STRATA 3D™

3.7 Addendum

Version 3.7

Pro and Plus

MACINTOSH
WINDOWS

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INTRODUCTION

Thank you for acquiring Strata 3D 3.7. This addendum is for both Strata 3D*plus* and Strata 3D*pro.*

This software includes three new features: the animated extensions Explode and Shatter; and the Save format Macromedia® Flash™ (SWF).

Shatter and Explode are specialized animation extensions that are a lot of fun, and produce stunning effects with very little effort. Within the parameters you set, Explode and Shatter can disintegrate an object or send the pieces flying.

The new Macromedia Flash SWF save format lets you output a file that is ready for the web.

Explode and Shatter

The advantage of these extensions is that they automatically perform all of the calculations required to create the animation effect. A group is created for the exploding polygons to set up their individual motion paths, and the event markers are automatically generated and laid down on the time line.

Explode and Shatter are very similar. The controls are identical, with one exception. In Explode, the Force control sets parameters for the outward expansion of the object's pieces. In Shatter, Tumble controls the motion of the pieces as they fall.

Here are some things to keep in mind as you use these extensions:

- Save a copy of your model under a different name before you use these extensions, so that you can easily try again if you are not happy with the results.

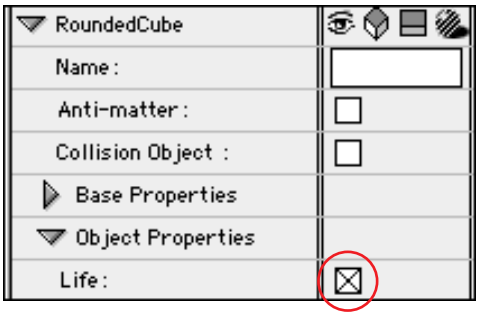
- Shatter and Explode can only be undone by use of the Undo command if you select Undo before performing any other operations. However, you can preview the animation by pressing Play in the Project window before you Undo.

  Another option for reversing an Explode or Shatter is to select the Group formed by the extension in the Project window and delete it. You will need to reset the Life attribute to see the object (see next.)

- Explode and Shatter add a Life attribute to the original object, which is turned off when the explosion begins.

  Therefore, if you delete the group that was formed by the extension, your object will be invisible. Open the original object in the Project window; then open Object Properties and enable its Life attribute. See your manual if you need to review the Life attribute.

  NOTE: If the Explode or Shatter were applied at any time other than zero, you will also need to delete the Life attribute's event marker from its timeline.



Check this box to bring your original object back to life.

- Explode and Shatter are memory intensive. How much RAM you need depends on the complexity of the object(s) on which you plan to use these extensions. If in doubt, leave the Complexity Reduction checkbox enabled.

- Explode and Shatter add a Group in the Project window that contains all of the pieces and animation markers generated by the extension.

  You can edit any of the Group's properties; and the individual pieces and their event markers, but be careful. Exploded and Shattered objects are so complex that simply opening the Base properties of the Group in the Project window can take several minutes to complete - depending on the power and speed of your computer, and the complexity of the original object.

  If you need to delete the effect from your model to start again, delete the group that appears in the Project window when you Explode or Shatter an object. Don't forget to also reset the Life attribute of the original object.

- The object origin point determines where the Shatter or Explode effect will start. With Shatter, it is the point where the object begins to fall apart. In Explode, the object origin point determines the origin and direction of the shock wave.

  Every object has an origin point, which is blue. It coincides with the center of the object, but it can be moved.

  To move an object's origin point, first make it visible by selecting the object and choosing WireFrame, Outline or PointCloud mode. Then hold down the Command key (Macintosh) or Ctrl key (Windows), and click and drag the origin point to the new location. You can move the origin point in any direction, so you will need to switch views to check the positioning.

- There is no collision detection on the pieces of Exploded or Shattered objects.

EXPLODE

The Explode extension explodes an object into a cloud of triangular polygons that move outward and then fall in a flurry of random motion.

This effect is adjustable for duration, force, gravity, and the life span of the exploded pieces before they disappear. There is also a Complexity Reduction feature, which can significantly reduce the number of polygons produced by Explode.

The Explode extension works by first breaking the surface of the object into a group of triangle-shaped polygons. These polygons are all about the same size. They explode outward in a spherical pattern away from the object origin point. The Force of the explosion determines how far and how fast the pieces move outward. After the initial exploding impact, the pieces begin to tumble and fall. How fast the pieces fall is determined by the Gravity setting.

