

A review of IBM PC - and Macintosh - compatible Image Manipulation software

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Introduction

This software review was commissioned by the Advisory Group on Computer Graphics who requested a written report on 'image editing' software. The broad range of software subsequently reviewed was secured by Chris Whitaker of the Combined Higher Education Software Team (CHEST).

Powerful workstations, both networked and 'standalone', have become increasingly accessible to university staff and students in recent years. Current 'entry level' personal computers, as often purchased by students, are now capable of running relatively sophisticated graphics-intensive software. Consequently there are many programs available which are suitable for image manipulation and which cater for a wide range of budgets and intended purpose.

During recent months this software review has been referred to as an evaluation of 'image editing', 'image manipulation' and even 'image analysis' software. In actual fact this apparent confusion simply reflects the broad range of applications for which many of the products tested are commonly used and none of the aforementioned descriptions is wholly inaccurate. For the purpose of the following report the description 'image manipulation' software seems most appropriate.

Some of the software tested, most notably Adobe PhotoShop, provides a comprehensive range of tools which will meet the needs of most forms of digital image manipulation. However such software usually comes at a price, both with regards to initial purchase and any subsequent upgrading but also with

respect to specific hardware requirements (actual and more importantly *recommended* minimum). In contrast, some of the software tested is best suited to particular applications, for example creative 'painting' as opposed to the editing of existing images, web page design or graphics file conversion, and hence may be more affordable and tolerant of host machine specification.

Two members of university staff performed the software evaluation and compiled this report. Thus the report aims only to provide a brief review of different programs which facilitate the manipulation of digital images - we have largely avoided comparing applications on a value-for-money basis, since so many additional factors, including those mentioned above, are likely to influence purchase decisions. The authors contribute the benefits of quite different, but complementary, backgrounds. Brian Boullier began this review as a lecturer in Cellular Pathology. However he recently became the Learning Technology Manager in the Computer Centre at the University of Bradford. He has acquired a working familiarity with a wide range of software and hardware essential to the development and implementation of computer-aided learning materials, which includes image manipulation software such as reviewed here. In contrast Sue Gollifer is a practising artist and researcher whose work is exhibited regularly in the UK and abroad. She is a Senior Lecturer in Fine Art, and Subject Leader in Printmaking, in the Faculty of Art, Design and Humanities, at the University of Brighton, and recently became Art Co-ordinator for the recently established CTI in Art & Design. She has been using Apple Mac-

intosh computers for the last eight years, both in her own work and as a medium for teaching.

The authors also have complimentary experience with regards to preferred computer platforms. Brian Boullier evaluated the software on a IBM-compatible PCs with either a 166 MHz Pentium (non-MMX) processor or 200MHz Pentium Pro processor, both with 64MB of RAM and a 4MB Matrox Millennium display adapter providing 32bit colour density at a screen resolution of 1024 X 768. Sue Gollifer used a Power Macintosh 7200/90 MHz Mac, with 32MB of RAM.

We hope that this report will provide useful information to those in Higher Education seeking to invest in new image manipulation software, and perhaps the prerequisite hardware. However any recommendations, implied or otherwise, must be considered in the context of individual circumstance. Factors such as intended purpose, budget constraints and special pricing, available hardware etc. will often have a major effect on the correct choice.

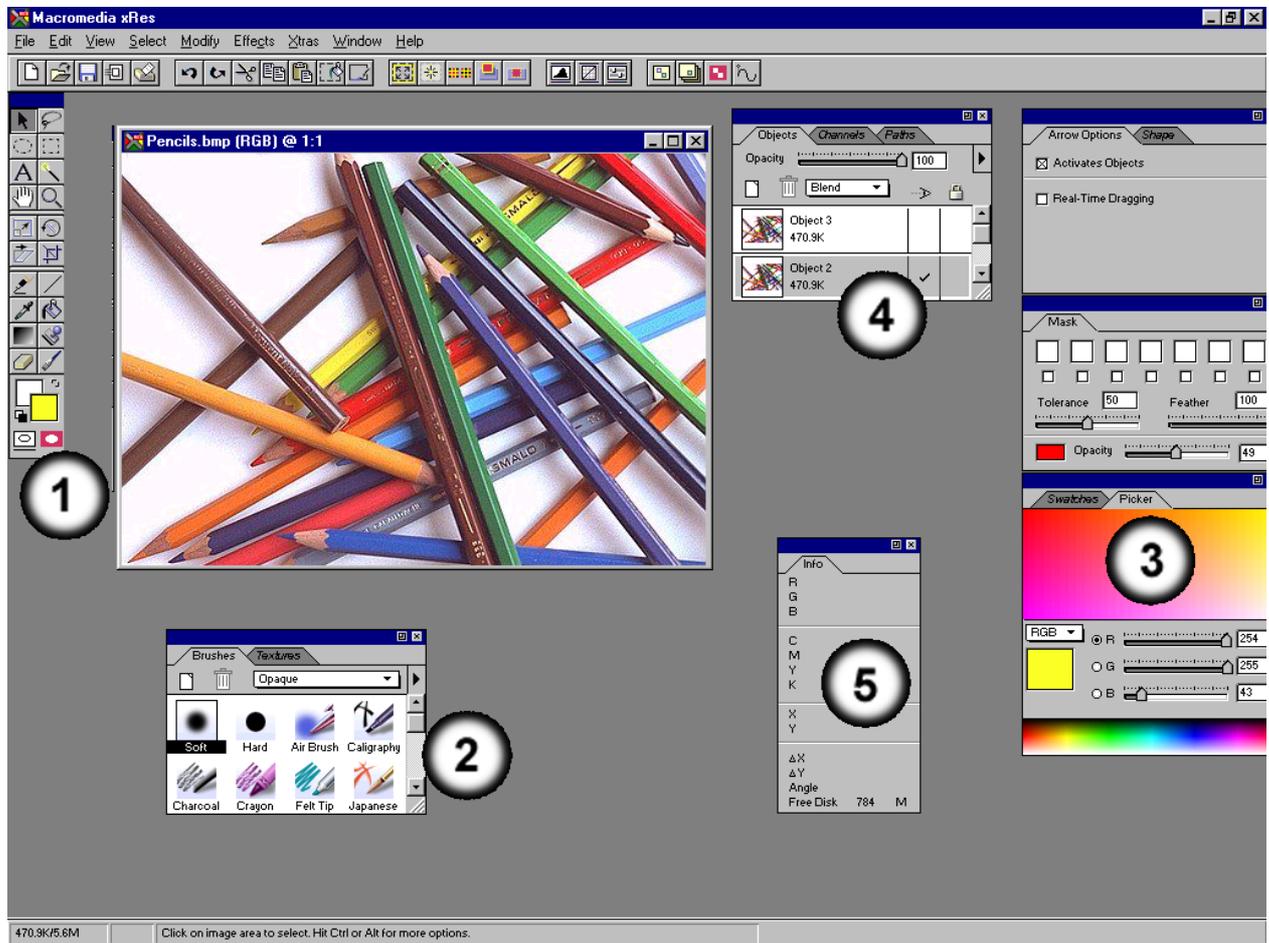
Macromedia xRes 3.0

Brian Boullier

When first using Macromedia's xRes 3.0 one is struck by the similarity in interface design to several other applications, most notably Adobe PhotoShop as well as some characteristic elements of Fractal Design Painter. This is not to imply that functionally the applications is inherently the same, but rather that by a process of evolution, to which Adobe might claim the ancestral throne, the main tool palettes of com-

petitive applications have become remarkably similar. Such similarities are not necessarily a bad thing as the digital artist can more quickly adapt to each product if and when necessary. It is interesting to note that Macromedia have preferred to market xRes as a companion program to Photoshop rather than as a direct competitor. xRes 3.0 mixes many of the powerful image-editing features of PhotoShop with some of the natural media tools of Fractal Design Painter. This combination of features will undoubtedly endear this program to many users.

Photoshop-compliant plugins are rapidly becoming the standard amongst image editing programs and xRes is no exception, indeed like before, xRes includes a special edition of Kai's Power Tools. Other notable features include layered xRes 'objects' which include their own undo and channel information, and batch conversion of image files to any 1 of 12 formats. XRes supports web file formats such as GIF89, Progressive JPEG and PNG. More notable is the facility to optimise colour palettes for selected web browsers and ease at which client-side image maps can be created within the application. When used in conjunction with Macromedia Shockwave, xRes 3.0 represents a powerful image creation and editing tool for the web (Shockwave represents one of the few widely accepted web plug-ins for 'multimedia' delivery). The painting tools include a full suite of artistic brushes, textures and filters – like Fractal Design Painter this program gives it's best when used with a graphics tablet. Refinements to previous versions include various 'productivity enhancements'



Macromedia xRes 3.0 is a very capable image manipulation program which combines some of the best elements of it's competitors: 1) main tool palette, 2) brush palette, 3) RGB colour picker, 4) object layers palette, 5) comprehensive image information.

such as easily re-configurable tools – anti-aliasing can be turned off in all tools by one simple step for example.

Perhaps the most notable feature of xRes is it's superior ability to work with high resolution images (hence, incidentally, the reason for the application's unusual name). This bitmap editing program operates in two different modes: 'direct mode' which is recommended for images under 10-20MB in size containing less than ten independently-editable objects, and xRes mode for images requiring more than 10-20MB and/or containing more than 10 objects (presumably as personal computers become more powerful the recommended limit on file size for direct

mode will also increase). Like Live Picture, xRes permits very large image files to be manipulated using machines with only moderate amounts of RAM (16 – 48MB). Macromedia now market the vector based illustration program 'Freehand 7.02' as a companion package to xRes 3.0, and the two programs are now more fully integrated in terms of design and purpose. There is no doubt that Macromedia are targeting web developers with their products.

In direct mode xRes functions in essentially the same way as other bitmap editors and acts in real time on all the component pixels of the image being manipulated. Direct mode is the default work mode and all of the applications

comprehensive range of functions are available. In contrast xRes mode supports the rapid manipulation of high resolution files by restricting the necessary image processing to the area of the image visible on the screen at the zoom level chosen at the time. This 'selective processing' uses a technique called 'tiling' (technology courtesy of Fauve) to divide large images into smaller sections. The result is that when you apply a filter or perform another operations on, say, a 500MB image file it will seem to be applied at the same speed as if on a 10MB image file because the processing required for the whole image is delayed until the image is finally rendered. It comes as no surprise that Macromedia recommend 500MB spare hard drive space as a swap disk for xRes mode.

It should be noted that xRes does not employ a 'proxy system' in which lower resolution files are used to represent larger, higher resolution files. In fact xRes allows high resolution images to be viewed, edited, painted and masked at the level of individual pixels irrespective of the image size or resolution. Unfortunately a small, yet significant selection of tools are unavailable in xRes mode namely the extremely useful 'magic wand' and 'bucket' tools as well as indexed 256 colour mode. However this unique feature of xRes together with its range of painting tools means that the program deserves to be considered as a very competent solution to image editing in its own right, particularly amongst web developers, as well as a useful complement to Photoshop for those who demand its useful additional features and who can afford more than one program of this general type.

System Requirements: (Windows) Pentium processor, 12MB RAM (18MB recommended) for Windows 95, 16MB RAM (32MB recommended) for Windows NT3.51, SVGA colour (24-bit colour recommended), 10MB hard disk space 500MB minimum free disk space for swap file, CD-ROM drive

(Macintosh) 68040 (12MB RAM minimum, 16MB recommended), PowerMac (16MB minimum, 20MB recommended), System 7.5, 8-bit colour (24-bit recommended), 10MB hard disk space, 500MB minimum free disk space for swap file, CD-ROM drive

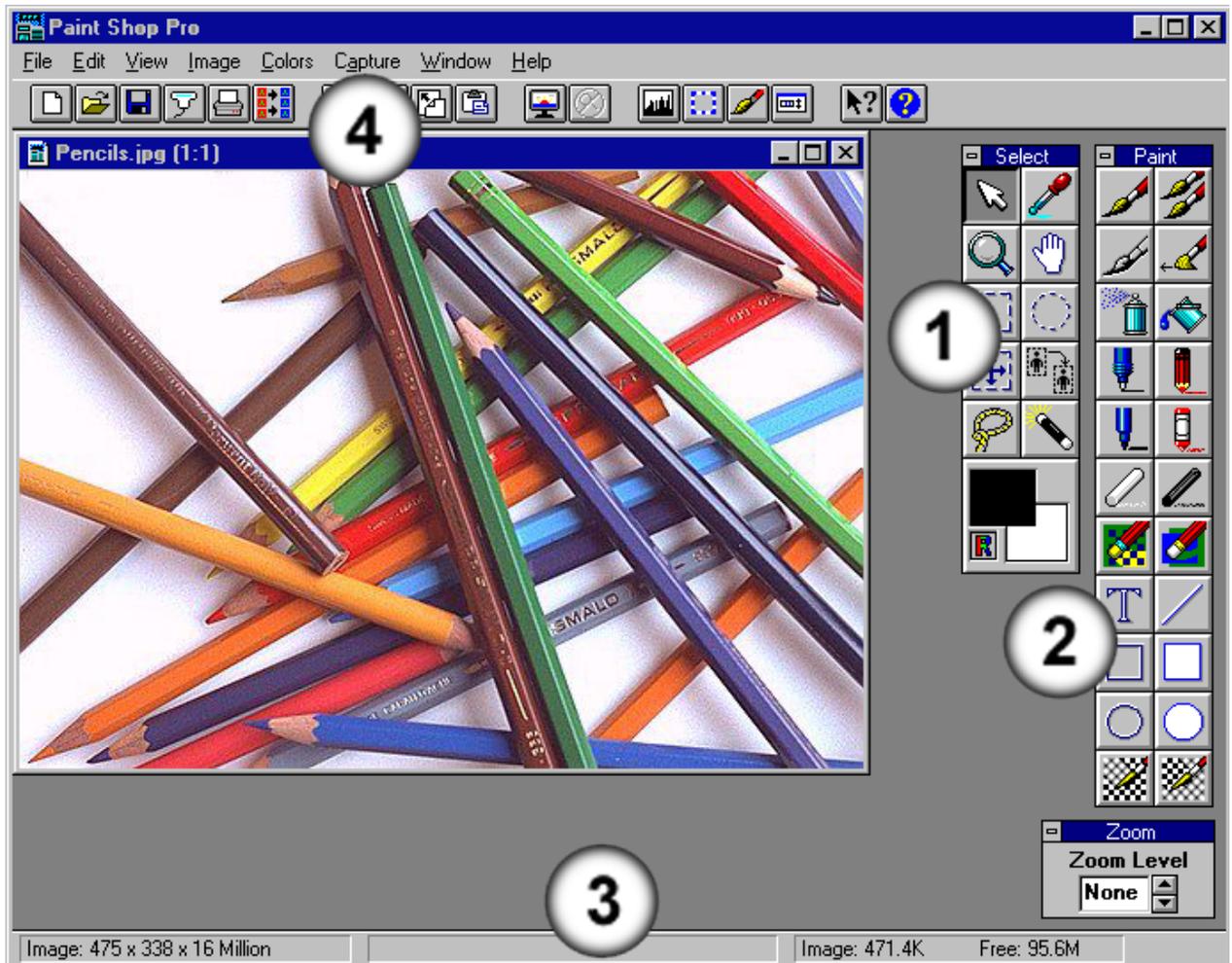
Manufacturer: Macromedia Inc., 600 Townsend Street, San Francisco, CA 94103, USA.

