Video to DVD – Part 5

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Since Parts 1 to 4 were originally published in Archive magazine in late-2005, there has been much further feedback from readers, with enough follow-on discussion for a further part. So although this (final?) part has not previously been published, we hope it's of value. *25% EXTRA FREE* folks!

In one sense, all this interest is very encouraging but, in another, it's sobering to realise that RISC OS can take only a small supporting rôle in this epic production. Never mind. Many thanks to everyone who responded and we'll pick up a number of your inputs which hopefully will be of general use. Names are withheld, mainly to protect the next poor duffer...

Caveat emptor

An Archive reader reported a tale of woe from which we can all learn. As he wanted to import 'raw' video from a VCR, edit it and feed it back out to video tape, he'd bought an up-market, two-way, external plug-in digitiser made by Pinnacle, of the type we'd originally discussed in Part 1.

It came bundled with 'Studio 9' edit application software so he expected soon to be in the business of using the PIPs, cutaways and chroma key effects we described in Part 3. But having installed Studio 9, he was unable to make much sense of it in relation to what he was expecting.

Realisation came when he clicked on About – to discover the title was *Pinnacle*'s Studio 9, not **Ulead's VideoStudio 9**. Aaarrgghh!!

To add to his embarrassment and disappointment, the retailer couldn't offer him a refund on just the software as it had come 'free' with the digitiser box. So he had to fork out the extra for the Ulead VideoStudio 9 which he'd gone in for in the first place.

Just to rub his nose in it, he saw the Pinnacle Studio 9 software (only) on the same shelf – and even the packaging looked similar. To confuse the issue yet further, on the very next display, there was Macromedia's website designer, called Studio 8. Do these people do it to us on purpose? Anyway, *Caveat emptor... [Although at the time of writing VideoStudio 10 is the current version, v9 is still available, so do beware the gotcha.]*

Digitising analogue video *(Method 4)*

In Part 1, we explained three methods of getting your analogue video converted into digital format: an internal digitiser card, an external plug-in digitiser doing the same job – or cheat by using a TV/video card. Unless you already happen to have a TV/video card pre-installed, that could cost you between c. £35-120, depending on the digitiser's capabilities.

However, another reader came up with a nifty alternative, in his case at no extra cost, and which we'll call Method 4. This assumes that you have or will be getting VideoStudio v9 or later (by *Ulead* remember...) and that, being a devotee of all things high-tech, you already have a 'domestic' DVD *recorder*. (OK, that's going to cost loadsamoney, but if you accept the many inherent advantages of having a DVD recorder anyway, this 'added-extra' is FOC.)

With this kit, the Method 4 procedure itself is very simple and rather neat:

– Plug your analogue video device (camera, VCR, DVD player, etc) into the DVD recorder and record the source material (or TV programme!) onto DVD.

– Put the disc into your computer's DVD player. Unless it's all in one big chunk, check the contents using something like *Windows Media Player* and note which title(s)/chapter(s) you wish to use.

– Fire up VideoStudio and, in **Capture** mode, download the requisite video file(s) into the computer, following which you can use them as source *digital* material as normal.

Nice one! Although this method is aimed at capturing analogue video, the same procedure can cover a situation where you have a DV camera but your computer doesn't have a Firewire socket – but the DVD recorder does. In which case, plug in the camera and proceed as above.

Although the procedure is very simple, there are a few points to consider when using it:

– As always, go for the best-available connection method, depending on what connectors are on your source device and the DVD recorder. If possible, go for Firewire (for a DV camera), SCART (for a plug-in DVD player) or, failing that, S-video.

– Many DVD recorders, but not all, have an S-video socket and stereo audio sockets on the front panel (usually *AV3*), perhaps also with an adjacent Firewire socket.

– Use a composite connection only as a last resort, although it must be said that this is a perfectly satisfactory method for connecting a low-band source such as a VCR.

– If you record the material onto DVD in one chunk, the file captured by VideoStudio could be enormous and thus a tad unwieldy. You might prefer to split it into clips of, say, 5-10 minute segments, allowing for a short overlap at the in/out points. Once captured by VideoStudio, these will be more manageable and can easily be cut further, edited and/or butted together as desired.

