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February 2000

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**The  
Knoll Brothers**

**Creators of  
The  
Photoshop  
World**

# 10 Years of Photoshop

The Birth of a  
Killer Application

By Jeff Schewe

Photoshop is the best selling pixel editing program on the planet. It is the standard of many industries and has been a huge revenue source for Adobe Systems Inc. But Photoshop's beginnings were humble, and if it weren't for a tendency to procrastinate by a certain University of Michigan graduate student, Photoshop might never have been developed.

Back in the fall of 1987, Thomas Knoll, a doctoral candidate in computer vision, was trying to write programming code to display gray-scale computer images on a black-and-white bitmap monitor. The code was called Display. Knoll wrote it on his Mac Plus computer at home



Thomas Knoll

as a diversion from his doctoral work. Because it wasn't directly related to his thesis, Knoll thought it had limited value at best.

Little did he know that this initial code would be the very beginning

of the phenomenon that would be known as Photoshop.

Knoll's program caught the attention of his brother, John, who worked at Industrial Light and Magic (ILM) in Marin County, California. ILM was the visual effects arm of Lucasfilm, the famous motion picture company founded by George Lucas. With the release of *Star Wars*, Lucas had proved that really cool special effects, combined with heroic characters and a "shoot-em up script," could



John Knoll

produce a blockbuster motion picture. To that end, John was experimenting with computers to create special effects. He asked his brother Thomas to help him program a computer to process digital image files, and Display was a great starting point. So began their collaboration.

John arranged to purchase a new Macintosh II, the first color-capable model, through his father, a professor at the University of Michigan. Before it was shipped to his brother, Thomas got hold of it and rewrote the code for Display to work in color.

In the ensuing months, Thomas and John worked on expanding Display's capability. At John's urging, Thomas added the ability to read and write various file formats, while John developed image processing routines that would later become filter plug-ins. Thomas developed the unique capability to create soft-edged



Display 0.07 Splash Screen

selections that would allow local changes. He also developed such features as Levels for adjusting tonality; Color Balance, Hue, and Saturation for adjusting color, and painting capabilities.

In the summer of 1988, John thought they might have the basis of a commercially viable product. Thomas was reluctant: "Do you have any idea how much work it is to write a commercial application?" he asked John. But with his naive optimism, John convinced Thomas it would be worth the effort. "I'll figure out how to make money with this," he told his brother. Well, John was right, but so was Thomas. It did take a lot of work.

When John saw an ad in *MacWeek* for another pixel imaging application, PhotoMac, he became concerned. He went to the SIGGRAPH Conference (Special Interest Group for the Computer Graphics division of the Association for Computing Machinery) to investigate the new application. "We've got nothing to worry about here," he told Thomas. PhotoMac lacked some of the major features of the Knolls' product. In fact, John was stunned by how poorly its features were implemented.

Thomas changed the name of their software several times. Each time he found one he liked, it had already been taken. Then, during a

program demo, he confided to someone that he was having problems naming the program. The confidant suggested Photoshop, and that became the program's working name.

John started shopping around for a company to invest in Photoshop. He called on SuperMac, but financial troubles there precluded any deal. Aldus was already working on something inhouse. Although Adobe was interested, nothing could immediately be settled.

Thomas remained in Ann Arbor, Michigan, fine-tuning the program, while John traveled all over Silicon Valley giving program demos. He kept pushing his brother to add new features. John even wrote a simple manual to make the program more understandable.

Finally he succeeded in attracting the attention of a scanner manufacturer. Barneyscan decided that the program would be of use to people who owned their scanners. A short-term deal was worked out, and the first public iteration of the software was introduced as Barneyscan XP. About 200 copies of the program, now in Version 0.87, were shipped with scanners.



Photoshop 0.87 Splash Screen

Around this time, John demonstrated the program to engineers at Apple computer. It was a huge hit. They asked John to leave a couple of copies. There followed the first incident of Photoshop pirating. Seems that the engineers shared the program with some friends.

