JETTOLOCAL

This plugin (my first Lightwave C creation) adds and interesting feature included in most CAD packages. It allows the user to define a local coordinate system, so further modifications (translate, rotate, etc...) take place following this user defined system.

The trick to get this is simple, you define your local coordinate system by means of three points. Running the plugin rotates and translate all geometry on foreground and background layers until your defined system matches Lightwave world origin. Once you finish the editing, running the tool again, restores original position and orientation.

Original idea must be credited to **Szabolcs "Jester" Matefy**, who posted it in Lightwave 3D's forums.

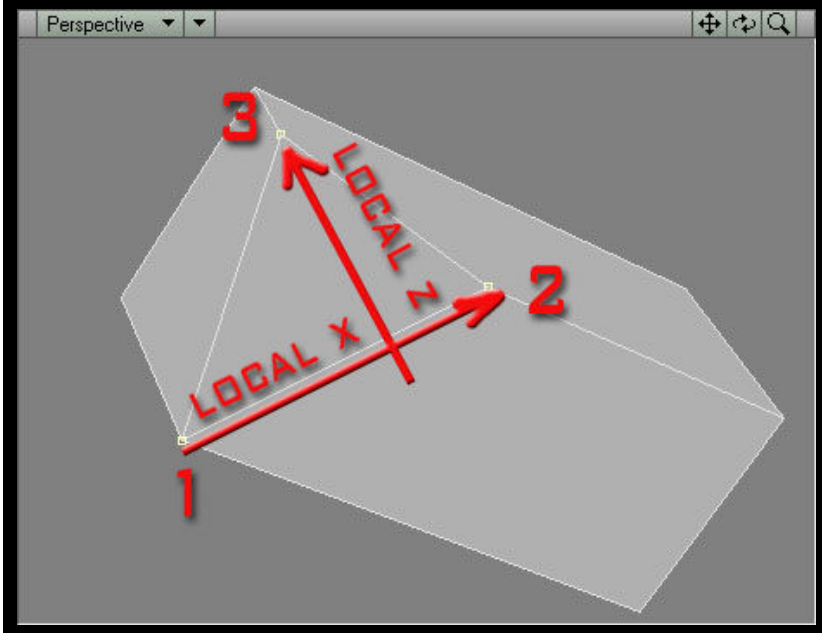
Download animation showing JettoLocal in action (3032 KB)

INSTRUCTIONS

In order to define local coordinate system, you need to select three points, which will define two axis:

- The first axis gets defined by the line traveling from the first to the second point, in the same sense.
- The second axis will be, logically, perpendicular to the first one, crossing the third selected point
- Third axis and origin of the local coordinate system get defined directly from the previous info

You can configure which axis of your local coordinate system are being defined. Default is +X for the first axis and +Z for the second, although you can set all possibilities under the configuration window.



All transformed layers store the transformation info into his layer name (along with previously name, if it existed), so you can have different layers aligned in different ways. As long as the tool finds any transformed one, it will restore it, so the alignment only takes place when none is found. This makes the tool simple yet effective.