– If the DVD recorder has a hard disc drive, we'd then suggest initially recording the material onto the hard disc in one chunk and, subsequently, dubbing it across to DVD in the 5-10 minute segments (overlapping is no longer necessary but is perhaps still advisable).

– The advantages of this indirect method are that it saves having to keep fiddling with the camera controls to split up the video (saving wear and tear on the camera), makes it much easier to pick-and-choose which bits you wish to put onto DVD (a sort of very rough edit) and you can give each file a meaningful name, making identification that much easier when you come to edit the material.

– Clearly, the format of the DVD used for transferring the material from the DVD recorder to the computer must be compatible with both DVD drives, but often a re-writable DVD+R/W or -R/W disc will be suitable.

– A known exception are Panasonic DVD recorders which use the re-writable DVD-RAM format. Although the special drivers are available for some computer DVD drives, we've never had any success in getting them to read DVD-RAM discs formatted on a Panasonic DVD recorder. Nor will the recorders read DVD-RAM discs formatted on the computer. Catch 22...

– Not to worry; a write-once DVD-R disc will not only do the transfer job but can also act as a backup/archive disc should you subsequently lose or corrupt the original material on analogue or digital video tape.

Chroma key handling

In Part 4, we discussed the problem of how to conveniently reposition and resize an overlay in relation to the background image if the latter can't easily be seen, an example of that being illustrated in Part 3, Fig 4.

We've since received a number of enquiries along the same lines, so maybe it will help to clarify the point if we give you an example piccy and discuss the procedure in more detail.

To make it easier to handle, all we need to do is first to generate the overlay (still or clip), initially positioned centrally, at quarter-frame size, in the normal way (Fig 1).
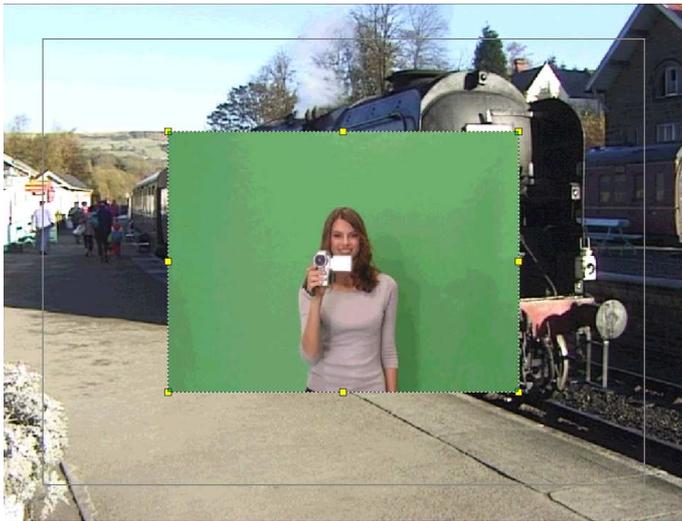
Fig 1 Introducing an overlay

Then, *before* repositioning and resizing the overlay, we apply the transparent mask, whipping away the green studio backdrop and leaving Miss VideoStudio 2005, seemingly legless (!), and 'floating' above the station platform (Fig 2).

Generally we can ignore the outer, black, 'Safe area' box. The region outside the rectangle is not guaranteed to be displayed on your TV but, in our experience, this is never a problem.

We're interested in the dotted, bounding box of the overlay which – even with the transparent mask applied – is still displayed, along with its eight *yellow* corner and side drag boxes. (For the moment, ignore the four small, green boxes at the corners; their use will be described in the next topic.)

