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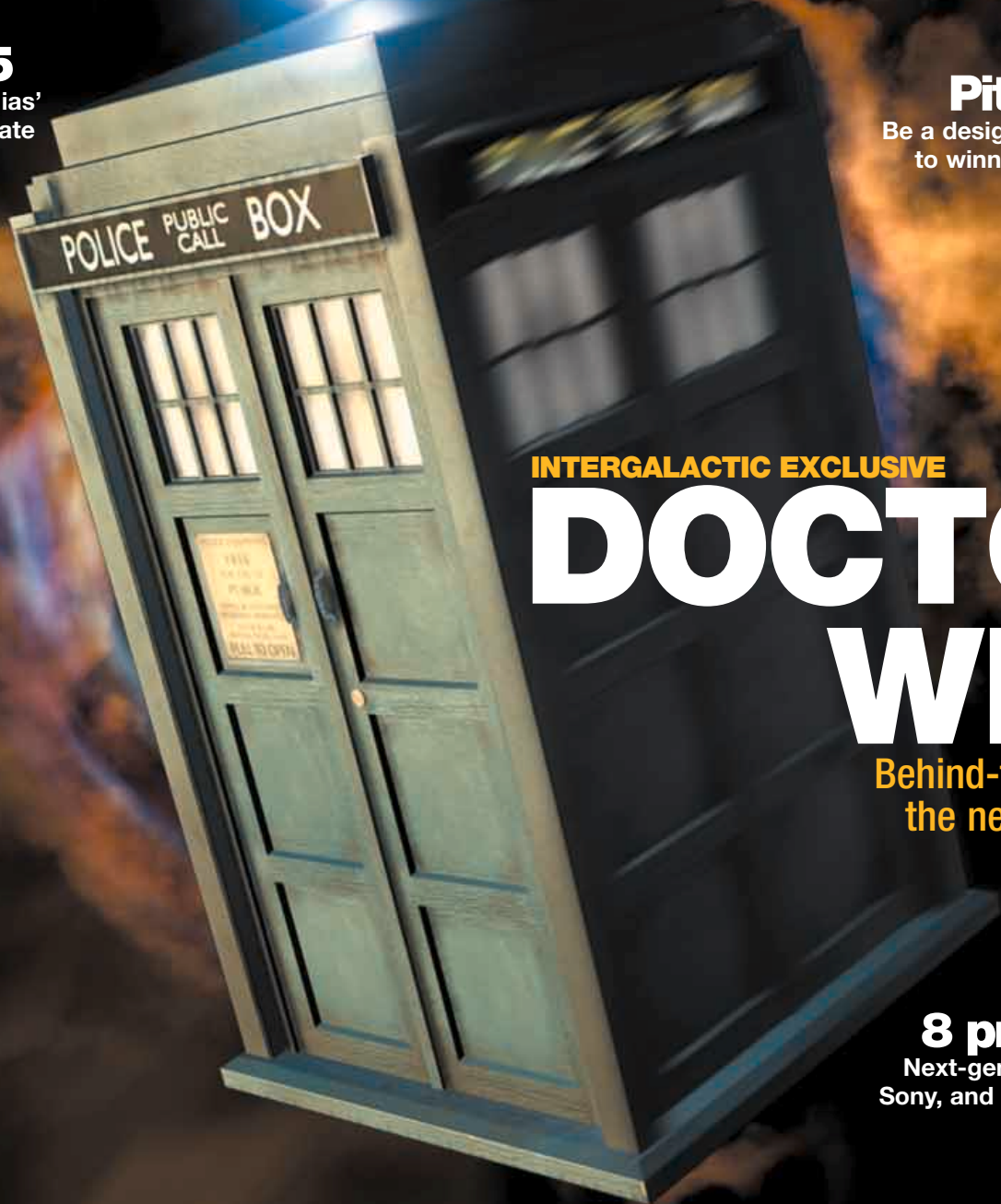
INTERGALACTIC EXCLUSIVE
DOCTOR WHO
Behind-the-scenes of the new BBC series

HARDWARE
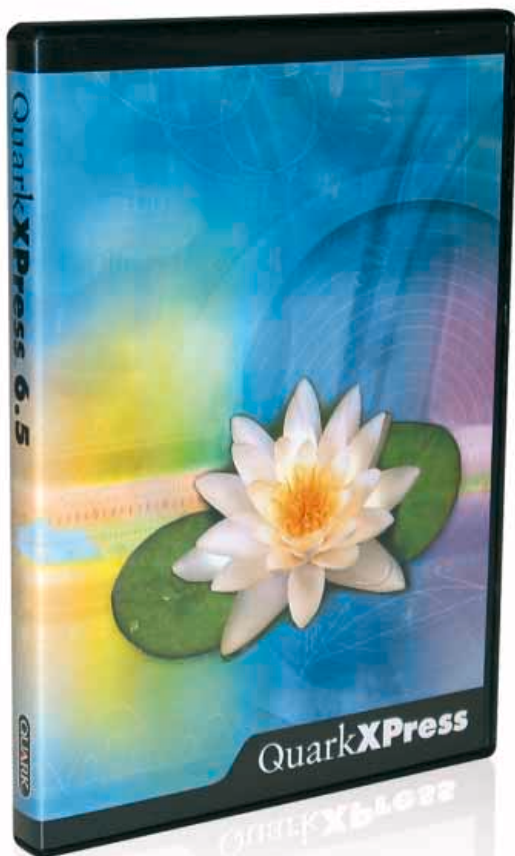### 8 pro laptops
Next-gen Apple, Alienware, Sony, and Dell laptops tested

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Macworld 4 Star Rating

QuarkXPress 6.5 received a **4-Star rating** from Macworld in the January 2005 issue. Macworld says, "Quark has produced a feature-packed, mid-term upgrade."

Macworld Best of Show 2004

QuarkXPress 6.5 received a **Best of Show** award from the Macworld MacExpo show and conference. The London show awarded only 10 such awards that are "given to products either making their public debut at MacExpo or recently introduced and generating excitement on the show floor."

Macworld Eddy Winner 2004

QuarkXPress 6.5 has won the award for **Most Improved Page-Layout Program** in the Macworld magazine Editors' Choice (Eddy) Awards.

PC Plus Performance Award

QuarkXPress 6.5 won the **Performance Award** from PC Plus, one of the most respected magazines in the UK with a circulation of over 120,000. PC Plus says that "the future of the company looks assured and this 6.5 release is a step in the right direction."

The new features of QuarkXPress® 6.5 offer enhanced creativity and greater productivity

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If only pitching for your next project, your next client, your next paycheck, was as easy as ripping off some lines from *Trainspotting* and sticking in words from whatever subject you're aiming at. But it's not easy. It's bloody hard, when it comes down to it. Better buy this magazine, run home and read pages 34-40 immediately. Read the rest and you'll know more and be more creative than anyone around you (unless they've read it too).

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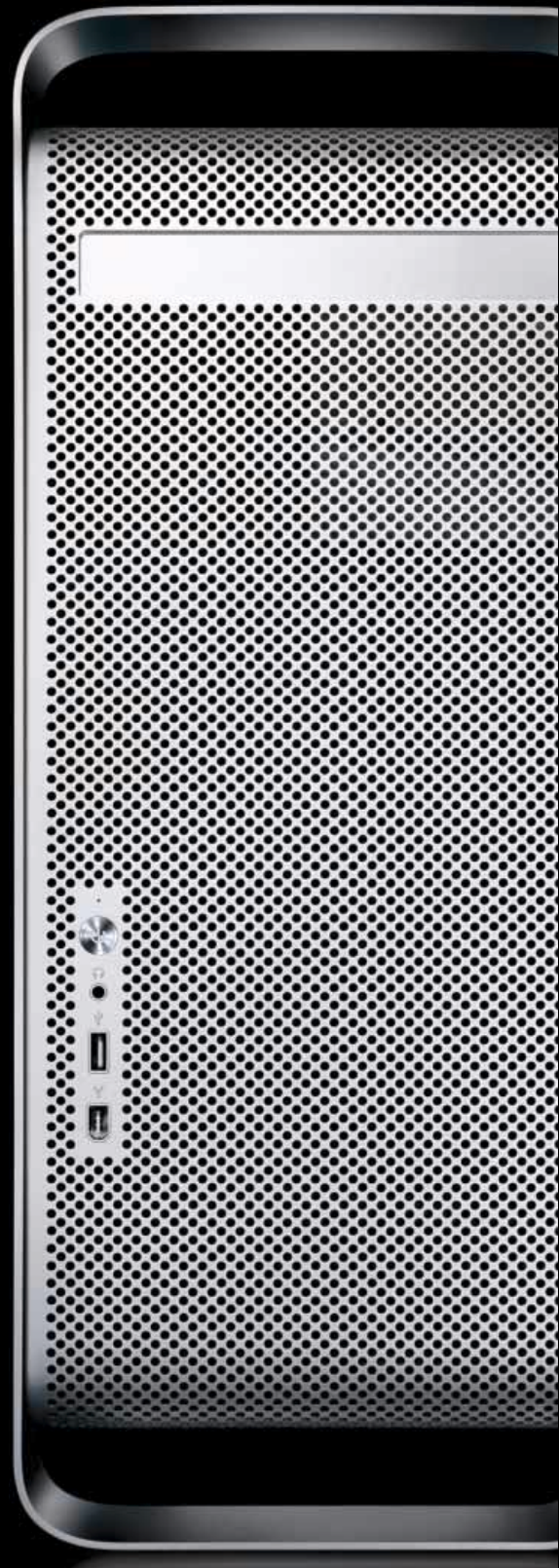
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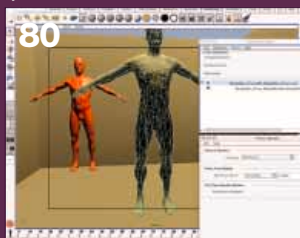
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by The Mill, *www.mill.co.uk*

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TEAM LinG – Live, Informative, Non-cost and Genuine!

features

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DVD ripping takes off
Despite all efforts, DVD piracy is rising fast,
as this special report reveals
Give your storage a boost
Media makers need as much digital storage
as they can muster, as this guide shows

Mac security: fact and fiction
Just because you use a Mac, doesn't mean
you're immune from hackers and viruses
TV on your mobile phone
Sound impossible? Not according to
Vodafone, which is showing the technology

regulars

Apple iPod links cams

Apple has updated its line of iPod photo digital music players with a slim 30GB model now costing £212 plus VAT. The company has reduced the price of the 60GB iPod photo to £263 plus VAT – and shown its iPod Camera Connector, which allows digital cameras to link to the iPod Photo.

Episode III new chapter

Four stills from the forthcoming *Star Wars Episode 3* have appeared on the Web. Though primarily aimed at Natalie Portman-worshipping fanboys, the stills preview some of the CGI cityscapes used in the film, including a city reminiscent of Cloud City from *The Empire Strikes Back* and a metropolis.

Explorer to get updated

Microsoft plans to release a version of a new Internet Explorer browser by the summer that better protects users from scams and malicious code while surfing the Web. "We have decided to do a new version of Internet Explorer," Gates said. The new IE 7 will "add new levels of security," he said.
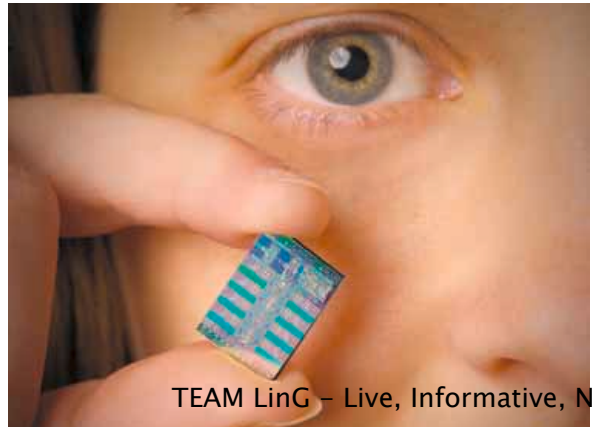
BBC Post Production gets gold medal for VFX

BBC Post Production London has won a Gold World Medal in the 2005 Television Programming & Promotion Competition at the New York Film Festival, the BBC has revealed. It won the award for its work on the title sequence for BBC Sport's coverage of the Olympic Games. The sequence features a giant swimmer rising out of a wave, a runner generating a sandstorm, and a discus thrower emerging from particles of rock. The athletes were filmed both on location in Greece and against greenscreen. BBC Post Production 3D matched moving athletes and attached custom particle effects using Alias Maya, to create the impression they emerge from the elements. Apple Shake was used for compositing the discus thrower and Discreet Inferno for the rest of the effects and final polishing.

Sony shows its next-gen 'Cell' microprocessor

Researchers from IBM, Sony, and Toshiba unveiled the long-awaited Cell microprocessor in February – paving the way for a new generation of powerful workstations aimed at digital content makers, and forming the basis of Sony's PlayStation 3. The three companies disclosed that its performance should reach ten-times the capability of current PC processors. The prototype chip shown comprised of one 64-bit Power PC processor core and eight separate processing cores that the companies call "synergistic processing elements," or SPEs. The cores can support multiple operating systems. Multicore processors can execute instructions in parallel, which means multiple separate instruction threads can be processed at the same time. By moving to multiple-core designs, chip designers can extract more performance from their products while reducing power consumption and heat dissipation.The Cell designers have figured out how to push both frequency and parallelism, the companies said. Cell is capable of running at more than 4.5GHz, but the companies have not determined how fast the final product will run.

Global festival

FAQ

File formats can be VHS, DVD, Beta SP or MiniDV.

Deadline is April 15 ($20 entry fee), then May 13 ($25 entry fee).

Running time should not exceed 60 minutes.

Clearances will be needed from actors and musicians featured on your film and soundtrack. Signed agreements are required.

The internationally renowned film festival ResFest is calling for entries for its 2005 global tour that showcases the year's best shorts, features, music videos, and animation in cities around the world. The tour kicks off in September 2005, and is seen as a showcase of the hottest up-&-coming filmmakers, designers, and animators.

The festival – which last year included an in-depth look at the work of British director Jonathan Glazer (Guinness *Surfer*, UNKLE's *Rabbit In Your Headlights*, *Sexy Beast*), plus music promos from Warp Records (LFO, Aphex Twin) – is recognized as a pro-am face-off due to its low entry fees, and is the largest festival of its kind. Budding filmmakers, motion graphics designers, shorts directors, and design collectives can enter for just $20 per entry before April 15. Final submission for entries is May 13, with the winners announced at the end of July.

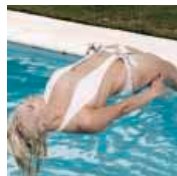TEAM LinG – Live, Informative, Non-cost and Genuine!

for film innovation

The festival toured over 33 cities and 13 countries in 2004. Winners selected for the 2005 festival will get a year's screenings and exposure at events in cities such as Tokyo, Los Angeles, London, Melbourne, and Cape Town.

Festival organizers say that ResFest is dedicated to showcasing work in all genres and visual forms – including narrative, documentary, experimental, and design-oriented work; entries can be live action or animated, or hybrid, and can be shot on any format. The main criteria for selection is innovation, say organizers.

Standout work from the 2004 tour –

which featured over 1,500 entries – included the seminal *We Have Decided Not To Die* (main image) by filmmaker Daniel Askill which mixed slow-motion photography and visual effects – and a segment called *Bushwhacked*, showcasing films based around the US presidential election.

Music videos that headlined last year's tour included The Street's *Fit But You Know It* (effects by Rushes) and *Get Yourself High* from The Chemical Brothers.

A special feature on design collective Shynola was shown, looking at their work for the likes of Blur, UNKLE, and Radiohead.
ResFest, www.resfest.com

ResFest 2004 was a global showcase of political films, digital animation, and short films that were selected from over 1,500 entries.

Rob Kilsby, single image Silver winner, www.ipa-folios.com/rob_kilsby

Photographic awards face off

The London Photographic Awards has detailed two international photography competitions for 2005. *All along the Watchtower* is a conceptual brief, based on Bob Dylan's song. Artists can draw inspiration from Dylan's lyrics. The deadline is April 8. *Let's face it* is a showcase for established and up-coming portrait photographers, of either people or animals. The call for entries is open until April 1. Entry costs £12 for a single image or £18 for up to six related images. Students can enter for £8 for a single image or £12 for up to six related images.
LPA, www.london-photographic-awards.com

Apple wins the battle of brands

A poll of branding professionals has found that Apple is the world's most influential brand, dethroning Google, last year's winner. The survey of just under 2,000 brand managers, ad executives and academics threw up a surprise by ranking Al Jazeera in fifth place. Ikea and Starbucks were ranked third and fourth respectively. The poll is undertaken every year by Interbrand. eBay was a notable new-entry at number nine and other brands in the top ten were Mini, Virgin and Nokia. The last entry in the top-ten, Coca-Cola, has been on a gentle decline in the poll for the last few years.

Winning students Johan Borgstrom (left) and Philip Askins (right) show-off their Animex Awards – otherwise known as 'the Lemmy'. Askins won two awards, including best newcomer, and he's just 17-years-old.
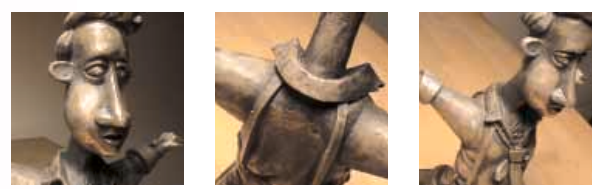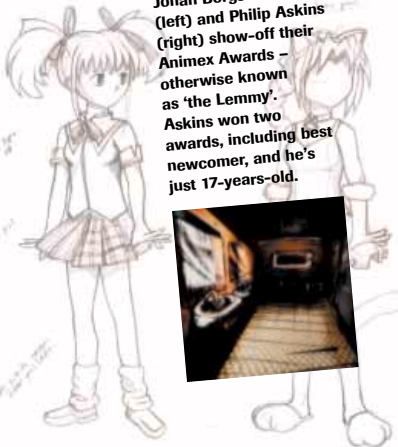
Animex
Students of animation

Aspiring animators from around the world have been given a boost at this year's Animex Student Animation Awards, held in February as part of the Animex 2005 Festival. The festival is billed as an annual celebration of animation, and is run by the University of Teesside.

Organizers said they had received over 450 entries from 32 countries – the highest number in the event's six-year history. Winning entrants included films from the US, UK, Germany, and Malaysia – with judges including Industrial Light & Magic's Tom Martinek, and Mark Craste from Studio AKA.

The festival – which attracts a high calibre of directors, animators, and industry professionals – also saw a series of events aimed at preparing up-coming animators for a career in the entertainment industry.

Events included a two-day gaming series that included Chris Crawford and Ernest Adams founders of IGDA, and Tony Bickley, european development director of Konami. A Lounge event saw 120 students get the chance to meet staff from the likes of Imageworks and ILM, while eight students won the chance to pitch their ideas at the Pitch Party.

Speakers at the festival included Bill Westonhofer, visual effects supervisor on the forthcoming *The Chronicles of Narnia: The Lion, the Witch & the Wardrobe*.

Two of the talented animators behind the Disney presentation of a Pixar film, *The Incredibles*, also headlined the event. Animators Mark Walsh (who was also the directing animator for *Finding Nemo*) and Rob Russ (*Toy Story 2* and *A Bug's Life*) talked about how the silver-screen heroes were created.

Animex, www.animex.net

GreenCine film festival

DivXNetworks – the company behind the DivX video codec – has launched an online film festival with GreenCine. Launched at Sundance, it will target feature-length films screened by judges including Lawrence Inglee, producer of *The Day After Tomorrow*. Winning films will be shown globally. Find out more at *http:// filmfestival.greencine.com*

Animex Award winners mix with top animators
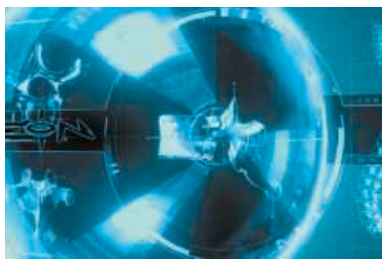
For first-time entrant Johan Borgstrom – winner of the 3D Computer Animation Games Award for his *Eon – Chapter One* (middle picture) entry – the Animex 2005 Awards were an opportunity not just to pick up a gong, but to mix with leading animators from around the world.

"I found about about the Animex Awards from the Internet, and I entered straight away," says Borgstrom, who travelled from Gothenburg for the event. "This is my first time at Animex, and it's really cool. It's surreal – there are people from Pixar and Dreamworks here."

Among the international line-up, the sole UK winner was student Philip Askins, who is studying art and english at the University of

Teesside. He scooped two awards – the Newcomer Award for his film *Ghost Story*, and the Webtoon Award for *A Random Stickman Cartoon*.

"Ghost Story is a two-minute film about a ghost with a lot of time on his hands, and thinks it would be great fun if he followed a petrified man down a corridor of his mansion," says Askins. "If it were a pantomime, people who be screaming 'It's behind you!'. The *Random Stickman Cartoon* involves stickmen and completely random events."

Other winners included *Overtime* (Best 3D Computer Animation, right), and *Rex Steele: Nazi Smasher* (Best 2D Animation, left). **More winners can be found at** www.animex.net/awards

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Mac creator dies aged 61

Jef Raskin, the lead designer of the first Mac computer, has died aged 61. Raskin joined Apple in 1978 as employee number 31 and headed the Mac development team from its founding in 1982. He named the project after his favourite apple, changing the spelling for copyright reasons.

Spongebob soaks advert

Animation studio Icepics has created a TV and cinema ad campaign for Volvic, featuring TV cartoon hero Spongebob Squarepants. Used to launch Volvic Splash, it first aired in February, and is planned to playout to Nickelodeon. Icepics recently animated Scooby Doo for Adidas. *www.icepics.co.uk*

'Laundry' to deliver files

A 'digital courier' service called The MediaLaundry has launched that can handle the secure transmission of files such as video, audio, and graphics. The service, which has 100Mbps lines, costs €10 for 1GB of storage, and it supplies free client software for Mac and Windows. *medialaundry.com*

The Hive delivers CG for Five's *CSI: New York* ident

London FX studio The Hive has revealed it has created the idents package for Five's new series *CSI: New York* – the crime-drama spin-off from *CSI: Miami* – which follows a team of forensic investigators as they solve crimes in the Big Apple. The idents were filmed using high-powered ball-bearings fired at apples that had been dipped in liquid nitrogen to create a clean, sharp explosion – with footage clocked at 8,000 frames per second in a bid to capture the right action, says The Hive. The Hive then replaced the ball bearings with a CG bullet. The 20-second ident, which has been airing since February, is made up of a combination of shot material, 2D elements created by Heap, and 3D work from senior Maya operator Christian Anderson.

The Hive, www.hiveuk.com

Xbox 2 woos creator of *Final Fantasy* game series

Hironobu Sakaguchi, creator of the *Final Fantasy* series, has signed on with Microsoft to produce two titles for the next version of the Xbox. Sakaguchi will lead the development of two role-playing games for the successor to the current Xbox, Microsoft has said. The two games will be exclusive to Xbox and be published by Microsoft's Game Studios.

The next Xbox console is widely expected to be out by year's end. Microsoft introduced the current Xbox game console, the first model, in late 2001. As of December 31, the company had sold 19.9 million consoles worldwide, 13.2 million of which were in North America, 5 million in Europe and 1.7 million in Japan and the Asia-Pacific region.

More than 60 million copies of the multiple instalments of *Final Fantasy* have been sold worldwide, according to publisher Square Enix.

Sakaguchi last year left game publisher Square USA, where he was president, to launch his own development studio called Mistwalker. Details of the arrangement between Sakaguchi and Microsoft were not disclosed.
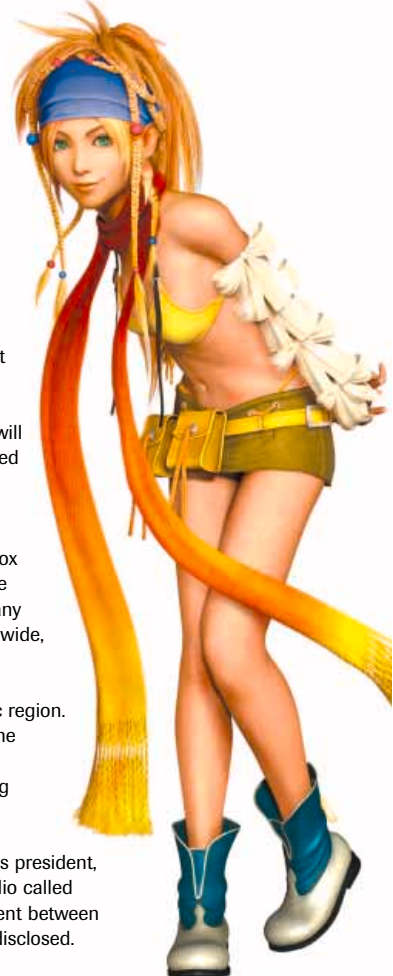
incoming

Robots the movie debuts on March 18, and is the long-awaited outing from the original creators of the CG classic, *Ice Age*. It stars the voices of Ewan McGregor, Robin Williams, Mel Brooks, and Halle Berry. Preview screenings are scheduled from March 13.

VES Awards
Top visual effects winners are hailed at awards event

KromA, a visual-effects studio in the US, reckoned it drank its way through $1,000 of energy drinks to turn around the video for Britney Spear's *Toxic* single. It took the company just three weeks to work on the promo, including creating a CG model of the popster herself.

The cream of the industry's visual effects artists gathered in Hollywood in February for the third annual Visual Effects Society (VES) Awards, which saw honours going to films such as *The Aviator*, *Spider-man 2*, *The Incredibles*, and music videos such as Britney Spear's *Toxic*.

The awards, which celebrate the best visual effects artistry in film, television, commercial, music promos, and games, also handed out a VES Lifetime Achievement Award to Robert Zemeckis, which was presented by actor Tom Hanks.

US-based KromA won the Outstanding Visual Effects in a Music Video category for its work on *Toxic*, which saw the studio create a photoreal 3D model of Spears, recreate London and Paris as CG enviroments from 2D concept drawings, and deploy particle effects for an exploding glass sequence.

"We essentially worked round the clock," said VFX supervisor Bert Yukich, who collected the award. "We went through $1,000 of energy drinks."

WINNING THE AWARD FROM VES IS THE ICING ON THE CAKE

BENOIT GIRARD

Digital Dimensions picked up a gong for Outstanding Supporting Visual Effects in a Broadcast Program for the ABC television pilot *Lost* (main image). It created a riveting plane crash sequence that formed the heart of the show. "Winning the award from VES was the icing on the cake with a project like this one," said Digital Dimension's president Benoit Girard.

Best effect of the year went to the tidal wave in the movie *The Day After Tomorrow*, and *Star Trek Enterprise* scooped the award for Outstanding Visual Effects in a Broadcast Series. Best CG character in a live action feature was awarded for the work on Hippogriff in *Harry Potter and the Prisoner of Azkaban*.

VES, www.visualeffectssociety.com
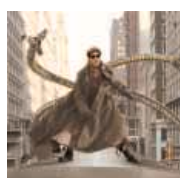
Winners at VES included (from left to right) films such as *Spider-man 2*, *The Day After Tomorrow*, *Harry Potter and the Prisoner of Azkaban*, and *The Incredibles*.

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Macromedia to boost Flash video

Akamai and Macromedia are teaming to give end users a quick, secure way to speed the delivery of Flash video to desktops. The companies have announced the immediate availability of Akamai Streaming for use with Macromedia Flash. Executives say the service will eliminate the need to deploy video on-demand applications across multiple browsers and platforms because users will be able to instantly view video using Flash Player. Content providers upload media such as movies to Akamai's EdgePlatform, where it is stored and delivered on demand. Pricing depends on use.

Tabbies Awards to hail magazines

English-language business-to-business magazines worldwide have been invited to enter the 2005 Tabbie awards – the second annual editorial and design awards for the global event. Past winners included *Forbes* and *Tobacco Reporter*.

Categories in the Tabbies' design division include best front cover, best use of digital imagery; best front cover illustration; best use of a photographic front cover; best front cover of a special issue; best opening page or spread; and best-designed table of contents. Deadline is March 23, 2005.

Judges in 2004 included Jeremy Leslie, creative director at John Brown Citrus Publishing, and editors from leading trade publications.
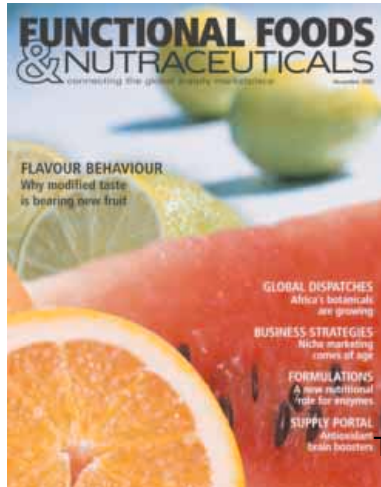Tabbies, www.tabpi.org

Nibs

Smackdown art winner

Over 56,000 creative professionals visited www.studiosmack down.com last month to determine the outcome of Aquent's unique online design competition, Studio Smackdown. The contest pitted five graphic designers against each other to wrestle for art dominance. Toni Greaves won.

Moonfish set to Wade

Moonfish, one of the top 20 UK digital marketing agencies with clients such as Intel, has promoted Chris Wade (below) to the position of head of technical services. Chris will oversee all aspects of Moonfish's technical offering as well as managing the company's technical team. www.moonfish.com

"I quit – this place stinks"

A survey of over 250 advertising agencies have revealed a list of unusual reasons as to why staff quit. Some responses included: the fact the job wasn't as glamorous as the staffer thought; the building being too smelly; and being paid too much. One person admitted he simply couldn't get up in the morning.

WipEout designer on mobile gaming

With the release of the PSP looming, companies have been pushing to finish games in time for its release. We recently had a chance to talk with Colin Berry, designer for *WipEout Pure* on the PSP.

Digit How different is it to design a game on a PSP compared to PS2?

Colin Berry With *WipEout Pure*, we have not had to adjust too much from the point of view of short bursts of gameplay. If people want to load-up *WipEout Pure* and play for only 5 or 10 minutes then there is always going to be something there for them to play. One aspect of design we had to address with the PSP was that it has a few less buttons than a PS2 controller. So, from a design perspective we had to be clever in working out what controls we wanted and how to map them to the available buttons. We haven't been prevented from putting anything into the game… and we have actually benefited from the PSP and made use of its features such as Wi-Fi, which has enabled us to [offer] downloadable content.

Digit Do you have to make compromises to graphics to extend battery life?

Colin Berry The number of polygons you're pushing doesn't directly affect the battery life. The battery life is affected by the clock frequency of the CPU and GPU. However, reducing these wasn't really an option, as it would slow the framerate down.

Digit How difficult is it to develop on the PSP compared to the PS2?

Colin Berry A lot easier. The PS2 is a challenge and returns dividends when used correctly, but it does take a while to master. The PSP is far easier and comes with excellent libraries.

Digit What about development time?

Colin Berry Initially, for *WipEout Pure* we thought we would have a smaller team than we did for *WipEout Fusion*, but in the end the team size for *Pure* has grown to about the same as it was for *Fusion*, although its only been in the second half of the project that the size of the team has doubled to end up just over 20. A smaller machine doesn't mean a smaller game, so all the content still needs to be created. I guess if people are simply porting an old PS2 game over then they may well have a smaller team size than they would for a PS2 game. However, we are not doing a port, the whole game is new. Time wise *WipEout Pure* has taken a little over a year.

Digit What are some of the inspirations behind *WipEout* on PSP

Colin Berry For the most part the inspiration came from the previous versions of *WipEout* and the reactions both positive and negative to various iterations, and the desire to produce the best version of the series to date. A little inspiration was taken from *F-Zero* on the GameCube, the original *Mario Kart* on the Super NES and probably on a subconscious level several other racing titles. However the main inspiration has always been the previous *WipEout* games and *WipEout 2097* in particular.

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FX studios are game

Twenty-three per cent of US effects and animation studios are working on interactive games, according to research firm Trendwatch. It shows the games market is growing strongly, as evidenced by the number of vendors allocating more resources for game development.

BeArtist.com site debuts

Cardsup Greetings, a multimedia company from Vancouver, has detailed the launch of *BeArtist.com*, a major online portal for illustrators and artists. Its aim is to become the single reference site artists will ever need if they want to know how to build a successful career by selling and publishing.

Digital flicks are coming

The world's first digital cinema network has been given the greenlight in the UK by the Film Council, which has awarded the Arts Alliance Digital Cinema group the contract to build 250 digital cinema screens. The award, worth £11.5 million, will use HD screens to show movies. *artsalliance.com*

Framestore CFC's animation falls flat

London-based Framestore CFC has completed work for car-maker Renault that features a 2D character called Hector, and follows his adventures in a 3D world. Taking six weeks to produce using Alias Maya, *Hector's Life* is a 60-second spot needed the creation of two rigs: a 2D one, and a 3D rig for when an element of depth was needed.

The shoot, which took place in Italy, was supervised for Framestore by Ben Cronin and Jake Mengers. Global illumination references were gathered by Mengers for the London team, and cut-out paper figures were shot on location in order to place the 3D Hector plausibly in situ.

Further CG work was required for the creation of the dung beetle (main image, above). The life-like bug was built, textured, rigged, and animated in two weeks in Maya by Dean Robinson, using a preserved beetle as a model.

The spot was shot on film for later use in cinemas, and a further level of grain was added to enhance the look of the spot.

Framestore CFC, www.framestore-cfc.com

The adventures of Hector follow a 2D paper character on his adventures to find the ultimate in luxury – space.

Oscar success for both *Spider-man 2, Incredibles*

The 77th annual Academy Awards was held in the US in February, with the coveted Oscar statuette going to movies such as *The Aviator* (five gongs) and Clint Eastward's *Million Dollar Baby* (Best Motion Picture). Yet, for all the red-carpet celebrity draw that the Oscar's inspire, the creative industry was more interested in the winners of best visual effects and animated movies.

Best Animated Feature Film of the Year went to Disney's *The Incredibles* from Pixar, directed by Brad Bird, which beat *Shark Tale* and *Shrek 2* to first place. In accepting his Oscar, Bird attributed "life" as the reason behind successful animation. The animated CG movie also scooped an Oscar for Best Achievement in Sound Editing, winning over both *Spider-man 2* and *The Polar Express*.

Best Achievement in Visual Effects was won by *Spider-man 2* (effects led by John Dykstra), which beat off challenges from *Harry Potter and the Prisoner of Azkaban*, and *I, Robot*. Best Short Film, Animated, went to Chris Landreth's *Ryan*.

The Academy Awards, www.oscar.com

technology
Is this the end for CRTs?

The end is nigh for Barco's place at the pinnacle of the creative monitor market. The company has called time on its long-standing CRT monitors for designers – the Personal Calibrator V and Reference Calibrator V – and even withdrawn the LCD display created to replace them, the Coloris Calibrator. A company spokesperson told Digit that the company was now only focussing on what it calls "professional markets", such as medical imaging.

Barco's CRT displays are the last of the major brands for designers to enter what is called 'end-of-life' – where no more units are being manufactured but a limited number are still available through resellers. Recently, the demise of NEC-Mitsubishi's 22-inch NF (Naturally Flat) tube has ended production on well-known monitors such as the Diamond Pro 2070SB and LaCie's Electron22blue. Last year, Sony ended both its 21-inch CRT range and the Trinitron tubes within them.
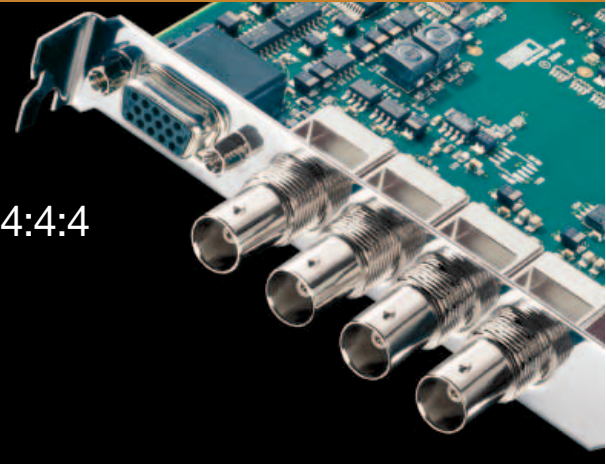
There is still a demand for high-quality CRTs though, as the news has caused a run on the remaining stocks of Electron22blues, according to LaCie UK general manager, George Leptos. There is some confusion over what to replace them with. Some designers are happy with equivalently priced models, such as Apple's 20-inch Cinema Display or LaCie's Photon20vision II.

The first high-end LCD display, Barco's Coloris Calibrator was withdrawn due to the company being unable to secure TFT panels of consistent quality, according to Geoffrey Clements, managing director of Barco's reseller into the creative market, TypeMaker.

TEAM LinG – Live, Informative, Non-cost and Genuine!

april

monday	tuesday	wednesday	thursday	friday	saturday	sunday
				01	02	03

THE RING 2
Following the huge success of the scary movie, *The Ring*, a sequel was inevitable. Good for horror fans.
On general release

monday	tuesday	wednesday	thursday	friday	saturday	sunday
04	05	06	07	08	09	10

**VISION 2005
LONDON**
This four-day event from the RNIB looks at the issues faced by blind people, including Web-site design and access challenges, and how to overcome them. *www.rnib.org.uk/vision2005*

**FLASHFORWARD 2005
SAN FRANCISCO**
A series of conferences, exhibition, and screenings of the best in Flash animation and design. *www.flashforwardconference.com*

monday	tuesday	wednesday	thursday	friday	saturday	sunday
11	12	13	14	15	16	17

**DIGITAL EXPO 2005
NEC, BIRMINGHAM**
Sign UK, Digital Expo, Screenprint, and Outdoor Media open together and are aimed at design and print professionals. *www.digitalexpo.co.uk*

**NAB 2005
LAS VEGAS**
Running over two conference centres, NAB is one of the bigggest video shows going…

**PACKAGING INNOVATIONS
NEC, BIRMINGHAM**
A guide to the latest developments in packaging technology and trends, aimed at packaging designers. *www.easyfairs.com/packaging/birmingham*

monday	tuesday	wednesday	thursday	friday	saturday	sunday
18	19	20	21	22	23	24

**NAB 2005
LAS VEGAS**
… and features a huge exhibition where the likes of Apple and major video and effects vendors typically release new versions of their creative wares. *www.nabshow.com*

**FESTIVAL OF
VISUAL ART
GLASGOW**
glasgowinternational.org

**STAR WARS
CELEBRATION III**
Run by Atomfilms online, this will show the winners of the recent *Star Wars* fan movie competition.
www.starwars.com

monday	tuesday	wednesday	thursday	friday	saturday	sunday
25	26	27	28	29	30	

**HITCHHIKERS
GUIDE TO THE
GALAXY**
Long-overdue film based on the books by Douglas Adams gets UK outing.
On general release

Canon debuts EOS-350D SLR

anon has announced the EOS-350D, an upgraded version of the popular EOS-300D. The 300D has been lauded with kickstarting the low-cost, sub-£1,000 SLR market that has seen models such as the E-1 and E-300 from Olympus debut. The 350D adds features and functions found on Canon's higher-end digital SLRs.

The EOS-350D features an APS-C size 8.0-megapixel CMOS sensor, up from the 300D's 6.3mp sensor. This allows the 350D to produce stills up to 3,456-x-2,304 pixels in size – in RAW, TIF or JPG formats – and from ISO 100 to ISO 1600. The 350D replaces the 300D's DIGIC image processor with the DIGIC II processor, found in the more expensive EOS-1D Mark II and EOS-1Ds Mark II.

According to Canon, the 350D starts up in 0.2 seconds. E-TTL II distance-linked flash metering provides precise flash exposures. Users can select between three focus modes: One-Shot AF, AI SERVO, and AI Focus. Canon says writing to memory card is 3.5-times faster and the interface is upgraded to USB 2.0 for fast image downloads. Mirror lock-up and second curtain flash have been added.

The 350D features the same Monochrome mode found on the EOS 20D, allowing photographers to shoot in B&W with a range of filter effects. White Balance correction of both blue/amber and magenta/green bias is available to ±9 levels and WB bracketing is extended to include the magenta/green bias direction.

The 350D features a standard EOS lens mount, allowing any of Canon's EOS lenses to be used. Canon has also released the EF-S 60mm f/2.8 Macro USM lens, for use with the EOS-350D (plus the EOS-300D and the EOS-20D). It features a true 1:1 macro magnification ratio, the lens has a focal length equivalent of 96mm in the 35mm format. This very closely matches the EF 100mm f/2.8 Macro USM, Canon's most popular single focal length lens.

The EOS-300D will ship in March for £638 plus VAT for the body alone, or £680 plus VAT bundled with an EF-S 18-55mm f/3.5-5.6 II lens kit.

Canon has also released the Digital Ixus 700 for £339 plus VAT. The 7.1mp Ixus 700 isn't as svelte as some Ixuses (including the Ixus 50), but it's still amazingly sleek for a seven-megapixel camera. Like other Ixus cameras, it's got an elegant metal case, and Canon has given the Ixus 7000 curvier styling than previous models. Its new features include a clever option that automatically rouses the camera from sleep mode when you pick it up. The Ixus 50 has a 3x optical zoom and a two-inch LCD, and costs £271 plus VAT.

Canon, www.canon.co.uk

CURIOUS LABS HAS announced that it expects to ship version 6 of Poser in Spring of this year. The company claims that it has promotions coming soon that will be of interest to both Avid users and potential new buyers of Poser. No details regarding new features have yet been released.

HP HAS RELEASED details about the xw9300, its new top-of-the-line workstation, featuring NVidia nForce Professional 2200 and 2050 graphics chips. The new PCI Express-based workstation features the new 852 and 252 AMD Opteron processors in single or dual-processor configurations.

THE CYBER-SHOT DSC-W7 is the new model in Sony's W line. It's a higher-end cousin to the DSC-W1 and costs around £300. The brick-shaped DSC-W7 is a bit chunkier than some of the new models; it looks like a thicker version of Casio's Exilim and shares some features, including 7.2mp resolution.

Magic Bullet shoots shots

Red Giant has released version 2.0 of its Magic Bullet Suite collection of film-look filters for After Effects, and added a new plug-in, called Film Fix, for editors and compositors working with degraded film stock. Magic Bullet Suite 2.0 ditches the SD and HD configurations of the original release in favour of a single version that does both for £450 plus VAT. A render license is available for £295 plus VAT. Upgrades from version 1.0 cost £85 plus VAT, and owners of Magic Bullet Suite HD get the render license for free.

The update adds 13 Misfire filters that mimic film grain, splotches, scratches, and projection artefacts; 23 additional Looks presets; improved Mac performance; and the removal of the need to use a dongle. Film Fix offers tools for the removal of tears, dust and scratches, as well as stabilizing footage in 2D. Film Fix costs £1,095 plus VAT.

Red Giant, www.redgiantsoftware.com

Nikon aims at photojournalists with the launch of the D2Hs

The D2Hs is Nikon's latest professional digital SLR model and is shipping in March for £2,128 plus VAT. With a 4.1-megapixel sensor, the D2Hs is designed for photojournalists and sports photographers who need high speed but don't need high resolution. A large picture buffer for continuous shooting lets users snap up eight frames per second for up to 50 consecutive shots using fine quality images and JPEG compression (or 40 shots using RAW format).

The D2Hs features a new image-processing engine that produces higher quality pictures with finer gradations and lower noise. Also new on this model is a refined exposure metering system, improved auto white balance and better auto focusing. The D2Hs uses USB 2.0 to connect to a Mac or PC, and can also send pictures wirelessly to a Mac OS X or Windows XP-equipped system using Nikon's optional WT-2/2A 802.11g transmitter. The D2Hs is compatible with DX Nikkor and Nikkor AF lenses.

Nikon, www.nikon.co.uk

Canon shrinks A520 camera

After replacing the A75 with the A510, Canon has replaced the A85 with the 4x-zoom, 4Mp PowerShot A520, claiming it's 13 per cent smaller and 20 per cent lighter. The lens is equivalent to a 35mm 35-140mm zoom and has a maximum aperture of between f/2.6 and 5.5. Canon claims that the 9-point rear focus system gives more efficient focusing to limit power consumption. A redesigned flash unit, optical viewfinder, and a move from Compact Flash to SD memory card contribute to a lighter, more compact body. The camera includes a Print/Share button for direct printing to any PictBridge compatible printer. A 16MB MMC card is included. Software includes ZoomBrowser EX for Windows and ImageBrowser for Mac, PhotoStitch and PhotoRecord, plus photo manipulation software ArcSoft PhotoStudio. It costs £204 plus VAT.

Canon, www.canon.co.uk
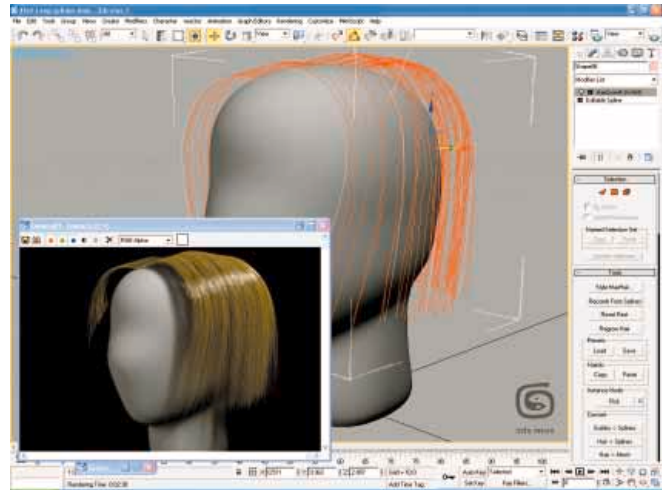
3DS Max 7.5 for subscribers

Discreet has announced a free update for its 3DS Max modelling, animations and rendering suite, which will ship in mid-April. However, version 7.5 will only be made available to users on the company's subscription scheme, which costs £295 plus VAT per seat per year.

3DS Max 7.5 adds a hair and fur system based on Joe Alter's Shave And A Haircut plug-in, which includes both styling and dynamics tools. A comb allows brushing along complicated contours, with support for realistic effects including clumping and frizz. The plug-in's own dynamics system can interact with 3DS Max's own forces, including inheriting inertia directly from skin. The hair system is integrated into Mental Ray, using the native Mental Ray hair primitive for faster rendering. The update also provides the latest version of Mental Ray, version 3.4, for use with the whole application. This adds faster final gathering performance, and fast rasterization for first-generation rays, according to Discreet.

Discreet, www.discreet.com

Matchware Mediator 8 adds multimedia tools

MatchWare has announced Mediator 8, an update to its multimedia software that includes a new interface design, multi-user editing, advanced spell checking, vector drawing, an enhanced multimedia catalogue and wizards. A new multimedia catalogue visually enhances projects by dragging-&-dropping professional interface templates, resizable buttons, vector based illustrations and dynamic video players, the company claims. It runs on Windows, and costs £36 for the Standard version, and £210 for the Professional version.

Matchware, www.matchware.com

Amapi Pro real-time 3D tool is added by Eovia

Eovia has announced InstantViz, an add-on for its Amapi Pro 7.5 3D modelling software. Using technology from developer Lumiscape, InstantViz uses the power of modern graphics cards to provide real-time photorealistic renderings of projects, according to Eovia. As well as allowing the real-time viewing of fully textured objects, InstantViz can also create presentations of projects, for example for client approval, at any stage in a project. InstantViz costs £489 plus VAT, but Eovia is offering an introductory price of £349 plus VAT until May 31. It runs on Windows 2000 and XP, and requires a computer with at least a NVidia GeForce 6600 or Quadro FX 1100 graphics card.

Eovia, www.eovia.com

Wacom boosts its tablet displays

Wacom has launched a 21-inch version of its combination graphics tablet and LCD display, the Cintiq. The Cintiq 21UX replaces the 18-inch Cintiq 18SX – adding a larger screen, higher resolution and support for the company's Intuos3 tablet technology. The unit costs £1,899 plus VAT.

The Cintiq 21UX features a 21.3-inch screen with a 1,600-x-1,200 resolution and a 24-bit colour depth. Using the Intuos3 technology, the tablet display features an optical resolution of 5,080dpi and 1,024 levels of pressure sensitivity. It supports the Intuos3 series of pens, including the provided multi-tip Grip Pen. Included tips are the brush-type stroke nib and the felt pen provides frictioned drawing. An optional Airbrush is available.

