

The upgrade has some great new features, but major, ill-advised changes in color handling spell trouble for those accustomed to previous versions—in short, for the entire industry.

A P R O F I L E O F

Photoshop 5

By Dan Margulis

The unprecedented expansion of the use of color images everywhere around us, and the phenomenal success of Photoshop, have an old explanation, but an accurate one: a picture is worth a thousand words.

Bearing that in mind, I will shut up, in favor of referring you to the two images at right. Ordinarily, I'd ask which one you liked better. This time, though, that's irrelevant. The questions are: do you think these pictures are the same? Do you think they are even *close* to being the same? If you are used to dealing with one image in a professional context, do you think you can substitute the other for it?



On the assumption that you have said no, no, and no, you have just indicted Adobe on the charge of breaking one of the most fundamental laws of software upgrading: maintaining compatibility from one version to the next. These two images originate from the same file, which was in the LAB colorspace. The darker one (at far right) is separated into CMYK for printing using the pure defaults of Photoshop 4. The lighter one is using the defaults of the just-released Photoshop 5.

One *can* fix up PS 5's separation engine so that it gives results similar to that of PS 4, at a cost of considerable effort and experimentation. And if, because you don't work very much in CMYK, you think you've been spared, think again. In RGB the problem is, in some ways, worse. Open a CMYK file from PS 4 in PS 5, and it'll look very different, but the file itself will be unchanged. Open and save a PS 4 RGB file in PS 5, and presto! Different color values—and a different file.

This is but a sample of the mischief awaiting the unwary—and it all could have been avoided so very easily. The upgrade offers some complicated new color capabilities that may be of interest to a small minority. Offering such options is one of the things upgrades are supposed to do.

Instead of making them *options*, however, Adobe implements them as *defaults*, without an easy way of restoring the status quo of Photoshop 4. Accommodating the changes is complicated enough to baffle non-expert users and to encourage calamitous color errors. It also will make *dealing* with such non-expert users much more difficult for all of us, since we will no longer know how their Photoshop is configured.

These color changes singlehandedly make what would otherwise be a superb upgrade into one that will foment chaos. Despite its undoubted merits, on the whole Photoshop 5 is a major disservice to the industry.

A disturbing trend in upgrades

For high-end print work, six programs command a significant market share. All six have upgraded in the past 14 months. For the first time, some of these are having a rocky time displacing their predecessors.

One, FreeHand 8, has been raved about by everyone who has touched it. Two others, PageMaker 6.5 and CorelDraw 8, have received cordial, though less ecstatic, reviews. Two others, Illustrator 7 and Quark 4, have been severely criticized.

This disturbing trend was predictable. Desktop publishing is mature. All of these packages have gone through a lot of evolution. Most obvious improvements have already been made. Full advantage has already been taken of computers that can do things today they couldn't five years ago.

And yet we are all asked to pony up \$1000 or so per workstation per year to keep up with the latest versions, and the question must be asked whether we should do it, particularly when confronted with "advances" that may cause more problems than they cure. It therefore seems appropriate to discuss not Photoshop in isolation, but what we are entitled to expect from an upgrade, and how well PS 5 stacks up to some winners and losers of the past, such as those listed in the boxes on this and the facing page. Here, then, are the questions we should be asking.

What new capabilities do we get?

It's only been 18 months since Photoshop 4 came out. Adobe, like Corel, Macromedia, and probably Quark as well, has had disappointing earnings recently. Photoshop is its biggest cash cow. All the more reason to suspect that the company is forcing a \$200 upgrade to happen, right?

Wrong. PS 5 is loaded with new features. How valuable they are to each of us depends on how we each use Photoshop. PS 4, for example, was particularly good for those who use layering extensively. I don't, so from my perspective, they might as well have called it Photoshop 3.5. But for somebody who frequently has half a dozen layers on an image, PS 4 may have been the more significant upgrade.

For almost anyone else, PS 5 is a bigger move. Not every feature is important to every person. I, for example, can live without multiple undo. But the sharp new curves interface would make the upgrade worthwhile for me even if everything else were unchanged.

New features: the "Top Ten"

Photoshop 5 adds a phalanx of useful new features, more than any recent upgrade of a major graphics package. Cutting them down to 10 is no easy task. These, in alphabetical order, are my choices; yours might be different.

1 Dot gains are definable by curve in each channel, as part of a revised CMYK Setup.

2 Drop shadows, many different varieties of them, can be easily and rapidly generated.

3 Fifth colors are finally supported.

4 Fixed measuring points, up to four of them, can be inserted in an image to get interactive readouts of what happens when we make changes.

