**Mini Tutorial**
Using Smoothing Groups in FSDS 2.X
As someone who always looks at the last page of the book I highly recommend glancing though this document before reading it. It might give you a better understanding of what I'm trying to explain.

This mini tutorial will explain how to make more realistic looking landing gear struts using **Smoothing Groups** but it also illustrates some other uses for Smoothing Groups.
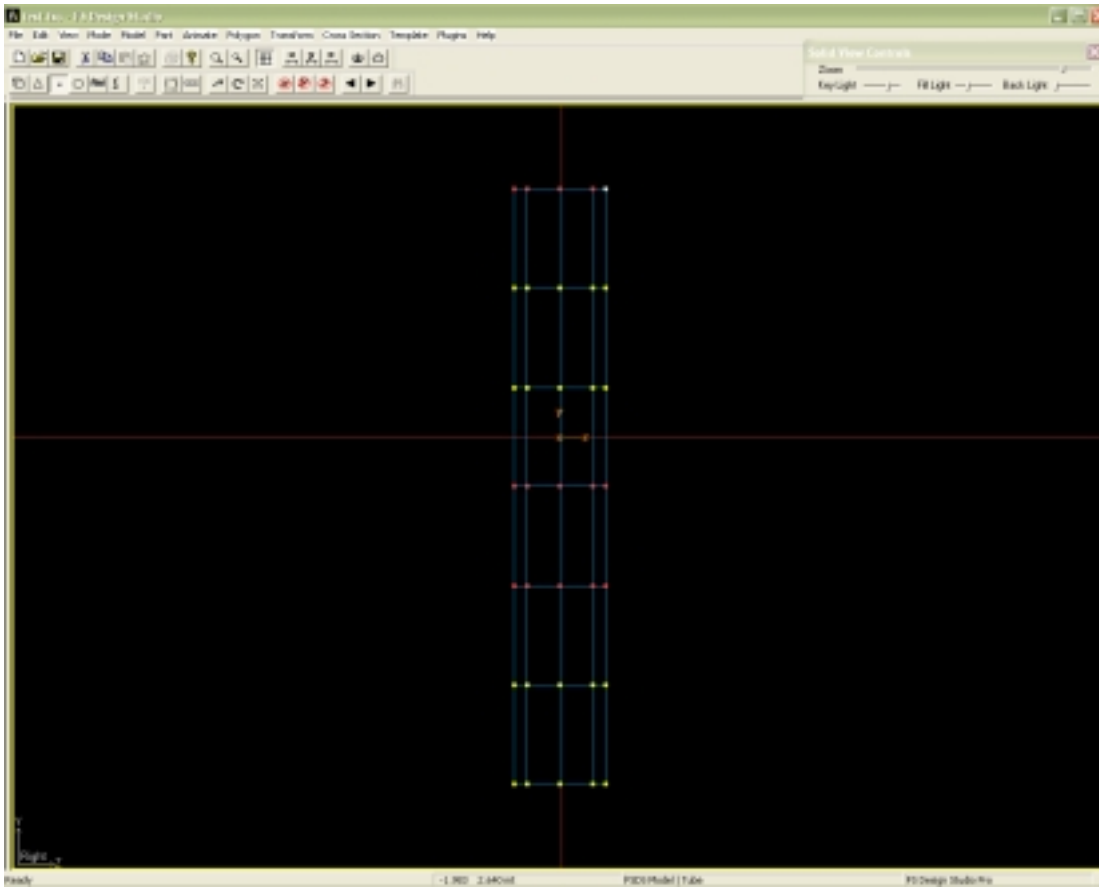
Create a tube for the strut. Choose an odd number of sections. We'll see why soon. You can increase or decrease the number of sections depending on the level of detail you desire and the complexity of the strut.
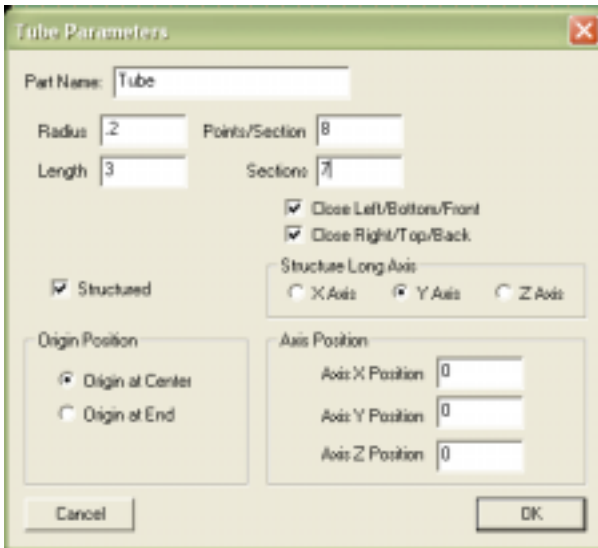

