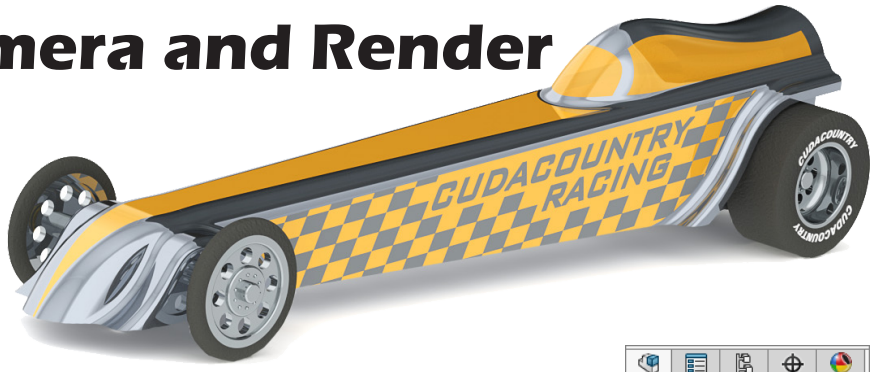
C02 Rail Car

Camera and Render



A. Sketch for Floor.

Step 1. Open your **RAIL CAR ASSEMBLY** file.

Step 2. Click **Right Plane** in the Feature Manager and click **Sketch** on the context toolbar, **Fig. 1**.

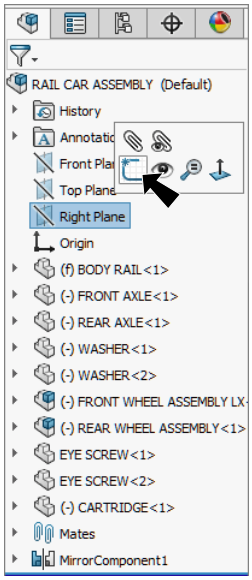


Fig. 1

Step 3. Click **Normal To** on the Standard Views toolbar. (**Ctrl-8**)

Step 4. Click **Line** (**L**) on the Sketch toolbar.

Step 5. Sketch a line at an angle under the Wheels, **Fig. 2**.

Step 6. **Right click graphics area and click Select** from menu to unselect Line tool.

Step 7. **Ctrl click outer circular edge of tire and line** to select both. Release Ctrl key and click **Make Tangent** on the context toolbar, **Fig. 3**.

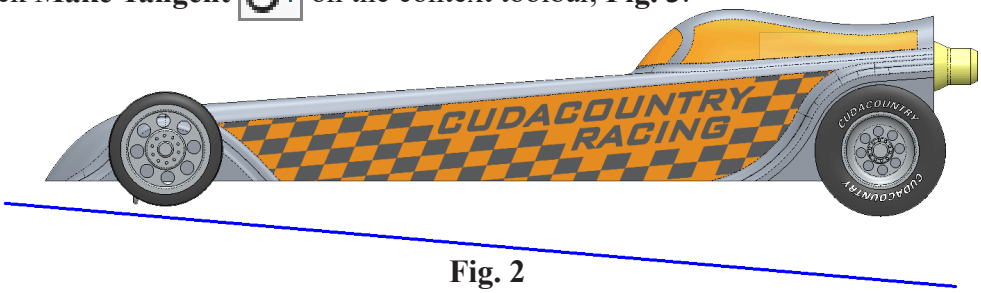


Fig. 2

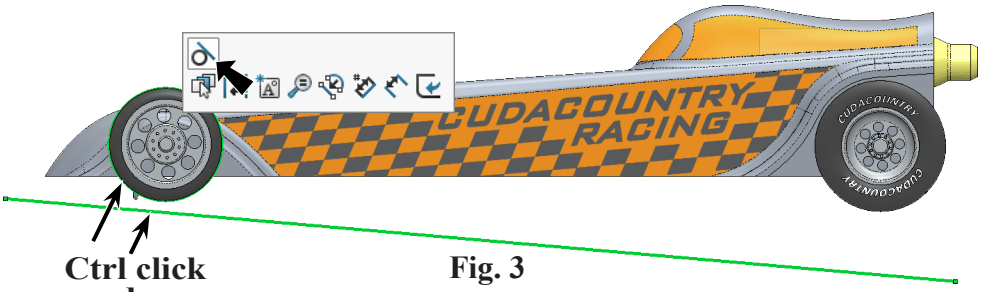


Fig. 3

Step 8. **Ctrl click** the **outer circular edge of other tire and line** to select both. Release Ctrl key and click **Make Tangent**  on the context toolbar, **Fig. 4**.

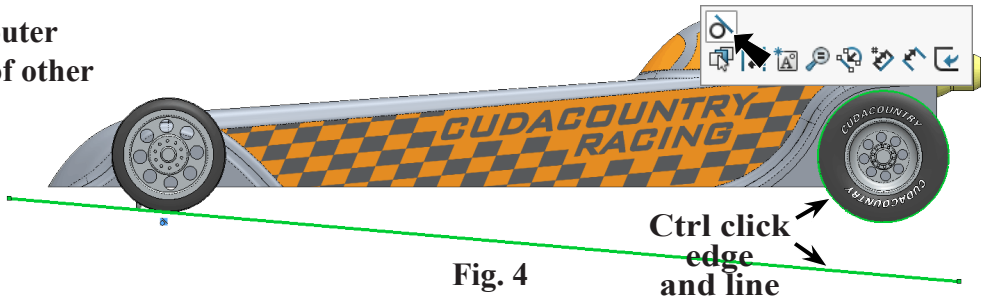


Fig. 4

Step 9. Click **Exit Sketch**  on the Sketch toolbar.