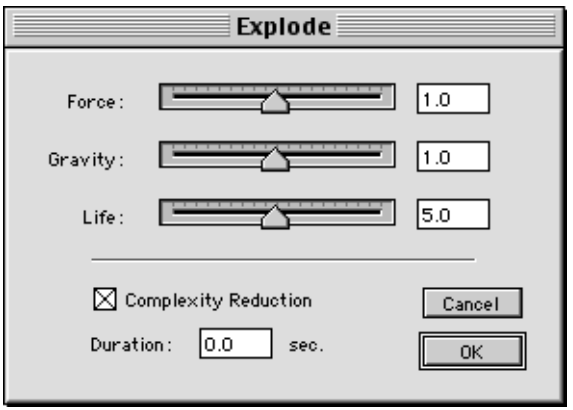
Using Explode

To use Explode, first select the object by clicking on it with one of the Object Manipulation tools.

 Then click the Explode button, located on the Button bar. Or, you can select Modeling menu > Explode. The Explode dialog appears. Notice that the three sliders for Force, Gravity and Life are accompanied by numeric fields.

Once you click OK in the dialog, the Explode extension begins calculating the animation script. A progress bar may appear. When this process is finished, you may want to save your model with a different name to preserve the version you saved before using Explode. This is recommended any unwanted changes to the original object.

Force



This sets the force of the explosion. The force of the explosion moves outward from the object's origin point.

The range of the Force slider is 0 to 2, but you can enter higher or lower numbers. A higher number will give you a more forceful explosion, with the pieces flying outwards more quickly.

A negative number will make your object implode. Start with a very small number: 0.5 or so, because otherwise the force will send pieces flying through the middle of the object and out the other side so quickly that it will still look like an explosion.

Gravity

This determines the pull of gravity on the exploded pieces. With low gravity, the pull is slight and the exploded polygons will have an extended arc and travel farther before starting to fall slowly. With more gravity, the pull is very strong and the pieces do not travel far before they begin to fall rapidly.

The range of the Gravity slider is 0 to 2, but you can enter higher or lower numbers. A higher number will make the exploded pieces fall more quickly. A negative number will cause the exploded pieces to rise.

Life

This sets the time the exploding pieces remain visible after the explosion. When set to the zero, the pieces die immediately. When set to 10 or higher, the pieces take longer to die.

The range of the Life slider is 0.01 to 10, but you can enter a larger number in the numeric field. You cannot use a negative number in this field.

Complexity Reduction

The default setting for this checkbox is enabled, with good reason. A Primitive Rounded Cube has nearly 4,000 polygons to start with. While exploding this object doesn't add any polygons, it does add an animation path to each polygon. Obviously, this many animation paths could cause problems; you will want to use Complexity Reduction in most situations.

In particular, applying Explode to Text objects and complex extrusions will generate an inordinate number of polygons. This could cause a memory problem if your computer does not have enough memory to hold the necessary information.

Complexity Reduction has no effect on polygonal meshes. Instead of converting an object to polygons, it simply animates the polygons that the object is already made of.

NOTE: This checkbox reverts to **On** every time you use Explode. If you want it off, you must remember to disable it every time.

Duration

This field sets the time it takes for the object to explode completely. It is measured from the point on the time line when the Explode extension is applied. It does not include the life of the exploded pieces, which is measured after the object is fully consumed.

SHATTER

The Shatter extension breaks an object or group into polygons, which then tumble and fall; and eventually disappear. You can adjust the duration of the process, the tumble energy and life span of the pieces, and the pull of gravity.

The polygons always fall in the - Y direction (negative Y axis), according to the absolute coordinates of the model space. This is not view-relative.

You can make objects appear to fall up or sideways by setting up your model properly, and then rendering through a camera. You can also enter a negative number in the gravity field, so that the shattered pieces float.

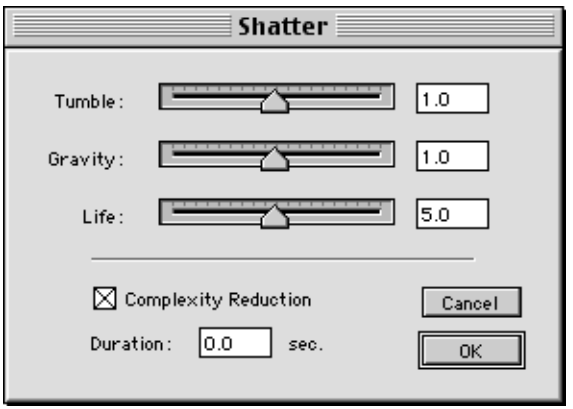
Using Shatter

To use Shatter, first select the object by clicking on it with one of the Object Manipulation tools.

 Then click the Shatter button, located on the Button bar. Or, you can select Modeling menu > Shatter. The Shatter dialog appears. Notice that the three sliders for Tumble, Gravity and Life are accompanied by numeric fields.

Once you click OK in the dialog, the Shatter extension begins calculating the animation script. A progress bar may appear. When this process is finished, you may want to save your model with a different name to preserve the version you saved before using Shatter.

