

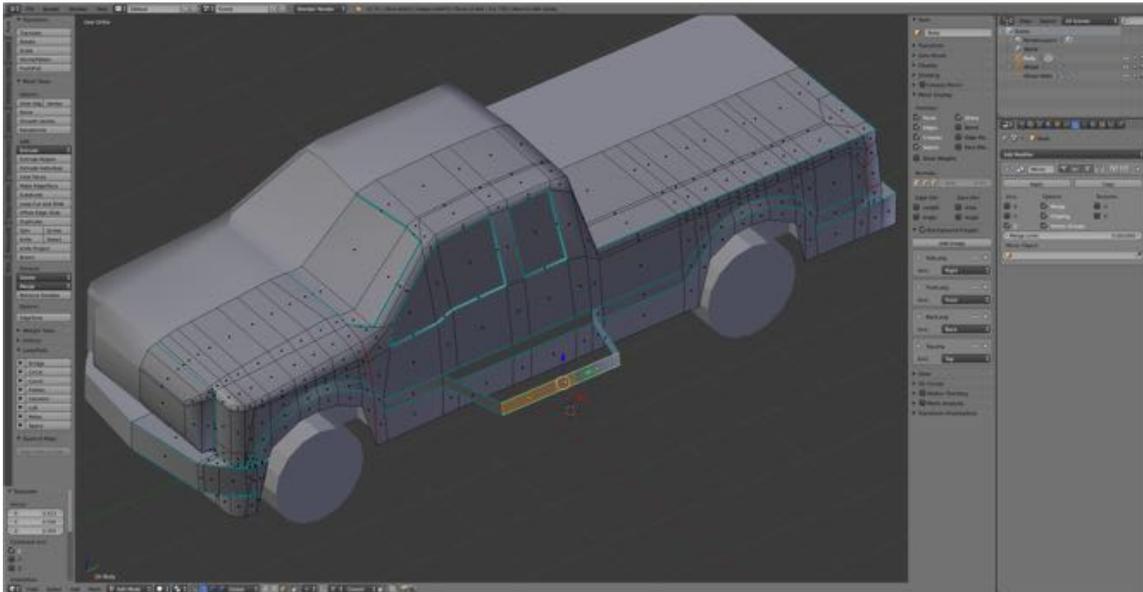
Modeling the 2010 Ford F250

Step 11

Modeling – Separating Parts

There are additional ways to make edges sharp besides using the Mark Sharp Tool and the Edge Split Modifier. In particular, one can add an Edge Loop to either side and draw them in close to the edge to be sharpened. But this method adds additional geometry (triangles), something to be avoided when making low poly models. However, using the Edge Split Modifier also has its challenges.

The Edge Split Modifier when applied rips a mesh apart creating two edges where there was one.



Edge Split Modifier applied to the body the three of the faces between the two side crease pulled out along the X-axis to show that the marked edges have been split.

