Understanding Poser Files: pp2 files

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Tools Needed

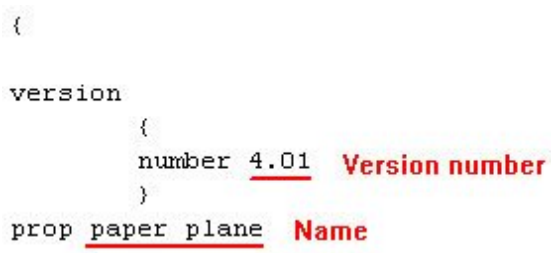
*** Poser**

*** A text editor**

Introduction
Poser files are easy to work with because they are just text files which can be edited with many applications. I prefer Edit Pad Lite (free for non-commercial use): http://www.editpadpro.com/editpadlite.html But of course you can use your favourite text editor, too. As an example for this tutorial I will use one of my freebies, a paper plane. Feel free to download it and have a look at the files yourself: http://www.esha.xail.net/html/objects.html IMPORTANT: If you start experimenting, always make a backup copy of the file first, just in case!

Step 1 - Open the File

Open the pp2 file in a texture editor.



As we said, it is just a text file.

Right at the beginning there is a brace sign {. You will find many of these throughout all your Poser files. You'll also notice that they often are in different places, preceded by tabulators. They are important because they separate the different types of information in the file. If one of the braces is missing or if you change its position the file probably will not work any longer.

The version number tells us in which versions of Poser the file will work. If the version number is 5 or 6, the file will generate an error message in Poser 4. A file for Poser 4, though, will work perfectly in newer versions, too.

Then we find the prop's name, in this case it's "paper plane". This is the name Poser will display for the prop. It has nothing to do with the name of the file. The prop's name appears 4 times throughout the pp2 file, if you want to change it, make sure to change them all.

Step 2 - The Geometry

There are different types of props.

If you import an object into Poser and save it as a prop, the geometry will be saved inside the pp2 file and it will look like this:

```
        {
        geomCustom
                {
                numbVerts    144
                numbTVerts    165
                numbTSets     536
                numbElems   126
                numbSets    536
                v 0.118124 0.008638 -0.230626
                v -0.112503 -0.018396 0.000000
                v 0.118124 -0.018396 0.000000
                v -0.009363 0.008638 -0.166883
```

Geometry

... and so on and so on ...

... the end looks like this:

```
                f 76/147 88/149 92/158 75/153
                f 85/159 90/160 58/157
                f 93/161 95/162 94/163
                f 105/146 133/164 35/165 31/132 30/135
                }

        }

prop paper plane
        {
        name    paper plane
        on
```

If the prop is a big object with many polygons, the prop file will be big, too. When you load several such props into your scene, this results in a very large scene file, because Poser includes everything in the pz3 file. This is why many content creators generate props with external geometry.

They remove the geometry data and insert a few lines which tell Poser where to look for the obj-file. Because the geometry data is not included in the file anymore, this kind of prop is called a prop with external geometry. These files are much smaller and look like this:

```
prop paper plane
        {
        storageOffset 0 0.3487 0
        objFileGeom 0 0 :Runtime:Geometries:esha:freebies:paper plane.obj
        }
```

The storage offset value is always the same, it's just something Poser needs.

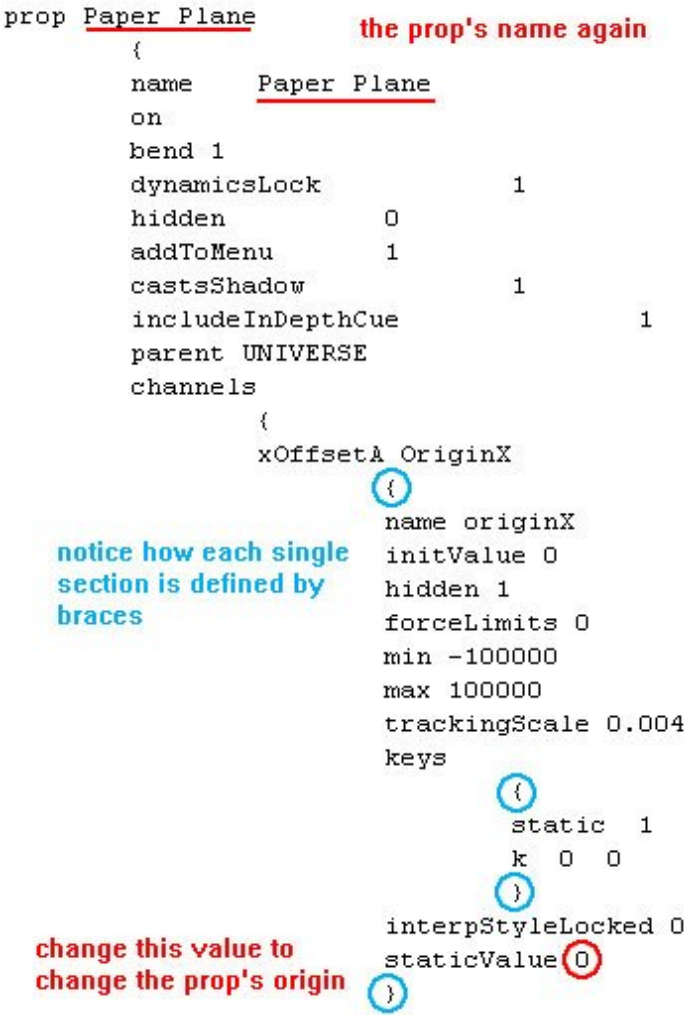
The path for the obj file will vary. Of course, the obj file has to be in the folder which is specified in the pp2 file, otherwise it will not work. If Poser ever gives you a message telling you that it can't find the obj file, check this geometry path and have a look where the obj file really is.

