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Work better with Acrobat 3D Toolkit

Why Acrobat 3D Toolkit Is Worth Exploring

by Robert Green

Engineers, designers, and CAD specialists have a lot on their plates, especially when considering the complex 3D modeling systems in use these days. So when you hear of other 3D rendering, animation and documentation software platforms — such as Acrobat® 3D Toolkit — you might be tempted to think "Why should I bother with that?"

I admit, I was a bit skeptical myself — until I had a chance to evaluate Acrobat 3D Toolkit in some real-world engineering scenarios. Following is an overview of what Acrobat 3D Toolkit (included with every copy of Acrobat 3D software package) is and why engineers, designers, and CAD specialists — in addition to technical writers, illustrators, and marketing professionals — should take the time to get acquainted with its features. Here goes.

Hands On — Easy Interface

The first thing you notice when you open Acrobat 3D Toolkit is that it looks and feels like most 3D CAD tools already in use. The interface has an Explorer navigation tree to locate files, along with a "scene" browser — which is essentially an assembly/part browser. Visualization is performed via toolbars that use familiar move, pan, and zoom controls along with arithmetic analogies like planes and axes. Along the bottom of the window, the various parts that form the assemblies can be displayed in thumbnail format.

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IN THIS ISSUE

Get to know Acrobat 3D Toolkit. Learn how it can enhance the appearance and interactivity of your 3D designs.

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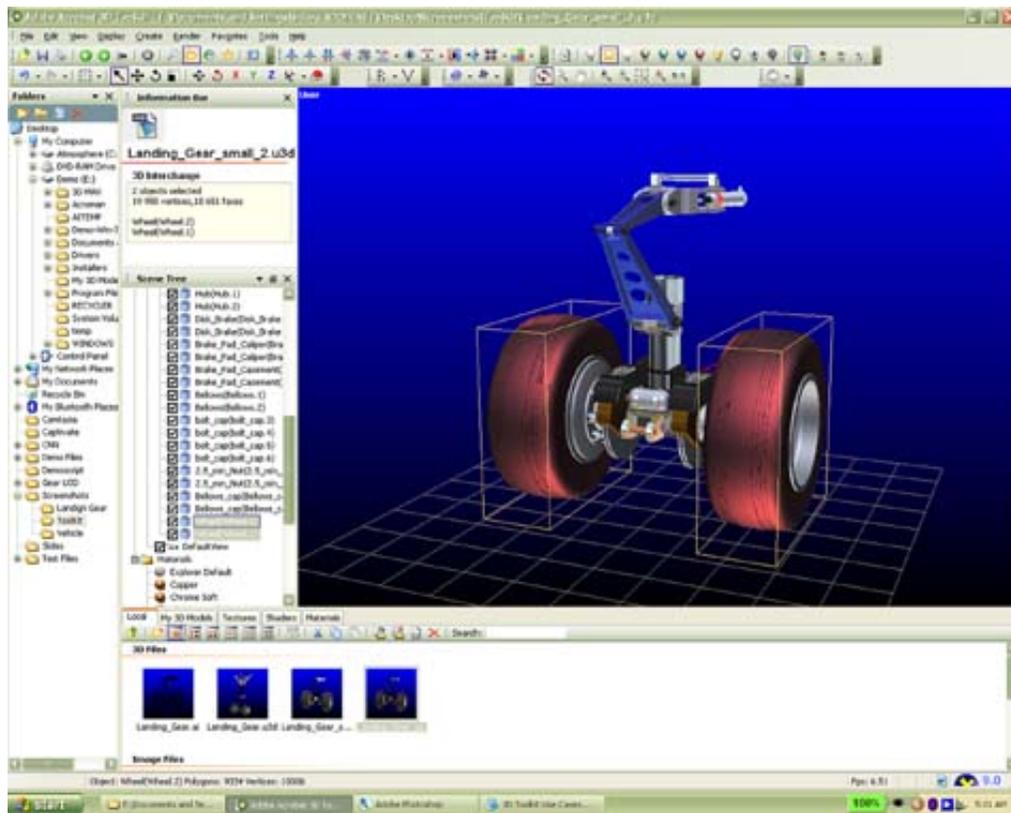
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NEXT MONTH

More on the 3D Toolkit. Learn how to share 3D data with maximum convenience and minimum hassle.