Tumble



This control sets the rate of motion for the pieces of your object. When set to zero, they have no motion and simply fall from the object. With a high setting, the polygons tumble rapidly as they fall.

The range of the Tumble slider is 0 to 2, but you can enter higher or lower numbers.

Entering a negative number will make the pieces tumble in the opposite direction. However, the result may not look any different to you; this depends on your object.

Gravity

This determines the pull of gravity on the shattered pieces. With low gravity, the pull is slight and the polygons will fall slowly. With more gravity, the pull is strong and the pieces fall rapidly.

The range of the Gravity slider is 0 to 2, but you can enter higher or lower numbers. A higher number will make the pieces fall more quickly. A negative number will cause the shattered pieces to rise.

Life

This control sets the length of time in seconds that the pieces remain visible after the object is fully shattered. With a short life, the pieces disappear immediately.

The range of the Life slider is zero to 10, but you can enter a larger number in the numeric field. You cannot use a negative number in this field.

Complexity Reduction

The default setting for this checkbox is enabled, with good reason. A Primitive Rounded Cube has nearly 4,000 polygons to start with. While shattering this object doesn't add any polygons, it does add an animation path to each polygon. Obviously, this many animation paths could cause problems; you will want to use Complexity Reduction in most situations.

In particular, applying Shatter to Text objects and complex extrusions will generate an inordinate number of polygons. This could cause a memory problem if your computer does not have enough memory to hold the necessary information.

Complexity Reduction has no effect on polygonal meshes; because it is unnecessary. The extension simply animates the object's existing polygons.

NOTE: This checkbox reverts to **On** every time you use Shatter. If you want it off, you must remember to disable it every time.

Duration

This field sets the time it takes for the object to shatter completely. It is measured from the point on the time line when the Shatter extension is applied. It does not include the life of the shattered pieces, which is measured after the object is fully consumed.

Macromedia® Flash™ (SWF) Format

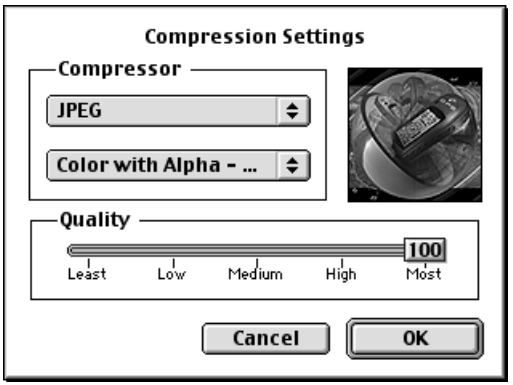
This feature takes your rendered movie and saves it as an SWF file. In other words it saves your pixel renderings to the SWF format. This is a pixel-based format, not a vector-based format. In contrast, the Ravix™ Swift 3D feature available in Strata 3D*pro* saves to a vector-based format.

Using Flash Export

You can access this feature from the Render dialog when rendering an animation, by selecting Macromedia Flash (SWF) in the Save dialog which appears. Or you can save still renderings to the Macromedia Flash (SWF) format by choosing Save in the File menu.

After you are finished in the Save dialog, the Compression Settings dialog appears.

Compressor. Choose JPEG or Uncompressed.



NOTE: Saving as Uncompressed can take a long time, because each frame must be reproduced with the full quality of the original movie. This will result in a large file which may not be suitable for use on the Internet.

Quality. If you choose JPEG, you can use the standard Quality slider to set the quality of compression. Remember, this represents a gradient between file size and image quality. The higher the image quality, the larger the file size.

- **Color with Alpha - 32 bit.** This is the only color option.

NOTE: Suspended renderings of SWF files will only work if no other SWF file has been saved since the file was suspended

Warning for users of Macintosh operating systems 8.6 - 9.x only. If your Flash player's memory allocation is too low, you will not be able to play your SWF file.

Any Flash player on a Mac OS lower than X needs to have its memory allocation set large enough to open your largest SWF file. For example, if you have a 10 MB file, your Flash player's memory allocation needs to be set to at least 10 MB.

If there is not enough, it will silently fail, resulting in a blank screen in your Flash player, and the result will be a blank screen in your Flash player. Examples of Flash players include QuickTime™, Internet Explorer™, Netscape™, etc.

To change an application's memory allocation, first find the actual application and select it by clicking on it. Select Command-i (Get Info). In the dialog which appears, select Memory from the Show menu. Change the memory allocation in the Memory Requirements part of the dialog. See Mac Help in the Help menu for more information on this procedure.

Do not be tempted to change the memory allocation for Strata 3D! This is not necessary because Strata 3D automatically takes the memory it needs. Changing Strata 3D's memory settings will actually make **less** memory available to the application for rendering.