5 A variety of new **Gradients** have been added, along with a banding-prevention algorithm.

6 A Magnetic Lasso tool detects edges of objects and makes simple silhouetting and selecting much easier.

7 Multiple undo, in the form of a "History" palette, lets us, if we have enough RAM, correct errors we made a long time ago.

8 Acrobat's PDF files, even multiple-page documents, can now be opened in Photoshop.

9 3D transforms permit the appearance of changing the natural positioning of objects. Works in RGB only.

10 Type capabilities have been radically upgraded. We can change sizes and faces, edit text, even kern manually. Plus, a great interactive preview allows us to apply all kinds of beveling, drop shadows, and other special effects.—DM

Other people might be enamored of the "magnetic" lasso tool, which detects edges. As long as this is treated as a significant improvement over the magic wand and not the end of all masking problems forever, it's a nice addition. In conjunction with the nifty, flexible drop-shadowing capability, and the ability to remap selections around three-dimensional objects, this is going to be a huge aid to productivity in certain operations.

When I reviewed Photoshop 4, I identified six such improvements—the kind of things that could singlehandedly make the upgrade pay for itself, depending on your work. This time, I found 15. I winnowed this list down to 10 favorites on this page.

Is it easy to change over?

On page 29, you see a picture of a loaded gun: the new Profile Setup of Photoshop 5, which has implemented ICC-compatible color management, but in a way that guarantees that for every user who gets a benefit, one hundred will see their jobs ruined.

I had chosen the phrase "loaded gun" to describe this before I read Adobe's white paper on Photoshop color management, which was distributed to beta testers in March. In describing a related new command, Profile to Profile, the authors said: "Think of [it] as a loaded gun...misused it can cause a great deal of trouble."

An eerie agreement on terminology, but not on logic. Loaded guns should be kept out of the reach of those who do not know how to use them. And certainly, nobody would dream of *requiring* children to play with loaded guns—would they?

Consider another loaded gun. One can reformulate the definition of what color the printing inks are, in the event, say, that our inks vary slightly from the CMYK standard. This feature has been made more accurate in PS 5, but it is still safely hidden away from discovery by all but expert users.

By contrast, not only is Profile Setup placed prominently, but virtually everybody is forced to play with it, because the new Photoshop 5 default is to emulate a cheap PC monitor. If you are preparing images exclusively for Web use, this may

Five that made the 'grade



A properly thought-out, well-engineered upgrade can change the course of graphics history. Below, the best graphic arts upgrades of the 1990s, listed in order of appearance; obviously, these are personal and debatable choices. But these meet *all* the criteria for an excellent upgrade.

Apple Macintosh System 7 (1990)

The memory management capabilities of this upgrade are what made the desktop revolution possible. In spite of the massive changes in architecture, this

OS was outstandingly stable—more so than its successors.

QuarkXPress 3 (1990)

Eight years after its introduction, essentially the same program commands the large majority of the high-end market. That is a testimony to the brilliance of the concept: outstandingly precise page-makeup controls, coupled with full support for color printing long before it was fashionable.

Adobe Photoshop 3 (1994)

If there was ever any doubt that Photoshop was going to take the professional market, this very fast upgrade ended it. The introduction of layers remains the

most significant capability added to the program since the ability to display CMYK documents.

Adobe Acrobat 3 (1997)

No more Acrobat Pro, no more Acrobat Exchange, just a single, stable, easy-to-understand program with many new capabilities. Acrobat has been around for some time, but nobody would have even dreamed of uttering the words “PDF Workflow” without this upgrade.

Macromedia FreeHand 8 (1998)

A faster, smoother, sweeter version altogether, with lots of new type capabilities, support for transparency, and a more logical interface.—DM

be what you want; for everybody else, this default is unusable.

Color management, in the sense of changing the characteristics of files on the fly, works, in a small minority of well-managed settings. Grand calibrationism, in the sense of tagging every file in the universe in such a way that a computer can later alter it automatically for whatever purpose it is headed for, has been resoundingly, and justifiably, rejected by the market.

Nevertheless, Adobe has decided that RGB should henceforth be “device-independent.” Even forgetting the fact that this disenfranchises those who have built a successful workflow doing it the other way, the logic behind such a decision is flimsy. But let us accept, for the sake of argument, that it was the right thing to do.

Given that, one still has to define this “device-independent” RGB. Several possible standards exist. Adobe, I can only surmise, convoked a committee and charged it with finding

out which of these would be the absolutely worst and most inconvenient for the largest number of users.

After lengthy consideration, it was determined that, due to various inherent limitations and its general incompatibility with anybody else's settings, the worst possible choice would be a definition called sRGB. This has therefore been implemented as the Photoshop 5 default, quite in keeping with the general philosophy of this upgrade, which is to saddle novice users with defaults they won't understand and that can't be made to work.

sRGB is a standard suggested by Microsoft and Hewlett-Packard, with the fanciful idea of someday having everybody who accesses the Web see precisely the same colors, regardless of what monitor they use.

