



ILLUSTRATION & IMAGE EDITING

Gimp Work with transparency



Michael J Hammel reveals his surrealist side for this transparency workout.

**LAST
TIME**

Last month I showed you how any set of photos can be turned into a collage worthy of more than just the scrapbook. Those techniques extend to all kinds of projects, like those in this month's column. If you missed the issue, call 0870 837 4773 or +44 1858 438795 for overseas orders.



Graphics artists often need to clean up photos for a project. It happened to me recently while I was helping my wife prepare some photos for an advertisement for a dentist client. The photos showed people smiling, but their teeth were not quite perfect. You'd expect people in a dentist's ad to have perfect teeth. While the dentist had plenty of pictures of perfect teeth, he didn't have photos suitable for the advert, which had to be full colour, nicely themed and properly lit. One of the photos also had a logo on a shirt that had to be removed. So we turned to *Gimp*.

Before we're able to tackle a project like that (we'll actually do so next month), we need to take simpler examples of merging two images. We introduced this concept last issue, but this time you'll learn how to be far more precise with the technique, as well as getting more practice before diving into munging with teeth.

This month's first project will cover fine merging (the example merges the head of a dog with a man's body), while the second project will be a variation of the common 'infinite reflection' image, with a laptop displaying a laptop, displaying a laptop, *ad infinitum*.

PART 1 – SIMPLE MERGE

This project starts with two stock images purchased from an inexpensive online stock photo collection (**Fig 1**). I searched for a man in a suit and a portrait of a dog and it took about an hour to find the best images.

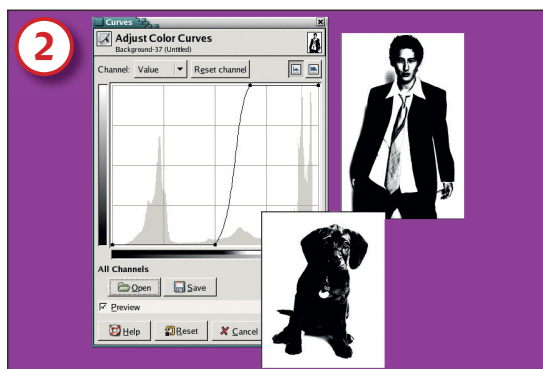
I chose images that were taken from roughly the same angle (ie head on) with similar lighting. Lighting qualities can be tested by desaturating the images (Image > Colours > Desaturate), adjusting the Value curve as shown in **Fig 2** and looking at where the shadows fall on the faces. This shows the basic

direction of lighting. Because both images are lit primarily from the front they have similar shadows and highlights. And that makes them a good fit for this project.

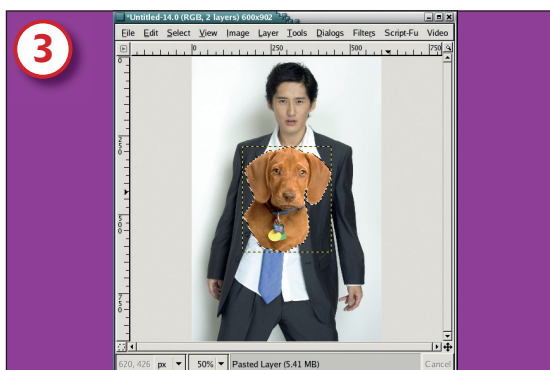
Make a selection of the dog by using the Fuzzy Select tool with the threshold set to 20.0 and clicking in the top-left corner (the white area). Invert this selection so that it encompasses the dog. The full body will be selected at this point (plus some background), but we only need the head so use the Free Select tool to subtract everything but the head, the neck and the collar



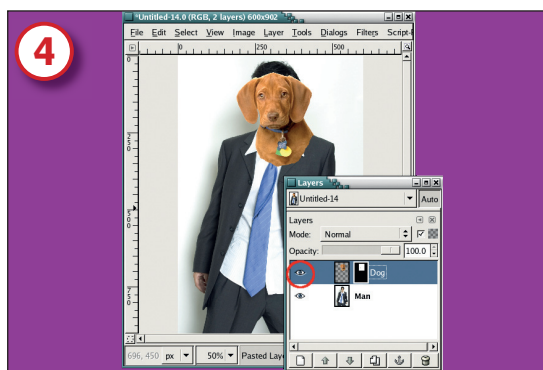
1/ The white background for the dog will make it easier to create a selection from that photo, so the merge will be from the dog image on to the man.



