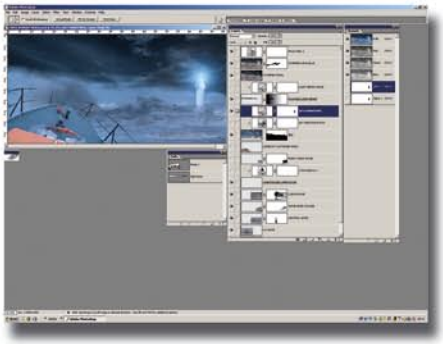
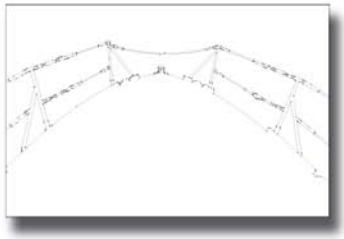
NEW SERIES
DIGITAL COMPOSITING



NORTHERN ROCK
NOT JUST ANY PORT IN A STORM



PART ONE – BACKGROUND

Few digital endeavours draw upon the whole gamut of Photoshop skills in the way digital compositing does. As part of researching this series we called in both Katrin Eismann's and John Lund's new books on the subject (see box). Between them they total 844 pages! It is not, therefore, the intention to simply regurgitate the contents of these two excellent tomes but to discuss tactics and explain what are good things to take on and those which you should avoid if you don't want to lose money in man hours.

The Journey

By way of example, take the opening illustration to this feature. This was partly developed as a brief for an education task and was deliberately set up to be tricky!

Here is the schedule of how long it took to complete:

1.	Read Lund's book and sow the seeds.	1h
2.	Sketch out the concept including a reasonably tight brief for the students	1h
3.	Test and then abandon some currently available wave and lighthouse shots	3h
4.	Collect skies for use	2h
5.	Get new set of wave shots in storm	3h
6.	Organise and obtain a shot of the lifeboat	4h
7.	Draw paths around lifeboat rails	1.5h
8.	Develop and test compositing the main wave breaking over the bow	2h
9.	Develop the methods for the beam of light	1.5h
10.	Composite the lighthouse to eliminate protest banner	1h
11.	Make a trial assembly	2h
12.	Composite the final assembly	2h
	TOTAL	**24h**

A Few Pointers

Take a group of digital retouchers and there will be almost the same number of different ways of tackling a job. However it is interesting to note that Katrin Eismann's list of topics is almost identical to your author's. Here are my own pointers, gleaned from using Photoshop since it first appeared (and the Quantel PaintBox before that, I recall!).

The main skills are:

1. Conceptualisation – first think of a good idea!
2. Planning – get it right in camera as far as you can!
3. Judgement of perspective – vital for realism
4. Blending of tone and colour – mismatches stand out
5. Masking – this is *the* key skill
6. Knowing when to stop – including the courage to abandon ship!

Conceptualisation

Sometimes the conceptual brief will be provided by an art director, especially if it includes advertising copy and a desire to get a specific message across. At the other end of the scale is the pressing need to composite an open eye across a closed one so you can get the album off the Graphi in tonight's post! The former is a self-starting process for which you might go off and take specific images; the latter is a necessity driven by a need to repair a shot.

In terms of creative satisfaction the first scores highly and time will drift rapidly by, the second may simply pay the bills or retrieve your reputation but has to be done.

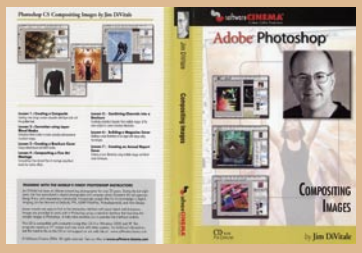
Planning

Always plan, even if the task is trivial. Always check that you are tackling the task in the simplest, most efficient way. Once you have decided on a course of action take a final look over your shoulder before you charge off – for example there may be a better unblinking eye you flagged out in the file browser for another reason!

