

Impression Newsletter

Number 3

July 2020

Introduction

This newsletter is for users of Impression-X, the RISC OS desktop publisher and may also be of use to users of the free version, Impression Style version 3.13.2019. The first newsletter explained the historical development of Impression and the second newsletter brought things up to date to release 4b - i.e. Impression-X version 5.78 (28-Oct-2017). It also looked at future developments. Since then release 4c has been issued.

Risc OS Developments Ltd

Originally developed by Computer Concepts, the Impression family was taken over during 2019 by RISC OS Developments Ltd (from its more recent owners X-Ample Technology). Richard Keefe continues to work on the software and has been doing so for a few years now in order to make it 32-bit compatible. This is a big job and is an even greater task with the source code for some original components missing, meaning they will have to be rewritten from scratch.

Meanwhile Impression-X runs under Aemulor or under Virtual Risc PC so that the remaining 26 bit components can still be supported.

What next for Impression-X?

When 5.75 was issued in 2014, improvements were anticipated for long filenames; JPEG support via ArtWorks files; JPEG support embedded in Draw files; DELETE key reverse support and bug fixing in the Indexing process.

With one exception (embedded JPEG objects in Draw files) these have now all

been added and JPEG handling improved.

At the London show in October 2019, Richard Keefe had the latest beta version of the software available (5.78). He was anticipating the release of a new version some time after the show with some new Postscript-related features added.

Bug fixes

Computer Concepts documented a number of relatively minor bugs, some 800 in total, which had been fixed in version 3.13/4.13/5.13 but the necessary changes to the source code have been lost. Richard is therefore working through these slowly in parallel with adding features that reflect the changes to both RISC OS and the hardware on which it runs since December 1996. Release 4c will bring this up to 230/800 complete.

Release 4c

The next release was distributed on 13 March 2020 and brought Impression-X up to version 5.799 (06-Mar-2020). This was the last release for those who subscribed in October 2014 so renew now! It contains bug fixes so that Artworks imported colours will be rendered correctly and a Duplex printing option added to Postscript printing. It included !TransJPG2 (originally provided with release 4b) and copies of Newsletters 1 and 2.

User Manual

The original printed User Manual was some 330 pages (plus contents list and a 13 page index). This has been updated to 347 pages plus index and now identifies the Publisher features that are not available in the now free Impression Style version.

The updated User Manual has been provided with release 4c in PDF form. It can also be obtained by non-subscribers by sending £15 to RISC OS Developments. The manual was produced using Impression, but it is provided in PDF format and has been made suitable for display under RISC OS as well as other platforms.

Where next? Release 5

The list of new features under development is shown below. An estimate is given for most items of their state of completion as at June 2020. Those shown as 'for next release' should be ready for release 5 along with more 5.13 bug fixes.

New subscriptions

A new subscription will be required for release 5 - those who are already subscribers will receive a discount on this.

!Store

!Store will be updated to version 7.9x for 'season one' subscribers and a separate 'season two' download will appear in due course, in time for release 5.

Release 5 - work in progress for next release

- *JPEG rendering for JPEGs embedded in an imported Draw file (75%);*
- *Fix bugs in JPEG importer (80%);*
- *Fix bugs in PS Duplex printing (40%);*
- *Sufficient crypto support for licence file - avoids need for per-user build (50%);*
- *Dictionary update (32 bit and multiple word lists) (70%);*
- *Investigation of bug i.c.w. loading of long filenames (12 to 16 characters);*
- *Dictionary encoder/decoder (45%);*
- *ArtWorks v3 full interface (currently only 2 of 4 features supported) (50%).*

Further work for releases after release 5

- *GIF/PNG/TIFF file importers (30%, one at a time according to demand);*
- *SVG (vector graphic) importer via ArtWorks (15%);*
- *Export of original graphic (currently stored within a Draw file);*
- *Full colour printer interface support;*
- *Direct JPEG rendering in Postscript output (15%);*
- *Full version history;*
- *Protected printing and password protection;*
- *Advanced Encryption Standard (AES) support (AES supersedes DES defined in 1977) (90%);*
- *Printed manual;*
- *Memory scratch increase to prevent overflows;*
- *MS doc, docx and RTF importer/exporter;*
- *Additional fonts.*

Memory usage and JPEGs

JPEG images are now much more common than sprites and offer efficient compression at the expense of a small loss of colour information, designed to be almost unnoticeable to the eye.