Website: <http://www.macromedia.com/>

PaintShop Pro 3

Brian Boullier

Despite having been launched in 1995, and being upgraded last year, version 3 of this popular program is still available for purchase and is fully supported by it's manufacturer (JASC Inc.) and UK distributor (Digital Workshop). PaintShop Pro 3 is supplied in 16- or 32-bit versions which are compatible with Windows 3 and Windows 95/NT respectively. This version persists primarily because of the continuing need for 16-bit programs to run under Windows 3 - within the university sector for example, many PCs are still running this GUI on top of MSDOS because the cost of upgrading hardware and software is prohibitively expensive. PaintShop Pro 3 represents a relatively inexpensive means of performing so-



PaintShop Pro 3 presents the user with an intuitively straightforward interface through which can be accessed many features associated with considerably more expensive programs. These features include: 1) selection tools and colour picker, 2) paint tools, 3) image information, 4) screen capture.

phisticated image editing on an 386 PC or higher. The program needs only 4MB of RAM to run successfully and occupies less than 6MB of disk space when fully installed.

PaintShop Pro 3 contains many of the features of Version 4 including a variety of image painting, retouching and enhancing tools. The program, which is accessed as a single application and is started by selecting a single icon or menu entry, might really be considered an integrated suite of related programs - PaintShop Pro 3 also incorporates a useful image browser, batch format conversion utility and screen

capture facility. A cut-down version of the popular Kai's Power Tools is also supplied.

One of the major strengths of all versions of PaintShop Pro is the wide range of file formats supported, both for reading and writing. Notable amongst these are the Compuserve GIF format and JPEG formats which are used extensively on the Internet. PaintShop Pro 3 is a very capable program when used solely for image manipulation, but comes into it's own when also used for routine file conversion in conjunction with other programs such as Adobe PhotoShop or Macromedia xRes.

System requirements: IBM compatible; 386 processor or higher; Windows 3.1 or higher; VGA or SVGA display; 4MB RAM.

Manufacturer: JASC Inc. 10901 Red Circle Drive, Suite 340, Minnetonka, MN 55343, USA.

Manufacturer's website:
<http://www.jasc.com/>

UK distributor's website:
<http://www.digitalworkshop.co.uk/>

PaintShop Pro 4

Brian Boullier

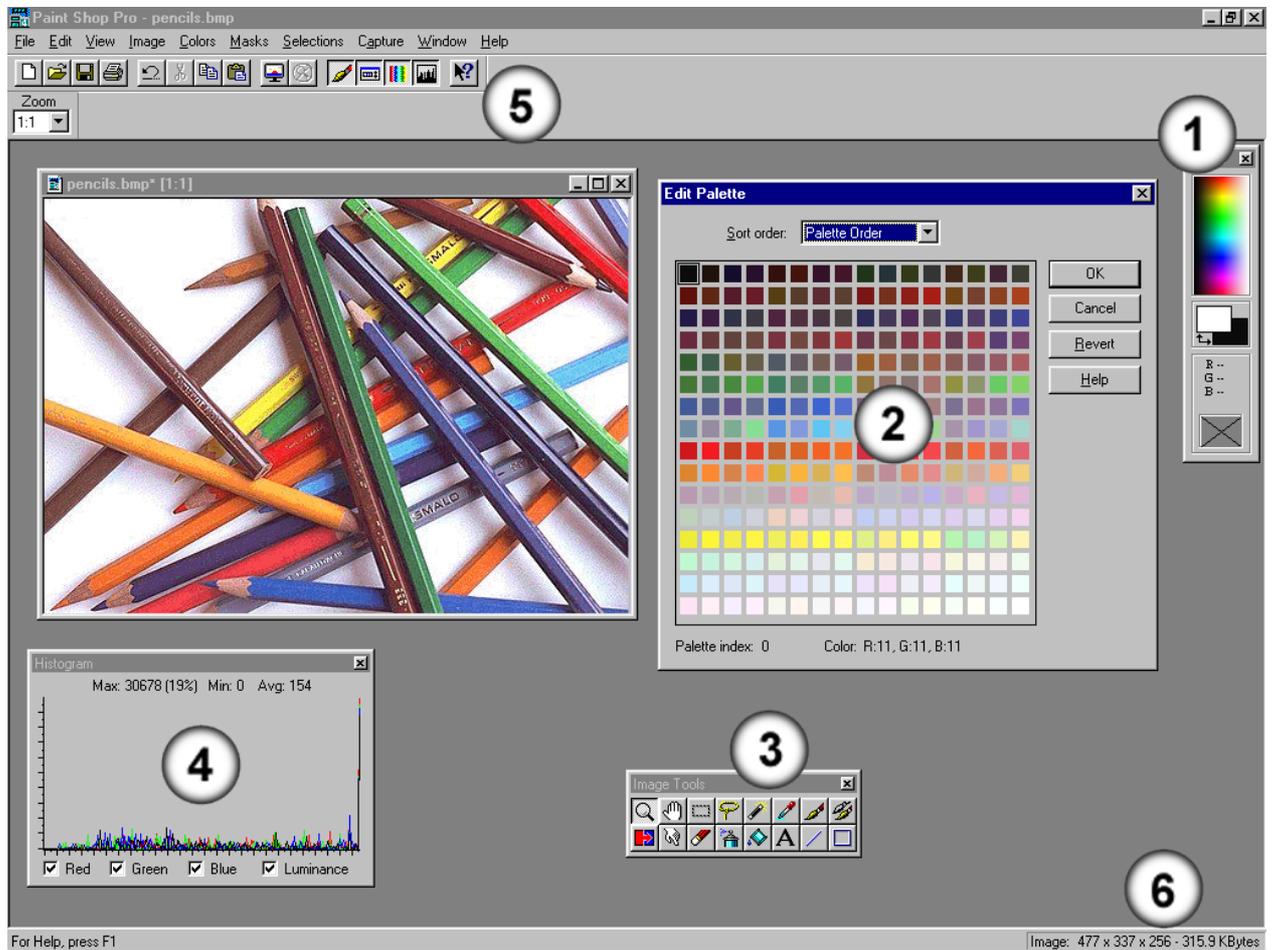
This latest version of this popular program continues to remain one of the best known secrets amongst computer graphics professionals. I have watched PaintShop Pro evolve from a relatively crude version 1.0 into an extremely competent program. PaintShop Pro defies categorisation and is best described as an 'image manipulation' program - in addition to powerful image editing features it also offers batch conversion of image files, screen capture and a useful 'browse' facility. These additional features alone may prove reason enough for purchase.

This slightly unconventional range of features and unusual sales methods (the program has always been available as 'shareware' as well as directly via the national distributor) may explain why some potential users initially treat this program with a degree of suspicion. In this respect the program's price can

also compound the problem since, it has to be said, the retail price of PaintShop Pro represents extremely good value for money.

Version 4.0 is available in 32-bit form only, and is compatible with both Windows 95 and Windows NT. PhotoShop users will feel immediately at home with the interface of PaintShop Pro. The program offers a comprehensive range of tools. The drawing and painting and retouching tools are no less than you would expect from a professional image editing package. The paint tools, whilst lagging behind the specialised range and functionality of Fractal Design Painter, include seven different brush types which, uniquely to this version, can be applied with various textures including 'Fruit Peel' and 'Woodgrain'. The re-touch tool facilitates lightening, darkening, softening, sharpening and now also include an emboss brush which raises the selected foreground colour(s) from the background. The 'gradient fill' tool represents a significant addition to earlier versions and textures also now feature amongst the 'fill' tools.

PaintShop Pro offers all important image editing functions via an accessible pull down menu. Version 4.0 also adds a range of special effects such as 'drop shadow', 'buttonize' (the selected area is rendered with bevelled edges) and 'seamless tiling' which is useful for creating tiled backgrounds for web pages. Jasc Inc., who are responsible for PaintShop Pro, deserve credit for making the program so useful to web developers. The aforementioned special effects are particularly useful when designing images for the world-wide-web. In this respect, in addition to the



PaintShop Pro 4 enjoys a major following amongst graphics professionals since it offers high-end features at an affordable price. These include: 1) basic colour picker, 2) editable colour palettes, 3) basic tools, 4) histogram representation of RGB colour values and luminance, 5) main toolbar.

extensive number of file formats which can be opened within the program (a feature which in itself generated many devotees to earlier versions), newly created files can be saved in many different formats including the GIF (interlaced/non-interlaced and non-transparent/transparent background) and JPEG formats popular on the web.

The program also incorporates a browser feature, which allows rapid viewing of thumbnail representations of selected files - once again this is an extremely useful feature for web developers wishing to check for redundant image files amongst revised directories.

The screen capture facility is easily configured and offers several options including 'full screen' or a user-selectable area with or without the cursor – this feature was used to generate the example screens throughout this review.

PaintShop Pro includes a variety of image useful filters and is compatible with Photoshop-compatible plug-in filters such as the Alien Skin Black Box filter set reviewed elsewhere. Finally the program provides a particularly well structured and comprehensive system of help files – a useful feature in situations where the supplied manual isn't readily

available, for example when the program is made available on public access machines.

System requirements: IBM compatible; 486 processor or higher; 5MB free disk space; SVGA display; 8MB RAM.

Manufacturer: JASC Inc. 10901 Red Circle Drive, Suite 340, Minnetonka, MN 55343, USA.

Manufacturer's website:
<http://www.jasc.com/>

UK distributor's website:
<http://www.digitalworkshop.co.uk/>

PhotoDeluxe 1.0

Brian Boullier

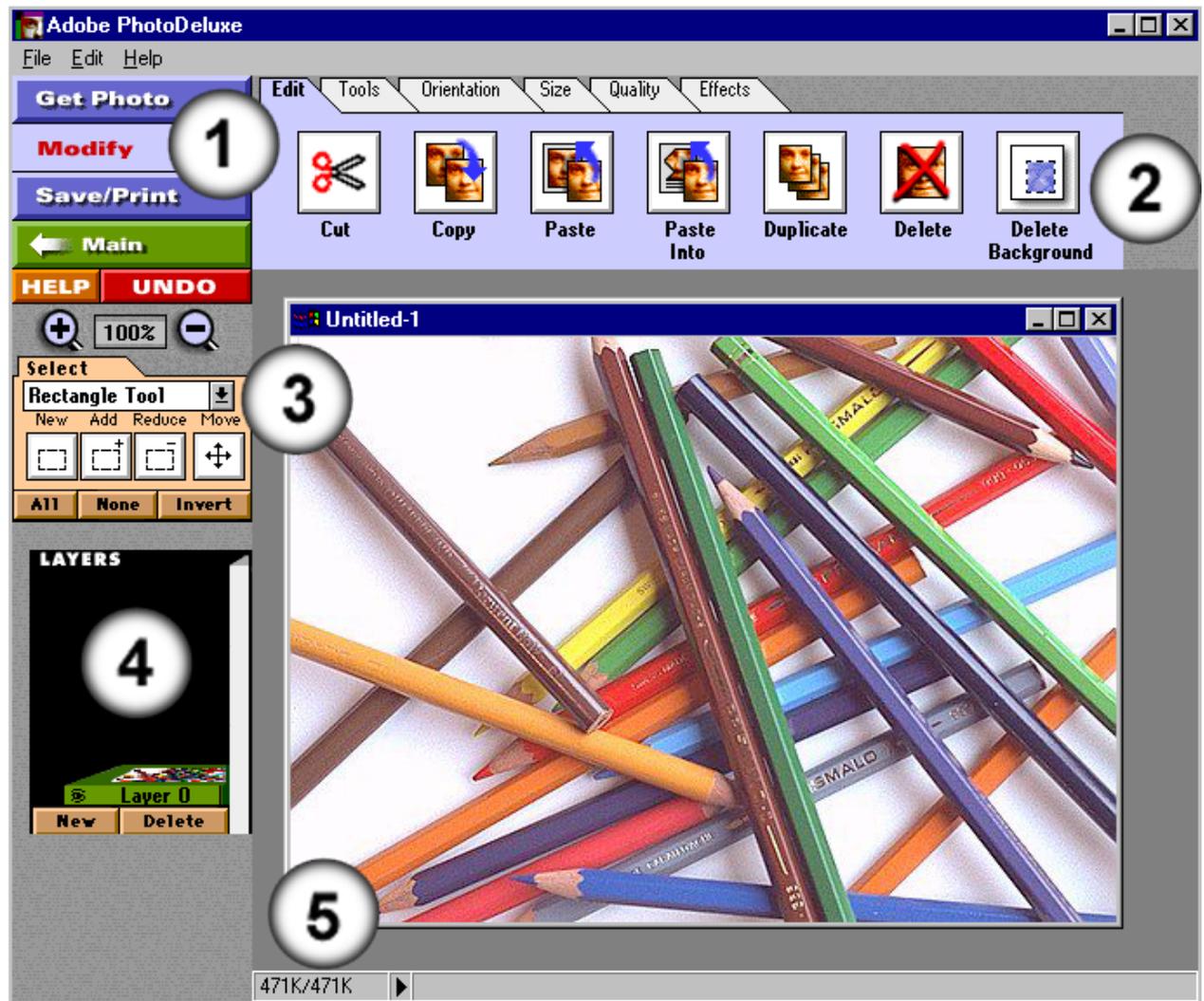
In addition to their professionally orientated software PhotoShop, Adobe also produce another image manipulation package aimed more towards the home market, particularly the post capture editing of digital photographs - this program is sometimes bundled with consumer-level digital cameras. PhotoDeluxe presents an unusual, if not unique, user interface which on first inspection disguises the hidden strengths of this program.