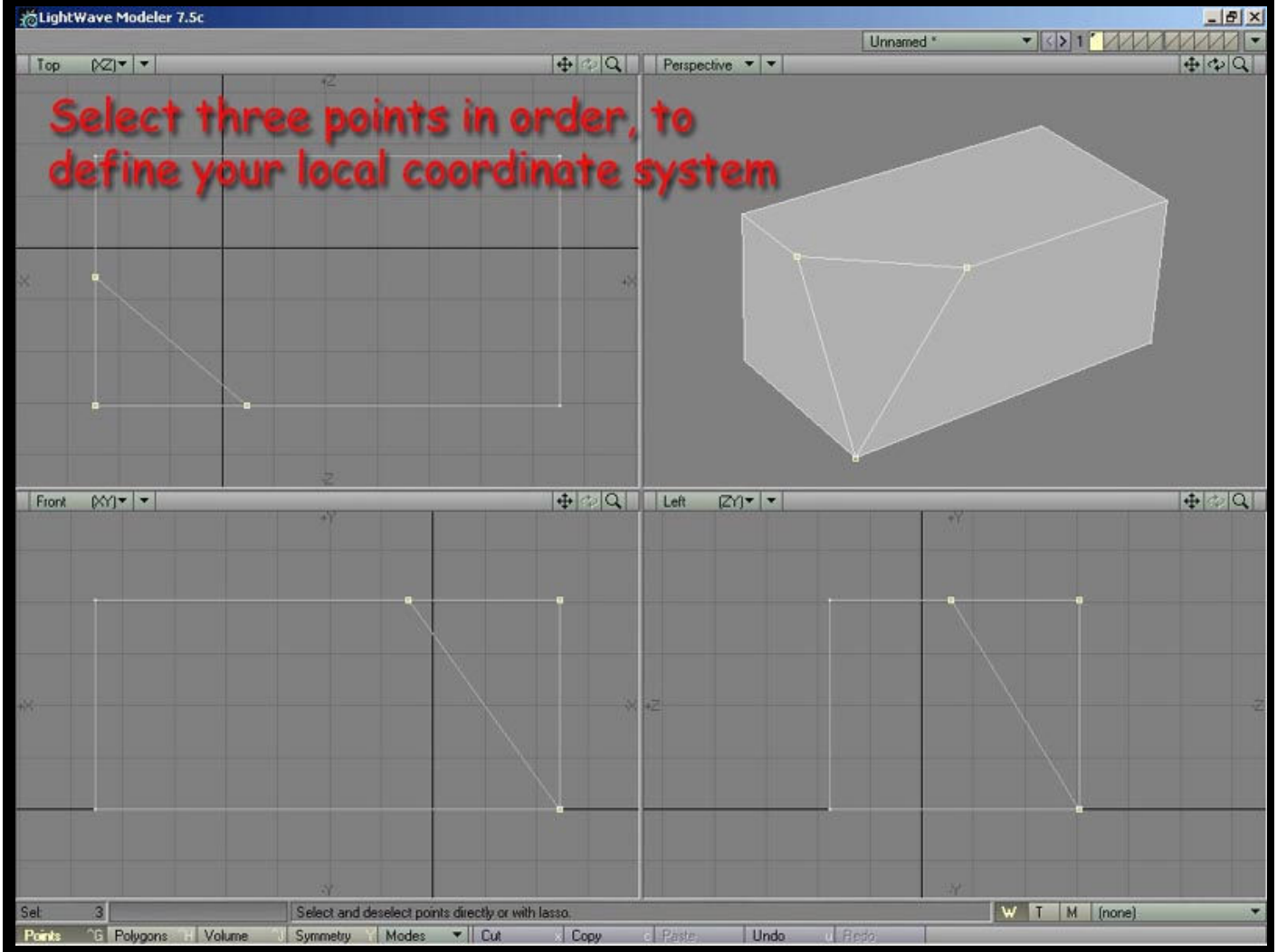
Along with this:

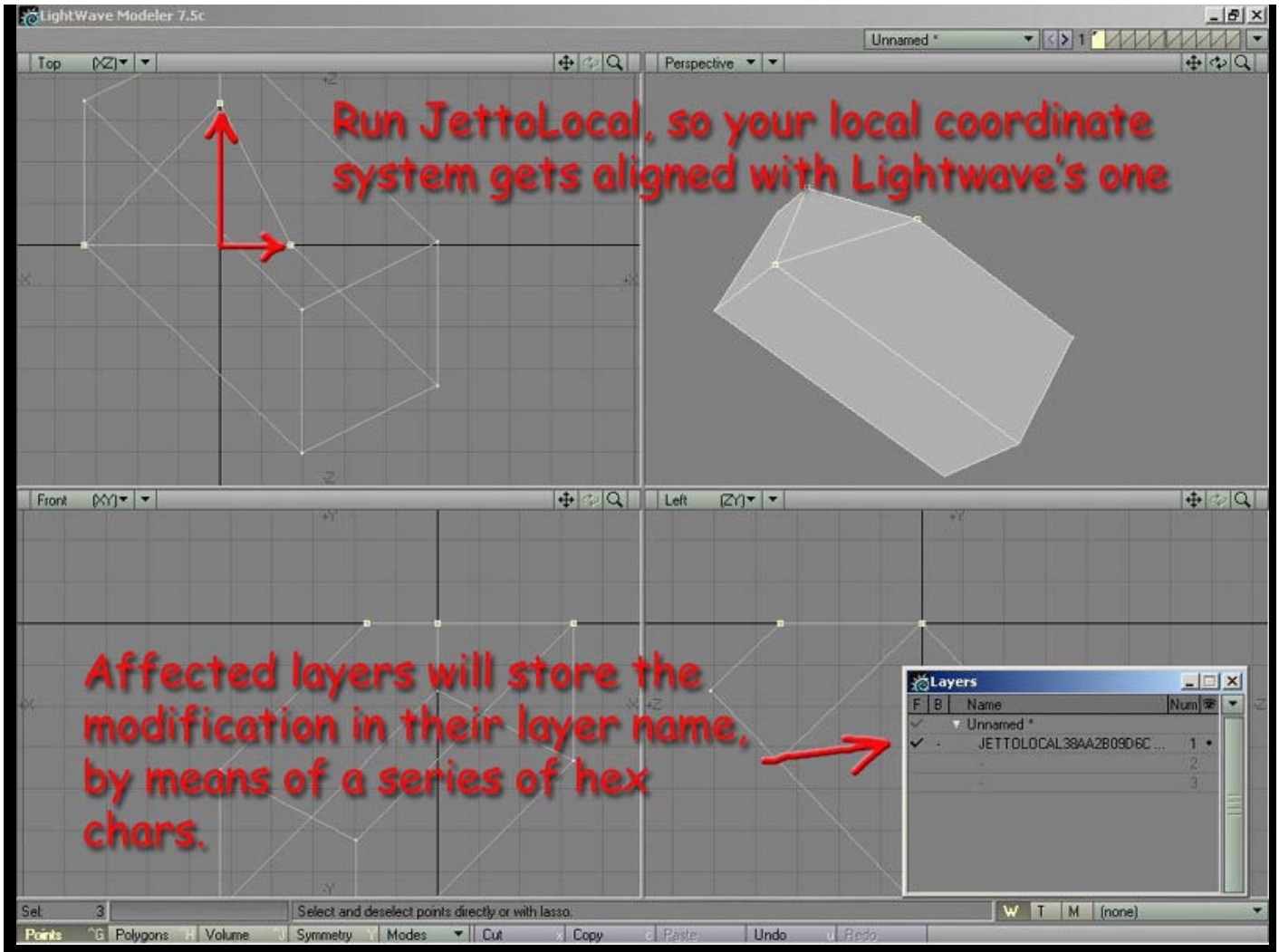
- If you run the tool selecting only one or two points (and there's no transformed layer shown), JettoLocal will repeat last coordinate system employed. This can be a big timesaver if you are going to work on the same working plane several times. A dialog will be shown in order you to confirm this, although it can be removed in the config menu)
- Finally, if you run the tool without any point selection and JettoLocal doesn't find any transformed layer, the configuration menu is shown:

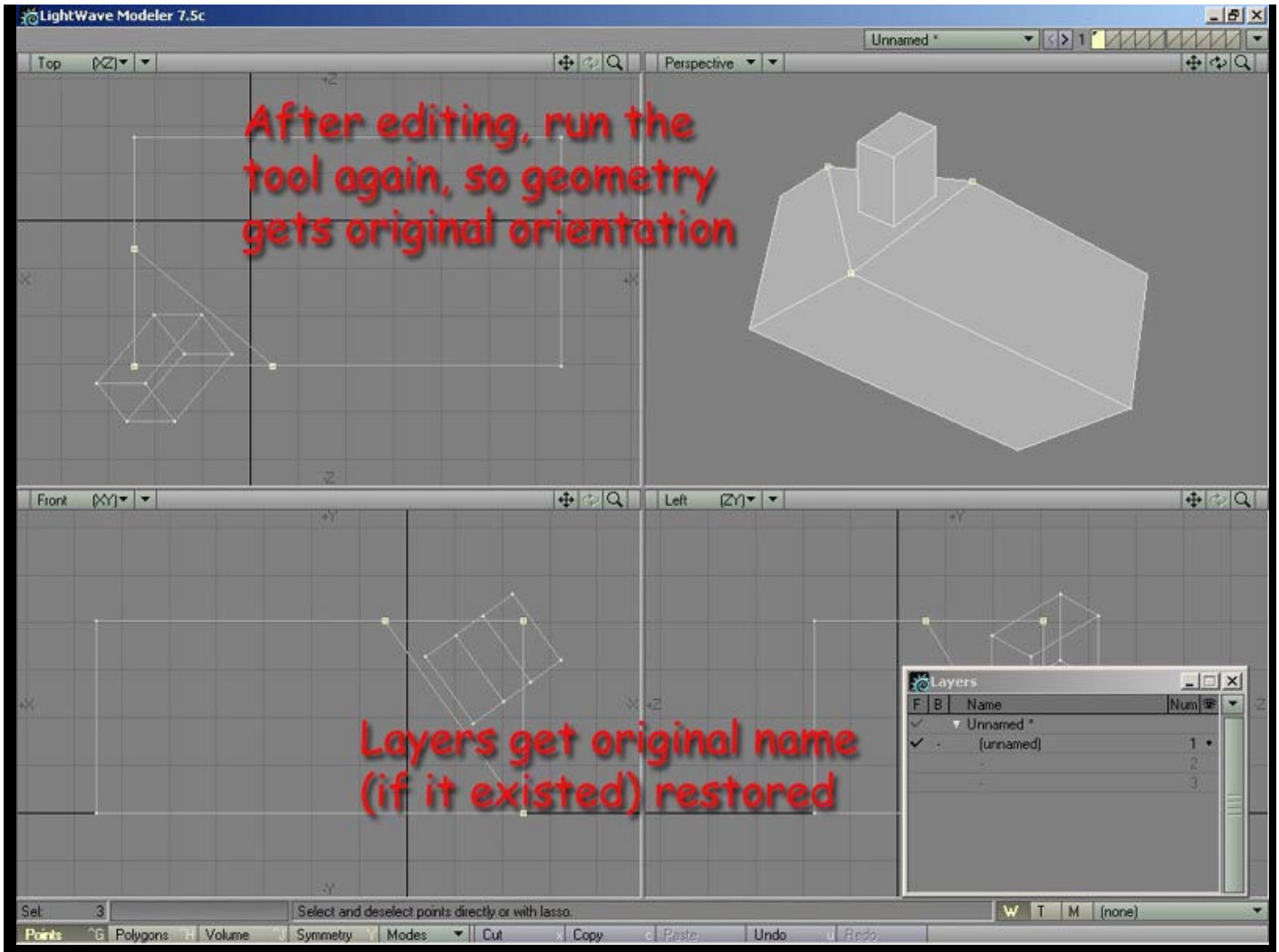
Here, you can select which pair of axis are being defined by your selection. Also, you can avoid the confirmation window when repeating last working plane (which is shown by default).