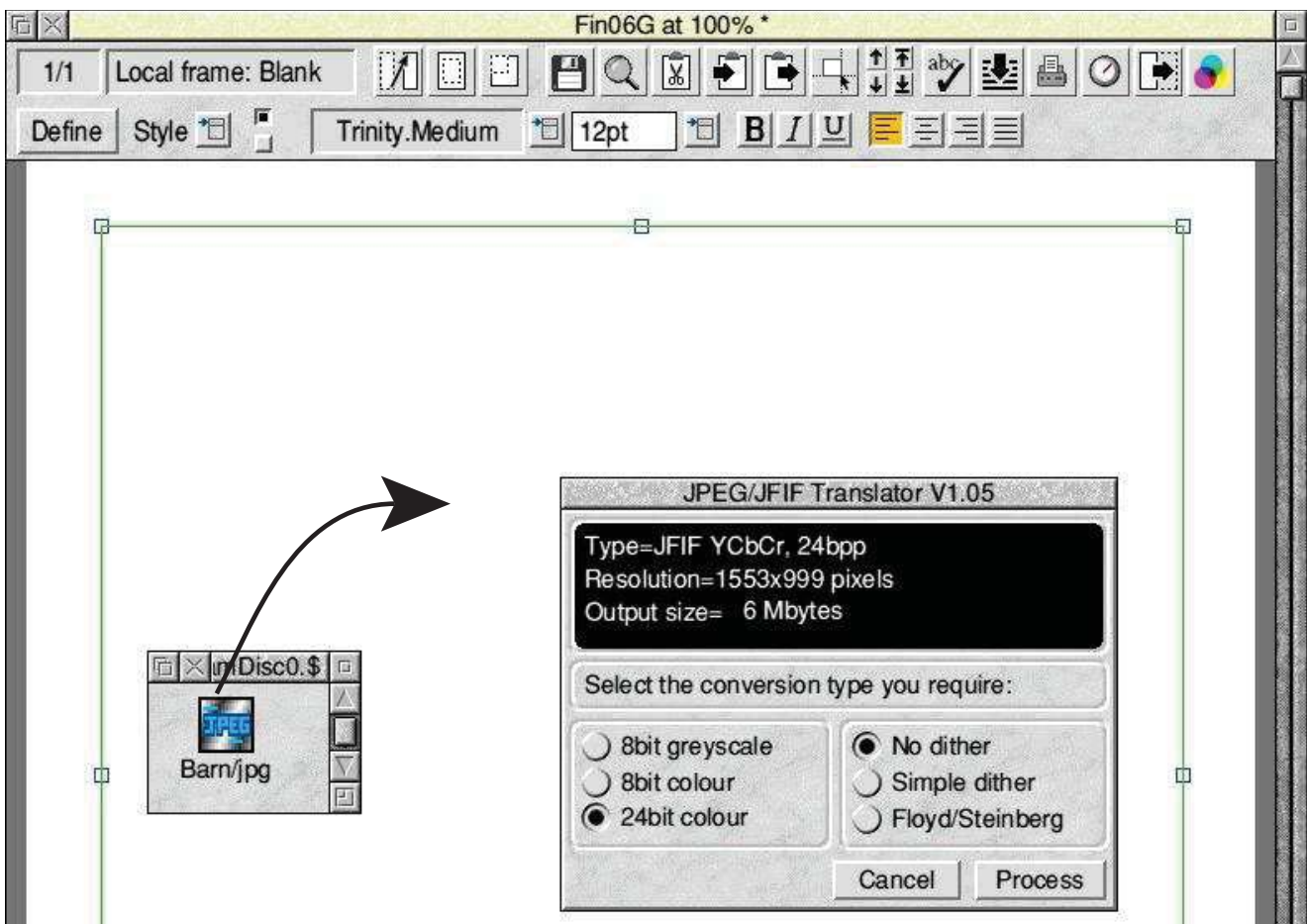
Prior to release 4b, any JPEG file imported directly into Impression was converted to a much larger sprite file embedded in a Draw file by the utility !TransJPEG which is normally stored in Boot:Resources.!System.!CCShared. This was version 1.05 (10-Feb-1994) of the JPEG/JFIF translator. Placing the utility in this directory is the recommended way for this utility to be 'seen' by the filer before Impression starts.