On starting the program the user has a choice of opting for 'Guided Activities' or 'On Your Own'. New users are encouraged to try 'Guided Activities' first. In principle these are similar to Microsoft's 'Wizards'[™], guiding the novice through the successive steps

necessary to complete a task chosen from the following categories: 'Touch Up Photo', 'Transform Photo' and 'Cards and More'. The names of these categories, particularly 'Cards and More' shed light on the intended market for this program - 'Cards and More' facilitates the production of greetings cards and calendars, undoubtedly a feature designed to appeal to the domestic consumer rather than the busy professional.

Each of the three categories is further subdivided into groups of related tasks. For example within 'Transform Photo' the following submenus are available: 'Collage', 'Fun', 'Art', 'Cool' and 'Internet'. Each submenu is represented by a tabbed card which contains large, easy-to-recognise icons. This makes selection of the appropriate function a straightforward and unintimidating task. The Internet related tasks are particularly useful and simple to apply if the clear step-by-step instructions are followed - the program greatly simplifies editing, resizing and saving images for use on the WWW.

More experienced users will exploit the surprisingly comprehensive range of functions provided within the 'On Your Own' program menu. As always, the initial requirement is for a suitable image - this may be newly acquired via a compatible scanner (such as PhotoShop-compatible or Twain compliant a 'flatbed' or 35mm transparency scanner) or digital still camera (this software is occasionally 'bundled' with digital still cameras) or copied from a Photo CD or digitised reproduction of a conventional photograph originally recorded onto 'Advanced Photo System' film.



The unique interface of PhotoDeluxe ‘hand-holds’ novice users whilst also facilitating quite sophisticated image manipulation by more experienced users (as above). The broad range of features includes: 1) the manual ‘modify’ menu which includes 2) a range of editing tools, 3) tool specific controls, 4) layers support, 5) image information.

The extensive ‘Modify’ menu facilitates a range of functions within each of the following submenus: ‘Edit’, ‘Tools’, ‘Orientation’, ‘Size’, ‘Quality’ and ‘Effects’. The ‘Effects’ tab even contains several filters from the Kai’s Power Tools. One measure of the strength of this program is that separate image layers can be created and images can be saved as multi-layer images in the PhotoShop ‘.psd’ format in addition to the default PhotoDeluxe (‘.pdd’) format. The program also supports creation of files in the increasingly

popular cross-platform Acrobat (‘.pdf’) file format.

In conclusion PhotoDeluxe offers many of the most commonly used features of PhotoShop via a more user-friendly interface and hence shouldn’t be mistakenly dismissed as a poor alternative to it’s more professionally orientated stablemate. PhotoDeluxe represents an powerful image manipulation programme with an unusual yet easy to use interface which should appeal particularly to new and inexperienced users.

System requirements: (Windows) 486 or Pentium processor, Microsoft Windows 3.1, or Windows 95, 8 MB or more of RAM (5.2 MB of RAM available to PhotoDeluxe), 45 MB of hard-disk space, support for 256 or more colors, CD-ROM drive

(Macintosh) 68040 processor with 8 MB of RAM, or PowerMac with 12 MB of RAM, System Software 7.0 or later, 45 MB of hard-disk space, support for 256 or more colors, CD-ROM drive

Manufacturer: Adobe Systems European Headquarters, Adobe House, West One Business Park, 5 Mid New Cultins, Edinburgh EH11 4DU, Scotland, United Kingdom.

Website: <http://www.adobe.com/>

Photo-Paint 5.0

Brian Boullier

This program is one of the least expensive products in this review, primarily because it has been superseded by two further upgrades since it was introduced early in 1995. It merits inclusion not simply because it remains on retail sale (Corel persist in selling previous incarnations of their range of software which is of real benefit to those on limited budgets) but because it represents a powerful image manipulation program which runs under Windows 3.

Photo-Paint 5 offers a useful set of features that encompass image painting and editing. Photo-Paint 5 is best known as part of the famous Corel Draw suite of integrated graphics programs, or 'modules' as Corel like to term them. Photo-Paint 5 is also available separately as 'Photo-Paint 5 Plus' which includes screen capture and file manage-

ment utilities and some 10 000 clip art images.

The program benefits from a comprehensive range of built-in filters which can be applied to selected areas of the image. These include common colour and sharpness filters as well as more sophisticated effects such as 3D rotation and perspective transformations (which frankly are of less frequent value) In addition the program can accept third party filters including Adobe's Gallery Effects 2 & 3, Kai's Power Tools and Alien Skin's Black Box (however since this is program is now over two years old check compatibility with more recently manufactured plug-in filter sets).

Painting and editing tools are accessed through a toolbox which can be fixed or floating - the latter usually proves more convenient especially when workspace is at a premium when running at low screen resolutions (which is more likely on machines destined to run this software). In this respect Corel also deserve credit for providing 'collapsible palettes' - individual tools are selected from the toolbar by a single click which simultaneously opens a floating 'tool settings' palette. Double clicking a tool icon on the toolbar opens a more comprehensive tool related palette. For example, single clicking on the 'eyedropper' tool icon (which is used to pick colours from the image) invokes a simple tool settings dialog box in which the size of the tool can be configured. However double-clicking on the same 'eyedropper' tool icon additionally invokes a comprehensive 'colour' palette. The colour palette is particularly well realised in this program, giving excellent representations of the colour channels associated with five different

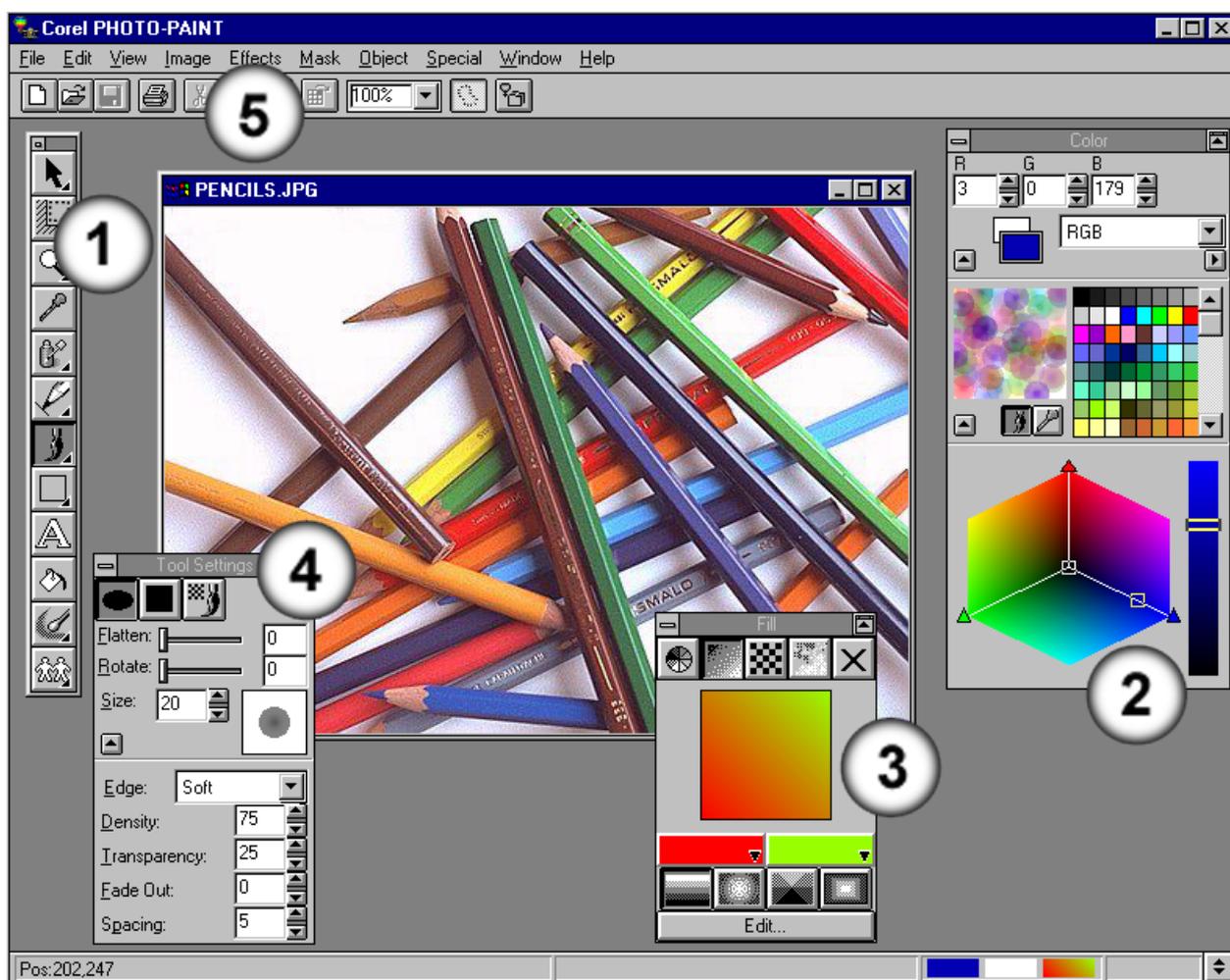


Photo-Paint 5 offers a bewilderingly wide range of features including 1) a standard toolbar, 2) an RGB colour picker, 3) comprehensive fill functions, 4) tool-specific settings, and 5) special effects accessed through a conventional pull-down menu.

colour models as well as the actual palette of the currently selected image. Active palettes can be minimised or 'rolled up' so that they occupy less valuable screen space. In addition to giving access to related palettes, the individual toolbar icons allow selection of subsets of each tool - the brush icon gives access to different brush styles (which in turn alters the contents of the 'tool settings' palette).

One other notable strength of this program is the powerful 'fill' tool which offers an exceptionally wide range of colour patterns and built-in textures which, along with some of the supplied filter effects and customisable brushes,

challenge the authority of more professionally orientated programs such as Adobe PhotoShop and Fractal Design Painter.

Unfortunately, as the preceding paragraphs imply, this program's strength also reveals its principle weakness. Photo-Paint 5 offers a comprehensive range of tools and effects but the methods of accessing them are often unconventional, inconsistent and sometimes unduly complex. With time and growing familiarity with the program this problem should recede, but for new users, and particularly those working on remote workstations without the assistance of additional documentation (the

online help is good, but also suffers from an unconventional interface) the full power and functionality of the program may never become apparent.

Finally, this version of Photo-Paint also shows it's age with respect to the range and type of file formats supported. For example the program can only import GIF files. An appealing feature, which admittedly other manufacturers include under a different guise (Adobe's 'save a copy' command is more effective for example), is the 'checkpoint' command which saves the current image allowing subsequent alterations to be easily removed by using the 'Restore Checkpoint' command. Interestingly this feature is accessible via the conventional 'Windows'-style menu rather than a special icon, which in this case would arguably have been more appropriate.

In comparison to some of the other programs under review, some functions of Photo-Paint 5 such as filter rendering seemed relatively slow, but with modern CPUs and display adapters as well as amounts of RAM which would have been considered a luxury when this version was released (it only requires a 386 CPU and 8MB RAM) this proves only a minor inconvenience rather than a major problem.

System requirements: Windows 95, 486 or Pentium CPU, 8MB RAM (16 MB recommended), VGA display (256 colour recommended), CD-ROM drive, mouse or tablet

Manufacturer: Corel Corporation, Corporate Headquarters, 1600 Carling Ave., Ottawa, Ontario K1Z 8R7, Canada.