In constructing such a chimera, one has to use a least-common-denominator approach, assuming the worst because that is what many Web surfers have.

... and five to forget

It's one thing to issue an upgrade that doesn't quite measure up, and another to do something that causes users to abandon the application. Every one of these cost its product market share—and always because it failed to abide by one or more of the rules stated in the column, just as Photoshop 5 fails to ensure compatibility. Again, personal choices: your mileage may vary.

Aldus PageMaker 4 (1990)

Unlike the products below, PM 4 was stable and did what it was designed to do—which wasn't what the market wanted. Releasing a product that didn't support color and couldn't have more than one document open at a time indicated a clueless management. This

cemented Quark in as the only option for high-end users. Despite three solid upgrades since then, PageMaker hasn't recovered from the damage.

Aldus FreeHand 4 (1994)

Lack of major new features, unexplained crashes, and unpredictable printing caused users to abandon FreeHand and gave its competitor, Illustrator, a big shot in the arm.

Microsoft Word 6 for Mac (1995)

Forget the un-Macliqe interface. This agonizingly slow, memory-hungry dog required more computing power than Photoshop, for simple word processing.

Adobe Illustrator 7 for Mac (1997)

While it brought welcome parity

between Mac and PC users, it also brought so many changes in the interface that *Adobe Magazine* had to run a listing of the top 10 command changes. With this and persistent printing problems, more than one reviewer reported trashing the upgrade and going back to version 6.

QuarkXPress 4 (1997)

An overpriced, bug-infested attempt to add illustration-software features into a page-layout package. Nearly a year old now, but don't take your QXP 4 file to a service bureau: most, having been burnt too many times, will insist you convert it into 3.3 format.—DM



A little on the dark side

Ever since Photoshop was introduced, people have complained that it delivers muddy-looking separations. Adobe, attempting to respond, blames Photoshop's dot gain assumptions. If that were really the problem (and it isn't), it could have been solved by raising the default dot gain from 20 percent to, say, 22 percent, which is the SWOP standard. Instead, in a monumental blunder, Adobe kept the default at 20 percent, but *changed what 20 percent means*. This gains absolutely nothing for non-beginner users, while obsoleting any workflows they may have developed using numbers valid in previous versions of Photoshop.

Any default is going to be too dark for some applications and too light for others. There is no right answer, other than to leave well enough alone, which is what should have been done here. But if your seps seem a little on the dark side, it's more likely the fault of certain other separation defaults, which do have right answers that Adobe has failed to find. Here's how to get better results. These options all live in Photoshop 5's CMYK Setup. In Photoshop 4, the first two are found in Separation Setup and the second two in Printing Inks Setup.

GCR Method: In CMYK, one can play the black plate off against the other

three. A heavier black does not necessarily imply a change in the color of the image. Photoshop's default, a "Medium" black, is heavier than the traditional standard, but not incorrect—until you pair it with an erroneous computation of black dot gain. For most images, you'll have better luck changing GCR to "Light."

Black Ink Limit: Whether they use inks, toners, or dyes, all output devices fail to hold detail when the aforementioned colorants reach a certain heaviness. The worse the output device, the lighter the point at which the failure will occur. For a number of technical reasons, the failure point for black can be quite low. In many applications, even an 80 percent black coverage is likely to print as solid; even the finest presses occasionally fail at 90 percent black. I recommend an 85 percent maximum black for virtually all print conditions. Anything between 80 and 90 makes sense. Photoshop's default, 100 percent, is a recipe for mud.

Overall Dot Gain Setting: The higher the number, the lighter the resulting separation. Changing it doesn't affect files that are already in CMYK, only new separations. In Photoshop 4, the default was 20 percent, which most users found too low. In Photoshop 5, the default is still 20 percent, but it equates to about

27 percent in PS 4. The lower the dot gain, the *greater* the difference between versions; 20 percent in PS 4 equates to about 11 percent in PS 5. Experimentation will be needed, since the method of black generation also changes. But the following complicated formula can get you a starting point: PS5 dot gain = $PS4dg - 3 - (.3 * (40 - PS4dg))$.

Channel by Channel Dot Gain: Photoshop has been operating on a false assumption that dot gain is heavier in cyan than in the other three inks, which accounts not just for the muddy look, but for some magenta casts. In real life, black usually has the highest dot gain and yellow the lowest.