Tip: Hit the C key on the keyboard to zoom into and center the view on the current part.
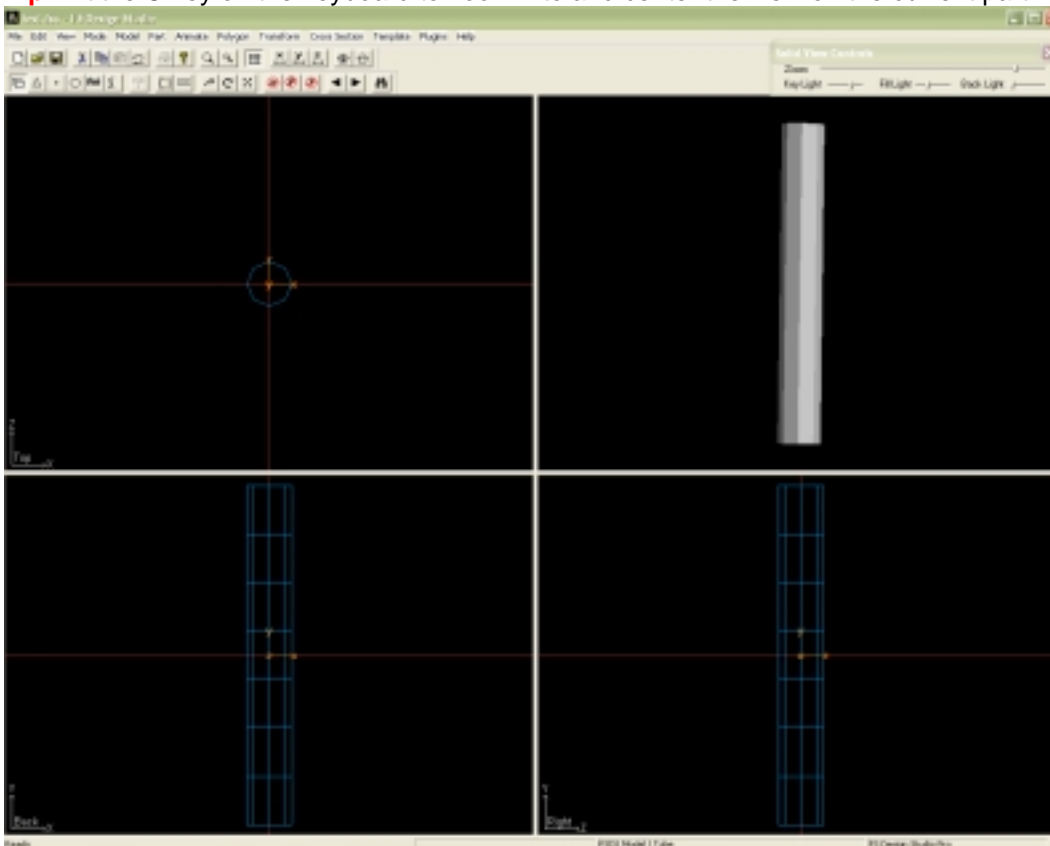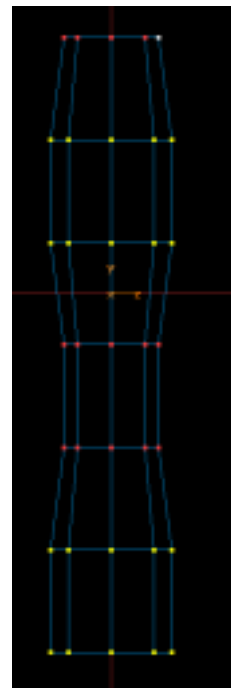
Switch to Point mode and select the sections as shown in the screen shot.

