript command compatibility

A table listing the specific PostScript command compatibility of RiScript is now present on the RiScript support disc as a HTML file, entitled **Compat/HTM**. Use a web browser to view this file.

An on-line and possibly more up-to-date version of this table may be found on the Cerilica WebSite at:

`www.cerilica.com/riscript/compat.htm`

Technical references

1 Adobe Systems Incorporated. PostScript Language Reference Manual, Second Edition. Addison-Wesley Publishing Company, 1990. ISBN 0-201-18127-4.

2 Adobe Systems Incorporated. Updates to the PostScript Language Reference Manual, Second Edition. July 1995. Technical Note #5085.

3 Adobe Systems Incorporated. PostScript Language Reference Manual Supplement for Version 2017. April 1996. Technical Note #PS2017.

4 Adobe Systems Incorporated. PostScript Language Documentation Structuring Conventions Specification, Version 3.0. September 1992. Technical Note #5001.

5 Adobe Systems Incorporated. Portable Document Format Reference Manual, Version 1.2, November 12th, 1996.

6 Adobe Systems Incorporated. Encapsulated PostScript File Format Specification, Version 3.0. May 1992. Technical Note #5002.

7 Adobe Systems Incorporated. Adobe Type 1 Font Format, Version 1.1. Addison-Wesley Publishing Company, 1990. ISBN 0-201-57044-0.

8 Adobe Systems Incorporated. The Compact Font Specification, Version 1.0, 15 October 1997. Technical Note #5176

9 Adobe Systems Incorporated. The Type 2 Charstring Format, 5 May 1998. Technical Note #5177

Website resources

Please note that due to the ever-changing nature of the internet, these site links are correct at the time of writing and may be liable to move or close without notice. Cerilica Limited is not responsible for the suitability or accuracy of the contents of the websites and associated links listed.

PostScript

The official Adobe site is the ultimate source of information with regards to PostScript and PDF development due to their status of being the developers.

`http://www.adobe.com`

PostScript FAQ (Frequently Asked Questions) FTP list.

`ftp://wilma.cs.brown.edu/pub/comp.lang.postscript/`

PostScript resource pages.

`http://yoyo.cc.monash.edu.au/~wigs/postscript/`

PDF

Adobe's website currently has the following page which contains many links to PDF resource sites, including material on its own site.

`http://www.adobe.com/products/acrobat/adobepdf.html`

There are many other websites dedicated to the subject of PostScript and PDF files. Many may be easily found using the common internet search engines. Please also refer to the Cerilica WebSite for any development information about RiScript.

Link !RiScript to !Fresco

Recommended only for users familiar with RISC OS systems.

Fresco is one of RISC OS' premier internet web browsers at the time of writing and is capable of using RiScript to view PDF files.

This technique is provided "as is" and Cerilica Limited does not warrant that it will work or is liable for any negative consequences. It has been tested under RISC OS 3.7 with RiScript 4.0 and Fresco 1.72 operating with version 1.31 of the ANT Internet Suite. Cerilica Limited nor ANT Limited are able to provide technical support for this procedure.

To make Fresco start !RiScript when it downloads a PDF file, you must add the following line to the "!InetSuite.Internet.Files.MimeMap" file:

```
application/pdf[09][09]RiScript[09][09]ADF[09].pdf
```

(...where "[09]*" represents a Tab character)*

Please note that a line commencing with "application/pdf" may already be present, in which case edit the remainder of the line to read as per above.

Upon completion, in "!Fresco.Runables" add the line:

```
ADF
```

If this file does not already exist, create it as "Text" settype file.

In order for Fresco to automatically pass PDF files to RiScript to display, !Fresco must first be quit and run once more.

This technique may be used to let Fresco automatically run PostScript and EPS files with the PC file extension of ".PS" and ".EPS" respectively.

Clipping paths

This section is a brief overview of possible problems that may be caused by the lack of clipping capabilities within the Drawfile format and therefore extended to RiScript.

This applies to both viewing of PostScript and PDF documents and export of Drawfiles and PDF files.

Examples of clipping

Clipping is a feature found in the PostScript language and describes a profile by which the contents are clipped. The best illustration of this is the use of frames in Impression as they may be thought of as clipping paths (usually rectangular in shape). If, for example, you place a sprite within a frame and then reduce the size of the frame so that certain parts of the image are obscured from view, you have effectively clipped the sprite.