The tablet sits on a removable base that can be pivoted 180 degrees in either direction and tilted from 10 to 60 degrees vertically. Wacom says that this allows the tablet to be treated like a piece of paper and manoeuvred into a comfortable position before drawing strokes.

The tablet features the same user-configurable ExpressKeys and Touch Strips as the Intuos3 tablets. The ExpressKeys are two four-button keypads, while the Touch Strips can be used for scrolling and zooming.

Wacom, www.wacom.com

Dell boosts its mobile workstations

Dell has announced a new range of mobile workstations for 3D artists and video editors and compositors based on Intel's latest Pentium M processors and the new 915PM chipset. The M20 and M70 include Pentium M processors with speeds up to 2.13GHz and 533MHz DDR2 dual-channel memory and feature PCI Express bus architectures.

The M20 starts at £999 plus VAT and includes ISV certifications and OpenGL graphics with the ATI Mobility FireGL V3100, which offers 64MB of graphics RAM. Lighter-weight than the M70, the M20 starts at 2.21kg, but has a lower graphics resolution of either 1,024-x-758 or 1,400-x-1,050. The M70 starts at £1,189 plus VAT and includes the NVidia Quadro FX Go1400 256MB OpenGL graphics engine and 15.4-inch wide-aspect displays, featuring a resolution of either 1,280-x-800, 1,680-x-1,050 or 1,920-x-1,200. The weight of the M70 starts at 3.04kg. Both the M20 and M70 will take up to 2GB of DDR2 533MHz dual channel memory and either 60GB 7,200rpm or 80GB 5,400rpm hard drives. Both come equipped with Windows XP.

Dell, www.dell.com/uk

Discreet Combustion 4 adds keying, motion FX

Discreet has announced Combustion 4, the latest version of the visual effects software that includes vector paint, particles, effects, animation and 3D compositing tools. The new version, for Mac and Windows, adds new creative tools, interface improvements, new paint tools and enhanced support for 3D animation products and encoding software.

New Discreet's Diamond Keyer, a set of keying algorithms derived from Discreet's Flame. Time-Warp is a key-frameable, time-remapping operator used to generate slow motion and speed-up effects. B-spline vector shapes and new point-grouping has been added to help improve roto-scoping. An optimized Fast Gaussian Blur has been added.

A Gbuffer builder lets you create custom Rich Pixel Format (RPF) data structures from bitmap files. A newly optimized Merge Operator speeds up merging two layers of the same size using transfer nodes. Operator, navigation, filtering and compare tools have been reworked with improved user interfaces. New file format import and export options support ASCII Scene Export (ASE) camera targets from 3DS Max, and Windows Media can be imported. HDRI support has been added through Open EXR-compatible output.

Combustion 4 will be released on Windows in March 2005 with a Mac release expected in May 2005. The new release costs £850 plus VAT, with upgrades priced at £200 plus VAT.

Discreet, www.discreet.com
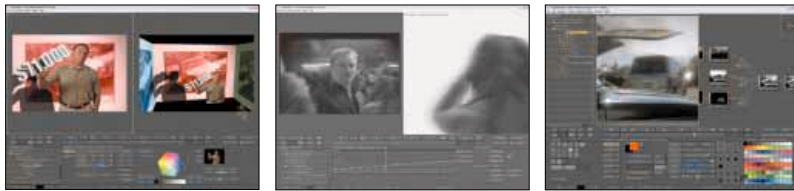
ATI shows FireGL V5000 3D card

ATI has introduced the FireGL V5000 workstation graphics accelerator for PCI Express systems, which offers dual-DVI connectors and 128MB of GDDR3 memory for around £400. ATI claims that the FireGL V5000 will bring top-end functionality to a wider-range of design professionals, thanks to its lower price. Advanced features includes dual-DVI connectors for multiple displays, dual link support for 9mp displays, stereo 3D capabilities with quad-buffered support, eight pixel pipelines, six geometry engines, increased sub-pixel precision and 128MB of GDDR3 memory. ATI claims that the new card features a lower power consumption design. The FireGL V5000 cards are certified with Discreet 3DS Max, Alias Maya, Softimage|XSI, and SolidWorks.

ATI, www.ati.com

HP Designjet 90 series to launch

HP will introduce the Designjet 90 series this summer, which can accommodate paper up to 18-x-24 inches, with optional roll-feed capability for printing images up to 18-inches-wide and 100-feet-long. Its six-colour ink system can produce images up to 2,400dpi in resolution. Connectivity options include a USB port and a Centronics standard Open EIO for adding the printer to a network. Wireless capability can be added with an HP Jetdirect module.

The standard Designjet 90 will sell for £750 plus VAT while the 90r, which includes the roll-feed capability, will sell for £830 plus VAT. The Designjet 90gp is also available, which adds an HP colourimeter with profiling and calibration software.

HP, www.hp.com/uk

Xerox adds to EFI proofing

Xerox has launched the Phaser EX7750 in collaboration with EFI. The Phaser EX7750 combines Xerox's Phaser 7750 A3+ colour laser printer with an EFI Fiery Color Server, which provides job and colour management and faster printing, according to Xerox. The Phaser 7750 offers printing at up to 1,200dpi or 35ppm, with a first page out time of 11 seconds, according to Xerox. Pricing for the bundle begins at £13,049 plus VAT.

Xerox, www.xerox.com

Compact Nikon

Nikon has introduced five new compact digital cameras, ranging in price from £128 plus VAT to £272 plus VAT. The Coolpix 5900 and the Coolpix 7900 feature 5.1mp and 7.1mp resolution, respectively, and feature all-metal bodies, 3x optical zoom lenses, two-inch LCD screens and a new Face-Priority auto-focus feature. The Coolpix 5900 costs £213 plus VAT, and the Coolpix 7900 is £272 plus VAT.

The new 4mp Coolpix 4600 (£128 plus VAT), the 5.1mp Coolpix 5600 (£170 plus VAT) and the 7.1mp Coolpix 7600 (£255 plus VAT) all share automated functions such as In-Camera Red Eye Fix technology. All will ship in the Spring.

Nikon, www.nikon.co.uk

4

5
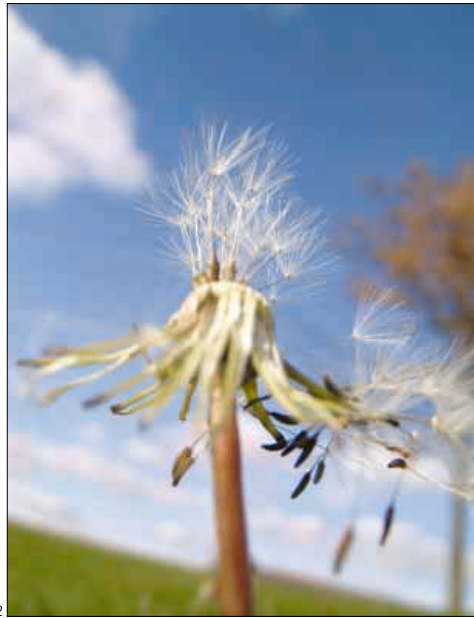
BIGSTOCKPHOTO OFFERS BUDGET PHOTOGRAPHY

www.bigstockphoto.com

A new stock library has launched that offers photography from just $1 per image. Big Stock Photo is an online photo library that, once you have registered, allows you to download and upload content. Photographers can become a contributor, subject to a quality check by the site's editors, and earn 50 cents per download. Payments are made by cheque or via PayPal.

main picture. *Swan Reflections,* 2. *Make A Wish,*
3. *Manhatten Madness*

PHOTOLIBRARY OFFERS TASTE

www.photolibrary.com, 020 7836 5591

Photolibrary.com has announced that it is representing the new FoodPix catalogue, *Taste*. This rights-managed culinary collection covers continental food as well as old-fashioned dishes, and the company says it fuses art and science photography. The entire FoodPix collection offers over 40,000 images. Images from *Taste* can be viewed and purchased at *www.photolibrary.com*.

4. *00038910-001,* 5. *00041546-001,* 6. *00043763-001*

6

1

2
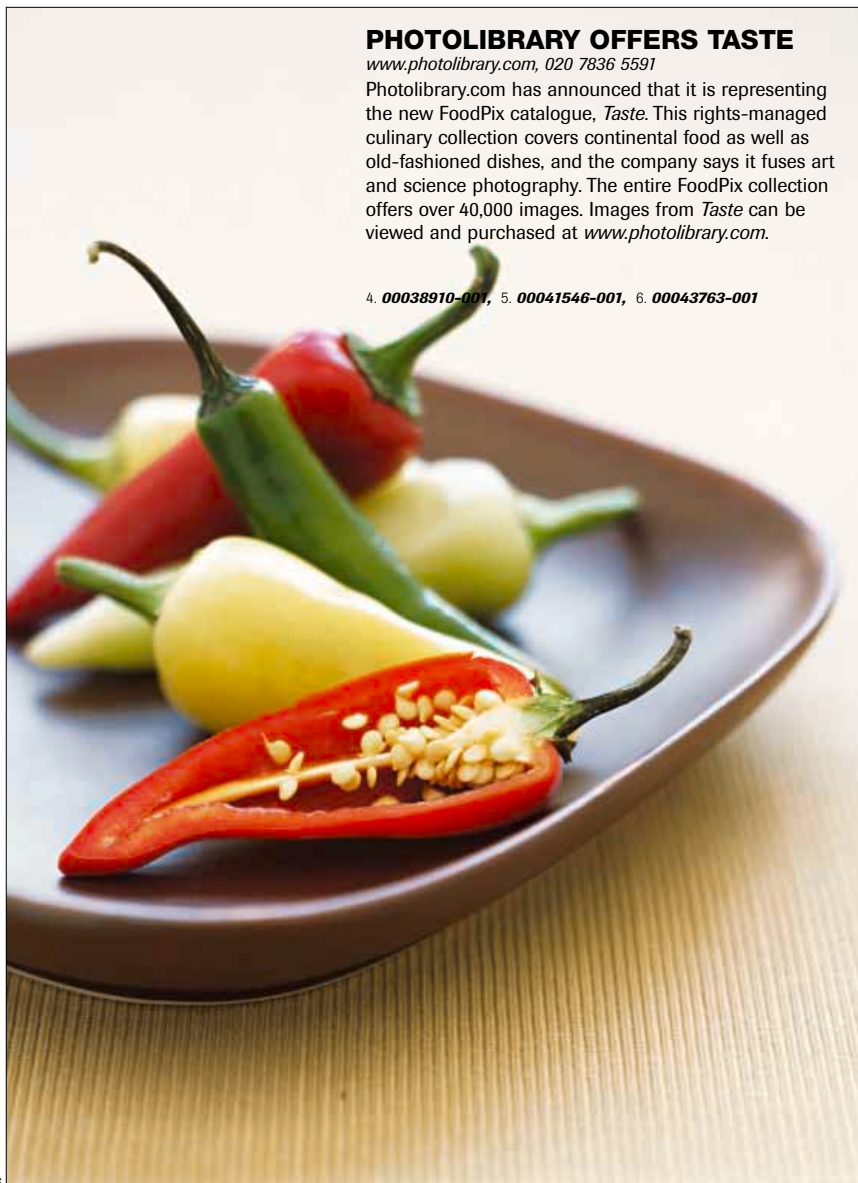
ARTBEATS OFFERS CLOUD CLIPS

www.artbeats.com

Artbeats has released several new motion collections. *Cloud Chamber HD volume 1* and *volume 2* (pictured) features simulated cloud formations. The royalty-free HD collections cost $799. The company has also released *Nightmare Light* and *Lumaform* – royalty-free background collections of various light projection images. *Nightmare Light* costs $399 for SD and $599, for HD, while *Lumaform* costs $299 for SD and $499 for HD. All collections are available from the Artbeats Web site.

IMAGE100 GIVE A SPORTING CHANCE

www.image100.com, 020 7612 1550

image100 has released *Sport*, a new collection of royalty-free images. The collection offers a total of 645 photographs, ranging from "Sunday league heroes to Olympic champions", according to the company. The images are available for download from the company's Web site. Prices for individual images depend on the file size required.

1. *111245H,* 2. *111082H*

Tyke ITC Black
Tyke ITC BlackOsF
Tyke ITC Bold
Tyke ITC BoldOsF
Tyke ITC Book
Tyke ITC BookOsF
Tyke ITC Light
Tyke ITC LightOsF
Tyke ITC Medium
Tyke ITC MediumOsF

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AaBbCcDdEeFfGgHhliJjKkLlMmNnOoPpQqRrSsTt UuVvWwXxYyZz1234567890

AaBbCcDdEeFfGgHhliJjKkLlMmNnOoPpQq RrSsTtUuVvWwXxYyZz1234567890

TYKE FAMILY
ITC www.itcfonts.com
The International Typeface Corporation (ITC) has released 37 exclusive new fonts in four families. Three of these new families are featured here. ITC Tyke is designed to match the heftiness of Cooper Black, but with a wider range of weights. Individual fonts cost $29, while the complete volume costs $199. The fonts can be purchased from the ITC Web site.

| RESAVSKA FAMILY | BLACK / LIGHT | \{([@$%&!])/ |

Resavska ITC Black
Resavska ITC Bold
Resavska ITC Light
Resavska ITC Medium
Resavska Sans ITC Black
Resavska Sans ITC Bold
Resavska Sans ITC Light
Resavska Sans ITC Medium

AaBbCcDdEeFfGgHhIiJjKkLlMmN nOoPpQqRrSsTtUuVvWwXxYyZz12 34567890

AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrS sTtUuVvWwXxYyZz1234567890

RESAVSKA FAMILY
ITC www.itcfonts.com
Another of ITC's new releases, Resavska was designed by Olivera Stojadinovic. It is designed to be legible at small sizes. Individual fonts cost $29, while the volume costs $169.

| ASTRO FAMILY | BLACK / WHITE | \{(([@$%&!])}/ |

ASTRO BLACK ITC
ASTRO BLACK ITC

AaBbCcDdEeFfGgHhIiJjKkLlM mNnOoPpQqRrSsTtUuVvWwX xYyZz1234567890

AaBbCcDdEeFfGgHhIiJjKkLlM mNnOoPpQqRrSsTtUuVvWwX xYyZz1234567890

ASTRO FAMILY
ITC www.itcfonts.com
The name and design of Astro were inspired by the cartoon series *The Jetsons*. ITC Astro is available in solid and outline weights, and priced individually at $39.95, or you can buy them together for $72. The fonts are available for download at the ITC Web site.

| BRAMBLE FAMILY | REGULAR / WILD | \{(([@$%&!])/ |

P22 Bramble
P22 Bramble Wild

AaBbCcDdEeFfGgHhIiJjKkLlMmNnOoPpQqRrSsTtUuV vWwXxYyZz1234567890

AaBbCcDdEeFfGgHhIiJjKkLlMm NnOoPpQqRrSsTtUuVvWwXxYyZz12 34567890

BRAMBLE FAMILY
P22 www.p22.com
P22 and the International House of Fonts has released two new typefaces: Bramble and Mantra. Bramble was designed by Steven Rapp, and comes in Normal and Wild weights. They can be purchased from the company's Web site for $19.95 each, or $29.95 for the set of two.

| MANTRA FAMILY | REGULAR / XPERT | \{(([@$%&!])}/ |

Mantra
[ornaments]

AaBbCcDdEeFfGgHhIiJjKkLlMm NnOoPpQqRrSsTtUuVvWwXxY XYYZz1234567890

[ornament glyphs]

MANTRA FAMILY
P22 www.p22.com
The second of P22's new releases, Mantra, was designed by Hungarian typographer Amondo Szegi. According to the company, it blends the Roman alphabet with Tibetan calligraphy, as well as Hungarian folk influences. Mantra Xperts offers various alternate letters. The two faces can be bought as a set for $29.95, or individually for $19.95.

TEAM LinG – Live, Informative, Non-cost and Genuine!
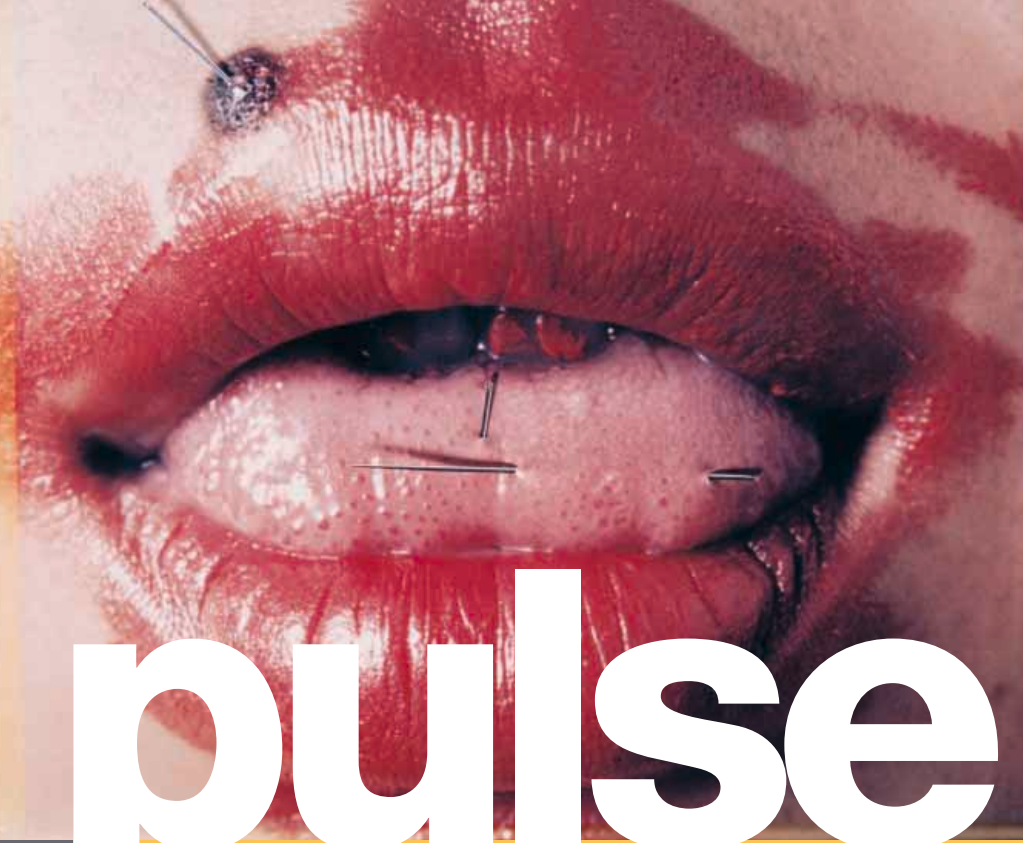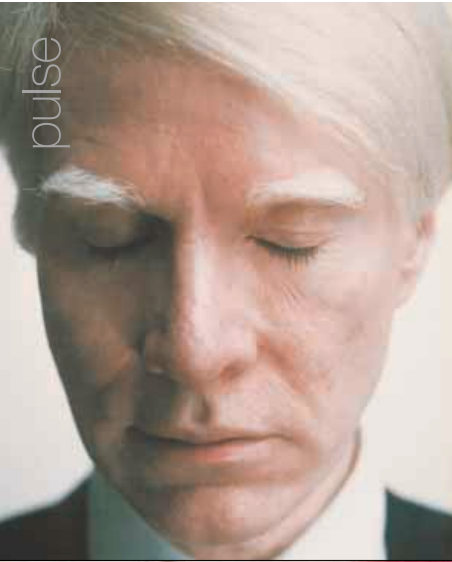
pulse

Be inspired by the latest happenings in the world of creative design

AN INSTANTLY AVAILABLE COLLECTION OF POLAROIDS

In existence for over 50 years, the Polaroid Corporation's photography collection is the greatest collection of Polaroid images in the world.

Established by Polaroid founder Edwin Land and photographer Ansel Adams, the collection now includes images by hundreds of photographers throughout the world and contains important pieces by artists such as David Hockney, Helmut Newton, Jeanloup Sieff, and Robert Rauschenberg.

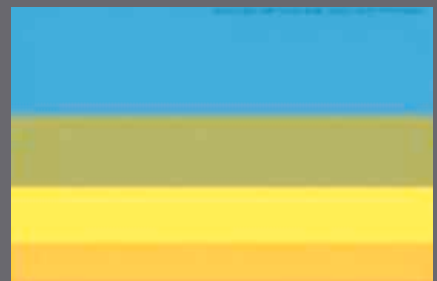*The Polaroid Book* (£19.99, published by Taschen) is a survey of this remarkable collection and pays tribute to a medium that defies the digital age and remains a favourite among artists for its quirky look and instantly gratifying, one-of-a-kind images.

It includes over 400 works from the Polaroid Collection, including, clockwise from top left, Andy Warhol, Salvador Dali, and *A Game: Lips and Needles* by Masahisa Fukas. A technical reference section features the various types of Polaroid cameras. *www.taschen.com*

HANG THE VJ ››

Channel 4 has launched **PIXnMIX**, a Web site devoted to the art of VJing. Central to the site is the CandyJar, a unique repository of video clips for aspiring and experienced VJs to download for free.

The clips are shared under Creative Commons licences which encourages a thoughtful, progressive approach to copyright in the context of digital creative collaboration. PIXnMIX is a pioneering project among UK broadcasters and a unique development in an emerging art form.

To help launch the site, 20 youngsters in Birmingham with an interest in digital visual arts but no video experience were guided through the process of gathering, producing and mixing audio-visual material to create their own live VJ performances.
www.channel4.com/pixnmix

›› **HANG ON A MINUTE, I'VE GOT TO FIND A C...AMERA**

Young Latvian photographer Arnis Balcus has been making a name photographing himself and his partner(s) having sex. "Is this sort of narcissim a problem?" he asks. Well, he argues, not if it's self-mocking, and not the "pathetic sincerity" of Tracy Emin.

Casually posed portraits, still-lifes and images of sex are shot from the hip, using a cheap digital camera. His images explore and celebrate "snapshot culture" he says. His first London exhibition is at the Matthew Bown Gallery, April 14 to May 14.
www.matthewbown.com

⌃ SONY LAUNCH NEW JUKEBOX

Sony will launch a new version of its network jukebox in March in Japan. The NAS-A10 contains a 40GB hard drive, a CD drive, AM and FM radio and a MemoryStick slot. The jukebox allows music stored on the disk to be transferred to either of the two prior portable music players or onto a MemoryStick Duo memory card for playback in a device such as the PlayStation Portable (PSP). It will cost approx $600 (around £340).
www.sony.com

⌃ SNAP ABBEY

Abbey bank has developed personalized bank cards in association with Endengene. The new photocard service lets Abbey customers upload their own digital images onto their cash and debit cards or choose from a library. The card is then processed in the normal way.

The Photocard has already proved a hit with Abbey staff following its internal launch last year, with the children of staff being the most popular pictures. Abbey said: "This is the first to be available in the UK and creates a distinctive position for Abbey in the market." *www.abbey.com/photocard*

<< WHAT WAS THE SKY LIKE WHEN YOU WERE YOUNG?

Displaying the breathtaking confidence that students have, 24 postgraduate photography students at Central Saint Martins College of Art and Design have embarked on a life-long project.

24:2004 **saw 24 photographers document the first 24 hours of 2004 and is now an exhibition of the resulting 24 photographs. The same crowd of photographers did the same thing for the first day of 2005. They plan to keep this up for another 22 years – 24 hours, 24 photographers, 24 images, 24 years.**

"How will the group, the project, and the world it documents change over the next quarter of a century?" asks the group.

You can see – at least a small part – for yourself until March 19. *24:2005* **is this year's selection of 24 images and is in Soho Square, London, until 19 March.**
Longing for London, left, by Nicky Willcock.

<< PRETTY IN PINK

T-shirt design company UniForm has magazine credits from *ID* to *Wallpaper*. Celebrity fans include Pete Tong, Zoe Ball, and Sara Cox. UniForm's new collection, out now, is based on Op Art.

Launched in 1997 the brand now sells to retailers throughout the UK, Europe, USA, Australia, and Japan. This of course has been no mere accident. The two founders, Paul West and Paula Benson, have a design pedigree that includes art direction and design for high profile campaigns including Depeche Mode, Girls Aloud, Busted, The Faders, Everything But The Girl, and MTV. UniForm is a division of their graphic design studio, Form.
www.uniform.uk.com

Stop paying us too much

The creative industry faces staffing challenges and high turnover – but the reasons are often more bizarre than you'd realize.

Many of us have dreamed of working in media since we decided to use crayons for drawing rather than eating. That was certainly the case for me: I wanted to be a journalist since I can remember, and I spent many an hour from the age of ten creating newspapers using Letraset transfer letters, and no end of patience. My debut issue, which was subsequently shown to the school assembly (complete with utterly embarrassing *Samantha Fox Dates Local Schoolboy* headline), didn't dampen my enthusiasm one jot.

Fast-forward a few years, and I remember nervously taking the entrance exam for my longed-for and heavily oversubscribed journalist degree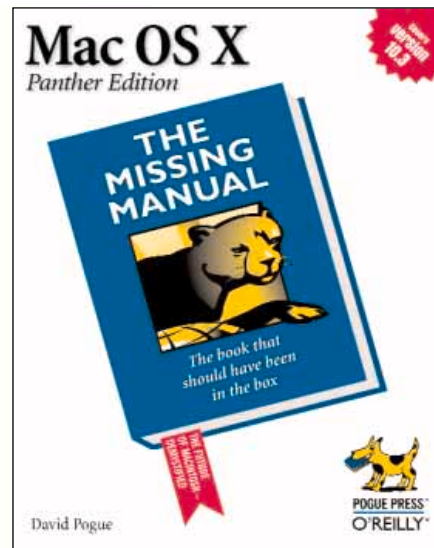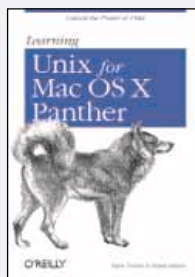, and almost bolting from the room when I saw the competition. Not only was I the only bloke without a ponytail, but I was the only one that didn't take the paper with my feet perched on the table while smoking a roll-up. Everyone was hip, could name-drop with ease, and seemed destined to reside in the lofty towers of a glamorous media industry.

So it comes as no surprise, really, when reality hits home. People think media – in all its guises – is a non-stop riot of parties, dar-lings, air kisses, baggy cargo pants, and workplaces with ball pools and pinball machines. This attitude probably explains the latest findings from The Creative Group, which asked the top 1,000 media agencies why people quit. The following are all real reasons why media personnel walk.

Headlining the list were gems such as one employee didn't like to use a computer and felt the job simply wasn't glamorous enough. **Really? You mean deadlines, the need to understand pixels, and boring client meetings are the reality of today's world?**

Of course, environment makes a difference. One employee quit because he didn't like the smell of the studio, and another walked because the studio lighting "wasn't right". And as for the bizarre excuse one departing designer made – that he was making too much money and didn't feel he was worth it – that's just nuts.

Some employees you do actually want to be rid of, such as this collection: one person was bored, and left; another felt he was over-employed; while a third quit because she didn't want to work so hard, and besides, the location wasn't terribly exciting. The staffer who left to join the Witness Protection Program in the US probably shouldn't have made it through the door in the first place.

One such Marie Celeste moment happened to me. A flighty designer had just started working on a sister magazine in a previous company, when she popped out for lunch after her first morning, and never came back. A second woman left abruptly, texting us a few days later saying that life was too short, and she was off to travel the world. Maybe it was my Sam Fox jokes?

All this simply shows that working in the creative industry is much like any other business. Crappy Monday mornings, rubbish jokes from fellow workers, pale skin from the florescent lighting, and gritty eyes from staring at your monitor. Still, it beats being a lawyer, dar-ling.

Matthew Bath

respond

Contact DIGIT. Get issues off your chest.
Send letters to dialogbox@digitmag.co.uk
Please note that personal correspondence cannot be entered into.

Money matters

Cheers for a great guide to the UK design industry as it stands (Digit 84) – and, more importantly for me, give me the chance to leave it around on my desk open on the page with the average salaries list for my boss to see. Now I've been given an instant raise to my rather meagre salary. Well done!
Joan Smith (not my real name)

Love the pictures, hate the type

I have just received my first copy of Digit magazine. First impressions were really great. Just the sort of things I want to read about. But reading it gave me a headache. The typeface used for articles is far, far too small.

Your designers should review their typographic study notes on readability. If newspapers and books were printed using type this small no one would buy them. Designers need to remember that the majority of the population do not have the acutely sharp sight of a 21-year-old. And not everyone reads magazines in bright daylight or in studio conditions.

Even if you are young, try reading Digit as you travel home tonight on the moving top deck of a number 74 bus or in the soft-lit lounge bar .If you are older than 40 you will struggle. If it's a struggle, then you'll surely give up. Although you can see the individual words OK, scanning the lines and digesting the information is hard work. Because you are concentrating on the act of reading, the pleasure of reading is greatly diminished.

After a few short articles I gave up and just skimmed through the magazine. This is a shame. Such a good thing spoilt by poor typographical design.
Michael Hailstone

DIGIT: *We're sorry that our choice of typeface is spoiling your enjoyment of Digit, but we've not had complaints about it before. Our choice of the size of typeface comes from a desire to provide our readers with a wealth of information on every page without getting in the way of the luscious artwork that we know you're equally interested in. Imago is one of the most readable fonts at any size – and too make it larger would leave us with room for less words or smaller/less pictures. This is not a choice any of us would like to make.*

One giant leap into 3D

I was grateful for your article on 3D software for illustrators such as myself, as I've been trying to get into 3D for some time – but with little success. I think my work would really benefit from some true 3D elements as it's always been kinda sci-fi.

I've tried many different packages, including the 'learning editions' of most of the 3D tools used by top effects companies on big-budget Hollywood movies, and generally ended up more befuddled than Mr Magoo. They seem to speak a different language to the rest of us and the interface is beyond convoluted.

Following your advice though, I checked out Strata CX and while the language is still arcane, the tools were a lot easier to learn - so cheers!
Dennis Dissen

DIGIT: *Sometimes it does seem that the language used by 3D applications was devised by a particularly secretive old maths teacher, but it's often necessary as 3D is by its nature more technical than 2D design, animation or video production. Perserverence is always the best way.*

A Vue to a kill

I will never buy your books again because they are expensive but most of all you fuck people over by telling them there is great software on the CD like Vue D'Esprit but once you have bought the book it is only for Windows and not for Apple and this is false advertisement. Put it on the cover that it is only for Windows and not this sneaky shit that you first have to buy the book so that only then you can look inside the book to find this out.

Thanks for nothing.
Dennis Dissen

DIGIT: *For every free piece of software that we give away for free with the magazine, we always get a few complaints that it doesn't work with any platform that you care to mention. As flaming responses go though, this one is a classic.*

To be serious though, a quick look at our Digit CD pages would have informed this reader that both of the full packages we offered on Digit 83's CD were for Windows-only. Why? Because that's how the companies behind them made them.

Oh well, we hope the six free full-size, royalty-free images; Aardan animations; Kempt Flash game – oh, and the fantastic creative magazine that comes with the CD – is enough to keep Mac users satisfied.
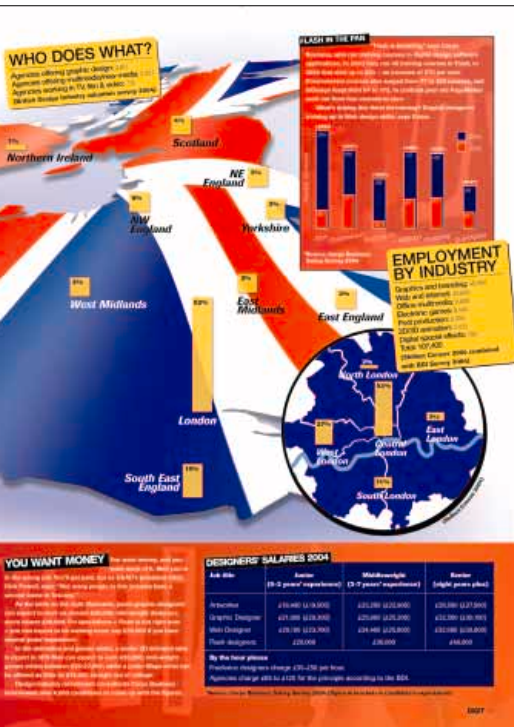
⊛ *star letter: Gay, straight – it's still porn*

In response to your reply to the letter headed 'Sense and suitibility' in Digit 84:

You had used an image that you referred to as 'homoerotic'. and have ducked the issue by comparing it to the other erotic images used and printing letters that also miss the point and so strengthen your stance. The point is that the image was not homoerotic as you claim, it was pornographic. You are designers, so you know semiology; about signification – so by any intelligent assessment of that image (the position of the bodies, the facial expressions, the abscence of other meaning), it is pornographic, it overtly illustrates a sexual act. The other images are erotic, not pornographic as they intimate, not illustrate, a sexual act.

You decided to print pornography in the name of design but have fended off criticism by labelling it 'erotica' (which it isn't) and deflecting the question by printing homophobic responses; however, it doesn't alter the likelihood of your readers being offended by the inclusion of pornography and you have not addressed that question. If instead of your 'homoerotic' pic you had chosen one of a woman having anal sex, would you have printed it?
Simon King

DIGIT: *We're not denying that the image could be defined as pornographic. To quote Bill Hicks: "pornography is defined as something with no artistic merit but causes sexual thought. Well, that sounds like every commercial I've ever seen". However, we believe that in a serious discussion about what is acceptable for the use of sex and sexuality in design (in legal rather than moral terms), it's useful to see examples from both sides of the line. It was there for academic interest, not to titillate – which so far no-one has accused us of. If the same advert had shown a woman having anal sex, and received the same response and condemnation from the ASA then, yes, we would have printed it.*

Write in & win

This month, the star letter wins a copy of *On the Road with Your Digital Camera* by Michael Freeman worth £16.95. It is the essential, all-in-one handbook for the digital photographer on the road and the definitive guide to planning a digital photographic assignment, trip, or holiday. The book is aimed at both professional and 'prosumer' hobbyist photographers and is packed with detailed information on file downloads and backups, email and FTP image transmission, batteries and international power supplies. It's written by one the most widely acknowledged experts in digital photography, and the author has travelled and taken pictures all around the globe.

To order your copy of *On the Road with Your Digital Camera* at a special price of just £13.45 plus FREE postage and packing (worth an additional discount of £3.50), visit *www.ilex-press.com/digit*

I L E X

Matt   Lynn   Chris   Neil   Andy   Dan

DIGIT 33

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pitch to win

Pitching for work is vital to landing the good jobs. The process is loathed by some, but it can be as creative as the account that's up for grabs. Here's how to charm the people holding the purse strings.

BY DEBORAH BONELLO

Sometime during the 1970s, the late Sir Peter Parker, then head of British Rail, went to the offices of the advertising agency Allen, Brady & Marsh to hear a pitch for his company's advertising account. Some 45-minutes after his arrival, a very unimpressed Parker was still sitting, fuming, in the agency's reception area surrounded by a disgusting array of over-flowing ash trays and polystyrene coffee cups. Having had enough, Parker stood up to march out of the reception but was cut off at the agency's front door by its chief executive Peter Marsh, who said: "This is what it's like for your customers every day of the week." He won the account.

Fast-forward to the present day and the pitch process is still vital for creative companies when it comes to winning new business. But it's not all drama. The use of pitch theatre such as that employed by Marsh and co above tends to be favoured more by advertising than the new-media industry. However, there are rules and processes that creatives agree are necessary ingredients for a successful pitch.

The type of pitches agencies get involved in tends to vary by discipline. In new-media, for example, agencies find themselves pitching to existing clients as often as new ones because most work is done on a project-by-project basis. On the other hand, ad agencies tend to work for clients on a retainer, and pitch for new ones when they come up for grabs.

Either way, the pitch process is crunch time for an agency, so getting it right is paramount.

Before the big day, there are things agencies can do to make sure it is as prepared as possible to wow the client.

Tom Adams, co-founder of Mook, the creative digital design consultancy, says his agency generally insists on meeting the client before a pitch.

"We won't do any creative work without first meeting with the client," he says. "Just relying on a written brief can be misleading so we need to qualify it."

Adams says the agency has its own way of understanding a brief. "We have a questionnaire that we send over, and it almost writes the brief for them. It asks them everything from how much traffic they expect on their site through to which sites, even those not in their sector, they admire," he says.

Mark Chalmers, a creative partner at Amsterdam-based advertising agency Strawberry Frog, says: "Too many people assume the client's brief is set in stone. What they think they want and what they need are often different things. It's essential to talk over the issues and get to the heart of the matter. Start off from the same agreed piece of paper."

It is also worth considering whether a pitch is worth getting involved with in the first place. Jon Bains, founder of the digital creative agency Lateral, has little love for the pitch process. "I absolutely hate pitching," he says. "It's the worst, most pointless exercise in the universe and you spend a ridiculous amount of time working on them."

He says it's important to choose your battles. "The main deciding factor is budget, to be blunt."

Adams agrees. "We try not to do more than two a month. We probably get 200-300 incoming requests for pitches a year."

In the case of new-media work, often an agency has to actually do some of the work in order to be able to present something to the client. This costs both money and time. Generally, if the project is a Web site, experts say the best idea is to put together a prototype of the site that is a few pages deep. It will give the client a strong idea of what the site will look like and how it will work without requiring the agency to pretty much build the whole thing on speculation.

Once you have decided to pitch in, do your homework. "Show that you've put some effort in and you're really trying to understand what the client does. ▶

Do anything you can to put yourself in the shoes of that brand's customers," says Paul Mallett, managing director of digital marketing agency Swamp.

Vox pops

He says before going into a pitch, he and his colleagues often go out into the street to speak to the public about what they think about a certain brand or company. They record the street interviews and then edit them into a vox pop linear film to show the client during the brief. This is a good way of breaking the ice, as well as showing the client that you've done your research – plus you can place some funny, anecdotal comments from Joe Public.

Glyn Britton, managing partner at the communications agency Ingram Partnership, says once you know you're pitching for a piece of business, you should get cracking straight away. "Two weeks is regarded as plenty of time but it's not unusual to be given two days. It's really important not to sit on the brief – start work on it immediately. Rehearsal is absolutely key. Understanding the client's business is important but you'll never do it better than them."

Ashley Friedlein, chief executive of E-consultancy, says: "The most important thing is to understand the client's market, customers, and competitors. The classic mistake is for agencies to go into a pitch meeting and tell the client what it needs."

Once you've done your homework and the time comes to pitch, it's important to send the right people to meet the client.

Chalmers at Strawberry Frog says never send any more people than the client is sending, otherwise they'll be outnumbered. "You'll dominate the talking and have a couple of spare parts. Quality client time is precious, you need to hear what they have to say.

"When we pitched for the European Ikea business there were three of us in a room of twelve. It was great because the focus was on our work. You could have heard one of their elusive alun keys drop."

You should avoid sending in the big guns to pitch for work. The danger is that clients will be disappointed when they find that the people working on their business day-to-day won't be the people they trusted their business with. "The team who will do the work are sent in – that is a pitch basic," says Britton at the Ingram Partnership.

In terms of environment, some agencies encourage clients to go to their offices when they're pitching. This gives the agency more control over what the client hears and sees as part of the pitch. This isn't always a luxury that's available, though, and if you're pitching in a client's office always get there early to give yourself time to set up and avoid fiddling around with laptops and projectors when the client's in the room.

Once you're in the room, a lot of your success will come down to the chemistry you have with the client team. Ultimately, the client reps are looking for someone they're going to enjoy working with. It's important that you like them too – you must try and gauge whether ▶

TOO MANY PEOPLE ASSUME THE CLIENT'S BRIEF IS SET IN STONE

MARK CHALMERS

Above: **These mood boards were made by Random Media for Creativity Incubator, a site aimed at engendering creativity in the work place. Using mood boards in your pitches gives you something physical to hand to clients, and gives you visual material to refer to. An over-reliance on PowerPoint-style presentations can be boring for the client.**

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Pro 7
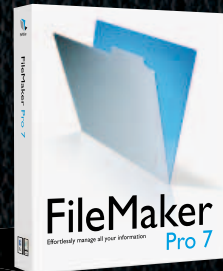
PITCH THEATRE: THE LEGENDS

Saatchi & Saatchi, when pitching to Toyota, put a model of the car in the front window of the agency. This required the removal of the window in order to get the car in. When the client turned up it was the wrong model, so when he came for the second round meeting the agency put a second model in reception.

Mediacom, the media agency, pitched for the Royal Bank of Scotland and, to prove its commitment to the bank's business, included a share certificate for half a million pounds in the company as part of its presentation.

When communications agency The Allmond partnership pitched for Weetabix, the agency transformed part of its offices into a supermarket aisle for cereals, to demonstrate its understanding of Weetabix's customer visibility, profile, and competition. They won the business.

Advertising agency Publicis once staged a pitch for an Italian confectionary brand in an Italian restaurant. An obvious idea perhaps, and a small detail, but it made a big difference.

or not they are right for your business and the kind of people you want to work for.

Ben Swindell, a creative director at Holler Digital, says it's important to get your personality across during the meeting. "If they haven't met you before then they're sizing you up to see if they can work with you," he says.

Chemistry set

You want your pitch to be memorable, and you want the client to trust you and like you, and one of the ways that agencies try to do this is via the use of pitch theatre, which makes it look as though they've gone the extra mile for the client. From examples as extreme as that used by Marsh and his associates to win over British Rail, to just attention to small details, gimmicks can really help to make an impression on the client.

Chalmers at Strawberry Frog says: "We do everything we can to bring our proposal to life. Since when did someone say 'pitch on PowerPoint'? We are the agency, we should be the refreshing change to the daily norm. We won Emirates in Bloomingdale's board room in New York City, we've pitched in people's houses, we've even pitched in our pants. Pitch theatre has to be relevant."

On the other side of the coin, pitching can be a long and arduous task for the client as well as the agency, as they have to have lots of different meetings with different agencies. Anything that makes the process more interesting and entertaining for the client has got to be a good thing and will score you brownie points.

However, experts were quick to mention the perils of pitch theatre.

Kathleen Saxton, marketing director at Saatchi & Saatchi, says that pitch theatre can work wonders, but you have to research the client. "It has to be relevant, smart and memorable," she says. "The best theatre should all draw from the central idea the agency is recommending and support the team, rather than overshadow the thinking. Theatre needs lots of rehearsing, so the

team feels comfortable with all the props.

"There is sometimes a risk that if you are struggling to crack the strategy or overall idea that pitch theatre will be ramped up to mask the shortfall – especially in this market when we all know that every agency on the list will be pulling out all the stops."

Pitch theatre tends to be more the territory of advertising agencies than new-media design and graphic shops. New-media experts are rather cynical about its value.

Adams at Mook says: "What we tend to find with graphic design and online advertising is clients are not taken in by pitch theatre. They're quite business-like and want to see the quality of our creative work. It's less about theatre and more about putting together a solid creative pitch that they're impressed with.

"Very experienced clients know whether they can trust you to do their work based on your previous work for them or other clients."

Bains at Lateral isn't a fan either. "We don't do that but it can work," he says. "It depends on who you're talking to. Every agency has its own style. Ours is brutal honesty. We like to think that agencies hire us because we're straightforward and no bullshit."

Britton at The Ingram Partnership says that the power of pitch theatre is limited. "Quite often clients are seeing a range of agencies, all of whom could deliver what they need. Theatre won't win it for you – being prepared will. Be able to answer all their questions," he says.

More important is the need to keep a pitch simple. This is especially relevant to agencies pitching for new-media business.

Lateral's Bains says: "The problem is that in our industry a lot of the time you're pitching to people who don't know the area."

Although most clients have specialists in-house to deal with new-media developments and marketing, often the client isn't a specialist and throwing a load of Web-speak at them is only going to confuse them.

"Make sure that you talk at a level they understand. As an industry, we often talk

PITCH THEATRE HAS TO BE RELEVANT, SMART, AND MEMORABLE

KATHLEEN SAXTON

DO ANYTHING YOU CAN TO PUT YOURSELF IN THE SHOES OF THAT BRAND'S CUSTOMERS

PAUL MALLETT
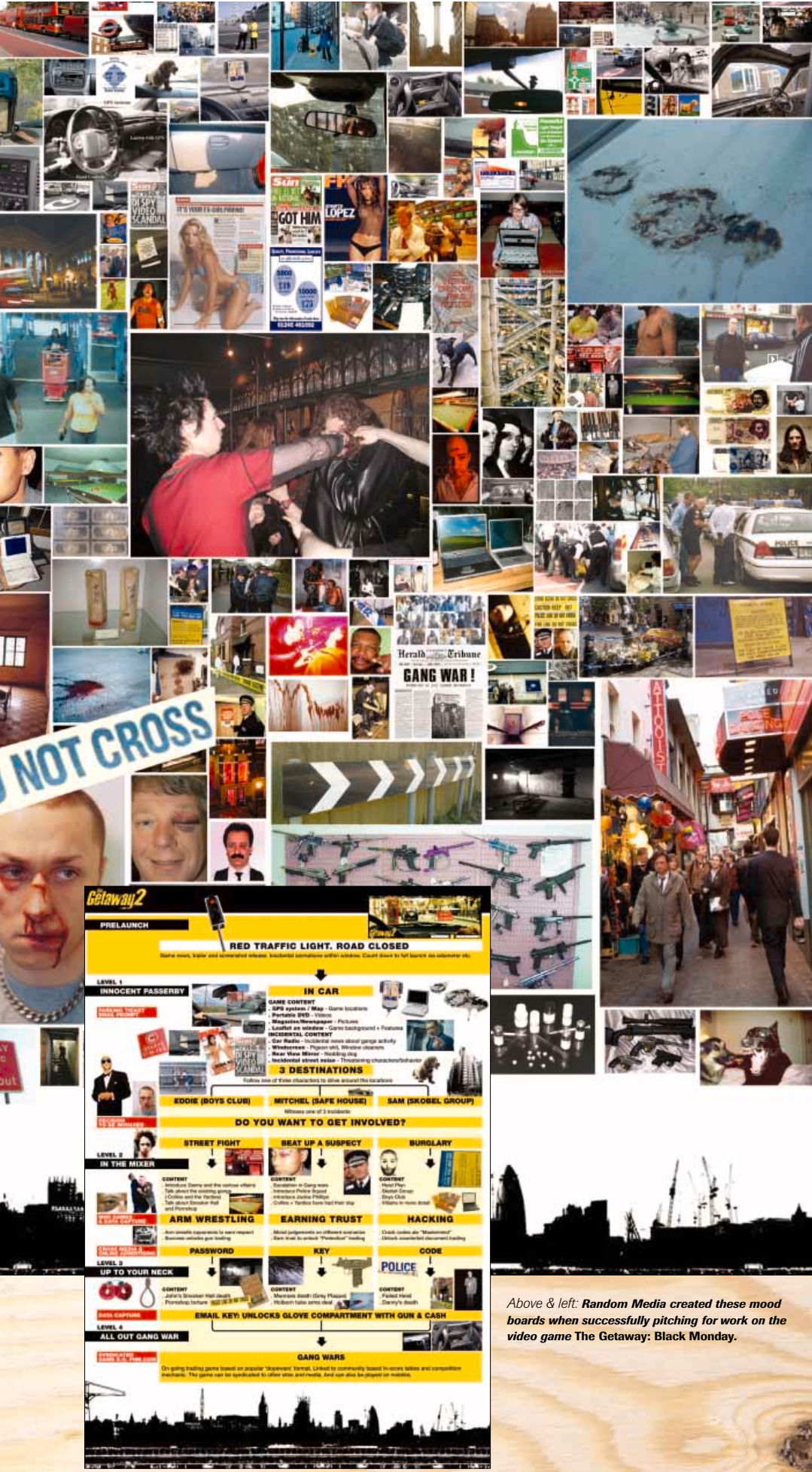
*Above & left: **Random Media created these mood boards when successfully pitching for work on the video game** The Getaway: Black Monday.*

over people's heads," says Bains.

Richard Exon, new business development director at advertising agency BBH, says that rule applies to other disciplines. "Aim for clarity and simplicity. That's the pitch's job - to edit thousands of hours of creativity and thoughts into a presentation."

The idea of simplicity should be regarded as a golden rule. Pitching with lots of good ideas just isn't, well, a good idea.