Subsequently, John returned to Adobe for another demonstration. Russell Brown, Adobe's primary art director, was blown away by the program. He had just signed a non-



Russell Brown

disclosure agreement with Letraset, to view their new image editing program, ColorStudio. He was convinced that Photoshop was better.

Timing is everything. With a great deal of enthusiasm, Adobe decided to buy the license to distribute Photoshop. It was September 1988 and the Knoll brothers and Fred Mitchell, head of Adobe Acquisitions, made the deal with a handshake. It would be April before the final legal agreements were worked out.

The key phrase in that deal was "license to distribute." Adobe didn't completely buy-out the program until years after Photoshop had become a huge success. It was a smart move on the Knolls' part to work out a royalty agreement based upon distribution.

After the legal agreements were signed, Thomas and John started developing a shipping version. Adobe decided to keep the working name Photoshop. Thomas wrote all the code for the application in Ann

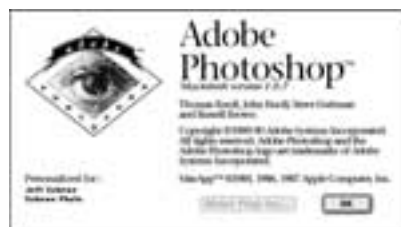


John Knoll's early Photoshop icons.

Arbor, while John developed and wrote plug-ins in California. Some of the Adobe people thought John's features were gimmicky and didn't belong in a serious application. They viewed the product as a tool for retouching, not special effects, so John had to find a way to "sneak" them into the program. Those plug-ins have become one of the most powerful aspects of Photoshop.

Between April 1989 and the official release of the program early in 1990, development continued, with no official beta testers. At Adobe, Russell Brown and others worked with the program and made suggestions. Thomas would write and then rewrite the code, while John, Russell, and Fred pushed him to add features. John was particularly good at coaxing Thomas to make improvements. Finally, in February 1990, Photoshop 1.0 shipped.

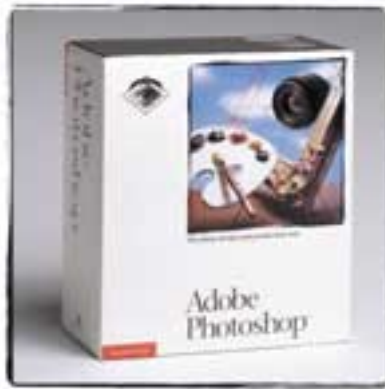
**T**here were some early bugs in the program, and most people ended up using Version 1.0.7. Despite that, Photoshop was a hit, beating the competition—most notably ColorStudio—with its well-written code and easy-to-use interface. Photoshop had features that the others lacked, and the timing of the release was excellent: Just as the desktop



Photoshop 1.0.7 Splash Screen

publishing revolution was heating up, Photoshop was there to take advantage of the growth. (Of course, you had to own an Apple computer.)

Adobe also had a secret weapon: Russell Brown. His first public



Adobe Photoshop 1.0 shipped on a single 800k disk.

demo of Photoshop probably took place at the Mac Summit in Santa Barbara in 1990. He had a knack for making Photoshop seem easy and lots of fun, producing humorous demos that showcased Photoshop's features. People who attended the demos spread the word about this really cool new product.

Yet, clearly, Photoshop 1.0 needed more work. While Photoshop was easier to use, ColorStudio, which was developed by Fractal Design, had some advanced features Photoshop did not. However, much to its disadvantage, Letraset had positioned ColorStudio in a vertical market, selling it as a specialized tool for specialized uses.

Adobe, on the other hand, positioned Photoshop as an easy-to-use tool for anybody with a Mac. *MacWorld* even published a shoot-out in an article about Photoshop and ColorStudio. John Knoll, working in Photoshop, and Marc Zimmer, of Fractal Design, working in ColorStudio, produced a series of retouching and compositing tasks. Photoshop was seen as the winner, although Zimmer complained that the test wasn't fair—John was an artist while Zimmer was "just a programmer." With the development and release of Photoshop 2.0, Adobe was clearly becoming the industry standard.