An imported sprite is embedded into a Draw file and uses quite a lot of memory.

A standard 'cheat' for importing JPEG files was to embed them in an ArtWorks file before importing them. This allows them to be held within Impression in their compressed form and only rendered when being displayed or printed.

Why was this 'cheat' used? The reason is that, prior to release 4b, the whole of the current chapter, including images, is loaded into memory during editing and in the 26 bit world the total amount of memory available for this is application memory, limited to about 26Mbytes. With images as JPEGs rather than as sprites there can be more of them.

The utility !TransJPG2 should be placed in !CCShared and the original !TransJPEG removed. This updates the translator to version 1.10 (19-Jan-2017).



What happens prior to release 4b, or if the new JPEG utility has not been seen by the filer. The image is expanded to an 8bit or 24bit sprite embedded in a Draw file. This takes up much more memory than the JPEG but has no advantage. The options allow a smaller colour space to reduce memory usage.

What now happens when a JPEG is imported is that it is automatically embedded in an ArtWorks file and is thus held internally in a much more economical way allowing more images per chapter.

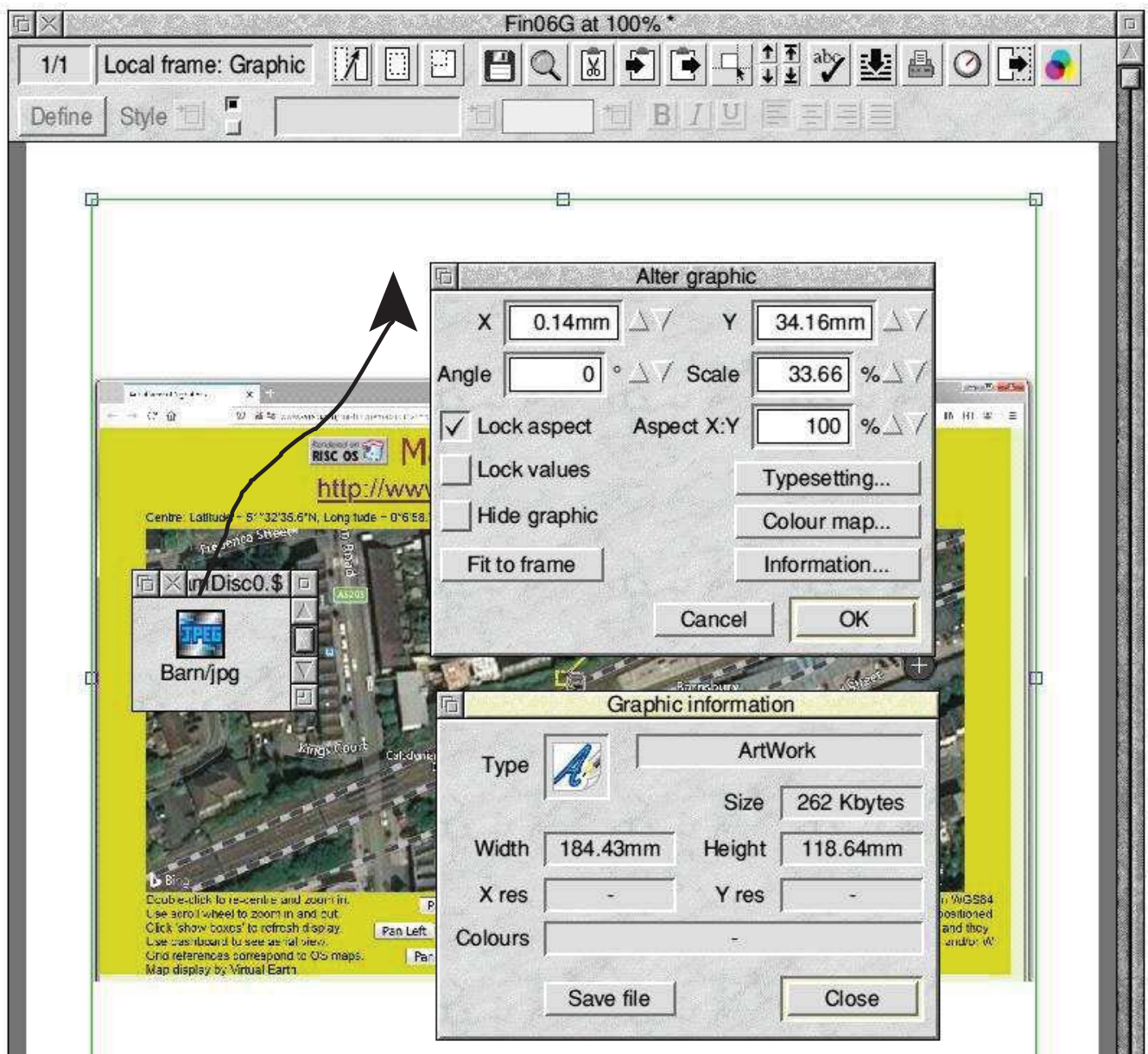
The screen shot below shows that the graphic, which occupies 7Mbytes as a 24 bit colour sprite, is held as an ArtWorks file 262kbytes in size, only a few kbytes larger than the imported JPEG file (259kbytes) itself.

