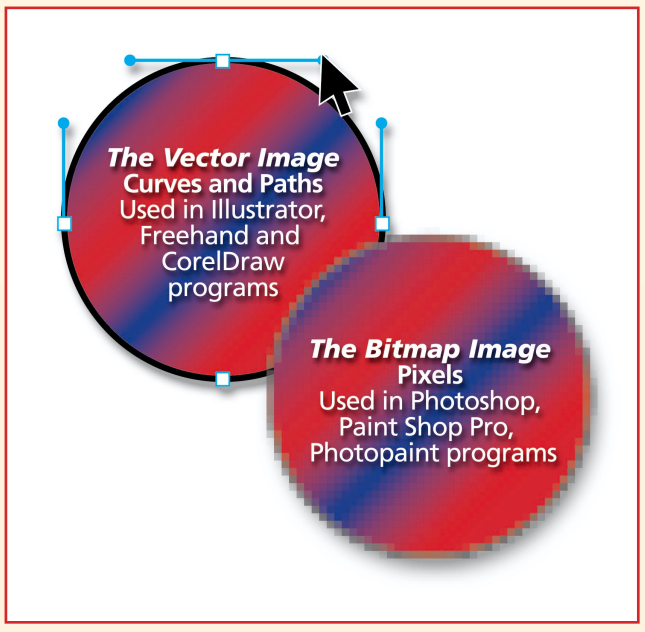
TIF, EPS, JPEG; What do they do?

Colourfast
Your key to colourful prints

In recent years, and with the development of creating documents faster and more efficiently than ever before, the scenario of saving images remains a problematic area for 'new designers' working on Mac's or PC's who don't have the image technical know how. Our Deano looks into the solution.

We have looked into the three main files formats; EPS, TIF and JPEG, which are used within this industry and can point out what advantages each of the file formats have and when and where they should be used.

First up EPS. What is it? It stands for Encapsulated PostScript, the native language for PostScript devices. This is the ideal file format for colour images (Freehand, Illustrator and Photoshop) as it holds colour accuracy, quality and paths (including clipping paths). From the point of creating bitmap/pixel images or vector



illustrations it holds accurate information for printing to a PostScript digital printing device – or it can be colour separated to process or spot film/plates for lithographic print – this does depend on how the image was structured in the first place.

Although the Photoshop EPS file size, which is saved on your system, is one of the largest it does however play an advantageous role when it comes to designing and printing other colour file formats.

Importing a 20Mb A5 colour EPS file saved at 300dpi, into Quark XPress for instance, is a far better, more flexible, format to work with than TIFF (Tagged Information File Format). This format will be described later and has its own advantages.

EPS produces a little add-on size-for-size low-resolution preview image to be imported into your page layout document… this means it will keep your Quark document size to an absolute minimum. This does not mean that because you have imported a low-resolution image you will get a low-resolution image when you print – unless you have a non-PostScript printer. If you print to a PostScript printer Quark will send down the original high-resolution information. It also displays on-screen colour far better than TIFF.

Having a low-resolution preview image enables you to create documents with far more speed on-screen whilst the true high-resolution file remains saved on your system untouched until accessed for print. EPS's unique ability to use clipping paths, (yes clipping paths can now be used in TIFF images as well. Available in Photoshop 5 or later). It allows the user to cut-out the images to place into documents without having to actually cut out the background of the image.

EPS works extremely well with spot colours in all three Freehand, Illustrator and Photoshop programs and will even export your chosen spot colours for use within other programs. The imported spot colour image, into Quark XPress, will import the spot colours into the colour palette ready for use. We recommend that if you have to change the spot colour do not change it in Quark XPress, change it at the image source i.e. the Freehand, Illustrator or Photoshop file.

Now I bet you are saying does Photoshop do spot colours? Yes it does. Utilising the monotone, duotone, tritone feature under 'Mode'. Choose your spot colours, levels or curves, and experiment… ideal for economical two-colour print jobs with great effects… give it a go!

Photoshop will only allow you to save this image as an EPS and yes, as we have said before, it will export your chosen colours. If using black as one of your colours make sure you type in 'Black' instead of 'Process Black' as it is its default named colour.

TIFF, ah ha! Why is it enjoyed by many design and advertising agencies! This weird but clever file format is not the most idealistic file format for colour files, even though the file size comes down when saved, especially when LZW compression is activated. It poses problems from the point of using the file within Quark XPress and its practising flexibility. When importing TIFF files into Quark XPress you will see the colours on-screen distorted but you do have a high-resolution image, fine if you are printing to a non-PostScript printer!