Manufacturer's website:
<http://www.corel.com/>

Photo-Paint 6.0

Brian Boullier

Corel's Photo-Paint evolved to a true 32-bit program in version 6 and represents a significant upgrade from previous versions. Consequent improvements, such as the added functionality offered by the right hand mouse button, transform the way the program works in routine use.

PhotoPaint 6 uses the multiple document interface, which allows more than one image to be opened simultaneously. OLE 2 is also supported. This means that, when using other applications such as Microsoft Word, embedded images can be edited by PhotoPaint without having to separately launch the application. A wide range of file types are supported including PhotoShop PSD files, although the any original layers are not retained. Instead of layers, PhotoPaint 6 offers independent 'objects'. Images can be saved in a variety of formats including GIF (transparent and interlaced/non-interlaced) and JPEG, commonly used on the world-wide web.

Like the other versions under review, there is a vast array of available tools which are accessible through a highly customisable interface which includes Corel's, now trademark, 'roll-up' palettes. The loosely organised interface, whilst extremely flexible, is actually the program's greatest weakness – the user is immediately confronted with a bewildering variety of features, with even more available by accessing further menu options. For example 11 different Windows 95-style toolbars are available

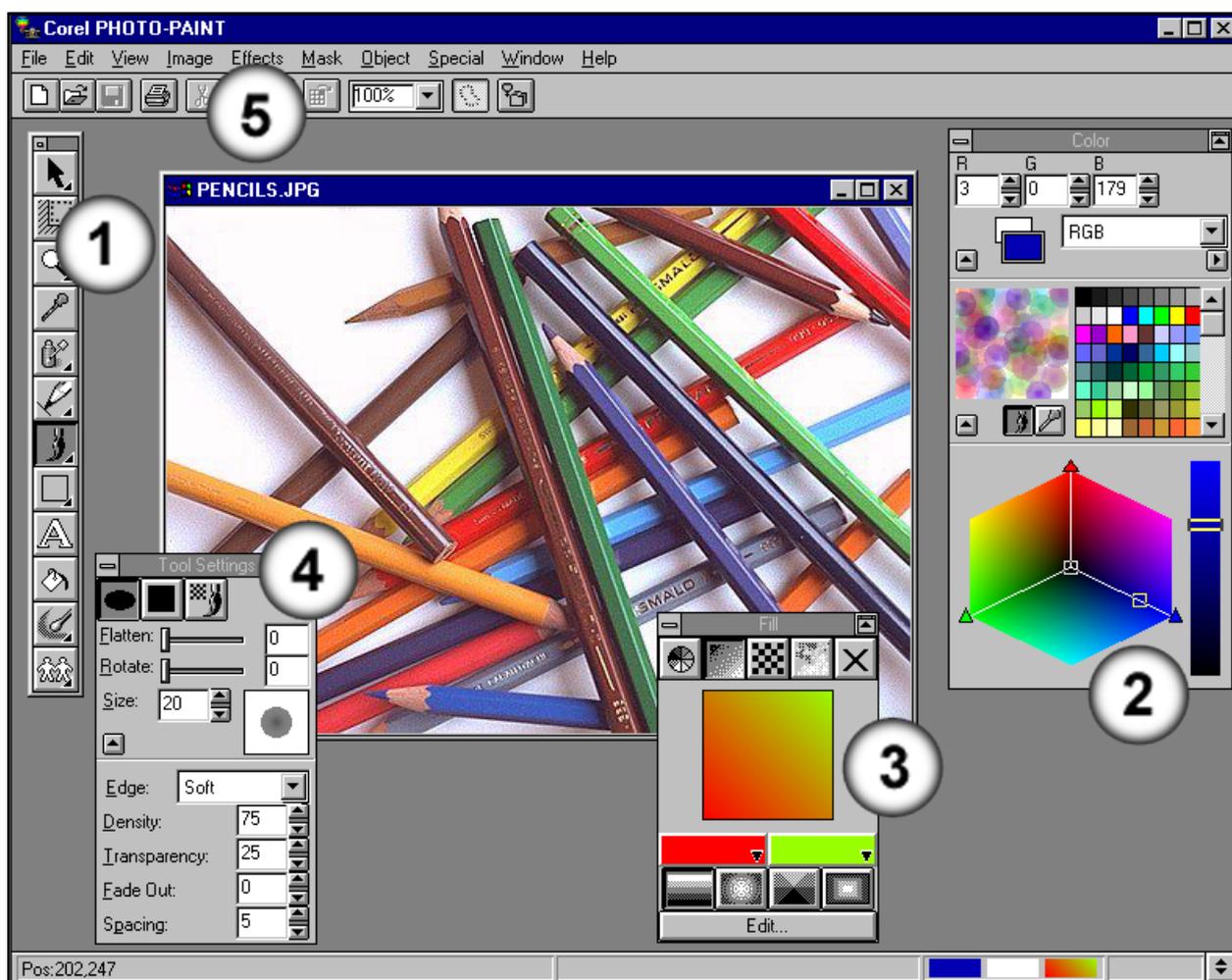


Photo-Paint 6 packs in even more features than it's predecessor including 1) highly configurable tool settings, 2) layered 'objects', 3) an RGB colour picker, 4) a 'roll-up' menu, 5) single frame editing of .avi files, and 6) a comprehensive range of special effects accessed through a conventional 'Windows' menu.

which group related tools according to their function e.g. 'line tools', 'zoom tools' 'shape tools' and 'mask tools'. Individual toolbars can be customised with regards to their on-screen position i.e. 'docked' to an edge of the program's window or 'floating' within the workspace, as well as component functions. Fortunately the toolbar menu includes a 'reset' button which allows customised toolbars to be returned to their default configuration when necessary.

Corel offer special prices to educational users via normal retail outlets – buyers should note that these prices

usually exclude the supply of manuals, which in the case of PhotoPaint are essential.

Complexity aside, Corel PhotoPaint 6 is an extremely competent image manipulation program. Having now been superseded by version 7 (in recent years Corel have released a new version of the Corel Draw package, and hence PhotoPaint, every Spring), this version is particularly affordable and many consider it the poor person's PhotoShop.

One range of features worth investing time in becoming familiar with is the large range of plug-in filters and special

effects, which are supplied as standard. In most cases the original image, or a representative area of it, can be compared to an adjacent preview image before the filter is applied – a very useful feature. Amongst nearly 80 available filters are the usual image adjustment and colour balancing options as well as more sophisticated effects such as Zaos Tools Paint Alchemy and Fractal Explorer – this particular filter may not find everyday application but is definitely worth investigating if only to experience Kai Krause's trademark style of program interface.

System requirements: Windows 95, 486 or Pentium CPU, 8MB RAM (16 MB recommended), VGA display (256 colour recommended), CD-ROM drive, mouse or tablet

Manufacturer: Corel Corporation, Corporate Headquarters, 1600 Carling Ave., Ottawa, Ontario K1Z 8R7, Canada.

Manufacturer's website:
<http://www.corel.com/>

Photo-Paint 7

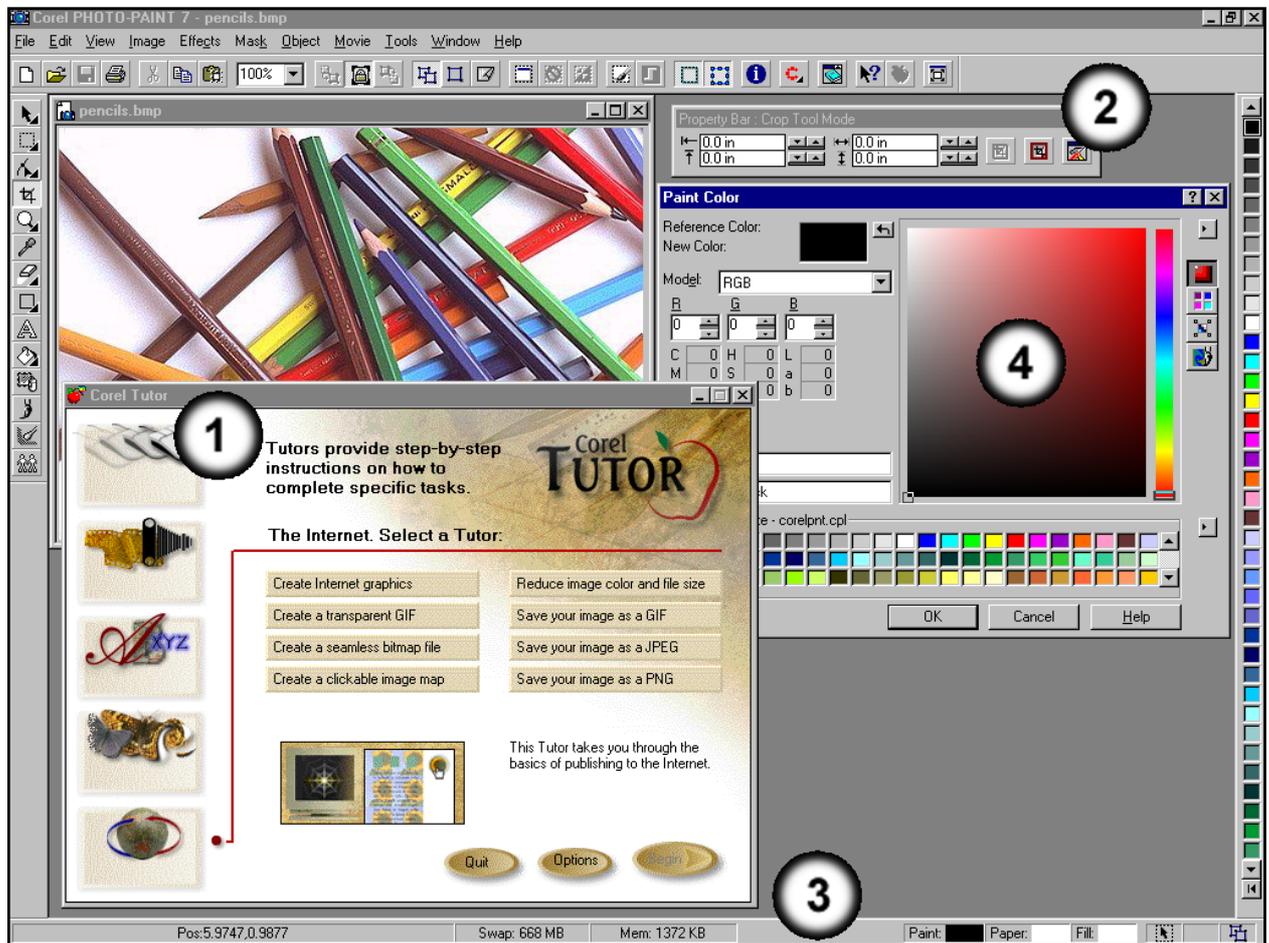
Brian Boullier

PhotoPaint 7 represents the latest in the long line of Corel's popular image editing programs. The program is most commonly encountered as part of the Corel Draw Suite, but may also be purchased as a part of the 'PhotoPaint Plus' package. Prospective buyers might also consider Corel's retail prices to educational users – whilst these special pack-

ages come without manuals, PhotoPaint 7 incorporates a very useful series of tutorials which guide the user through such common tasks including photograph retouching and graphics for the Internet. These tutorials are comprehensive enough to replace conventional manuals when the program is accessed across a remote network.

The PhotoPaint family has undergone continual development over the years. As a consequence PhotoPaint 7 is a very powerful image editing program with a thoughtfully refined user interface. The most obvious improvement to this version is the 'Property Bar', a context sensitive toolbar which changes according to the currently selected tool. Toolbars can be either 'docked' to the periphery of the workplace or left floating in a convenient area. In addition the status bar which runs along the bottom of the workplace now includes information on the user-allocated size of swap disk and the memory available to the current image. Amongst the many less immediately apparent, but nonetheless notable, improvements are the 'repeat stroke' tool which enables previously saved brush strokes to be modified and reapplied and the 'image sprayer', which allows previously saved images to be applied onto the current canvas much in the fashion of Painters 'image hose'.