Now we need to scale the sections to create the various collars and rings on the strut. Switch to Scale mode.

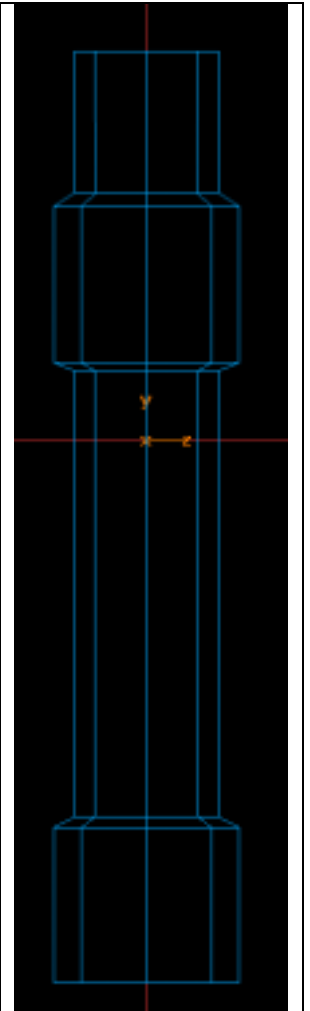Click the constrain Y button but leave the constrain Z and X buttons alone.

Scale the sections as illustrated >>>>>

Switch to Section mode ⬭ and to Move mode. ➔
Move the sections until the appear as illustrated >>>.
(**Note**: I cheated here. I needed to add an extra section. To maintain the correct amount of sections required to make the collars. Hence the **odd number** of sections.)
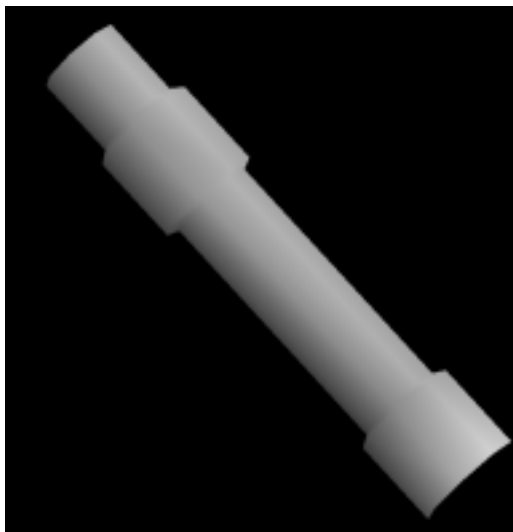

Notice how the part appears with no smoothing (left) and smoothing turned on (right)
Notice the part with NO smoothing has very defined lines and shapes but it looks "blocky".
Notice that the smoothed part looks more realistic except the collars appear to be blended together.
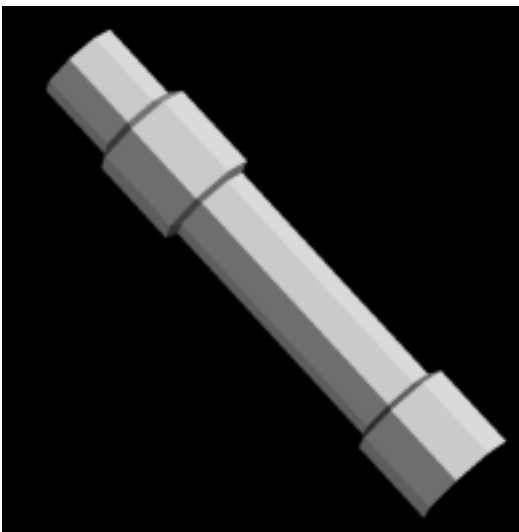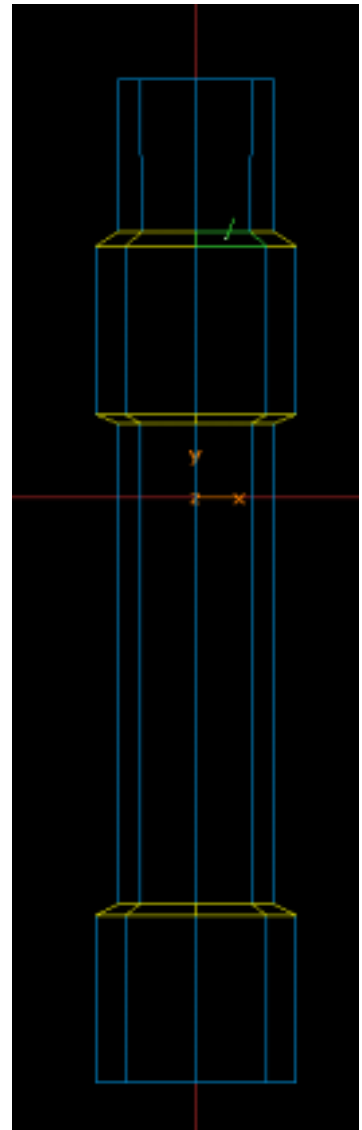