Thomas Knoll had been the entire engineering staff. Adobe needed

additional engineers. They hired Mark Hamburg, also a graduate of the University of Michigan, who had interviewed at Adobe the same month Photoshop 1.0 shipped. Mark had worked at Ashton Tate, where he implemented Bezier Paths for Full Write. Paths was a feature Adobe wanted to add to Photoshop 2.0, and the company pegged Mark as the Path Man for Version 2.0.



Mark Hamburg

Working with Thomas in Ann Arbor, Mark began development of Version 2.0 in Mountain View (Adobe's first home). The major features of 2.0 were to be a rasterizer for Illustrator files (Adobe's vector-based application), support for CMYK color, Duotones, and the Pen tool. Hamburg said his first real contribution to Photoshop was to suggest raising the minimum RAM allocation from 2- to 4MB. Apparently, this little allocation bump greatly aided the stability and performance of the program.

Steven Guttman, now CEO of Halfbrain.com, became Photoshop's first full-fledged product manager



Photoshop 2.0.1 Splash Screen



Steven Guttman

and began the tradition of giving code names to the beta versions. Version 2.0, Fast Eddy, was supposedly named for a character in the movie *The Hustler* (maybe also for the speedy development cycle). Photoshop 2.0 shipped in June 1991.

Adding CMYK support to Version 2.0 made the printing industry sit up and take notice. Photoshop 2.0 fueled the desktop publishing revolution by putting separation capabilities in the hands of Photoshop users. Sales started to skyrocket. Development continued and additional engineers were hired, including Kevin Johnston. Development of the next version wouldn't be easy.

Adobe had decided that a Windows version should be developed along with the Mac version. Guttman split product management into two teams. The Mac team was headed by Jeff Parker, the Windows team by Bryan Lamkin. The development progressed



Bryan Lamkin

slowly, and required a total rewrite of Thomas Knoll's original code.

The Windows version of Photoshop was like a completely separate program. The Mac version bore the code name Merlin; the Windows version, Brimstone. Adobe would later rue its decision to number the next version Photoshop 2.5. Why marketing chose not to label it Version 3.0 remains unclear. In general, software versions labeled .5 do not sell well because they are perceived as mere maintenance releases.

Important new features were added, notably palettes and 16-bit file support. In general, though, Version 2.5 is most noteworthy for being the first Windows version.

**A**dobe Photoshop for Windows had a competitor: Aldus PhotoStyler. Windows users could now run Photoshop, but the list of new features was short. There was also immediate feedback from the market that something was really wrong with the memory handling.



Photoshop 2.5 Splash Screen

Tech Support tried to track down the problem; Hamburg was so determined to fix it that he actually offered to make house calls. When the "memory bug" was finally located and squashed, the primary viable version became 2.5.1. This version was significant for being the first application tuned to work with Power PC chips, Apple's faster new chip architecture. Zalman Stern

was the primary writer of the Power PC accelerator code, which was implemented as a plug-in.

Even before 2.5 had been completed, work began on Version 3.0, code named Tiger Mountain. This next version was to incorporate a major new feature Thomas was working on called Layers.

Meanwhile, Thomas worked with Hamburg and Johnston on other early 3.0 features, with the help of a few specialized engineers. Stern created optimizations for the Power Mac, while Seetha Narayanan worked on bringing the Windows version on par with the Mac version.



Seetha Narayanan

Photoshop 3.0 was the first version I had the opportunity to beta test. I had some experience as a beta tester for a program called Live Picture, which some users touted as a "real-life Photoshop Killer." Adobe was concerned that Live Picture would offer serious competition. Live Picture's Layers feature allowed the user to stack multiple elements, while keeping them discretely separate. Layers would prove to be a very significant feature.

Meanwhile, rumors of Photoshop's new features began to leak to the media. There was speculation that the Photoshop engineers had copied the Layers feature from Live Picture, when in

truth, Thomas had worked on the concept long before he ever heard of Live Picture. To him, the layers concept was merely a convenient method of keeping objects separate during image editing.