Now, with the background image more clearly visible, we can easily reposition the
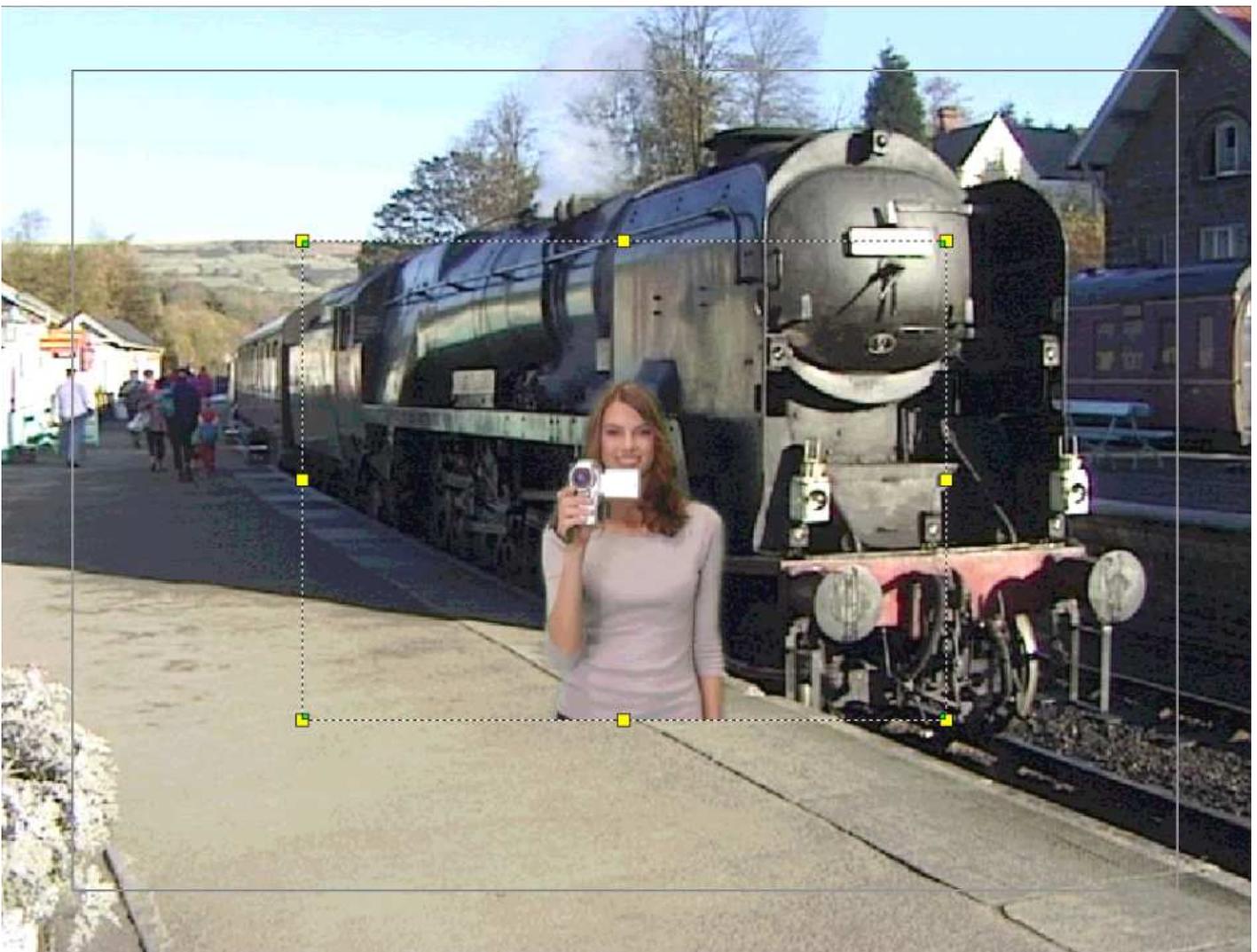
Fig 2 Overlay after application of transparent mask

overlay by select-dragging – partially off-screen if desired – and resize it by select-dragging any of the eight yellow drag boxes (aspect ratio locked). The end result is illustrated in Part 3, fig 5.

Re-shaping an overlay

In Part 3 we said that, although an overlay can easily be repositioned and resized, its shape can also be distorted. The point of this was queried so we'll also illustrate that with an example.

Let's say we wish to superimpose a movie clip of a BBC 'met-man' onto a static background image with a notice board which is slightly skew. The composite effect we wish to achieve is shown in Fig 3.

Fig 3 Re-shaping an overlay

This is very easy to handle. First apply the met-man movie overlay, in the normal way. Then initially make it smaller, by select-dragging the yellow drag-boxes, so you can see the the four corners of the notice board.

Now select-drag the four, small *green* corner boxes of the overlay (illustrated in Fig 2) into position, tweaking them as necessary to finish up with what's shown in Fig 3. And that's it.