"In all cases answer the brief simply and clearly," says Chalmers at Strawberry Frog. "Average concentration span is 40 minutes, go with your gut and pitch the creative you really believe in. Few people can stomach five different routes and sustain excitement or a coherent response. Enjoy your work and be confident about it. Ultimately advertising is a confidence game."

Best foot forward

Mallet at Swamp believes one of the hardest things is narrowing creative ideas down. "Never go in with loads of ideas," he says. "Most companies are looking for companies to advise them. So never go in with 15 ideas – you've got to get them down to three. Then you have to decide what order to present them in – my advice would be to put the strongest idea first."

There are other factors which will affect the way an agencies pitches. How much creativity exists within the recipient organization often defines how a creative agency approaches them.

Benn Achilleas, design director at Neoco, says: "If we're pitching to creative clients then we'll go straight into the work and it will tend to be more expressive. With blue-chip clients we're more straightforward and logical."

Odd though it may seem, many agencies find that the bigger the client, the more relaxed the representatives tend to be. The marketing or Web-development budgets of smaller companies tend to be much more modest than big conglomerates, and therefore more personally precious to the people involved, who might own a stake in the company or have started it up themselves.

Adams at Mook says that the seniority of the people in the pitch meeting will also affect how Mook puts together its pitch.

"You have to tailor what you say depending on the experience of the person you're presenting to. Senior people want to know what they're getting for their money, whereas junior people tend to be more impressed by the visual," he says.

The format of pitch meetings – which usually takes place in board rooms or equally formal surroundings – tend to encourage the process to be equally formal, and sometimes it's good to move away from this. The meeting should be about reciprocity. Just trawling ▷

through a PowerPoint presentation can be boring for the client, and it's generally one way. Some agencies say using different rooms for different parts of the pitch – creative versus strategic for example – gets the client up and out of their seat, and creates little mini-breaks throughout the meeting.

BBH's Exon says: "It's very important when pitching to maintain your receptive as well as transmission modes. It's tempting to go into transmit mode, but then you can miss a lot – you should try to spend half of your time in the pitch listening." Watch the client's reaction – if something isn't going down well then cut it down or just move onto the next part.

Clients appreciate honesty, too. The E-consultancy's Friedlein says that during a pitch it's important to be transparent about costs, even if they're higher than the client might expect. This manages the client's expectations, and will prevent the agency from looking like it's trying to sneak extra costs into the business after having the won the account. "This builds trust. If a client feels they can trust you it goes a long way towards winning a pitch," he says.

The tools you use to present your ideas are also important. Although PowerPoint and projectors seem to be the equipment of choice for most creative agencies when pitching for new work, more and more companies – even those showcasing digital creative – are using storyboards and other props to wow clients.

This helps to step out of the predicted formality of the pitch situation and encourages more sitting and pointing around a table and

less staring at screens. It aids you in your quest to be one of the more memorable meetings for the fatigued client.

Mallet at Swamp says: "When we're presenting interactive ideas we'll still do it on boards as it keeps it tactile, gets people involved and stops them staring at a screen."

Benady at Random Media says boards are a must over projectors: "We always use boards. New media agencies generally use projectors but we use boards which have a bigger impact. We always use mood boards that tell the story of how the idea developed."

Strawberry Frog try to use as many different things as possible, says Chalmers: "We try and have a variety of equipment. It's more interesting. From magazines to pick up, to films, to boards or posters. It's important to have something out you can refer back to. Projecting work only allows you to see one thing at a time. A linear presentation is fine if your clients have a photographic memory."

So, when the pitch is over how do you gauge whether it's a win or lose situation?

"Three times now we've been in a pitch and they've really gushed about it afterwards but then we've not won the business," says Benady. "Then often the people who seemed like the least impressed ring us back and hand us the account."

Adams at Mook is equally confused. "We find that the more positive the meeting then the less likely it is that we've won. The more poker-faced and thoughtful the client looks then the more likely we are to get the business."

THE CLASSIC MISTAKE IS TO GO IN AND TELL THE CLIENT WHAT IT NEEDS

ASHLEY FRIEDLEIN

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RICHARD EXON

Above & left: **These visuals were put together by digital agency Holler as part of a pitch to create a microsite for Eurostar's Ski Train service.**

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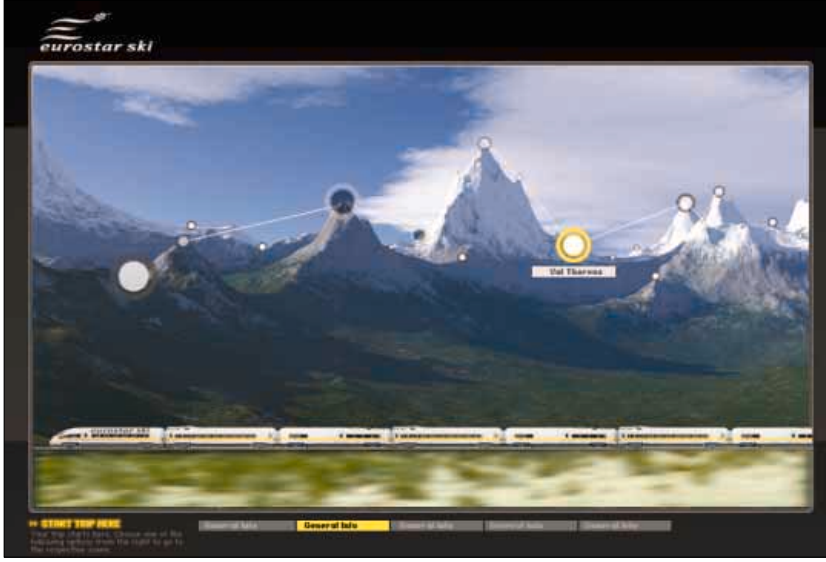
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Life's Good

Animatics

Animatics gets George Lucas all hot and sweaty. We lift the lid on what he knows and what you've been missing. *BY ED EWING*

Above: **Just-released Antics Pre-Viz puts movie-style animatics and pre-visualization in the hands of the consumer for under a grand.**

Thirty years ago when George Lucas was developing the *Star Wars* trilogies, he used footage of World War II dogfights to show his stop-start model-animators what he wanted the final battle in his film to look like. His sketched storyboards were legendary for their detail, and when *The Empire Strikes Back* came around he used traditional techniques to roughly animate them on film. Crude, pencil-drawn sketches of AT-AT Walkers stop-framed their way through Lucas' moving storyboard, and into cinematic history.

Fast-forward 20 years and Lucas was taking full advantage of new technology to give him the creative control he craved. "George can finally 'sculpt' the film itself," gushed the *StarWars.com* Web site in 1998. "Using animatics, the film has become a responsive medium. As a result, *Episode I* will be closer than ever to the Star Wars movie that George wants to see."

Skip ahead another technological light-year to 2005 and animatics – or 3D previsualization – is an important and influential part of the movie-making process. It's not unusual for entire films to be blocked out in animatics, for actors to act against a blue-screen with animatic footage to guide them, or for directors to work-up ideas in animatic as part of their pitch. And it's not just Lucas and his Hollywood colleagues who have access to the technology – software like RealViz StoryViz and Antics Pre-Viz can put studio-style power in your laptop.

Cruise control

David Dozoretz is at the forefront of animatics in Hollywood. In the mid-90s he was an art director assistant at Lucas' studio, Industrial Light and Magic (ILM). ILM was trying to sell Paramount the idea of a helicopter and train chase on a new movie, *Mission: Impossible*. Dozoretz was asked to make an animatic to demonstrate the excitement and flow of the scene.

"In four weeks we put together 100 low-res shots," Dozoretz explains in his online bio. "It was the first time CG animatics had been used to previsualize an entire sequence." That animatic pitch helped sell the film not only to Paramount, but to movie star Tom Cruise as well.

It also made Dozoretz's career. Lucas saw the animatic and

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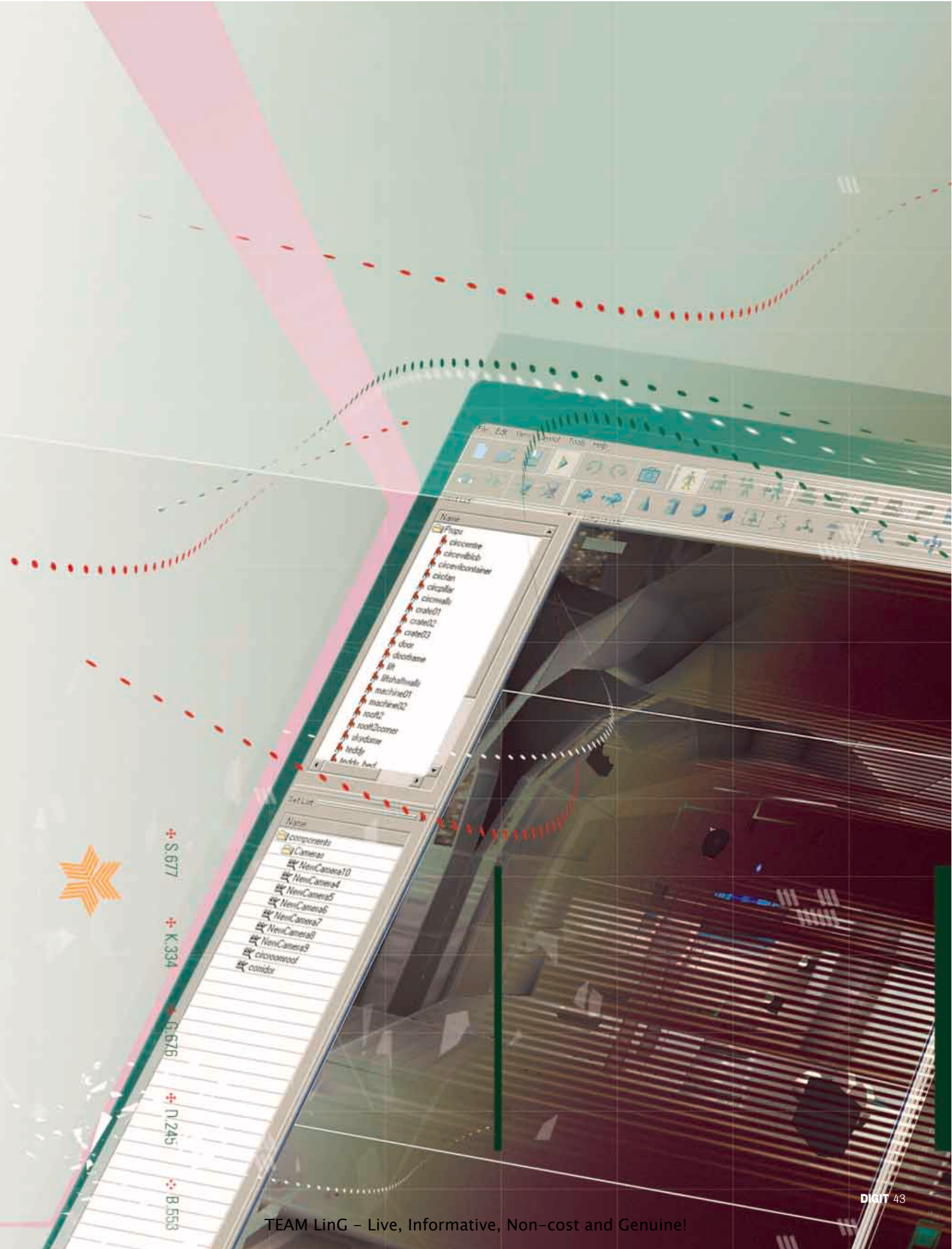
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Above: George Lucas' remarkably detailed storyboards were left redundant when he discovered what could be achieved with animatics.

IN 2005, ANIMATICS IS AN IMPORTANT AND INFLUENTIAL PART OF THE MOVIE-MAKING PROCESS
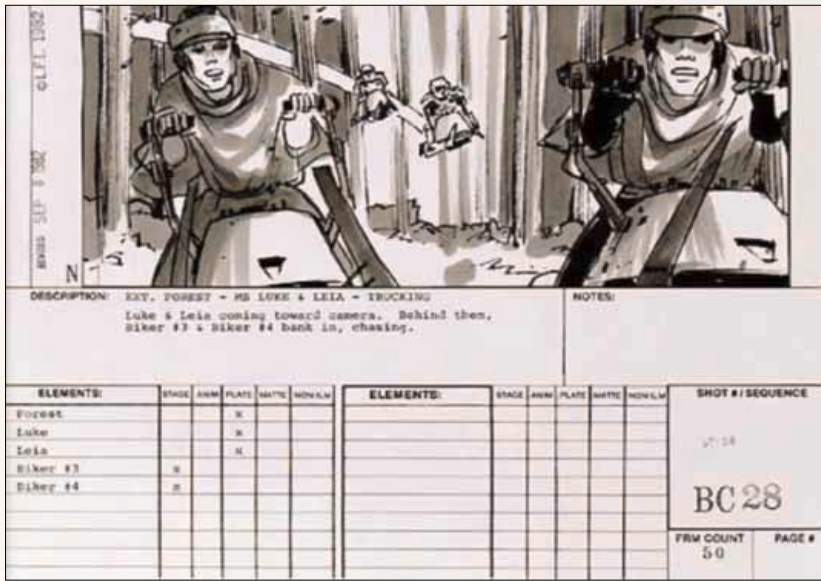
asked the then 24-year-old Dozoretz to help him with his fourth *Star Wars* movie.

"George's storyboards were fantastic," says Dozoretz, "but as he got into doing animatics we left many of them behind."

But Lucas wasn't into the technology for its own sake: "It's about filmmaking," says Dozoretz, who originally used Form.Z but now uses Maya with After Effects and Premier for compositing. "George knows what filmmaking tools work for him and animatics are one of those tools." In the end, 45 minutes of *Episode I* was previsualized in 3D before filming started. By the time it came to work on *Episode II*, the entire movie was shot in animatics.

Narrative and control

Lucas uses animatics as a narrative tool: his animatic team headed by Dozoretz concentrate almost entirely on storytelling, plot, and character development.

But as well as creative control, animatics give filmmakers acute technical control. California-based company Pixel Liberation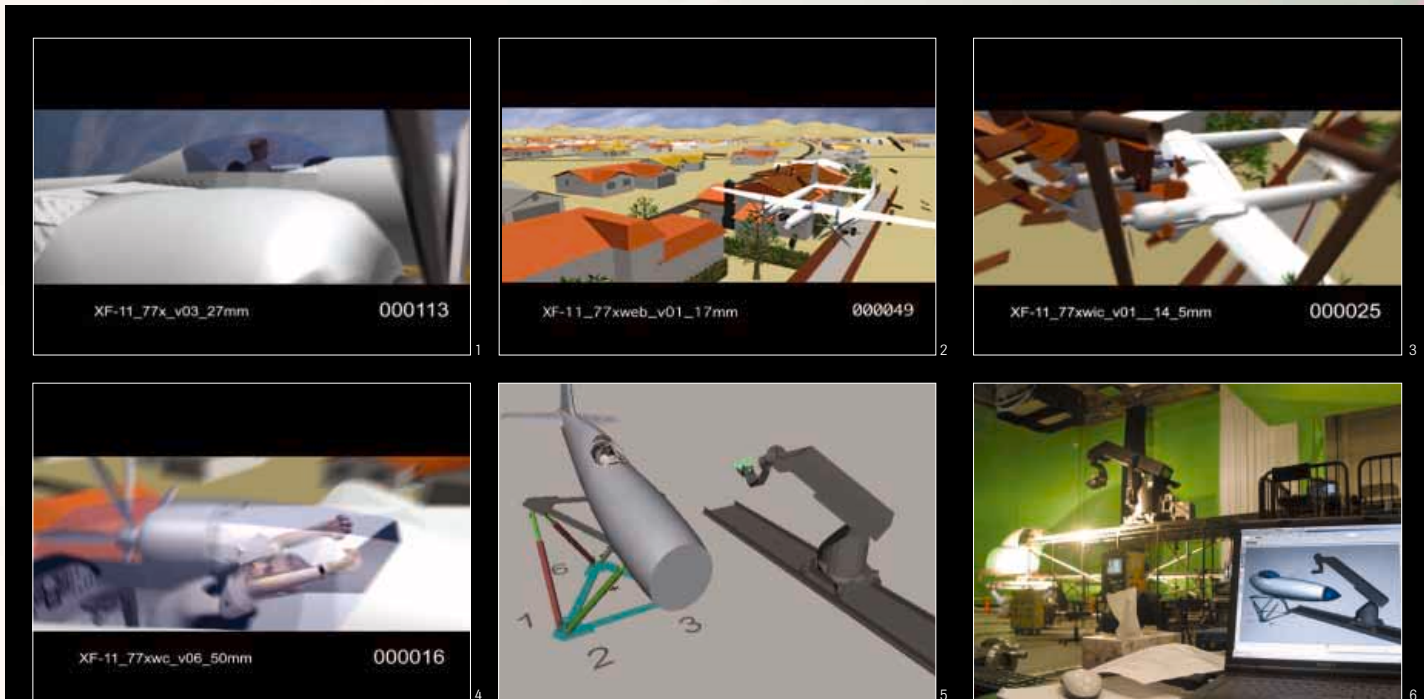 Front (PLF) has a reputation for hardcore problem-solving using animatics. The company has worked on dozens of films, from Disney's *My Favourite Martian* to the *Matrix* series. Ron Frankel was a member of PLF before setting up his own company, Proof Inc. Frankel says he worked with both creative- and technical-minded directors.

Spielberg, he says, wanted to "get the major beats down." David Fincher on the other hand wanted: "a map for each set-up – with equipment, what lens was needed, camera moves, and actor placements," when he came to make *Panic Room*.

Panic Room is set in a four-storey Manhatten brownstown. The house is equipped with a "panic room", a refuge in case of intruders. On the first night in their new home Meg Altman and her daughter are burgled, forcing them to retreat to the panic room. The film unfolds from there, as the intruders try to force their way in. The camera is king in this movie, sweeping seamlessly through the building and between floors, ratcheting up the tension.

Each shot was meticulously prepared. "David decided to previsualize the entire film," says Frankel. "We rendered everything out as AVI files … we could load up an AVI file, the director could make changes as he was sitting there and we could hit a button for the next frame capture. Sometimes he'd still be talking when we were able to show him the new version."

A feature of animatic is its un-realism. It means ▶

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Learning to fly

Oliver Hotz took pre-viz and animatics a step further when working on The Aviator. *While steps 1-4 show the XF-11 spy plane and the pilot, Howard Hughes (Leonardo DiCaprio), crashing in Beverly Hills, stills 5 and 6 show Hotz's motion control camera and motion control base. Shots developed in animatic were programmed into the live action rig and the camera and the sequence was then run.*

If the rig set-up couldn't handle the movement required for the shot, the filmmakers could compensate with camera movement.

Hotz says: "For me and everyone on set, that was the most fascinating and beneficial part. The motion control/base worked so well I'm going to use it on every project now."

ANIMATICS GIVE FILMMAKERS CREATIVE AND TECHNICAL CONTROL

characters don't have to be as fully developed as full CG. Frankel explains: "There's no point in getting bogged down with complex character animations that might take days to create. With Softimage|XSI we created a library of poses. Characters would sort of skate along, look left and right, gesture this way and that."

Extensive planning bore fruit. With the shots modelled as animatics it was possible to decide how the physical set was to be constructed to allow the director's dynamic shots.

In the end, they built a set like a skyscraper – a steel box cantilevered so any wall could be moved out.

Director's cut

Back then that was unusual. Now it's almost normal. When Martin Scorsese was directing *The Aviator* he had immediate feedback and control and could view different shots, with different lenses from a "virtual camera" in realtime on a laptop. When he found a sequence he liked, he pulled it back up and replayed it on the actual set. The development there was the use of motion capture software. Using Kaydara MOCAP resulted in realtime movement through a 3D set. Kaydara's roots in game-engine technology helped.

Animatics are not the sole preserve of the director. For actors working on bluescreen it is often the only visual reference they have. Jude Law and Gwyneth Paltrow, stars of 2004's *Sky Captain and the World of Tomorrow*, spent a month

*Above & right: **Machinima** is little known outside the gaming world, but uses games consoles to allow users to create their own animatics. Spielberg is said to be a fan.*

*Below right: **Antics Pre-Viz** is one desktop solution that allows real-time editing of animatic storyboards.*

acting against a bluescreen. The entire movie was previsualized shot by shot before shooting began in London. For Law and Paltrow playing on an empty set, the only way to work was to look at the animatics of themselves on screen and then navigate the grids and markers on the floor which had been plotted there by the animatic previz.

The future

A natural extension of that, and one which has been toyed with in Hollywood, is making full length 3D pre-viz films before green-lighting them. An idea studio accountants would surely love, but actors deplore.

But as animatics get easier to make, that can't be far off. No longer the preserve of a Hollywood elite, off-the-shelf previz applications are here, creating a perfect pitch-tool for the advertising and design industry. Antics Pre-Viz and Realviz StoryViz do similar things, though there's a big difference in price – Pre-Viz costs £750, while StoryViz costs $3,600 (around £1,900).

The software is designed to be user-friendly, building on game-engine roots, and lets users create animations in real time. The walking motion of off-the-peg characters is streets ahead of the "skating" characters developed for use in *Panic Room*.

"What sets Antics apart is that it is not another variation on traditional keyframe animation," says Antic's Mark Burton. "Instead, like a videogame, it harnesses the robust processors and graphics cards of PCs to offer real-time interactivity." Released on March 1 this year, Antics has already been road-tested on a Hollywood production, says Burton. Its main selling point, he says, is its ease of use: "It has intelligence built in. With a simple click, you can direct a character towards a chair and it 'knows' to sit down."

Users can pick drag-&-drop environments and characters from a library of content, while characters can be instructed to move and pick up objects, just like in gaming. "Pick up the TV and go downstairs" is all you have to type for the animatic character to do just that, according to the developers Alternatively, you might like to try: "pick up light sabre, chop Darth Maul in half". That's what George Lucas would do.

Aviation, guaranteed

*Oliver Hotz was pre-viz supervisor on **The Aviator**. Responsible for four major VFX sequences he and a colleague created 25 minutes of previsualization. "We previsualized every shot, not just the visual effects shots," he says. "That helped all of us, including the director and editor, get a better feel for the flow of the sequence. When we moved into the production phase, the pre-viz was also used as a bidding template for soliciting quotes from the model shops and special effects houses."*

In production the pre-viz was crucial. Complicated shots were planned using animatics, then programmed into motion control cameras.

"One of the inherent problems of shooting motion control is it's usually very time consuming," says Hotz. "We had to find a quicker way.

"I split up the pre-viz animation into two parts. One was used to drive the motion-base, which had the full-scale cockpit on it. The other one drove the motion control camera used for the actual filming.
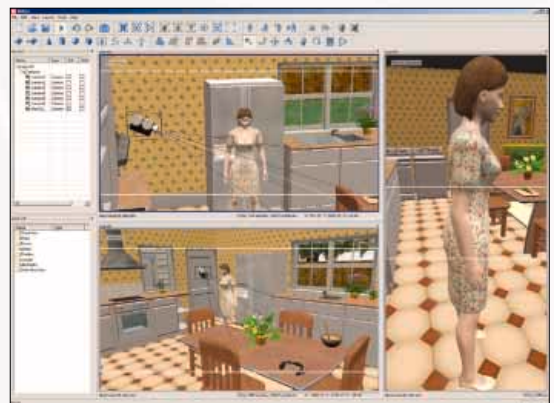
"This process turned out to be so effective that even on location we could make adjustments or even frame new shots within minutes. All we had to do was write out new control files for the two systems and we were good to go. If the director on set wanted to try a different angle or setup,

we could quickly accommodate that.

Hotz says Maya was the tool of choice, since it offered the flexibility he needed. "Even before we went on set, we could check a mock-up of the motion base and the motion control camera, and preview what they would do, all within Maya," he says. "We had all of the real-world physical limitations of the platforms built in so we could easily see if the motion-base or the motion control camera was reaching its limits, and adjust accordingly."
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IT'S LIKE
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TELEVISION
WILL COHEN

DOCTOR WHO

Everyone's favourite Timelord is back, with a new BBC series and a huge array of effects created by The Mill. Digit bagged the first look…

By Matthew Bath

It's been a long time – even for a Timelord – but the wait for the new series of the cult science-fiction drama *Doctor Who* has been worth it. After a break of 16 years – the last TV series episode aired in 1989 – the BBC is set to play-out a revitalized, revamped, and stunningly realized series that features richly detailed plots, fine characterization, and a level of visual effects that simply haven't before graced British TV screens. In a word, the new *Doctor Who* – starring Christopher Eccleston, Billie Piper, and a dizzying array of alien creatures – is amazing.

Since the announcement that *Doctor Who* will see his Tardis materialize on our screens, speculation over the series has been rife. *Who* fans have filled Web sites with gossip and snatched on-location photos. Even national newspapers have joined in the guessing game as to how the series will pan out. Will the Daleks return? Will the Cybermen make an appearance? Can Billie Piper fill the shoes of previous *Doctor Who* assistants?

With this level of pre-season hype edging towards fever pitch, the pressure has been on – not just for the BBC – but also for The Mill, which has been slavishly working on creating, honing, and polishing a level of effects that will compliment the return of the series, since it won the pitch for producing the visual effects.

For the London-based VFX house, the series represents a milestone. Already renowned for its work on a vast output of effects-heavy commercials and features, including bagging a Oscar for its work on Ridley Scott's *Gladiator*, The Mill has had its work cut out in order to meet an exacting schedule.

The result has been the creation of over 1,000 effects shots for the 13 episodes – with episode two accounting for a staggering 200 effects shots in just 45 minutes. And these aren't simply star-filled space mattes seen through the windows of spacecraft; The Mill has been charged with creating everything from fully CG characters and scenes, to fluids and particle effects, greenscreen and matte work, colouring and grading, and compositing CG into live action scenes.

It's been a tall order, especially considering that all the effects aren't yet completed. In fact, when I arrived, the effects deadline for episode two – by far the most ambitious of the series – was only a week away. And it's the end of February.

Which makes the quiet confidence of Will Cohen, VFX producer for the series, who has been working with VFX supervisor Dave Houghton, something of a surprise when Digit was invited to meet him and be the first publication to get a look at the new series, and get a sneak peek into the creative pipeline that was needed for the effects.

Outside, The Mill's London office looks a lot like a bank – all high, white walls, huge imposing doors, and sparse signage. Look closely at the electronic bell by the door, though, and a simple 'M' presides over a single button, wallmounted camera, and speaker. It's hardly the tap-dancing, neon-lit, fast-lane of an entrance you'd expect from one of the world's most famous effects studios – and most people walking down Great Marlborough Street, just off Regent Street, pass by without so much as a glance. When I arrived, a gaggle of white-uniformed beauty salon trainees were snatching a quick cigarette break from their course next door, their tanned faces lost in gossip, oblivious to the effects magic being conjured up behind them.

Once inside, though, it's a different story. The lobby wouldn't look out of place in a Park Lane hotel – all chocolate browns, recessed lighting, deep sofas, and a series of galleried meeting rooms and offices that overlook the entrance. It's quiet, strangely relaxing, and there are fresh strawberries on the table by the sofas. I'm just debating whether to tuck into the fruit bowl, when VFX producer Will Cohen comes bounding out to greet me. Looking relaxed and confident, he tells me later that he started life as a runner at The Mill before heading off to produce effects work for commercials and TV projects. He returned around 18 months previously, and has been working on the *Doctor Who* project for much of that time.

By now, I've been whisked into a screening room with the world's biggest Plasma screen (about eight feet, at a conservative estimate) and Will is fiddling with the controls that finally ▶
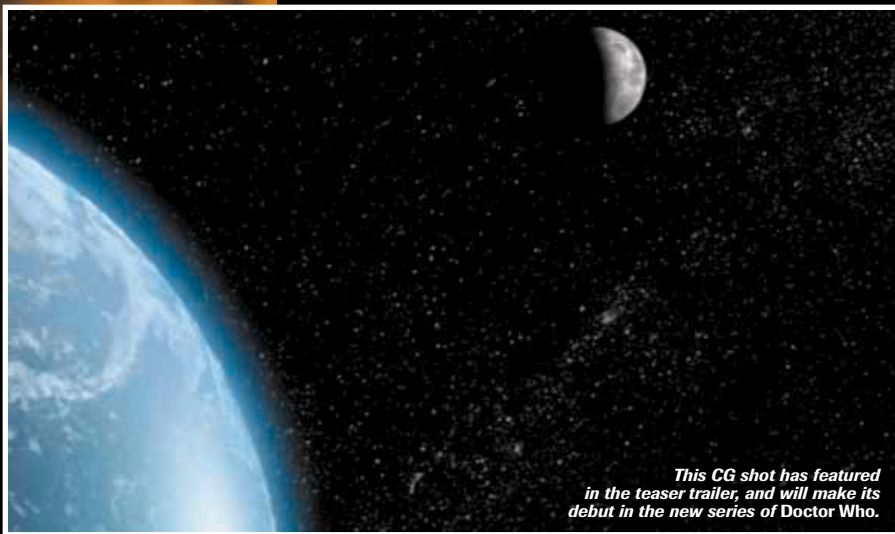
*This CG shot has featured in the teaser trailer, and will make its debut in the new series of **Doctor Who**.*

THE NUMBER OF EFFECTS IN THE SCRIPTS DID MAKE ME SWEAT A BIT

WILL COHEN

The teaser trailer for the series shows the camera zooming into a CG earth and smacking down into the heart of London.

blast the first glimpse of an almost completed trailer of the first half of the series. It's big stuff. The music has been subtly updated by Murray Gold, while the timetunnel title sequence is a modern take on the classic. In the series, it's coloured red when the Tardis is travelling forwards through time, and blue when heading back. The logo – set on a gold oval with plenty of flare and corona detail – has been crafted for widescreen viewing.

Will is instantly onto the detail as first the teaser, then scenes from the first few episodes, play out. "It's all about detail," he enthuses, as a snow-bound Tardis disappears from view. "Look at the snow flakes that fall from the Tardis' window sills as it disappears – it's all subtle particle effects that we just keep layering onto the scenes." Indeed, it's a fleeting effect, but one that adds to an almost subconscious level of realism. The Tardis itself was rendered with multiple passes, including one specifically for paint chips and scratches that it has picked up on its adventures.

What is obvious during the viewing is the sheer range of effects The Mill has created. From fully rigged CG characters and aliens – themselves all different – to fluid and water effects, to a fantastic scene in episode one that features a fully CG earth that positively glows against the backdrop of space. And as for episode two – which mixes in greenscreen work, complete CG scenes, and a parade of CG characters and effects – "it's like nothing that has before been seen on British television," says Will.

Because we want to

Yet, in true *Doctor Who* style, in order to get to here, we need to travel back a year to when The Mill first pitched for the project.

"We pitched for the project roughly a year ago," says Will, "and we knew from April 2004 that we had got it – and we've been planning and working on it since then," he says. "We knew the pitch would be fierce – and we had to make an impact at the pitch. A pitch is a lot about trust, and with the

Billie Piper becomes the latest to try to better Bonnie Langford's performance as the Doctor's assistant.

series there were a lot of detailed, varied scripts involved that meant a huge range of effects. What the BBC needed was a commitment to communication from us so there were no surprises, especially in terms of the schedule. From there, it all organically developed."

The pitch itself was based on the scripts for the first two episodes – "I remember reading them and blocking out the number of effects. And there were a lot of effects – it did make me sweat a bit," says Will. From there, the team created some examples of the type of effects that they felt would work with the scripts, plus drafted out a series of concept artwork and created a few test shots. They also went armed with animatics of some of the scenes to show an idea of pacing, and how completed shots could work.

With shooting pencilled in for the end of July, and the cast on board, The Mill and the BBC held a series of production meetings from June 2004: "basically, we locked the meeting room door for ten hours and went through everything," says Will. The meetings reviewed production design and models, looking at which scenes would work best with physical models, and which would look better as CG. "It also gave us and the BBC a chance to lay down some ground rules for the production, to ensure the schedule was achieved."

The Mill then broke each script down and blocked out the sequences as a series of storyboards, detailing what additional design would be required, and what digital effects were needed. An effects list was then drawn up with deadlines, with the 3D people on the team jumping in and working on concepts and designs right from the off. By July, the first batch of physical models from the BBC's production department rolled up at The Mill, allowing the team to scan in the models and use them as a basis for CG work.

Some of the CG modelling work evolved during the process, says Will. One character in episode two, a creature who is seen as a stretched piece

of skin stitched to a metal frame, was originally slated to be a physical model, with minimal CG work. Yet the need to show her with translucent skin with effects such as blood flow, meant that it quickly moved to being a full CG character.

"The alien, played by Zoë Wannamaker, is one of my favourite CG characters," says Will. "We shot Zoë delivering her lines, and then recreated the CG character with all the facial expressions based on her."

The upshot is that the character looks… well, like a flattened version of Zoë. To create her, The Mill deployed Alias Maya to build and rig the model, adding texture and lighting detail. The animators then used both the shots of Zoë acting her lines, and DAT audio recordings, to build a series of blend shapes for key mouth and facial expression shapes. Even her eye colour and mascara were faithfully reproduced as textures, with the lip-syncing created by hand in Maya. With the CG model appearing full-screen as a major character, the CG had to be believable, but also represented another challenge for the series workflow.

"Creating the effects has been a challenge," admits Will, "especially compared to other TV series or sci-fi series. Other shows are typically set in the same place – such as a spaceship in the likes of *Battlestar Galactica*, or graveyards in the case of *Buffy* – so the effects are continuous from one episode to the next. A prime example is a scene through a spacestation's window that shows a very good starscape. If the series is set in space each week, those effects can be reused with minimal hassle.

"*Doctor Who*, on the other hand, is more fleeting; each episode is set in a completely different place and time – from space to the streets of London – so the challenge is to create different effects for all these different environments," he adds. "Shows like *Buffy* will reuse an effect, such as a vampire turning to dust, and the team will then put their efforts into the CG needed for the series finale, such as a CG dragon or something. Each episode

EACH EPISODE IS SET IN A COMPLETELY DIFFERENT PLACE – FROM SPACE TO LONDON

WILL COHEN

CG creatures abound. These spiders from the new series were created in Alias Maya, and are fully rigged. They were then composited with Shake and Inferno.

GLADIATOR HAD 100 EFFECTS SHOTS. WE'VE HAD NINE MONTHS DO TO TEN TIMES THAT NUMBER

WILL COHEN

of *Doctor Who* is like a series finale in terms of work. If you compare it to the likes of *Gladiator*, which The Mill worked on – well, that had 100 effects and took around six months to complete – we have had nine months to do ten times the number of effects."

Other effects are notable by their colouring and compositing prowess. The view of the earth, as seen from space, is used both in episode one and two. Here, The Mill created a high-resolution model of the globe – in one scene, it zooms in through the stratosphere smack into the heart of London – and then composited it using Apple Shake and Discreet Flame.

For one episode, which features a morphing character with liquid-plastic skin, the team mixed physical models with CG effects. In many scenes, the actor was given a plastic sheen in make-up. In others, a digital morph involving the actor's fingers – in the style of the T1000 in *Terminator 2* – took the team three weeks, not only to model and animate using Maya, but also to match the CG to the shot.

Showtime

"A lot of the scenes were shot against greenscreen," says Will, "so until the first screening, no-one had seen the completed scenes." One such scene, in episode two, features the Doctor set in a completely digital matte-painted environment. The team have been updating the scene as the schedule proceeded, adding render passes for rust and grime layers, 3D fans, beauty passes, and particle effects such as steam. All are subtle (apart from the cool, huge fans), but pull the CG from TV land into the level seen in movies.

Rendering was a huge technical challenge for The Mill. "We have a 100-machine render farm," says Will, "and we had 30 machines dedicated to the project during the day, and the full 100 during the night. The sheer amount of passes added to the farm's workload."

The need for a strong creative and technical pipeline was paramount for the project to succeed – something that Will was responsible for: "I've lost lots of sleep over the schedule," he says – then, he reaches down and touches the wooden skirting board of the screening room we're in – "and once the series starts airing, we're going to have 13 weeks with which to finish the remaining episodes. You'll be able to start the countdown then."

Two key elements were required for the project to work: a great effects

team, and smooth communication between the BBC, writer/producer Russell T Davis, and producer Julie Gardner.

"We have 20 people working full time on the project," says Will, and he's obviously impressed that he's pulled together the top talent from The Mill to work on it. "Each team member works on their own shots – pretty much to completion – rather than the traditional way of doing it which is to break down shots into tiny segments and people work on a small part of a single shot. It means people own the shot they're working on and sometimes you're working on a new shot every day. There's tons of creative scope for the team – someone won't just work on a shader – it's very collaborative."

For communication, The Mill made use of BeamTV – a broadband, hack-proof closed network that can literally squirt HD footage (*Doctor Who* is shot with Beta SP) to members.

"BeamTV was great. It meant that we could work on an effect, or composite a CG character into a live-action scene, and then the episode director could complete a day's filming in Cardiff, go home and over broadband download and view the scene," says Will. "It made for instant feedback on our work – decision making and sign-off was much quicker. With so many shots, the ability to decide on a shot, then move on, is vital."

Feedback on the project has obviously been limited: "security reasons," cites Will. It means that peers have not had a chance to evaluate the project, but Will beams when we start talking about feedback from the BBC. "When the client sees it, it's a nice experience – you can sit back and enjoy it. Julie and Russell were like kids in a sweetshop when they saw the completed episodes."

So, with the clock counting down, and the Tardis confined to the small screen, the only way for The Mill is to head into the future. With the expectation of the fans, the BBC, and the viewing public, the prime-time series will no doubt be a major water-cooler topic from the end of March. Touch wood, of course.

DIRECTORS BUILT THE WHOLE SET COMPLETE WITH RAIN MACHINES AT SHEPPERTON STUDIOS

Credits

Project: *Singin' in the Rain*
Client: *Volkswagen*
Production: *Stink*
Post Production: *The Moving Picture Company, www.moving-picture.com*
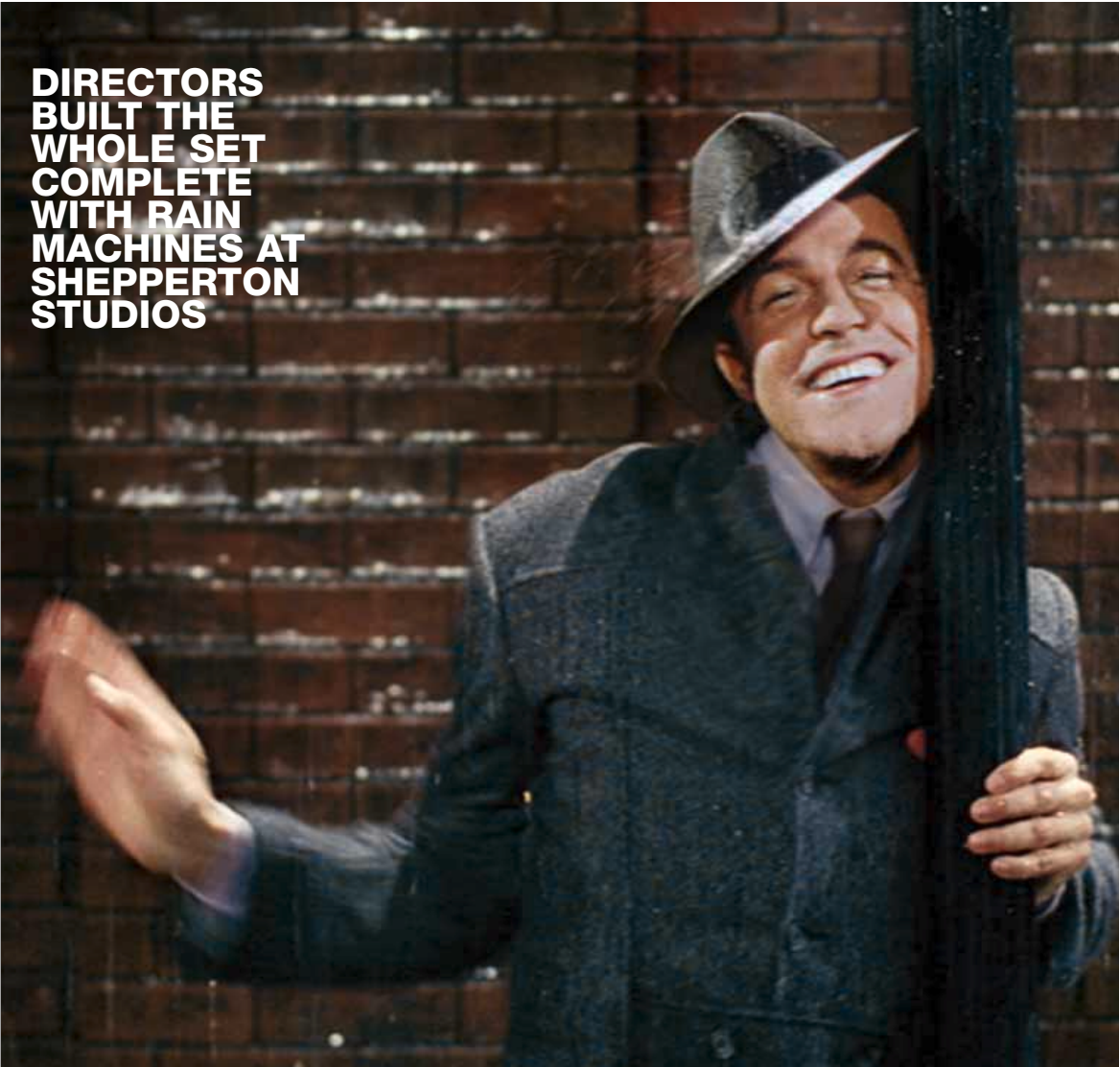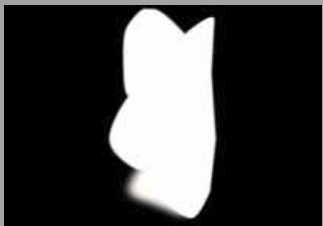*020 7434 3100*
Tools: *Inferno, Combustion*
Introduced: *27 Jan 2005*

Based on *Singin' in the Rain*, 1952
Starring Gene Kelly
Production MGM
Contact www.mgm.com

ALL SINGIN' VW

Recreating the famous *Singin' in the Rain* sequence to advertise the VW Golf GTI was the challenge for Stink. It came up smelling of roses.

Y ou've probably seen it on TV by now. The camera opens on an atmospherically lit Gene Kelly, swinging on a lampost, singing the merry tune that we all know and love from 1952's Hollywood hit smash *Singin' in the Rain*. Then, a hip-hop beat drops and Kelly is flick-flacking through the puddles, breakdancing across the cobbles and getting jiggy with a shiny new Volkswagen Golf Gti.

Left aghast at the digital wizardry employed by those clever technicians at production company Stink we rushed to find out how they'd done it. I mean, Kelly's not still alive is he?

No, the answer is of course that the directors built the whole set – complete with rain machines – at Shepperton Studios and had a real-life dancer breakdance, body pop and tip-tap-toe in tune to the jazzed up music. Cool.

"Moving Picture Company (MPC) received a script from Stink and were asked to advise on the potential challenges of adding Gene Kelly's face to the bodies of dancers," explains Sophie Trainor at MPC.

"The immediate challenge was how best to approach using Gene's head from the film. We began the post work using images from the DVD, but thankfully an HD resolution master appeared a few days later."

"A copy of the set used in the classic movie was built at Shepperton Studios, using rain machines. A camera mounted on a crane was used for the majority of the shots to match the feel of the original film." As well as the set, directing duo NE-O cut a rough animatic from the film that was used as a guide throughout production.

Digital head

Sophie is keen to point out that no digital actors were harmed in the making of this spot. "Every shot uses Gene's head from the original movie. First, we needed to remove the dancer's head - this was accomplished by repeating a similar camera move for a clean background pass on set. In Inferno, the clean pass was stabilized, tracked and mapped onto the dancer's head.

"We sourced a high-definition master of the original sequence, then edited the shots of Gene – a particularly complicated process as some shots are 15 seconds long – and in certain cases Gene's head had to be reversed, frame-cut and morphed together to match the dancer's moves. This was then cut out and stabilized from the film before being tracked back onto the dancer's body.

"As a final touch to the work completed in Inferno, we re-transferred the commercial back to film before grading the negative to become the final master. This process of re-shooting to film really helps to blend the composites and gives an organic feel to them."

Background rain and splash effects were shot in the studio, while particularly complex shirt and tie animation required hand animation to blend with the new head. "This was achieved using warping and tracking tools in Inferno and in some cases painted by hand," says Trainor. "There is no 3D in the ad," she adds. "On the 2D side, Inferno was the main compositing tool with Combustion used for roto work."

The ad first aired on 27 January and won plaudits from viewers, the industry and Kelly fans alike. The client liked it too.

By Matthew Bath and Ed Ewing

WE WERE SHOOTING IN AN ICE-CLAD ENVIRONMENT, USING FLAME-THROWERS

SIRIO QUINTAVALLE

THE LAST DRAGON

Here be dragons... Framestore CFC found experience with dinosaurs helped when it came to creating fire-breathing reptiles.

When you're looking for a VFX team to bring an essential burnish of authenticity to a crypto-zoological documentary about fire-breathing reptiles, who you gonna call? Framestore CFC were delighted that *The Last Dragon* was nominated for its outstanding visual effects by the Visual Effects Society in its third annual Awards short-list. The 100-minute programme first aired in Germany in November 2004, and again on Channel 4 on 5 March 2005.

Billed as a "thrilling investigation" into these legendary beasts, *The Last Dragon* uses a docu-drama approach to bring plausibility to its subject. The programme's premise is that dragons existed from prehistoric times, co-existing with both the dinosaurs and then later with mankind, becoming extinct only relatively recently, thanks to man's ruthless hunting.

A 35-strong team from Framestore CFC delivered 167 shots – some 35 minutes of CG – in 25 weeks for *The Last Dragon*, making it one of the fastest turnarounds the company has ever delivered. "We were helped enormously by the experience we've gained with the *Walking With Dinosaurs* series and specials over the last few years," says CGI Supervisor Alec Knox, "From the dragons' walk/run/flight cycles, to tricks that give the impression that there's a physical camera move where it's actually done electronically, there were a hundred little techniques we'd developed on the dinosaur projects to get great results at speed."

The Last Dragon consists of two threads. The first is the dramatized story of Dr Tanner (Paul Hilton), a rogue palaeontologist whose belief in the existence of dragons is triumphantly vindicated when he is air-lifted in to perform an autopsy upon some mysterious animal and human remains which have been discovered in a remote Romanian ice-cave.

The second thread takes the form of a series of 'documentary' flashbacks, interwoven with Dr Tanner's adventure. These take us back to several illustrative moments during the prehistory and history of the dragon, showing the creature evolving into several different iterations – Prehistoric, Marine, Forest and Mountain. These scenes, which feature hunting, fighting, mating, and nesting dragons, are authoritatively narrated by Ian Holm.

Shooting took place in three separate week-long segments between March and May 2004. These were in La Palma, in the Canary Islands, for the prehistoric footage, Chamonix, in the French Alps, for the mountain sequences, and at Anduzes, near Nimes, where a small bamboo forest provided the necessary Chinese forest location.

Flame-throwers

Senior Compositing Artist Sirio Quintavalle supervised the shoot for Framestore CFC. "The ice-cave sequences were interesting," he recalls. "We were shooting in these extraordinary ice-clad environments, using flame throwers – a unique experience."

The crew also suffered the headaches and sickness that attend working at high altitudes, and Quintavalle also found himself donning a wet suit to create the necessary water interactions during the Marine dragon shoot.

The Last Dragon bolsters its narrative with some ingenious "scientific" explanations for various aspects of dragon physiology, including their ability to fly and to breath fire. Fire performs multiple functions for the dragons: as a weapon, a signal, a triumphant post-coital roar, a barbecuing aid, and sometimes to warm and form their eggs, which are kept in dragon-built kilns.

"We shot flames on location where appropriate," says Quintavalle, "And supplemented them with a flame-thrower effects shoot for the flying sequences and the kiln shots where we needed the flames to have a more magical quality.