If you then proceed to PostScript print the Impression file, RiScript will display the whole image once more as the clipping path (frame) will have been ignored.

Other RISC OS occurrences of clipping paths include when a special fill is specified within Vantage or a linear or radial fill in ArtWorks. In these cases, the fill will appear to "explode" beyond the filled profile's boundaries. An example of this appears on the opposite page (upper illustration).

Future development

With the introduction of the stand-alone Cerilica renderer (using technology developed for Cerilica Vantage), we hope that this may be incorporated within RiScript to remove this current deficiency experienced by the RISC OS platform.

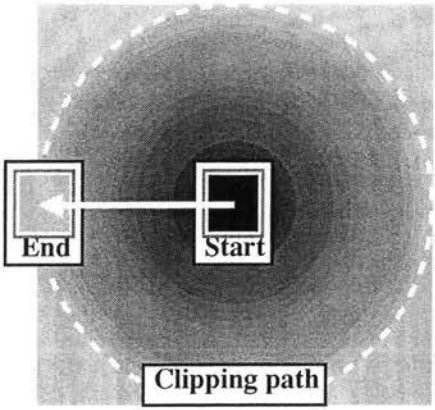
Please refer to the Cerilica WebSite for relevant announcements:

`www.cerilica.com`

Clipping problems illustrated

The image, right, is of a RiScript Drawfile output derived from an ArtWorks file. The ArtWorks file contained a radial fill starting from Black and ending in Blue and applied to a circle, which had a boundary denoted by the "clipping path" dashed line.

As may be seen, the radial fill has "exploded" beyond the clipping path when viewed in RiScript.

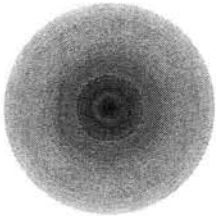


Current work-arounds

There are a number of possible solutions if you have control over the original document from which the PostScript file was created so that this clipping problem may be avoided.

If using ArtWorks, first export the file as a Drawfile (a capability built into each copy of ArtWorks) so that all linear and radial fills are clipped prior to use. There are several settings that are relevant to this process and may be found within ArtWorks' Choices ▸ Draw dialogue box.

To illustrate the effectiveness of this method, the Drawfile, right, was created by RiScript and based upon a file exported from ArtWorks which originally contained the same fill as shown above.



Another situation previously mentioned was that of sprites overflowing a frame within Impression. The work-around for this situation is to crop the sprite prior to placing within the frame by using Photodesk, David Pilling's Image Master or even Paint as supplied with each RISC OS machine.

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If on-screen images appear "broken" when generating PDF files from a RISC OS document, please read this section.

Bitmap image optimisation

When producing documents under RISC OS in applications such as Cerilica Vantage, Impression, Ovation, etc. destined for PDF output via RiScript which include bitmap images (sprites), it is strongly advised that 16 or 24 bit colour images are used (32K, 16M deep colour images). This even means that 256 colour depth images or lower are first converted to 32K colour ones via **ChangeFSI** or the like, before being used.

The reason for this is that the RISC OS printer driver (at the time of writing) performs special operations when handling images up to and including 256 colour depth in order to accommodate a sprite's mask capability – even when a mask is not actually set in a sprite. This special operation breaks up images into small sections which can look bad on-screen as well as take large amounts of time to process for RiScript and any PostScript interpreter.

Using 32K or 16M colour images forces the RISC OS PostScript printer driver to avoid this technique. However, the resultant PDF file size will be roughly comparable or less to that containing equivalent bitmaps in 256 colours or less due to excellent compression techniques inherent to the PDF format and the "cleaner" image condition.

Support disc

Various support material is present on the support disc supplied with RiScript. Due to the continuous evolution of this package, please read the **Readme/txt** plain text file present on the disc for the latest information about its contents.

Areas covered on the disc include:

- **Using RiScript to export layouts and contents of Impression files.**
- **A guide to creating PostScript files via the RISC OS printer driver.**
- **A brief overview of clipping issues.**
- **PostScript command compatibility table (HTML format).**