In this particular example, the overlay remains nicely rectangular, albeit rotated slightly to fit within the notice board area. But it's just as easy to use the green drag-boxes to distort the bounding box into any rhomboid shape you want.

Slideshows revisited

The topic of slideshows which we discussed in Part 3 was a little tenuous in the context of video editing but we received a fair amount of feedback and queries. We can reduce most of this to a few points:

– Although the idea of putting the slideshow onto DVD was intended for ease of 'auto' display on TV, the contents of the same disc can of course be displayed on a computer monitor, up to full screen size, using a suitable display utility such as *Windows Media Player*. A commentary and/or musak tracks can be included if desired.

– If DVD-burning is not possible for some reason, selecting the alternative 'SVCD' format and burning the results onto CD can be a perfectly acceptable alternative (see the related discussion in Part 4) *provided* the DVD player supports the SVCD format; not all do.

– A third option, instead of combining the images into a composite slideshow file, is to burn them separately onto CD, in JPEG format. The limitations here are that you have to 'drive' the slideshow (big deal), no transitions and commentary/musak tracks are available and the DVD player must support JPEG display. Against that, a very high quality display can be achieved, *provided* you prepare the JPEG images for display on TV in order to avoid 'shimmer' etc (see our series of articles on 'Viewing JPEGs on TV' in Archive mag 17.9 p47 *et seq*).

– The contents of the same JPEG disc can be displayed on a computer monitor and there are lots of PC/Mac utilities to support that, Windows XP's built-in *Picture and Fax Viewer* being adequate for the purpose.

– For RISC OS users with ARM-powered machines, the DVDs and VCDs can be run using *KinoAmp*, while the JPEG CDs can be run, with a range of transitions, using *OHP* or *Panorama* (if you can still get them).

Squished & squashed images

For some time, we've been aware that snapshots captured within VideoStudio have occasionally appeared somewhat 'squished', i.e. the standard image aspect ratio of 4:3 seems to be wrong (Fig 4).

Fig 4 Squished …

Conversely, we've also been aware that JPEG images with a 4:3 aspect ratio are displayed wider than expected on TV; they appear a little 'squashed' and partly cropped (Fig 5).

Fig 5 … and squashed … (same height)

Someone else remarked on the same phenomena but until recently we haven't been able to suss out the causes. We're still not sure we're on the right lines, but a *possible* reason is discussed in a handy booklet which came with the VideoStudio package. Let's see if we can work it out.

The clue is in the image aspect ratio of 4:3. On a standard PAL TV, where the vertical resolution is 576 pixels (or 576 horizontal lines in an analogue display such as on a CRT), that means the image width (4:3), will be 768 pixels.

However, the booklet suggests that the standard resolution for PAL DVD is *720×576* pixels, i.e. approximately 8% narrower than the expected 768×576 pixels. This is confirmed by the menus within VideoStudio where, if you select PAL/DVD before rendering your movie, the frame resolution readout will indeed be the slightly 'squished' 720×576 pixels (at 25fps).

But if the movie on the PAL/DVD is then displayed on a standard 4:3 TV, why doesn't it look too narrow? Although not mentioned in the booklet, we *think* the answer might be that, before displaying the frame, the display circuitry first expands the image width, by about 8%, to restore the 4:3 aspect ratio and nicely fill the screen.

We stress that *this is only a guess*, which is only partially confirmed by the references in the booklet. However, if this proved to be the case, it might explain all the other phenomena which we and others have seen:

– If we grab a snapshot of an image within VideoStudio which has been downloaded ('captured') from a PAL/DVD, then the image resolution will be 720×576 pixels and, therefore, will appear to be slightly 'squished' compared with a 4:3 image of 768×576 pixels (Fig 4).

– Conversely, if a standard 4:3 image such as a 768×576 pixel JPEG is displayed on a TV, then perhaps the circuitry is still expanding the width by some 8%, the left and right extremities are cropped and it looks a bit 'squashed' (Fig 5). Or, on a widescreen TV, the image appears wider than it should be.

– This would also explain why, if a JPEG with a true 16:9 aspect ratio (1024×576 pixels) is displayed on a widescreen TV, it also is cropped and looks slightly squashed.