PhotoPaint 7 offers a comprehensive range of naturalistic brush effects (some of which render quite slowly) and an even more impressive selection of special effects plug-ins which include Paint Alchemy and the wonderfully inventive Kai's Power Tools (Special Edition). This latest version of PhotoPaint also recognises the increas-



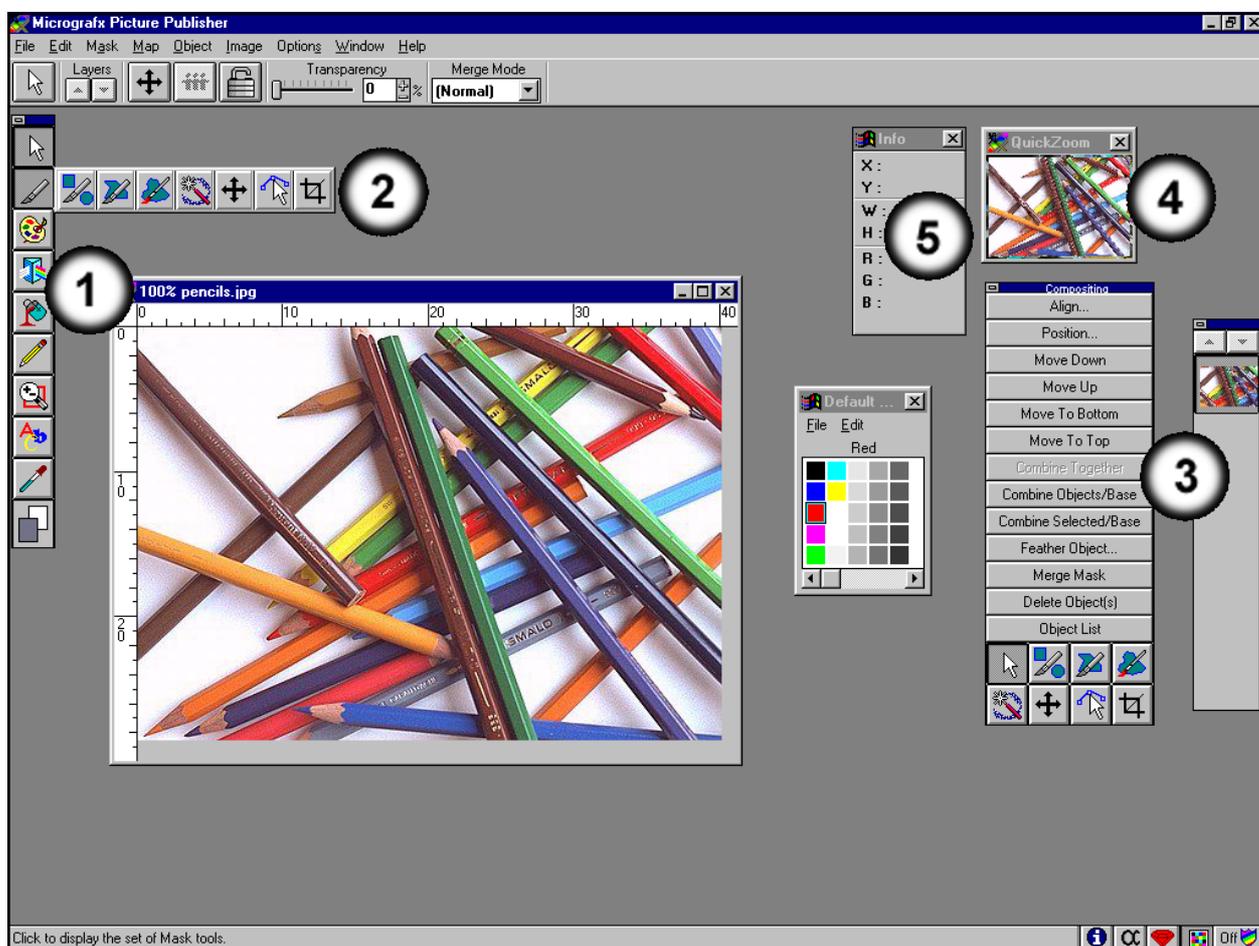
Corel PhotoPaint 7 offers a comprehensive range of powerful tools including 1) ‘Corel Tutor’, an online guide to most commonly encountered tasks (‘The Internet’ is illustrated) which should be of major benefit to new and inexperienced users, 2) the context-sensitive ‘Property bar’ (here supporting the chosen ‘crop tool’), 3) the status bar displays information regarding available swap file and memory, and 4) a comprehensive colour picker.

ing need for Internet-related tools. The most important Internet file types (.gif, .jpg and .png) are supported and online tutorials can assist with the necessary steps in creating web-optimised images. In conclusion PhotoPaint 7 offers most of the features required for professional image editing together with sufficient online help and assistance to enable the novice to produce professional results – like many of its competitors, the programs main drawback is the amount of time needed to become familiar with all of these features.

System requirements: Windows 95 or NT4.0, 486/100 or Pentium 100 recommended, 16MB RAM (32 MB recommended), VGA display (SVGA recommended), 42MB hard disk space, CD-ROM drive, mouse or tablet

Manufacturer: Corel Corporation, Corporate Headquarters, 1600 Carling Ave., Ottawa, Ontario K1Z 8R7, Canada.

Manufacturer’s website:
<http://www.corel.com/>



Picture Publisher 5 presents a deceptively simple interface through which many powerful functions are accessible including 1) the basic toolbar, 2) an expanded toolset for each basic tool (in this example the mask tool has been expanded), 3) comprehensive control of layered objects, 4) a convenient zoom function, and 5) important image information

Picture Publisher 5.0

Brian Boullier

Micrografx Picture Publisher 5.0 has been available for over two years now. Whilst previous versions led the way for image editing on the PC, this version is beginning to look dated in comparison to the latest competition. However many users are still reliant on 386- and 486-based PCs running 16-bit versions of Microsoft Windows and for them this program is worthy of consideration.

At first glance the program's interface seems comparatively simple and low on features. This is in complete contrast to Corel's Photo-Paint. As such, it is much less likely to intimidate new users whilst more experienced users of image editing software will know to look further for the many additional features which reside within this program.

When first opened, Picture Publisher 5 presents the user with a simple toolbox containing standard tools such as paintbrush, magnifying glass, fill and text. Clicking on some of these standard

tools reveals an expanded toolset (the status bar at the foot of the window confirms the availability of additional tools). Choosing one of these tools subsequently updates the context-sensitive toolbar which normally runs across the top of the program window. For example clicking the paintbrush reveals the available range of brush types and if one of these brush types is selected, such as the airbrush, the related toolbar appears giving refined control over the selected tool.

Opening images is a straightforward task. The ImageBrowser provides representative thumbnails of images before opening, as well as importing or saving. Other noteworthy features include object layers and unlimited undos via the 'Command List', an editable record of all manipulations performed on a single image. The program also supports common scanners including TWAIN compliant devices.

The program is supplied with an extensive range of effects filters which are accessed through a windows-style pull down menu. A useful 'Effects Browser' feature allows filter effects to be previewed on representative sections of the image before being applied fully. Filter rendering occurs quickly, in fact the program is fast in most respects, with the relatively short time needed to launch the program being particularly impressive. The program also supports PhotoShop plug-ins including Kai's Power Tools – Picture Publisher 5.0 represents particularly good value when purchased together with Micrografx Designer 4.1 and Kai's Power Tools 1.0 in the retail 'Micrografx Designer Power Pack.

System requirements: 386/33 + maths coprocessor (486DX recommended), 8MB RAM (16MB recommended), Windows 3.1 or above, DOS 5.0 or above, VGA display or better, mouse or pointing device

Manufacturer: Micrografx Limited, Grafx House, Forsyth Road, Woking, Surrey GU21 5RS, UK.

Website: <http://www.micrografx.com/uk/>

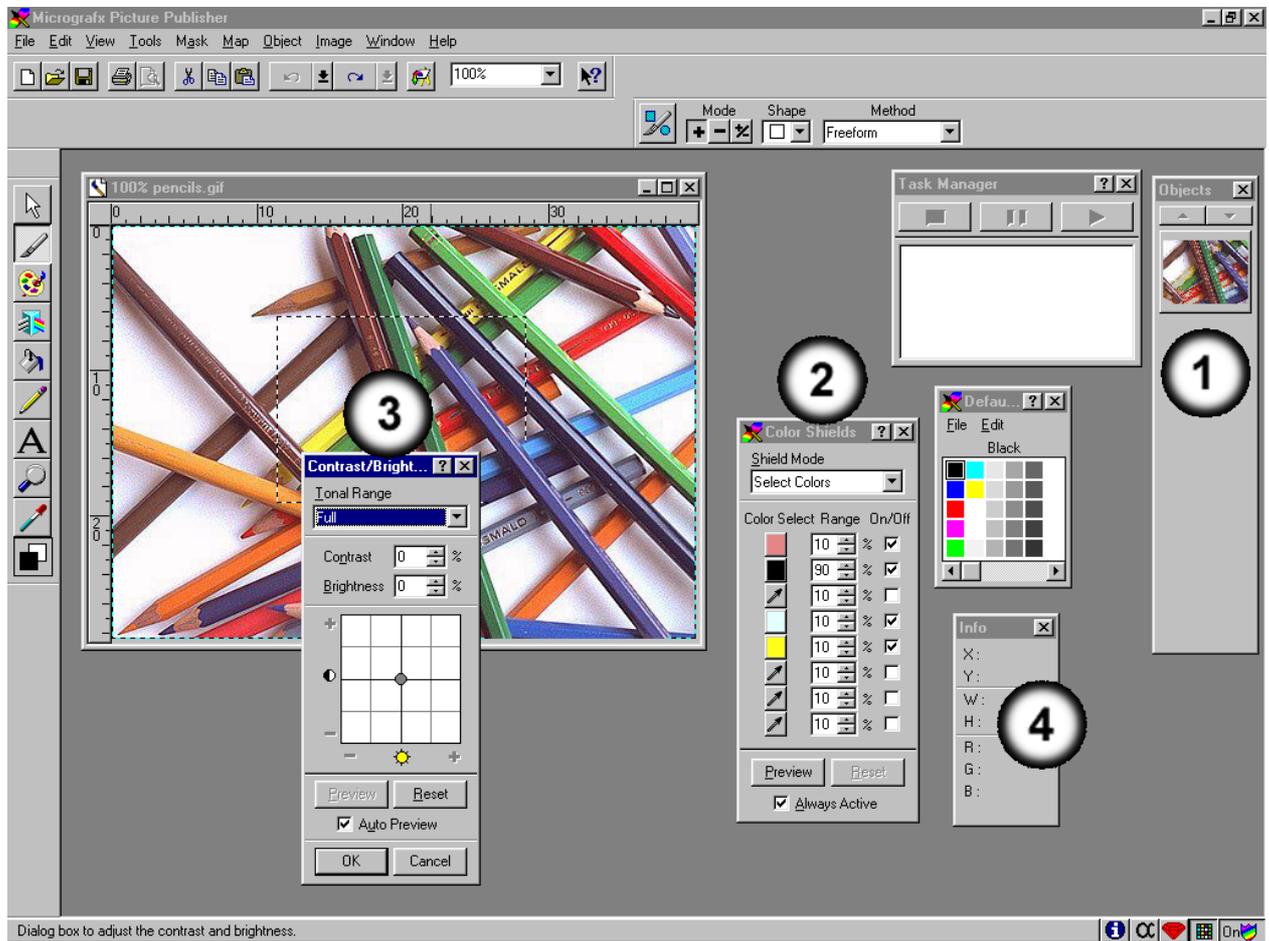
Picture Publisher 6.0

Brian Boullier

Picture Publisher 6.0 represents a major version upgrade by becoming a native 32-bit application suitable only for Windows 95 and Windows NT.

General benefits of this move include long file names, true multitasking and full OLE 2.0 support. More specifically Micrografx have deliberately redesigned the interface and functionality of Picture Publisher 6.0 to appeal to users of Microsoft's professionally-orientated 'Office' suite. To this end the program is only sold as part of the 'ABC Graphics Suite' (which also includes Micrografx Designer, ABC Flowcharter and the ABC Media Manager).

As with version 5.0, on initial inspection the interface appears quite basic and almost short on features. However first impressions are definitely deceptive in this case – this is a very powerful program with a comprehensive range of features. Fortunately Micrografx have added pop-up 'hint bubbles' which describe both the de-



There are many innovative features in Picture Publisher 6.0 including 1) the layered objects tool, 2) the colour shield, which allows layered masking on the basis of colour, 3) the image contrast/brightness control which offers a 'joystick' in addition to the more usual numerical value entry boxes, and 4) image information (cursor position, pixel colour, image size etc).

fault buttons and the functions of the pull-down menus when the cursor rests briefly above them. The online help is suitably detailed and is written in the style of a 'how to' guide. This is particularly useful for new users, especially since the single manual refers to the complete ABC Graphics Suite and how it might be used for only several pre-defined projects.

The main tool palette is located to the left of the screen, that is until the user customises the screen layout. As with version 5.0, selecting any of these tools reveals an expanded toolset sup-

ported by an additional context-related toolbar. All the toolbars can be moved so that they 'float' on the workspace or alternatively they can be 'docked' to any side of the screen. Individual buttons can also be assigned to different toolbars. Frankly the extent to which the interface can be customised is somewhat overwhelming and is likely to lead to confusion, especially amongst inexperienced users or where PCs are shared by more than one user. Of greater practical value is the ability to access important editing functions by clicking the right hand mouse button when the cur-

sor is above the current image.

In addition to atypical interfaces the Picture Publisher lineage is also notable for unconventional tools. An example is the 'colour shield' which facilitates layered masking on the basis of colour in addition to the more usual area selection. Up to 8 colours can be selected using an individual dropper tools with tolerances adjustable from 0-100% of the RGB value assigned to the original colour. Picture Publisher 6.0 also offers combined adjustment of brightness and contrast by means of a 'joystick' control – this unusual method is extremely effective and is helps enormously in conceptualising the combined effects of adjusting these parameters in a given image.

As one would expect, Picture Publisher 6.0 expands the general capabilities of earlier versions. Many users will welcome the broader file support, particularly the ability to create interlaced and transparent GIF files. In conclusion this is a very versatile program which, although lacking the ultimate refinement of PhotoShop, will reward the dedicated user with excellent results.

System requirements:

486DX or higher, 8MB RAM (16 recommended), 30MB - 45MB hard disk space, Windows 95 or NT3.51, VGA or higher, 256 colours or higher, CD-ROM, mouse or pointing device.

Manufacturer: Micrografx Limited, Grafx House, Forsyth Road, Woking, Surrey GU21 5RS, UK.

