

# GRAPHIC EXCHANGE



CRYSTAL CLEAR

ILLUSTRATOR 10 AND TRANSPARENCY  
BRYCE 5: WHERE IS KAI KRAUSE?  
FONT DESIGN: RICHLER AND FONTESQUE SANS  
MULTIMEDIA: OS X TO XP TO MPEG-4

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This is the Cheshire Cat.ai Illustrator 10 sample file that was used to test Adobe's NEW TRANSPARENCY EFFECTS. The subject of the artwork seemed very appropriate.

# Not even transpa

## Grinning on your screen li new transparency effects also have the capacity to

**BY LERRICK STARR** So you're a designer who depends on the digital integrity of your work to deliver a paycheck. But you just upgraded to *Adobe Illustrator 9* or *10*. And you just sent a job to press using the new version for the first time.

Don't be surprised if you get a call from your printer. He may start asking how you created your files. He may even want to charge you for extra prepress time and wasted proofs.

What happened? You've been using *Illustrator* for years, haven't you?

### IS TRANSPARENCY BAD NEWS FOR PREPRESS?

Here's the story.

Adobe introduced a new object attribute with *Illustrator 9*, and refined it in the recent release of version *10*. Designers now have the ability to apply transparency effects to overlapping objects, groups of objects and layers so that selected items lower in the stacking order—including bitmaps—show through those objects. From a creative person's perspective, the possibilities are extremely exciting.

But before you go wild with this new toy (see Lidka Schuch's review on page 36, *Illustrator 10—Big, bold and beautiful to the*

*web and back*) you had better be aware that this new capability changes some of the basics in the prepress workflow. Prepress operators who are responsible for imaging files containing these new transparency features can expect the unexpected, because very few RIPs today can handle native transparency code.

Somehow transparency must be represented in PostScript code in order to image it, and therein lies the difficulty.

### CORELDRAW DID IT FIRST, ADOBE MODIFIES THE APPROACH

Transparency effects are old news to PC users of *CorelDraw 5*, who had the ability to create transparent objects long ago as part of *Draw's* Lens effects—which produced incredibly complex PostScript code that routinely overpowered the less sophisticated PS RIPs of the day. The best workaround for rippers was to export the transparent objects as bitmaps, delete the original objects from the file, and then replace them with the exported bitmaps. The files then imaged quite easily—but at that stage, the original artwork was lost, and the imported bitmap (of the transparency) could not be modified.

Instead of the export-import bitmap trick à la Corel, *Illustrator 10* rasterizes portions of the artwork in a "flattening" process, using

# Everything about transparency is apparent

## Like a disappearing Cheshire Cat, Adobe Illustrator's and settings may look wonderful—but they crash your workflow.

a built-in Vector/Rasterizing engine that pre-rips complex parts of the transparency effect, converting them into bitmaps. Whereas in *CorelDraw* you had an original file plus a “printable” file, *Illustrator* merges both into one “twinned” file. There are now two components to an *Illustrator* EPS: the original AI info and a flattened, rasterized/vector version suitable for imaging. You’ll be waiting for *Illustrator* to translate its native artwork into imageable form every time you save as EPS or print to your laser.

When you save these files into a legacy format (like *Illustrator* 8), there’s a very good possibility that they will be a lot bigger than they should be. And forget about editing them—they’re simply too complex!

### THE BASICS OF FLATTENING

One of the files to be found in *Illustrator 10*’s sample files is *Cheshire Cat.ai*, and fortuitously it contains transparency effects, which one assumes has been officially tested and sanctioned. (If you’re working in version 9, you’ll find something suitable in the sample files there. Those with earlier versions will have to pony up the price to toy with this technology.)

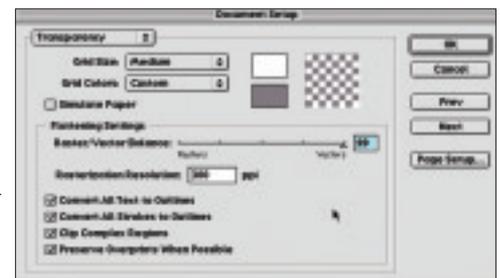
Open *Cheshire Cat.ai* or a document containing transparent objects and go to the File>Document Setup>Transparency dia-

logue box. Now look at the Flattening settings.