To correct for this in Photoshop 5, you need to have set overall dot gain first. Then, change Dot Gain from "Standard" to "Curves." In each of the four CMYK curves, enter a new number at the 50 percent point. For magenta and cyan, enter 50 plus the overall dot gain (68, if you have set dot gain at 18 percent). For black, enter four points higher than magenta and cyan, and for yellow, two points lower. If you are using Photoshop 4, you can do approximately the same thing by changing Printing Inks Setup>Color Balance to the following values: Cyan 1.0; Magenta .95; Yellow 1.0; Black .92.

—DM

The range of colors sRGB can portray is therefore limited, and completely unsuitable for prepress work. Furthermore, its assumed gamma is 2.2, as opposed to the professional standard of 1.8. For those needing a translation, this means that an RGB image will look grossly darker in PS 5 than the same file in PS 4.

One need not be psychic to predict what is going to happen. Many users will conclude that PS 5 is worthless, and trash it. Most others will turn color management off, if they can figure out how to do so. Instructions for this are in the box on the facing page.

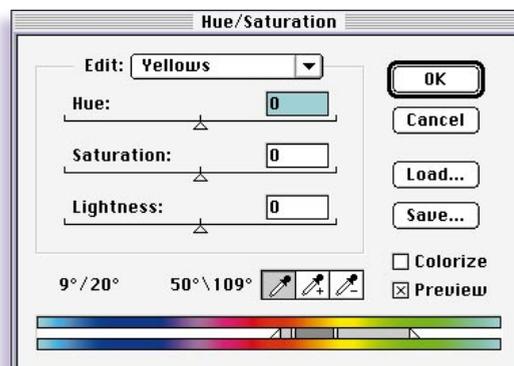
Turning it off, however, doesn't mean that the rest of the world will, and therein lies the tragedy. Exchanging RGB files with unknown parties is no longer safe. Give a file to a freelance retoucher, for example, to remove some defect, and the file may come back with entirely different colors, since Photoshop 5, by default, alters RGB colors *without warning*.

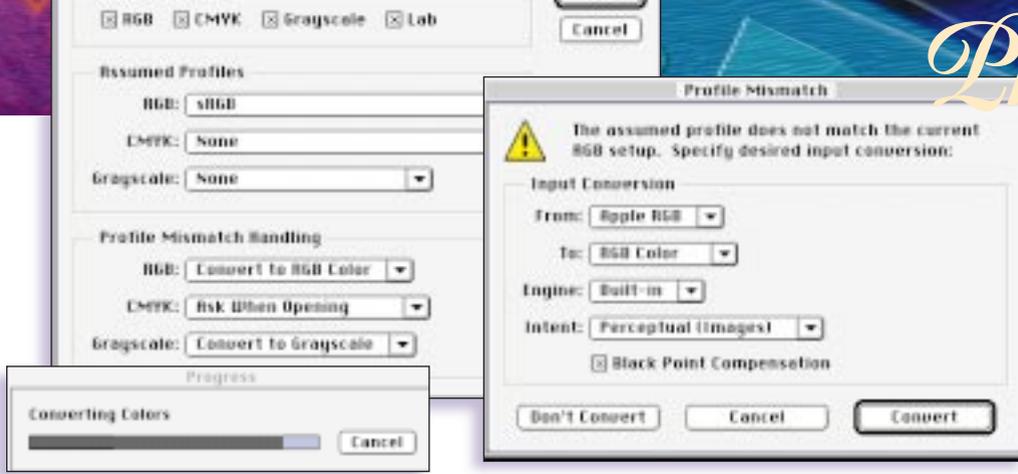
A continuing problem, as we all know, has been clients trying to evaluate color on lousy

monitors. We have muddled by so far, because even though the image on the client's monitor may not look exactly like ours, it will be more or less in the same neighborhood. But if the client is using the PS 5 default, all bets are off: the color will look *nothing* like what we see on our monitor.

And that's not all. The Photoshop default is to embed ICC profiles whenever possible, inviting other applications to alter the color whenever they think it appropriate. A few users *will* want to embed profiles, but what about the vast major-

The Hue/Saturation adjustment command becomes more configurable, and there is more control over how far the move extends. The setting at right defines orange as the target color, but the impact is set to go farther into yellowish oranges than reddish ones.





Default settings that allow Photoshop to change existing colors on the fly are an invitation to disaster. Even experienced users will have trouble implementing this upgrade's version of color management. Inexperienced ones face ruined jobs.

ity? In calibrationist heaven, all applications are ColorSync-savvy. Here on this planet, some are and others aren't. Quark ignores embedded profiles. PageMaker doesn't—and may well act.

The Adobe white paper shrugs this one off. "Make ICC-awareness and support for RGB spaces other than the monitor," it intones, "an important factor in buying graphics applications."