Step 3 - The channels

The next thing in the pp2 file are the channels. In Poser, the channels are displayed as dials which you can use to change certain settings.

> The Offset Settings

The list of channels starts with the Offset settings (zOffsetA OriginX, zOffsetA OriginY, zOffsetA OriginZ). These wheels are hidden by default in Poser, although you can switch them on in the properties panel. The offset values set the center of the prop, this is especially important for rotation behaviour. You can use these settings to make the prop rotate not around its own axis but around a given point in space.



> The Scale Settings

There are 4 different scale channels: A general one and one for each x, y and z scaling.

A value of 1 means 100% or original size, 0.5 would be half the original size and 2 would mean double size. The prop will load in Poser with these pre-defined values, but you can always change them using the dials.

```
propagatingScale Scale
        {
        name scale
        initValue 1
        hidden 0
        forceLimits 0
        min 0.001
        max 100000
        trackingScale 0.004
        keys
                {
                static  0
                k  0  1  = 100%
                }
        interpStyleLocked 0
        }
```

> More Settings

Then there are channels for rotation and translation, always one for x, y and z each. They define rotation and position of the prop when it is loaded in Poser. Basically, they work in the same way as the scale settings, so I will not explain them further.

Step 4 - Morphing Props

Props can also contain morphs. In my case the paper plane has 2 morphs to bend the left and the right wing.

In the pp2 file, morphs are displayed as additional channels. By default they are set to zero, but of course you could also load a prop with a morph pre-applied.

```
{
targetGeom Bend R Wing
        {
        name Bend R Wing
        initValue 0
        hidden 0
        forceLimits 4
        min -100000
        max 100000
        trackingScale 0.02
        keys
                {
                static  0
                k  0  0
                }
        interpStyleLocked 0
        indexes 46
        numbDeltas 144
        deltas
                {
d 0 0 -0.0623481 0.02563427
d 2 0 0.003110371 0.0005963345
d 3 0 -0.004092007 0.000484705
d 4 0 0.002873113 0.000615023
d 7 0 -0.004154616 0.0006585866
d 12 0 0.0006077001 3.46452e-006
d 13 0 0.0006352998 -8.173287e-006
d 18 0 0.01323848 -0.0006172433
```

change this value to 1 if you want to load the prop with the morph pre-applied

deltas

The lines of numbers starting with a “d” are the deltas. This is the data which tells Poser how to change the prop when the morph is applied. Theoretically, deltas can be saved in separate files and then injected to use them, but this works only for figures (e.g. V3’s head and body morphs which are sold separately). With a pp2 file, don’t touch the deltas, leave them as they are, or the morphs will not work anymore.

Step 5 - Display Modes

After the channel data you’ll find some settings to determine the way the prop is displayed in Poser. The default setting for props is USEPARENT. This means that the prop will be displayed with whatever settings are used for the document display style. However, you can set your prop to a certain display style which will not be affected by the document display style. That means, you can have your prop displayed in outlines and the rest of your scene in texture shaded mode.

NOTE: This has no influence whatsoever on how the prop is rendered. It only sets the display mode for the preview window, where you set up your scene before rendering.

```
endPoint 0 0.0261342 0
origin 0 0 0
orientation 0 0 0
displayOrigin  0
displayMode USEPARENT
customMaterial  32
```

change this to 1 to display the origin when the prop is loaded

The various display modes are: SILHOUETTE; EDGESONLY; WIREFRAME; HIDLINE; SHADEDOUTLINE; FLATSHADED; FLATLINED; CARTOONNOLINE; SKETCHSHADED; SHADED; SMOOTHLINED and TEXTURESHADED.

After the display settings you'll find the material settings. We'll skip them here because this is a topic for a separate tutorial which will follow soon. ;)

Step 6 - The End of the File

At the end of the file all the braces that were opened before find their closing counterparts. Be careful not to delete any of the braces, the file will not work without them!

The "add actor" command tells Poser to add the prop to your scene. Again the prop's name is used, it has to be the same name as we chose at the beginning.

```
        locked 0
        }
doc
        {
        addActor Paper Plane 1
        }
}
```

Now you know a bit more about Poser prop files, I hope you found this information useful.

Happy rendering,

esha