First there’s the slider. Default value is 100. At this setting all transparent file elements should be converted to vector elements—but in practice, they aren’t. At the opposite end of the slider is zero, where all file elements are rasterized.

At any setting of less than 100, you can enter a rasterization resolution—300 ppi is adequate for low-res proofing or low end printers; 600 ppi or higher might be required for small text. Needless to say, the higher the ppi, the longer the rasterization process and the bigger the file size.

There are also four other critical options, but the right choice is not always intuitive. You’ll have to review (and possibly alter) your selections based on the artistic intent of the original design: **Convert all text to outlines.** If you don’t choose this option, then,



This is the first place to go. Note the **RASTER/VECTOR SLIDER**. Moving it to the left increases the percentage of raster output in the flattened file.

# transparency

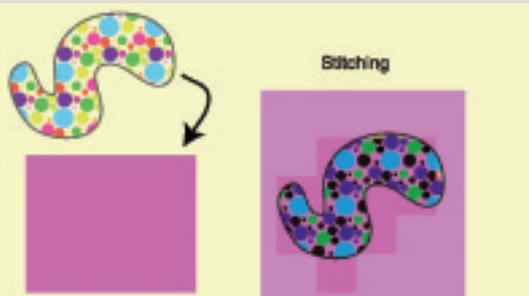
for instance, a line of type that runs through transparent objects will be partially converted to outlines in the area of overlap during flattening—which may introduce subtle differences in the appearance of the affected type. For consistency’s sake, you might select this option. But beware, *all text in the file will be outlined*—including small type that probably shouldn’t be.

The safer choice might be to manually outline text in the area of the transparency and not select this option. But making this decision also means that the creator becomes accountable for the final output.

**Convert all strokes to outlines.** By default all strokes wholly or partially contained within a transparent effect are automatically outlined. The effect of this choice is to force the outlining of all strokes in the artwork. The miniscule thickening introduced by the outlining process will be evident on low resolution printers, where strokes may print disproportionately thick. This is a lesser issue than outlining text, but it still may have an impact on the

**TO AVOID COLOR STITCHING** Adobe describes color stitching as the visible transition between rasterized images and vector objects that are adjacent to each other. Color stitching occurs when a printer driver processes solid colors and images differently. The likelihood of color stitching when you print an object with transparency from Illustrator is highest when the Raster/Vector slider in the Document Setup dialog box is at position 40; the likelihood of stitching decreases at positions 60 and 80. It is not likely to be visible at 100. If you see color stitching in your printed artwork:

- Disable color optimization in your printer driver, by deselecting the Vivid Color, Intelligent Color, or similar option in the printer driver’s Properties dialog box (choose Print Setup>Properties).
  - Adjust the slider to a higher position or peg it at its default of 100. This minimizes the number of rasterized areas in an image, reducing the chance that a rasterized area butts up to a vector area.
  - Choose the “Clip complex regions” option.
  - Move the slider to position 0. This rasterizes all areas that contain transparency, eliminating all vector areas.
- Note: It is possible to see stitching on screen which does not appear in the final output. For an accurate preview of flattened artwork, turn off anti-aliasing by choosing Edit>Preferences>General and then deselecting Anti-Aliasing Artwork.



look of the printed piece. Again, you may choose to manually outline the strokes in the area of the transparency and keep control of the process.

**Clip complex regions.** This option creates and applies clipping masks to the rasterized portions of the art, which smooths out the transitions between vector and raster areas and helps prevent “stitching” (see sidebar). Choosing to clip complex regions definitely improves the final result, but it also increases processing time as well as file size and complexity. Select this option if computational load isn’t an issue and the choice is available. If you know that some rasterization will take place regardless, choose values less than 100 until this option becomes available.

**Preserve overprints if possible.** A counter-intuitive option: if chosen, overprinting will be preserved *except* in the area of transparency, where they will be simulated. So an overprinted line that runs through a transparent object will *lose* its overprint in the area of the transparency.

This is a tough choice for the creator. Your prepress guy may be in a better position to judge final output for overprints—but you’re between the devil and the deep blue sea on this one! And this also effectively cancels out all the *Illustrator* trapping techniques that designers and rippers have struggled to master for the last ten years. I suppose in-RIP trapping will be a prerequisite. Clever move, Adobe!