Frames containing graphics

Any graphic in a frame is held internally within Impression in one of two

ways - either as a Draw file containing a mixture of vector graphics and/or embedded bit-image graphics (such as sprites) or as an ArtWorks file with similar content. However Impression can import many different types of graphic files.

A graphic frame cannot contain a text story as well as the single graphic it holds. A text frame can contain graphic items embedded in a particular place in the text story. Each graphic then behaves as if it was a text character with the height and width of the graphic frame at the position in the text where the text cursor was when



Using !TransfPG2, the image appears immediately as it is imported, with no intermediate steps needed. It is held as an ArtWorks file and the ArtWorks file is the same size as the JPEG that was imported.

it was embedded. This places some limits on the size of the graphic window - it must lie within the text margin and within the text frame. Copying and pasting a block of text into the same text window or into another text window will include any embedded graphics but saving the text story, even with styles selected, does not.

Dynamic areas

Dynamic Areas, used from release 4 onwards, free the amount of data Impression can hold in memory from the 32Mb application limit and allow documents to be held in memory up to the size of the Dynamic Area. Not all systems are currently supported as Impression uses certain addresses as magic numbers [this cannot be removed until a release after 32bit completion] and so if the dynamic area provided by RISC OS uses these numbers it rejects it.

In the testing I have done so far, see table below, all the modern platforms support dynamic areas. A notable exception is Virtual Risc PC and this is a

real drawback, Any Impression document containing large graphics (more than 26Mbytes in total in any one chapter) will therefore not load in VRPC.

Object linking & embedding (OLE)

I think it is worth explaining a little about this and a good example is provided when trying to lay out tabular information. It is possible to do this using styles, rule offs etc. but that is not the best way. A generalised interface is provided in Impression which allows a file to be imported which is in Draw file format even where its file type is not &AFF (DrawFile).but of a different file type.

Several applications (e.g. TableMate, Equasor and FamTree) save their data in accordance with the Draw file specification but use a filetype and include extra tags (both allocated by ROOL) which allow their internal data structure to be hidden within the file. When a Draw file is rendered, any unknown tags (draw file object types) are ignored.

Double-clicking such a file in a filer

Platforms which support Impression-X dynamic areas			
Platform	Processor	RISC OS version tested	firmware
Pandaboard ES	A9	5.27 (10-May-2020)	27-Feb-2012
ARMX6	A9	5.27 (12-May-2020)	OS 14 beta
ARMBook	A53	5.27 (23-Jun-2020)	
Pi Zero	ARM11	5.26 (18-Oct-2018)	18-Oct-2018
Pi model 1 B+	ARM11	5.26 (18-Oct-2018)	18-Oct-2018
Pi model 3 A+	A53	5.26 (18-Oct-2018)	18-Oct-2018
Compute module 3+	A53	5.27 (17-May-2019)	
Pi model 4	A72	5.27 (8-Jun-2020)	12-Jun-2020
Titanium	A15	5.24 (16-Apr-2018)	
Iyonix	Xscale	5.16 (18-Jan-2010)	
Mini-m	A9	5.27 (1-Feb-2018)	
Platforms which do not support Impression-X dynamic areas			
Risc PC Kinetic	StrongARM	4.03 (9-Nov-1999)	
Virtual Risc PC	ARM 7500	4.39 (28-Apr-2004)	

window causes its parent application to be launched so that it can be edited. Dragging such a file to an Impression frame simply causes it to be loaded as a Draw graphic. It is recognised as such from its content rather than its file type but Impression remembers the file type under which it was loaded. If its parent application has been seen by the filer, then the action to be taken for that file type will be known as well as how the OLE protocol should deal with such filetypes.