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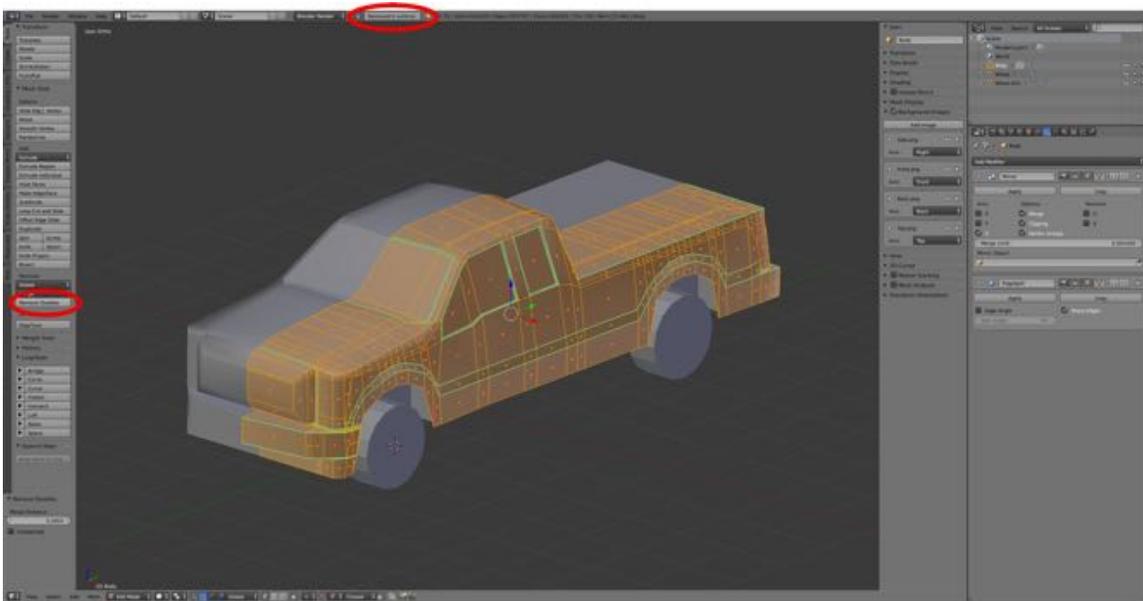
Each vertex along the marked edge is replaced by two vertices at the same location, in other words “doubles”. Doubles are not allowed when converting the mesh to a Trainz asset because faces cannot be formed between vertices that occupy the same location. This is known as the “Surfaceless Polygon” problem. Normally the solution would be to delete the doubles but in our case this would also delete the sharp edges by combining the two split edges back together.

http://online.ts2009.com/mediaWiki/index.php/HowTo/Solve_Blender_Modelling_Problems

The solution is to separate the sections of the model split off by applying the Edge Split Modifier. We are also going to need to do this when applying texture to our model so here we can “kill two birds with the one stone” (i.e., accomplish the both tasks at the same time).

First, we need to remove any double not associated with edges to be split.

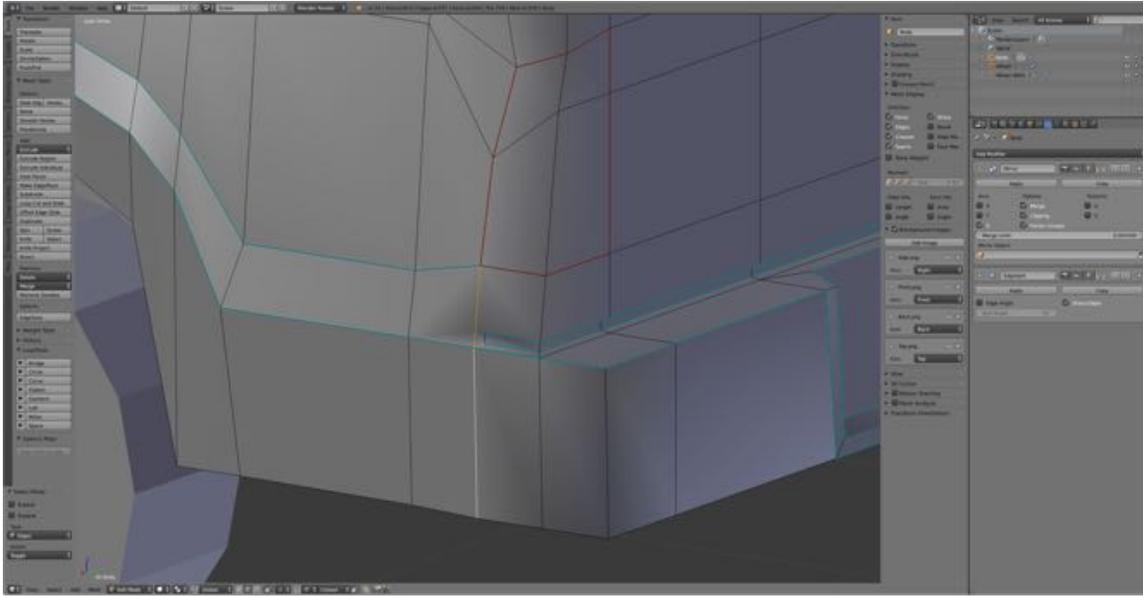
- In the **Outline Editor**, select the **Body Object**.
- In the **3D Editor**, switch to **Edit Mode** and **Vertex Selection Mode**, and select the whole **body (A-KEY)**.
- In the **Tool Shelf Tools Tab's Remove Pane**, select **Remove Doubles**. (I had 6 doubles removed as indicated in the Information Editor.)