Photoshop 3.0 shipped for the Mac at the end of September 1994, the Windows version shipped in November. It was an instant hit with users and the press.

Version 3.0 was not without its tribulations. Before it shipped, Jeff Parker took a sabbatical from Adobe, leaving 3.0 bereft of a Mac version product manager. John Leddy stepped in to take over the position. During the beta process, there was friction between engineering and quality assurance (Q&A). Many features in Photoshop 3.0 were barely documented or not documented at all. In fact, there was speculation that Brown had engineers include undocumented features so he could wow the crowds at demos. While Russell did indeed beg, plead, and finagle for new features, the lack of documentation was not a conspiracy, but a breakdown in communication among various departments at Adobe.

The Bass-O-Matic episode, however, was merely the result of an engineer having some fun. While several stories are floating around about the origins of Bass-O-Matic (a reference to a Dan Akryod skit on *Saturday Night Live*), all I can say is what I know for sure: At times during early beta testing, the words “Bass-O-Matic” would mysteriously appear in a menu. When I returned for a look in the menu, the words would disappear.

Matt Brown, one of Adobe’s best tech support guys, came up with a remarkable explanation for this anomaly. He said that Bass-O-Matic

was a scheme to pare down the ranks of Version 3.0 beta testers. If a beta tester didn’t report at least one Bass-O-Matic sighting, said Matt, then obviously he wasn’t using the program, and he would be dropped from the beta program. At the time it sounded like brilliant explanation!

There was a more serious glitch discovered after Version 3.0 shipped. Somehow, the beta expiration code had escaped notice. Version 3.0 was recalled. Version 3.0.1 started shipping immediately. Unfortunately for those users who did not return their software, the program expired on January 1, 1995. While the vast majority of users were aware of the problem, and Adobe did its best to replace 3.0 CDs, some users panicked. All it took was updating the installed 3.0 version with the 3.0.1 updater already widely available through online services.



Photoshop 3.0.1 Splash Screen

Unfortunately for Adobe, a similar situation occurred February 1, 1995, when the Japanese version also suffered a beta copy expiration warning. A quick 3.0.3 updater fixed the problem, but there were serious repercussions. Some engineers left Adobe.

These incidents were mildly embarrassing, but they didn’t diminish the enthusiasm that users had for Version 3.0, especially the Layers feature. This was the version with an Adobe Transient Witticism (ATW)—a little something “extra” that programmers

wrote into the applications. They were usually well hidden unless you knew the obscure key strokes necessary to reveal them (See sidebar on page 23). Such ATWs are basically humorous one-liners made up by the engineering staff.

In many ways, Photoshop 3.0 (and all five upgrades) was a definitive product. Many people, both within Adobe and on the outside, wondered what could top 3.0. Though there was now a considerably larger engineering staff (Sean Parent from Apple and Marc Pawliger from IBM came onboard in the later stages of 3.0 development), the idea of developing another version of Photoshop wavered. Photoshop engineers became distracted by other projects. Thomas was beginning the stressful and time-consuming project of building a new home; Hamburg began working on an object-oriented programming application; Johnston and a couple of other engineers left Adobe or started new projects.

Development seemed bogged down when Lamkin decided to jump start it. With encouragement from Hamburg, he hired an interface designer to rework the entire user interface of Photoshop. The goal was for all Adobe products to have a similar appearance and behavior logic. Hamburg was persuaded to return to the Photoshop engineering team, which took on the task of “revving” Photoshop yet again.

There were some real surprises lurking for unsuspecting Photoshop users. First, Andrei Herasimchuk, the new interface designer, started making radical recommendations for the key commands and behavior logic of Photoshop. Herasimchuk came from a small New England software company



Andrei Herasimchuk

that had come out with a Photoshop companion product, Specular Collage. Even before 3.0 acquired Layers, Specular had developed a proxy system of loading Photoshop files, stacking them as layers, collaging multiple files, and adding filter effects. Herasimchuk was instrumental in developing Collage.