– We first noted this when we wrote the 'Viewing JPEGs on TV' articles for Archive and observed that, to exactly fill the widescreen TV display, the JPEG image needed to be something like 980 pixels wide, rather than the expected 1024 pixels. Funny old thing, that's around 8% narrower than the true 16:9 aspect ratio...

The 'picture' is further confused by a mention elsewhere in the booklet that the resolution for DVDs is *702×576* pixels. Of course this could be a simple typo (702 instead of 720), or it might be mixing up PAL with the American NTSC standard (much of the booklet is in US-speak); sadly we simply don't know the answers.

But if we happen to be right, then most of the observed phenomena fall into place. If anyone can please provide a definitive answer to this video standards conundrum, then we'd be delighted to hear from you.

Auto-rotating images

Finally, an even more tenuous link with previous bletherings but a shameless plug for David Pilling's *DPScan* (the Windows port of his long-standing *DPlgScan* for RISC OS).

We covered a 'case study' in Part 4 where a selection of wedding photographs – made into a slideshow – had been added to a much-edited and improved wedding video. Most of the images for the slideshow were from the professionally-taken photographs, scanned by the firm involved but (like their video) rather sloppily done.

In particular, all the scanned images were skewed, literally to greater or lesser degrees, so had first to be rotated before being fed into Movie Maker. All this massaging was done very successfully using *DPScan* but, as you'll imagine, was a pretty boring exercise.

Enter that nice Mr Pilling to the rescue; at our suggestion, he *very* quickly tweaked *DPScan* to semi-automate the rotate function.

To explain: In *DPlngScan*, if you do the Preview scan and realise the image is slightly skewed – probably through the document not being placed perfectly square on the scanning surface (very common with books for example) – all you have to do is press <shift-ctrl> and select-drag the mouse pointer along any suitable reference line – either horizontal or vertical – on the image. This could be along, say, the document edge, a line of text, the side of a building, etc.

Dragging and adjusting the pointer causes a line to be drawn along the chosen reference and, when released, causes the skewed image to be rotated back to the 'all-square' condition, *before* the main Scan is done.

David couldn't replicate this function within the Preview section of *DPScan* because, unlike *DPlgScan*, this is controlled by the Windows scanning application. But instead, he was able to embody it into the main Scan function.

The end result is the same though. Firstly do the Preview scan of the document but don't worry if the result is skewed. Then do the main Scan and, on completion, press <shift-ctrl>, select-drag the pointer along a suitable reference line (Fig 6) and let go.

Fig 6 Drawing a reference line

Up pops a box showing what the skew error is, in degrees, to two decimal places. Click on OK and the image 'skewness' will be corrected, automatically (Fig 7).

Fig 7 Auto-rotated

In theory, removing the skew error from the image also corrects the underlying document frame but, if this doesn't work out perfectly, the result can easily be cropped slightly, using *DPScan*'s cropping tool. Nice one David, many thanks for that.

We've since spotted two incidental bonuses to having this feature necessarily applied to the post-Scan point in *DPScan*, rather than at the post-Preview stage.

Firstly, it not only works for documents not placed perfectly square on the scanning surface, but also for pre-scanned documents. Simply drag the scanned image file into *DPScan* (Fig 6) apply the semi-automated tweak, and there you have it (Fig 7).

Secondly, it will do the same job for skewed bitmap images from any other source. For example, how many times do you find that an image from a digital camera has not been captured perfectly square, especially if the viewfinder is a relatively low-resolution, electronic job? Remarkably, an error of only a degree or two can mar the result. No problem; drop the image into *DPScan* and remove the skew angle, as described above.

However, although the the image is now righted, the surrounding frame becomes skewed, literally to the same degree (Fig 8). This is inevitable however you do it.

Fig 8 Post-rotation

But we can again use *OPW*'s cropping tool, very conveniently, to give the finished result, although the loss of at least part of the image surrounds is unavoidable.

Further details of *DPScan* are given in Archive 19.4 pp34-36 (or in the VirtualRPC In Use booklet, Vol 2, pp80-82). *DPScan* is bundled with OPro for Windows (*OPW*) but is available separately from David Pilling (price to be advised).

The end bit

That's definitely it for this topic but, if we can assist with any of your queries, please do continue to send them to us.

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