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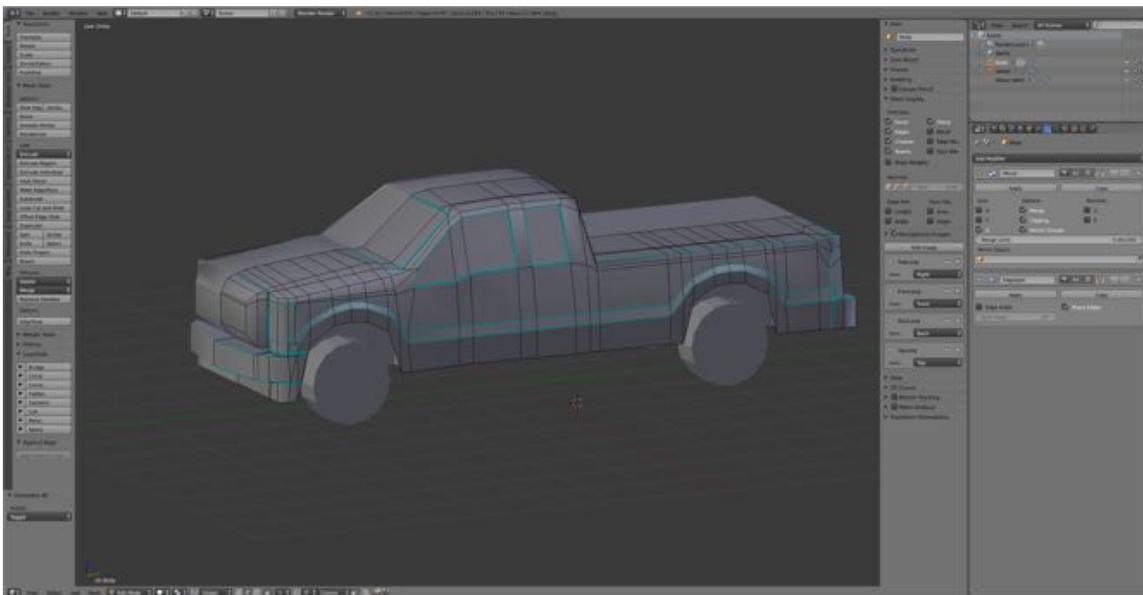
To assist in isolation of parts of the mesh, four additional edges need to be marked.

- In **Edit Mode** and **Edge Selection Mode**, select the **four edges under the taillight as shown**.
- **Mark Sharp (CTRL + E-KEY > Mark Sharp)**.



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- Also **select and Mark Sharp (CTRL + E-KEY > Mark Sharp)** the **taillight** and the **headlight**.
- **Select the whole Body (A-KEY)** and **clear any marked seams (CTRL + E-KEY > Clear Seams)**.