"We built a model of the kiln in the studio, matched up the camera angles and flame direction to Lead Animator Neil Glasbey's rough animation, and shot at 75fps. We also added magnesium powder for a bit of extra sparkle." The task of compositing the shots was later carried out by Quintavalle and others, working – appropriately enough – in Flame and Inferno.

By Matthew Bath and Ed Ewing

The artists at Framestore CFC were able to use their experience of working on the BBC's *Walking With Dinosaurs* when it came to creating *The Last Dragon*. The project required a full 35 minutes of CG in 25 weeks – one of the fastest turnarounds the company has ever had to work towards.

HARVEY NICHOLS

TribalDBB

Tribal DDB London is ten this year. That's quite an age for a new-media ad agency. We asked them to tell us all their secrets and they said yes.

By Ed Ewing

Tribal DDB
12 Bishops Bridge Road
London
W2 6AA
Tel +44 (0)20 7258 4500
www.tribalddb.co.uk

Tribal DDB in London is staffed by "rock stars, socialites, sex machines and knife throwers," according to their design director Victoria Buchanan.

"We're neither old-school advertising nor trendy new-media wankers – just people," adds creative director Ben Clapp.

Immediately suspicious of any 32-year-old creative director of a new-media ad agency claiming not to be a new-media wanker (NMW), Digit set out to

see if in fact the reverse was true.

But no, it seems that despite our best investigative journalism efforts we cannot conclusively prove the NMW tag. Instead, Clapp claims the label of "survivor": "A few veteran dot-com crash survivors seem to be celebrating their ten-year anniversaries at the moment and Tribal is happy and relieved to be one of them," he says. "Tribal started in 1995 as BMP interaction but joined the global Tribal DDB network soon after. It's grown, and shrunk, and grown again since then. The biggest shake up being a merger in 2001."

Tribal DDB Worldwide has 20 offices worldwide and according to its Web site is a "top ten international digital marketing agency with a strong reputation for strategic thinking and excellent creative work." They deliver the full spectrum of digital services from online marketing, media buying and planning and strategic direction through to Web design and programming.

Skin off the puff and you

find a very lean, hungry, ambitious, and successful global new-media agency. Tribal DDB London's clients include *The Guardian*, Volkswagen, Harvey Nicols, British Gas, Lunn Poly, Philips, BT Yahoo!, Dairy Council, Camelot, and Axa.

Life in the UK

Clapp was appointed creative director in July last year. It's an exciting time for any new-media agency he says, not least because, "money is being spent again and a lot of it on digital." He adds: "The UK creative industry is really healthy at the moment and as far as traditional digital formats go, great work is already being produced. The problem is that not enough truly visionary work is coming out of digital and there are huge opportunities here."

Buchanan agrees: "The work we see as bland, is stuff that displays myopic thinking about the potential of digital. Like Web sites built for the sake of having a Web site. That and old clichés such as 'Skip intro' buttons,
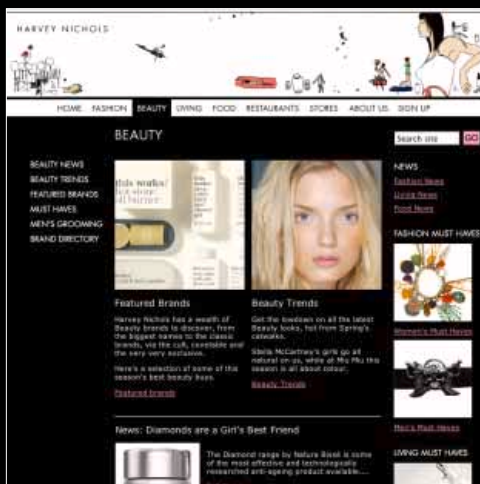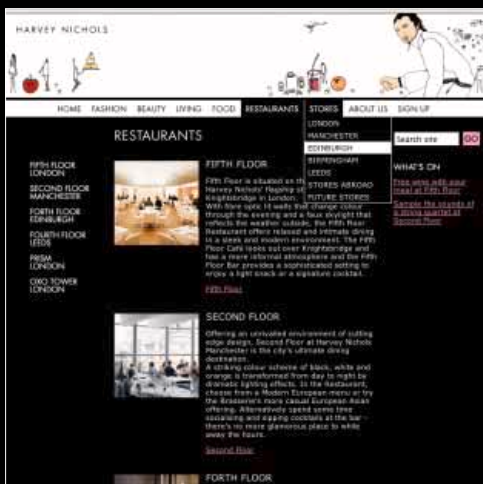
Behind the wheel

Tribal's work for VW allows users to interactively find out about the car in microscopic detail. Users can also configure the car online. The company's work for Marmite was lighter of heart, but equally creative.

overuse of 'easing' in Flash, reading debates about whether intrusive formats work or not. We have to all consciously move on from these things."

In fact Clapp isn't all that inspired by what he sees going on in the digital world in the UK. "The uncomfortable truth is that the work that's really exciting us is coming out of the US at the moment. Crispin, Porter and Bogusky's work for BK and Mini – the way their whole campaigns are built around a single thought, often expressed through a digital hub, is changing advertising. Even in logistical terms, it's incredible. We worship their obese US asses."

Perhaps the most exciting thing about the UK at the moment is: "seeing the influence of the Internet permeate culture as a whole," he says.

Internet virgins
Tribal's clients are sophisticated users of the Web. They are not internet virgins by any means, says Buchanan: "Tribal have long-term client relationships. We are not a novelty to them and neither is the Internet.

"Experienced and discerning advertisers such as Volkswagen or *The Guardian* expect much more from agencies, and we work closely together all the

THE SAD TRUTH IS THAT THE WORK THAT'S REALLY EXCITING US IS COMING OUT THE UNITED STATES. WE WORSHIP THEIR OBESE US ASSES

BEN CLAPP

way through projects.

"We have a new generation at Tribal which has come through the ranks," says Clapp.

"A new MD, a new creative director and a new head of planning. We now have a far more honest, intelligent set-up and spend more time planning creatively and technically. We have evolved into a full service agency, growing off into specialist areas in advertising such as Web sites, ECRM, video, 3D, and interactive TV."

Award winning
Being part of Tribal DDB Worldwide has helped. The DDB network ▷

VW Phaeton

"Handling Volkswagen's first entry into the luxury car sector, our research showed the target audience had a desire to discover products for themselves," says Tribal's design director Victoria Buchanan.

"The site illustrated the depth of engineering in the design by allowing the audience to freely explore every aspect of the Phaeton – even to microscopic levels.

"In order to explore the site in such a free way the conventional rules of designing a site (in those days) were deliberately turned on their heads. The approach created a truly unique Web site where you can freely move around stars containing pockets of information, pictures, animation or just sexy stuff. Follow a path and you click through to micro levels of details.

"The Phaeton was a big technical step for us as this whole site is dynamic, all content is generated on the fly as opposed to a set number of screens pulled from a database. The approach created a truly unique Web site and was a big step for us.

"Working without an above-the-line campaign to support it Tribal picked up four major awards, including D&AD, for its site promoting Phaeton. We also took over the whole of Selfridges' window with an interactive display."

The campaign won a D&AD Silver Award as well as awards from Clio, OneShow and the Account Planning Group (the first ever to be awarded to a digital agency). As such it was considered a real milestone for the agency, and they worked hard together to achieve the result.
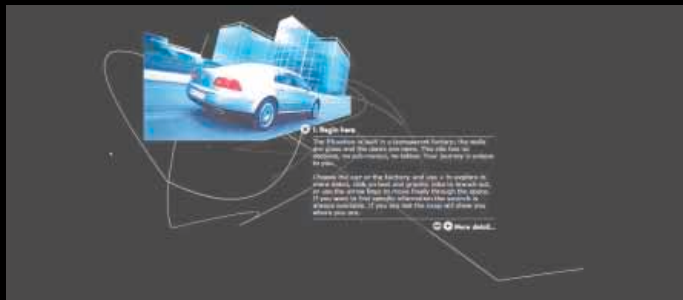
ThomsonFly

"ThomsonFly was an interesting project in that it was pushed into new areas by the client themselves," says creative director Ben Clapp.

"We were in the process of creating digital advertising work for the launch of TUI's new airline ThomsonFly. The ads used a very smooth, clean, but rich animation style of white lines extending from the type. The intention being to use the smooth animations to brand the airline as simple and inexpensive rather than merely 'budget.' When we presented the work, the client was so pleased with it that they wanted us to run it as TV, which we did."

"We created the ads in Flash and reformatted them, making them longer and more detailed. A soundtrack was added (which is now used for all Thomson holiday TV work) and a voiceover, but essentially they were the same ads appearing on the TV and cinema as in the embedded online work.

"It really made us realize how high our production values had risen that we could produce TV ads in-house. As with all our project it forced us to recreate, redesign and develop technical and creative answers for clients and pushed our technical and artistic creativity in the studio and helped us to grow and develop our disciplines.

"Obviously, the attention from the award-winning projects has also helped attract attention and brought in people who want to work with us, while the technical work has developed relations with third party media owners and opened new arenas for us to advertise in," adds Clapp.

Being a part of the acheivement and structure of talents of the global Tribal DDB network sets us apart from most other digital shops.

was named the Most Awarded Agency Network in the world for 2004 by the Gunn Report. It also got Adweek's Global Agency Network of the Year for the second year in a row. "Being a part of that achievement and structure of talents sets us apart from most other digital shops," says Clapp.

Tribal won a lot of awards in 2004 including D&AD, Clio, The One Show, IMAA, Epica, and IAB – and it is proud of its record. "But to be honest," says Buchanan, "we're genuinely not driven by

award-hunting, though we recognize that only the best work wins any of the decent ones. We never make or adapt work to win awards, and the recognized awards such as D&AD or Cannes are the only ones we pay to enter. Many are just money-making schemes, you may as well buy a trophy."

"We're equal first in the number of IAB 'campaigns of the month' we've clocked up, and we're pleased with that local standing as it reflects the UK situation," adds Clapp.

One of the awards the company is most proud of is a D&AD Silver for its work on the Sony Mavica. Clapp explains: "The Sony Mavica was one of the first affordable and accessible digital cameras in the marketplace. Our approach was to donate a number of cameras to young artists and filmmakers and ask them to shoot short films for use in our advertising campaign.

"Films were shot over the course of a month and were among the first films streamed into online advertising formats. The ad work

won D&AD silver – the first digital advertising ever to win such an award. That helped put us on the creative map and also demonstrated the benefits of having creative, media planning and buying in one place."

The cutting edge
Looking at the new VW GTI campaign it's clear this is the cutting edge. "The site is a truly interactive video of the new GTI," says Buchanan. "It's a video experience you control.

TEAM LinG – Live, Informative, Non–cost and Genuine!

Pretty soon people will access all their home entertainment from one digital device. This throws up a challenge for us. We need to understand how to exploit this creatively.

We have worked within 3D and broadband limitations to create an immersive experience of the GTI as it drives. Users can choose direction and focus in a collection of short looping videos embedded in flash. The site also allowed you to configure a GTI online, which proved hugely successful with 21,400 configurations before the car launched. An interactive TV addition helped enhance the famous *Singing in the Rain* TV ad and brought elements of the Web site and TV together in an iTV experience." Phew.

"We make a point of getting a diverse bunch of people involved at the early stages of a brief," says Clapp. "We run organized brainstorms and planning sessions which allow everyone – from media planners to creatives to techies – to understand the brief and to pitch in with ideas."

Tools for the job
From there it's down to the knife throwers, or creatives, who use Photoshop, Illustrator, FreeHand

Tribal DDB has an impressive list of clients, including Philips, and The Guardian (top).

and Flash for design work, Flash MX 2004, php, and MySQL for Web development, and After Effects and Avid for video.

But there's no laurel-resting at Tribal. "Things are changing again and rapidly," says Buchanan. "Pretty soon people will access all their home entertainment from one digital device. This throws up a challenge for us. We need to understand how we can exploit this creatively, to produce work that's innovative and groundbreaking."

Create. Store. Backup. Go.
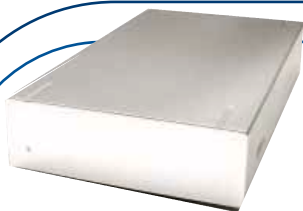
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DAVID DROGA'S AD AGE

"Selling is everything, from chatting up a girl in a bar to what you wear in the street." But selling is changing, says David Droga, one of the most biggest creative names in advertising.

D avid Droga may be one of the biggest names in advertising, but as a consumer, he's as cynical as the rest of us. Worldwide creative director of the huge agency Publicis, Droga doesn't like to be sold to, and he says it's a trait he shares with the British public. "I think the British general public is more aware of good design and good advertising," he says. "The British don't just sit back and accept rubbish."

Droga is an authority on advertising markets around the world. He's led creative departments all over the globe, starting in his native Australia. In his early 20s, he joined OMON – a small, Sydney-based start-up – and quickly turned it into Australia's hottest agency. At 27, he took the creative director role at Saatchi & Saatchi Singapore. Success there earned him the opportunity to lead Saatchi's London office.

In three years, Saatchi had returned to the top of the advertising tree – winning the Cannes Agency of the Year in 2003. Now, in his worldwide creative director role at Publicis, his job is to apply his golden touch to one of the largest agencies in the world.

Droga says his impulse to conquer the world comes from his Australian roots. "Everybody in Australia seems to don a backpack and travel the world when they're about 18. I did it business-wise," he says. "In Australia, unless you're a sportsperson, if you want to create any ripples around the world you really have to do it from someone else's backyard."

Droga's ambition works alongside some firm principles. The standards he has set himself throughout his career show the extent of his drive. "Advertising is an industry in which lots of pressure is on you," he says. "I believe I've had high standards, and I've tried to live up to those, and be my own barometer." He also has a fierce work ethic: "I could never guarantee that I was more talented than anyone else, but I could guarantee that I would work harder than anyone else," he says.

His role at Publicis demands this attitude. "Because I'm not accountable for one particular thing, I'm sort of dragged wherever I'm needed," he says.

And while he never donned his backpack as a teenager, he's spends more time travelling than your average gap-year Etonian. "It depends which country calls me first," he says. "It's one of those impossible

jobs – if I spend three days in San Francisco on one project then I'm annoying people in France because I'm not working on their project. Essentially my main job is to ensure we have the right creative leaders in our offices. And I spend time on our most influential accounts."

The advertising industry has transformed since Droga started out as an 18-year-old at OMON. "The mystery of our industry has vanished," he says. "Clients used to be seduced by the mystery of what happened in the back room. Clients realize now that they can do a lot of that stuff in-house. Big agencies aren't intimidating forces any more."

It's not just the creative side that has changed. The way consumers experience advertising has also shifted. The Internet and digital television services have lessened the impact of traditional advertising. "For years, the consumer only had a few stations to watch and a few newspapers to read. So clients could rely on bombarding them," says Droga. "The consumer is armed now, and the industry is led by that. There's much more consideration to understand the consumer, as opposed to just taking the consumer for granted."

Another shift in advertising is the structure of the industry. Droga says that the prestige of the industry among the top young creative people has fallen. "It used to be that the best young creative minds would come into our industry," he says. "Now, it's not necessarily their first choice."

Smaller design and advertising firms are also presenting a challenge to the established multinational agencies, according to Droga. "A lot of these small agencies are now not only competing, but outdoing the big ones," he says.

Despite the challenges to the industry, Droga's passion for creativity remains. "I like the idea of being revitalized by a blank piece of paper," he says. "I think there's something scary and intimidating and inspiring about that. It's what any creative person loves."

And despite his lofty job title and wide experience, he still believes creativity works best when the ego is left out of the process. "I've never walked into a country and assumed I know everything. One of my principles is to always take a step back and try to absorb as much as I can before I have on opinion."

The cynicism of the British makes London his favourite place he's worked so far. "London, pound for pound, is the strongest advertising market in the world ... we have to try to make things more beautiful, or cleverer, or wittier, or more subtle."

His respect for London's advertising industry comes from his shared attitudes with the British consumer. "I love the British cynicism and wit and mocking. Even when I come back to London now, within two minutes I'm being mocked. That makes me laugh."

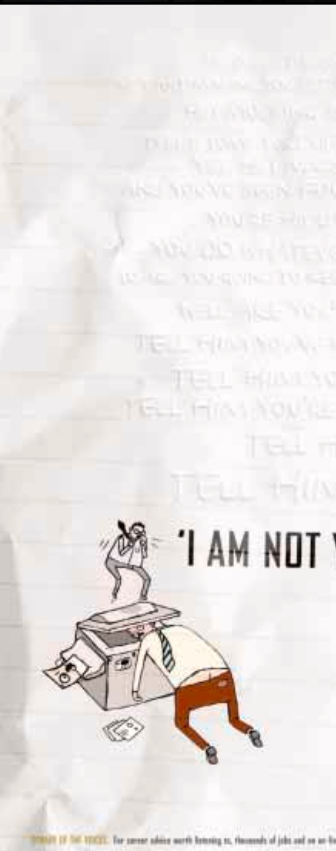who David Droga company Publicis url www.publicis-usa.com words Andy Penfold

Get closer to the music. go create SONY

Get closer to the music. go create SONY

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email: showcase@digitmag.co.uk

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1-6 NICOLAS VAN LEEKWIJCK

www.8media.cruz.be, eight@pandora.be

Nicolas Van Leekwijck is a 22-year-old graphic design student living in Antwerp, Belgium. His Eightmedia project started out as a small personal creative outlet. "By the end of 2005," he says, "it'll be time to take Eightmedia to the next level – I want to start a small graphic design studio based here in Belgium." He says he tries to design attractive, imaginative, yet functional creations.
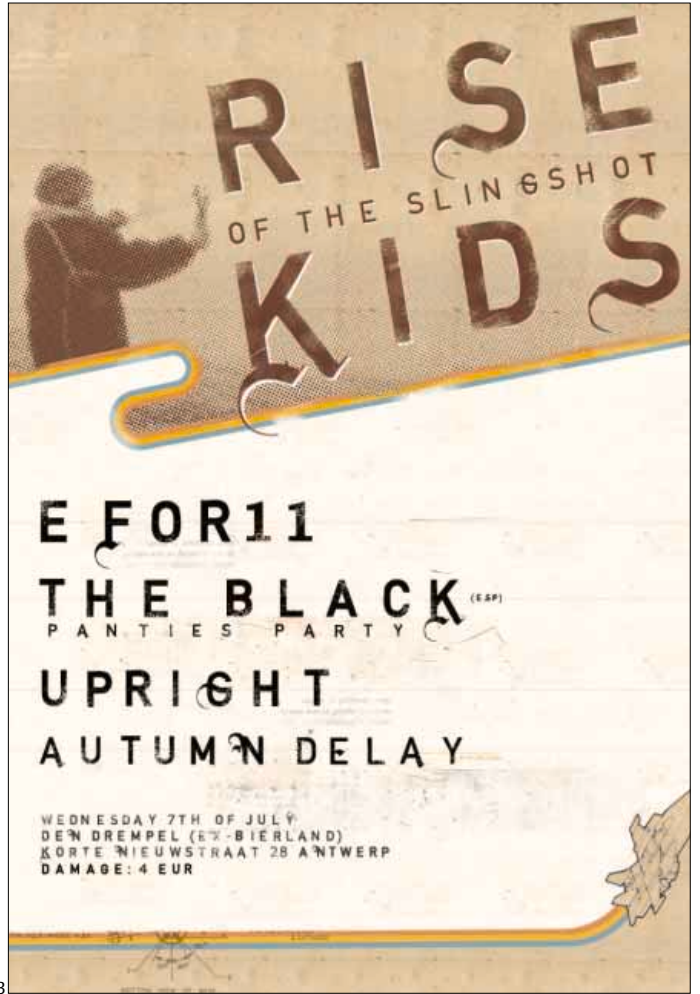
FALLACY OF PERSONAL ATTACK
The fallacy of personal attack is used to divert attention from the issue at hand and, to attack, focus it on one's opponent or on those who are the victims of the problem.

FALLACY OF APPEAL TO AUTHORITY 2054 ••
The fallacy of appeal to authority refers to an argument that makes an illegitimate appeal to an authority that may be ambiguous, irrelevant to the problem, or biased.
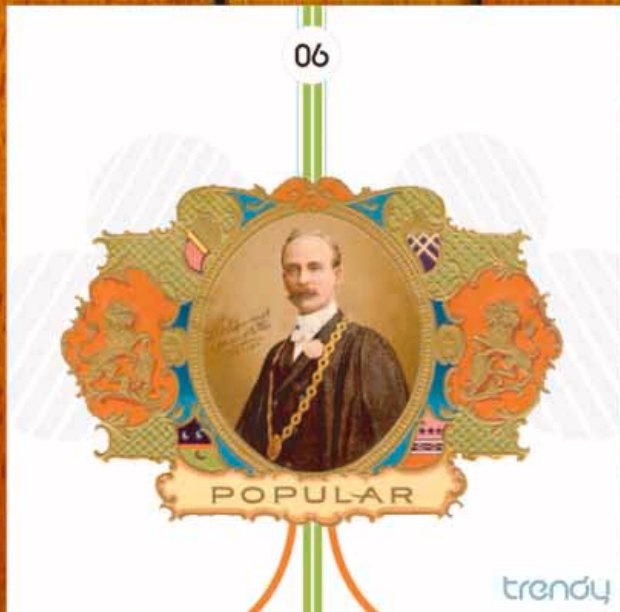
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1-2 RICH MCLEAN
r124@blueyonder.co.uk

Rich McLean says he doesn't think of himself as an illustrator. "I was a musician until a couple of years ago, and began designing posters for American concert promoters," he says. "I just ended up doing the illustrations myself. They were originally hand-drawn and painted images." Since then, he has become a freelance editorial designer, and uses Illustrator and Photoshop in all his design work.

"My aim is to build a portfolio of work for editorial and advertising clients," he says.

3-5 KEV SPECK
**www.kevspeck.com,
kev@kevspeck.com**

Kev Speck graduated ten months ago, and is now a full-time freelance illustrator. He says he's doing the job he's dreamed of for six years, and believes passion, ambition, and enthusiasm can take you a long way.

"My style fuses collaged photocopies and lazy tracings with layered textures to create colourful, beautiful, and heavily detailed illustrations," he says.

His list of clients includes *WGSN*, the *NME*, the *FTM* and *Atomica* magazine.

6-10 SPENCER WILSON

www.peepshow.org.uk, spenny17@aol.com

Spencer Wilson graduated from Brighton University in 1998. Then, along with seven creative friends, he co-formed an illustration collective called Peepshow. "It was a way to share experiences, exhibit, and have some fun," he says. "Some lucky breaks and a lot of leg-work since has enabled me to illustrate for a multitude of magazines and advertising agents, as well finding time to continue my involvement with collective projects."

Based in Birkhamsted, Wilson is currently plotting the next Peepshow project, as well as developing his own style, and continuing to freelance for "anyone with a brief to offer".

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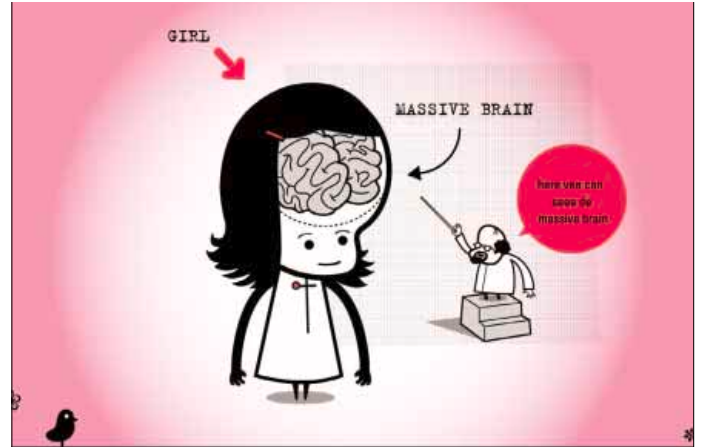
1-5 NIKO STUMPO
www.abnormalbehaviorchild.com, me@abnormalbehaviorchild.com

Niko Stumpo was born in Drammen, Norway. He spent his first years in Norway before moving to Italy at the age of six. Here, he started skateboarding. His first career was one as a professional skater, and he toured Europe, until a serious injury cut his skating career short. He was forced to change his focus, which led him to rediscover his passion for art.

He had finished art in high school, and later enrolled in a fine art academy, but never finished the course. Instead of continuing school, he decided to rely on his own creativity, and became fascinated with Web design. Since then, he has worked as a creative director at Quam, a major design agency in Milan. He then started out on his own. His clients have included MTV Italy, MTV France, EA Sports, Sony PS2, Nike, Condé Nast, Capcom, Powerade, Heineken, and Goretex.

As well as his commercial work, Stumpo still spends time on personal projects. He showcases his personal work on his experimental Web site *abnormalbehaviorchild.com*.

His artwork has been exhibited at the Biennial in Tirana and Valencia, the World Wide Web Exhibition in Sao Paulo, Brazil, the George Pompidou in Paris, the Riviera Gallery and Witney Museum in New York, and the Palazzo Fortuny in Venice.

6-9 MIIKA SAKSI
www.non-stops.com, nonstop@non-stops.com, *00358 50 545 7774*

Miika Saksi is a 24-year-old self-taught graphic artist. He is a freelance designer, stylist and illustrator based in Helsinki, Finland. He says he started in graphics in the summer of 1995, initially just for fun. By 1997, he had started working as a designer professionally.

He is also a member of Njoi CoLab *(www.njoicolab.com)*, a collaborative collective that consists of eight Helsinki-based graphic designers.

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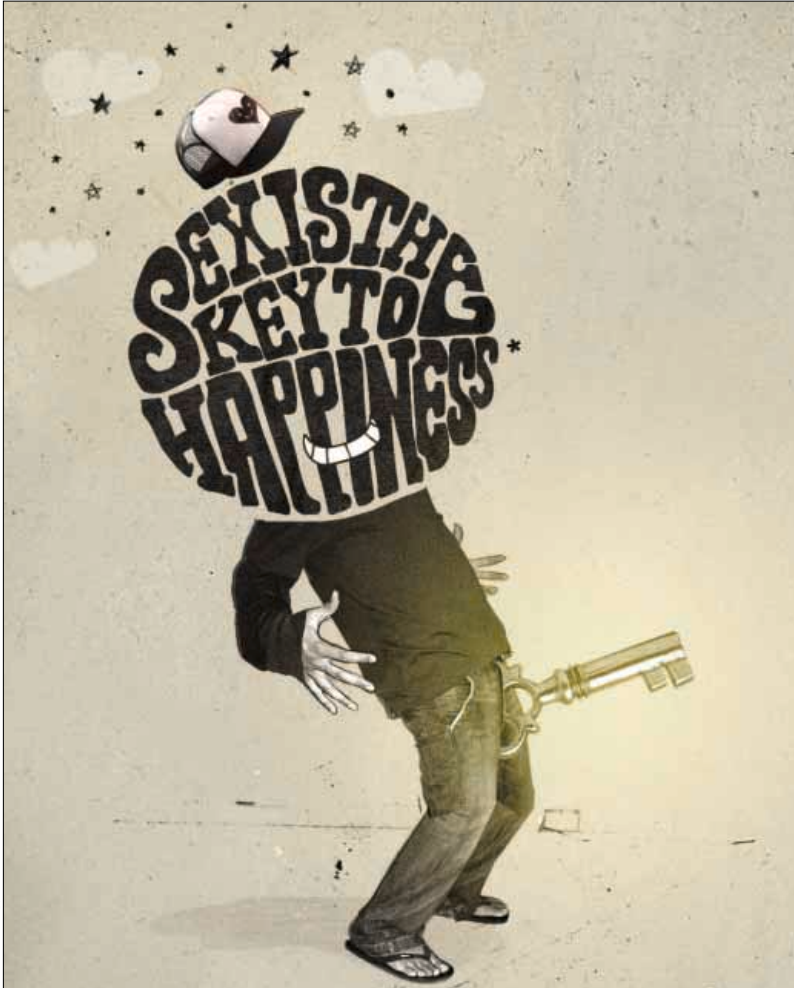
1-6 MAURO GATTI

www.thebrainbox.com,
www.mutado.com,
mauro@mutado.com

Mauro Gatti is the art director of Mutado Studio (*www.mutado.com*), a new agency founded at the beginning of 2004. He has developed his career mainly through freelance work for clients such as Yamaha, Peugeot, MTV, and La Biennale di Venezia.

Gatti is equally passionate about print design, Web design, illustration, and motion design. His personal playground is the Brainbox site (*www.thebrainbox.com*) and he is soon to launch Fake Idol (*www.fakeidol.com*), which will showcase his illustrations.

5

PANTONE®

WIN!
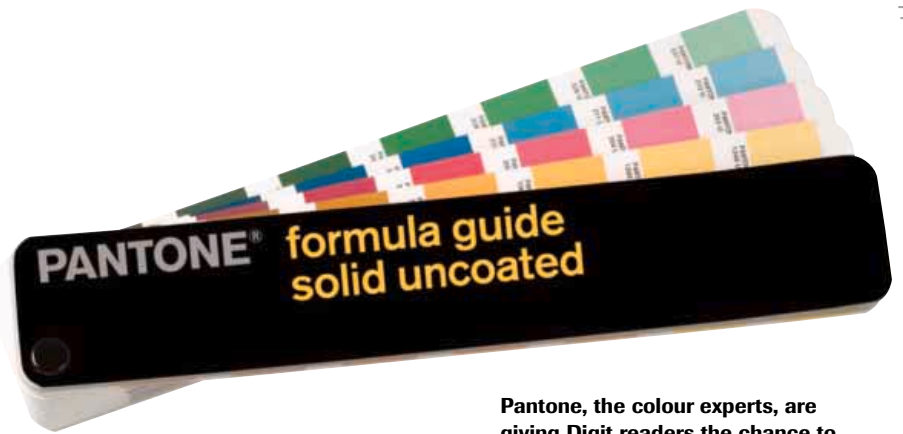
Full set of the New Pantone Formula Guides

Pantone, the colour experts, are giving Digit readers the chance to win one of five Ultimate Survival Kits (worth £197), which include a set of the new, larger fan guides.

Pantone recently launched a new range of fan guides boasting colour swatches 25 per cent larger than the previous editions, for easier colour management. Created on a one-of-a-kind, state-of-the-art printing press, the new guides help users accurately identify, replicate and communicate colour.

The Ultimate Survival Kit is made up of five essential colour-referencing guides designed to effectively manage the industry-accepted Pantone Colour Systems. Three of the guides illustrate solid Pantone Matching System colours (1,114 in each) on coated, uncoated, and matte stocks. Also included in the kit are a process colour guide, and a solid-to-process guide showing how solid Pantone Colours will look when printed in four-colour CMYK process printing.

HOW TO ENTER
For your chance to win an Ultimate Survival Kit worth £197, answer the question below.

How much larger are the colour swatches in the new Pantone formula guides?

**a) 5 per cent larger b) 10 per cent larger
c) 25 per cent larger**

Pantone and other Pantone, Inc. trademarks are the property of Pantone, Inc.

to enter go to www.digitmag.co.uk/win

THE SMALL PRINT
The competition is open to anyone over the age of 18. One entry per household only. No entries accepted from anyone connected with either company. Responsibility will not be accepted for any entries lost or delayed. No cash alternative. The winner will be the first correct entry selected after the closing date of April 30, 2005 and will be notified shortly afterwards. The winner's name will be published in the following issue of Digit. IDG cannot be held responsible in the event that a company that is providing a prize is unable to honour its obligation, for whatever reason.

Def Wars

BY ED EWING

Format war has been raging across Earth for years. While peace reigns in places, interplanetary council members Sony and the EBU are still fighting. What can be done to bring peace to the world of HDTV?

A lot's written about HDTV, high definition television, but the *New York Times* tech correspondent got it in a nutshell: "On each programme," he wrote upon receiving his HDTV set, "we counted the pores on the host's nose."

An HDTV set has many more lines than a standard set, and the more lines you have, the better the picture. We don't have it in the UK yet, but if you've been to the States, South Korea, Japan, Australia, Nigeria, or Brazil in the past few years you've probably seen it for yourself. Going from normal British telly to high definition TV is like going from black-&-white to colour.

Your bog-standard TV set in the UK has 625 lines, of which you can only see 575. This is the PAL standard. A TV in the States has one hundred less at 525 and is known as the NTSC standard. High definition TV sets have up to 1,080 lines. This gives a much more detailed picture.

After years of format wars across the globe, and in particular in the US, the HDTV world is settling down – a bit. The US has adopted a Common Image Format based on using the maximum number of lines, 1,080. But there is more to it than that. ▷

How to speak HDTV

1080i

The Common Image Format adopted in North America and much of the industry. Has 1080 lines and displays interlaced, which gives it a TV look. Displays at 50 or 60 fields per second. The major flat panel manufacturers have said they will make the next-gen displays to this format.

1080p

Because you don't get the inter-line twitter associated with interlaced displays, 1080p has a film look. Downsampling 1080p to any other format creates a better image than if it was originally shot in that format. In the future, the EBU wants Europe to broadcast 1080p, but bandwidth, compression, and cost rules it out for now, hence its recommendation of 720p.

720p

With 720 lines this is a less common standard of HDTV for acquisition and transmission. Some sports broadcasters prefer it because the 50 or 60 progressive fields per second gives better motion portrayal, especially in slow motion.

Ratio

HDTV has a display aspect ratio of 16:9. Standard TVs are 4:3. This means HDTV displays are much wider.

HD Ready

You'll find an HD Ready label on lots of TVs from now on. To get one, a display device has to have a minimum of 720 lines in wide aspect ratio and accept 720p 50/60 and 1080i 50/60 input.

Fake HDTV

High definition can mean any system where the number of lines is increased beyond the basic video standard. What's called HDTV is sometimes merely a progressive scan of standard TV. Confusingly, this is sometimes called Enhance Definition TV, EDTV. This is standard TV displayed on a progressively scanned TV. The aspect ratio is 4:3.

Screen envy

Cathode ray tube is dead. Or so they'd love you to believe. Europe loves flat panels on the wall, the States is going for enormous slimline CRTs. This new tube technology means once massive CRT widescreen HD TVs are now smaller than old-style CRTs and half the cost of a flat panel display.

Guys and massive TVs

Big TVs are a guy thing. CNET in the US did a Christmas survey in 2004 where Big Screen TV came out top of men's wish list – above world peace and good health.

I want HDTV

Media mogul Rupert Murdoch is said to have demonstrated HDTV to his executives to "audible gasps," of amazement. "It's going to be dynamite," he said. At the moment you need an HD-compatible TV and a satellite receiver to get Euro 1080, the only European HD broadcaster. They broadcast one lifestyle channel and plan another this summer. Sky is planning to introduce HDTV broadcasting in 2006, most likely in time for the footy World Cup. Details have not been released but it is expected to be on a premium subscription basis. The BBC is planning to go fully HD-compliant by 2010.

WE DON'T NEED THIS DEBATE. MOVIES, NEWS, KIDS, AND SPORT ALL WORK IN INTERLACED FORM

JOHN IVE, SONY

Clear as mud

Three image formats currently dominate HDTV production: 1,920-x-1,080 in 50 or 60i varieties; 1,920-x-1,080 in 24, 25, or 30p; and 1,280-x-720 in 60p. Or, to use their shorthand, 1080i, 1080p and 720p.

The first two numbers refer to the resolution. So 1080i is 1,920 pixels wide by 1,080 lines deep. The second set of numbers is the number of fields per second that are displayed on the screen. Because electricity in the States runs at 60Hz frequency, HDTV in the US displays at either 60 or 30 fields a second, in Europe (50Hz) it's

*below. **The different sizes of TV: PAL and NTSC is standard definition UK and US television; 720HD and 1080HD is high definition; 2K is film.***

50 or 25 fields a second. 24 is based on film.

The letter at the end is either "i" for interlaced, or "p" for progressive. Both are different ways of getting a picture onto a screen. Interlacing is where the display writes alternate lines – lines one, three, five, and so on, then lines two, four, six and so on – to build up the whole picture on screen. Half the picture is drawn with every refresh, resulting in a complete frame being drawn 25 times per second. The technology was developed because early TV tubes couldn't draw the whole picture before the top began to fade. This is how standard definition works. It's also why TVs "flicker".

Progressive is where the entire image is written in line order and then displayed on the screen, so lines one, two, three, four, up to 1,080 are written and then the image is displayed. This gives a smoother image without flicker, and it looks like film. This is how your computer monitor displays.

Sony kicks off

So far so clear. The confusion – and wading through the Web sites, news groups and industry press releases, it is clear that the HDTV-world is very confused – comes when you start to look at how these three different

standards are being applied.

1080i has been adopted as the common image format by the States, and to a large degree by Australia, North America, and Asia. The big technology developers and manufacturers like Sony have also been happy to adopt this standard. But, just to make things more complicated, Europe has not.

Instead, at a European Broadcasting Union (EBU) conference towards the end of last year they came down firmly in favour of 720p. This nearly gave Sony Europe's director of strategic planning, John Ive, a heart attack: "We don't need this debate," he said. "Movies, entertainment, kids, current affairs, docs, and even sport work wonderfully well in interlaced form." He would say that of course – his company is the biggest supplier of 1080i production and broadcast gear in the world.

In turn, that made Phil Laven, director of EBU's technical department, commit a sharp U-turn. The final decision was turned into a "work in progress" and the issue was left fudged, again.

Excuse me?

"Why is Europe promoting 720 progressive while the rest of the world is getting on with 1080 interlaced?" you might ask. Well, to clarify their position after their bun-fight with Sony, EBU released a statement in January this year. It said that most consumers in Europe are moving towards widescreen, non-CRT, flat panel TVs. All these flat panel displays and HDTV projectors will be progressively scanned.

Because the displays are progressively scanned, said EBU, broadcasters should broadcast in progressive. This is because when you convert from interlaced to progressive you lose quality. This is done in the consumer's equipment and it is the quality of these filters which determine the quality of the image: much better to broadcast in progressive and display in progressive.

Another good reason – and perhaps the main one – for recommending 720p over 1080i is bandwidth. With current compression technologies it is less bandwidth-heavy to broadcast 720p.

So, despite Sony's heart attack,

2048		
2K Film		1536
1920		
1080 HD		1080
1280		
720 HD		720
720		
625 SD (PAL)		625
525 SD (NTSC)		525
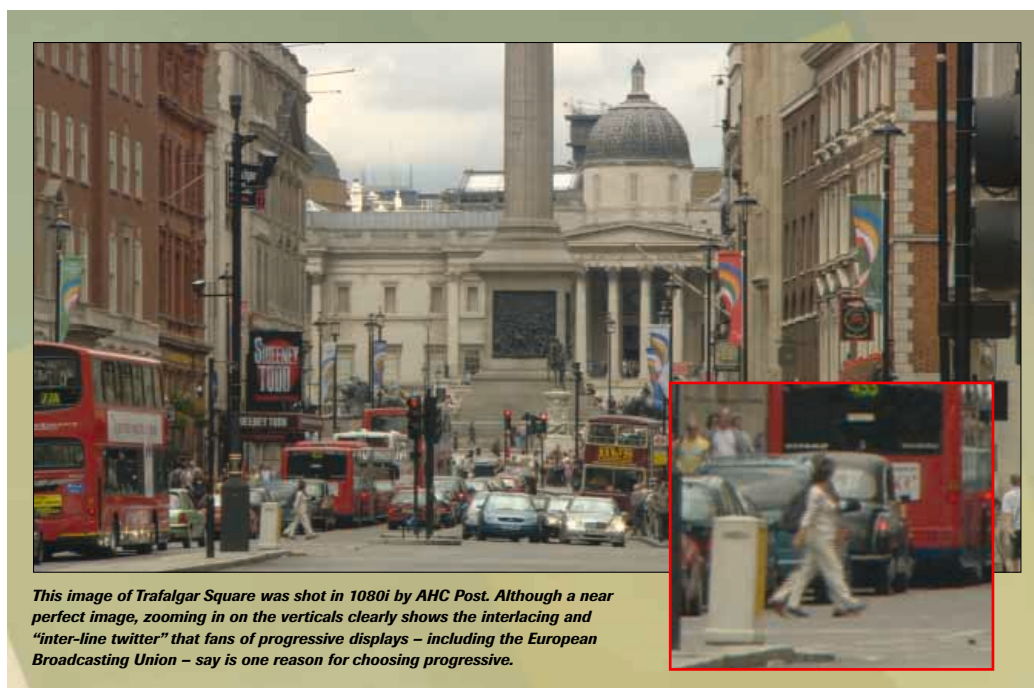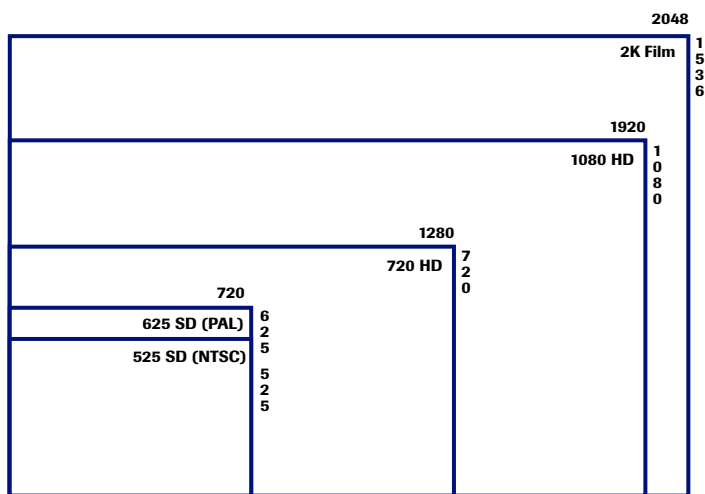
This image of Trafalgar Square was shot in 1080i by AHC Post. Although a near perfect image, zooming in on the verticals clearly shows the interlacing and "inter-line twitter" that fans of progressive displays – including the European Broadcasting Union – say is one reason for choosing progressive.

EBU went on to recommend that the preferred standard for HDTV emission in Europe is 720p/50. However, it also mentioned the need for "flexibility" and the need to be aware of and support "the multiplicity of HDTV formats".

Hang on a minute…

Let's think about this for a minute. The States and the rest of the world are broadcasting in 1080i. Some of the US sports channels broadcast in 720p/60 because they get better motion portrayal. The nascent HDTV industry in Europe is also working in 1080i: The BBC test broadcasts are in 1080i; Sky is promising to broadcast in 1080i and 720p in time for the 2006 World Cup in Germany; and a dedicated HDTV satellite channel called, wait for it, Euro 1080 launched in early 2004.

So why is EBU adamant that progressive is better? It would argue that it's looking towards the longer term. In the future, the argument goes, compression technologies will be such that 1080p (the best quality of the three formats) will be easily piped into homes.

It also argues that the difference in quality to the viewer is negligible: 720 and 1080 lines deliver the same subjective vertical resolution. It argues that "inter line twitter" of interlaced images reduces the image quality.

The EBU agrees that 1080i gives a wider image, but argues that cameras and displays today only offer 1,440 pixels and use funky technology to stretch it out, not the 1920 promised. Sony of course points out that the screens of tomorrow will be the full 1,920 pixels wide.

EBU argues that progressive gives much improved motion portrayal, especially for slow motion – you don't get the blur of interlaced images. And finally it argues that it's easier to convert from progressive to interlaced than vice versa.

"Suppliers of HDTV equipment have complained that EBU's support for progressive scanning is damaging the case for 1080i/25 and the 1,920-x-1,080 common image format," EBU's Philip Laven said in defence of his position. "In fact, EBU has recognized that 1080i/25 services will operate alongside 720p/50 services – and strongly hopes that 1080p/50 will eventually become the norm." Where does this leave you and me?

Well, as consumers we should be OK. A new "HD Ready" label has been produced by the European Information and Communications Technology Industry Association (EICTA). Supported by all the major Euro broadcasters, including Sky, the label guarantees technology from different manufacturers is future proof. If a screen has an HD Ready label it has a minimum resolution of 720 lines, and is capable of accepting 720p/50/60 and 1080i/50/60.

But as programme-makers things are trickier. EBU in their well-funded, fat-bottomed helpful kind of way have suggested that HDTV programme makers buy equipment that: "Should include, at a minimum, 720p/50, 1080i/25 and 1080p/25 systems". They add: "HDTV production equipment in the longer term will need to include all of the above and 1080p/50."

So the future of HDTV in Europe looks like it will be multi-format. Broadcasters will be able to choose, on a programme-by-programme basis, whether to broadcast in 720p or 1080i and consumers shouldn't need to worry. But what if you're a programme maker?

Choosing what to shoot

"Forget about 720, 1080 is real high definition," says Doug Hammond, director of operations at Shooting

As the format war between HD-DVD and Blu-Ray hots up film studios are siding with one format or the other. Whoever wins, high definition DVD will feed the demand for HDTV from the traditional broadcasters.

Partners Group in London. They've been shooting HD since 1990 and their definition of HD is 1,920-x-1,080.

"You'll never make a movie on 720," says Hammond, "you can on 1080". From his point of view the EBU format war about 720 isn't even worth discussing. His industry works on 1080 and that's it. "We've sent some cameras out to Africa for Discovery Channel in the States. They'll be shooting in 1080/30p or 1080/60i." He advises: "Use 1080, shoot one higher and down convert from 60 to 50 rather than bump it up."

In the States, that bellweather of the broadcast world – the LA porn industry – has been at it for years. At the AVN Adult Entertainment Expo in Las Vegas in January Bob Christian of Adam & Eve Productions said they'd been shooting in HD for three years. "We shoot at the highest 1080p and then edit on HD equipment. The DVDs are released at standard definition but the all-HD process results in a higher quality image."

However, not everyone thinks that's such a good idea. Nina Hartley, a 21-year veteran of the industry who has been in over 650 movies said she wasn't sure if HD would benefit porn. "HD is not adult friendly," she said. "Most women in porn are average looking, the same for the guys. I'm not sure how that will hold up."

HDTVDEcision Chart. *Shooting in 1080 but unsure of what frame rate to use? Shooting Partners in London give their clients this flow diagram to help decide.*

	Digibeta (790)	Super16	HDCam (750)
Camera hire (8 weeks)	£10,600	£20,800	£12,700
Stock and working copies	£3,100	£36,480	£5,100
Shooting Sub Total	**£13,700**	**£57,280**	**£17,800**
Post - neg cut, grade, conform, finish & masters	£14,320	£22,720	£14,320
Total	**£28,020**	**£80,000**	**£32,120**

This table, courtesy Shooting Partners, gives a rough indication of costs involved in shooting HD based on an eight week shoot using 60 rolls of stock.

TEAM LinG – Live, Informative, Non-cost and Genuine!

this month
Alias Maya 6.5 Epson RD-1 2d3 Boujou 3 Canon EOS-1Ds MK 2 Eizo ColorEdge CG220 Toon Boom Studio 2.5 IBM IntelliStation Z Pro

Digit Best Buy
The prestigious Digit Best Buy award is given only to products that are in the top-flight of their class. The product must offer professional creatives compelling design advantages, leading the way in its particular field. Digit Best Buy products are compelling solutions, often delivering innovative technology or unique tools, or are simply the best of their kind.

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Buying notes
All prices in product reviews are listed without VAT (17.5 per cent), and are correct at press time. Some manufacturers are forbidden by law to supply prices, in which case an average street price will be given.