TIFF files will slow your machines working ability to continually display the high-resolution image on-screen. However, the documents images can still be printed as with EPS files but on closer inspection, through our experience, the colour does slightly vary from the colour original.

Being a resolution dependent file, many of the colour TIFF users find that to increase the speed of their working practices they seem to create more work for themselves. They create low-resolution versions and then lay the document up. WHY?

A small modification to an image can cause an extra ten minutes work modifying two separate files and updating where necessary. With EPS, open the high-resolution file make the modification and save. The incorporated low-resolution preview will be updated within Quark XPress when applied.

TIFF has been known to be a greater cause of RIPing problems and minor image inaccuracies when outputting digital prints or to film or plates.

TIFF, however, is extremely useful and very flexible when it comes to monochrome images; greyscale or lineart. Mono TIFF files can be colourised as spot or process within Quark XPress. With Lineart TIFF images the background can be made transparent in almost any program. EPS does not allow you to change monochrome images within other programs.

And now onto JPEG which is a standardised image compression mechanism. JPEG stands for Joint Photographic Experts Group, the original name of the committee that wrote the standard.

JPEG is designed for compressing either full-colour or greyscale images. It works well on photographs, naturalistic artwork, and similar material; not so well on lettering, simple cartoons, or line drawings. JPEG's decompressed image isn't quite the same as the one you started with. JPEG's degree of 'lossiness' can be varied by adjusting compression parameters. This means that the image maker can trade off file size against output image quality. You can make 'extremely' small files if you don't mind poor quality; this is useful for applications like indexing image archives. Conversely, if you aren't happy with the output quality at the default compression setting, you can jack up the quality until you are satisfied, and accept lesser compression.

JPEG is great for website design but the hindrance for image quality and file control means that the document should not really be used for digital or lithoprint. OK you may deal with a really small file but dependent on the PostScript RIP being used will depend on how the image colour is printed. If you receive JPEG's for print open and print direct from Photoshop.

Because of the excellent file compression ability you can send a typical 20Mb image quite easily as an attachment to an email – basically transferring the 20Mb image to JPEG and sending the 3Mb file from one machine to another – once received extra work should be carried out to make the file technically correct i.e. saving the colour JPEG back to an EPS file.

So on to the summary. Colour for print, always EPS. Mono for print choose TIFF. And as for JPEG files it is ideal for file compressing and transferring large images over email or for use on websites. Oh and remember for colour images use CMYK and not RGB (Red, Green, Blue). If you are in the RGB habit, even though images can look more vibrant on-screen, please move over to CMYK. CMYK will give you more accurate colours from the image when it goes to print and it will also give you less of a problem whilst RIPping.

What file format should you use?

	EPS	TIFF	JPEG
Saved Resolution Size	Standard: 300dpi = 150lpi Fine Print: 400dpi = 200lpi	300dpi Greyscale 800dpi Lineart	72dpi Web/On-Screen RGB 300dpi Print CMYK
Artwork development	Full Colour CMYK/Spot Colours	Greyscale/Lineart	Colour/Greyscale
Used for	Full Colour Printing Multiple Spot Colour Printing Duotone, Tritone – Photoshop	Mono Printing Single / Spot Colour Printing Image can be coloured in XPress	Web, Multimedia Presentations, Image Only Transferring via Disk, E-mail, ISDN
Use for Vector or Bitmap?	Vector and Bitmap	Bitmap Only	Bitmap Only
File Flexibility	Excellent for Colour	Excellent for Mono	Good for Colour and Mono
Colour accuracy/quality	Best/Excellent	Good/Excellent	Fair/Good
Greyscale accuracy/quality	Use TIF Format	Best/Excellent	Fair/Good
Lineart accuracy/quality	Use TIF Format	Best/Excellent	Not Applicable
Data Transfer	Extremely Slow; High Data	Extremely Slow; High Data	Fast; Already Compressed Data
Can it be compressed	Yes, Not Recommended	Yes, LZW Compression	Yes, Already Compressed Data
Approximate compression rate of a 20 Mb CMYK file	26 Mb Binary 52 Mb ASCII	21 Mb No Compression 17 Mb LZW	7 Mb @ 10 Compression 3 Mb @ 6 Compression