In the real world, we can't do that, sorry. We can't deliver images that look different depending upon which page layout program they're placed in.

Even more innocuous profiling implementations seem suspect. In the first draft of the review, I spoke highly of a new monitor calibration utility, Adobe Gamma, which replaces the clunky Gamma control panel of previous versions. It holds the user's hand during calibration and ends up with a ColorSync profile that controls screen behavior for all Macintosh apps (Photoshop only on the PC).

It worked great for me, and I thought it was foolproof. But the first returns are in, and users seem to be having a lot of problems with it—and finding that they can't get rid of it after installing it.

Until this is clarified, I'd recommend you hold off on lighting up Adobe Gamma—let alone the rest of the profiling powderkeg.

Photoshop 5's profile management is indeed a loaded gun. The establishment of sRGB as a default, knowing that professional users will use different settings, is a ticking time bomb. And embedding profiles that some applications honor and others don't is a land mine, waiting to be stepped on.

Compatible files from the past

"Photoshop 5 has revised its dot gain model," observes the Adobe white paper,

"to bring it more in compliance with industry norms, so some of the settings may appear to have different dot gain numbers than they did in previous versions of Photoshop. In general, this should not be a cause for alarm."

Turning off the problem

Most users will have better luck with the Photoshop 5 upgrade if they turn color management off altogether. This is a several-step operation. If you'd like to have PS 5 behave more or less like PS 4, first open PS 4. Go to File: Color Settings>Monitor Setup>Save (you pick a name). Now quit PS 4, open PS 5, and make the following changes in File: Color Settings, which has four suboptions:

Under RGB Setup

- Load the file you saved from PS 4. If you have no such file because you are starting from scratch with PS 5, change "sRGB" to "Monitor RGB."

Under CMYK Setup

- Under Ink Options>Dot Gain, enter .65 times the number you are accustomed to working with in PS 4, or use the more accurate but more complicated formula in the box opposite. Be prepared to experiment.

- Change Separation Options to match their Photoshop 4 equivalents, or use the values suggested in the box on the facing page.

Under Grayscale Setup

- Change Grayscale Behavior from "RGB" to "Black Ink" if your destination is print; leave it at "RGB" if it's the Web, a film recorder, or RGB device.

Under Profile Setup

- Uncheck "Embed Profiles" for all four options.

- Change all Assumed Profiles to "None."

- Under Profile Mismatch Handling, change all to "Ignore." —DM

It should be a *big* cause for alarm for the poor Adobe customer service reps who will have to field the calls from ag-onized customers who can't make their PS 5 seps look anything like what they're used to.

We aren't talking about slight differences, either, but the difference between the right and left versions of the image on the opening page. It has nothing to do with ICC profiles: it's Photoshop's built-in separation engine. Whatever values we currently have for dot gain in PS 4, we need to enter a much lower number in PS 5, if we want equivalent results. If not, all our seps will be much lighter. Plus, any CMYK file created in PS 4 will look way too dark when opened in PS 5.

This is worse, if possible, even than the new treatment of RGB, for two reasons. First, if you don't like sRGB, you can, with some difficulty, change it to something better or return more or less to the status quo. With the new separation engine, there is *no* workaround. We simply throw away all of our previous settings and conform to the new order.

What could Adobe have been thinking? The statement about "industry norms" is hooey. There has never been any general agreement on what a particular dot gain number means; to the extent that there is a standard, it's that of the program that 95 percent of all professionals use—to wit, Photoshop 4. To the extent that it's anything else, Photoshop is moving away from it. For certain types of printing, we will have to use PS 5 values of less than 10 percent—which is absurdly low for virtually all presses.

Kodak's ColorFlow: profile generation for the pro

Photoshop 5's commitment to the ICC profile standard leaves the user with some stark choices. In view of all the problems, the easiest, and for most, the best choice, is probably to turn off all color management as described in the box on page 29. For those wishing to plunge into the new technology, the profiles included with the Photoshop package are likely to be inadequate. This is especially true of the new way of handling RGB files, where Photoshop 5 offers us a potpourri of unpalatable choices. But it also applies to the conversion to CMYK, where Photoshop's included profiles are quirky and unreliable.

If you are serious about both quality and profile-based management, you will need to tweak, and since Photoshop does not have this capability, you'll need a third-party package that does. The good news is that Kodak offers such a product, with most of the capabilities one would want. The bad news is, it costs \$2500.

Before climbing its considerable learning curve, make sure you know the approach is right for you. Many people don't realize the extent to which they are already color-managing.