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Digit ratings
The best in its class ★ ★ ★ ★ ★   Avoid ★
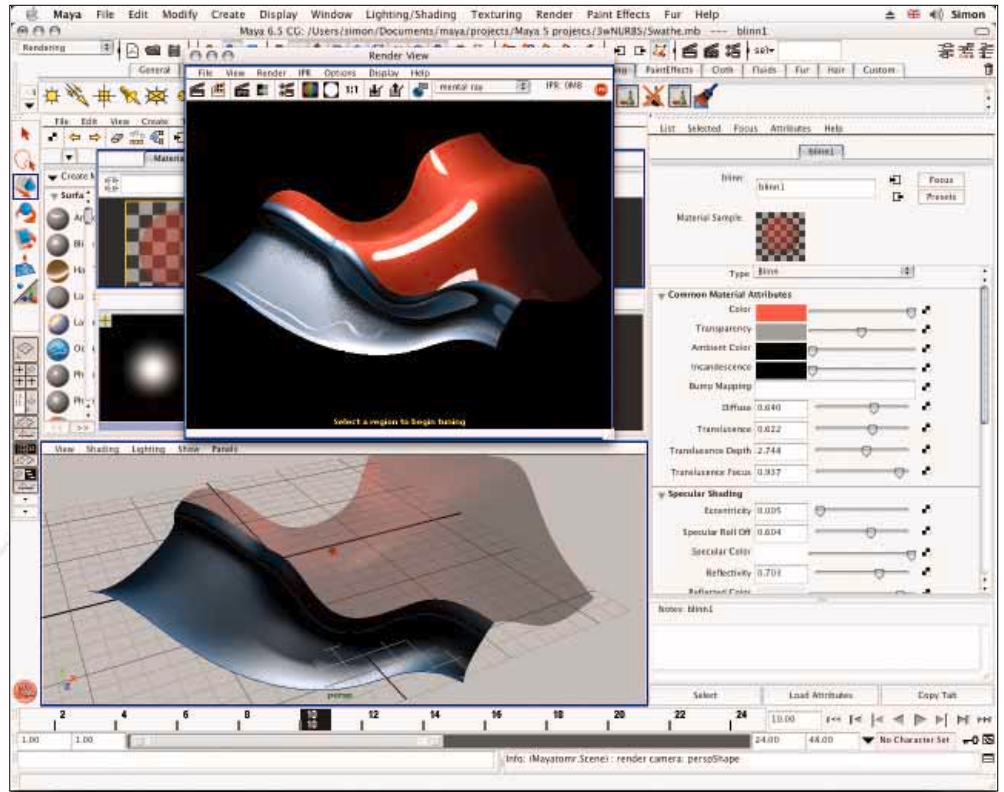
Maya 6.5

3D modelling, animation, and rendering software

format Irix 6.5.15, Mac OS X 10.3, Red Hat Linux 9.0, SuSe Linux 9.1, Windows 2000/XP

price Complete £1,449 plus VAT, upgrade £659 plus VAT, Unlimited £4,899 plus VAT; upgrade £909 plus VAT

company Alias, *www.alias.com*

contact Alias, *01494 441 273*

minimum specs Intel Pentium III/PowerPC G4, 512MB RAM, hardware-accelerated OpenGL graphics card, 450MB of hard disk space

pros **Satellite rendering, better Final Gather performance and much improved IPR, all-round performance gains. Better file referencing implementation.**

cons **Interface can be slow at times – on OS X you have to restart the program periodically to regain performance.**

Digit Rating ✪✪✪✪✪ 🏅

Maya's improvement continues with this latest release from Alias, though this .5 update is short of radical new features. Most of the boosts are to speed and performance.

The most significant feature is the inclusion of Mental Images' MentalRay 3.4 rendering engine. Alias have continued to refine the integration of MentalRay with Maya, and while it doesn't quite match the synergy Softimage|XSI has with MentalRay, Alias has done a good job of getting the two programs to work together tightly.

The most exciting new feature in the new MentalRay implementation is Satellite rendering. Not only does this allow you to farm out a batch render to multiple CPUs over a network, it offers parallel processing of any MentalRay rendering you do inside Maya itself. As long as you have network render nodes available, as soon as you do a test render in Maya (including IPR) the load is spread across the network and delivered back to the Render View as if it was a normal local render.

The implementation is seamless. This is not farming out frames to different CPUs, but 'buckets' within a frame. Print designers using Maya for huge resolution stills can at last benefit from additional networked CPUs.

The number of CPUs that you can use is limited though, dependent on your license. Maya Complete comes with MentalRay rendering licenses for four local CPUs and two additional networked CPUs, while Maya Unlimited users can ▶

Alternatives

3DS Max 7

LightWave 3D 8

Softimage|XSI 4.0

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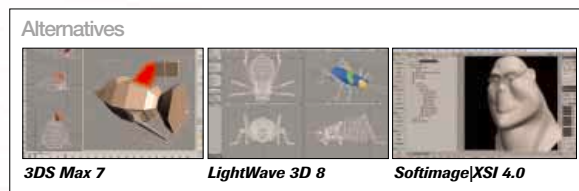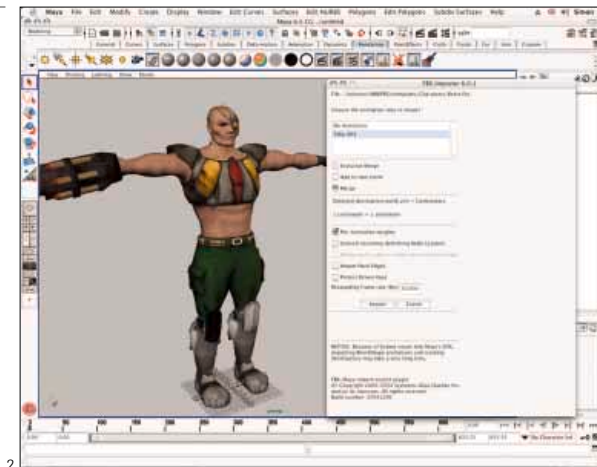
render on up to eight additional CPUs. So if you are a Maya Complete user with a few spare PCs or Macs lying about you can call them into service and potentially double your rendering speed.

Installation and set-up of Satellite is simple. You need to install and run the Maya Satellite service on each networked machine and be able to connect to them from the main machine on which Maya is running. A special configuration file named maya.rayhosts is placed in Maya's preferences folder with the names (or IP addresses) and port numbers of the render slaves. When you initiate a render, Maya sends a request to the awaiting slaves who churn through the data and pass it back to the master machine. It's a fantastic addition to the package.

Data slaves

More improvements come in the form of speed enhancements to various areas, such as Artisan and 3D painting, and various polygon operations including poly reduction. Soften/Harden polygons is still desperately slow, though, when compared to other 3D programs. Obj importing on Windows and saving of

.mb files over a network is now faster. The latter will be especially important to teams collaborating using Maya's object referencing. This has been enhanced in Maya 6.5. The new system is more robust and less prone to problems when making or loading/unloading edits to complex referenced hierarchies.

The new system introduces proxies. This allows you to swap low-resolution proxy files that you associate with each referenced file. Proxies are easily loaded and unloaded to allow you to optimize the current scene for the job at hand.

Scene management can become problematic when working with very large data sets, so some kind of proxy system becomes essential. However, the Reference manager window could be easier to use, since it puts the load/unload commands in sub-menus when a simple check-box button would have been more direct.

Despite the countless speed-ups and improvements, which seem to be the main thrust of this upgrade, Maya's general interface operations can still be on the slow side. Changing interface layouts tends to be sluggish, as does accessing marking menus and the hotbox. It's only a second or so delay but when these operations occur many times in a session it becomes frustrating.

Similarly, loading data into the Attribute Editor can take a second or two, and this is a pain. The issue of a general slowdown during a session on Mac OS X remains. The workaround is to save, quit and restart Maya.

Generally though Maya 6.5 is a decent – if not earth-shattering – upgrade. For many users there will be some bugs crushed or an improvement in performance that makes the 6.5 upgrade worthwhile, but apart from the referencing and Satellite rendering features don't expect a whole lot of new goodies to play with. **Simon Danaher**
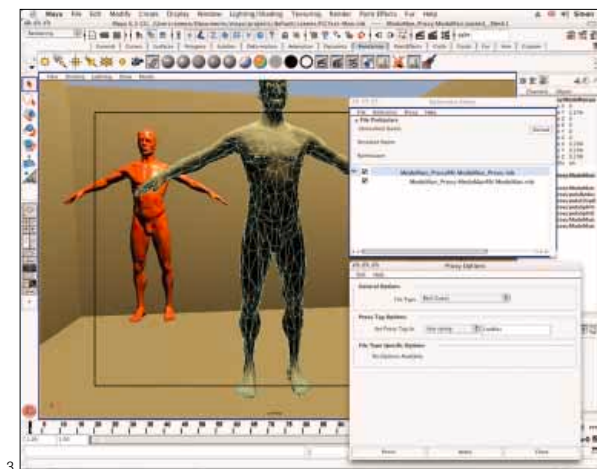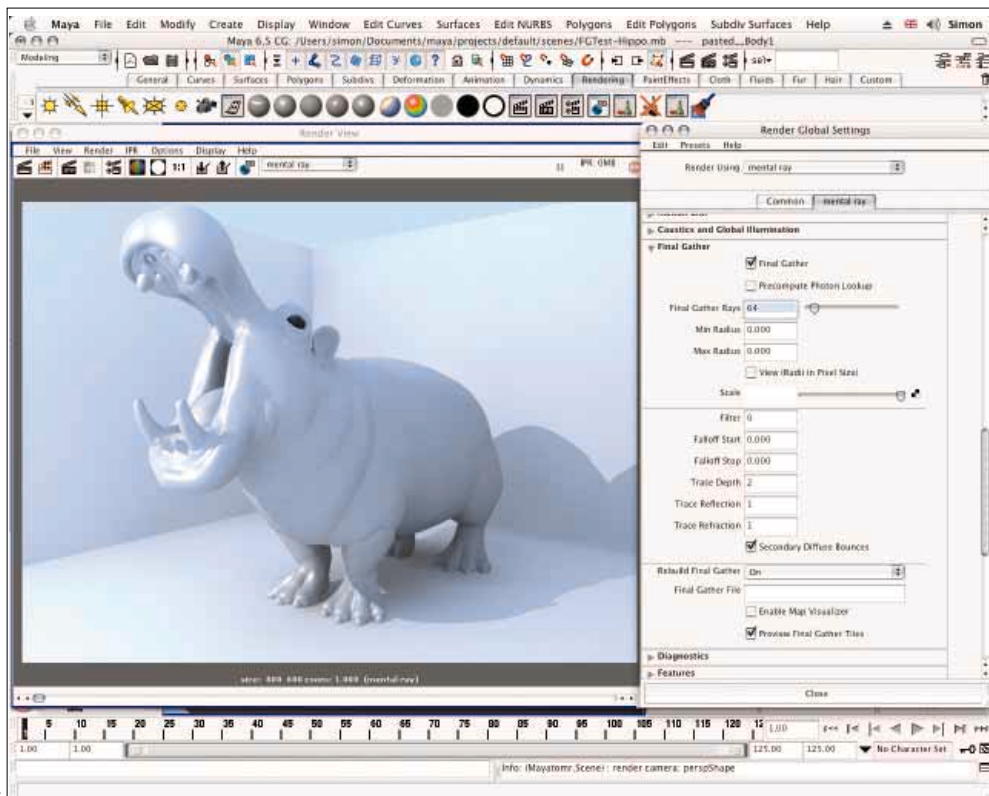
2. *Maya 6.5 features built-in FBX support for transferring animated characters between it and MotionBuilder, or indeed any program that supports the FBX format.*

3. *File Referencing has been improved together and a new Proxy system introduced to allow low-resolution substitutions to be made in complex scenes.*

4. *Final Gathering has been improved in 6.5 so that you need only 1/10th of the FinalGather samples that you previously required in order to get the same quality results.*

main picture. **The R-D1 is styled like an old-fashioned film camera.**

2. **The camera's built-in mono option is aimed at Leica lens users, and there's even a choice of traditional photographic digital filters such as yellow, orange and red for landscapes.**

3. **High contrast edges are a good test for chromatic aberration. The R-D1 with Voigtländer 35/2.5 pancake lens produce results that put many digital SLRs to shame.**

4-5. **Epson's PhotoDRAW RAW processing software is only available for Windows users to convert RAW data to JPG or TIFF files. A plug-in is provided for Mac users.**

R-D1

6mp digital rangefinder camera

format Mac/Win

price £1,702 plus VAT (body only)

company Epson, *www.epsonrd1.co.uk*

contact Epson, *08702 416 900*

accessories Voigtländer 90mm f/3.5 Apolanthar lens £205 plus VAT, Voigtländer 50mm f/2.5 Color Scopar lens £180 plus VAT, Voigtländer 28mm f/3.5 Color Scopar lens £255 plus VAT

pros *Classic analogue handling with life-size finder for an involving experience, while large digital SLR-style sensor provides low noise.*

cons *Menu system is poor. Main concern is that the camera has frame-lines for only three focal lengths.*

Digit Rating ⬤⬤⬤◐○

Alternatives

Canon EOS 20D   **Leica Digilux 2**   **Panasonic DMCLC1B**

Epson's 6mp R-D1 shares some features with the recently announced R3A. It includes the same bright, life-size finder magnification, and aperture priority exposure control.

Its big attraction, though, is the compatibility with loads of Leica M bayonet and L mount screw lenses. It also fits a wide range of other brands – such as early screw thread lenses from Canon and Nikon – with the help of an optional adaptor. A lever on the top plate allows selection from one of three frame-lines visible in the viewfinder for 50mm, 28mm, and 35mm focal lengths.

Other lenses will fit, but it will be difficult to judge the field of view for the sensor without a viewfinder. However, Voigtländer have introduced a series of four viewfinders covering 12mm, 15mm, 21mm, and 25mm focal lengths. These attach via the hot-shoe, but as yet there are no dedicated finders for longer lenses, such as an 85mm, or 105mm.

We were supplied with the gorgeous M mount Voigtländer Colour Skopar 35mm f/2.5P II pancake lens, so called due to the stubby construction. Together, handling is very good, though the R-D1's body is big, and the magnesium alloy construction belies its 590g weight. There are few modern comforts. For starters, these classic lenses are manual focus only, and there's no evaluative metering, built-in flash, or automatic frame advance. It's odd having a manual film advance lever when saving to an SD card. It cocks the shutter though, and lightly pressing the shutter release primes the TTL centre-weighted metering.

As with most similar systems, you'll have to know how to compensate for difficult lighting, but at least there's exposure compensation or metered manual. In both instances, the shutter speed selected is shown in the viewfinder, either automatically, or, if using manual, the set speed is shown while the metered option flashes. It's simple but effective.

Shutter up

Both shutter speed and exposure-compensation are selected by a traditional knurled dial on the top plate. It locks when set to AE (Auto Exposure), and it's fiddly to release to use exposure compensation. ISO settings from ISO 200-1600 are selected by pulling the same dial up and rotating to suit. And, just like
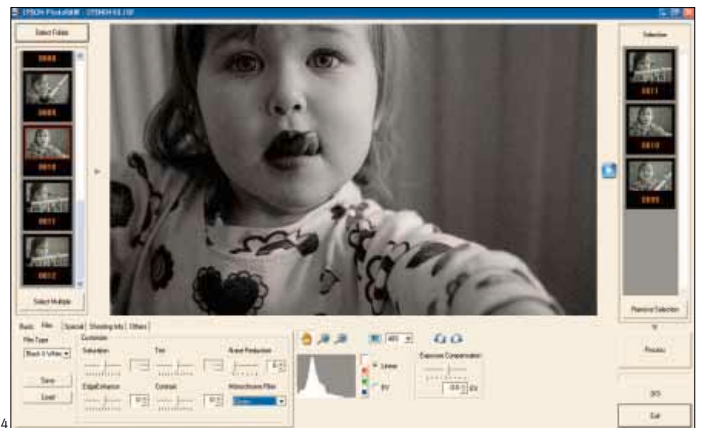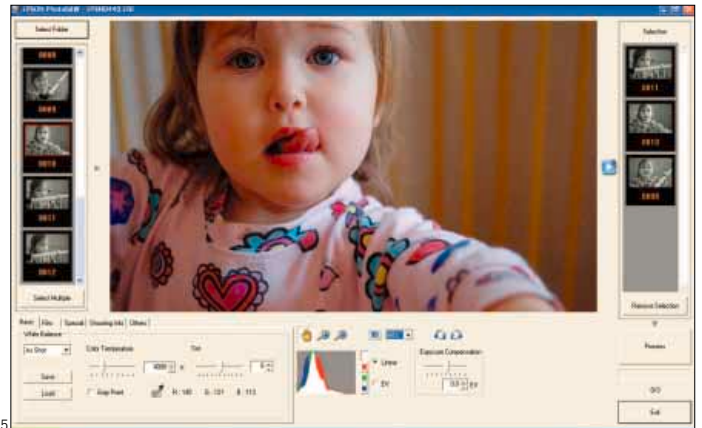
a 35mm camera, there's no auto option.

Powering up is sluggish, but it's only really noticed when you've forgotten to turn it on. It's not really an issue as the shutter has to be cocked before metering anyway.

Driving forward
On the left hand side, a large circular window encompassing four dials with needles provides the first indication that this isn't actually a film camera. It looks not unlike the gauges on your dashboard. It's here that white-balance, image quality, battery life, and the approximate number of frames remaining are displayed. A pseudo film rewind knob is actually a super-responsive jog-dial, and is used for adjusting the settings in combination with a well-placed lever sitting high on the camera's back.

In addition to a 3,008-x-2,000-pixel RAW file format (ERF), there are just two JPEG settings – one at full resolution and the second with a 2,240-x-1,488-pixel image size. The camera's rear is dominated by a pull-out and rotating monitor, but at 2.0-inches it could easily have been larger. Nonetheless, it is well detailed, though the protective screen is

highly reflective and difficult to see in bright lighting. It can't really be angled either as the camera's shutter design doesn't allow real-time CCD viewing. It's either out for setting the menu, or it's folded away to protect it from scratching.

Navigation of the menu is clunky, even with the excellent jog-dial – there are too many button-presses required to select any given feature. That said, there are only two settings that you'll probably use regularly – film settings, and colour options. The latter allows mono shots with the further option to add digital photo filters for effect, such as red, yellow, and green, for portraits and landscapes.

Film settings allows customization of edge definition, noise reduction, tint and saturation, as if selecting a traditional film for its particular characteristics. However, if you're shooting RAW files then there's little use choosing either option. Along with a copy of Elements 2, Epson supplies its PhotoRAW processing software, but it's Windows only. Mac users have to make do with a plug-in.

The R-D1 produced some excellent images, with careful use of the meter. Noise is very low due to the large digital
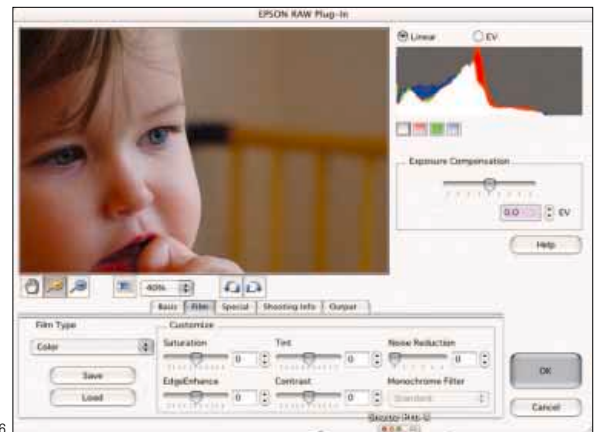
SLR-style CCD – even ISO 1600 is usable. The life-size finder allows both eyes to be open during focusing, which is a major plus for a rangefinder, and quick grab shots can be achieved even without AF.

The R-D1 is a niche product, but it's an incredibly rewarding camera. The only concern is that, off the shelf, it only has frame lines for three focal lengths equating to 42mm to 75mm, but this is unlikely to stop the legions of M-type lens owners wanting to try it.
Joanne Carter

Toggle Radial Display | **Add Calibration Line**

Principal Point: %X: 50.0 %Y: 50.0
Distortion: R: 0.32 Step: 0.01

0000

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0 |5 |10 |15 |20 |25 |30 |35 |40 |45 |50
|0   □   50|0 |60 |70 |80 |90 |1
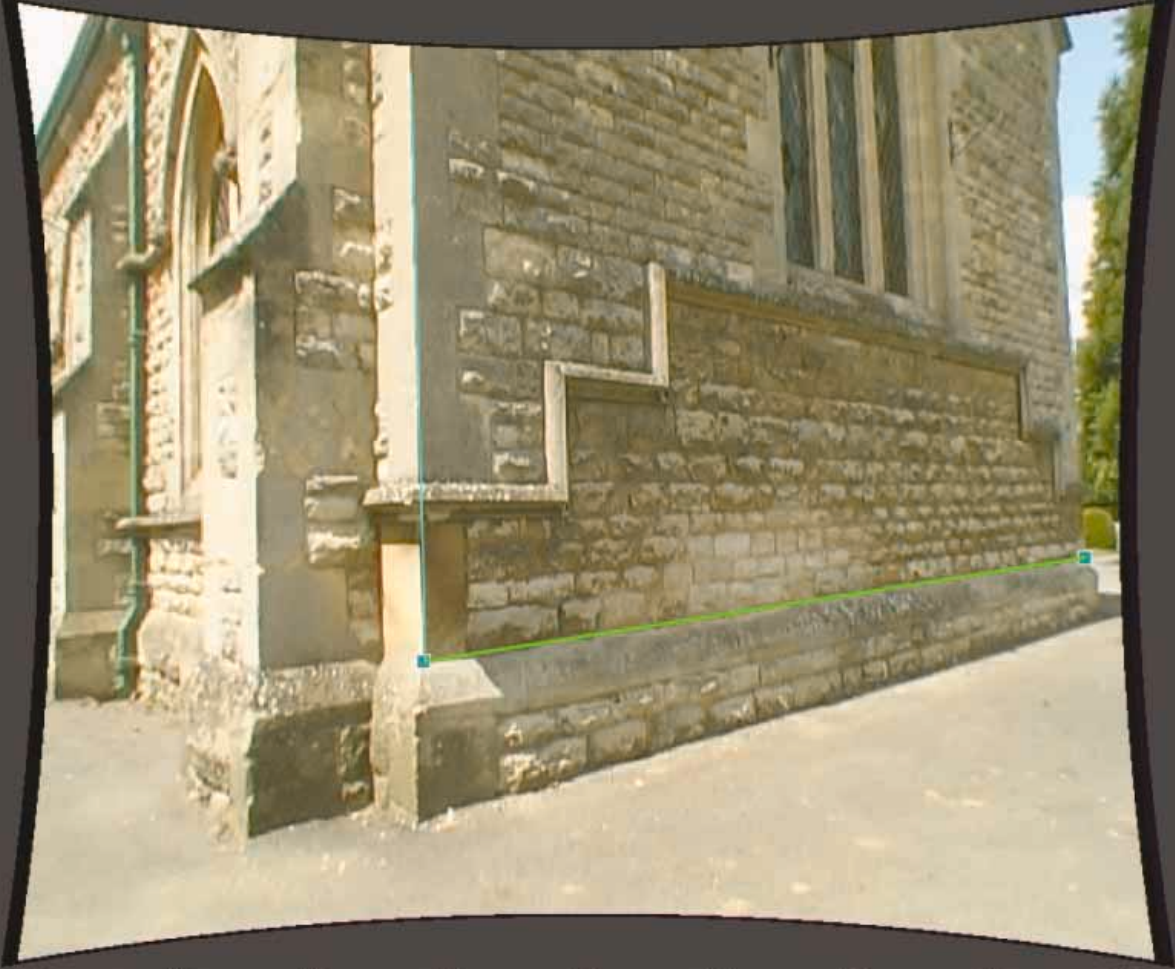
Ok   Cancel

Boujou 3

Matchmoving software

format   Mac OS X 10.2/3, Red Hat Linux 7/8/9, Windows 2000/XP
price $10,000 (around £5,325)
company   2d3, *www.2d3.com*
contact   2d3, *01865 811060*
minimum specs   500MB RAM, OpenGL-compatible graphics card

pros   **Fast automatic tracking with excellent solution integrity.
It's simple to use, too.**

cons   **It's very expensive, and it's dongled – so be careful not to lose
the key.**

Digit Rating ✪✪✪✪○

Alternatives

*RealViz
MatchMover Pro*   *Science D Visions
3D Equalizer*   *The Pixel Farm
PFTrack 3.0*

B oujou has always been an
expensive package. At $10,000 it's
probably the costliest matchmoving
solution available. For that kind of payout,
you'd expect it to deliver something
special. It doesn't disappoint – the
software will save you a huge amount
of time, and spare you from the ravages
of matchmoving boredom.

Some 2D-to-3D packages require you
to manually place 2D markers on certain
points in an image and then track them
in 2D before finally extracting the 3D
scene information. This process can be
both time-consuming and tedious, and
requires that you have a least a few goes
before discovering what and where the
best tracking points in the footage are.

Along with a handful of matchmoving
applications, Boujou is a totally automatic
matchmoving solution. Once footage is
loaded you can tell the program to
analyze each frame and choose the
2D tracking points itself. There's no
need for human input at all.

There are two main benefits of this
automatic process. Firstly, the software is

able to input a much larger number of
tracking points than you would be able
to reasonably do manually. This helps
to reduce errors in the solution since
the data is averaged over a greater
number of tracking points. Secondly,
the program can automatically add new
points to track as they enter the frame.
This is very difficult to do manually.

The mask
Moving objects in the scene can
throw out the auto-tracking solution
by contaminating the static scene data.
Since Boujou doesn't use any kind of
artificial intelligence to select tracking
points, it's just as likely to select a moving
object as the static background scene.
Small movements can be dealt with by
the software, so swaying trees don't
seem to cause too much of a problem.

However, an object traversing
the scene, such as a vehicle, person,
or animal, can present too much
of a problem. Boujou handles this
complication simply – to prevent
these objects from being tracked
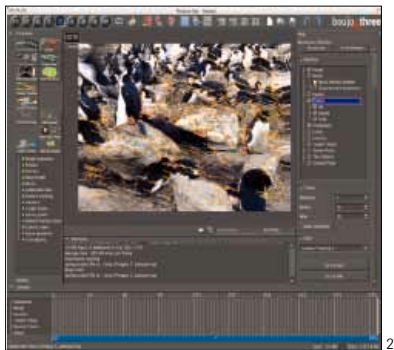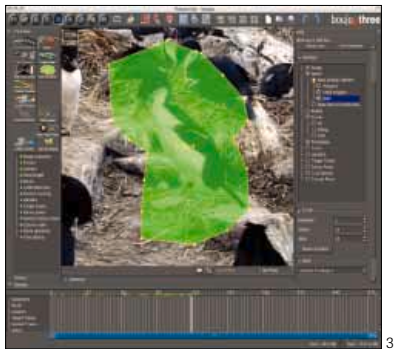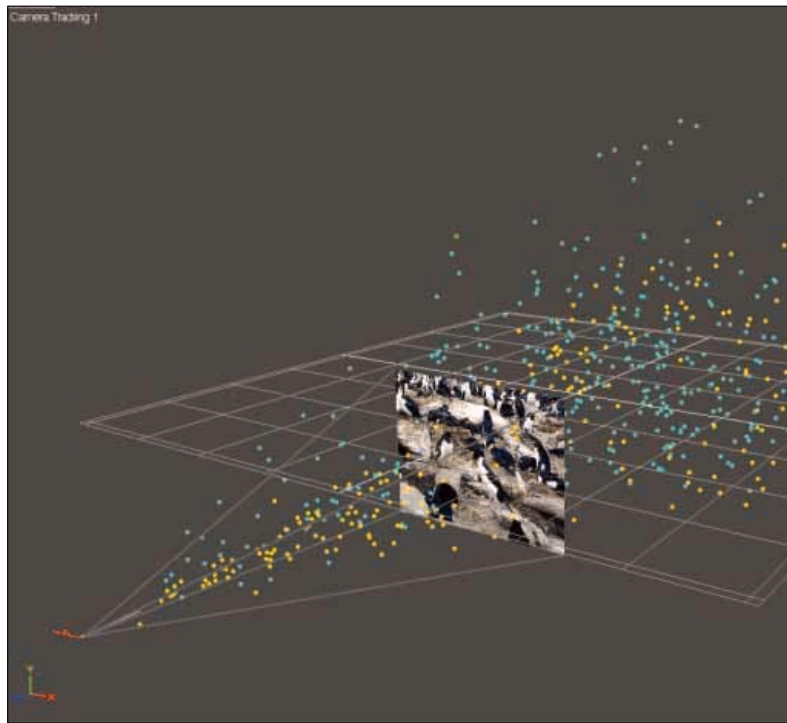
you can draw a mask to isolate them from the background.

The masks are simple polygonal shapes that you draw over the footage. They can be animated, both in translation and in shape. The masks are auto-keyframed as you make changes to them, so it's a relatively straight-forward process to matte out a particular object from the tracking process. Multiple masks can be added and animated independently, so it doesn't matter if objects cross each other in the footage. Boujou also allows you to import image-based masks so you can create custom mattes from the footage using whatever motion graphics application you like.

Once objects are masked out, you can tell Boujou to track the scene, which it does quickly. The speed will depend on the number of tracked points, length of the sequence, and the degree of camera movement. If there is a big jump between frames then tracking can take longer. Generally, Boujou suffers less from losing track of points than other matchmoving applications, and the integrity of the solutions seems to be high.

Some sequences will prove too difficult, in which case you can manually intervene and place custom markers, or inset survey data to constrain the

solution. Of course, entering the camera focal length helps.

Once tracked, the camera solution is derived when you press the Camera Tracking button. This runs in a separate pass and can take a minute or so. Again solution integrity tends to be high, and you can place test 3D geometry in the scene to confirm the solution looks good. Boujou allows you to export the camera to numerous 3D formats including Maya .ma, Softimage .xsi, LightWave .lws and Houdini .hip. You can also export to Shake.

The new version sports a charcoal interface for enhanced contrast and new, faster tracking algorithms. There are some improved tweaking tools, such as camera path smoothing, and a new timeline.

Redundant Wizard

A new Wizard is included to guide users through the whole matchmoving process. This is a godsend for those not used to the program, though the process is so simple you'll only need to use the Wizard a few times before you get the hang of it. We did encounter a windowing bug requiring a Force Quit on Mac OS X, where two Save dialogs overlapped each other during a camera export and neither

would receive mouse or keyboard input. Apart from this the program seemed fairly robust and bug-free.

Boujou is what an automatic matchmoving program should be. It's simple to use and gets the job done quickly with the minimum of fuss, saving a huge amount of time in the process. For those who can't stretch to the price tag, the stripped-down Boujou Bullet offers some of the power of the full version for $2,500. But despite the price, Boujou 3.0 is a superb program that's well worth looking into.
Simon Danaher

main picture. **Canon's extensive EF range of lenses (except for EF-S) can be used without the cropped field of view, due to the full-frame sensor.**

2. **Canon's new Digital Photo Professional (DPP) software has a simple to use interface, including batch-processing options, but it's still sluggish in use.**

2

EOS-1Ds Mark II

16.7mp digital SLR camera

format Mac/Win
price £4,510 plus VAT (body only)
company Canon, *www.canon.co.uk*
contact Canon, *08705 143 723*
accessories EF 50mm f/1.4 USM lens £238 plus VAT, EF 28-135mm f3.5/5.6 IS USM £295 plus VAT, EF 28-300mm F3.5-5.6 L IS USM lens £1,489 plus VAT

pros **Full frame CMOS panel allows unrestricted use of Canon's wide-angle EF lenses. The 16.7mp resolution permits a double-page spread at 300dpi with minimal interpolation.**

cons **Menu system is poor. Frame-lines for only three focal lengths.**

Digit Rating ⦿⦿⦿⦿⦿

Alternatives

Contax N-Digital   *Nikon D2x*   *Kodak DCS Pro SLRc/n*

The update to Canon's EOS-1Ds hardly comes as a surprise. It's the studio-&-location version of the sports- and press-oriented EOS-1D, which was updated last year. However, the timing of the EOS-1Ds Mark II's release is surprising – Canon announced it just days after Nikon announced its 12.4mp challenger to the original 1Ds.

Visually, the EOS-1Ds Mark II has hardly changed over its predecessor, but in fact each magnesium alloy panel has actually been subtly altered. The matte finish paint is less reflective too, though few users will notice at first. What matters is this camera now features an impressive 16.7mp CMOS sensor, and it's still full-frame. With a maximum 4,992-x-3,328-pixel image size, the EOS-1Ds Mark II can punch-out a 300dpi image at 16.5-x-11-inches without interpolation.

At 36-x-24mm, the CMOS sensor is precisely the same size as a single 35mm frame, allowing Canon's wide-angle lenses to be used without the irreversible cropping of the field of view associated with digital SLRs using smaller, often APS-C-sized sensors. Conversely, there's none of the extra reach when using telephoto lenses, which is one of the reasons why sports and action photographers like the smaller chip. But, with so much resolution and detail available, it's still feasible to crop an image to give a similar effect.

Buffer up

Canon have increased the continuous framing rate to a respectable 4fps with buffering for up to 32 high-quality JPEGs or 11 RAW images, up from the 3fps and 10 JPEG or 10 RAW shots from the discontinued 1Ds. Even with the substantial increase, it's nothing like the turn of speed available from the

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press cameras. This isn't really what this camera is for. For many users, the EOS-1Ds Mark II will be seen as an alternative to using slower, versatile, 645 medium format cameras and digital backs.

Noise from the proprietary CMOS panel is impressively low, and Canon has expanded its sensitivity with a range the equivalent of ISO 50 to ISO 3200. There's nothing to be gained quality-wise with the lower setting, but by adding the ISO 3200 option at least puts the spec on a par with recent semi-pro digital SLRs, and can be the difference between getting a shot and missing out.

Other changes and improvements include a more detailed screen, and the addition of an SD card slot next to the standard CF Type II bay, which can be used individually or to write files simultaneously, as back-up. Faster processing is claimed, and it's certainly

visible in certain areas. JPEG images appear on the monitor within an instant, but a supposed 50 per cent increase in AF processing is barely noticeable in practise.

Picture this
For photographers concerned with deadlines and captions, and who don't have time for post-processing, the camera has a vast range of user selectable options. Between the separate Colour Matrix and Parameters options, users can, for example, choose an appropriate colour space, adjust brightness, colour balance, saturation, contrast and sharpness, choose from three tone curves or load their own from the EOS Viewer utility.

Gone is the external secondary white-balance sensor. The camera now relies solely on TTL measurement from the CMOS sensor. In some instances, notably

under indoor lighting, images from the Mk II don't appear to be quite as well-corrected. However, external sensors can be easily fooled – especially if the camera is located under one light source and you're using a telephoto trained on another. It's not so much of an issue if there's time to tweak white-balance, and there are a number of ways of achieving this. In addition to six presets, a manual option, and colour temperature settings in degrees Kelvin, there's even a choice of up to three personal settings. White-balance bracketing and colour correction are available too.

It's a dazzling array of choices, but it allows the user to fine-tune the camera over time to his or her own preferences.

That said, many users are likely to just shoot RAW files anyway. New Digital Photo Professional software is included and offers a wide range of processing and enhancement options, though it's still slow in use and not as slick as rival offerings.

Start-up times – from sleep and from powering up – are vastly improved, and there's none of the previous camera's sluggishness. Handling is very good, but the old-school NiMH battery pack makes for a body that feels heavier than the quoted 1.5kg. Nikon's D2-series utilizes similar construction techniques and use a Lithium-Ion pack, and appear much lighter and better balanced.

Without doubt, image quality and detail is nothing short of remarkable, and the camera boasts the size and convenience of a pro 35mm SLR. For the hard-working professional, such expediency makes all the difference.
Joanne Carter

3. *Difficult lighting is handled extremely well by the evaluative metering system, and at ISO 1600 noise levels are low.*

4. *DPP's imaging editing window allows for a fair range of adjustment and enhancement, for RAW and RGB-JPEG images, but it isn't as impressive as some rival and third-party offerings.*

5. *Although the camera is built for location work, the sublime image quality will make it a firm favourite in the studio as well.*

ColorEdge CG220

LCD monitor

format   Mac OS X 10.2/3, Windows 2000/XP
price   £3,189 plus VAT; Eye-One calibrator £177 plus VAT
company   Eizo, *www.eizo.co.uk*
contact   Eizo, *01483 719 500*

pros   **The best handling of colour available from an LCD monitor, and fantastic display quality. Good ergonomics and high-level of user control.**

cons   **Hugely expensive – a CRT could match it for quality at a fraction of the price, if you could buy one.**

Digit Rating ✪✪✪✪✪

We've only seen one LCD monitor so far that could be said to truly challenge the colour ability of the CRT: Barco's Coloris Calibrator. Unfortunately, that model was withdrawn in December 2004 due to issues with the quality of components, and with CRTs on their last legs, there's a gap in the market for high-end displays for creatives.

Now, Eizo is attempting to tackle the issue with its latest ColorEdge monitor for designers, the CG220. It offers the same focus on colour – being the first LCD monitor capable of displaying the whole gamut of the Adobe RGB colour space – and has an inevitably high price.

For an LCD, the ColorEdge 220 is enormous – though it will still take up less of your desk space than a LaCie electron22blue, for example. The 22-inch screen is surrounded by a thick black bezel and supported by a tree-trunk of a base. Around the monitor sits a small hood for keeping ambient glare off the screen. Part of the hood slides off to allow a calibration device to hang without having to remove the whole thing.

Eizo does it

A calibration device is a must. Eizo ships the CG220 with its own ColorNavigator software, which is designed to work with GretagMacbeth's Eye-One device. ColorNavigator works with both Macs and PCs. It's simple to use and offers a wide level of control.

After calibrating your monitor – and even before – the quality of the CG220 is immediately obvious. Even to the naked eye, the level of colour accuracy and depth is better than LaCie's

Colours visible to the human eye

Colour space displayed on monitor

Adobe RGB space
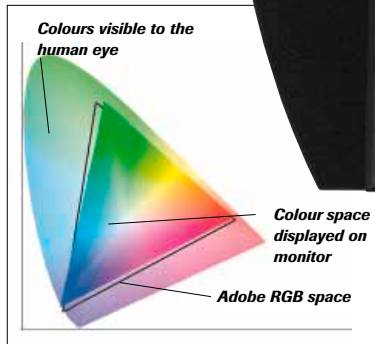
Photon20vision II, which is currently the LCD of choice for designers. Assuming the rest of your workflow from input (camera, scanner) to output (proofer, press) is properly calibrated, there's currently no better way of making sure that what you see is what you get.

We examined the colour profile created by ColourNavigator and the Eye-One in Chromix ColorThink 2.1. The colour range available for output by the CG220 is the largest available on any LCD display we've seen by a wide margin – though it didn't quite cover the Adobe RGB gamut (see diagram, above). It was also one of the most accurate we've seen.

The 1,920-x-1,200 resolution allows a large amount of detailed information to be shown: an A4 spread – plus palettes – was perfectly readable in InDesign. Only the slow response rate of 37ms is a disappointment – but this monitor isn't aimed at video professionals.

The ColorEdge CG220 is a fantastic monitor but the price is going to be too high for the majority of designers – though you can reduce it a bit by

going for the Colour Confidence DisplayProof System bundle from TypeMaker, which essentially bundles the Eye-One calibrator and a colour management guide for the same £3,189 plus VAT price. TypeMaker also claim to check the monitor to a higher standard.

You're essentially paying over £3,000 for a monitor created to match £700 CRTs. However, if your clients require that level of colour accuracy (or you're just rich), the CG220 is an exceptional product. Those on lower budgets may want to wait for LaCie's forthcoming 321 LCD Monitor, which claims to match CRTs for colour but is more affordable at just over £950 plus VAT.
Neil Bennett

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specifications

Viewable area: 22.2-inch   **Dot pitch:** 0.294mm   **Native resolution:** 1,920-x-1,200   **Connection:** 2x DVI-I   **Response rate:** 37ms   **Horizontal viewing angle:** 170 degrees   **Vertical viewing angle:** 170 degrees   **Brightness:** 200cd/m2   **Contrast ratio:** 400:1   **10-bit gamma correction:** yes   **Dimensions (W-x-H-x-D):** 565-x-452.5-x-272mm   **Weight (with base):** 6.6kg   **Modes:** 1   **Speakers:** no   **Ports:** USB (for calibrator)   **Software:** ColorNavigator   **Specified calibrator:** GretagMacbeth Eye-One   **Hood:** yes

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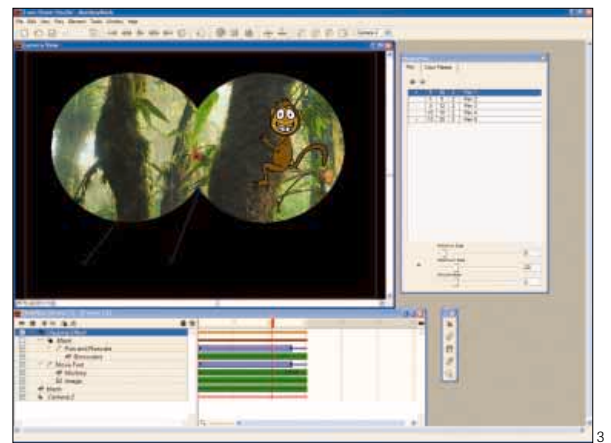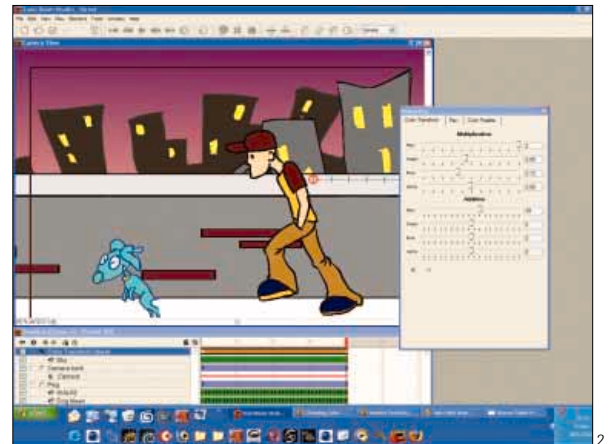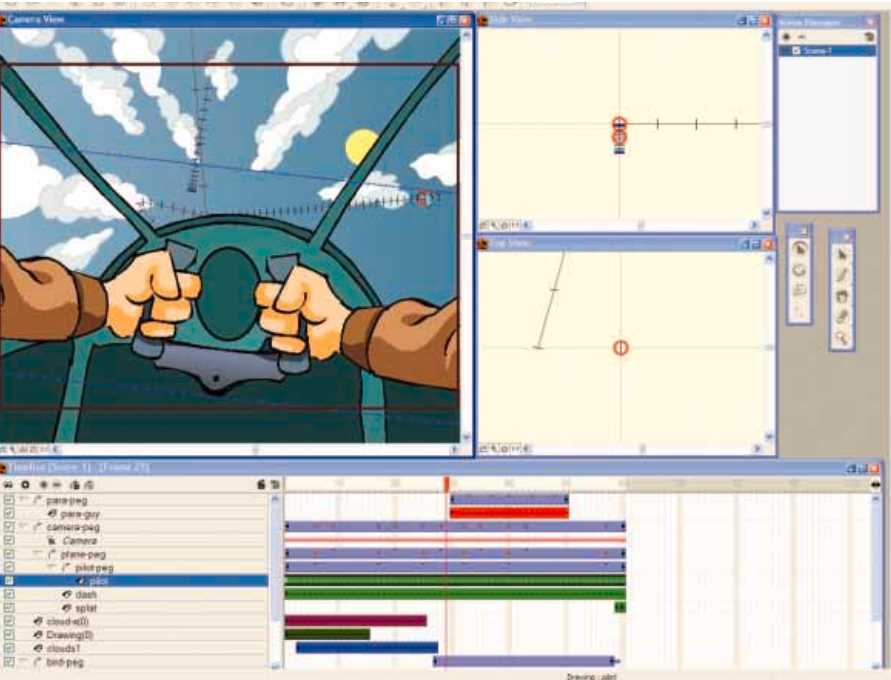
Toon Boom Studio 2.5

2D animation software

format Mac OS X 10.3, Windows 2000/XP
price £239 plus VAT, upgrade £99 plus VAT
company Toon Boom, *www.toonboom.com*
contact Pixelution, *01462 433558*
minimum specs PowerPC G5/Pentium III 800MHz processor, 256MB RAM, 100MB hard disk space, Wacom tablet

pros **Auto lip-syncing, drawing in 3D scene planning view, and colour transformation effects add to an already well-designed package.**

cons **Some inconsistency with interface conventions and a slightly clunky display for 3D and orthographic views.**

Digit Rating ✪✪✪✪○

1. *The 3D Scene Planning mode is where your animated elements come together. Elements can be keyframed in 3D space.*

2. *The new Colour Transformation effects allow you to animate colours of elements over the course of an animation.*

3. *The new clipping mask feature allows you to create effects such as this moving binocular view.*

D igitized 2D cell animation is a tricky thing to get right. The toolset required seems similar to those in any other drawing application, but in reality they need to be a lot more specialized. Toon Boom Studio 2.5 offers a decent and robust toolset together with a clearly set-out workflow for 2D animation.

Version 2.5 adds to the feature set with impressive automatic lip-syncing, gap-closing, and colour keyframing. There's a new clipping feature for adding masks to drawings. These can then be animated, and soundtracks can now be scrubbed directly from the timeline.

Good support for graphics tablets is essential, and version 2.5 adds pressure sensitivity support for line thickness with Wacom graphics tablets. The update at last adds eraser support for Wacom pens too. There was an issue with the Intuos 3

Wacom tablet – there was occasionally an offset of the stroke compared to the cursor position when you began drawing. We couldn't duplicate this effect in any other program using the tablet so there may be an issue between the latest Wacom driver and Toon Boom.

Schoolboy errors
One minor, but irritating interface issue was the inconsistent menu conventions when you switch functions on and off. In the Window menu you get 'Show Function Editor' which changes to 'Hide Function Editor'. In other menus, you get a check mark instead. It's a minor complaint, but causes brief confusion when you start with the application, and it's a mistake that shouldn't find its way into a commercial program.

However, overall Toon Boom 2.5 offers a clean and clear workflow for

professional 2D animation production. The integration of the two modes of operation – Drawing and 3D Scene Planning – have been further tightened by offering touch-up drawing to be accomplished in Scene Planning mode. This is a fantastic feature because it allows you to see what needs to be fixed right in the scene as it's playing, rather than performing the guess work involved when having to do touch-ups back in the drawing mode.

While there isn't a massive number of new features, those added are significant and will have a great impact on the workflow of current users. While in essence it's still a relatively simple and straightforward program Toon Boom Studio 2.5 represents a focused and well-crafted environment for traditional 2D animation.
Simon Danaher

Alternatives

Bauhaus Mirage 1.2

Digital Video The TAB 2.0

Macromedia Flash MX 2004

IntelliStation Z Pro

Dual-processor workstation

format Windows XP
price £4,385 plus VAT
company IBM, *www.ibm.com/uk*
contact Matek, *www.matek.net, 01403 276 300*

pros **Obscenely powerful 3D performance. Fast image rendering and processing.**

cons **High price. Small, single hard drive. No DVD reader.**

Digit Rating ✪✪✪✪✩

The last IBM workstation we looked at was rather behind the times – but this is right up-to-date. Dealer Matek's entry into our last workstation group test was a generation behind much of the competition, but this is the first computer we've seen to feature ATI's top-of-the-line FireGL 7100 graphics card. It's a superbly powerful machine – with a price to match.

The IntelliStation Z Pro shell is an imposing black box that's shorter and fatter than the Dell Precision 670 we looked at in Digit 80. It's rather ugly – especially sat next to an Apple Power Mac G5 – and it doesn't look as imposing as the Precision either. But it's what's inside that counts.

This Z Pro is driven by the fastest Xeon processors available: two 3.6GHz chips with 2MB of Level 2 cache each. These are fed by 2GB of DDR2 RAM across an 800MHz system bus, and connected to a motherboard with an almost full set of PCI-Express, PCI-X, PCI, Ultra360 SCSI and ATA connectors. A FireGL 7100 card, a single 73GB, 10,000rpm Ultra 360 hard drive and a CD-RW drive are all included. But that's it – leaving a bare-to-the-bone system.

Light work
From the specs you'd expect this IntelliStation to be powerful – and this unit will surpass your expectations. Rendering of the Radiosity_box benchmark scene in LightWave 8 (using four threads with Hyper-threading turned on) was accomplished in 18 minutes and 44 seconds – two minutes quicker than the dual 3.4GHz-driven Precision 670. However, we should mention that the IntelliStation was tested using version 8.2 of LightWave (while the Precision used the then most recent 8.0 version), as it took the upgrade and an ATI graphics driver update to make LightWave open the benchmark scene. This may have given the rendering time an extra boost.

It was our Cinebench tests where this IntelliStation really started showing off. This is the first review machine we've seen to get Cinebench scores of over 3,000: achieving a groundbreaking 3,384. Equally importantly, this is over eight-times quicker than without using the graphics card. The NVidia Quadro 3400 used by the Dell Precision 650 could only manage a 6.19x boost – though in itself this is an impressive score. This IntelliStation's 3D power is due to the V7100 card, which is imbued with 256MB of GDDR3 memory, six geometry engines, 16 pixel pipelines and a throughput of up to 28.8GB per second. It's also why this workstation costs so much.