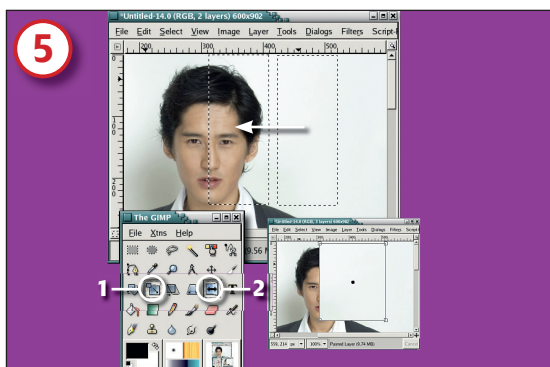
2/ The man and the dog are both lit from roughly the front, so are a good fit for this project. Here I used the Curves dialog and desaturation to test their compatibility.



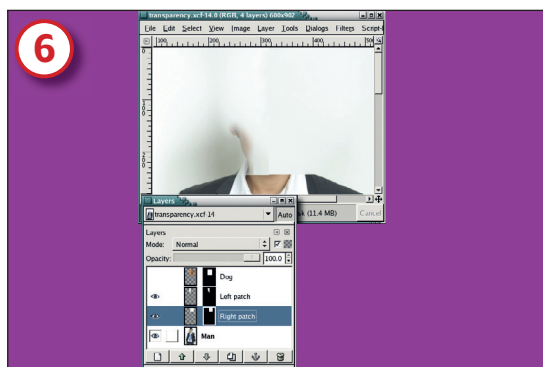
3/ The feathered head, neck and tags are pasted in.



4/ When you first position the pasted selection, don't worry about things like the man's exposed hair here – that can be fixed.



5/ Tools in the Gimp Toolbox help you scale and flip concealing patches.



6/ The left patch is blended up to the neck and head so that the shadow behind it will show between the ear and head of the dog.

and tags. The selection isn't exact along the neck and tags at this point – the excess is what we'll use to merge with the other image later.

Shrink the selection by one pixel (Select > Shrink) and feather it by three (Select > Feather) before grabbing a copy of it (Ctrl+C or Edit > Copy) and pasting it into the image of the man (**Fig 3**).

Position the dog's head over the man's using the Move tool. Clicking the visibility icon (circled in red in **Fig 4**) of the dog layer on and off helps with positioning by letting you see the best position in relation to the man's suit. I've positioned the dog's nose over the man's nose and mouth because that lets the dog's collar align nicely with the shirt collar. The head was flipped horizontally using the Flip transform tool to let the tags better hang away from the tie. But because the dog's head is proportioned differently from the man's, it needs to be made

thinner and shorter using the Scale Transform tool. Before finishing this step, add a layer mask to the dog layer.

Removing the hair

The man's head is exposed above the dog's, so we need to apply some patches to remove it. We'll actually create two square patches, both with layer masks. To draw them, turn off the visibility of the dog layer, and create a rectangular selection over the right-hand side of the man's head. With the Rectangular tool still active, hold down Shift (or possibly Alt+Shift depending on your desktop configuration) and drag the selection to the right. Copy the selection (Ctrl+C), then move the selection back over the head, paste the selection (Ctrl+V) and make it a new layer (Layer > New).

Fig 5 shows the process in detail. Click on the Scale Transform tool **[1]** to make it active. Click on the layer and

QUICK TIP

Transparency gems

- Use layer masks instead of the Eraser tool – they allow you to undo changes long after you've saved them.
- Soft-edged brushes will smooth edges when merging layers.
- Use smaller brushes for finer detail when working with masks.
- Selecting odd-shaped objects in an image works best if the background is nearly uniform in colour.
- Reduce the opacity of a layer when merging with the layer below so that you can see where to paint in the layer mask.