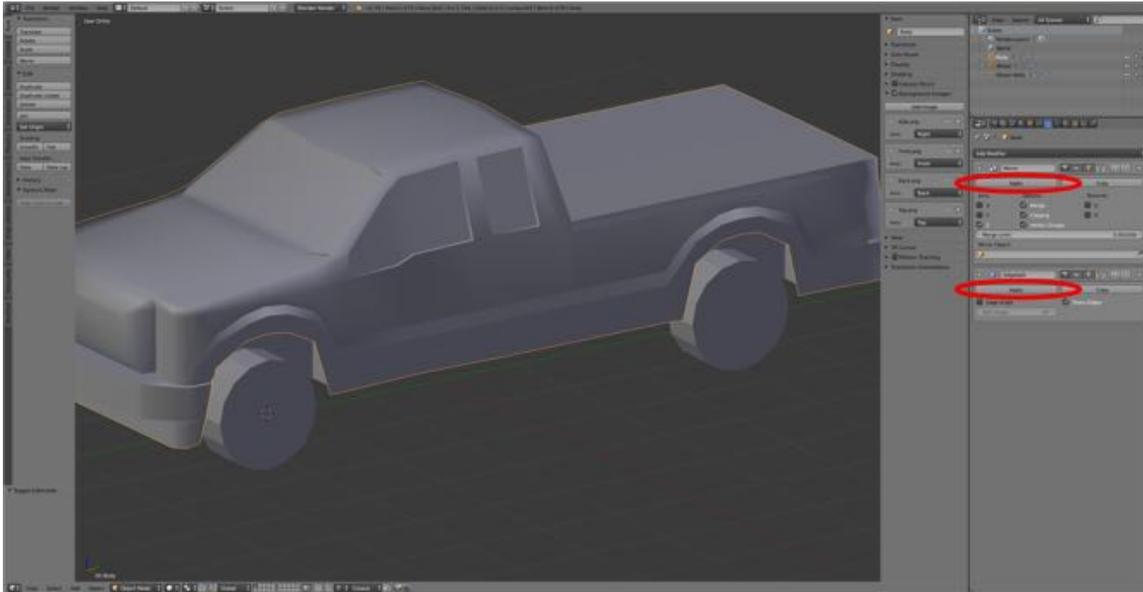


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Separating Parts of the Mesh

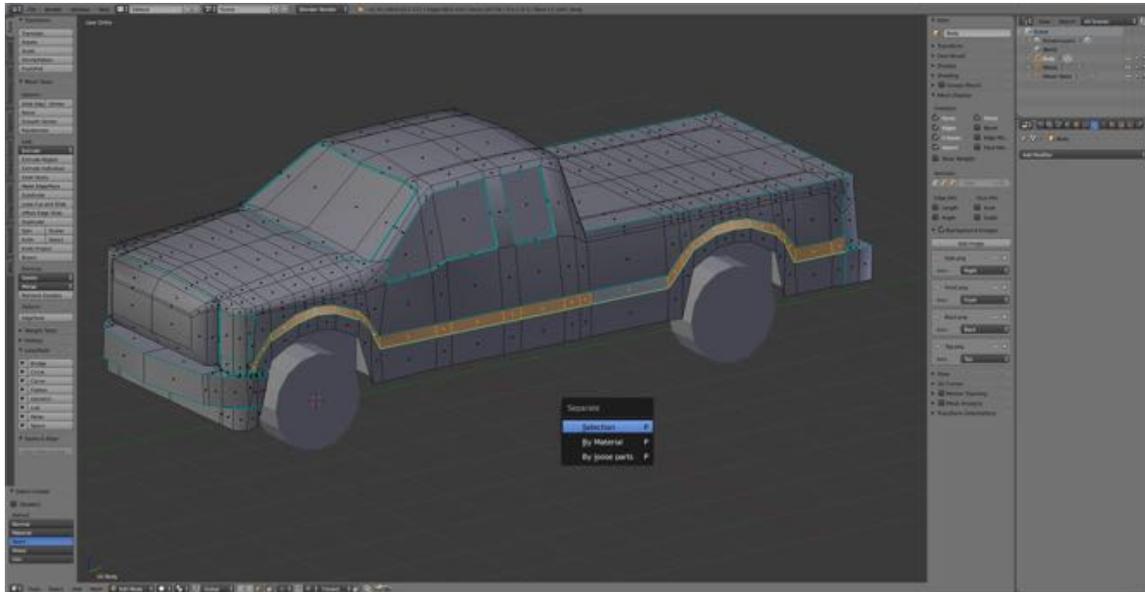
Now we can apply the Edge Split Modifier then the Mirror Modifier and begin isolating the parts of our model that we will want to apply texture (e.g., windows, bumpers, grill, etc.) from those that we just want to paint. Some parts which we will just want to paint (e.g., the window frames) will also have to be separated to avoid have doubles.