The high price is justified by the power of the unit within 3D applications – though you'd need to be working with some very intricate models to make it worthwhile. Some of Matek's configuration choices are poor – the Precision's addition of a Serial-ATA system drive (leaving the SCSI system free for media manipulation) is better, and the CD-RW drive is a lame option when almost all pro-level systems come with a DVD±RW as standard. A DVD writer is of limited professional appeal, but the ability to read DVD-ROMs is something everyone needs these days. However, the stonking 3D performance should keep you happy.
Neil Bennett

Alternatives

Dell Precision 670

IBM M Pro

DVD on the menu

Thanks to the dominance of DVD in home entertainment and computing, desktop authoring of DVDs has really taken off. We've looked at several applications for creating DVD, drawn from across the scale.

BY MICHAEL BURNS

The process of creating a DVD is the same whether you're just burning data or constructing a flashy menu for a movie release. It consists of adding data to a project folder on a computer, then laying out that project in an authoring package. Video and audio assets first need to be encoded to formats compatible with the DVD specification, and if you want your DVD to do anything more than store data, you're going to have to incorporate some sort of menu system on your disc.

Disc navigation is normally added in the form of menu screens and jump buttons that correspond to chapter points embedded in the media streams. Authoring applications allow you to link buttons to menu screens, media, and chapter points by either dragging-&-dropping the asset or item onto the button or by specifying the link in a properties field.

Subtitles can be entered or imported, and colours can be set for the button to give some interactive feedback to the user. The project is then 'built', with the video and audio streams multiplexed together during this process and then written to the blank disc. All DVD authoring follows this same basic ▷

Adobe Encore DVD 1.5

format Windows
price £385 plus VAT, upgrade £69 plus VAT
company Adobe, *www.adobe.com*
contact Adobe, *020 8606 4000*
minimum specs Pentium III 800MHz or
faster processor, 256MB of RAM, 1GB hard-disk
space, DVD-ROM drive and supported DVD
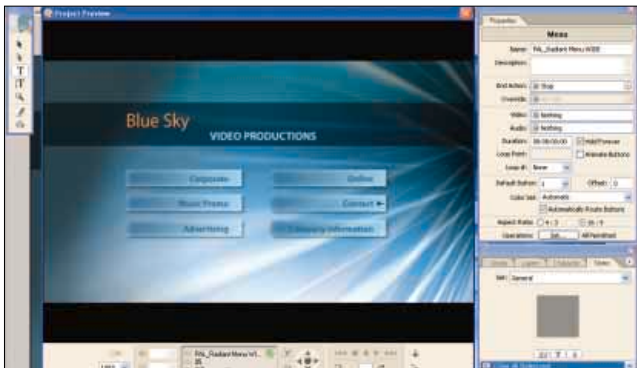burner, QuickTime 6.5 software
digit rating ✪✪✪✪○

Encore has a similar look to Sonic's DVD Producer, with an initially rather dull interface
of empty floating palettes. All assets are imported into the Project Window, and as you
do so the corresponding monitor, menu editor, or timeline pops up. This all makes for
rather cluttered viewing, especially on a small monitor, and as there is no preset
workspace facility, users need to set their own default arrangements.

When you drag a video clip to a menu, Encore automatically creates a video
button for the clip, creates a link from the button to play through the video, and
then sets the End action to return to the menu. In a view option similar in style
to Photoshop, you can check button routing using a floating overlay.

Encore DVD integrates extremely well with Photoshop, Premiere, and After
Effects 6.5 or later. If you have an Adobe-heavy PC, you'll be able to export motion
menus as AVI files in After Effects, create backgrounds and buttons in Photoshop,
and add markers for Chapter points in Premiere movies. You can use the Edit
Original command in Encore to edit the files in their native applications.

The Styles palette allows pre-designed effect styles for Text, Shapes, and Images
to be dragged-&-dropped onto elements in the Menu Editor. A Check Project feature
can be used at any point in the process to identify and solve problems in the project's
structure. QuickTime is now supported as an asset, meaning that Encore, though still
confined to the PC, is now more of a cross-platform contender than the Apple offering.

Apple DVD Studio Pro 3

format Mac OS X 10.3.2 or later
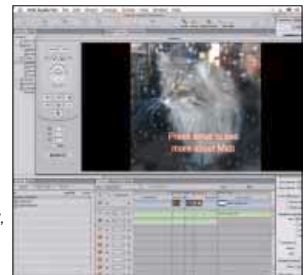**price** £297 plus VAT
company Apple, *www.apple.com/uk*
contact Apple, *0800 783 4846*
minimum specs 733Mhz G4 or G5 Mac,
AGP graphics card with 8MB of video memory,
256MB RAM (512 MB recommended),
QuickTime 6.5, 4.4GB Disk space, DVD drive
digit rating ✪✪✪✪○

The closest thing to a professional DVD authoring suite you'll get on a Mac, DVD
Studio Pro is closely integrated with the rest of the Mac OS media packages (Motion,
Soundtrack, Final Cut Pro, iTunes, and iPhoto). The best thing about DVD Studio
Pro is the level of user control available – Apple gives the author access to some
in-depth commands from the user interface and allows scripting for more complex
programming. For example, you can notify a DVD player if a user has viewed a certain
First Play menu before and get it to jump ahead accordingly.

The authoring process is fairly simple and can be carried out in any of three
workflow configurations ranging from basic drag-&-drop elements to full outline
views and scripting windows. Assets are imported into the application and can be
encoded to MPEG format in the background as soon as they arrive in the Assets
tab. Multi-layered graphic files can be imported as menu backgrounds and the
product has tight integration with Photoshop – allowing live updating of edited files.

Extra templates and interface elements, extra workflow enhancements and wider
format support all arrived in version 3. Other enhancements include new transitions,
buttons and slideshows, as well as extended support for video and audio formats.
You'll need a large drive to store all the templates and extras. Recent updates have
allowed this tool to burn directly to dual-layer DVD-9 discs as well as encode HD
material using the bundled Compressor application.

ALL DVD AUTHORING FOLLOWS THE SAME BASIC PROCESS

process. This is due to the
applications, hardware, and
media all adhering to the DVD
Specification, a standard set
and adhered to by manufacturers
such as Sony, Philips, and Pioneer.

Basic 'collect and burn'
programs such as Roxio Toast and
NTI Dragon Burn on the Mac and
the likes of Ahead Nero on the PC
have the ability to add perfectly
adequate navigation to your discs,
but for anything more complex you

need a dedicated DVD authoring
application. All of the applications
tested here offer designers the
ability to create varying levels of
complexity in their menus. Most
have some facility to import layered
images from a graphics package
– normally Photoshop – or provide
tools for adding text, images, and
shapes (for buttons) within their
own workspace.

If you are designing your menus
in an external editor, be aware that

you should save screens as
multi-layered files if you want
to use button highlights.

Author's specials
For motion menus it's best to
create complex transitions in an
application such as After Effects,
before importing the rendered
project into the DVD project.

You need to leave at least
double the hard drive space
required for authoring each project.

APPLE DVD STUDIO PRO IS THE CLOSEST THING TO A PROFESSIONAL AUTHORING SUITE AVAILABLE FOR THE MAC

Pinnacle Liquid Edition 6

format Windows 98/2000/XP
price £153 plus VAT
company Pinnacle Systems,
shop.pinnaclesys.com
contact Pinnacle Systems, *01895 442 003*
minimum specs 800MHz processor, 256MB
RAM, DirectX 9 compatible graphics and sound
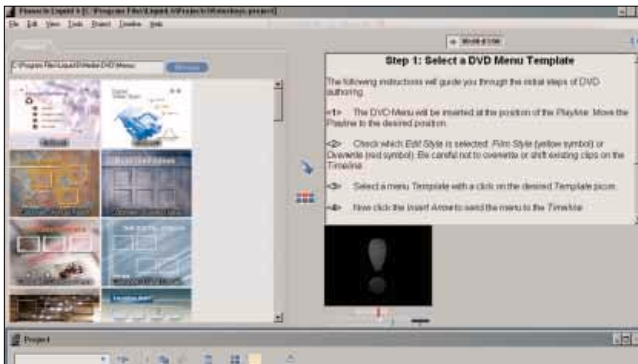card, 500MB disk space, CD drive
digit rating ●●◖○○

Pinnacle's Liquid product is a full video editing and effects suite with an integrated DVD authoring component. The tools resemble a basic program such as Intervideo's WinDVD, so if all you are looking for is some quick editing and simple transitions to prepare your disc, Liquid may be a bit of overkill.

There are a number of wizards to make the process of assembling your assets easier – including a media search tool. The wizards are helpful, as Liquid is not a product you can pick up and run with, as you need to understand Liquid's editing conventions first.

Liquid is another package with one video track, but it allows users to assemble clips consecutively on the timeline. There are a number of menu templates to choose from – you can follow a wizard to add the menu asset to a sequence in the timeline, then create links to chapters. You can customize the menu in the Menu Template Editor, importing background graphics or adding or editing text. End actions are installed using jump markers in the Timeline, which return users to the main menu after every clip. You can save the finished project as an ISO file prior to burning.

It may possess confusing proprietary quirks in some places, but Liquid Edition includes Hollywood FX Plus RT and TitleDeko RT for effects and titles. Having your effects, video, and authoring package in one suite is certainly of use to the DVD author, allowing you to create complex motion menus with transition effects before adding them to your DVD project.

Sonic DVD Producer Authoring 5.0

format Windows XP Pro
price £1,125 plus VAT
company Sonic Solutions, *www.sonic.com*
contact Sonic Solutions, *020 7437 1100*
minimum specs 1.7GHz Pentium IV CPU,
512MB RAM, CD or DVD-ROM drive,
1,024-x-768 resolution, 24-bit colour,
200MB hard drive space
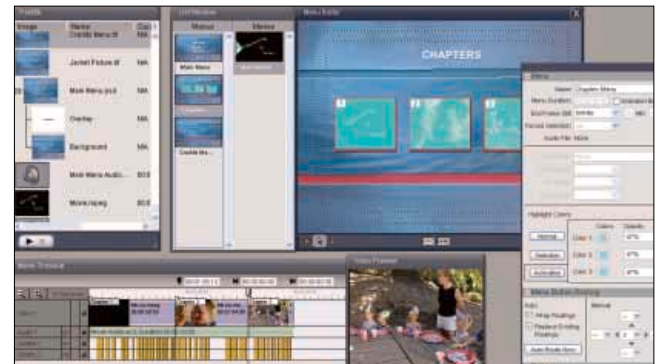**digit rating** ●●●◖○

Sonic Producer goes some way to bridging the gap between high-end dedicated systems and the desktop DVD author. It ships in three versions – the option tested here ships with a 128MB Matrox Parhelia video card. The interface includes a timeline, a viewer window, a Palette for storing assets, a list window for adding menus and movies to a project, and a menu editor window.

A large library of assets in the Producer folder is available to the Palette on opening. Menu graphics and imported assets are dragged onto the List Window to bring them into the project – along with any audio associated with the video.

The menu building process is a straightforward case of drag-&-drop, with automatic linking of buttons and tracks. Button highlights can be set in the Properties window – though the application doesn't support imported graphics with Alpha channels. There are several choices for menu button routing, including an AutoRoute choice. Support for burning DVD-9 discs directly came with version 4.5, so Sonic was ahead of the pack with Producer and you can also add a jacket picture for the project.

Illegal formats for DVD use such as AVI are transcoded just before the build process, so be prepared for a long wait if you haven't prepared your assets beforehand. Other products in the roundup share this lack of background encoding, but given the price here it could be seen as an omission. However, the application does ship with Sonic Audio Transcoder and MyDVD, a real time MPEG encoder.

When you are working through a slew of DVDs, this probably means using a fast external drive. Some DVD writers do not support DVD+R discs – the Apple Superdrive is a notable example.

DVDs have limited interactivity when compared with Web sites or games consoles, due mainly to the basic nature of consumer DVD players. The DVD specification is meant to ensure that the disc you author will play on all platforms.

As the specification was set some time ago, many of the strictures imposed seem backward in today's consumer market. However, developers have added some special features to applications to extend the use of the format, and a good designer will always be able to create some interaction using scripted behaviours, animated motion menus, and transitions and button routing.

Button routing allows you to specify the behaviour of the cursor and remote control. Many packages allow both manual and auto-routing of buttons for greater flexibility, but it's wise to keep to convention if the DVD is for the wider market.

On the button
To avoid unsightly jumps when the disc is accessed, you can set transitions between menu screens to play when buttons are pressed. Similarly, End actions are assigned to movies and menus to take the user back to a main menu screen after the movie has finished playing, or when a menu has cycled for a specified amount of time.

Special features can be built into menus by accessing the parameter register memory values of a DVD. These are machine level commands that the player understands and can control parental management features, or whether to play a certain menu ▷
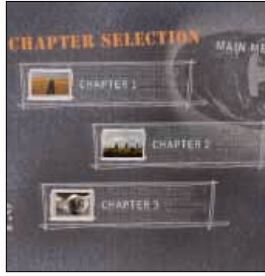
Sonic ReelDVD 3.1.3

format Windows 2000/XP
price £140 plus VAT
company Sonic Solutions, *www.sonic.com*
contact Sonic Solutions, *020 7437 1100*
minimum specs Pentium III processor,
800MHz , 256MB RAM, 2GB hard drive
space, SoundBlaster compatible sound
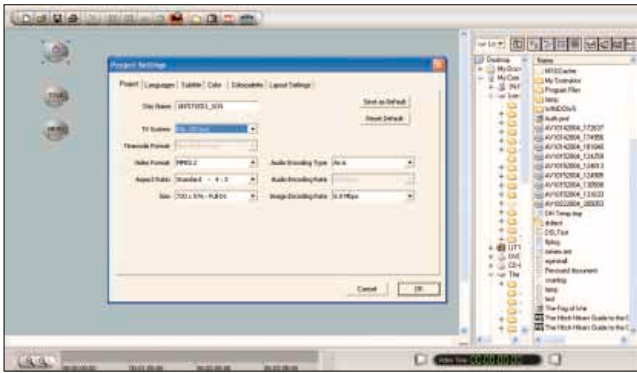card with DirectSound support, CD or
DVD-ROM drive
digit rating ✪✪✪✪✪

Ideal for entry-level users, ReelDVD is a simple application. It has an open interface with a Windows-style explorer window. The Storyboard area is the starting point for assembling assets and elements. Files dragged into the Storyboard from the Explorer window are given the once-over by the application and a window pops up to say whether or not the format is supported. Only MPEG-1 and MPEG-2 video is supported, so transcoding needs to be completed before bringing assets into ReelDVD.

The storyboard builds up an arrangement of tracks, icons for menus, and connectors between them, which is ideal for the non-linear nature of DVD authoring. Once tracks are in the Storyboard, their component parts, known as streams, can be viewed in the Track Editor. Here is where the button highlights and subtitles for each track are set using up to 32 subpicture streams, as well as the language for the audio (up to eight streams). The Track editor also allows Dolby Digital audio files to be synced with the timecode in the video stream.

Multi-layered PSD files can be imported intact, so that you can automatically define subpicture overlay masks and button hotspots for menus. In a further nod to professional authoring, button routing can be set up in the preview window while playback flow, End actions, and simple point-&-click programming can be set up in the Storyboard. There's no facility for DVD-ROM content but ReelDVD will allow you to create a DVD-Video from prepared assets with little fuss.

Ulead DVD Workshop 2

format Microsoft Windows 2000/XP
price £153 plus VAT, upgrade £76 plus VAT
company Ulead Systems, *www.ulead.co.uk*
contact Ulead Systems, *0049 2131 512 6850*
minimum specs Intel Pentium III
800MHz or higher, 128MB RAM, 500MB
of hard disk space, Microsoft DirectX 9
and DVD-ROM drive
digit rating ✪✪✪✪✪

DVD Workshop features a simple interface and has plenty of wizards to help you along. A well-sized Preview Window dominates the screen, with a Media Library to the side, and a Content Window in the form of a filmstrip below, used to define the order of material.

DVD Workshop restricts the project to a single video track and there is very much a linear approach involved, with five tabbed windows carrying you through the authoring steps. Encoding is handled by Ulead's MPEG-Direct codec so you can capture and translate any analog or DV footage into MPEG in one step, including video from non-copyrighted DVDs.

Automatic scene detection in the form of Split by Scene allows the software to capture, detect, and arrange clips automatically, but there are also simple controls to trim or cut clips into separate files, insert chapter points and add background music. For more complex projects you can add or import up to 32 separate subtitle tracks complete with customized text, as well as eight audio tracks and audio fading options. Button routing facilities are available – you can manually assign commands to a playlist to control how menu buttons behave.

The interface is far from sophisticated but this will suit many users who just need to assemble a project quickly. Recent update patches have provided support for dual-layer authoring so this relatively inexpensive offering is still a valid package to consider for more professional work.

IF YOU'RE SERIOUS ABOUT AUTHORING, IT'S WORTH LOOKING AROUND TO TAKE ADVANTAGE OF THE LATEST TECHNOLOGY

if the viewer has seen it before. The power to access these features is what sets the higher-end packages apart from the host of DVD authoring applications.

The high storage capacity of DVDs can hold multiple types of information on one disc, which allows a degree of interactivity. For example, a band's music DVD could hold extra material in a DVD-ROM section such as screensavers or Flash movies. The amount of space used for video dictates the amount of interactive material you can include.

Interactivity
For this reason, commercial movie releases, which use high-quality video and audio streams packed on dual-layer discs, usually display little interactivity, while discs featuring less or lower quality video content, intended for play on a PC, will boast more interactive features.

Web access can be built into DVDs, embedding hyperlinks or within DVD-ROM content, so that if the disc is being viewed on an Internet-connected PC, a Web page can be accessed. The buttons point to the corresponding Web links, and are stored on the DVD-ROM section of the disc. On a corporate DVD, you could embed links to a sales site or prompt a sales request by opening the user's email program.

Alternatives

Although there is a proliferation of DVD software for the prosumer, higher-end systems are available. Chief among these is the Scenarist line by Sonic Solutions. This is the weapon of choice for professional DVD authoring houses such as Abbey Road Interactive. There is a wide range of configurations that include an audio hardware converter, PCI encoder cards, dual monitors, and specialized software. The power of Scenarist lies in its ability to access the programming level of the DVD specification, providing a complete tape-to-disc solution that encodes, authors and outputs DVD projects for any purpose.

Sonic's SD-series Encoder hardware lies at the heart of the system, working in conjunction with real-time hardware video output that allows you to preview your project in real time on an external video monitor. The authoring process itself allows multiple video angles with audio/subtitle switching, jacket picture, subtitle effects, text data, 96KHz PCM Audio, DTS Audio, and even full karaoke support.

The key factor in the success of Scenarist however is its cell-level access to the scripts that control DVD players. This allows precise control over every command and parameter available in the DVD specification, including access to all 16 General Parameter registers (GPRMs). Multiple users can work on parts of the same project at once thanks to a powerful workgroup management system.

Pioneer also has a high-end solution in the form of the PRV-LX10 Professional DVD-Video recorder. This features a modular design with a 120GB hard drive and up to two DVD-R/RW drives in one unit. It allows one-step conversion of video assets to DVD, easy authoring of video projects and video archiving to DVD-Video format. Designed for those with limited knowledge of DVD authoring on computers, it can create DVD-Video on DVD-R or DVD-RW 4.7GB discs and allows real-time recording and menu creation.

Basic editing features allow users to trim VOB files, precisely remove and replace chapter points and reassign the title order. The internal hard drive allows storage of over 20 DVD projects, as well as libraries of menu backgrounds, button layout files, and EDL data. The recorder offers multiple analogue and digital connections and RS-422A and FireWire control capabilities. An ethernet port allows you to transfer files to the internal drive via a network connection.

Many DVD authoring applications will only accept video and audio assets encoded in formats that are 'legal' for the DVD specification. For encoding purposes, a third party hardware system or application is often required. One such system is the MPEG MovieMaker 200S from Optibase. Available in Basic or Xpress configurations, MPEG MovieMaker 200S is an MPEG-2 and MPEG-1 encoding platform for DVD creation that ships as a half-size PCI card.

Encoding options

It offers a range of video and audio interfaces, video resolutions, audio encoding format and MPEG multiplexing capabilities. Integrated with Optibase's developer tools and video streaming and networking platform, the boards are bundled with the MPEG Composer 200, a well-featured encoding-management application.

ProCoder 2.0 by Canopus provides powerful tools to prepare source video for conversion. Stitching allows multiple source clips in different formats and resolutions to be linked together to create one or more target clips. Video and audio filters provide high quality enhancement tools, such as bitmap overlay, cropping and volume adjustment, and to protect input before encoding, while target filters allow specific adjustments to be made for particular output formats.

You don't need specialized hardware for the encoding process. A software solution that content creators have been using for years is still going strong in the shape of Discreet Cleaner. Available for both Mac and PC platforms, Cleaner provides support for more than 60 media formats, including QuickTime 6, MPEG-4, Windows Media 9 (including support for HD and multi-channel audio), RealSystem 9, and AAC.

High performance, high quality MPEG-1 and 2 VBR encoding allows users to create top quality video for DVDs and Video-CDs, as well as providing a way to tweak the video with Cleaner's controls to get the highest quality. Professionally designed presets are available, allowing users to understand trade-offs between encoding output and quality, as well as allowing them to tweak the presets to get exactly what is required without starting from scratch.

Both Cleaner 6 on the Mac and Cleaner XL on the PC platform have the ability to set watch folders to encode footage automatically as well as output the encoded material to multiple local, network, and FTP destinations.
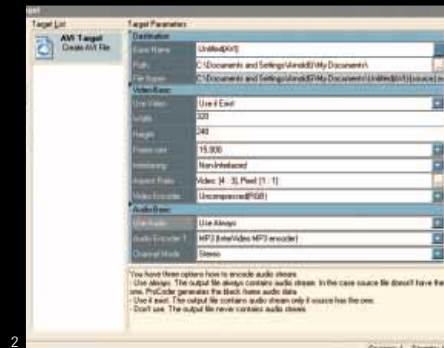
Discreet Cleaner XL (1), Canopus ProCoder 2.0 (2), Optibase MPEG MovieMaker 200S (3)

In authoring terms, the standard designation for single layer and dual layer media is DVD-5 and DVD-9 respectively. Until now, consumer DVD-9 projects were largely confined by the recordable media available. So, disk images had to be saved to DLT drives for pressing to DVD-ROM by commercial authoring houses. Older commercial dual-layer DVD formats weren't compatible with existing DVD Video players either.

In a breakthrough in dual-layer recording however, competing DVD-RW DL and DVD+RW DL formats are now available, so a new stage of DVD-authoring is set to be played out. The new formats virtually double data storage capacity on DVD recordable discs from 4.7GB to 8.5GB, allowing recordable media to provide space similar to the discs pressed by the major studios for their movies.

Most of the applications tested here have had point updates rushed out in the past month to provide support for dual-layer authoring, while hardware manufacturers are bringing out dual-layer burners. We used one such device as the baseline drive for the test – a new standalone FireWire burner from Plextor (the PX716UF), which we used with both Mac and PC applications.

Drives like this can support a dizzying number of formats, so if you're serious about authoring it's worth looking around to take advantage of the latest technology.

The recordable Dual-Layer discs will be priced at a premium until they become more widely accepted. For that reason we'll use the DVD-5 compatible single layer DVD format and its rewritable derivatives. It's best to use branded disks, so we used a selection of 8x and 16x speed TDK DVD+Rs and 2x speed DVD-RW discs for the test.

main picture. **Sony Vaio FS195XP**
1. **AJP D900T,** 2. **Alienware MJ-12m 7700 ,**
3. **Apple PowerBook G4 15-inch**
4. **Dell Latitude D610,** 5. **Evesham Voyager XT ,**
6. **HP NW8000,** 7. **Sony Vaio A397XP**

Creative laptops

BY NEIL BENNETT

The next generation of laptops and mobile workstations are here, so whether you need something small and light for regular travel or a powerhouse that only needs to go desk-to-desk, prepare to do more on the move.

2004 was supposed to see the laptop emerge – we'd all chuck out our hulking desktops and workstations and work from 'hot' desks and airport lounges on tiny silver devices, serviced by secretaries in pencil skirts while saying 'Ciao' into mobile phones.

While this fed the fantasies of largely male sales departments and middle managers, creative pros have been underwhelmed by what's been made available to them. Creative applications from Quark and Photoshop to Final Cut Pro and LightWave require high-resolution workspaces, which require a screen at least 15-inches in size. The only laptops combining spacious displays with a light frame seemed to be Apple's PowerBook G4s, which were a generation behind their workstation-class G5 cousins.

At the beginning of 2005 though, Intel is attempting redress the balance between power and mobility with a renewed version of its Centrino platform for notebook computers. The platform, known by its development codename Sonoma, will provide benefits across the board, according to Intel.

The Centrino platform is aimed at notebook computers and consists of three major pieces: the processor, its companion chipset, and a wireless board. The new Centrino platform includes improved versions of all three components with a new chipset, called 915 Express, forming its centrepiece.

The 915 Express chipset, formerly known by the code-name Alviso, adds support for the PCI Express interconnect technology. This allows users to add more powerful graphics chips to their notebooks.

The chipset supports DDR2 memory, a next-generation memory standard that clears the way for memory chips to run at faster speeds. The chipset also comes with support for a faster front-side bus, increasing the speed at which data flows between the processor and the memory from 400MHz to 533MHz. Multimedia improvements include support for Dolby Digital and Dolby 7.1-channel surround sound.

Changes have also been made to the wireless side of the package. There is improved networking software, within both the chipset and a new client application. Intel says this will make it easier for users to connect to Wi-Fi access points, as well as bring several security enhancements aimed at enterprise users. However, wireless speeds are still significantly slower than their ethernet equivalents. Wireless is great for Web surfing but you're still better off plugging in to move Quark documents or video clips around your studio's network.

Seven new Pentium M processors are available as part of the package. They range from a top-of-the-range model that runs at 2.13GHz to an Ultra Low Voltage version that runs at 1.2GHz.

Intel has presented benchmark tests that show a notebook PC with a 1.6GHz processor running the new Centrino platform would deliver a 5 per cent increase in performance with no impact on battery life, compared to a similar PC running at the same speed based on the old platform. The difference in graphics performance between the same two PCs is even greater with the new Centrino platform delivering a 91 per cent increase in performance, according to Intel's benchmarks. ▶

2   3   4   5   6   7   8

AJP D900T

format 17-inch widescreen
price £1,399 plus VAT
company AJP, *www.ajp.co.uk*
contact AJP, *020 8208 9744*
digit rating ✪✪✪◖ ☆

This is a whopper. It dwarfs every other unit in this group except Alienware's MJ-12m 7700, which uses the same hulking Clevo chassis. It also weighs just under a ton (actually 5kg, or two 15-inch PowerBooks), runs for less than an hour without being plugged into the mains and produces as much heat as a Metro on a motorway.

This may seem faintly ridiculous – and if you regard the D900T in terms of a traditional laptop, it is. However, if you work desk to desk (or home to work) and you're after a level of power just not available from traditional laptops, a unit such as this makes perfect sense.The power comes from a 3.2GHz desktop Pentium 4 chip, which is accessed through a desktop-level 800MHz frontside bus. The D900T features 1GB of DDR2 memory and NVidia's latest, greatest mobile graphics chip, the 256MB RAM-enabled GeForce Go 6800. It's a set-up that would make most desktop users jealous.

All this power is accessed through a top-quality X-black-type 17-inch screen, which looks fantastic. The black-&-silver chassis looks impressive, and features an excellent keyboard and trackpad – though the pad is the wrong aspect ratio for the screen.

The D900T falls down because it's not fully featured enough to justify the weight and size. The 3.2GHz P4 chip is good, but a 3.4GHz or 3.6GHz unit would have been better. The 80GB hard drive only runs at 4,200rpm, only one of the D900's two bays is used and many creative applications require the full Professional version of Windows XP. The chassis is credible if you fulfil its potential, as with Alienware's unit (right), but not if you cut corners.

Alienware MJ-12m 7700

format 17-inch widescreen
price £1,928 plus VAT
company Alienware, *www.alienware.co.uk*
contact Alienware, *0800 279 9751*
digit rating ✪✪✪✪ ☆

Based around the same enormous Clevo chassis as the AJP D900T, the MJ-12m 7700 contains more than enough power and peripheral features to justify its size and weight. It's expensive – almost two grand. However, the overall package just about justifies the cost.

The 3.4GHz Pentium 4 processor at the heart of the 7700 is one step below Intel's fastest desktop chip. It's only slightly faster at pure processing than the 3.2GHz chip found in the D900T, but it's much quicker than any of the Pentium M chips at high-intensity processing. The 7700 was over two minutes faster than the D900T in our Photoshop 2D image processing test, even though both machines feature 1GB of identical DDR 2 RAM. This can be attributed not only to the faster processor, but also the 7700's innovative drive system.

The 7700 is the first laptop we've seen with two hard drives inside. The two 60GB drives run at 7,200rpm, which makes them viable for video editing, and are joined as a RAID array. This had been set-up as a single 120GB drive, but this could theoretically be set as a single 60GB mirrored drive for extra data protection.

It's for the power and features such as this that some users will plump for the 7700 over lighter 17-inch models. Alienware also has a mobile workstation version coming out soon, which is identical apart from using NVidia's Quadro FX Go1400 graphics chip.

Other details we like included the excellent X-black-type screen, the dual-layer DVD±RW drive, and the multiple media card slots that will work with almost any camera. Only Bluetooth is a notable exception to the 7700's feature set.

Apple PowerBook G4 15-inch

format 15-inch widescreen
price £1,343.88 plus VAT
company Apple, *www.apple.com/uk*
contact Apple, *0800 783 4846*
digit rating ✪✪✪✪ ☆

This new PowerBook isn't a G5, but it's still a notable machine. It's not the fastest, but it offers great value-for-money and style.

To some creatives, though, all that matters is that it's a Mac; it runs Mac OS X, and is the smallest, lightest 15-inch we've seen. If you have an older PowerBook, the speed bump to 1.67GHz is noticeable with larger documents and media. The sleek aluminium design is getting a bit old now, but you'll still garner envious looks.

This PowerBook's main competitor is Sony's Vaio FS195XP, which is very similar in price and purpose. The specs almost match too: processor (1.67GHz vs 1.73GHz), RAM (512MB), screen resolution (1,280-x-854 vs 1,200-x-800), DVD±RW drive and wireless (though Bluetooth is only an option on the Sony).

The differences begin with the screen, which the Vaio wins hands down with the glossy X-black display. The Vaio has the edge for high-intensity processing (LightWave test) and image processing (Photoshop), and knocks the stuffing out of the Mac at 3D. To the Vaio's advantage, the 1.73GHz processor is only mid-range – while the PowerBook's 1.67GHz is as good as it gets. The PowerBook has the advantage with weight (it's 800g lighter) and battery life (4.5 hours to the Vaio's two hours).

However the PowerBook also features innovations not found on the Sony: notably the scrolling trackpad, Sudden Motion Sensor and Bluetooth 2.0. The trackpad allows two fingers to be used for scrolling and other functions, and works well – though two buttons would have been more useful.

If you're shopping for a new machine, check the specifications to ensure you get all the benefits of the new platform. This is because Intel is allowing manufacturers some degree of freedom in their selection of the Centrino platform. For example, two wireless adaptors are available but only one supports 802.11a networking. Similarly, four chipsets are available to PC makers but only two of them support the faster 533MHz front-side bus.

Thermal challenge

Away from Intel, there is less to shout about in terms of processors and architecture. AMD's mobile processors have found more favour in low-cost units, and Apple is still stuck with its G4 chips for its laptops – claiming that putting a G5 chip in a laptop is "the mother of thermal challenges".

However, innovation has appeared in other areas, with Apple debuting a faster wireless connectivity standard for connecting peripherals (Bluetooth 2.0), and technologies first introduced by single manufacturers last year appearing across the board.

In 2004, Sony introduced its revolutionary X-black screen technology, which produced brighter and richer output than we're used to with LCD displays – nearer, in fact, to what you'd expect from a CRT display. Video editors especially will appreciate the extra brightness. Now the technology is also available on larger models from more specialist manufacturers.

In the last year we've also seen widescreen displays change from being confined to a stylish minority to appearing on most models. As well as improving the looks of a laptop, widescreen laptops are generally easier ▷

Dell Latitude D610

format 14-inch conventional
price £799 plus VAT
company Dell, *www.dell.com/uk*
contact Dell, *0870 152 4699*
digit rating ✪✪◖ ★ ★

Quite why Dell sent us the Latitude D610 for our feature on laptops for creatives, I'm not sure. However, it provides an excellent lesson on why we require the specs that we do – and why our laptops cost so much more than those dinky units the sales guys are running around with. The D610 would be ideal for the travelling businessman or woman, but it's not for the creative professional at all.

As you'd expect, the D610 comes last in all of our tests – even losing out to the 15-inch Powerbook in our 3D tests. The results also seem better than they really are, as the 1,024-x-768-pixel screen has almost a third less pixels for the graphics system to deal with than a 1,200-x-800 screen such as that found on the PowerBook or Vaio FS195XP. It's pretty lame, though that's hardly surprising considering the basic processor and lack of a separate graphics chip.

The 14.1-inch screen has its advantages – it's much easier to use in cramped conditions such as on a plane – but the D610's only slightly lighter than the 15-inch PowerBook, and the resolution is too low for most major creative applications.

To keep the price down to less than £800, Dell has skimped on the hard drive – which is only 40GB in size – and the optical DVD/CD-RW combo drive. These could be improved using the online build-to-order site, as you could spec the machine up to a 2GHz (Pentium M 760), 2GB RAM, ATI X300 graphics chip, a 1,280-x-1,024 screen, 80GB hard drive, and a a/b/g wireless card for a whopping £2,094 plus VAT – and you'd still be better off with a 15- or 17-inch Sony.

Evesham Voyager XT

format 15-inch conventional
price £976.85 plus VAT
company Evesham, *www.evesham.com*
contact Evesham, *0870 160 9700*
digit rating ✪✪✪◖ ★

The Voyager XT is the definitive average creative laptop. Its specifications look pretty good on paper and it's available at a very good price. However, there's nothing to make you rush out and buy it.

The overall styling of the Voyager XT is very corporate, but it's much more powerful than the sales force-focused Latitude D610 (left). The 1.8GHz Pentium M 745 processor is powerful, but relies on a 400MHz frontside bus. The standard 512MB RAM is DDR RAM, not the faster DDR2 memory found on other new models. The modern prevalence of widescreen displays may be in part an affectation for style points, but it's semi-practical too, so the Voyager XT misses the bus here, too.

Certain physical components aren't good quality either. The keyboard and trackpad are as comfortable and responsive as you'd expect from a standard laptop, not what you require from a high-end creative laptop set against models from Apple and Sony. The keyboard was very squidgy, almost reminiscent of an old ZX Spectrum. Below the trackpad is a scrollpad, which is a nice thought but not high-enough quality to be truly useful.

The ATI Mobility Radeon 9700 gives the Voyager XT more 3D power than any other Pentium M-based laptop – only beaten by the huge 17-inch desktop replacements from AJP and Alienware. The Voyager XT's connectivity options are basic, only offering 10/100Mbps ethernet networking – most other laptops in this group test offer Gigabit, and b/g wireless networking. There's no Bluetooth and only two USB 2.0 ports. The DVD-RAM drive is unusual, but slow as it's DVD recording is limited to 2x speed.

HP NW8000

format 15-inch conventional
price £2,399 plus VAT
company HP, *www.hp.com/uk*
contact HP, *0870 241 1485*
digit rating ✪✪✪ ★ ★

The NW8000 is the most reasonably-sized mobile workstation models in this round-up – but smaller and lighter models have since appeared from Dell and IBM. The NW8000 is still a worthy machine though, if hampered by an outdated graphics chip and less than up-to-date technology.

At 2.9kg, the NW8000 is as light as the Evesham Voyager or the 15-inch Sony model. The case design isn't bad, and it certainly feels more robust than the cases of either of those two models. Look inside it, though, and the NW8000's weaknesses appear.

The 2GHz Pentium M chip is powerful – but the 400MHz frontside bus lets it down. This is because the NW8000 is essentially based on pre-Sonoma technology.

The NW8000's screen is great, but it's been usurped by the X-black-type screens becoming more widespread. The NW8000's screen is still better than most offerings, though.

More importantly, the ATI Mobility FireGL T2 graphics chip that makes the NW8000 a mobile workstation is getting on a bit. With a new range of Mobility FireGL chips on the way – the V5000, the V7800 and the V9000 – that boast more power and PCI Express connectivity, the poor old T2 looks very lame indeed.

The NW8000 did comparatively well in our tests – but certainly not well enough to justify the price being even £450 more than the well-beaten MJ-12M 7700.

As Digit went to press, HP has announced an upgraded version of the NW8000 that adds the Mobility FireGL V5000 graphics chip. We'd recommend you wait for this NW8240 instead.

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to use in cramped environments, such as while flying cattle class.

IBM was first to introduce drop protection for the notebook hard drive, using motion sensors to shut it down before it hits the floor. From the original 'Active Protection System', we now have other systems such as Apple's Sudden Motion Sensor.

Power tools
The new PowerBooks are the first to support Bluetooth 2.0, which is designed to be three times as fast as the Bluetooth 1.0/1.2 found on all other devices. However, this is less about speed than saving battery life – anyone trying to print photos via Bluetooth will appreciate the speed jump. Open Bluetooth connections eat battery power, and transferring data in a third of the time will save you much juice. Unfortunately, there aren't any Bluetooth 2.0-compatible devices available yet.

Other useful devices that are becoming more widespread include dual-layer DVD burners, which allow 8.5GB to be burned to a single disc – though media prices are still prohibitively expensive at around £6 plus VAT per disc unless you order in bulk online. More laptops are including media card ports, which is great if you are always losing your USB card reader – though an SD card slot isn't much use if your camera uses Memory Sticks.

A laptop may not be your primary machine, especially with a deadline hanging around your neck – but when it's time to kick back, chill out and be creative, a laptop in the garden with a beer on a summer's day is just what you need.

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Sony Vaio FS195XP

format 15-inch conventional
price £1,344 plus VAT
company Sony, *www.sony.co.uk*
contact Sony, *08705 111 999*
digit rating ●●●●○

The Vaio FS195XP is Sony's take on Apple's new 15-inch PowerBook. Although stylish, Vaios used to come in two varieties: large, heavy, and powerful; or small, light, and a bit weak. The FS195XP isn't quite as diddy as the PowerBook or as stylish as the 17-inch Vaio (right), but it's an all-round performer let down by some graphical corner cutting.

Based on Intel's Sonoma platform, the FS195XP has some powerful technologies behind the rather bland specs. 512MB of RAM is right for the price, though the 1GB limit is crap. It's DDR2 memory, which gives this Vaio a slight advantage in RAM-hungry tools such as Photoshop. The 1.73GHz Pentium M processor is faster than the 1.67GHz Power PC G4 processor found in the PowerBook. More importantly, you have the option to spend more and get a processor up to 2.13GHz in speed, which you don't with the PowerBook.

What will attract most users, though, is the X-black screen – though this is no longer only available on Sony laptops and monitors. Unfortunately, the screen is powered by an NVidia GeForce Go 3200 graphics processor, which only has 16MB or 32MB of graphics RAM (Sony couldn't say which). The 128MB quoted figure is found by adding this to the amount of normal RAM that the graphics chip can use – dropping the available power overall. This leaves this Vaio lagging behind other PC laptops in the 3D stakes, but still ahead of the 15-inch PowerBook.

This Vaio lacks the PowerBook's scrolling trackpad, Sudden Motion Sensor, and Bluetooth 2.0 – though none of these are essential.

Sony Vaio A397XP

format 17-inch conventional
price £1,899 plus VAT
company Sony, *www.sony.co.uk*
contact Sony, *08705 111 999*
digit rating ●●●●◐ DIGIT BUY

The Vaio A397XP is an absolute corker. It offers the best balance of power and mobility for the creative designer – and looks great to boot. It's as if the AJP or Alienware units had been on a serious diet, making it thin and light enough to use on the move and powerful enough to use as your central design, editing, or animation machine.

The outside looks great, but it's the screen that really shines. Combining Sony's X-black technology with a high-definition 1,920-x-1,200 resolution matrix, it's the best laptop screen we've ever seen. Images in Photoshop are extremely detailed and colourful, and the screen offers spacious layouts within usually cluttered video editing and 3D applications. Even at this resolution, the ATI X600 chip keeps 3D graphics running smoothly and generating a decent Cinebench score – helped along by the fast 2GHz processor and 1GB of DDR2 memory.

Results in Photoshop were less impressive, though perfectly adequate. We could see that redrawing the huge resolution was slowing down image processing, which the swift time in LightWave backed up. However, the small delay is worthwhile. Only the two huge Pentium 4-based units were more powerful than the A397XP, and their size and weight puts them in a different category of device entirely.

Also adding points to the A397XP's score was a responsive trackpad, which was the correct shape – unlike some of the other widescreen laptops, and a comfortably large keyboard. This Vaio matched its much bigger brothers for sound quality from its little speakers, and the dual-layer Sony DW-D56A DVD±RW drive.

A definite winner.

products at a glance

MANUFACTURER	AJP
MODEL	D900T
PRICE PLUS VAT	£1,399
DIGIT RATING	●●●◐
OS	Windows XP Home
CPU	Pentium 4 540 (3.2GHz)
RAM (STANDARD/MAX)	1GB/2GB
FRONT SIDE BUS	800MHz
SCREEN	17-inch
ASPECT RATIO	Widescreen
RESOLUTION	1,680-x-1,050
GRAPHICS CARD	NVidia GeForce Go 6800
GRAPHICS RAM	256MB
HARD DISK	80GB
OPTICAL DRIVE	DVD±RW (dual layer)
MEDIA CARD SLOTS	CF, SM, SD, MS
INPUT DEVICE	Trackpad
DIMENSIONS (W-X-D-X-H)	397-x-298-x-50mm
WEIGHT INCLUDING BATTERY	5.2kg
BATTERY LIFE	1 hour
ETHERNET	Gigabit
WIRELESS CONNECTION	802.11b/g/Bluetooth/IR
PORTS	4x USB 2.0, 2x FireWire, DVI, S-Video, composite video, PCMCIA, keyboard/mouse, parallel, serial, modem

Testing procedures

The laptops were benchmarked for 2D graphics and rendering performance. All tests were performed three times directly from start-up and an average taken. Video-manipulation performance was tested using Adobe After Effects and Discreet Combustion.

Photoshop
This test performs 20 actions upon a 200MB image, within Photoshop CS with Version Cue running. Results are in seconds and smaller bars are better.

Cinebench
Cinebench 2003 simulates scenes from within Maxon Cinema 4D. Scores given are the OpenGL HW-L result. This is an indication of the frame-rate and 3D power of the host machine, placing particular stress on the graphics card. The test passes the position of light sources and geometry to the graphics card, which processes them using OpenGL. Results are in Cinebench's proprietary units, and longer bars are better.

Rendering
This uses the Tracer – Radiosity.lws file, included with LightWave 7.5c, with the resolution multiplier raised to 50 per cent (from 25 per cent) to test the response to very complex scenes and long-term stability. The Image Viewer FP was turned on. Rendering was performed using two threads per Hyper-Threaded or 64-bit processor and one thread per processor for other chips. Results are in minutes and seconds, and shorter bars are better.

	ALIENWARE MJ-12M 7700	APPLE POWERBOOK G4 15-INCH	DELL LATITUDE D610	EVESHAM VOYAGER XT	HP NW8000	SONY VAIO FS195XP	SONY VAIO A397XP
Price	£1,928	£1,343.83	£799	£976.85	£2,399	£1,344	£1,899
Rating	★★★★	★★★★	★★	★★★	★★★	★★★★	★★★★
OS	Windows XP Professional	Mac OS X 10.3	Windows XP Professional	Windows XP Home	Windows XP Professional	Windows XP Professional	Windows XP Professional
Processor	Pentium 4 550 (3.4GHz)	PowerPC G4 1.67GHz	Pentium M 730 (1.6GHz)	Pentium M 745 (1.8GHz)	Pentium M 755 (2GHz)	Pentium M 740 (1.73GHz)	Pentium M 760 (2GHz)
Memory	1GB/2GB	512MB/2GB	512MB/2GB	512MB/1GB	1GB/2GB	512MB/1GB	512MB/1GB
FSB	800MHz	167MHz	533MHz	400MHz	400MHz	533MHz	533MHz
Screen size	17-inch	15-inch	14.1-inch	15-inch	15-inch	15.4-inch	17-inch
Screen type	Widescreen	Widescreen	Conventional	Conventional	Conventional	Widescreen	Widescreen
Resolution	1,680-x-1,050	1,280-x-854	1.024-x-768	1,400-x-1,050	1,600-x-1,200	1,280-x-800	1,920-x-1,200
Graphics	NVidia GeForce Go 6800	ATI Mobility Radeon 9700	integrated	ATI Mobility Radeon 9700	ATI Mobility FireGL T2	NVidia GeForce Go 6200	ATI Mobility Radeon X600
Graphics memory	256MB	64MB	up to 128MB (shared)	128MB	128MB	up to 128MB (shared)	128MB
Hard drive	120GB	100GB	40GB	80GB	60GB	100GB	80GB
Optical	DVD±RW (dual layer)	DVD±RW	DVD/CD-RW	DVD-RW/RAM	DVD/CD+RW	DVD±RW (dual layer)	DVD±RW (dual layer)
Card reader	CF, SM, SD, MS	None	None	None	SD Card	Memory Stick	Memory Stick
Pointing	Trackpad	Trackpad	Trackpad/Pointer	Trackpad	Trackpad	Trackpad	Trackpad
Dimensions	397-x-298-x-50mm	348-x-241-x-28mm	312-x-262.2-x-34.3mm	326-x-258-x-25mm	326-x-275-x-41mm	364-x-265-x-25mm	406-x-280-x-42mm
Weight	5.2kg	2.5kg	2.2kg	2.9kg	2.9kg	2.9kg	3.9kg
Battery	1 hour	4.5 hours	not quoted	3 hours	2 hours	2 hours	2 hours
Network	Gigabit	Gigabit	Gigabit	10/100Mbps	Gigabit	10/100Mbps	Gigabit
Wireless	802.11b/g/IR	802.11b/g/Bluetooth 2.0+EDR/IR	802.11b/g/IR	802.11b/g/IR	802.11b/g/Bluetooth/IR	802.11b/g/IR	802.11b/g/Bluetooth/IR
Ports	4x USB 2.0, 2x FireWire, DVI, S-Video, composite video, PCMCIA, keyboard/ mouse, parallel, serial, modem	2x USB 2.0, FireWire 800, FireWire, DVI, S-Video, PCMCIA, modem "	4x USB 2.0, VGA, S-Video, PCMCIA, parallel, serial, modem	2x USB 2.0, FireWire, VGA, S-Video, PCMCIA, parallel, modem	2x USB 2.0, FireWire, VGA, S-Video, PCMCIA, parallel, serial, modem	3x USB 2.0, FireWire, VGA, S-Video, PCMCIA, parallel, modem	3x USB 2.0, FireWire, VGA, S-Video, PCMCIA, parallel, modem

DIGIT BEST BUY (Sony Vaio A397XP)

Test results

	AJP D900T	Alienware MJ-12m 7700	Apple PowerBook G4 15-inch	Dell Latitude D610	Evesham Voyager XT	HP NW8000	Sony Vaio FS195XP	Sony Vaio A397XP
LightWave	39m 49s	37m 21s	64m 24s	66m 5s	58m 35s	56m 19s	61m 21s	53m 11s
Photoshop	8m 53s	6m 47s	11m 52s	14m 20s	10m 19s	6m 53s	11m 17s	10m 46s
Cinebench (CB)	2627	2588	806	624	2311	2643	1816	2289

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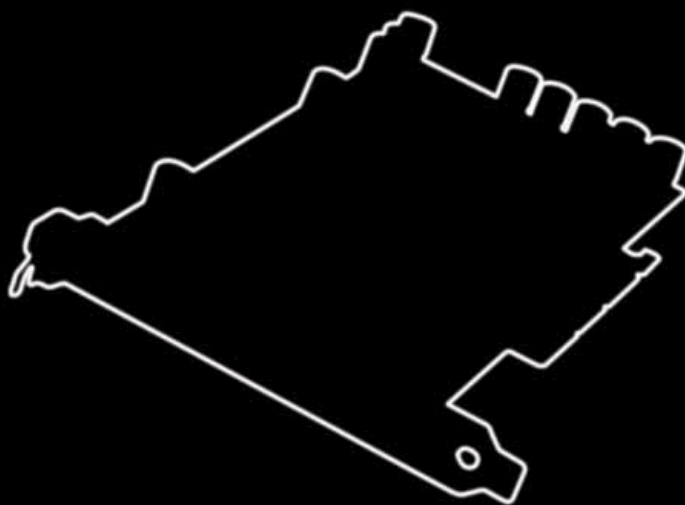
DIGIT BEST BUY RECOMMENDATIONS: WORKSTATIONS

Apple Power Mac G5 dual 2GHz
Everything the Mac community had hoped it would be, the Power Mac G5 is fantastic with Photoshop, and could convert Windows users

Dell Precision M60
A sleek and businesslike notebook that is suitably kitted-out for the creative professional. Boasts the Pentium M processor (1.7GHz) and 2GB of RAM

Sony Vaio GRT996ZP
Huge and powerful, this Vaio has the best screen we've ever seen on a laptop. A 3.2GHz Pentium 4 chip adds speed to this desktop-replacement

Xworks X6
Incredibly fast processing speeds, plenty of RAM, and flexible upgrade options make the X6 a fantastic machine

Buying advice: digital cameras

If you want a digital camera for serious design and publication work, you'll probably reach for a digital SLR first. These cameras are built for professional photography. With a digital SLR model, you're sure of high-quality output, the lenses are interchangeable, and the cameras can communicate with proper flash lighting systems. Digital SLRs are now starting to fall in price, too, so they're becoming an affordable solution to your imaging problems.