With Lamkin's blessings and encouragement from Hamburg, Herasimchuk undertook some radical surgery on Photoshop. Other engineers worked on other new features: Parent developed Actions; Jason Bartell worked on Adjustment Layers (originally scheduled for a later version); and Pawliger worked on Grids & Guides. Hamburg worked on Free Transform and screen caching, a performance enhancement that originated with Thomas. This was the start of Photoshop 4.0, code named Big Electric Cat.

I was introduced to the alpha version of Photoshop 4.0 on a trip

to the West Coast. Herasimchuk invited me to the Adobe offices in Mountain View to participate in what he called "Usability Testing." It was more like a psychological test.

I was stationed at a computer with a video camera aimed at me, told to launch the program, and left to explore it. They wouldn't tell me much of anything, but they did ask questions. I was supposed to intuitively grasp the changes, of which there were many. Most of them seemed to have a definite logic. I was one of three people given an alpha version to "play" with, and I started e-mailing off my opinions and reactions.

Somewhere along the line, the full impact of the proposed changes hit me: Users were going to face major behavioral differences in the way Photoshop worked. I started getting nervous that I had too much responsibility and that maybe the engineers should re-evaluate the changes. My cold feet came too late to have any impact, which as time has shown, was fortunate.

When the first beta copies came out, there was an uproar from the beta testers. "Why was such-and-such (insert your favorite key command here) being changed?" Some users rebelled. By the time the beta process was over, most testers had adjusted to the changes, but the media had picked up on the controversy. The news groups and online services such as CompuServe and AOL were flooded with complaints by frustrated users who felt the changes made no sense. At the time that Photoshop 4.0 shipped in November 1996, the general reaction among users was, "Why did you break Photoshop?"

Finally, as they learned the changes and began to understand the improvements in logic and behaviors, the controversy died

### Evolution of the Photoshop Toolbar



Photoshop 4.0. Splash Screen

away. Photoshop 4.0 was a huge financial success for Adobe and a vindication of sorts for the engineers who took a risk in making radical changes.

**F**rom the time Photoshop first appeared on the market, to the shipping of Version 4.0, some rather remarkable things took place in the industry. The desktop publishing revolution forever changed the prepress and printing industries, mostly for the better. Adobe bought Aldus and killed PhotoStyler. Macromedia ended up with Free Hand in the deal, Illustrator's main competitor. They tried to create another Photoshop competitor, x-Res, but it died. On the Windows side, Picture Publisher began to lose its market share.

Meanwhile, a little startup company called HSC started selling Photoshop plug-ins, changed its name to MetaTools, and went public. It bought up Specular and then merged with Fractal Design, again changing its name, this time to MetaCreations. Its image editing product, Live Picture, has since died.

The World Wide Web surged as a technology. Just last month, MetaCreations released its product engineers and put their products on the auction block, retaining only the Web streaming products. Apple began to lose market share, but was still touted as the first choice for graphics and multimedia content creation.

Remarkably, throughout all of these changes, Photoshop continued to grow and prosper. The installed user base is in the millions (with a ratio of unregistered to registered users at perhaps 5-10/1). Entire cottage industries have developed and prospered by supplying Photoshop plug-ins and add-ons. The number of books written about



Adobe Headquarters

Photoshop has topped 100. A couple of years ago, well after Photoshop had become a success, Adobe entered negotiations with the Knoll brothers to finally buy out all rights to Photoshop. It cost Adobe a bundle, but it was worth it.

Photoshop 5.0 was in development well before Version 4.0 shipped. I remember glancing at a white board in Sean Parent's office on the 10th floor of Adobe's new corporate offices in San Jose (they say it's the building that Photoshop built, kind of like Thomas's house, but with more floors). It was fall 1996, during the Version 4.0 launch party. On the white board was a list of possible features for the next release. Most of them have made it into the program.