Although this behavior can seem a bit tricky, it's intended for a really fast use, avoiding unnecessary menus, options or the fact of having to install more than one plugin

As an example, see the figure, in which we are adding a box over an inclined plane:




LightWave Modeler 7.5c
Unnamed *
Top (XZ)
Perspective
Run JettoLocal, so your local coordinate system gets aligned with Lightwave's one
Front (XY)
Left (ZY)
Affected layers will store the modification in their layer name, by means of a series of hex chars.
Layers
F B Name Num
Unnamed *
JETTOLOCAL38AA2B09D6C...
Sel: 3
Select and deselect points directly or with lasso.
W T M (none)
Points Polygons Volume Symmetry Modes Cut Copy Paste Undo Redo



HISTORY

Changes since 0.1:

- Added "repeat last" feature, so the tool remembers last working plane employed.
- You can choose which axis are being defined, originally only +X and +Z
- Layer transformation codification adds a checksum, more for fun and personal realization than real sense :-P (and the same goes to the next new feature...)
- Checking for layer's names lengths, imposing a limit of 256 character (although real limit seems to be 522).
- Lots of internal improvements and some memory liberation fixes

LIMITATIONS

Rather than limitations, we have to be careful with a series of issues.

- First of all, you should never undo the transformation. The reason for this is that, when aligning, JettoLocal changes your layer's name. Undoing this, establishes original orientation, but doesn't restore original layer name, which will originate bad results from the tool in a next run. If you forget it and undo the alignment, without redo possibilities, you can simply edit layer name and remove JettoBevel info from the name.
- On the other hand, hidden geometry will not be affected, so be sure you have not unhide anything when trying to restore original orientation.
- JettoLocal adds a simple checksum to written data on layer's name, so if some of the hex digits is changes, it will simply ignore this layer (as if it wasn't transformed), showing an information window about that.
- This is fun: Lightwave seems to have a limit on layer's name length, since names more than 522 characters crash the application. However, for security reasons, specially for future Lightwave versions and because 522 is an ugly number, I have imposed a limit of 256 characters. Currently JettoBevel info employs 170 (although it could vary depending of the computer architecture), so layer names more than 256 - 170 = 86 characters will be retailed. Again, the tool ask user for this. As you can imagine, I have tried to be the more accurate possible with my first plugin!

AKNOWLEDGEMENTS

This tool wouldn't have been possible without the help of some people: first of all thanks to Szabolcs "Jester" Matefy for sharing original idea. On the other hand, special thanks to all people on Lightwave's plugin Yahoo forum. And finally, thanks to Ernie Wright for his help and for writing such a great documentation as Lightwave SDK's is.

AUTHOR

This plugin has been written, debugged and tested by Javier Gómez Cáceres.

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DOWNLOAD

Press the link to download the zip. The zip does not contain any documentation, so save this page if you want a copy of the manual.

IMPORTANT: since I have only a PC, there's no MAC version for JettoLocal. Mac users, please send me a Mac! :-P

Download JettoLocal 0.8 for Windows

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