Smoothing turned OFF

Smoothing turned ON

Switch to Polygon mode and select the polygons as shown in the illustration.
Use the arrow keys on the keyboard to move from one polygon to the next.
Use Shift + S to select it. (Shift + S again in the same polygon deselects it)

While still in **Polygon mode** go to **Edit > Polygon Properties**. Notice that the **Smoothing Group** is set to **1**
Note: 0 mean no smoothing.
Now change the number to **2**. This means that these polygons with be smoothed in group **2** while the non-selected polys
will still be smoothed in group **1**. Click **OK**
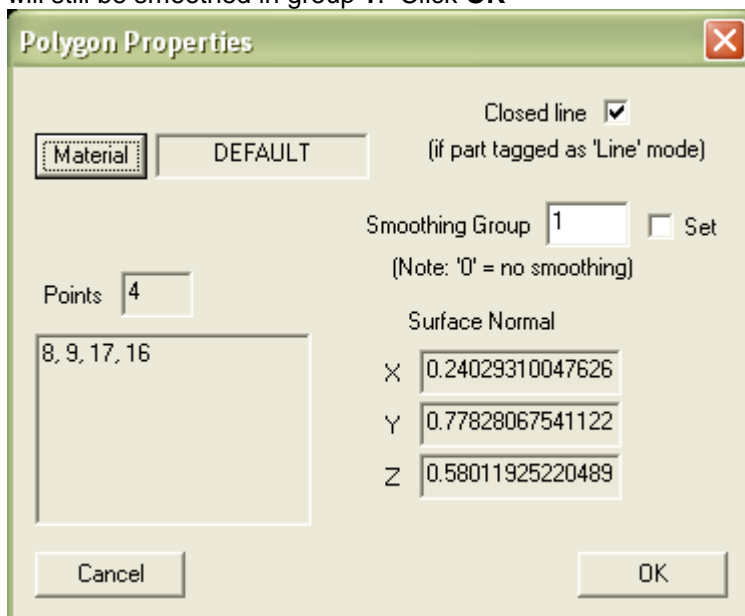
Notice that you now have distinct separation between the different groups of polygons.

Important:
Be sure to unselect all polygons in polygon mode prior to texturing. Otherwise only the selected polygons will be textured. (another tutorial idea?)

Also, if you have polygons selected and you copy, paste and flip the part, the selected polygons will be flipped while the others will not.
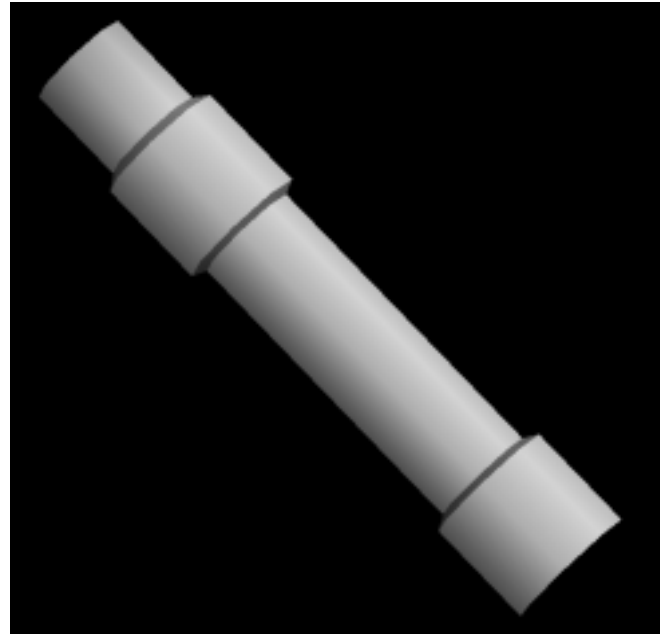
Explanation: The key here is to keep like numbers separated. You do NOT need to have a different group number for more groups. The number means nothing as far as amount of smoothness. It only matters when sets of polygons are next to each other that the numbers are different. Each group will then act as if it is independent of the other groups. Smoothing Groups can be used for various applications. Below illustrates how they can be used to create a ribbed fuselage. Each number **1-5** represents a different smoothing group.