It should be noted that a “Flattening Guide” is now included with *Illustrator 10* which outlines some of what we have just covered. You can also learn more from white papers on the Adobe website (*Printing and Exporting Artwork* and *Achieving Reliable Print Output*) at [www.adobe.com](http://www.adobe.com), as well as through the *Illustrator* User Forum at [www.adobe.com/support/forums](http://www.adobe.com/support/forums).

## THE FLATTENING PREVIEW PLUG-IN

If you want to look at potentially troublesome areas and get a sense of just what flattening will do to your file, you can see a pre-

Once you’ve loaded the *PREVIEWER PLUG-IN*, its dialogue box lets you view the area of the file which will be affected by the flattening process. Hint: Set the slider at 99% or less to set a final resolution and make greyed out views visible.





In the test file, no matter how high you set the Vector conversion, a small area remains a raster (see area within the red circle). In the magnification, look at where the line divides vectors from raster areas—this is **STITCHING**.



Before you create your first print destined artwork you **MUST** set up the **RESOLUTION** in this critical dialogue box.

view in *Illustrator 10* using the Flattening Preview plug-in. Unfortunately it's *not* part of the automatic installation procedure—you have to locate the Flattening Preview folder (in the Utilities folder), drop it into the Plug-ins folder, then restart. (Take time to read the PDF!)

With your file open, choose Window>Flattening Preview, and up pops a new window. Click the arrowhead at the top right in the preview dialogue, set the viewer for Detailed Preview, and choose from Composite, EPS and legacy.

On the right is the same slider and set of choices you have in Document Setup

(don't forget that changes made here are global). And over on the left are some new options:

**Refresh.** You must push this button with every change you make!

**Rasterized Complex Regions.** This view is slider-dependent (Rasters and Vectors) and will highlight areas of the artwork that are simply too complex to be described as vector objects. Curiously, this button and the Rasterization Resolution box are greyed out at 100% vectors as if no rasters will be created. But put in the value 99, and you can select those options. Push the Refresh button and a tiny area of the file will be highlighted near the bottom of *Cheshire Cat.ai*. This same small patch of raster remains, even when the slider is at 100! (This unexpected result is bound to trip up someone downstream in the workflow.)

**Transparent Objects.** Push this button and all objects affected by transparency are shown.

**All Affected Objects.** Highlights all objects affected by the flatten-

ing process, including those objects which are very close to the flattened objects.

**Affected Linked EPS Files.** This choice highlights linked EPS files which are affected by transparency. *Illustrator* places linked files at the *bottom* of the stacking order.

*Adobe Illustrator* offers no guarantees when it comes to linked images and the results of flattening those files. So don't link. Embed those files, or you're asking for trouble.

**Expanded Patterns.** Patterns that will be expanded because they are affected by transparency.

**Outlined Strokes.** This will show all strokes outlined because of their interaction with transparency, or because the Convert All Strokes to Outlines option is checked.

## WHAT FILE FORMAT DO I WORK IN, AND WHEN ELSE DOES FLATTENING OCCUR?

While the job is in progress, you can use version 10's .ai or EPS formats, or even PDF 1.4 (provided you check off *Acrobat 5.0* and Preserve Illustrator Editing Capabilities when saving).

If you create and place an EPS in a page layout application, the EPS portion of the file is read. When re-opened in *Illustrator*, the unflattened component of the EPS is referenced.

Very important: if you want to save the file in a legacy format (*Illustrator 8 .ai/EPS, Acrobat 1.3*), all transparency information is irretrievably *lost* as the file is flattened.

Your file will be flattened not only when you use the Flatten Transparency command in the Object menu, but also if you:

- **Print**
- **Export** to a vector format that doesn't understand transparency (e.g. PICT, .emf, .wmf, etc.)
- **Copy and paste** art from *Illustrator* to other applications using the AICB and Preserve Appearance options checked (Edit>Preferences>Files and Clipboard).

Another important note: *Illustrator 10's* default copy and paste format is PDF (of course this version is also fully Carbonized for OS X).

## RASTER EFFECTS DIALOGUE

Ever use raster effects in your work? Tricks like Drop Shadow or Gaussian Blur?

Now you'll have to pay attention to the Raster Effects settings which are found under Effect>Document Raster Effects Settings.

If you open this dialogue you'll find the default set to 72 dpi, which is suitable for fast screen redraws. But for print, a minimum value of 300 is essential. Also, note the opportunity to check off Anti-alias and Create Clipping Mask; this is also where your offset value is set.