Website: <http://www.micrografx.com/uk/>

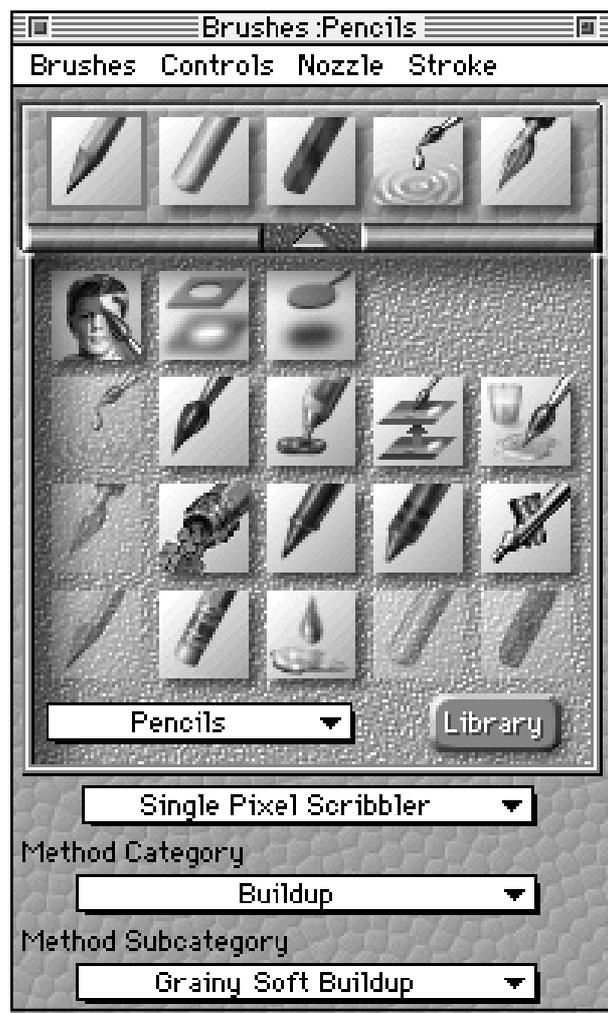
Painter 4

Sue Gollifer

Painter 4 has evolved significantly from its earliest versions as a 'natural media' paint programme, designed to be friendly and intuitive for a user accustomed to traditional fine art tools and pigments. It was the first programme which attempted a comprehensive simulation of real world artists' media. It has concentrated on this simulation throughout its various up-grades, and was originally not regarded as an complete graphics package: it is marketed as an 'electronic studio'. The manual looks like an artist's sketchbook, and early versions even came packaged in paint tins. Although the central intention was to achieve a liberating computer environment in which non-computer-literate users could produce art, its complexity tended to alienate the very users it attempted to attract. In response to criticism over this, the software designers have completely revamped the interface, and added some new features very similar to other graphic applications.

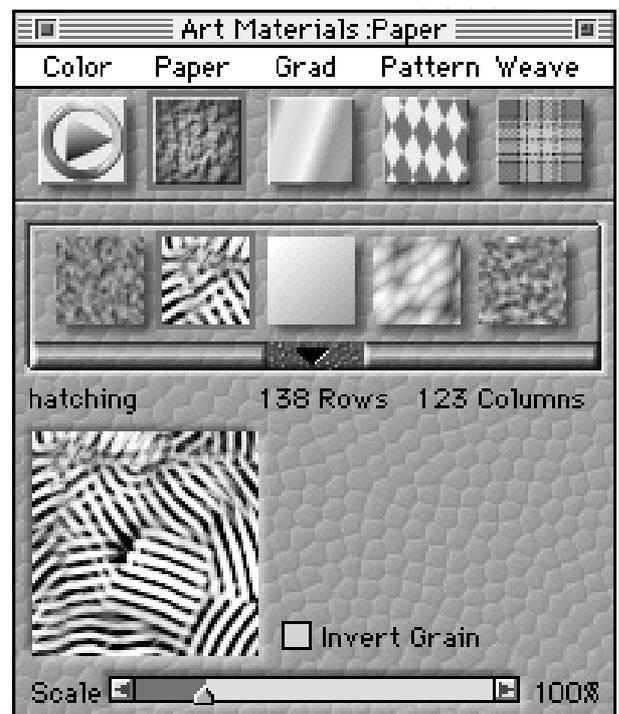
The application is effective when used with a fast computer with plenty of RAM - otherwise, when using painting modes of any complexity, there is a noticeable delay between each mouse or tablet action and its effect on-screen. This obscures the immediate, intuitive nature of the programme, and inhibits freedom of expression and movement. When used with a suitably powerful platform, and a Wacom pen and tablet, it is possible, through its pressure and velocity settings, to match the style, speed and direction of 'real' painting

marks and strokes, though on a limited scale. Though its interface is 'elegant', and imitates 'real,' materials, its apparent simplicity is deceptive. Any tool can be refined in numerous ways, and the way successive layers of floaters, masks, shapes and canvas can interact is most impressive.



In Painter 3 and now Painter 4, the palettes have been totally redesigned as drawers, allowing the user to open and close them by clicking on their icons: if the item is not displayed on the front of the drawer, you can click anywhere on the pushbar to open the drawer, revealing the items inside. Unfortunately this does not create a particularly helpful creative environment, as the picture image is often obscured behind the cluttered interface, where at

least four palettes can be open at any one time, and though they can easily be arranged around the screen they can still be very distracting. A second monitor, dedicated to the work in progress, is the ideal, though expensive, solution. However one of Painter's great strengths is still retained: to create the illusion of working on textured surfaces, from 'fine cartridge paper' to 'coarse canvas', rather than on a featureless blank monitor screen. These textures can be applied to the whole document or through individual tools as an applied variant.



The application's limitations are apparent if it is used as a Photoshop-type programme (i.e. as an image-manipulation programme for scanned images). But the application isn't designed with this in mind; it works well as a basic image-manipulation programme, but its strengths are much more to do with allowing the user the freedom to invent, draw, whatever, within the programme. As well as creating the typical paint-programme bitmapped pictures,

Painter now creates and works with postscript vector graphics. By using the new 'Shapes' menu, you can create and import resolution-independent PostScript vector graphics such as those created by *Adobe Illustrator* and *Macromedia FreeHand*.

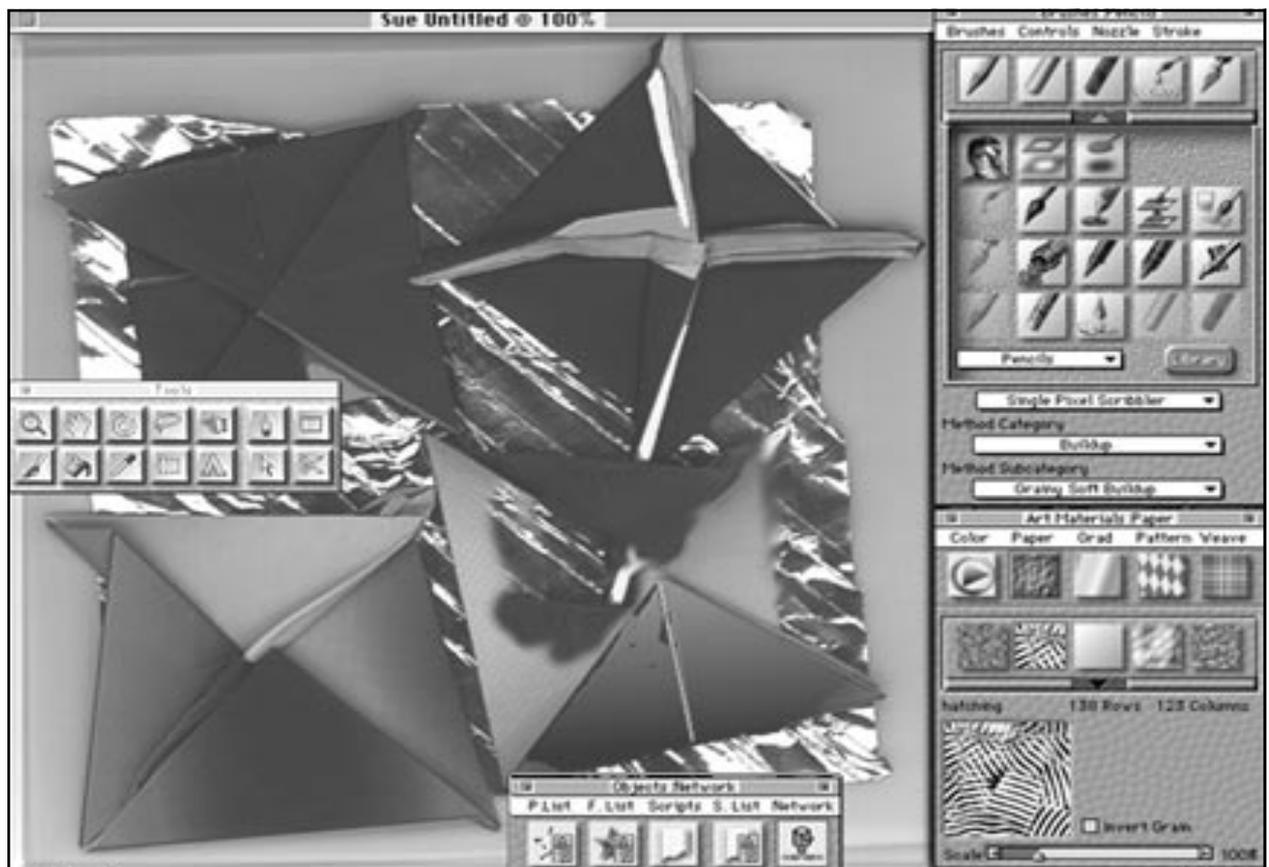
Painter reads and writes files in Photoshop 3.0 format, converting Photoshop layers into Painter's "floaters" and vice versa. Now Painter 4 users can also import artwork created in Illustrator format (written by CorelDraw, FreeHand and Illustrator) and add texture and transparency using Shapes. For the first time, users can combine floating selections created in Photoshop and Painter with vector-based artwork created in drawing programs.

The new 'Mosaic' brush lets users create realistic mosaics by 'painting' with tiles on a blank canvas or over scanned photographs. Each tile is an

independent object that 'knows' about every other tile, and carves its shape so that it fits perfectly with existing tiles.

Painter 4 also includes new rulers and guides which provide visual cues for sizing and manipulating graphic images; a new alignment Effect for precisely placing both bitmap and PostScript artwork objects; a 'Quick Curve lasso' tool for creating precise selections using beziers and pull-down menus on the floating palettes.

Among its less obvious features are: an animation capability; whole sections on patterns, fabrics and tartans; scripting and playback, and replayable brush-strokes; mosaics; image hose, which sprays out pre-set image stores in numerous configurations; cloning from remote documents; functioning live across the Internet, and easy web page construction. Painter can now create World Wide Web-page pictures that



have built-in links to other Web page and makes it possible to collaborate with other artists in real time over the Internet.

Painter 3.1 gave users the ability to create Web graphics in GIF and JPEG formats with support for interleaved and transparent GIF images. Painter 4 expands these capabilities by letting users create Image Maps for use in Web page designs.

So its apparent simplicity makes it a good programme for users who can simply transfer their drawing or painting approach. But underneath, its logic is really one that has evolved, rather than has been planned in a clear pattern. The shapes layer, for instance, makes up for a lack in previous versions of clean-cut geometric forms. However, it doesn't work in a very obvious way, nor do the masks. But the masks can be painted, making for complex vector files, but the improvised character of the programme comes into its own with text, which is far more malleable than (say) Macromedia xRes. The same is true for its floaters approach, much more direct than Photoshop's layers system. As with all Painter features, you have 32 levels of undo.

It can also be temperamental, locking up occasionally. But its shortcomings can be forgiven for its living up to its essential creative purpose. The vast array of painting and drawing tools in Painter 4.0, including some tools unavailable in any other art programme, lets you create just about any look or effect you want. This great versatility makes the application a great deal more complex than first impressions may make it appear.

System Requirements: (Macintosh) 68030 or 68040 Macintosh or PowerMac; 6.5+ MB of application RAM (8+ MB for PowerMac); System 7.0 or later; colour display (24-bit recommended); 20 MB free disk space; floating point unit (FPU) or PowerMac required for some effects.

(IBM compatible) 80486 or Pentium compatible PC; 8 MB of RAM (12 MB for Windows 95); Microsoft Windows 3.1 or Windows 95; colour display (24-bit recommended); 24 MB free disk space; math coprocessor required for some effects

Manufacturer: Fractal Design Corporation, P.O Box 66959, Scotts Valley, CA 95067-6959 USA.