For major productions make a sketch and use it to trigger potential problem areas. For example, the front of the lifeboat would have been easier to cut out if it had been shot against a bland background (the chosen view was deliberate to challenge and test the students!). In addition it was necessary to extend the safety rails on the right so that they reached the bottom of the shot. We knew that would be simple but even with the widest lens available (12mm) we could not

THE HELP FILE

Such is the complexity of masking and compositing that you are certain to need additional education resources if you are keen to get up to speed as fast as possible. Fortunately help is at hand in a number of media. On the book scene look at the two reviewed below. For CD/DVD we are greatly impressed by the production quality of the Software Cinema materials, the ease with which you can transition from watching to practice is quite something, and bear in mind that this is reckoned by the educationalists to be the most effective way of learning.

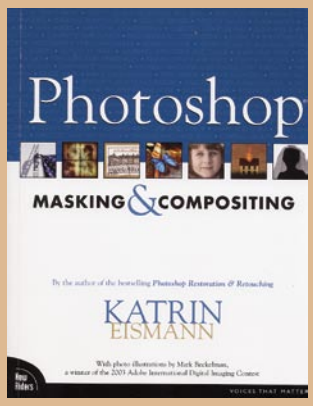


The web is also a great source for help. For registered Adobe software users you can visit their website for specialist help on a number of topics.

http://studio.adobe.com/us/main.jsp
http://www.graphic-design.com/Photoshop/tutorials/quickmask.html
http://graphicssoft.about.com/od/maskcomposite/
http://lucky13.deviantart.com/journal/3126783/

Photoshop Masking & Compositing

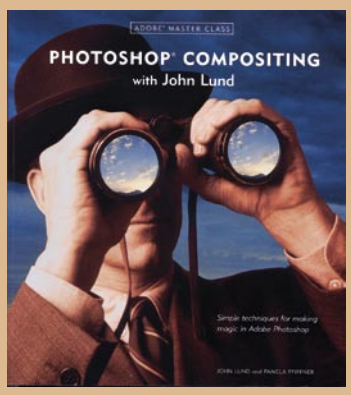
Katrin Eismann is one of the most respected authors on digital imaging and also wrote what is probably the best book of all for retouchers. She has now turned to masking and compositing with a comprehensive, 554 pages, which cover every conceivable aspect of the subject. The book is highly focused and rarely drifts from the subject area, referring to other publications for additional information. The book is backed by a website from which you are able to download 291 files to practise on. As with her other books it is not inexpensive but in terms of value for money it could be invaluable if it gets the job done more efficiently. Very Highly Recommended!



Photoshop Masking & Compositing by Katrin Eismann
New Riders Publishing 554 pages
ISBN#: 0-7357-1279-4 Priced at £41.99

Photoshop Compositing with John Lund

This book has more of an inspirational style to it with a small number of extremely clever composites, which are described in detail. In the absence of files to have a go yourself it is a bit of a dry read and at £37.99 it does not have quite the same value as Eismann's. However, if you are looking for something to inspire you it will most likely do that for your money.



Adobe Master Class: Photoshop Compositing with John Lund By John Lund & Pamela Pfiffner. Published by Adobe Press. ISBN: 0321205456; Pages: 320 Priced at £37.99.

get enough of the deckhouse in by the time we canted the image over. In retrospect we should have tilted the lens and arranged both the side and the bottom of the view to coincide with the proposed frame edges. This exposed a slight lack of planning ahead of the shoot; the notion of tilting the boat was developed at the initial trial compositing stage.

Other problems were beyond the reach of any planning. We looked up the tide tables for a big tide around the middle of the day. The force eight nor' westerly gale was a bonus. However the lighthouse had sprouted a protest banner, which rather spoiled the isolated look we were after, and we had to go back to a legacy image and "mend" the rim of the lamp house. This required some tricky masking and colour adjustment.

Practice the Parts

It pays to practice your technique before launching into the task. Here are examples from the illustration heading this feature.