In spring 1997, there was little news coming from Adobe. Illustrator 7.0 had shipped, and while the Mac version was not significantly different, the Windows version of Illustrator jumped from Version 4.0 to 7.0. That summer Herasimchuk e-mailed that things were starting to heat up at Adobe. He asked me to create the beta



Photoshop 5.0 Splash Screen

splash screen for Strange Cargo, the code name for Version 5.0.

At the Orlando Photoshop Conference in September 1997, Herasimchuk and Katja Rimmi (the primary interface designer of Photoshop 5.0) met with several of the alpha testers who would be working with the engineers on the Version 5.0 feature development. We sat around discussing some of the plans that were taking shape. Herasimchuk hinted that there was going to be a new feature that would "blow me away." That feature would be called the History Palette.



Katja Rimmi

The History Palette was Hamburg's vision of implementing a multiple undo feature in Photoshop. But instead of a traditional scheme, he wanted it to be an elegant and powerful feature.

Rumor has it that Hamburg was influenced by my blending technique—the way I worked between "states" (my term for an image file's condition at a particular stage of manipulation). Prior to Photoshop 5.0, there were four such states. My technique used the Saved state and the Snapshot state in manipulating the current state. This was the concept Mark used in developing his vision of the History feature. Instead of a plain vanilla multi-undo, which would have been cool on its own, Mark used the concept to enhance the power and usability of the feature.



# Of Easter Eggs & Code Names

By Jeff Schewe

Easter Eggs are little bits of application code modification that allow certain hidden functionality to be seen or heard. Usually, the functionality is no more than the application programmer's idea of fun and games. On occasion, programmers have been known to slip in hidden features, too, as a kind of secret signature. With some notable exceptions, Easter Eggs do no harm. I'm not sure when Easter Eggs made their first appearance in Photoshop, but I do know that even Version 1.0



shipped with the secret Knoll Software splash screen, which originally contained the address and phone number (long since obsolete) of John Knoll's software company.

Photoshop 2.0 was code named Merlin by Photoshop's first product manager, Steve Guttman. In Version 2.5, the Mac version was code named Fast Eddie, and



the Windows version, Brimstone. Photoshop 2.5 had a Hidden Filter menu for all the Distortion plug-ins, an extra bit of functionality designed by John Knoll. It was accessed by holding down the option key and navigating to About Plug-ins in the Apple Menu.



Mark Hamburg code named Version 3.0 Tiger Mountain, a reference to a recording by Brian Eno. From that version on, the platforms had the same code names.

Version 3.0 saw the introduction of Adobe Transient Witticisms (ATW)—one-liners supposedly uttered by the engineers during development. To see the 3.0 ATWs, go to the alternate screen (Option>About Photoshop) and let the credits run in their entirety. While holding the option key, click in the area just above the credits. Among the ATWs is a list titled "Top Ten Signs the Engineering Team Has Been Working Too Hard."

Mark Hamburg code named Version 4.0 Big Electric Cat, for a song by Adrian Belew. The splash screen was created by Joseph Kelter, of Bad Cat Design. In the Mac version, when users clicked on the kitty's nose, an Easter Egg manifested as an electronic burp. According to Hamburg, "How do you make the kitty



burp?" is one of the most frequently asked questions about Version 4.0.

In 1997, I was asked to create the alternate screen for Version 5.0 by Marc Pawliger—an honor, albeit an unpaid one. Hamburg named this version Strange Cargo, a reference to a work by techno artist William Orbit. There are two extra Easter eggs in this version, accessible from the alternate screen. I was sworn to secrecy, but the cat must be out of the bag by this time. Go to the alternate screen and immediately type "B-U-R-P." (Excuse me!) Now type in the kitty's name, Sorry—I still can't divulge that, but it can be found in the 5.0 ATWs (Hint: "\_\_\_LIVES!").



In homage to Photoshop's history, Version 5.0 has another Easter Egg. "Merlin Lives!" resides in a hidden Option>Layer Options key command. Version 5.5, which has the same alternate screen as 5.0, did not get a code name, and has but a handful of additional ATWs.