However, a few of the top 'prosumer' compact cameras offer similar capabilities, so it's worth checking out your options.

The race to pack in higher megapixel output seems never-ending – the current crop of compact models has eight million pixels. Higher resolutions can decrease output quality, because cramming more sensor cells onto small CCD sensors increases image noise. However, there are signs that suggest manufacturers realize high megapixel output only gives their products a temporary competitive advantage, and we're seeing some genuinely useful innovations too.

For instance, some manufacturers are addressing one of the biggest limitations of digital sensors – the dynamic range. This is the ability to capture detail in both bright highlights and deep shadows in the same exposure.

HP and Fujifilm have both come up with technologies that attempt to improve dynamic range. HP's Adaptive Lighting features on its Photosmart 945 model. When a photograph is taken, the camera calculates a contrast mask, and electronically balances the range of tones.

Fujifilm's method involves two photodiode sensors in each cell area of its Super CCD HR sensor. The two photodiode sensors have different light sensitivities, and the camera chooses which one to use for different areas of the image.

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating

Workstations

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Acumen Xtreme	£1,899	Evesham, www.evesham.com, 0870 160 9700	Windows	Oct 04	3.0
Looks like a winner on paper, but the Acumen Xtreme performs poorly. It incorporates a lot of new kit though, and packs in top accessories					
Aspire 2000	£1,020	Acer, www.acernotebooks.co.uk, 0845 226 2235	Windows	Jun 04	4.0
Some nice touches make this a sexy system for the mobile businessperson, but the Aspire 2000's screen is too low-res for the creative					
Centurion	£1,299	ACi, www.aciplc.com, 020 8830 1958	Windows	Jun 04	3.0
A no-frills Centrino-based laptop. Boasts 1GB of RAM for a reasonable price, but the screen and hard drive are notably average					
Crossbow XB-A700	£1,275	Armari, www.armari.co.uk, 01923 225 550	Windows	Digit 76	3.5
A good attempt to put workstation components in a small case. It looks great, but because of its small size, upgrade options are restricted					
EvoFlex 360-PCX59	£1,575	Graphicsworkstations.com, 020 8544 0022	Windows	Oct 04	4.0
There are a few weaknesses – the unit is incredibly noisy, for one – but overall this is an excellent budget option for the graphics professional					
IntelliStation M Pro	£1,750	IBM, www.ibm.com/uk, 0800 015 7229	Windows	Oct 04	2.5
Would have been a great choice a few months ago, but a few new technologies have rendered IBM's machine out-of-date					
Magnetar Xi	£3,999	Armari, www.armari.co.uk, 01923 225 550	Windows	Sep 04	4.0
Boasts supreme graphics performance, and is packed with features. However, it's pricey, and didn't perform that well on LightWave rendering					
NW8000	£2,507	HP, www.hp.com, 0870 241 1485	Windows	Jun 04	4.0
This mobile workstation is a little on the large side, but boasts a great screen, and fast powerful performance. It's a bit pricey for what you get					
NX7010	£1,533	HP, www.hp.com, 0870 241 1485	Windows	Jun 04	3.5
This laptop's feature list reads like a minimum recommended specs list for a creative notebook, and while it's adequate, it isn't anything special					
Pavilion zd7050EA	£1,445	HP, www.hp.com, 0870 241 1485	Windows	May 04	3.5
A big laptop with big ambitions. It's filled with wonderful little details, but needs a better processor and a higher-resolution screen					
PowerBook G4 (15-inch)	£1,870	Apple, www.apple.com/uk, 0800 783 4846	Mac	Jun 04	3.5
Not as cutting-edge as it once was, the PowerBook G4 is in need of an update. It's now underpowered, and only matches the encroaching competition					
PowerBook G4 (17-inch)	£2,040	Apple, www.apple.com/uk, 0800 783 4846	Mac	Jun 04	3.5
1GHz G4 chip; 17-inch/1,440-x-900-pixel screen; 64MB graphics memory; 60GB hard drive; 3.1kg; 4.5-hour battery life					
Power Mac G5 dual 2GHz	£1,863	Apple, www.apple.com/uk, 0800 783 4846	Mac	Oct 04	4.5
Ideal for the traditional Power Mac creative, but the dual 2GHz G5 is limited on high-end flexibility, but the G5 is perfect for 2D and video work					
Precision 370	£1,939	Dell, www.dell.co.uk, 0870 152 4699	Windows	Oct 04	3.0
Dell has delivered a machine that is fine for the corporate market, but best avoided by the creative user. Offers poor value for money, too					
Precision 670	£5,691	Dell, www.dell.co.uk, 0870 152 4699	Windows	Nov 04	4.0
The most powerful workstation we've seen but you need to spend £3,000 to upgrade the £1,200 model. Two 3.4GHz Xeon processors make it very fast					
Precision M60	£2,349	Dell, www.dell.co.uk, 0870 152 4699	Windows	Jun 04	4.5
A great mobile workstation – it's huge, but it packs a lot of power. Features media card reader slots and good ergonomic touches, and a decent screen					
Pro Cinebook 1.7	£1,233	Evesham, www.evesham.com, 0870 160 9700	Windows	Jun 04	4.0
Desperately tries to be a PowerBook. Doesn't match Apple's looks, but it does have shedloads more power and an absolute bargain price					
ThinkPad R50p	£2,900	IBM, www.ibm.com/uk, 0800 015 7229	Windows	Jun 04	4.0
The ThinkPad R50p is ugly, but confirms IBM's reputation for reliability and innovation. Features a Pentium M 1.7GHz, 1GB RAM, and a 60GB hard drive					
ThinkPad T41p	£2,930	IBM, www.ibm.com/uk, 0800 015 7229	Windows	Jun 04	3.5
A 14-inch version of the R50p, this notebook isn't as good value. The benefits brought by a smaller case are countered by lower screen resolution					
T900-NQ	£1,999	Armari, www.armari.co.uk, 01923 225 550	Windows	Oct 04	4.0
A powerful machine with a host of impressive technologies, although it could do with some more RAM. Incorporates an Iomega REV drive					
Vaio GRT996ZP	£2,210	Sony, www.sony.co.uk, 08705 111 999	Windows	Jun 04	4.5
A fine desktop replacement model, the Vaio GRT996ZP boasts a better screen than some standalone monitors. A 3.2GHz P4 chip makes it very fast					
X6	£1,937	Xworks, www.xworksinteractive.com, 01785 229 191	Windows	Oct 04	4.5
Aside from the black ash look, the X6 is a great machine that offers speed and top performance. Perfect for 2D, and easily upgraded for 3D work					

Digital cameras

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Camedia C-5060 WZ	£420	Olympus, www.olympus.co.uk, 020 7523 2772	M | W	Jul 04	4.0
The C-5060 WZ features a clever rotating monitor, and the widest-angle zoom of any prosumer compact camera. One of the best 5mp models available					
Cybershot DSC-F828	£765	Sony, www.sony.co.uk, 08705 111 999	M | W	Jul 04	4.5
Fast, powerful, and enjoyable to use, this camera should please professional photographers, as long as they can live without custom user settings					
D2H	£2,130	Nikon, www.nikon.co.uk, 0845 4500 155	M | W	Jan 05	5.0
Nikon's second-generation professional digital SLR is a fantastic camera, despite its relatively low resolution of 4mp. Great quality images					
D70	£680	Nikon, www.nikon.co.uk, 0845 4500 155	M | W	Jan 05	4.5
This is one of the first digital SLRs to move away from the professional market. It has consumer features like scene modes, plus pro fine-tuning options					
Dimage A2	£650	KonicaMinolta, www.konicaminolta.co.uk, 020 8751 6121	M | W	Jul 04	4.5
This 8mp model is great to use, thanks to its high-quality viewfinder and excellent output. The image-stabilization technology is a real plus, too					

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
DCS Pro SLR/c	£2,495	Kodak, www.kodak.co.uk, 01442 261122	M | W	Jan 05	**3.5**
It has a 13.9mp sensor, but this SLR is let down by a poor frame rate – only 1.7fps. A fine camera if you're not in a hurry, no good for sports or news					
DX7630	£298	Kodak, www.kodak.co.uk, 01442 261122	M | W	Jul 04	**4.0**
A high-resolution camera at a low price, the DX7630 has a good screen and full manual controls. Some of the controls are a little fiddly, though					
EasyShare CX7430	£170	Kodak, www.kodak.co.uk, 0870 243 0270	M | W	Jun 04	**3.5**
If simplicity is a virtue, the Kodak EasyShare CX7430 is perfect. It's good value for 4mp, but includes controls suitable only for point-&-shooters					
E-1	£850	Olympus, www.olympus-pro.co.uk, 0800 072 0070	M | W	Jan 05	**3.0**
The first camera built to the new Four Thirds lens mount standard, this SLR can't quite match the performance of more expensive models					
E-300	£595	Olympus, www.olympus.co.uk, 0800 072 0070	M | W	Feb 05	**4.0**
Digital SLR with 8mp and Four Thirds lens and flashgun compatibility. Great output for a good price, but the menu system is slightly fiddly					
EOS 20D	£925	Canon, www.canon.co.uk, 0800 616 417	M | W	Jan 05	**4.0**
This 8.2mp digital SLR offers fantastic image quality, great detail, a quick autofocus system, and a DIGIC II processor, all in a small and light body					
EOS-1D Mark II	£2,562	Canon, www.canon.co.uk, 0800 616 417	M | W	Jan 05	**4.5**
A digital SLR built for performance. Canon's DIGIC II processor, top notch exposure and autofocus technology, and 8.2 megapixels					
EOS-300D	£765	Canon, www.canon.co.uk, 0800 616 417	M | W	Dec 03	**4.5**
The lowest priced digital SLR on the market. All the important functions, such as user-definable white balance and sensor cleaning, are included					
Exilim Pro	£425	Casio, www.exilim.co.uk, 020 8208 2838	M | W	Aug 04	**4.5**
Fast and quiet with good image quality, plenty of advanced features, and bracketing options. The Exilim Pro is compact and solid, and a top model					
FinePix F810	£298	Fujifilm, www.fujifilm.co.uk, 020 7586 5900	M | W	Mar 05	**4.0**
An update to the FinePix F710, the main difference is the F810's 7.3mp resolution – twice that of the old model. A decent, well-built compact					
FinePix E550	£281	Fujifilm, www.fujifilm.co.uk, 020 7586 5900	M | W	Mar 05	**3.5**
Compact camera with 6.3mp resolution, 4x zoom, and a 2-inch screen. Unless you use RAW capture, it's prone to purple fringing at ISO 100					
FinePix S2 Pro	£1,150	Fujifilm, www.fujifilm.co.uk, 020 7586 5900	M | W	Dec 03	**4.5**
A top digital SLR model. Good on detail and easy to use, the FinePix S2 Pro has two memory card slots and supports both FireWire and USB					
FinePix S5500	£1,150	Fujifilm, www.fujifilm.co.uk, 020 7586 5900	M | W	Mar 05	**3.5**
It looks-&-feels like a digital SLR, but isn't. Boasts 4mp resolution, a massive 10x zoom, and good output, but sufffers from a small screen and					
FinePix S7000	£470	Fujifilm, www.fujifilm.co.uk, 020 7586 5900	M | W	Jul 04	**4.0**
Top-end prosumer digital camera with long zoom, fast responses, good control set and excellent 6mp or 12mp resolutions					
***istD**	£1,200	Pentax, www.pentax.co.uk, 01753 792 792	M | W	Jan 05	**3.5**
The smallest, lightest digital SLR on the market, the *istD doesn't offer as good value as some on the market, but still offers decent images					
FinePix F610 Zoom	£399	Fujifilm, www.fujifilm.co.uk, 020 7586 1477	M | W	Jun 04	**4.0**
Stylish design, good controls, and great output make this 6.3mp camera a decent buy. However, it only ships with 16MB of storage					
Lumix FZ10	£385	Panasonic, www.panasonic.co.uk, 08705 357 357	M | W	Sep 04	**4.0**
The 12x Leica zoom lens is powerful, and boasts built-in image stabilization. Image quality is great, but the supplied 16MB card is rather stingy					
PhotoPC-L400	£200	Epson, www.epson.co.uk, 01442 261 144	M | W	Jul 04	**3.0**
A basic, budget-priced 4mp camera. The L400 boasts a good user interface, but it doesn't offer comprehensive control over shutter speed or aperture					
Photosmart 945	£255	HP, www.hp.com, 0870 241 1485	M | W	Jul 04	**3.5**
The HP Photosmart 945 is simple to use, but its image quality doesn't compare favourably to the competition. A decent budget option nonetheless					
PowerShot G6	£510	Canon, www.canon.co.uk, 0800 616 417	M | W	Nov 04	**4.5**
This 7.1mp upgrade to the well regarded G-series offers faster processing and excellent images. Sadly purple fringing on contrasting edges is still there					
PowerShot Pro1	£725	Canon, www.canon.co.uk, 08705 143 723	M | W	Jul 04	**4.5**
Canon's top prosumer camera, and the company's first long-zoom compact. An 8mp CCD, 7x zoom, and well-designed controls make the Pro1 a top buy					
SD10	£936	Sigma, www.sigma-imaging-uk.com, 01707 329 999	M | W	Jan 05	**3.0**
Improved version of low-cost digital SLR produces extremely sharp images despite low resolution. Unusual Sigma-only lens mount is only drawback					

Digital video cameras

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
AG-DVC30	£1,650	Panasonic, panasonic-broadcast.com, 08700 100 464	M | W	Dec 04	**3.5**
A decent secondary pro camcorder but overpriced compared to Sony's PDX10. Features include IR-based B&W night-vision mode					
AG-DVX100A	£2,450	Panasonic, panasonic-broadcast.com, 08705 357357	M | W	Dec 04	**4.0**
The DVX100A has ruled the roost for years, but has been usurped by Canon's XL2. However this is still a great camera and has a lot to offer filmmakers					
DCR-HC40	£446	Sony, www.sony.co.uk, 08705 111 999	M | W	Aug 04	**3.0**
The auto mode on this prosumer camcorder is seriously lacking – it really struggles with bright sunlight. Spot metering can fix the problem, though					
DCR-HC1000	£850	Sony, www.sony.co.uk, 020 7365 2947	M | W	Dec 04	**2.5**
Good looking but ultimately disappointing DV camera lacking controls and let down by poor footage. Small, but not perfectly formed					
DCR-PC109E	£489	Sony, www.sony.co.uk, 08705 111 999	M | W	Aug 04	**4.5**
Sony's upright palmcorder has a touch-sensitive LCD screen – focus can be set by pressing a spot on the LCD. Boasts decent image quality, too					
DVC-30	£2,000	Panasonic, panasonicbroadcast.com, 08700 100 464	M | W	Apr 04	**4.0**
The DVC-30 is a flexible DV camcorder that captures great footage. It offers manual functions and unique features, but lacks Sony's innovations					

buying advice: DVD drives

Unlike CD-RW, recordable and rewritable DVD drives and media are split between three incompatible formats – though recent efforts have brought them closer together.

DVD-R and DVD-RW, writable and rewritable versions of the same format, were created by the DVD Forum, the original inventors of the DVD format. DVD+R and DVD+RW were developed by the DVD+RW Alliance. DVD-RAM was also invented by the DVD Forum. It differs from DVD-RW and DVD+RW in that it has a disc layout that doesn't require linear writing, as with conventional CD-RW, DVD-RW or DVD+RW discs. This allows it to be used like a hard drive, with drag-&-drop adding and deleting of files.

The main difference between DVD-R/RW and DVD+R/RW, apart from the basic incompatibility, is the lack of support for DVD+RW on the Mac. DVD-R and DVD+R both have current top speeds of 4x, with DVD+RW's 2.4x top speed beating DVD-RW's 2x. Though these speeds seem slow when compared to CD burners, you actually get a lot more from each speed with DVD. A 4x DVD-R burner creates an entire 4.7GB disc in the same time as it took an old 4x CD-R drive to build a 700MB disc. DVD-R/RW and DVD+R/RW speeds are likely to grow at the same rate as CD-R/RW did, if not faster. Manufacturers say they're unlikely to get as fast as current CD-R/RW speeds – though they also said that about CD-R/RW in the past.

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
DSR-PD70P	£2,200	Sony, www.sonybiz.net, 0870 6060 456	M | W	Dec 04	**3.5**
Sony's workhorse pro-level DV camcorder has a loyal following who swear by it. With controls to match the competition this would be a top model					
GR-D93EK	£510	JVC, www.jvc.co.uk, 0870 330 5000	M | W	Aug 04	**3.5**
Top of JVC's budget prosumer range, the GR-D93EK lacks some key features – such as a microphone input, headphone output, and accessory shoe					
GR-DVP9EK	£765	JVC, www.jvc.co.uk, 0870 330 5000	M | W	Aug 04	**3.0**
As small as a dictaphone, the GR-DVP9EK is stylish, light, and compact. It features a decently-sized 1/4-inch CCD, and plenty of manual funtions					
GY-DV5000E	£2,900	JVC, www.jvcpro.co.uk, 020 8896 6000	M | W	Dec 04	**4.0**
This stalwart of the scene is intuitive for those used to conventional broadcast cameras, offering good manual control and excellent auto					
HDR-FX1E	£2,150	Sony, www.sony.co.uk, 08705 111 999	M | W	Mar 05	**3.5**
This HDV camcorder offers exceptional output quality at 1080i resolution, but it suffers because it doesn't have XLR audio inputs					
JY-HD10E	£2,650	JVC, www.jvcpro.co.uk, 020 8896 6000	M | W	Dec 04	**2.5**
Very popular because for a year it was the only HDV camcorder available. But lacks manual control, is American format and has been superceded					
MV750i	£375	Canon, www.canon.co.uk, 08705 143 723	M | W	Aug 04	**3.0**
A very cheap prosumer camcorder, the MV750i's performance is unfortunately reflected in the price. The picture is OK, but image-stabilization is poor					
MVX25i	£765	Canon, www.canon.co.uk, 08705 143 723	M | W	Aug 04	**5.0**
The MVX25i is worth the money – there's virtually nothing to fault this prosumer model. The 1/3.4-inch CCD stands out					
MVX250i	£529	Canon, www.canon.co.uk, 08705 143 723	M | W	Aug 04	**3.0**
A 1/4.5-inch CCD is large for a camcorder at this price, and this model makes several premium features more affordable					
NVGS200B	£850	Panasonic, www.panasonic.co.uk, 0870 906 8357	M | W	Aug 04	**5.0**
The NVGS200B's three-CCD imaging system delivers vibrant, well-defined colour. Every manual feature you'd need is catered for and easy to use					
NVGS400	£900	Panasonic, www.panasonic.co.uk, 0870 906 8357	M | W	Dec 04	**4.0**
The NGS400 isn't a true professional-level DV camera, but it does offer some pro applications. Three CCDs, and clean footage with accurate colours					
NVGS55B	£510	Panasonic, www.panasonic.co.uk, 0870 906 8357	M | W	Aug 04	**4.0**
The NVGS55B packs a lot into a small package, including an accessory shoe and microphone input. There is a healthy selection of manual controls, too					
PDX10P	£1,400	Sony, www.sonybiz.net, 0870 6060 456	M | W	Dec 04	**4.0**
This is Sony's attempt to combine the best from the pro and consumer worlds and it works well. Top of its class in compact and mobile DV cams					
XL2	£3,000	Canon, www.canon.co.uk, 08705 143 723	M | W	Dec 04	**4.5**
Digit's Best Buy and the best indie-film DV camera in the market. It's £500 more than the DVX100A but is a better component-based system					
XM2	£1,350	Canon, www.canon.co.uk, 08705 143 723	M | W	Mar 04	**2.5**
There's nothing inherently wrong with Canon's XM2 – it has a great lens, and many pro-level features. However, it's now old and out of date					

Input devices

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Intuos3	from £129	Wacom, wacom-europe.com @ CU, 020 8358 5857	M | W	Dec 04	**4.0**
A smart new design and an improved pen make the Intuos3 a great graphics tablet. The mouse is a bit unbalanced, but overall a decent buy					
MX700	£51	Logitech, www.logitech.com, 020 7309 0127	M | W	Jan 03	**4.5**
The best cordless mouse on the market: flexible, rechargeable, and offering the level of precision a designer requires – at a price					
SpaceBall	from £375	3Dconnexion, www.3dconnexion.com, 01952 243 629	Windows	Sep 04	**3.5**
Two-handed input devices that potentially prevent RSI, but they're unlikely to change the way you work, as there's no real benefit in terms of speed					

Storage devices

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Bravo II Disc Publisher	£1,395	Primera Technology, primera.com @ Microboards, 0845 230 7800	M | W	Digit 76	**3.5**
A pricey convenience, the Bravo II Disc Publisher nonetheless offers good duplicating and printing facilities if you need to produce small runs of CDs					
FlashTrax	from £260	SmartDisk, www.smartdisk.com, 01252 530 960	M | W	May 04	**4.0**
The FlashTrax is an inexpensive way to avoid taking a mountain of costly media cards out when photographing – if you can take your eyes off the iPod					
MediaBank HS-R	£299	Miglia, www.miglia.com, 0870 747 2988	M | W	Mar 04	**4.0**
If speed and security are high on your priority list for external storage – and cost per MB isn't – the FireWire 800-enabled MediaBank HS-R is great					
REV	£249	Iomega, www.iomega.co.uk, 00 353 1213 3754	Windows	Jul 04	**3.0**
Cartridge-based storage system. Low-cost cartridges makes the REV a real rival to tape and DVD archiving systems. Sadly, it doesn't support Macs					

Monitors

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Cinema Display	£851	Apple, www.apple.com/uk, 0800 783 4846	M | W	Oct 04	**4.5**
Stunning picture quality for under £1,000. The design looks great next to a G5, but it only has a single input and no picture modes					
Cinema Display HD	£1,360	Apple, www.apple.com/uk, 0800 783 4846	Mac	Digit 76	**3.5**
More manual controls needed, but at almost half its original price this 23-inch LCD with huge resolution now offers excellent value for money					
ColorEdge CG21	£1,279	Eizo, www.eizo.co.uk, 01483 719 500	M | W	Digit 76	**4.5**
It's been overtaken by Barco's Coloris Calibrator for the best LCD crown, but this 21.3-inch model is far more realistically priced					

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Coloris Calibrator	£2,999	Barco, www.barco.com @ Colour Confidence, 0121 604 1234	M | W	Digit 76	**4.0**
Barco's first LCD for the graphics market is massively expensive, but boasts fantastic colour-accuracy and a built-in calibration sensor					
Colour Reference System	£1,446	Sony, www.sony-cp.com, 08705 111 999	M | W	Jun 03	**5.0**
The best monitor we've ever used. The GDM-C520K monitor and Sony/GretagMacbeth calibrator are a winning pair – for a comparatively low price					
Electron22blue IV	£549	LaCie, www.lacie.com/uk, 020 7872 8000	M | W	Apr 04	**4.5**
The Electron22blue boasts excellent picture quality, and offers great value for money. You won't get a better monitor without really splashing out					
Flatron L2320A	£1,999	LG, www.lge.com, 01753 491 500	M | W	Digit 76	**3.0**
Modern design and good functionality makes this 23-inch LCD a decent monitor, but it falls short of professional status due to poor picture quality					
Gallery 2010 Platinum	£779	Formac, www.formac.co.uk, 020 8533 4040	M | W	Digit 76	**3.0**
A 20.1-inch LCD with unimpressive picture quality, Formac's Gallery 2010 Platinum is slightly more flexible than the Apple Cinema display range					
MultiSync LCD2180UX	£1,099	NEC Mitsubishi, www.mitsubishi monitors.com, 020 7202 6300	M | W	Digit 76	**4.0**
A pricey 20-inch LCD, the LCD2180UX features a large colour gamut and great picture quality – though it's not quite up to the Eizo ColorEdge CG21					
p1230	£457	HP, www.hp.com/uk, 0870 241 1485	M | W	Apr 04	**4.0**
A fine monitor and excellent value for money, the p1230 boasts good picture quality and a compact case. Sadly, there is no USB hub included					
p225f	£399	Viewsonic www.viewsonic.co.uk, 01293 643 900	M | W	Apr 04	**3.5**
The design of the unit is dated, and the picture quality isn't anything to brag about either. However, it includes a USB hub, and at least it's cheap					
Photon20visionII	from£603	LaCie, www.lacie.com/uk, 020 7872 8000	M | W	Oct 04	**4.5**
Picture quality is marginally inferior to Apple's Cinema Display, but still fantastic. The Photon20visionII offers picture modes, and a budget version					
Reference Calibrator V	£3,250	Barco, www.barco.com @ Colour Confidence, 0121 604 1234	M | W	Apr 04	**3.0**
The cost is immense, but for the ultimate in colour calibrated workflow, there is no alternative. However, the screen is curvy by today's standards					
SDM-S204	£770	Sony, www.sony cp.com, 0990 424 424	M | W	Digit 76	**3.5**
This is an unimpressive unit – the definition of an average 20.1-inch display. It has a high contrast ratio – 500:1 – but otherwise it doesn't stand out					
Studioworks N2200P	£462	LG, www.lge.co.uk, 0870 607 5544	M | W	Apr 04	**3.0**
This CRT is decidedly mediocre, with poor refresh rates at high resolutions, and lacklustre design. Includes Colorific calibration software					
SyncMaster SM243	£1,701	Samsung, www.samsung.co.uk, 0870 242 0303	M | W	Digit 76	**4.5**
A massive 24-inch LCD, the SyncMaster SM243 is remarkably compact considering its size. Picture quality is fine after calibration					
UltraSharp 2001FP	£670	Dell, www.dell.com/uk, 0870 152 4699	M | W	Digit 76	**4.5**
This 20.1-inch LCD offers great image quality – especially when you consider the price. Features two USB ports, and a slim, stylish design					
VP201b	£698	Viewsonic, www.viewsonic.com/uk, 01293 643 900	M | W	Digit 76	**3.0**
An inexpensive but otherwise unimpressive 20.1-inch LCD. Suffers from graininess – particularly in blocks of colour – and an overall lacklustre picture					

Printers

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Bubble Jet i990	£255	Canon, www.canon.co.uk, 08705 143 723	M | W	Apr 04	**4.5**
Unless you require the quality of Epson's R800 – and are prepared to wait for it – the swift and accurate i990 is the best A4 inkjet printer available					
Bubble Jet i9950	£465	Canon, www.canon.co.uk, 08705 143 723	M | W	Jul 04	**4.5**
This A3+ photo printer has a PictBridge camera port at the front, and the ChromaPLUS eight-ink system. USB 2.0 and FireWire interface					
Designjet 120nr	£1,600	HP, www.hp.com/uk, 0845 270 4222	M | W	May 04	**4.0**
An excellent addition to a busy design studio. It may not be the world's fastest printer, but its price, quality, and versatility speak for themselves					
Designjet 130	£1,100	HP, www.hp.com/uk, 0845 270 4222	M | W	Jun 04	**4.5**
Exceptional output quality for photographs and artwork. The Designjet 130 is compact, flexible, and good value for money					
Designjet 30n	£535	HP, www.hp.com/uk, 0845 270 4222	M | W	Jul 04	**4.5**
Despite some usability issues, the Designjet 30n outputs exceptional quality photographs and artwork – better than most A3 photo printers					
P915	£80	Lexmark, www.lexmark.co.uk, 0870 44 0044	M | W	Feb 05	**3.5**
This A4 consumer-focused photo printer offers great print quality, and features such as support for four memory card formats make it a bargain					
Phaser 8400N	£909	Xerox, xerox.co.uk, 0870 873 3873	M | W	Apr 04	**4.5**
Nothing can match the 8400N for under £1,000. It boasts fast colour output, true PostScript support, and great graphics quality					
PIXMA iP8500	£280	Canon, www.canon.co.uk, 08705 143 723	M | W	Feb 05	**4.0**
A strange shape, the PIXMA iP8500 is billed as a printer for pro photographers, but doesn't have any digital camera card slots. Fast, with good output					
Photosmart 7762	£152	HP, www.hp.com/uk, 0870 241 1485	M | W	Jun 04	**4.0**
An excellent printer for the photographer – top quality with a friendly price. You may find yourself swapping print cartridges in and out a lot, though					
Photosmart 8450gp	£275	HP, www.hp.com/uk, 0870 241 1485	M | W	Feb 05	**4.5**
Stylish printer for digital photographers, packed with features for the serious user. Supports five different digital camera cards, as well as PictBridge					
Stylus Pro 2100	£387	Epson, www.epson.co.uk, 0800 220 546	M | W	Feb 05	**4.0**
An A3+ alternative to Epson's R800. A seven-ink system allows you to swap between matte black and photo black cartridges as required					
Stylus Photo R300M	£135	Epson, www.epson.co.uk, 0800 220 546	M | W	Jun 04	**3.5**
Considering the price, the quality is very high. However, printing is slow, and the ouput quality doesn't compare well to more expensive models					
Stylus Photo R800	$399	Epson, www.epson.co.uk, 0800 220 546	M | W	Feb 05	**4.0**
The highest-quality photo inkjet printer on the market, the R800 produces accurate photos, though it's slow and can't print borderless on the Mac					

buying advice: monitors

The first decision you'll need to make is whether to get a flat-panel display, based on liquid crystal display (LCD) technology, or a cathode-ray tube (CRT) monitor.

CRTs are cheaper and offer higher colour vibrancy and accuracy than LCDs. If low price is your biggest requirement, or if you're looking for a display for publishing or design work, go with a CRT.

An LCD display's advantage is unparalleled sharpness and ultra-thin profile. In recent years, the quality of LCDs has improved to the point where they are suitable for all but very high-end graphics work.

A screen hooked-up to a digital DVI or ADC connector offers sharper, clearer images than those connected via an analog VGA connector. Analog LCDs sometimes suffer from noise, a by-product of converting the video signal from digital to analog and then back again.

The resolution of a monitor is expressed in horizontal and vertical pixel dimensions. The higher the resolution, the more you will be able to see on-screen. The more inches, the larger the pixels. A CRT's dot pitch measures how close adjacent phosphor dots (or stripes on aperture-grille CRTs) are to each other. In general, the smaller the dot pitch, the sharper the display will be.

On CRT monitors, a low refresh rate – how many times your computer sends a fresh copy of the screen image to your display – implies flicker, a major cause of eyestrain. LCDs don't suffer from flicker at all.

RECOMMENDED:
HP PhotoSmart 8450gp
A stylish printer for the digital photographer. Can download pictures direct from your camera, or a variety of memory card formats, and offers first-rate picture quality

tech notes: film scanners

Despite the surge in digital photography, film isn't dead, and most professional photographers will have masses of film archived whether they've gone digital or not. So, scanning film is a regular task. The main problem when choosing a film scanner is the fact that the market is in decline. For a start, the emergence of digital photography has made a dent in the demand for film scanners. Decent flatbed scanners have invaded the film scanner's market too, and there's little incentive for manufacturers to keep their film models up to date.

Desktop film scanners generally come in two forms: 35mm and medium format. 35mm film scanners can capture 35mm slides and filmstrips, with the ability to scan just a single slide at a time or a holder of four or five. Some medium format film scanners can work with film up to 6-x-9cm, some with up to 5-x-4-inch – and most come with holders for around four 35mm slides.

In the past, the most important specification for a scanner was the optical resolution. Now, though, even the lowest-resolution film scanner can produce images large enough to print A4 size or bigger at 300dpi.

Most scanners can capture 16-bit colour, but the most important figure is the dynamic range. This gives an indication of the level of shadow and highlight detail the scanner can reproduce. Many film scanners offer hardware-based automated correction tools. Kodak's Digital ICE is the best known, but some manufacturers have invented their own proprietry systems.

DIGIT BEST BUY RECOMMENDATIONS: GRAPHICS CARDS

3Dlabs Realizm 100
This is a great value card. It boasts two display outputs, two DVI output, 256MB memory, and 8x max AGP support

PNY NVidia FX 1300
The PCI Express card is quick, solid, and good value. It boasts 128MB memory, two display outputs, and two DVI outputs

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Stylus Pro 4000	£1,495	Epson, www.epson.co.uk, 0800 220 546	M	W	May 04	**3.0**
This proofer boasts good results thanks to extra ink colours, which don't slow printing down. Some calibration quirks, but otherwise a good choice					
W2200	£1,995	Canon, www.canon.co.uk, 08705 143 723	M	W	May 04	**3.0**
This desktop proofer is now a couple of years old, but despite its age, delivers good results. Some practical problems, but very fast					
WP-20 Wireless Print Server	£120	Canon, www.canon.co.uk, 08705 143 723	M	W	Apr 04	**4.0**
Canon needs to fix the installation process, but the WP-20 Wireless Print Server is the simplest and best mechanism for networking an inkjet printer					

Scanners

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
ArtixScan 120tf	£1,360	Microtek, microtekeurope.com, 0870 906 3300	M	W	Mar 05	**3.0**
The best film scanner Microtek has to offer, which isn't saying very much, since this model is very old. Correction system isn't as good as Digital ICE					
CanoScan 9900F	£250	Canon, www.canon.co.uk, 08705 143 723	M	W	Sep 04	**3.5**
A top scanner at a low price, the 48-bit colour depth and 3,200-x-6,400dpi resolution are great, but it's let down by poor software					
Dimage Scan Elite 5400	£510	Konica-Minolta, www.minolta.co.uk, 01908 200 400	M	W	Mar 05	**3.5**
A very slim upright device, this film scanner sadly doesn't live up to its impressive specs. Takes a lot of time and tweaking to get decent results					
Dimage Scan Multi Pro	£1,960	Konica-Minolta, www.minolta.co.uk, 01908 200 400	M	W	Mar 05	**3.5**
This shoebox-sized film scanner is the medium-format equivalent of the Dimage Scan Elite 5400. Suffers the same drawbacks, but does have digital ICE					
Expression 10000 XL Pro	£1,634	Epson, www.epson.co.uk, 0800 220 546	M	W	Sep 04	**4.0**
This A3 scanner boasts 2,400-x-4,800 optical resolution and 3.8 dynamic range. Film scanning is no more than adequate, but it's fine for larger formats					
F-3200	£465	Epson, www.epson.co.uk, 0800 220 546	M	W	Mar 05	**3.5**
This unusual film scanner also scans reflective media, and can scan eight 35mm slides at once. Lack of corrective hardware limits its usefulness					
FilmScan 3600 Silver	£297	Microtek, microtekeurope.com, 0870 906 3300	M	W	Mar 05	**2.0**
A prime example of why you shouldn't buy a low-cost film scanner. Only 12-bit per colour capture gives dull and muted colours					
FineScan 2750	£6,500	FujiFilm, www.fujifilm.co.uk/gs, 01234 245245	M	W	Sep 04	**4.0**
You could use this high-end A3 format and film scanner confidently to produce a top-quality magazine, but it's been usurped by the iQsmart1					
iQsmart1	£6,382	Creo, www.creo.com, 01242 285 100	M	W	Sep 04	**4.5**
Professional A3 film scanner aimed at creatives. You don't need to be a pre-press expert to get great results, and the resolution is good at 3,200dpi					
Perfection 4870 Photo	£270	Epson, www.epson.co.uk, 0800 220 546	M	W	Sep 04	**4.5**
Low-cost flatbed scanner with high resolution and dynamic range. Built-in Digital ICE dust/scratch removal makes this good value – if slow					
Scanjet 5530 Photosmart	£156	HP, www.hp.com/uk, 0870 547 4747	M	W	Sep 04	**3.0**
This desktop scanner is tuned for high-speed print scanning. It's slightly larger than A4, but only takes single strips of 35mm film at a time					
ScanMaker i700	from £254	Microtek, microtekeurope.com, 0870 906 3304	M	W	Jan 05	**4.0**
High-resolution flatbed film scanner with Digital ICE, and a decent feature and software set. An attractively priced all-rounder					
ScanMaker i900	£595	Microtek, microtekeurope.com, 01327 844 880	M	W	Sep 04	**3.5**
This A4+ scanner has a conventional top bed for reflection copy, as well as a separate slide-in tray for film. It's a good scanner, but not good value					
Super CoolScan 5000 ED	£935	Nikon, www.nikon.co.uk, 0800 230 220	M	W	Apr 04	**4.5**
High-res film scanner with advanced post-processing functions. Excellent colour and shadow handling, with automatic restoration of worn originals					
Super CoolScan 9000 ED	£2,000	Nikon, www.nikon.co.uk, 0800 230 220	M	W	Feb 05	**4.0**
Versatile high-res film scanner with Digital ICE4. Can handle all formats from miniature to 6-x-7cm. Only 35mm and 120/220 film holders are supplied					

Graphics cards

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
FireGL X3-256	£699	ATI, www.ati.com. 01844 263 747, ati@manandmachine.co.uk	Windows	Nov 04	**4.0**
ATI's highest-spec AGP graphics accelerator has a massive 7cm fan that gives a lot of cooling power. It's pricey, though					
FireGL V3200	£249	ATI, www.ati.com. 01844 263 747, ati@manandmachine.co.uk	Windows	Nov 04	**3.5**
This 128MB PCI-based card is a decent card at a good price. It performs in the mid-range on Maya and Max, but is a winner for Cinema 4D					
FireGL V5100	£499	ATI, www.ati.com. 01844 263 747, ati@manandmachine.co.uk	Windows	Nov 04	**4.0**
ATI's decent value 256MB PCI Express card offers 22.4GB/s memory bandwith, has the same massive fan as the X3-256 but doesn't need extra power					
Parhelia 256MB	£365	Matrox, www.matrox.com, 01753 665 544	Windows	Nov 04	**3.0**
The Parhelia 256MB is small, and needs no exernal power. It supports three monitors at once so it's good for VJing or video production. Costly					
PNY Nvidia FX 1100	£645	NVidia, www.nvidia.com, 01784 224 220	Windows	Nov 04	**4.0**
Good performance but with 128MB memory and a £650 price tag you would expect more from it. Outclassed by the Realizm 100					
PNY Nvidia FX 1300	£535	NVidia, www.nvidia.com, 01784 224 220	Windows	Nov 04	**4.5**
A Digit Best Buy this PCI-Express card is small, solid, and well-priced. With 128MB of DDR RAM, it's good enough for most situations in 3D applications					
PNY Nvidia FX 3400	£929	NVidia, www.nvidia.com, 01784 224 220	Windows	Nov 04	**3.0**
At an earth-shattering price performance should have been better overall. The FX 1300 offers much better value for performance					
Realizm 100	£683	3Dlabs, www.3dlabs.com, 01784 470 555	Windows	Nov 04	**4.5**
Very good value. One of the most capacious cards on test and a Best Buy. 8xAGP support; 256MB memory; two DVI outputs;two display outputs					
Realizm 200	£874	3Dlabs, www.3dlabs.com, 01784 470 555	Windows	Nov 04	**4.0**
If you need to visualize scenes with a lot of textures, this is ideal. 8xAGP support; 512MB memory; two DVI outputs; two display outputs					

3D and animation software

3DS Max 7 — £2,695 — Discreet, www.discreet.com, 01252 456 669 — Windows — Jan 05 — **4.5**
Version 7 incorporates Character Studio 4, and features Normal Bump Mapping, Subsurface Scattering, and enhanced modelling and viewing tools

Animation:Master v 11.0 — $299 — Hash, www.hash.com, 001 360 750 0042 — M | W — Aug 04 — **4.0**
Oriented towards teaching people the basics of 3D animation, Animation:Master is nonetheless a decent, good-value character animation package

Carrara 4 Pro — £419 — Eovia, www.eovia.com @ Computers Unlimited, 020 8200 8282 — M | W — Feb 05 — **4.5**
Offers a wide range of features. Bones and IK animation are easy to use, and the suite boasts real-time terrain-creation and network rendering

CAT V1.2 — £549 — CAT, catoolkit.com @ Graphics Domain, 01869 255 815 — M | W — Aug 04 — **4.5**
A complete character-animation system for 3DS Max. It features a highly flexible and easy-to-create character rigging system called CATRig

Character Studio 4.2 — £695 — Discreet, www.discreet.com, 01252 456 669 — M | W — Aug 04 — **4.0**
Although Character Studio is often derided by 'real' animators, few solutions offer this level of productivity for bulk character animation work

Cinema 4D 9 — £424 — Maxon, www.cinema4d.co.uk, 0500 224 660 — M | W — Jan 05 — **4.5**
Version 9 supports N-gons, Brush, Melt, and enhanced knife tools. One of the best 3D applications out there – perfect for learning the craft

EIAS 5.5 — $895 — EI Technology Group, eitechnologygroup.com, 001 830 438 4955 — M | W — Sep 04 — **3.5**
3D suite that offers fast, high-quality rendering, good HDRI support, and unlimited network rendering. The Silo component is sadly Windows only

Endorphin 1.5 — £7,995 — NaturalMotion, www.naturalmotion.com, 01865 250 575 — Windows — Aug 04 — **4.0**
This character-animation system features customizable AI behaviours dynamic retargeting, and active posing. However, it's expensive and buggy

Life Forms 4.0 — £$495 — Credo Interactive, www.charactermotion.com, 001 604 291 6717 — M | W — Aug 04 — **3.0**
This tool imports third-party models and adds motion to them. It can be a bit of a mysterious process, and importing is often long-winded

LightWave 3D 8 — £945 — NewTek, www.newtek.com, www.newtek-europe.com/uk — M | W — Oct 04 — **4.0**
Version 8 of this 3D suite has new character animation tools including bone editing and rigging enhancements, plus an IK booster and loads more

Messiah:animate 4.0 — $595 — pmG Worldwide, projectmessiah.com — Windows — Aug 04 — **4.0**
A worthy update with a focus on workflow and rendering speed, but new features such as fur-&-hair creation and fake radiosity are impressive

Maya 6 — from £1,449 — Alias, alias.com, 01494 441 273 — M | W | L — Oct 04 — **4.5**
Maya is the industry-standard high-end 3D effects and character animation tool. Its workflow is creative and experimental, but hugely powerful

MojoWorld 3.0 — from $199 — Pandromeda, www.pandromeda.com, 001 304 788 7818 — M | W — Mar 05 — **4.0**
Powerful fractal scene generator that generates whole planets with local overrides. Pro version adds vegetation and animated textures

MotionBuilder 6 — from £645 — Alias, www.alias.com, 01494 441 273 — M | W — Feb 05 — **4.0**
Imports 3D character-models for animating. There's expanded keyframe features in version 6, along with enhanced character manipulation

Nat FX v2 — £750 — Bionatics, www.bionatics.com, 0033 149 691 220 — Windows — Dec 04 — **4.5**
A true high-end solution for creating and animating 3D foliage. A superb system, costly, but the animation is the best we've seen

Realsoft 3D 5 — €600 — Realsoft, www.realsoft.com, 00358 3212 9913 — Windows — Mar 05 — **3.5**
This 3D package will attract newcomers to 3D with its educational pricing plan, but it's Windows-only, and has a steep learning curve

Shade 7 — £552 — Curious Labs, www.curiouslabs.com @ CU, 020 8200 8282 — M | W — Jan 05 — **3.0**
Full function 3D modeller and renderer for a reasonable price. Integrates with Poser, ArchiCAD, Illustrator, and Photoshop. Not as easy to use as it looks

SketchUp 4.0 — £345 — @Last Software, www.sketchup.com @ CU, 020 8200 8282 — M | W — Sep 04 — **4.0**
@Last adds an intuitive push/pull tool to this easy-to-use design software. One of the easiest 3D graphics programs to master

Softimage|XSI 4.0 — from £299 — Softimage, www.softimage.com, 01753 655 999 — W | L — Oct 04 — **4.5**
Powerful 3D modelling and animation suite that boasts one of the best renderers available. Great workflow and interface makes this a top package

Strata CX — $695 — Strata, www.strata.com @ Grey Matter, 0870 366 5577 — M | W — Feb 05 — **4.0**
This 3D modelling, animation and rendering suite is easy to use, and the familiar interface and high-quality rendering make Strata a good buy

SpeedTree — £215 — IDV, www.idvinc.com, 001 803 233 0073 — Windows — Dec 04 — **3.5**
This 3DS Max plug-in generates animatable, realistic trees, though not as realistic as the more expensive Nat FX

Swift 3D 4 — £149 — Electric Rain, www.erain.com, 001 303 543 8233 — Windows — Sep 04 — **4.5**
Rendering times are a bit slow, but this is a versatile and easy-to-use 3D-to-Web application. Good quality animation tools and Flash importer

Vue 5 Esprit — £171 — E-on Software, www.e-onsoftware.com, 0033 143 553 671 — M | W — Feb 05 — **4.0**
This landscape-generation software is more expensive than its rivals, and requires OpenGL hardware for best results. Good output and features, though

World Construction Set 6 — £650 — 3D Nature, www.3dnature.com @ N Light, 0117 904 9452 — M | W — Jun 04 — **4.5**
Arguably the best 3D landscaping program, but not that intuitive. Fiercely detailed, you need the mind of a geographer to get the best from it

Xfrog — £220 — Greenworks, www.greenworks.de, 0049 3046 7963 31 — M | W — Dec 04 — **4.0**
A novel system for creating trees and plants and very logical and intuitive in use. Animation is on offer: you can simulate growth effects and wind

ZBrush 2 — £270 — Pixologic, www.pixologic.com @ Freehand, 01483 200 111 — M | W — Feb 05 — **4.5**
A novel and innovative hybrid 2D/2.5D/3D modelling, painting, and rendering program with lightning fast, high-resolution polygon tools

Desktop publishing software

Acrobat 6 Professional — £339 — Adobe, www.adobe.co.uk, 020 8606 4001 — M | W — Digit 63 — **4.5**
Acrobat 6 is split into two versions, with Professional offering advanced features for print, which should make it a key part of your design workflow

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DIGIT BEST BUY RECOMMENDATIONS: DIGITAL VIDEO TOOLS

Adobe After Effects 6.5
A packed point-five upgrade to a great compositing application, After Effects 6.5 has more than 60 new effects, and an advanced clone tool

Apple Final Cut Pro HD
Apple has gradually improved this video-editing suite to the point where Final Cut Pro is one of the best in the business

Apple Motion
Apple's motion-graphics product provides real-time manipulation and rendering of motion graphics on the Power Mac G5 for £169

Canopus Imaginate 2.0
Imaginate 2.0 offers smooth and simple rostrum camera options, and packs in loads of new features to keep it ahead of all-in editing suites

Canopus ProCoder 2.0
This video-transcoding software is invaluable. Encoding quality is high, and encoding to multiple targets simultaneously is very quick