7/ When merging, start with a large brush – I used the Circle Fuzzy (76) brush here. Use smaller brushes for finer detail work in the mask.

« drag to the right to stretch the width of the layer. Hit Enter to complete the scaling. Flip the layer horizontally with the Flip tool [2]. Repeat process for the left-hand side.

You'll have two layers of patches. Make sure the two patches overlap a bit. Blend the edge of the top patch with the other patch by adding a layer mask and airbrushing the edge in the mask. Do the same thing to all the other edges of both layers so they blend seamlessly with the background in the man's layer (Fig 6, previous page).

When the patches are blended cleanly, merge the patches and the man's layer into a single layer (Layer > Merge Visible Layers). Remember: the dog layer should not be visible when you do this! After this the dog layer should be on top once again (if it wasn't already).

Merging the collars

All that's left is to merge the dog's neck and collar with the background. This is done by using the Bucket, Paintbrush and Airbrush tools to spray black into the dog's layer mask. This is a bit time-consuming and requires changing brushes often. Unfortunately it's a manual task that cannot be made much simpler. But you can use one important trick: using any paint tool



8/ No dogs were harmed in the making of this image. We had to decapitate the male model, though.

you can click in one spot, move the mouse to another, hold the Shift key down and click again. This will draw a straight line between the two click points. This little trick can be used repeatedly along any edge – especially when used with soft-edged brushes – to cleanly merge the current layer with those below it.

Remember to reduce the opacity of the dog layer while you paint in the mask. This makes it easier to see what you need to mask out. Once you've merged the collars, the masterpiece is complete (Fig 8).

PART 2 – MULTIPLE MERGERS

This next project is a little easier. Again, we're using transparency, and only one mask. In fact, I'm going to break one of my golden rules: don't remove layer pixels. Normally I add transparency only using layer masks so that if I need to make changes later I just need to modify the mask – the layer content is still intact. But not this time. I want to create an image that shows a laptop whose screen shows the background (behind the laptop) and another laptop, which shows the background and another laptop, and so forth. For an added kick I'll desaturate the background in alternating laptop screens.

I call this an 'infinite reflection' because it's similar to holding one mirror in front of another, each reflecting the other off into infinity. Again, the original images (Fig 1) were bought online.

The first step is to scale the laptop to fit comfortably inside the background image. Select the white background (this project is made very simple by having the laptop on a nearly solid white background) using the Fuzzy Select tool. Grow the selection by

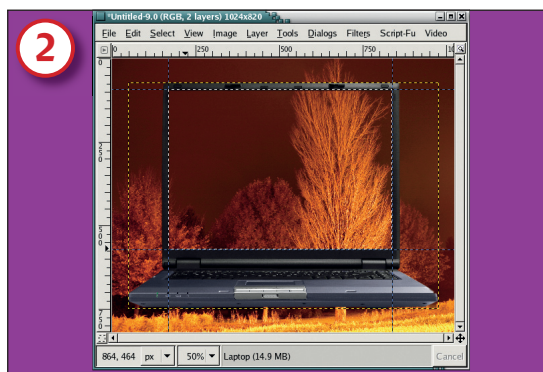
two pixels (Select > Grow) and invert it (Select > Invert). Finally, feather the selection (Select > Feather) by three pixels. It's now ready to be cut (Ctrl+X) and pasted (Ctrl+V) into the background image as a new layer (Layer > New) after you've pasted it.

Use layer guides to outline the laptop screen, and the Rectangular Selection tool to create a selection. Again, grow this selection by two pixels and feather it by three. Then – and here's where I break my normal rules – cut the screen from the layer (Edit > Cut) (Fig 2). Remove the Guides (Image > Remove All Guides, assuming you're using *Gimp* 2.2 or later).