Within Impression, CTRL-double-clicking on such an image in a frame will invoke the OLE protocol to open the image in its parent application for editing. Once the editing is complete, saving the file will save it directly back into Impression. This makes for a very simple and intuitive user interface.

Version 1.10i (06-Oct-1994) of TableMate is provided with both Impression-X and Impression Style and an updated version 5.03d (04-Nov-2001) of TableMate may be obtained from any RISC OS dealer.

It allows much more control over tabular data than would be possible using styles within Impression.

How images are held internally

If a graphic in the form of a Draw file or an ArtWorks file is dragged onto a frame it is held internally in that format. One limitation at present is that JPEG images embedded in a Draw file are ignored. The position is slightly more complicated for an OLE image: if an image that follows the OLE (Object Linking and Embedding) convention is imported, then it is treated as a Draw file for displaying and exporting but held internally as the file type under which it was imported.

Other graphics are either processed by a special loading programme, so that they

JPEG -> TransJPEG 1.05 -> sprite in a Draw file

JPEG -> TransJPG2 1.10 -> ArtWorks file with JPEG inside

TIFF -> TransTIFF -> sprite in Draw file

Clear -> TransClr -> sprite in Draw file

PhotoCD-> TransPCD -> sprite in Draw file

TblMate -> TblMate file

Equasor -> Equasor file

FamTree -> FamTree file

Various image formats than can be imported (apart from sprites and Draw files) and how they are processed.

are presented to Impression in a form that it understands or will be rejected.

Wish List

Sometimes I find that a strange font has crept into a document from some imported text or graphics. It would be really helpful if the 'Compile font usage' menu option would show not just each font used or substituted but also the first page in the document on which it appears. Then it would be a simpler matter to find and eradicate the use of a particular font.

When a document is saved in 'application format' the content of each graphic frame is included as a separate Draw or ArtWorks file. It would be nice if the Graphic Information window (shown on page 4) could include fonts used; leafname of file originally imported and the filename used when the graphic content is saved (e.g. Chapter27.Story15).

Another thing I would like is if Impression-X could, as an option, save a document in a format that could be loaded by Impression Style. Features such as irregular frames would have to be excluded but it would mean that documents could then be loaded by users of the free version.

One more thing would be the ability to use dynamic areas on Virtual Risc PC.

Style versus Publisher

RISC OS Developments

A new RISC OS distribution for the Raspberry Pi was released at the South West show by RISC OS Developments containing open source RISC OS 5.26, Aemulor and Impression Style as well as many other applications.

Impression Style is a robust, full feature product lacking only some esoteric features such as colour separations, guide and irregular frames, typesetting options and colour tables. It includes the features added when Impression II was released.

Aemulor

Impression Style will remain 26 bit whereas Impression-X will continue to be developed into a native 32 bit application.

Aemulor provides a 26 bit environment on 32 bit computers by restricting 'application memory' (set by the WimpSlot) to 28Mbytes for all 26 bit applications. Whilst Aemulor is running, all applications are limited to a maximum WimpSlot of 28Mbytes (or 52Mbytes with version 2.52 of Aemulor) to retain access to modules, which are used by any application and are available at all times, whichever application is running.

Features added in Publisher

From July 1994 Impression Publisher offered some evolutionary advances: improved typographical controls and graphics handling and frames could now be irregular, not just rectangular.

Publisher Plus

The OPI (Open Pre-press Interface) method was added in Publisher Plus to allow low resolution photographs to be used in the document but to be replaced during commercial printing by high resolution equivalents. The need for the OPI interface has largely disappeared as memory capacity on current machines is more than adequate for the high resolution versions to be embedded directly into the Impression document.

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