We knew that we wanted to tilt the horizon to add to the drama, but this needed additional space around the image to allow for cropping. Secondly, we did a rough path to cut out the background for the lifeboat so we could check the perspective and scale before spending time refining the paths and the mask. Thirdly, we practiced the methods for "wrapping" the bow wave breaking over the front of the boat. We soon realised that we needed to either work on a duplicate so we could back track if we messed up adjusting the mask. Alternatively we decided to "clear" the background by applying the mask and then adding another one to blend the wave over the area. We also established at this experimental stage that a blurring of 1 pixel was required to the hard-edged mask.

The beam from the lighthouse was initially drawn out using the Pan Tool to create a path, the shape of the light. The area within this path was duplicated onto a new layer (Ctrl-J). Different layer modes were tried and also a Curves Adjustment Layer was added. To simulate the gradual diffusion of the beam, the edges were softened using Gaussian Blur and then the whole beam was diffused using a gradient on the mask of the adjustment layer. Having confirmed the method this was applied to the final image with the additional flourish of lighting the panes of the lamp house as well. After some discussion with the students we elected for a single beam of light as being more realistic than a beam going in two directions.

Leave the Eraser in its box!

For almost all conceivable masking and compositing tasks it is better to use layer masks to "hide" the unwanted portions of an image rather than erase them. If you hide them under a mask you can reveal them by painting the mask with a white brush. If you erase, your only route to recovery is through the history palette, which may be way too late at the end of a long task. If your technique involves using the Extract Tool, this erases unwanted parts by default. Get around this by extracting on a copy of the subject layer, then making a mask from the extracted layer and using this as a layer mask on the original. Now you can use all the mask refining techniques downstream.

Cut it out!

One of the most frequent questions at technical seminars is how to cut out people and place them elsewhere or alternatively how to change the colour or image in a background. It is a question for which many different answers may be advanced. However a common thread is that it is a masking technique above all else. We start here but will continue the topic in part two.

Layer Fundamentals

First of all you need to understand about Photoshop layers. A layer is made "available" (that is *active*) by clicking on it in the Layers Palette. A layer may contain pixels of given colours or pixels may be transparent. When transparency is present it is represented by a light grey and white checkerboard pattern. If only a single layer is visible (ie its eye is set to visible) then this chequered pattern shows through in the main image window. However if a transparent cluster of pixels stands above another layer then the pixels of that lower layer show in the gaps. It is also a fundamental property of a layer that it can be moved up and down in the layer stack and also in the vertical and horizontal positions within the image. When pixels move out of view in Photoshop, to the edges of the image window, they are stored as "Big Data" and will be saved with a Photoshop psd file. The big data is only lost if the image is cropped, flattened or saved in an inappropriate format such as JPEG.

Cut-out Options

Our preferred method of effecting a cut-out is to use a Layer Mask and when doing so, to make a mask, initially, without any feathering of the edges. This can then be softened under highly controlled conditions at a later stage, and differentially around the image, should that be required. Having elected to use this tactic there are still options available for starting off the process.

The starting point of a cut-out is always to make a selection. In terms of simplicity there is a working list which runs something like this:*

- Select with a geometric marquee tool such as the Rectangular Marquee.
- Select with the Magic Wand.
- Select with magic wand on a channel.
- Use the tools of the Select menu such as Color Range.
- Select with Magic Wand on a modified channel (either modification by contrast change or mode change).
- Use the Extract Tool.
- Select with the Magnetic Lasso Tool.
- Select with the Lasso Tool.
- Use of the Pen Tool.

* *Note that other users may have a slightly different order of play. The position of the Lasso tool so low in the list reflects the difficulty of following contours with a freehand tool. This is much improved by the use of a graphics pen and tablet but remains a tricky process.*

Having made a selection there are a number of ways of modifying it to improve the fit of that selection to the subject. These are of two types, one to refine the edges (eg Blurring, Expanding) and one to refine the shape, usually by a transformation process. Many of these second generation modifications are performed on Layer Masks, alpha channels or the Quick Mask.