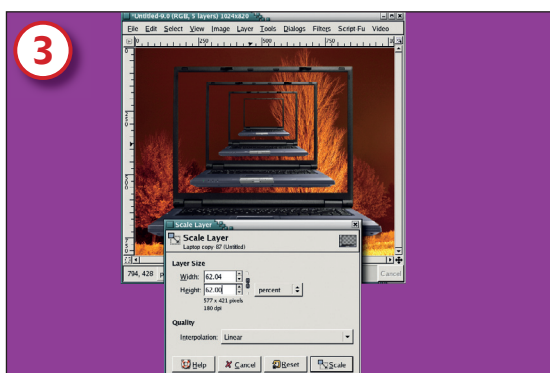
I've centred the laptop and made it fit most of the height of the background. Now it's time to add the 'reflecting' laptops. Duplicate the laptop layer (Layer > Duplicate Layer) and shrink by 60% (Layer > Scale). The Scale Layer dialog has a menu that defaults to pixels but can be changed to per cent, so you can enter '60' in the width and height fields. Centre each layer inside the screen of the laptop on the previous layer (Fig 3).



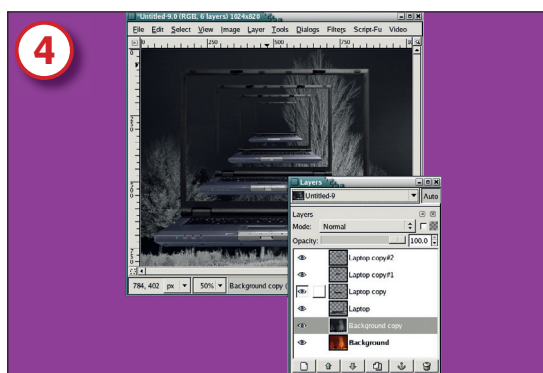
1/ The starting images. The idea for the project was suggested by another image I found in the image library. I decided it would be fun to try to reproduce it.



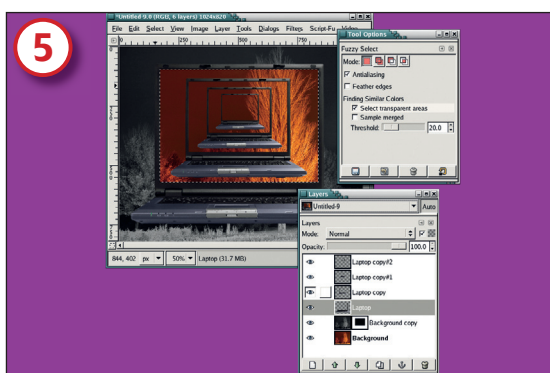
2/ Pasted in as a new layer, the laptop then has its screen removed.



3/ The amount that you scale each layer will depend on the size of your images and the number of laptop layers you add. Smaller percentages may be needed as you add layers.



4/ The desaturated, duplicate layer lives just above the background and is our default background.



5/ Masking a laptop screen. Use Ctrl+Shift+A to remove the selection.

The next step is the real trick in this project. I want to alternate colour and desaturated versions of the background with each laptop screen. To do this, we need add only one additional layer – a desaturated version of the colour background (Fig 4). This becomes the default background and we'll punch holes in it using the layer mask to let the colour background show through. To this we add a layer mask.

Make the first laptop (the original laptop layer) active by clicking on its name in the Layers dialog. Click on the Fuzzy Select tool to make it the active tool. Make sure Select Transparent Areas is set, then click inside the laptop screen area. This creates a selection that can now be used in the desaturated layers mask. With the selection in place, click on the desaturated background layers mask in the Layers dialog.

Fill the selection with black by dragging the default background colour (in other words, black) into the selection. This creates a hole in the desaturated area letting the colour



6/ Finito! With careful cutting we have been able to use just one mask.

background show (Fig 5). Repeat the selection process for the next laptop layer, this time filling the selection in the mask with white. This removes part of the hole. Alternate this process with each laptop layer.

In the end, you have a single mask with multiple holes in it allowing the colour background to show through in selected laptop screens (Fig 6).

Kinda cool, eh? **LXF**

NEXT MONTH

In **LXF70** we'll take on that dentist's project: clean up the teeth, fix alignment and improve the smile – all without painkillers!