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Submit a manufacturing-specific trick or a tip for using Adobe Acrobat 3D to our editor. If we publish it, you'll win a free *Cadalyst* t-shirt.*

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Have a question about Adobe Acrobat 3D? Send it to *Acrobat Insider*; we'll try to address it in an upcoming issue.

The Navigation Tab allows you to view the Model Tree of the embedded 3D content with Acrobat 3D Toolkit. Adobe Reader® Version 7.0.7 and later includes tools to interact with 3D content from Adobe Acrobat 3D.

If you've ever used a 3D assembly–based CAD system, you should be able to open and view assemblies/parts in Acrobat 3D Toolkit in about five minutes. And I think non-MCAD users will get the hang of it almost as fast, although the axes/planes analogies might take a little getting used to. So you may be asking, why would I even want to expose a non-CAD user to this sort of capability? More on that in just a moment.

Who Else Can Leverage 3D Designs?

Over the years I've found that the engineering CAD community gets hit on for all sorts of non-standard CAD support services from a variety of users. This type of support is generally provided to technical writers and illustrators, shop floor assembly staff, floor technicians, and even the marketing department. It seems that when we take the time to create 3D geometry that makes visualizing designs so simple, everybody else wants in on the game. Thus, we can quickly find ourselves in the non-design-focused role of providing assembly drawings, still renderings (like the illustration below), animations, and all manner of exploded and cut views to a wide variety of users.

While most of us have provided this type of CAD support, we may not have really thought through why we've become trapped in these support roles. Allow me to draw a few conclusions here:

People without CAD expertise need CAD designs: Technical illustrators creating assembly documentation don't really care if a surface deviates a few thousandths of an inch or if solids within an assembly are constrained perfectly.

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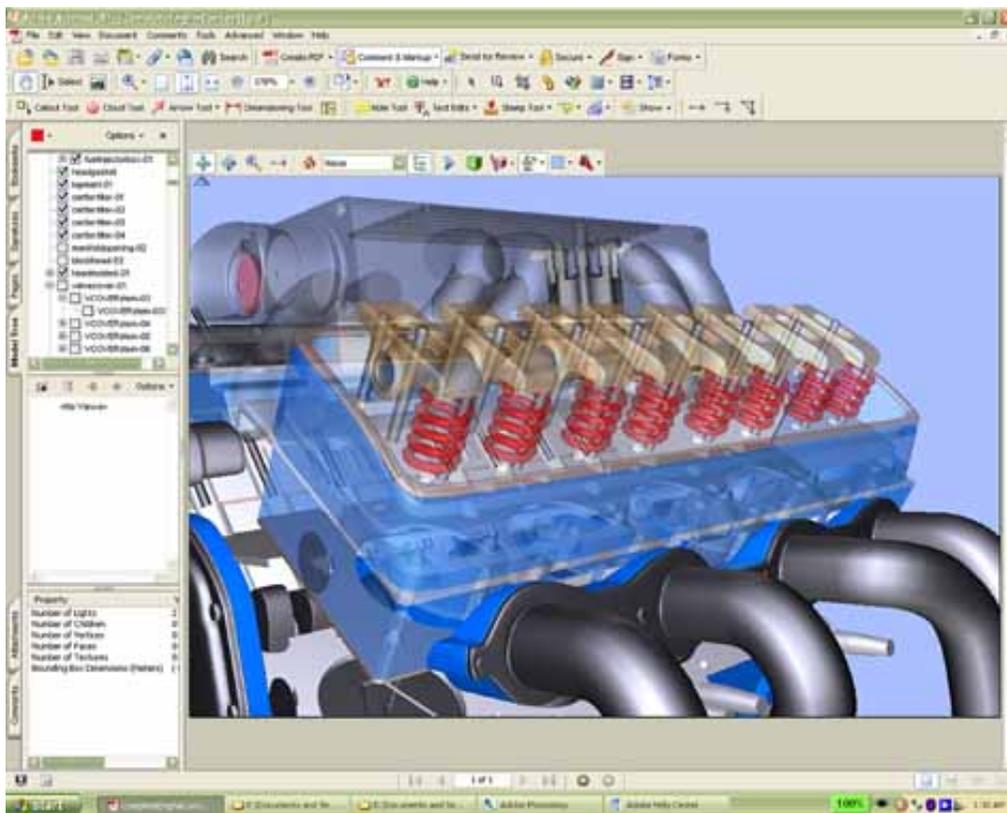
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Adobe Acrobat 3D Version 8 software will be available in spring 2007. Purchase the current version of Acrobat 3D (Version 7.0), and receive a free upgrade to Version 8. Click here to learn more.