Website: <http://www.fractal.com/>

Live Picture 2.5

Sue Gollifer

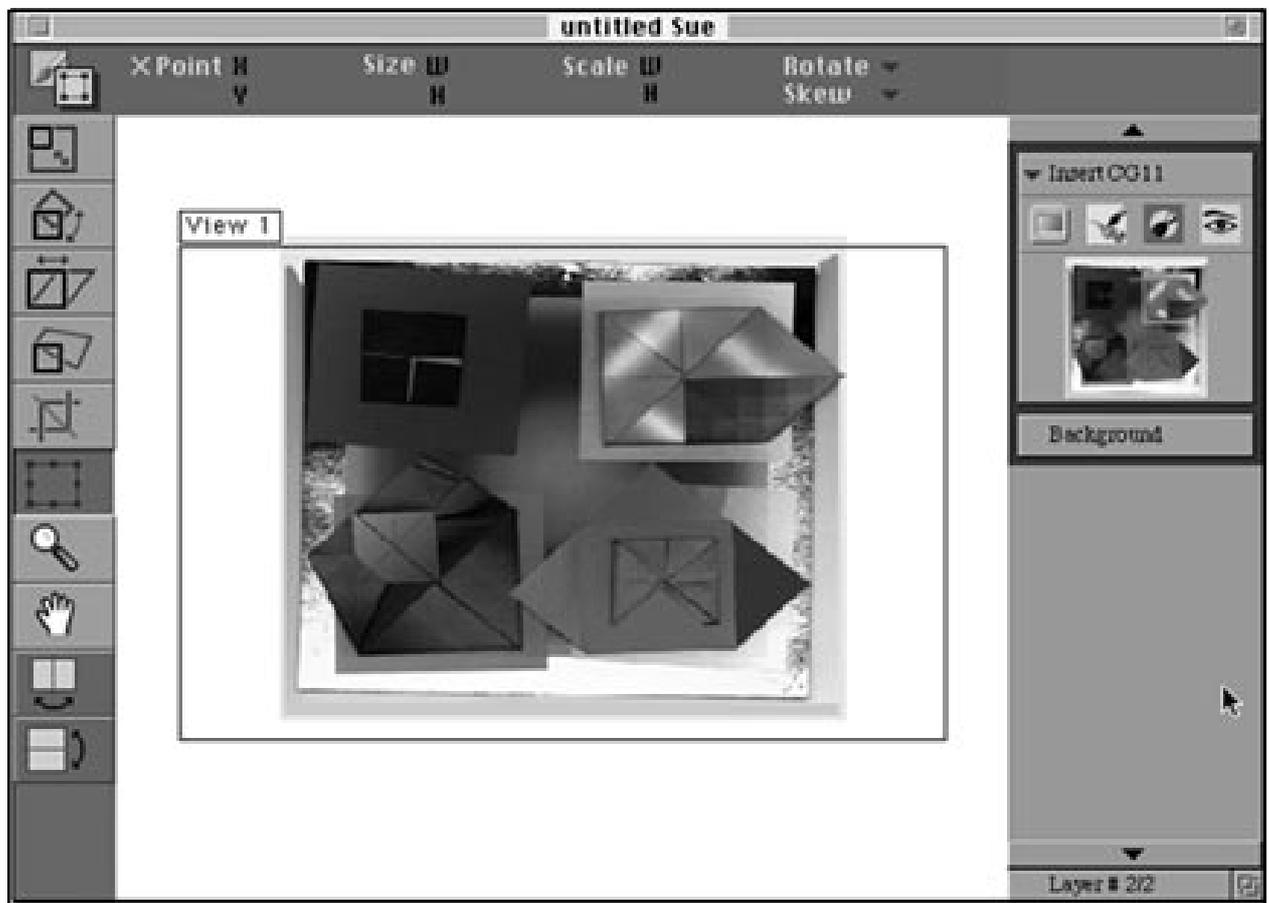
Anyone who has regularly to composite and manipulate high-resolution images in any quantity should consider Live Picture as an investment - although a lot of computing power is required to use it effectively. While its makers claim that the application can run on a Quadra with 24MB of RAM, it takes a 200Mhz PowerMac with at least 64MB of RAM to get the full benefit of Live Picture's distinctive abilities.

The secret of Live Picture's so-far unrivalled capacity to deal with large, high-resolution images in real time is FITS (Functional Interpolation Transformation System) technology, which oper-

ates on continuous-tone colour images, regardless of the level of resolution.

Before manipulation, images are first converted to Live Picture's exclusive IVUE format, which expresses image-editing functions algorithmically in separate FITS files. Using the IVUE format, Live Picture permits the viewing and manipulation of images - scaling, zooming, and panning data-hungry images instantly - but displays only that portion of the image that is needed at the time. It quickly processes image

edits (including retouching, colonising, distortion, compositing, lighting, feathering, and blending), and saves them in layers, separate from the pixel data. It can quickly modify or reverse any edit, at any time: the original image data is not affected, and there is also an unlimited non-linear "undo". One can rework, delete, or add effects at any time. When the work is finished, the file can be exported in the resolution and file format of choice (Live Picture imports from and outputs to all standard Mac



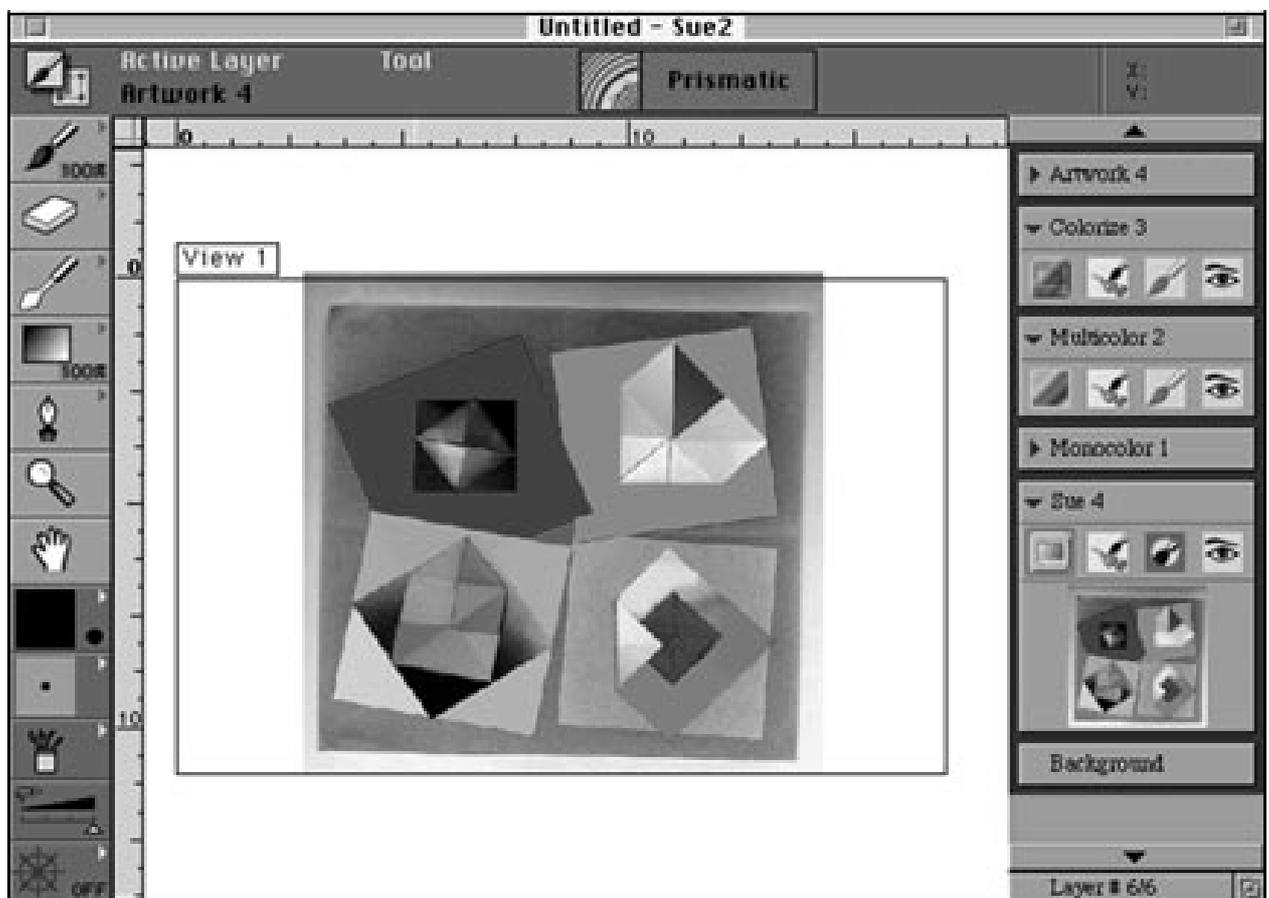
Along the left side of the window is a tool palette that toggles between a Positioning mode - for cropping, scaling, skewing, and moving - and a Creation mode, used for most compositing functions. A palette across the top, called the Multiplex Bar, enables numerical input for size and positioning. The palette with layer information, used to display and activate specific images and effects, is along the right side of the window. The interface does not conform to Macintosh standards for certain tools, but one can use Live Picture's pressure-sensitive brushes productively with a Wacom -type tablet, applying texture or varying opacity to create subtle effects. Special Effects Tools are available to sharpen, blur, smudge, blend, and add shimmer.

file formats), can directly generate colour separations, or can join a multiple FITS files queue for batch processing.

Live Picture may be seen as complementary to applications such as Photoshop. It lacks Photoshop's vast supply of tools and filters, but - unlike Painter, for instance - it has a relatively uncluttered interface, designed to be used comfortably on a 13-inch monitor.

What Live Picture lacks is real

retouching tools. Whereas Photoshop allows repainting of part of an image with tones from any other part of that image (or of another image - this is called 'cloning') - the equivalent function in Live Picture requires a new clone layer each time a different source is selected. Rendering is handled very quickly, when adequate processing power is available. Which brings us back to my initial observation: if you



As with Photoshop, separate images in the document can sit in separate layers, but so can individual editing decisions. Colour correction, sharpening, or distortion can be applied in different layers, each of which can be easily altered, hidden or removed at any time. A variety of layer types are available, including monochrome, multi-colour, clone, distort, paint, image-insertion, colour correction, and silhouette. This versatility can at times be confusing, especially as some effects cannot be combined, nor can layers be converted from one type to another. It's important to maintain clear and concise naming of layers - generally to be well-organised - because an object or effect is selected by clicking on its name in the layer list. Live Picture allows the user to define various views - as many as required - which can be used to negotiate rapidly from one zoom-level or portion of the image to another. Views can also be stored and selected in the layers list.

need a powerful application, and you have a powerful platform, then Live Picture is a good investment.

In conclusion Live Picture offers the following benefits:

- Essential complement for Adobe Photoshop users
- Speed: Work on a 500 MB image as rapidly as on a 5 MB image
- Power: Access an expansive range of creative options
- Flexibility: 'unlimited Undo'
- Resolution independence: re-scale and re-use the image for other purposes

System requirements:

The minimum recommended configuration is a PowerMac with 18MB of RAM dedicated to Live Picture. The recommended RAM is 24MB, and Live Picture will take advantage of larger amounts of memory, if available.

Live Picture will soon be available for Silicon Graphics platforms, and a Windows 95 version is in progress.

Manufacturer: Live Picture, Inc.
5617 Scotts Valley Drive, Suite 180
Scotts Valley, CA 95066, USA

Website: <http://www.livepicture.com/>

Adobe Photoshop 4.0

Sue Gollifer

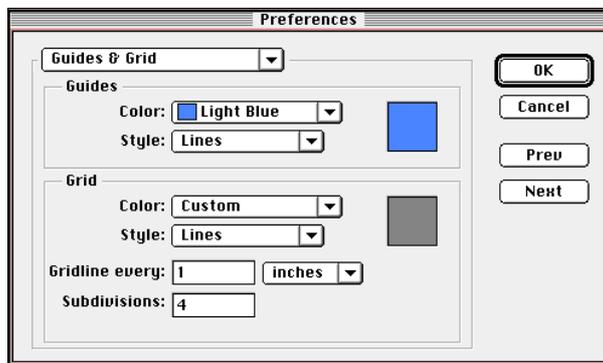
Since its introduction in 1989, Adobe Photoshop has become an industry-standard application for digital image enhancement, retouching and photo compositing. The application is easy for

the novice to get to grips with and yet sufficiently powerful for the professional. With its many upgrades it now stands out from all other applications within its field. One of the strengths of the Photoshop environment is that, although it is a very complex program, with numerous levels hidden within it, it appears initially elegant and straightforward. These merits have resulted in its usage world-wide by artists, designers, illustrators, photographers, and multimedia authors to edit scanned images, digital photographs, computer-generated images and for preparing web images. The user is able to start with a blank screen or scan an image directly into the program, then create separate layers like transparent sheets of acetate, where one can combine graphic elements, paint, and edit, adding colour, altering, or deleting, without changing the original background image. There is a complete set of tools for colour correction which allow users to take advantage of professional-level prepress capabilities, thereby bridging the gap between traditional print and Web publishing.

The recently released Adobe Photoshop 4.0 now offers a whole range of new features, 'Digital Watermarking' being perhaps one of the most significant for photographers and Digital Artists, since it creates an effective method to protect the copyright of their images. Using PictureMarc(TM) technology developed by Digimarc Corporation, Adobe Photoshop inserts an imperceptible, digital watermark in any image. While not apparent to the human eye, this watermark is still readable even after an image has been edited, or printed and re-scanned. Once

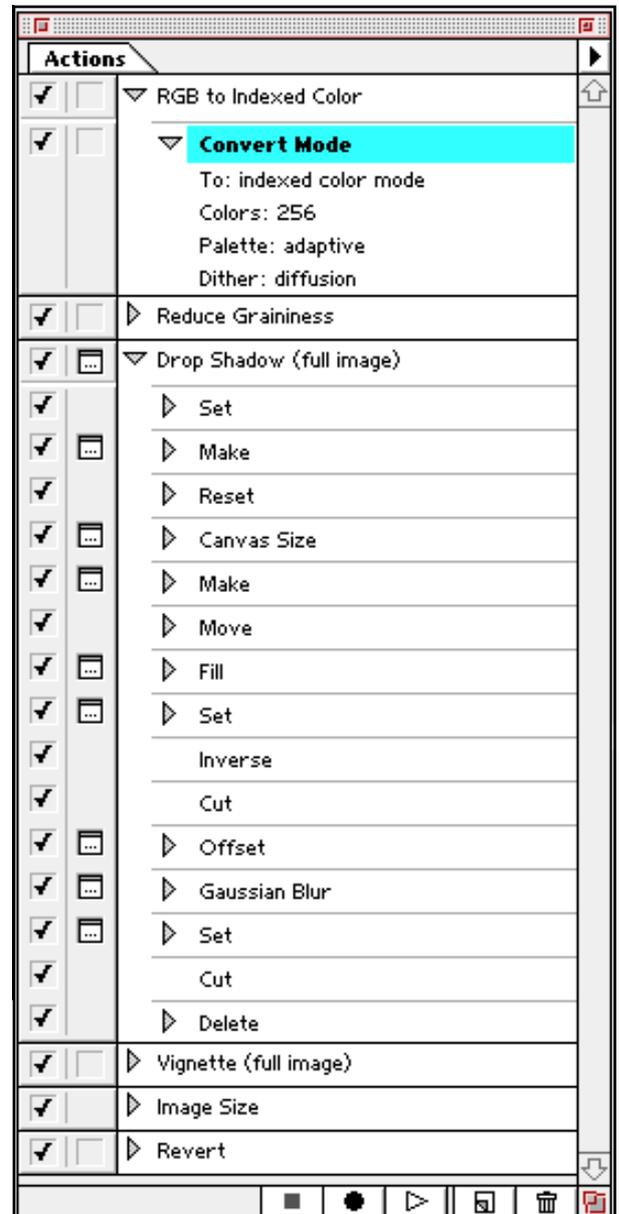
Photoshop has read the watermark, a link in the program can access the Digimarc Web site, from which users can obtain copyright and artist information for registered images. For more information visit the Digimarc Website: <http://www.digimarc.com/>.