Magic Bullet Editors
This Final Cut Pro NLE plug-in version of the film-mimicking tool greatly reduced in price compared to previous versions, and performs impressively
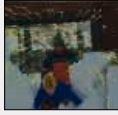
The Pixel Farm PFHoe 1.0
A powerful tool that lets beginners get to grips with complex motion tracking facilities. Handles free motion and nodal pan camera moves

Reflecmedia Matenee 1.0
It works best with Reflecmedia's own Chromatte hardware, but the software is quick and easy to use, and offers great results

The Pixel Farm PFMatch 1.0
For £750, you won't find a better tracking solution for broadcast media. Good tracking results, with a decent set of post-track tools

Paradise found
As part of Channel Four's Animator in Residence scheme, Gaelle Denis used After Effects to animate her bizarre story of a foreigner arriving in London in her shot film City Paradise

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
FullColor 1.5	£55	Badia Software, badiaxt.com @ XChange, 020 7490 4455	Mac	Digit 76	**4.0**
QuarkXPress dictates that you create colours in one window, and apply them in another. This useful plug-in brings these two functions together					
HumanEyes 3D	from £550	HumanEyes, www.humaneyes.com, 00 972 2651 8999	M | W	Digit 76	**4.5**
Breakthrough software for creating stereoscopic images for lenticular print or 3D monitors, with easy use interface. For now, though, it's very pricey					
InDesign CS	£609	Adobe, www.adobe.co.uk, 020 8606 4000	M | W	Jan 04	**4.0**
The CS version of Adobe's page-layout program gains an improved user interface, better styles and file import, and access to Version Cue and GoLive					
iDropper	£39	Gluon, www.gluon.com @ XChange, 020 7490 4455	M | W	Digit 76	**4.0**
A QuarkXPress plug-in that provides an eyedropper tool, which allows you to pick up attributes with one click and apply them elsewhere with another					
Multi Style II XT 5.0.4	£69	Techno Design, techno-design.com @ XChange, 020 7490 4455	Windows	Digit 76	**4.5**
This plug-in builds InDesign's must-have feature – nested type styles – into QuarkXPress. Makes complex styling much easier					
PageMaker Plug-in Pack	£39	Adobe, www.adobe.co.uk, 020 8606 4000	M | W	Digit 76	**4.5**
Designed to encourage PageMaker users to upgrade to InDesign, this plug in pack is a must-buy thanks to its simple bullets and numbering features					
QuarkXPress 6.0	£1,095	Quark, www.quark.co.uk, 00800 1787 8275	M | W	Aug 03	**3.0**
Too little, too late. Some innovative features don't mask its shortcomings in the face of the competition – and the licensing scheme is crazy. Avoid					

Digital video

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
After Effects 6.5	from £565	Adobe, www.adobe.co.uk, 020 8606 4001	M | W	Feb 05	**4.5**
The upgrade to version 6.5 adds an advanced clone tool, which saves a lot of time on boring jobs. Disk caching also speeds things up. Essential					
Au Naturel	$99	Buena, www.buena.com	M | W	Nov 04	**3.0**
An After Effects plug-in that restores a more realistic gamma curve to video footage but the results aren't that different from built-in tools. Slow.					
Blaze	£199	Easy Effects, www.easyeffects.com	M | W	Jan 05	**4.0**
Blaze successfully adds a different interface construct to Avid's product line. Offers a variety of colour, blur, and glow effects to text and video					
Boris Red 3GL	from £599	Boris FX, www.borisfx.com, 01264 326384	M | W	Feb 05	**4.0**
Runs as a compositing plug-in with almost any editing package, or as a standalone suite. The interface is cramped, but the results are great					
Boujou Bullet 1.0	£1,365	2d3, www.2d3.com @ Techex, 0870 161 7171	M | W | L	Oct 04	**4.0**
The interface of this matchmoving tool is a little glitchy, but Boujou Bullet offers a simple-to-use wizard, and offers fast and efficient matchmoving					
Colour Finesse 1.5	£349	Synthetic Aperture @ Digital Garage Group, 01295 201 120	M | W	Jan 05	**4.0**
Real-time colour correction systems haven't made Color Finesse redundant yet. It takes over the whole screen, but there's no better tool for colour					
Combustion 3	£725	Discreet, www.discreet.com, 01252 456 669	M | W | L	Feb 05	**3.5**
The best visual-effects package for under £1,000, but After Effects still tops it for motion-graphics work. However, Combustion represents good value					
Continuum Complete 3.0	£459	Boris FX, wwwborisfx.com @ 01491 875 665	M | W	Dec 04	**4.0**
A massive set of video plug-ins that runs with Final Cut Pro, Premiere Pro or After Effects. Expensive but worth it for professional users					
Digital Fusion 4.04e	£2,650	Eyeon, www.eyeonline.com, 020 7637 5319	Windows	Feb 05	**4.0**
Widely used in the US, Digital Fusion is a solid, reliable compositing suite. It renders quickly, and the interface is efficient and effective					
Edius 2.5	£315	Canopus, www.canopus uk.com, 01189 210 510	Windows	Sep 04	**3.5**
It's come a long way, and every upgrade fills in a few gaps, but the well-designed Edius still has at least four better packages for competition					
Final Cut Pro HD	£595	Apple, www.apple.com/uk, 0800 783 4846	Mac	Sep 04	**4.5**
Final Cut Pro has clawed its way to the top since its launch five years ago. Its swift workflow and drag-&-drop flexibility make it a top application					
Flix Pro 4.0	$149	Wildform, www.wildform.com, 001 310 396 2025	Windows	Digit 76	**4.0**
Easy-to-use tool for converting audio and video clips into Flash format. Performance could be improved, and preview window should be larger					
Imaginate 2.0	£119	Canopus, www.canopus-uk.com, 01189 210 150	Windows	Oct 04	**4.5**
Rostrum camera software that allows you to zoom and pan over still images. The real-time feedback is smooth, and the interface offers great control					
Liquid Edition 5.5	£425	Pinnacle, www.pinnaclesys.com, 01895 424 228	Windows	Sep 04	**3.5**
It has an efficient and flexible interface, but there are a few holes in Edition's feature set. Audio tools are weak, and the titling tools are poor					
Magic Bullet Editors	£175	Red Giant Software @The CarPark, 02879 632 614	Mac	Jul 04	**4.5**
This Final Cut Pro version of the Magic Bullet plug-in suite is a great product. It performs well, and is better value compared to older versions					
MatchMover Pro 3	£5,995	Realviz, www.realviz.com @ Keoti, 020 7482 4858	M | W | L	Jun 04	**4.0**
This professional 3D camera-tracking system is a capable and robust application, but can be buggy under Mac OS X and is very pricey					
Matenee 1.0	£195	Reflecmedia, www.reflecmedia.com, 01606 593 911	M | W	Oct 04	**4.5**
This keying plug-in is simple, fast, and effective – as close to one-click keying as you're likely to find at any price. Licensing is a little complex					
Mirage 1.2	€895	Bauhaus Software, bauhaussoftware.com, 001 210 212 7530	M | W	Feb 05	**3.0**
Combines video effects, motion graphics, rotoscoping, cel animation, and Painter-style natural media. Great for animators, not so great for compositors					
Motion	£169	Apple, www.apple.com/uk, 0800 783 4846	Mac	Nov 04	**4.5**
Apple's much anticipated motion-graphics product provides real-time manipulation and rendering of motion graphics on the Power Mac G5					
particleIllusion 3.0	$399	Wondertouch, www.wondertouch.com	M | W	Jan 05	**3.5**
A standalone program based around a 2D particle system that uses layers to create faux 3D effects. Impressive feature set, but not as good as Motion					
PFHoe 1.0	from £49	The Pixel Farm, www.the pixelfarm.co.uk	M | W	Mar 05	**4.5**
This motion- tracking software brings high-end process within reach of beginners. Inexpensive and professional, with a user-friendly look-&-feel					

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
PFMatch 1.0	£750	The Pixel Farm, www.the pixelfarm.co.uk	M | W	Jul 04	**4.5**
Relatively affordable tracking solution for broadcast, auto-tracking with good post-tracking cleaning and refinement tools. The interface is a little glitchy					
Premiere Pro 1.5	£525	Adobe, www.adobe.co.uk, 020 8358 5857	Windows	Sep 04	**4.0**
The interface has been given a grown-up redesign, and there's some new features too. Great integration with Adobe's other video products					
ProCoder 2.0	£299	Canopus, www.canopus-uk.com, 01189 210 150	Windows	Digit 76	**4.5**
Encoding quality is great, and encoding to multiple targets simultaneously is fast compared to the competition. Lacks backwards compatibility					
RealProducer 10 Plus	$200	RealNetworks, www.realnetworks.com, 020 7290 1206	L | W	Jul 04	**2.5**
It's the first commercial tool to support the Real 10 platform, but RealProducer 10 Plus barely improves on the free version					
Sapphire	$549	GenArts, www.genarts.com, 001 617 492 2888	M | W	Jan 05	**4.0**
An expensive set of plug-ins, but the collection offers great a wide array of useful tools. The results are excellent, too					
Shake 3.5	from £1,786	Apple, www.apple.com/uk, 0800 783 4846	M | W	Feb 05	**3.5**
An exceptional tool for post houses putting together top film and commerical work, but it's not the right software for everyday jobs					
Squeeze 4	$449	Sorenson, www.sorenson.com	M | W	Jan 05	**4.0**
Compression Suite that's simple and intuitive, with good export format option. Results are good quality, but you can't output from Windows to Mac					
StoryViz	€3,000	RealViz, www.realviz.com	M | W	Jan 05	**4.0**
Previsualization software that offers real-time preview rendering, import options, and real-world camera correlation. It's pricey, and tricky, though					
Vegas 5	£425	Sony Pictures Digital, mediasoftware.sony.com @ MVS Digital, 0845 456 0801	Windows	Jul 04	**4.0**
Ideal for short-form combo editing and compositing – thanks to a curves-based editing system and top-class audio tools. Lacks high-end colour controls					
Visual Communicator	£258	Serious Magic, www.seriousmagic.com, 01635 294 300	Windows	Jan 05	**2.5**
It's the easiest live video tool so far, with good keying features. However, the stock media is awful, and you can't add your own templates					
Xpress Studio	from£2,599	Avid, www.avid.com, 020 7534 2800	M | W	Oct 04	**4.0**
This end-to-end creative studio for video work beats the competition in terms of tools, but it's expensive and, not as well integrated as some packages					

Graphic design software

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
ADC plug-ins	$99.95	Kodak, www.asf.com, 01442 261122	M | W	Nov 04	**4.5**
Standalone versions of clever Digital ICE technology to reduce noise and film grain while preserving detail. Works well, but not with mono					
ArtMatic Pro 3.0	£169	U&I Software, www.artmatic.com @ Eovia, 01483 797 498	M | W	Feb 03	**4.5**
As graphics toys go, ArtMatic is in a field of its own: you won't find a better experimental art, animation, and squeak generator anywhere					
Backdrop Designer	$199	Digital Anarchy, www.digitalanarchy.com, 001 415 586 8434	M | W	Nov 04	**3.0**
Flexible easy to use Photoshop plug-in that lets you substitute simulated backdrops onto cutouts and blue-screen images. Good effects but very slow					
Creative Pack	$39	Flaming Pear, www.flamingpear.com	M | W	Nov 04	**3.0**
Formerly Furbo Filters, Photoshop plug-in Creative Pack offers four filters and special effects but no way of reverting back to the original image					
Deep Paint	$249	Right Hemisphere, www.righthemisphere.com, 001 510 818 2880	Windows	Nov 04	**3.5**
Photoshop plug-in that's like adding a miniature Painter to Photoshop. Lets you paint normally or use a wide range of tools for natural-media effects					
Digitalizer	$22	Panopticum, www.panopticum.com	M | W	Nov 04	**3.0**
Photoshop plug-in that creates an image out of text characters. It's decent value, but bugs are evident on images over 5MB					
Eye Candy 4000	$169	Alien Skin, www.alienskin.com, 001 919 832 4124	M | W	Nov 04	**3.5**
Eye Candy 400 is a collection of 23 plug-ins, so there is bound to be something that appeals to you. The Shadowlab option is particularly useful					
Flood	$20	Flaming Pear, www.flamingpear.com	M | W	Nov 04	**4.5**
Handy Photoshop plug-in for creating water effects is cheaper and easier to use than its rivals. Well worth the money					
FreeHand MX	£289	Macromedia, www.macromedia.com/uk, 01344 458 600	M | W	Apr 03	**4.5**
With its excellent MX Studio interface cleanup, great new tools, and a raft of improved features, this is the most compelling upgrade since version 7					
Illustrator CS	£435	Adobe, www.adobe.co.uk, 020 8606 4000	M | W	Jan 04	**4.0**
The typographic reworking, 3D graphics features, and improved performance are all impressive, but Illustrator's interface is showing its age					
ImageAlign	$129	Grasshopper, www.grasshopper.com, 0064 7854 7279	M | W	Nov 04	**3.5**
Photoshop plug-in that allows photographers to compensate for lens problems like barrel and pincushion distortion. One of the best of its type					
Light! 2.0	$50	Digital Film Tools, www.digitalfilmtools.com	M | W	Nov 04	**4.5**
Clever Photoshop plug-in that controls light and adds realistic shadows, even from objects not in the main image. Poor manual but still a Best Buy					
Mystical Lighting	$179	Auto FX Software, www.autofx.com, 001 205 980 0056	M | W	Nov 04	**3.0**
Lighting control Photoshop plug-in that gives you more in-depth tools and control than in Photoshop CS. However, it's a bit slow					
Painter IX	£249	Corel, www.corel.co.uk, 01628 589 800	M | W	Nov 04	**4.0**
Painter IX has faster brushes than 8.1 and is all the better for it. There really is no better natural-media painting program on the market					
Paint Shop Pro 8	£85	Jasc, www.jasc.com @ Digital Workshop, 0870 120 2186	Windows	Jul 03	**4.0**
Jasc pushes ahead with more design and correction tools to keep Paint Shop Pro strong enough to fend off rivals. The new look may confuse you					
Photoshop CS	£515	Adobe, www.adobe.co.uk, 020 8606 4000	M | W	Jan 04	**4.5**
This upgrade is all about improving efficiency and productivity. There are few new effects, but the user has much greater freedom to create					
Piranesi 4	£450	Informatix, www.informatix.co.uk @ CU, 020 8358 5858	Windows	Nov 04	**4.0**
High-quality and fast painting tool for painting textures, ading depth and finishing 3D scenes. Primarily used by architects					

Perfect timing
All characters in the TimeSplitters video game series are modelled using the same bipedal rig. Free Radical, the creative team behind the game, uses rigid bind in Maya, giving a prescribed geometry

Software in focus: Final Cut Pro HD
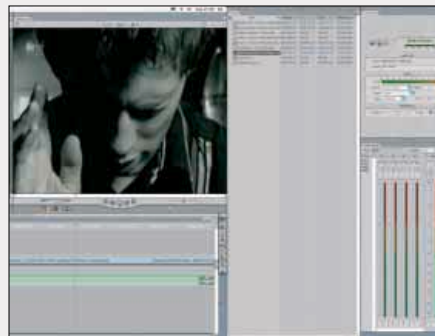
In the five years since Apple first launched Final Cut Pro, it has emerged as one of the best digital video applications. It's partly responsible for the demise of Premiere on the Mac, and it's creeping up on Avid's dominance of the film and broadcasting arena.

The newest incarnation – Final Cut Pro HD – may sound like a massive leap, but the 'HD' tag is really just there to sound impressive. However, it does feature native DVCPRO HD support, and DeckLink HD cards are comparatively inexpensive if you want to work with full 1080p HD.

Final Cut's success hasn't been about headline-grabbing features – Edition, Premiere, and Xpress Pro have been first with most creative tools. Final Cut has flourished thanks to an efficient workflow, and the plethora of hardware solutions that enable it to work with most formats.

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
pxl SmartScale	£149.99	Extensis, www.extensis.co.uk @ CU, 020 8358 5858	M | W	Nov 03	4.5
It has limits, especially with text and logos, but SmartScale soothes the headache of low-res imagery like nothing else. Highly recommended					
Stitcher 4.0	£345	www.realviz.com @ Computers Unlimited, 020 8358 5858	M | W	Apr 04	4.5
The leading multi-image stitcher for panoramas and interactive spherical images gains improved controls and interface, and better rendering options					
Studio Artist 3.0	$379	Synthetik Software, synthetik.com, 001 415 762 9452	Mac	Jul 04	3.5
Studio Artist is a powerful natural-media program, and the animation and rotoscoping features take it into new territory. Blighted by a poor interface					
Verdant	$179	Digital Elements, www.digi-element.com, 001 510 601 7351	M | W	Nov 04	3.0
Photoshop plug-in that lets you create realistic trees and plants that you can add to your images. Not quite photo-realistic, and a bit pricey					
Xara X1	£94	Xara Group, www.xara.com	Windows	Sep 04	3.5
This vector-illustration program has an extremely fast rendering engine, and intuative tools. However, its toolset is relatively limited					

Multimedia software

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
DVDit 5	£145	Sonic, www.sonic.com, 020 7437 1100	Windows	Aug 04	3.0
Not really a professional-level tool, but DVDit is simple to use and uncluttered. The price is reasonable, but basic features, such as subtitles, are missing					
DVD Studio Pro 3	£297	Apple, www.apple.com/uk, 0800 783 4846	Mac OS X	Digit 76	4.5
Compact yet wide-ranging DVD authoring application. Version 3.0 boasts new interface elements, workflow enhancements, and wider format support					
Encore DVD 1.5	£121	Adobe, www.adobe.co.uk, 020 8606 4001	Windows	Aug 04	4.0
The upgrade to version 1.5 adds QuickTime support, background transcoding, a styles palette, After Effects integration, and some essential revisions					
iPix Interactive Studio	from $899	iPix, www.ipix-uk.com, 01482 308 830	M | W	May 04	4.0
New spherical image stitcher and linker offers improved automation and input flexibility, but the most useful new tools cost extra					
Opus Pro 04	£255	Digital Workshop, digitalworkshop.com, 0870 120 2186	M | W	Jul 04	3.0
Clearly designed with the business user in mind, this multimedia-authoring tool is simple enough to use, but of limited use outside corporate markets					

Web design software

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Click Away 0.4	$499	Minds Eye View, www.pictosphere.com	Windows	Feb 04	3.5
It's still in beta and not as advanced as iPix's software, but at least its images are freely distributable. Legal issues make buying Click Away a gamble					
Dreamweaver MX 2004	£339	Macromedia, www.macromedia.co.uk @ 0131 458 6766	M | W	Nov 03	4.5
This upgrade manages to provide more power while still maintaining ease of use, and its strong support for CSS points to its future path					
Flash MX 2004	£419	Macromedia, www.macromedia.co.uk @ 0131 458 6766	M | W	Nov 03	4.5
New Timeline tools make the base version a must-have upgrade. Many functions of the Professional version may not appeal to Web designers					
GoLive CS	£335	Adobe, www.adobe.co.uk, 020 8606 4000	M | W	Jan 04	4.0
Up-to-date CSS support and improved integration with Adobe products make this a good upgrade, but Dreamweaver users are unlikely to switch					
Fireworks MX 2004	£249	Macromedia, www.macromedia.co.uk, 0131 458 6766	M | W	Nov 03	4.0
Not that radical an upgrade, but there are welcome performance improvements, collaborative features, and enjoyable new creative tools					
NetObjects Fusion 8	£132.50	WebSite Pros, www.netobjects.co.uk, 001 877 729 8625	Windows	Digit 76	3.0
A tidy interface and plentiful wizards make Fusion an easy-to-use Web design product, but you have to pay extra for some of the functionality					
TourWeaver 1.1	$115	EasyPano, www.easypano.com	Windows	Mar 04	4.0
An easy-to-use and simple-to-learn interactive tour authoring tool. Excellent features and a well-conceived interface make for a versatile system					
WireFusion 4.0	from £59	Demicron, www.demicron.com, 0046 856 486 950	M | W | L	Oct 04	4.0
WireFusion 4.0 features an updated interface, and is quick and easy to use. Pricing starts at £59, but the full version stretches to £1,195					

Utilities

Product name	Price	Company and contact details	Platform	Reviewed	Digit rating
Colorproof XF	from £735	EFI, www.efi.com, 020 8476 7676	M | W	Mar 05	4.0
Professional-quality proofing software to drive a wide range of colour printers, with accurate simulation of international print standards					
CubeLite	from £255	Flexion Solutions, www.cubelite.info 01530 837 143	M | W	Oct 04	4.5
This in-house photography studio comprises of a collapsible light tent and studio lamp that make it easy to shoot photos with even illumination					
Designer Edition 4.0	from £420	EFI, www.bestcolor.com @ CU, 020 8200 8282	M | W	Digit 76	4.0
Software RIP that provides accurate, high-quality colour output from a variety of inkjet printers. This upgrade doesn't offer many new features					
FileMaker Pro 7	£219	FileMaker, www.filemaker.co.uk, 01628 534158	M | W	Jun 04	4.5
Version 7 of this database/asset-management system boasts increased capacity, improved architecture, tighter security and multiple window views					
Instant PDF 3.0	€199	Enfocus, www.enfocus.com, 0032 9269 1690	M | W	Mar 05	4.5
Utility for detecting and correcting expensive mistakes before submitting PDFs. Now supports InDesign, QuarkXPress, Acrobat and OS X PDFs					
PitStop Pro 6.0	£429	Enfocus, enfocus.com @ XChange International, 020 7490 4455	Mac	Feb 04	4.5
A versatile PDF preflight checking, manual/auto editing and tracking utility. Now updated for OS X and Acrobat 6 features and formats					
Portfolio 7	£130	Extensis, www.extensis.co.uk @ CU, 020 8200 8282	M | W	Aug 04	4.0
An improved interface and ease-of-use make this more accessible than previous versions. New NetPublisher allows you to create a Web portfolio					
Profile Mechanic	£135/£140	Digital Light & Color, www.dl-c.com, 001 617 489 8858	M | W	Jun 04	4.0
An easy-to-use, and efficient program for calibrating your workflow. Profile Mechanic is simple to set up, good value-for-money, and reliable					

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Next month

On sale April 7, 2005

REBRANDING
How to re-invent your client's image – top
studios reveal their rebranding projects

INK & STOCK FOR DESIGNERS
Creative options for using a variety of ink
and paper stocks for creative impact

COLOUR THEORY
The intelligent use of colour can add impact to
projects – but do you know how colour works?

LABS: LCD DISPLAYS
Chuck out your CRT – LCD displays are
now better for designers than ever before

LABS: MATCHMOVING TOOLS
Add 3D computer animation to your video
projects with this round-up of software

DIGITAL CAMERAS
Reviews of the Fujifilm S3 Pro and
Konica-Minolta Dynax 7D digital SLRs

*all contents correct at press time.

This month the Digit CD features Eovia Amapi 6.1, a full 3D modelling package for Windows 98/NT/2000/XP and Mac OS 8.1/9 (and OS X under Classic). The package includes a full set of tools for the creation of scenes for illustration, product design and more. It includes rendering tools and an export module allowing models to be exported into Discreet 3DS Max.

The CD also includes demos of Eovia's latest 3D suite, Carrara 4 Pro – plus two other full packages: Paint.NET 2.1 and CADopia IntelliCAD 5.0. There are also 12 royalty-free images from Creatas and F.stop.com, demos, showreels and more.

GET TO GRIPS WITH THIS MONTH'S FULL FREE CREATIVE SOFTWARE
AN INTRODUCTION TO EOVIA AMAPI 6.1

Upon opening Amapi 6.1, you'll be greeted by the Registration page (right), where you'll need to enter your name and the Password (serial number) that you've obtained through registering at *www.eovia.com/offers/digit-0305.htm*. You'll also be given the choice to use the Workshop interface – as found across Eovia's product range – or the Standard interface, which uses a palette similar to other creative tools such as Photoshop. This tutorial has been created using the Workshop interface and below we have provided an easy visual guide to all of the available tools. These tools can also be found, with the same icons, on the Standard interface's palette.

Amapi's creative tools are divided into three sections: Construction, Modeling and Assembly. Changing between sections is achieved by swiping the mouse to the right edge of your screen.

Construction Palette
- 3D Primitives
  - Height Fields
  - Grid
  - Platonic Solids
  - Cone
  - Cylinder
  - Cube
  - Sphere
- Drawings
- Text Editor
- Extract Curves
- Facet Extraction
- Extrusion
- Sweeping
- Double Sweeping
- Ruled Surface
- Surfaces
  - Coons
  - Gordons
  - Hull

Assembly Palette
- Duplicate Repeat
- Symmetry
- Rotate
- Move
- Scale
- Snap
- Lay On
- Weld
- Unfold

Modeling Palette
- Deformers
  - Spherical
  - Taper
  - Bend
  - Twist
- Bend
- Wrap
- Stretch
- Delete
- Smooth
- Chamfer
- Thickness
- Cut
- Decimate
  - Tessellate
- Surface Relief
  - Soften
  - Bump

Control Panel
- Scene Manager
- Display Hidden Lines
- Simplified Display
- Working Plane
- Perspective
- Navigate
- See All
- Zoom
- Viewpoint
- Hide/Unhide
- Group/Ungroup
- Measurements
- Constrain Cursor Movement
- Magnetization

Construction, Modelling and Assembly palettes alternatly sit on the right-hand side of the interface, while the Control Panel sits below.
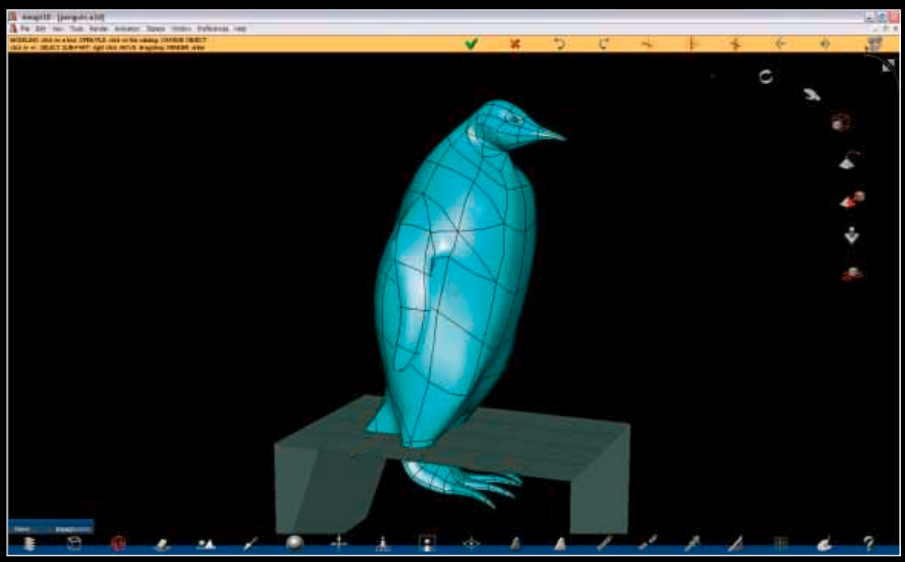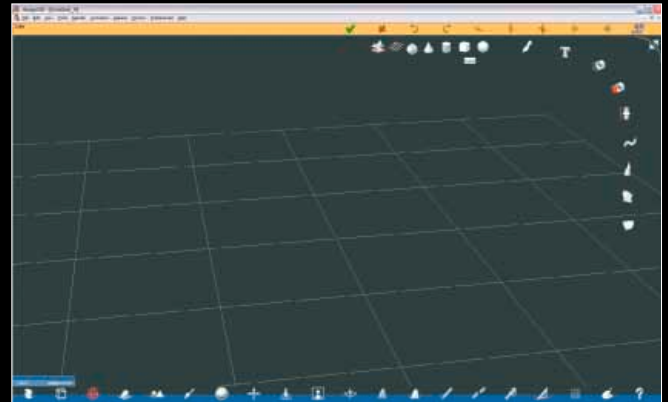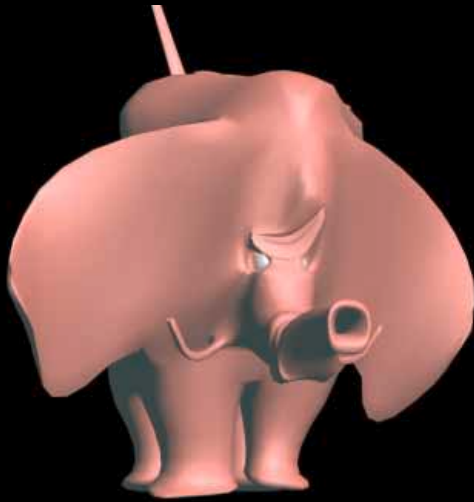
1. In this tutorial, you'll create an elephant from a cube. It's not going to rival the Oliphants from *The Lord of The Rings: The Return Of The King*, but it'll give you an introduction to Amapi's object creation (Construction), manipulation (Modeling) and placement (Assembly) tools. First, click on the Hide Object tool on the control panel to hide the Workbench.
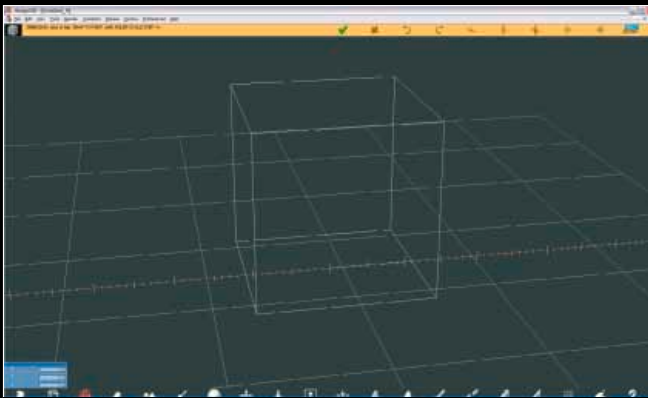
2. Swipe the mouse to the right edge to leave the Hide Object tool and prepare to build your elephant. Bring up the Construction toolkit and place the mouse over the Sphere tool to make the primitive chooser appear. Click on Cube. Click where you'd like the bottom face of the cube to be, then drag out your cube to a reasonable size.
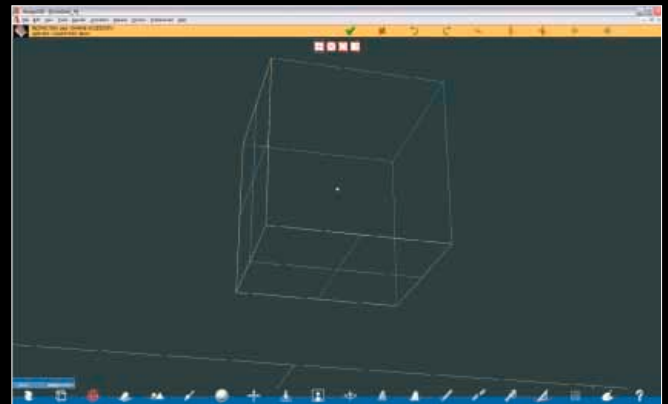
3. The elephant needs four legs. Use the navigation tools to move around so that you can see the bottom face of the cube. Select the Tesselate tool, and rectangular tesselation from the pop-up and click on this face. Click on the rear face too (the side you want the tail to be on. Press Enter/Return to confirm your work and swipe the mouse to the right edge to leave the tool.
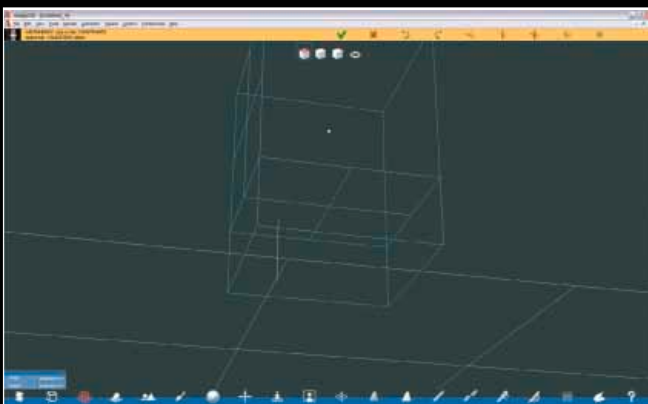
4. The elephant's legs will be extruded from the bottom face. Select the Extrusion tool and the Extrude Faces mode from the pop-up. Right-click to make the cursor change to selection mode. Click-&-drag to lasso around all of the vertices on the bottom face. Move the mouse down to drag out the extrusion. The yellow line indicates the first direction of extrusion.
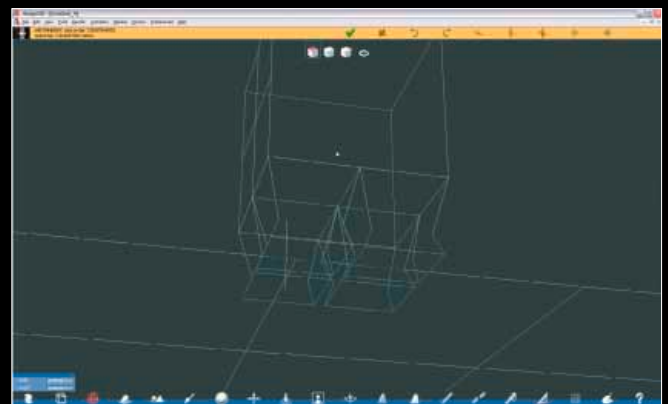
5. Space changes the extrusion type. Initially you can extrude directly away from the face. The second mode stays inside the face. The third adds the ability to change the size to the first. Use the third mode to bring the legs down and inwards to create ankles. Click to extrude further down to create the feet and click again to fix them. Press Enter and then leave the tool.

▶

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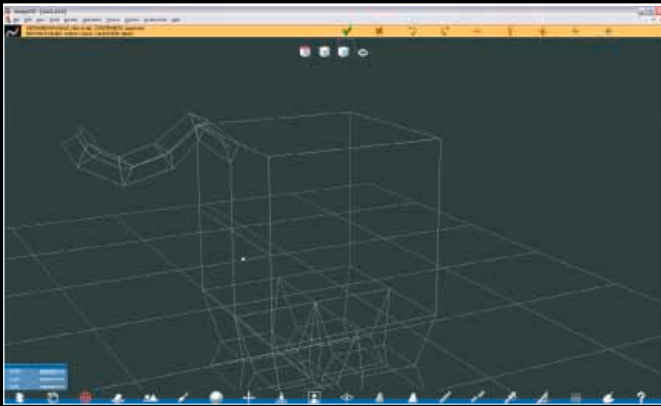
6. To create the tail, select the Sweep tool, which has more freedom than the basic Extrusion tool. Choose the Sweep Vertices mode from the pop-up and select the top central vertex from the rear of the cube. This is why you tesselated this side before, so that you had a vertex to sweep from. Move the mouse around a click to draw out a tail.
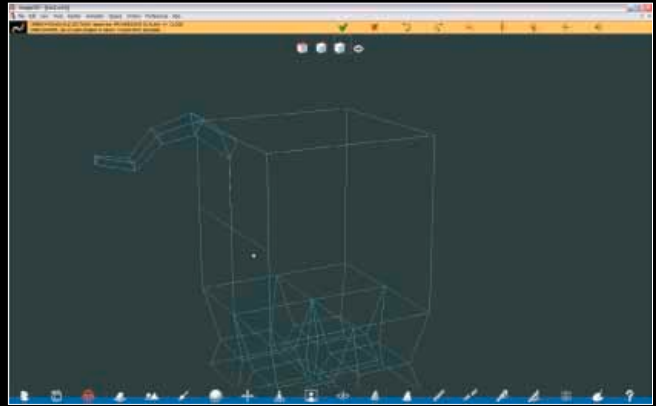
7. The tail is currently more of a pipe. Press Enter to finalize the tail shape, but don't leave the Sweep tool. You can use the plus (+) and minus (-) keys on the numeric keypad to change the size of the sweep. Make the tail smaller towards the end. Then leave the tool so that you're ready to create the neck, head and trunk.
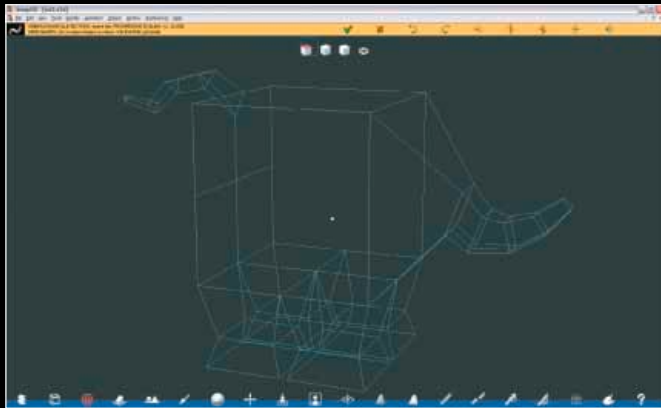
8. Select the Sweep tool again, but this time select Sweep Face. Select the front face and bring it out to create the thick neck. The CTRL/Apple modifier allows you to change the size of the section you're about to create – the face and trunk. Use the plus and minus keys to reduce the size of the trunk as it extends. Press Enter and leave the tool.
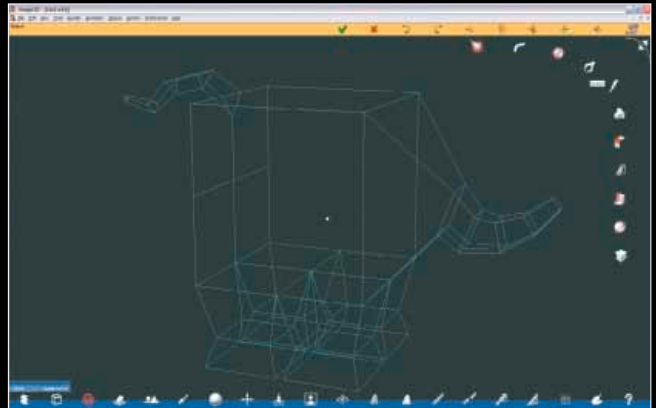
9. If the trunk doesn't quite look as you wish, you can edit it using the Stretch tool from the Modeling toolkit. Select a vertex or vertices (using the same right-click-based lasso technique as before) and move it/them to where you wish. The spacebar allows you to limit the movement to a single axis. Now all the elephant needs is Prince Charles-style ears.
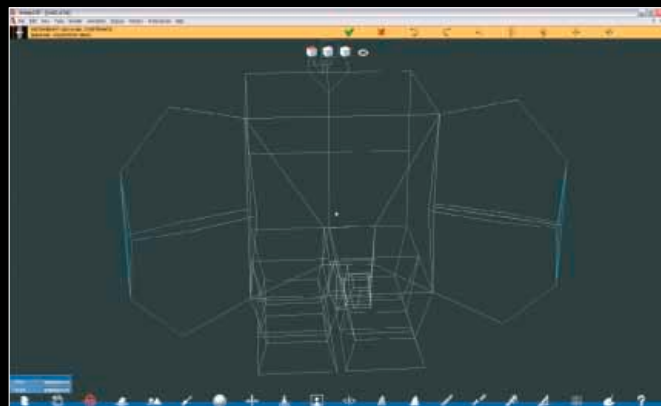
10. Select the Extrusion tool again and the Extrude Edges mode. We want the ears to be symmetrical, so Shift-click one of the vertical edges where the face meets the body and Shift-click the other vertical edge. Extrude the ear upwards and outwards, and then back in and further out to create a basic ear shape. Press Enter to finish and leave to tool.
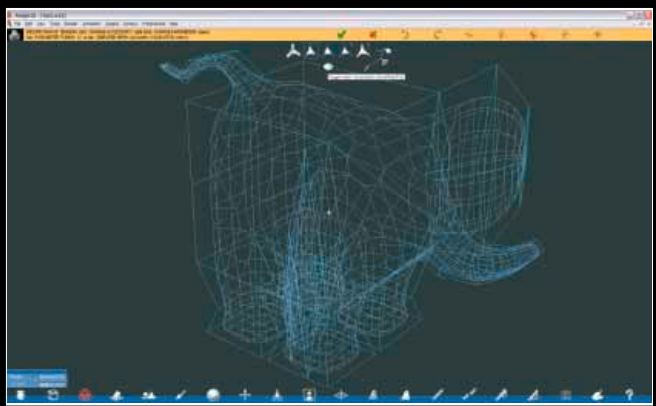
11. The elephant looks made out of Lego, so we want to smooth it out. Select the Smooth tool from the Modeling toolkit and the Doo method. Click on the closed eye to preview the smoothed subdivision surfaces. Plus and minus change the level of subdivisions. Press Enter to save a basic render. Now add more detail to your elephant until you're happy with it.

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Demo software
Using creative software can be a subjective experience, so we endeavour to let you try the software that we review in Digit. If you see this symbol in the issue, a demo of the software being reviewed can be found on this issue's cover disc.

EXPAND AMAPI INTO A FULL 3D ANIMATION SUITE!

UPGRADE TO CARRARA 4 FOR AS LITTLE AS £162!

THE LATEST PROFESSIONAL CREATIVE SOFTWARE TOOLS
#85 ON THIS ISSUE'S CD
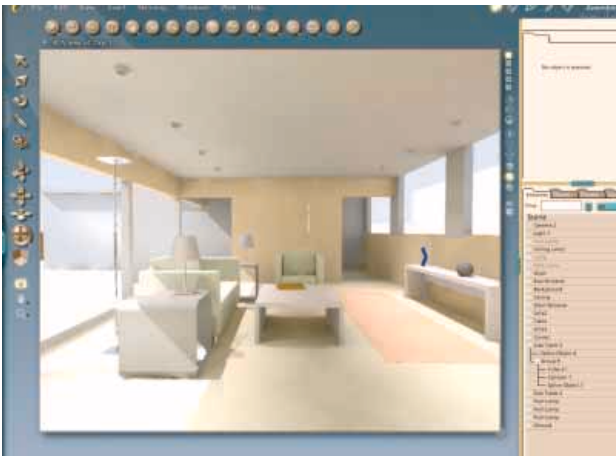
www.eovia.com, Windows & Mac

Carrara 4 is the powerful, approachable, complete 3D solution from Eovia. It offers modelling, animation and rendering tools aimed at the creative designer – and is designed to be easy for creatives from disciplines outside of 3D to learn.

The software is available in two versions: Standard and Pro. The Standard version includes a full creative toolkit, while the Pro version adds advanced features and includes a full version of Amapi 7 Designer

– plus the TransPoser and CAD-style plug-ins.

Version 4 of Carrara adds terrain and sky modules, texture and lighting controls, and improved rendering, IK, motion paths, and timeline support. Eovia claims to have improved integration with other tools, including Photoshop, Illustrator, Painter, Shockwave, Flash, Final Cut Pro, Avid Xpress, Premiere, and After Effects.

The new Pro version of Carrara adds network rendering, vector and 3D motion

blur, and integrated sound support. It also adds support for LWO and COB files.

We've included demos of the Mac and Windows versions of Carrara 4 Pro on the disc for you to trial.

Readers can upgrade to Carrara 4 Standard for £162 plus VAT; and to the Pro version for £353 plus VAT. To upgrade or for more details see www.unlimited.com/digit. **The offer runs until March 31, 2005.**

PAINT.NET 2.1

www.eecs.wsu.edu/paint.net, Windows

Paint.NET 2.1 is a photo and image manipulation application for Windows 2000 and XP. While hardly a replacement for Photoshop, it's a great package for creatives who don't need every part of Adobe's toolkit – and it's certainly a great improvement on Microsoft's Paint application that ships with Windows.

Paint.NET 2.1 offers a level of functionality only usually found in high-end applications, such as the ability to work with layers and a History palette that keeps track of everything you've done – and allows you to go back and change it.

The application features dialog boxes that become transparent when moved
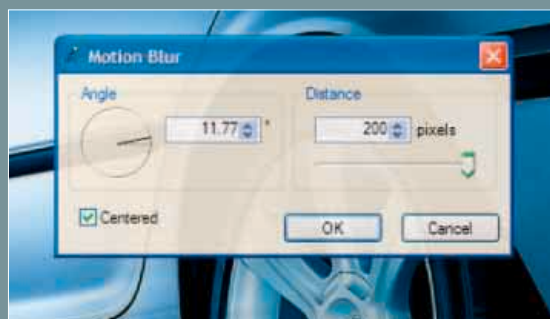
over the image you're working on, making your results more precise. It also supports additional plug-in effects such as Emboss and Difference Effects, which can be downloaded from the Paint.NET Web site.

Please note that this software is an alpha release, and as such Digit cannot guarantee its stability.

12 ROYALTY-FREE IMAGES

www.creatas.couk, www.fstop.com

This month we present 12 royalty-free images for you to keep. You can even use them in your commercial work if you wish. Six are from Creatas and present a summer of love to drive away those snowbound blues. Creatas can be contacted on 0800 056 7533. The other six are from FStop and showcase the work of Arlington, Texas-based photographer P Ravishankar. The images include nature photography and ancient buildings and landscapes. FStop can be contacted at www.fstop.com.
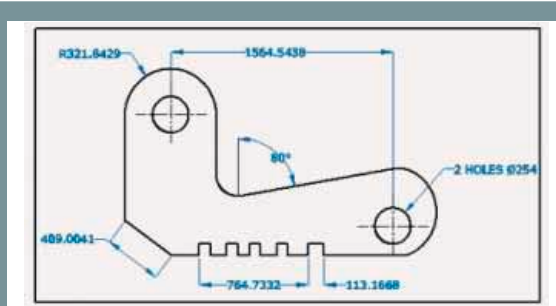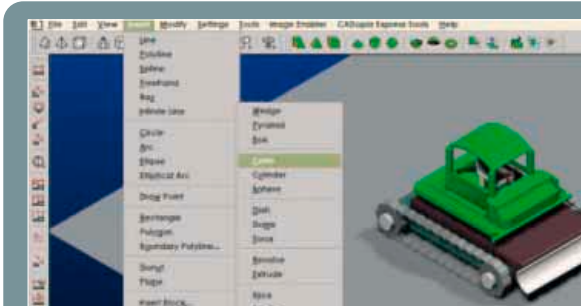
CADOPIA INTELLICAD 5

www.cadopia.com, Windows

CADopia IntelliCAD is the perfect CAD tool for students, educators, architects, designers, drafters, and engineers: virtually anyone who creates or uses CAD drawings.

The application offers compatibility with popular CAD products through IntelliCAD's native file format, DWG. It allows you to open and save any existing Autodesk AutoCAD file (V2.5 through 2005) and there is no file conversion or data loss. IntelliCAD also provides a high degree of compatibility with the AutoCAD command set, menu files, scripts, as well as with AutoLISP and Autodesk ADS. If you regularly receive files from clients that are in one format and you need to convert them to another, IntelliCAD can do that too.

IntelliCAD offers smooth Windows integration plus many unique product features, including the ability to open multiple drawings at once, and review and exchange drawing content.

This version of IntelliCAD is free to use for non-commercial work until January 31, 2006.

REVOLUTIONARY DESIGN MILESTONES THAT CHANGED THE WORLD

#8 THE GOT MILK? CAMPAIGN

With US milk sales turning sour Got Milk? and the White Mustache campaign made it cool again.

It's 1993, and milk sales in California are sliding. But, boldly committing three cents per gallon gave the California Milk Board $23million for an ad campaign – a budget on a par with cars and beer.

San Francisco-based ad agency Goodby, Silverstein and Partners ditched the post-war 'Milk does a body good' health message and developed a 'milk deprivation strategy'. This focused on that feeling you get when there's no milk to wash down cookies or go on cereal. The first TV ad saw a man unable to answer the $10,000-winning question on a radio phone-in because he had no milk to wash down his peanut butter sandwiches. *Got milk?* was born.

The success of the campaign saw sales rise by 15 million gallons that year. The next stage linked milk with brands like Oreo cookies. Print ads of cookies with a bite taken out and the "Got milk?" slogan were bold, simple and didn't even feature milk.

The campaign went national and Milkpep, the US milk marketing board, developed the White Mustache campaign. With celebrity endorsements, this built on milk's new coolness and brought back the health message. Celebrities get as much kudos from the campaign as they give.

In 2004 *Got milk?* went global as the UK milk council adopted it. An exhibition of the ads-as-art is at the Copia Gallery, California, until 30 May.
www.gotmilk.com

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