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Technical illustrators care about conveying the concept of how the assembly goes together. The bottom line is they know what they need, but they don't really care how the CAD system works.

Tech pubs can't generate images themselves: If you can generate assembly images, exploded views, or isometric hidden-line views with your CAD geometry, there should be no mystery as to why people ask you to do so on their behalf, right? But while producing documentation from CAD work you've completed makes perfect sense, it can be a drain on engineering resources to support such efforts.

Ditto marketing: How many times have you had to stop what you're doing to make pretty images for PowerPoint shows or other sales-related projects? Again, the goal of enhancing the marketing manager's presentations and tools makes perfect sense, but it comes at a cost of diluting engineering's resources.

Controlling opacity and part visibility allows for any number of technical illustration possibilities that illustrators can do for themselves without engineering involvement.

As I've evaluated Acrobat 3D Toolkit, I've stopped thinking about it as another software component to fit on my crowded plate. Rather, I see it as a collaborative bridge to others within the organization. There are plenty of people who would love to get their hands on your 3D data — if only they could figure out your CAD system! **The 3D Toolkit makes it easy for people with little or no CAD expertise** — including technical publications and marketing staff — to manipulate and create the designs they need for their work, without needing help from their busy engineering colleagues.

Acrobat 3D Toolkit — CAD Swiss Army Knife

If you've ever worked in a collaborative manufacturing environment, you've likely dealt with a variety of CAD systems and manufacturing protocols in use at different facilities. If you're an automobile designer, your dashboard may come in the form of a ProE file; wiring harness data is translated to STEP and your in-dash electronics manufacturers provide you envelope geometry of their packaging in SolidWorks®. Sound familiar?

These types of scenarios are common and — since you have a variety of data formats to deal with — can be vexingly difficult to deal with from technical publication and marketing standpoints. In these instances, Acrobat 3D Toolkit's ability to open almost any 3D geometry allows you, or anyone, to create assemblies, renderings, animations, or exploded views without the need for translations or other software. In fact, if you never share Acrobat 3D Toolkit with anybody else, you may find that its ability to deal with such a wide range of data is worth the price of Acrobat 3D (3D Toolkit is included) in and of itself.

PDF Capture

You can bring CAD files into Acrobat 3D directly or open them with the 3D Toolkit. The trump card that Acrobat 3D offers is bulletproof PDF integration via the 3D Toolkit, making it easy to marry 3D CAD geometry with other types of engineering data. With the Toolkit, you can open files in any number of 3D CAD formats and create PDF geometry using Acrobat 3D. This then allows you to blend the 3D PDF with all sorts of other data, including output from desktop publishing, presentation software, or word processing systems.

Summing Up

When I first started evaluating the Acrobat 3D Toolkit, I was prepared to focus on technical CAD parameters and wondered how a 3D CAD tool could ever measure up to the native CAD packages we all use. But as I've evaluated the package, I've found myself gravitating towards the collaborative and data translation possibilities that Acrobat 3D Toolkit brings to everyone besides those of us who do CAD all day, every day.

In coming editions of the *Acrobat Insider* I'll explore the features of Acrobat 3D Toolkit in much greater detail with an emphasis on how engineering can share their 3D data with maximum convenience and minimum hassle. I'm hoping that your curiosity has been piqued and that you'll share this and future editions of the *Acrobat Insider* with those in your company who could leverage your CAD geometry via Acrobat 3D Toolkit. Until next time.

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About the Author

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Details and Availability

For a full list of features and system requirements, visit Adobe's Web site. Microsoft Windows® 2000 with Service Pack 2, Windows® XP Professional or Home Edition, or Windows XP Tablet PC Edition is required for use with Acrobat 3D. Acrobat 3D for Windows, available on CD-ROM or by download, is $995.**

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