Also think about…
Tires (with rims)
Wings (trailing edge ugly shadows)
Control surfaces (ugly shadows)
Props front and back
Access panels
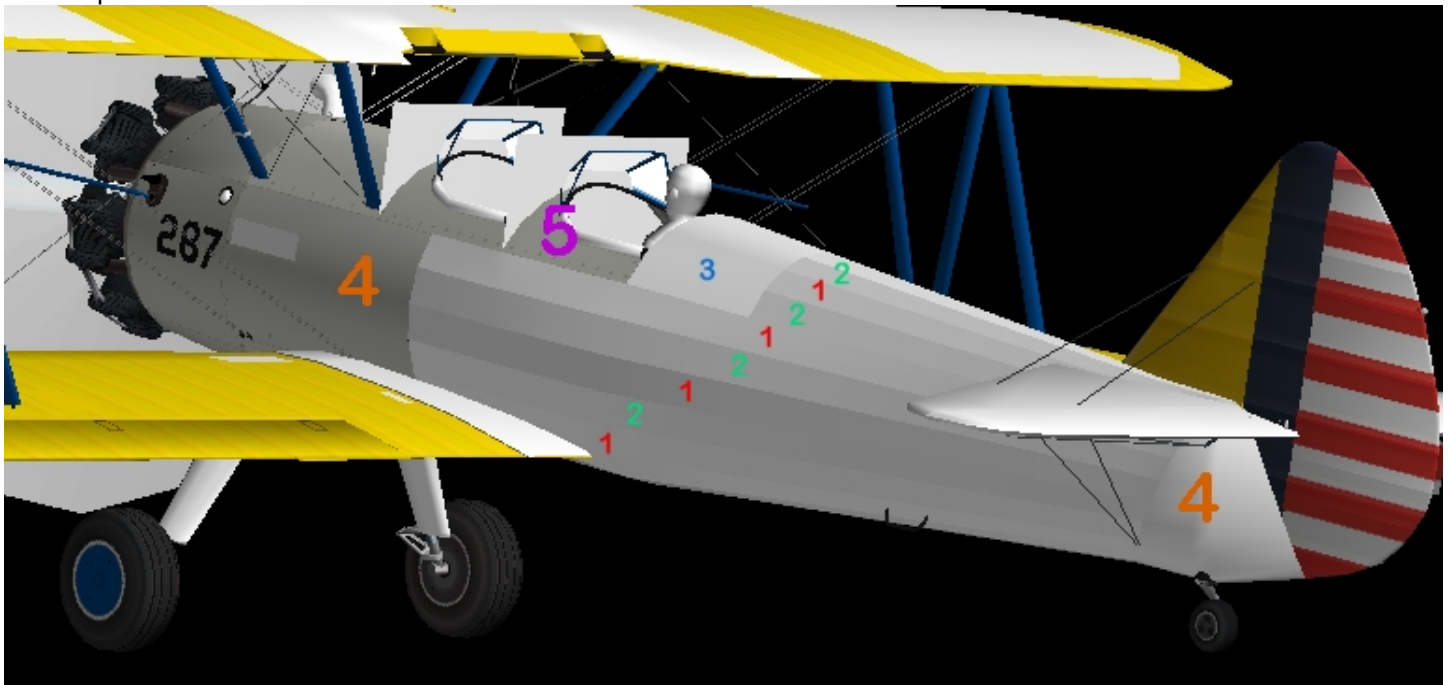
Note: Colors and shading may not be accurately depicted in PDF format.