- **Switch to Object Mode** and **select the Body** in the **Outline Editor** (if it is not already selected).
- In the **Properties Editor under Modifiers**, **LMB click Apply** to the **Edge Split Modifier** (Modifiers can only be applied in Object Mode).
- **LMB click Apply** to the **Mirror Modifier**.



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- **Switch to Object Mode** and **select the Wheels Object** in the **Outline Editor**.
 - In the **Properties Editor under Modifiers**, **LMB click Apply** to the **Edge Split Modifier** (Modifiers can only be applied in Object Mode).
 - **LMB click Apply** to the **Mirror Modifier**.
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- **Switch to Object Mode** and **select the Wheel Wells Object** in the **Outline Editor**.
 - In the **Properties Editor under Modifiers**, **LMB click Apply** to the **Edge Split Modifier** (Modifiers can only be applied in Object Mode).
 - **LMB click Apply** to the **Mirror Modifier**.
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- **Switch back to Edit Mode** and **switch to Face Selection Mode**.
 - **Select (L-KEY)** the **faces between the two right side creases**.
 - With the mouse cursor hovered over the 3D Editor, **separate** by pressing the **P-KEY** and **selecting Selection**.



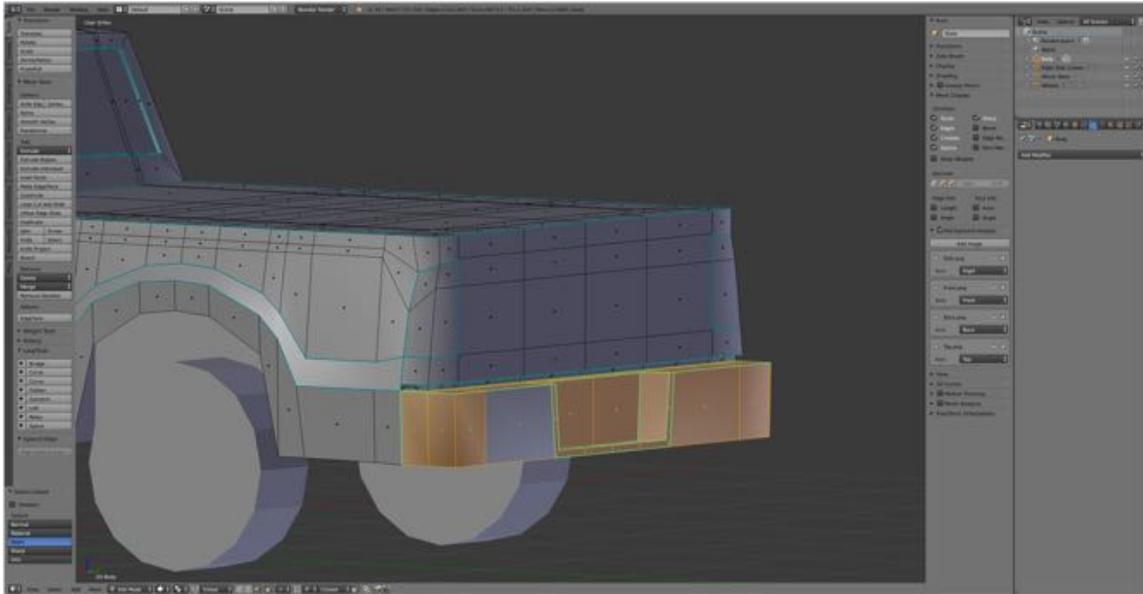
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- In the **Outline Editor** select the **new object (Body.001)** and in the **Properties Panel's Item Pane**, rename it "Right Side Crease".
- In the **Outline Editor** reselect the **Body Object** and **switch** back to **Edit Mode**.
- **Select (L-KEY)** the **faces between the two left side creases**.
- With the mouse cursor hovered over the 3D Editor, **separate** by pressing the **P-KEY** and **selecting Selection**.
- In the **Outline Editor** select the **new object (Body.001)** and in the **Properties Panel's Item Pane**, rename it "Left Side Crease".