For example, suppose that, now that this review has run in *Electronic Publishing*, I have to prepare it to run in some newspaper. The problem is, newspapers appear to print darker than magazines do, so I would need to make the images a little lighter. At least three ways come to mind: I could employ a couple of ICC profiles to alter the images; I could stick to Photoshop's own engine by converting the files to LAB, increasing the dot gain value in Photoshop's CMYK Setup dialog, and reseparating; or I could use the brute force method of just having at the images with curves and lightening them.

Only one of these approaches is commonly referred to as being based on

profiles, but, in fact, they all are. A profile is nothing more than our understanding of how our devices—in this case, a magazine press and a newspaper press, given the specific papers in use—behave. In the first case, there'll be a formal profile for magazine CMYK and a second for newspaper CMYK. In the second, we have to change Photoshop's entire understanding of CMYK with our dot gain move, but that is still profiling. And in the third case, the profile is in my head.

Which method gives the better results doesn't depend on the format. It depends on how good the profile is. Also, one has to take into account the time factor. Since none of the images here is of critical quality, I'd for sure adopt the third approach here. But there are those for whom the extra accuracy is crucial. For such persons, it may make sense to have a profile not just of magazine CMYK generally, but of the particular foibles of the paper and printing conditions of *Electronic Publishing*. These things can be measured and compensated for.

ColorFlow includes a basketful of transparent and reflective target images, which we can reproduce and measure, either on screen or with a densitometer. Program wizards then walk us through making a profile. No great expertise is required to do this. A second option is to forget about the target images, start by using a profile for a similar device on live jobs, observe any undesirable happenings, and tweak to correct them. Such tweaks do require an expert, in my opinion.

Great precision is possible with these profiles, more so than by adjusting Photoshop's built-in tables. Suppose your business is real estate, and you



have to produce thousands of images a week for placement not just in print advertising, but on your Web site. You want a streamlined method of preparing the images for both targets. ICC profiles are ideal for this, but it could also be done through the enhanced scripting ability of Photoshop 5. Yet, although you cannot afford to invest the time to make a work of art of every image, there are certain things that would be very desirable. Namely, skies should be blue, and lawns should be a healthy green, even if the image was shot on an overcast day. ColorFlow has enough power to isolate these colors and automatically make such conversions, using, among other things, the saturation controls shown above. ColorFlow also comes with an army of premade profiles for many different printers, output conditions, monitors, and scanners. And it has a suite of Photoshop plug-ins that emulate the workings of existing profiles, but allow the use of familiar Photoshop tools.

Although beginners and intermediates will have a tough time adjusting to its more powerful tools, ColorFlow can be the answer to most profiling questions, except the obvious one: since the alternative is faster, approximately as effective, and free, is the ICC approach all that attractive?—DM

Similarly, the white paper argues, "we have had reports that the separations from Photoshop 4 tended to run a little on the dark side." A little on the dark side for *what*? A default PS 4 separation (20 percent dot gain) is definitely too dark for a newspaper, and definitely too light for waterless sheetfed printing. No matter what the default is, it's sure to be right for certain things and wrong for others. Every intelligent user knows how to adjust the number to compensate.

Doing so requires no advanced degree in astrophysics.

Electronic Publishing changed printers in February. In my first two columns under the new regime, every image I printed was a little on the dark side, in comparison to what I was expecting. Having determined that this was not a one-time fluke, I adjusted my dot gain setting from 24 percent to 25 percent; time elapsed, 15 seconds. Users who deal with several printers typically have half a dozen or more such setups saved. With Photoshop 5, all go out the window.

In Photoshop 5, I must now lower dot gain to 17 percent to

match my PS 4 output—but 17 percent falls afoul of the industry-standard SWOP specification for magazine dot gain. It's too *low*, in spite of the obvious fact that *Electronic Publishing* is darker than average.

Is the PS 4 or PS 5 default number better? That's like asking, what should the default waist size be on a Photoshop user's pants? Everybody still needs to know how to alter the default to accommodate changing circumstances. The advantage of the change to anyone, except for the consultants who are hired to remake all existing dot gain settings, is therefore absolutely nil.

If we have a setting that works, it doesn't matter whether it's called 25 percent dot gain or 250 percent. What's important is to have some idea of what effect a given number will have. After nearly a decade, we do—except that Photoshop 5 takes it away from us.

How much computing power is required?

As you might expect, multiple undo is a RAM hog. Generally, the program appears slower than before. A minimum of 32MB of RAM is needed on either platform, with 64MB recommended, which I think is conservative.

The program runs under Win 95 or NT 4.0 as well as under Mac system 7.5.5 or higher. If you are still using a 680x0 Macintosh, however, you're out of luck.