The code name for the next version of Photoshop? Well, I can't comment on that, but I'm willing to bet it's a musical reference, and that it's stored in Mark Hamburg's ubiquitous Apple Newton PDA.



Joe Ault,  
Software  
Engineer,  
Generalist  
(utility infielder)

Jason Bartell,  
Software  
Engineer,  
Adjustment  
Layers, New  
Hue/Saturation,  
Levels and  
Curves  
enhancements



Scott Byer,  
Senior  
Software  
Engineer,  
UNIX version,  
Windows  
performance  
tuning,  
magnetic tools

Jeff Chien,  
Software  
Engineer,  
UNIX version,  
PDF, and EPS  
parsers



Kevin Conner,  
current  
Photoshop  
Product  
Manager,  
responsible for  
Photoshop LE

Chris Cox,  
Software  
Engineer,  
Bit twiddler  
and code  
performance  
tweaker.  
Author: Chris's  
Photoshop  
Filters



Josh Freeman,  
Software  
Engineer,  
Plug-in support

When I received the first alpha version of Strange Cargo with the History feature, I was stunned. Mark had implemented a perfect approach to multiple undos (at least from my point of view). I immediately started to put the feature through its paces. It was going to be a powerful one.

A few weeks later, I received another alpha version, with yet another aspect in the History feature: non-linear History. Wow! this was getting deep. To understand non-linear History, it helps to be a sci-fi fan. Non-linear History means that you can step back in time and branch out to a new timeline without killing off those future events that have already happened. Needless to say, Version 5.0 was looking like a major upgrade.

Every new alpha disk that arrived had more features hooked up and working. It gets to be a bit like an Easter egg hunt. You develop a pattern of checking out each menu item and tool for new goodies. There's always surprises—occasionally bad ones.

Take the Clone tool, for example. I've been told that a certain author had made a case to Hamburg about why the behavior change from Version 2.5 to 3.0 was a mistake. This unnamed author (his first name is Deke) convinced Hamburg to change the behavior back to the way it was in 2.5, so the Clone Brush would not produce a "hall-of-mirrors" effect. The change wasn't as bad as it was unexpected.

Then there were the Pen Tool behavior changes—required in Adobe's new policy of cross-application tool behavior unification. Herasimchuk had struck again. But the mild annoyances caused by these relatively minor changes were more than compen-

sated for by the impressively vast array of new features.



One big new feature caught a lot of users by surprise: Color Management. To some it was a Holy Grail. To others, it was a conspiracy to screw up their lives. I think the color man-

agement tools in Photoshop 5.0 are great. For the first time, users can do the majority of color management duties right in Photoshop, instead of using an expensive third-party tool. However, Adobe did make a couple of errors in judgement. For example, the default behavior to convert the colors of users' files when opening has proved to be a mistake.

Additionally, the engineers did something to the way dot gain is implemented. Apparently there was a slight error in the way Photoshop originally calculated dot gain, dating back to Version 2.0. The engineers decided to correct the error, but there was no documentation directly relating to the change, and this caused problems for users. Some members of the press proclaimed Photoshop 5.0 a failure. Adobe addressed these two problems and created an update that included a wizard to walk people through setting up color preferences. The update shipped as Version 5.0.2. And to think Herasimchuk was worried that nobody would notice Color Management as a new feature!

Other things were happening in the imaging

industry. Apple Computer, which many industry pundits had written off for dead,



came back to life with the release of the iMac. The resurgence of Apple caught much of the industry by surprise. Then there was the “Asian Flu,” the crash in the Asian financial markets that had adverse effects on many high-tech companies. Adobe did not come through unscathed. When Photoshop 5.0 shipped in May 1998, Adobe’s stock was about \$51 per share. By the summer, Adobe’s stock had tumbled, ending up at about \$25 the week before SeyBold San Francisco in September.