Other features include more than 90 filters, including the formerly stand alone product Adobe Gallery Effects(R), which consists of 48 new filters which offer a wide range of artistic effects, such as coloured pencil, crosshatch and film grain. Each filter is now 32-bit native, which enables far greater processing speed.



Photoshop 4 users can now display nonprintable grids and image guides, as are present in most drawing or CAD programs. Guides can be pulled from the rulers to provide precise horizontal or vertical lines to which tool operations can be snapped. Likewise the Grids feature creates a regular pattern of snap points across an entire image.

The new Navigator palette provides an easy way to move quickly to any location in a magnified image, by selecting the desired view from within a resizable thumbnail of the image. The standard Zoom tools are still available, but greater delicacy of zoom level selection

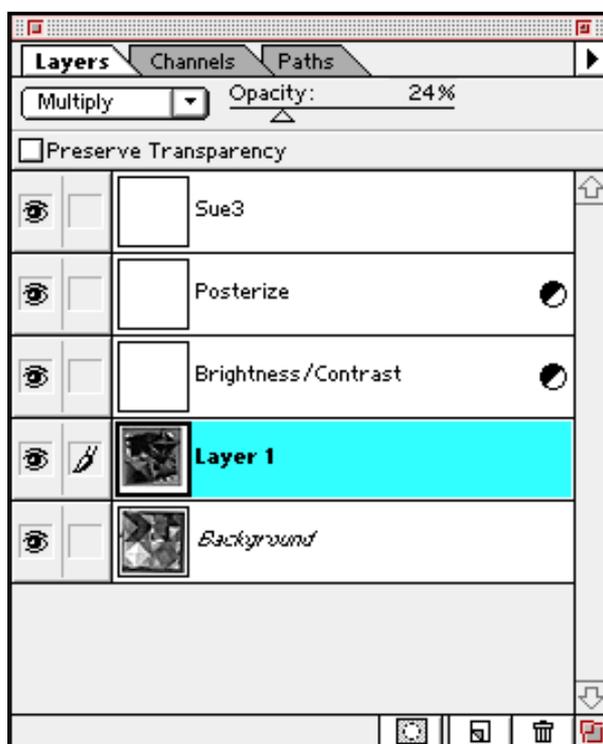


There is a new Actions palette containing the simple yet powerful Batch command, allowing application of an action script to a batch of images. Various actions can be displayed simultaneously in the Actions palette, and action sets can be saved and loaded separately.

is created using commands such as Fit on Screen, Actual Pixels, and Print Size.

What image layers in Photoshop version 3 did for compositing images, so the new layers adjustment does for colour correction. An adjustment layer is a mask through which an image ad-

justment is applied. These features are organised in the changed Layers palette, making it much easier to tell which functions affect layers and which affect the document as a whole. Any number of adjustment layers can be stacked in the Layers palette, each adjustment layer modifying the layers that lie below. Adjustment layers certainly encourage experimentation, as the layers can be hidden or viewed as different hierarchical orders allowing users to view the image in various different ways.



Nine types of adjustment layers are available, including Curves, Levels, Hue Adjustment and Posterize.

One of the most exciting new features in this upgrade is the Free Transform command, allowing users to apply a wide variety of transformations. Handles are placed around the boundary of a layer after which one can scale, rotate, or shear it, either by dragging the handles or by entering numerical values

in a dialogue box, making complex manipulation of images a great deal easier.

The gradient tool has also been completely redesigned, now functioning much more in the manner of the full-featured gradient controls available in high-end drawing packages, now allowing users to create and store multicoloured gradients with as many as 32 colours and varying levels of opacity. Combined with blend modes, the new gradient features a powerful special effects tool, similar to some of the Meta-tool plug ins such as 'Kai's Power Tools' and 'Gradient Designer'.

The new Actions feature in Photoshop 4.0 allows users involved in Webimage processing to easily perform batch file conversions and down sampling. Version 4.0 includes support for transparent, interlaced GIF files, and adds support for the following Web file formats:

Portable Network Graphics (PNG) - PNG is a lossless, portable, well-compressed RGB file format that can include mask-channel information, as well as being able to store gamma and chromaticity data for improved colour matching on heterogeneous platforms. It also supports progressive display for on-line use.

Progressive JPEG - supported by Netscape Navigator (TM), this compact file format allows images to be displayed with increasing detail as they are downloaded, reducing user wait time when viewing image-rich Web pages. In addition to supporting progressive JPEG, Photoshop 4.0 also adds greater user control over JPEG compression settings.

Portable Document Format (PDF) -

the Adobe Acrobat format, now common on the Web, can now be written directly from within Photoshop 4.0.

Photoshop 4.0 provides a direct link from the application to the Adobe Systems web page, providing easy access to product information, technical support, updates, plug-ins and other areas of useful information.

Adobe has carried out a great deal of adjustment to improve the program for the fields in which it is widely used, unfortunately without including any dramatic speed improvements but instead a wealth of low-level modifications. The adjustment layers are an extremely useful feature, the transformations are invaluable. The support for new Web formats is well thought-out; and the inclusion of better previews for distortion filters, improved layer masking and the watermarking feature for appending indelible copyright notices greatly improve the program's flexibility. It seems that Adobe have sought to make Photoshop as friendly and easy to use as possible, and have managed without the use of strong artistic metaphors to make it even more creatively flexible, although as ever the program is still very memory hungry.

System requirements:

(Macintosh) 68030 or greater (PowerMac recommended), Apple system Software version 7.1 or later, 16 MB of RAM for PowerMac (32 MB recommended), 20 MB hard-disk space, 8-bit or greater display adapter, CD-ROM drive (floppy disks available upon request).

System requirements:

(Windows) i386,i486, or Pentium CPU, Windows 3.1, Windows 95 or Intel based Windows NT (version 3.5 or later), 16 MB of RAM (32 MB recommended), 20 MB hard-disk space, 256-colour or better display adapter, CD-ROM drive (floppy disks available upon request)

Manufacturer: Adobe Systems Euro-

pean Headquarters
Adobe House
West One Business Park
5 Mid New Cultins
Edinburgh EH11 4DU
Scotland, United Kingdom

Website: <http://www.adobe.com/>

Effects Plug-ins

Sue Gollifer

Black Box



The Black Box is a set of 10 plug-in filters for high-end graphics programmes, and of the sets under review probably offers the greatest value for money. The set includes a number of useful beveling and distortion effects, including a uni-directional mo-

tion blur and a glass refraction filter. These effects can be carried out in one step, and the settings designed can be saved for future re-application.

Application requirements:

(Macintosh) Adobe photoshop 2.5 or later
MicroFrontiers Color-It! 3.0 or later

(Windows) Adobe Photoshop 2.5 or later,
Micrografx Picture Publisher 4.0 or later,
Corel PhotoPaint 5.0 or later, JASC
PaintShop Pro 3.12 or later.

Manufacturer: Alien Skin Software,
St.Mary's St. Suite 100, Raleigh,
NC 27605-1457, USA.

Website: <http://www.alienskin.com/>

Kai's Power Tools



Despite the initially confusing nature of the interface, Kai's Power Tools proves to be a powerful collection of plug-ins. A number of new features are included in the filter set, in-

cluding the Gradient Designer, Texture Explorer, Gradients on a Path, and the Fractal Explorer, and in addition to these predesigned effects, users can build upon hundreds of presets to create original effects. Further expansion of Photoshop's capabilities are provided through features such as Glass Lens, Hue Protected Noise, Pixelstorm, Vortex Tiler, Seamless Welder and more.

System Requirements: i386, i486,
Pentium, PS/2 or greater, 4 MB RAM,
VGA monitor, Microsoft mouse or
compatible input device, MS DOS 5.0
or higher, MS Windows 3.1 or higher.

Application requirements: Adobe
Photoshop 2.5 or later, CorelDraw 5.0
or later, Fractal Design Painter 2.0 or
later, Aldus Photostyler 2.0, Picture
Publisher 4.0, Autodesk's Animator
Studio or other "Adobe Standard" plug-
in compatible software.

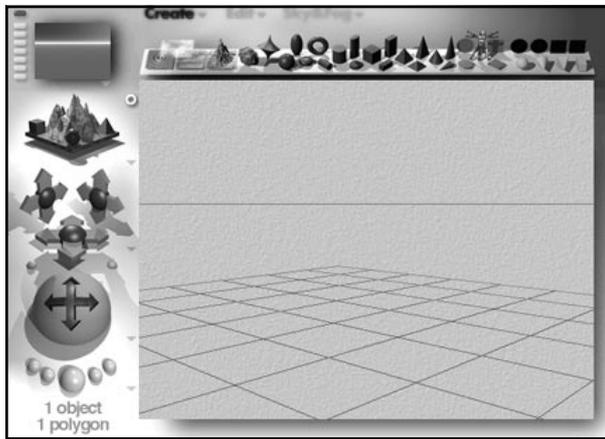
Manufacturer: MetaTools Inc., 6303
Carpinteria Avenue, Carpinteria, Califor-
nia 93013 805.566.6200

Website: <http://www.metatools.com>

Bryce 2

Bryce 2 is a stand-alone application that offers a new way to design and render natural 3D worlds and abstract 3D sculptures. Despite its low cost, Bryce 2 provides powerful technology on a par with the best of higher-priced applications.

Bryce 2's interface is surprisingly streamlined: in place of the original version's array of floating palettes,



there's a single large tool bar which the user toggles to choose from three sets of tools for creating objects, editing them, and generating sky and fog effects. Users of the other MetaTools products, such as Kai's Power Tools, will be familiar with the tool bar design, which is not Mac-standard: Tool icons remain ghosted until the cursor is rolled over them; then they "light up." As a result professional users who need Bryce's power only occasionally may find that the nonstandard interface requires a frustrating re-orientation at each use. But for users who want to fiddle and explore, there are a lot of facilities to play with.

System Requirements: (Macintosh) System 7.1 or higher, 68040 processor with math coprocessor, minimum 8 Mb RAM. PowerMac recommended.

(Windows) Windows '95 or NT, i486 processor with math coprocessor, minimum 12 mb RAM. Pentium recommended.

Manufacturer: MetaTools Inc., 6303 Carpinteria Avenue, Carpinteria, California 93013 805.566.6200.

Website: <http://www.metatools.com>

KPT Convolver

Unprecedented Filter Effects through One 3D User Interface. When KPT Convolver is launched, a 3D graphical user interface appears., the most prominent feature of which is the large diamond-shaped area with a smaller diamond superimposed over the top quadrant. These are the work areas in which users preview the filter effects. Along the upper left corner are the three buttons that activate the different KPT Convolver modes: Explore, Design and Tweak.



Explore Mode lets users try different filtering effects randomly in order to create variations of the original image. These different variations are displayed inside the large diamond shaped area in 15 miniature squares which form a grid. Users mutate the initial effect, displaying 15 mutated cousins or variations. Once the desired effect has been found, it can either be applied immediately or taken into the Design Mode for further refining and customising. Here, again, users are presented with the preview window and 15 variations. Explore buttons fade into the background while the Design features wake up, which allow more precise control over the degree to which

filtering operations are applied to an image. The Tweak Mode gives users precise control over each effect, with results previewed in real time. This combination of unique but intuitive interface and sophisticated power in detail makes Convolver an application with a place in every creative arsenal.

System Requirements:

(Macintosh) System 7 or later, floating point unit (FPU or Math CO processor). Requires a "host program" such as Adobe Photoshop, Fractal Design Painter, or Colour It! Requires 2.5 MB of RAM from the host's program's memory allocation and 4.5 MB free disk space. Colour monitor, 24-bit video card, 68040 or Power Macintosh recommended.

(Windows): i386, i486 (with a math co processor), or Pentium. Microsoft Windows 3.1 or Windows NT 3.5. KPT Convolver requires 4Mb free disk space, 3 Mb of RAM and a "host program" such as Adobe Photoshop, Fractal Design Painter, Corel PhotoPaint. Color SVGA monitor and 24-bit colour video card (486 or greater CPU) recommended.

Manufacturer: MetaTools Inc 6303 Carpinteria Avenue, Carpinteria, California 93013 805.566.6200

Website: <http://www.metatools.com>