Transparency functions have been so successfully integrated into *Illustrator 9* and *10* that it's possible for designers to introduce transparency effects *without even knowing it*. Effects and styles, for example, can introduce unnoticed transparency effects (see

Document Raster Effects Settings) into the artwork. If this occurs with flattening at *Illustrator's* default settings, you can be almost certain of making EPS files that won't print as expected.

### HOW SPOT COLORS ARE TREATED

Use spot colors cautiously—they are converted to CMYK wherever they interact with transparency effects.

This means that you have to *check the results in every EPS* when using the Print dialogue box or when creating spot color separations in any application except *Illustrator!*

No surprise that Adobe recommends converting all spot colors to CMYK equivalents in any artwork with transparency. "If an object contains spot colors and overlaps another object containing transparency, undesirable results may occur when exporting to EPS format," says the guide.

Furthermore, we are warned that spot colors in *Illustrator* EPS files that have been imported into other programs may not separate properly if the EPS spot colors are converted to their CMYK equivalents there.

Just how "undesirable" the results of spot color usage will be remains a matter to be tested in the field.

### WHAT ABOUT FILE SIZES?

Was there any doubt that file sizes had to get bigger? If you make an EPS, it now also contains the .ai transparency information. Once flattened, the complexity of the transparency effect adds to the overhead.

Let's use an *Illustrator* 8 sample file called Calla Lily Girl.ai—original file size 2.2MB.

It was opened in version 10 and resaved at 2.7MB. When an ellipse was added with a transparency value arbitrarily chosen at 64% and then flattened, it stayed at 2.7MB. Made into a version 10 EPS, it doubled in size, to 5.9MB. But converted to a version 8 .ai, it ballooned to 24.9MB, and the EPS version was 25.2MB. Finally, saved to PDF 1.4 and 1.3, the file sizes were 2.6MB and 1.5MB respectively.

Based on these numbers, one is left wondering: why not use PDF as *Illustrator's* native file format instead of .ai? It seems to me that ".ai" is about to become another legacy format. And maybe it's about time!

### CREATORS 1, RIPPERS 0

Ah, yes—digital artists and illustrators must be dancing in the streets. Transparency brings visual effects to the page which have been denied Mac-based designers for years, opening new vistas for experimentation and manipulation.

But from a prepress perspective, *Illustrator* used to be a place to trap and modify EPS graphics destined to go on press. *Illustrator's* prepress reliability was never a question—until now.

With that in mind, it should be emphasized that there will be a steep learning curve for the use of transparency effects in files

for commercial printing. That includes proper preparation of PDF and EPS files. Adobe has introduced an uncertainty factor into a mature and settled workflow. With increasing frequency, printers are now uncovering unintended examples of transparency in customer jobs.

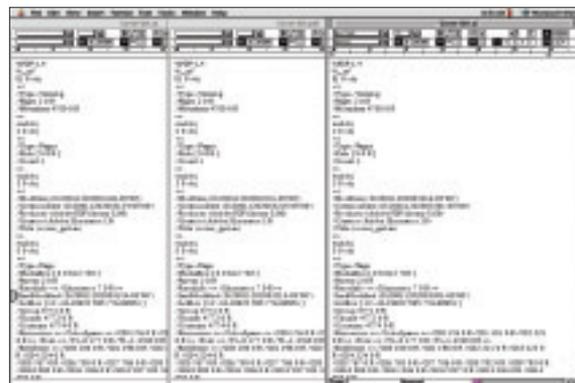
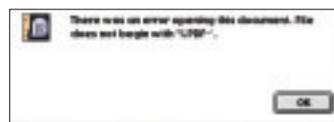
It looks like a shotgun wedding for designers and prepress operators—and Adobe is both father and pastor. 🍷

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This file, Calla Lily Girl, originated as an *Illustrator* 8 sample file. The ellipse was added and **TRANSPARENCY EFFECT** applied to create our test file.



You are probably familiar with the **ERROR DIALOGUE** (top) that occurs when opening non-PDF files in Acrobat. This dialogue also popped up when opening *Illustrator* 8.ai files—but no longer. Sample .ai files provided with *Illustrator* 9 and 10 can be readily opened in Acrobat 5 because the .ai file format seems all but abandoned. The screen grab (bottom) shows the headers for three files. The first is an .ai, next is a PDF saved from the .ai, and third, an .ai saved from the PDF. Guess what? They look identical.