During that summer, Adobe went through major corporate restructuring and laid off many people. Some employees left before being laid off, notably, John Leddy, who left for MetaCreations. Meanwhile, an Adobe competitor did something foolish—the company began a semi-official attempt at an unfriendly takeover of Adobe. Why Quark executives thought they could pull off a hostile takeover of Adobe is unclear, but the timing was terrible for Adobe.

Against the backdrop of all this controversy, and to the surprise of many, the decision to ship yet another Photoshop Version .5 release was made. Not only did it come just over a year after the shipping of Photoshop 5.0, but it also had Image Ready 2.0 as a bundled extension. The list of features new with 5.5 was not long, but it did finally address a major area that 5.0 had missed: the World Wide Web.

Photoshop 5.5 has been very successful, Adobe has come back, and with the release of InDesign (Adobe’s “Quark Killer”), the outlook is positive. So much so that Adobe’s stock has surged from \$25 a share to more than \$75, even after splitting two-for-one.

To say that Photoshop’s 10-year history is a phenomenon is a vast understatement. No single piece of



Photoshop 5.5 Splash Screen

graphics software has changed so many industries.

Will another piece of software come along to knock Photoshop from the top seller list? I doubt it. The elves at Adobe are surely hard at work developing yet another version of Photoshop with tremendous new features and perhaps a controversy or two.

Photoshop has become big business. The company’s revenues are \$1 billion a year. Yet throughout Photoshop’s history, one thing remains clear. Photoshop came out at the right place at the right time. It continues to be a well-crafted piece of software developed by some truly gifted software engineers.

Thanks, Thomas Knoll, for procrastinating on your doctoral thesis. By the way, he never did finish his thesis. He still lives in Ann Arbor, Michigan, in relative obscurity, with his wife and kids in the 10,000+ square-foot house that Photoshop built. He still works for Adobe on a contract basis and he still “plays around” with Photoshop. John Knoll is no longer directly involved with Photoshop development. But he is rumored to still use it in his work at Industrial Light & Magic. ◀

Jeff Schewe, a 46-year-old Chicago native, a feature consultant and alpha tester for Adobe Photoshop, is this month’s cover artist.



Greg Gilley, VP of Web Applications, Senior engineering

Kevin Johnston, former Software Engineer, calculations and numerous other features No. 3 Photoshop engineer, now with Halfbrain.com



John Leddy, former Photoshop Product Manager

Charles McBrian, Software Engineer, OLE automation support



Sean Parent, Software Engineer, Actions, File Info, Mac OS enhancements

Marc Pawliger, Engineering Manager, Grids & Guides, Measure Tool, Alignment, Color Samplers, Generalist. UNIX version



Akiko Sherry, Software Engineer, responsible for editable type in 5.0 and lots of Japanese features

# SCHEWE

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I would like to take this opportunity to thank all the people both at Adobe and those outside of Adobe who made this article possible. I particularly want to thank Thomas and John Knoll, Russell Brown and Mark Hamburg who were willing to take the time to let me interview them about Photoshop's beginnings. Thanks to the engineering and marketing staff who took the time to let me shoot their portraits. I also want to thank Marc Pawliger for reviewing the article and helping straighten out the details, and Andrei Herasimchuk for helping coordinate the portrait shootings. I also want to thank the editorial staff at *PEI Magazine* for a deft editorial touch and to Elmo Sapwater who convinced me to give the story to *PEI*.

The dedicated and talented people who work on Photoshop are a small and tight knit group that resembles a real family. People come and go, but they all deserve a place in Photoshop's history. There are many people outside of Adobe that should also share a place-from David Biedney and Bert Monroy who wrote the first Photoshop book to Kai Krause who turned Photoshop "chops" into a virtual modern day religion.

I have learned at the feet of some great people. Thanks to Bill Niffenegger for first introducing me to the industry and Matt Brown for giving me my first introduction to Adobe. I also want to thank the many people in the industry who've been good friends; Bruce Fraser, Deke McClelland, Stephan Johnson, Steve Broback, Andrew Rodney-all have gone out of their way to be helpful to me.

Thanks guys!



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