We will now repeat the process with each of the parts we wish to isolated and name them accordingly.

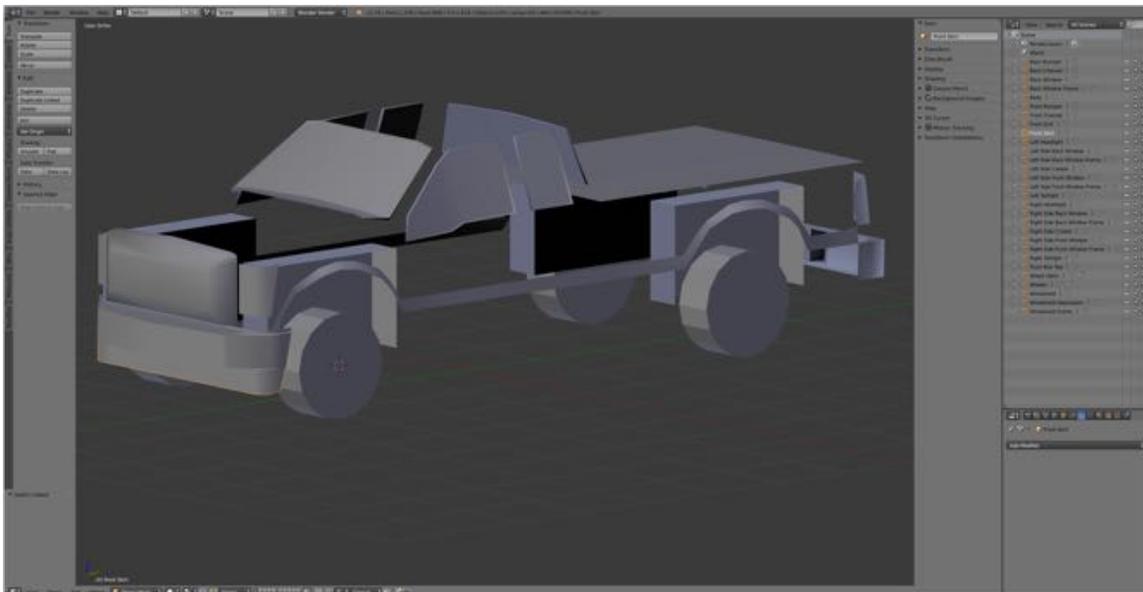
- In the **Outline Editor** reselect the **Body Object** and **switch** back to **Edit Mode**.
- **Select, separate and name:**
 - Right Side Font Window (just the window "glass")
 - Right Side Front Window Frame (the faces between the two marked edge loops)
 - Right Side back Window
 - Right Side Back Window Frame:
 - Left Side Font Window (just the window "glass")
 - Left Side Front Window Frame (the faces between the two marked edge loops)
 - Left Side back Window
 - Left Side Back Window Frame
 - Windshield (include only the upper row of faces)
 - Windshield Depression (lower row of faces)
 - Windshield Frame
 - Back Window
 - Back Window Frame
 - Right Taillight

- Left Taillight
- Back Bumper (include all but the indented channel)



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- Back Channel (include both rows of faces)
- Right Headlight
- Left Headlight
- Front Grill
- Front Bumper (include top and bottom)
- Front Channel (include both rows of faces)
- Front skirt (below bumper)



Only separates parts showing (i.e., body hidden).

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Finally, we will smooth the wheel.

- In the **Outline Editor** select the **Wheels Object**.
- In **Object Mode** with **smooth** the wheels (**Tool Shelf > Tools Tab > Shading > Smooth**).



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Save your work.

- Press **SHIFT + CMD + S-KEY** and **NUMPAD-PLUS-KEY** to incrementally increase your file name “**FordF250_13.blend**”.
- Save the file to a folder named “**2010 Ford F250 Blender Files**”.
- Right after you have saved your Blender file, under the **Information Editor’s Window Menu**, select **Save Screenshot**.