When all else fails or you get fed up exercising what can be considerable skills, you can get your wallet out and pay for a specialist cut-out program such as Extensis Mask Pro or Corel Knockout.

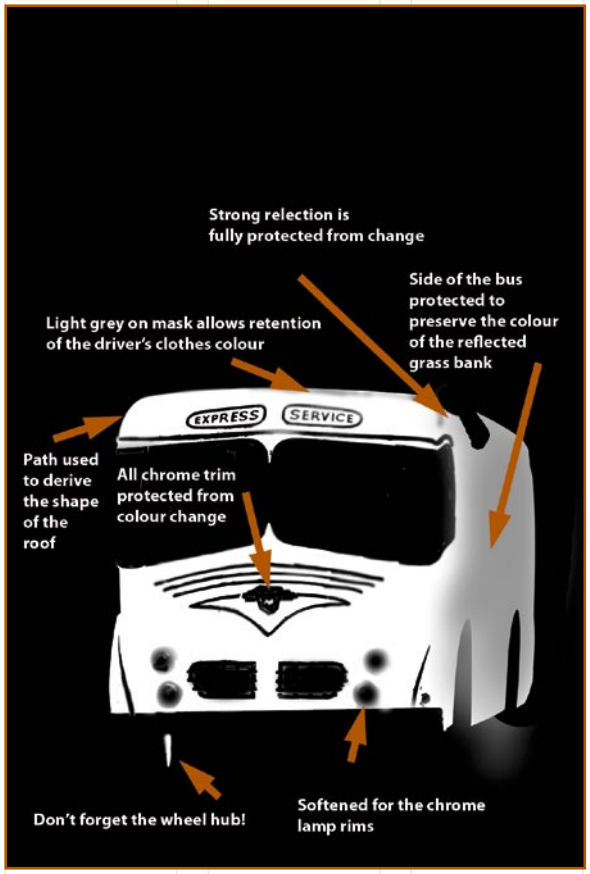
LEVELS OF DIFFICULTY

EASY: Magic Wand on the black portion then Edit>Clear on a layer. Any background may now be applied.

MODERATE: Magic Wand on the sky, followed by refinement of a Quick Mask. The bus was masked with a combination of paths and brushed mask features, including gradients on the mask.

DIFFICULT: Non-organic, mechanical objects are often best masked with geometric marquee tools or paths. Here complicated paths were drawn and then used to make a softened mask.

DIFFICULT: The bride is removed from the background and placed before a cathedral door using Extensis Mask Pro. Additional layers in Screen Mode were used to bring the brightness of the veil back to the correct value for the new background. The soft mask to leave the bouquet in colour was made by brushing with a Wacom Pen and tablet using a Hue Colour Adjustment Layer.



Anatomy of a Layer Mask

The annotated mask shown (left) was that used to change the colour of the bus paintwork. An HSB Adjustment Layer was used with the *colorise* button checked. This would have colourised the bus *and* the reflections of the surroundings. To prevent this, a 25% grey was applied as a gradient to the side of the bus to allow only part of the colour change to contaminate the reflection. Where the reflection was particularly strong, the mask density was increased to 100% black to prevent any colour shift. The outline of the bus roof was broken by the reflection of the driver and the Magic Wand could not be used to select for that part of the mask. Instead a path was drawn to accurately reproduce the top of the roof – man-made objects such as this are often better outlined with the Pen Tool using just a couple of points.

No Anti-Aliasing **Anti-Aliased** **Feathered**

Going Soft at the Edges

The realism of a montage is controlled by correct lighting, perspective and the quality of the transitions between introduced elements and their background. There are three types of edges anti-aliased, not anti-aliased and softened. Aliasing adds transitional pixels to detected edges made from marquee tools and is switched on by default. It is not the same as feathering a transition which softens it. In most uses the anti-aliasing is left switched on. The edges at the transition of montaged elements may be adjusted by use of sharpening and blurring tools and, for maximum, control by adjusting the levels of the mask (in the same way as you would adjust levels of the image itself).

NEXT ISSUE – We get to grips pulling hair out!