In short, if you have a marginal box, better to upgrade before experimenting with this animal. The fact that PS 5 now allows us to designate four separate scratch disks indicates that Adobe thinks this is a product for professionals. And yet, it doesn't trust us to set our own dot gains. Sigh.

Are the changes to the interface logical?

Illustrator 7 is the archetypical example of how to wreck an upgrade by making it unfamiliar to the experienced user. For PC users, it was a long-overdue improvement, but many MacHeads, like myself, were so irritated by all the needless command changes that we went back to version 6.

Photoshop 5 doesn't suffer from this problem. In fact, other than color, it's a simpler upgrade to adjust to than Photoshop 4 was. The airbrush is no longer accessed by the same keyboard shortcut. The seldom-used smudge tool has been given a decent burial as a suboption of another tool. The added features, except for the changes in color handling, work logically once you know how to find them.

As usual with Photoshop upgrades, there are several productivity-aiding tweaks. My own specialty, color correction with curves, gets a couple of nice ones, shown on the following page. We now can enter curve values by number or by clicking the up or down cursor, rather than

by eyeballing them in with the mouse. Better yet, we can expand the Info palette by planting up to four measuring points in the image. If we put one in the shadow, one in the highlight, one in a fleshtone, and one in a neutral area, we will get simultaneous readouts for all four as we try out corrections. This makes curvewriting a lot more efficient.

How stable is it?

Quark 4 demonstrates the dangers of an inadequately tested upgrade. Printing problems are legion. Files can't save over certain networks. Some files from previous versions crash on opening. Inappropriate clipping paths pop up in strange places.

As a result, the upgrade has been resoundingly rejected by the industry. It will be years before Quark recovers from the damage, just as it was years before FreeHand recovered from its unstable version 4, just as Corel still fights a reputation for poor printability that's mostly based on earlier revs, just as PageMaker is still criticized for flaws that existed in 1993 but have long since been taken care of.

Previous versions of Photoshop have been remarkably problem-free. The beta testing is extensive, by a group of people with diverse production requirements.

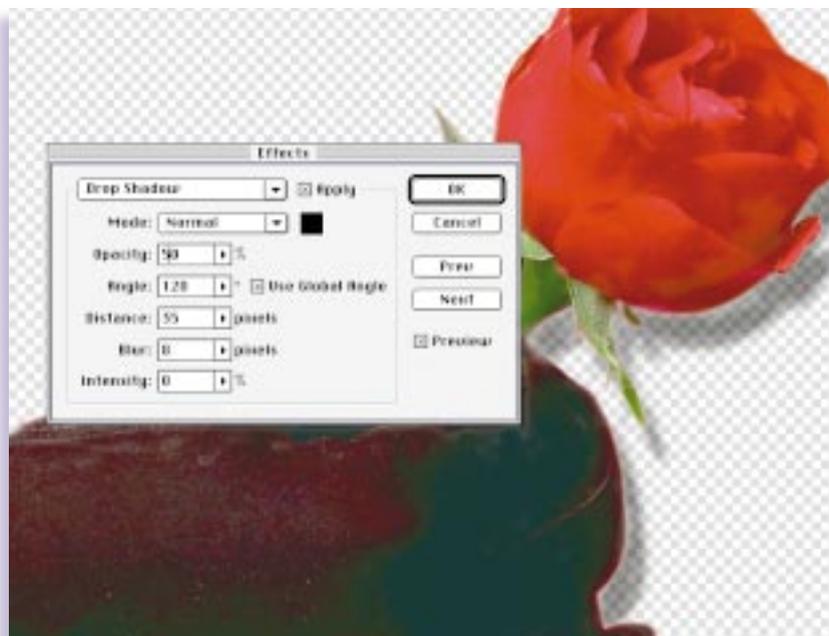
The multiple undo feature, plus the expanded batch processing and scripting capabilities, are different enough from past versions that problems may develop. Time will tell, but Adobe products have an excellent record for stability.

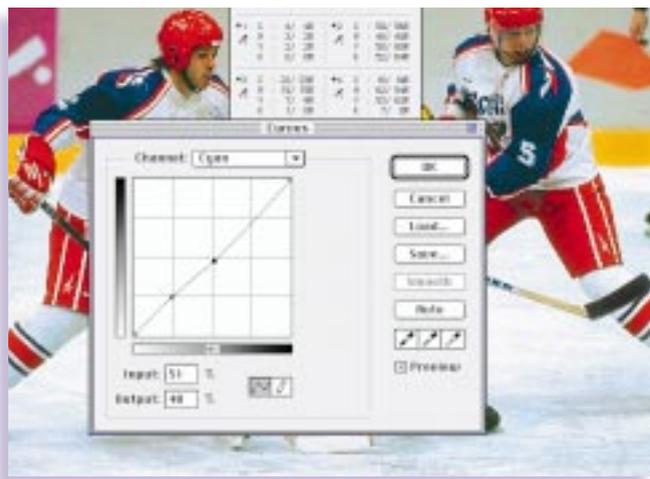
Do our plug-ins still work?

The contrast between Quark and Adobe is again stark. Some specialized third-party plug-ins are, to certain users, more important than the base program. Quark by and large left its developers holding the bag: many XTensions do not work properly with the latest upgrade.

Adobe, on the other hand, has a 30-person developer re-

Photoshop 5 adds many special effects, of which flexible, interactive generation of drop shadows is one of the most attractive. Coupled with a "magnetic" lasso tool that makes silhouetting easier, these features are a real boon to designers who like to experiment.





Curve users get two big aids to productivity: the ability to enter numbers manually, plus the ability to plant up to four fixed measuring points in the image, for display in an expanded Info palette.

lations department, fully involves its developers in the beta process, and even springs for a big booth at Seybold conferences for the developers to strut their stuff.

This is now paying the dividend of exciting plug-ins for all Adobe products as well as the presumption that plug-ins will work with Photoshop 5—unless they have something to do with color transformations.

Current versions of ScanPrepPro, the useful scanner control package, are another pointless victim of Photoshop 5's new color handling. ScanPrepPro tries to deliver final CMYK files set up specially for newspapers, commercial printing, or whatever the printing conditions may be.

But since its computations depend on the Photoshop 4 model, users who want to use it with PS 5 will have to buy an \$80 upgrade.

Scanner and digital camera owners whose devices now deliver RGB data to Photoshop face similar problems. In most cases, these can be solved by disabling the new RGB features in the manner discussed on page 29.

Does the upgrade deliver what the market wants?

I have never had occasion to want to open a PDF file in Photoshop—yet. It seems likely that this will change, so I'm very glad Photoshop 5 will allow it, and even batch-open multiple-page PDF documents. (The current popularity of the PDF format, it should be noted, is largely due to an excellent Adobe upgrade, Acrobat 3.)

Substandard upgrades don't think this far forward. Quark 4 ignores PDF. This isn't because Acrobat is an Adobe product; Quark is nondiscriminatory. It won't read HTML either, even though Adobe doesn't own the Web. This failure to deliver what the market wants is driving users to PageMaker, which supports both formats.

The outstanding FreeHand 8, by contrast, advertises that it is more compatible with Adobe products than the Adobe products are themselves. Considering Photoshop 5's incompatibility with Photoshop 4, one would have to agree.

The big winner with this upgrade is the designer who likes to experiment with different settings. The new type and shadowing effects are flexible and very interactive.

The enhanced Adjust>Hue Saturation command, shown on page 28, is typical of this approach. Previously, we've been able to make local color changes with it, but only by naming one of the six specific RGB/CMY colors as our target. With PS 5, we can click on anything in the image, an orange, say, and declare that this is the color we want Hue/Saturation to adjust. Furthermore, we can define how far toward yellow should be affected and how far toward red, and we don't have to move the same amount in each direction. Were there ways of doing this before? Sure, but it took much more time, so there is no way we would try eight different experiments before settling on the move.

It would be nice if these settings took into account other factors besides hue. It would also be nice if this functionality also applied to Hue/Saturation's CMYK counterpart, Adjust>Selective Color. But what we get is a big improvement. The rest can wait for Photoshop 6.

Significant segments of the market wanted fifth-color support, ICC support, and multiple undo. PS 5 takes care of these, but not the demand for some sort of proxying system that would enable 100+MB images to be handled more smoothly. Nor does it help us export partially transparent images, a major Web requirement.

To me, a more significant omission is implied by all of the color changes. If Adobe really wishes to implement ICC profiles, Photoshop ought to be able to edit them. Tweaks are always going to be necessary, as, for example, my tweak to the dot gain setting for this magazine was. Many desktop and large-format printers are still evolving; profiles that work for a current product won't be suitable for the next version. When the choices are a 15-second tweak to Photoshop's built-in engine or purchasing a \$2500 software package such as the Kodak ColorFlow reviewed here, it's not too tough to predict what users will do.

On truth in advertising

No other product has anything close to the impact on our industry than Photoshop does. The headline in Adobe advertising has it right when it calls Photoshop "the world-standard photo design and production tool."

When we look back a few years from now, my prediction is that there's too much good in this upgrade to land it on the list of all-time lemons. But the pointless mischief it does to the countless people who have a workflow based on past versions of Photoshop puts the matter in some doubt.

If only those responsible for the changes in color handling had appreciated the truth of the advertising phrase, Photoshop 5 might have been the upgrade we all wanted.

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