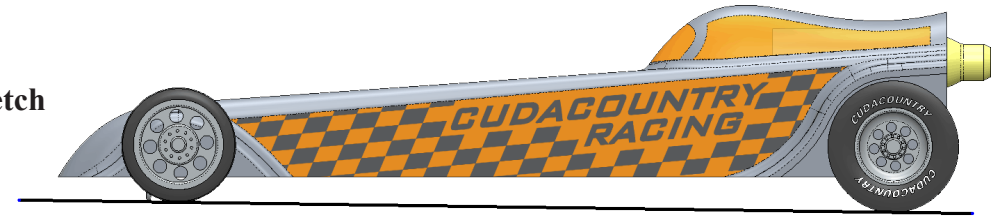


Fig. 5

B. Create Floor Plane.

Step 1. Click **Isometric**  on the Standard Views toolbar. (**Ctrl-7**)

Step 2. Click **Right Plane**  in the Feature Manager to select plane, **Fig. 6**.

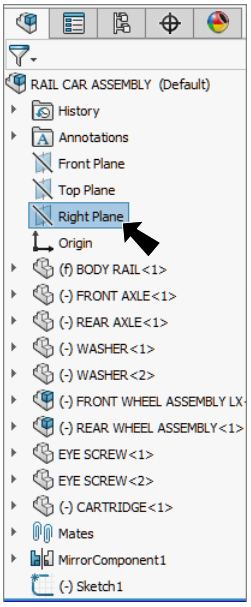
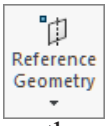


Fig. 6

Step 3. Click **Reference Geometry**  on the Assembly toolbar and **Plane** from the menu.

Step 4. In the Plane Property Manager set:
under First Reference, **Fig. 7**
Right Plane was preselected
under Second Reference
click **line** in sketch, **Fig. 8**
click OK ✔ .

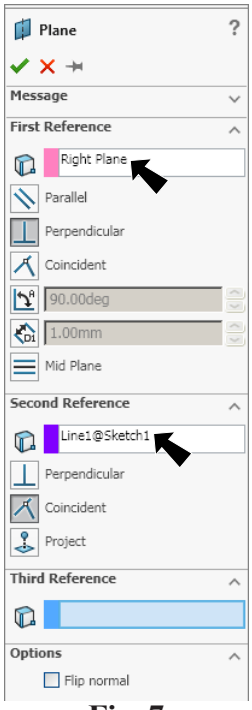


Fig. 7

Step 5. Save. Use Ctrl-S.

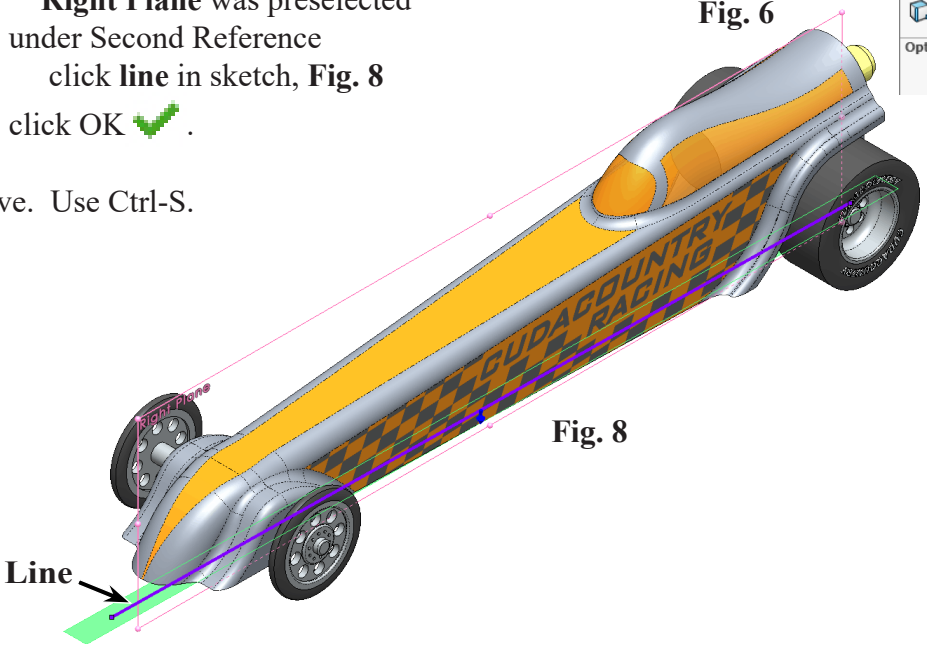


Fig. 8

C. Add Camera.

Step 1. **Hide Sketch1 and Plane1**  . To hide, click in Feature Manager and **Hide**  on the context toolbar, **Fig. 9**. **Hide both** Sketch1 and Plane1.

Step 2. Click **Display Manager tab**  in the Manager Pane and click **View Scenes, Lights and Cameras**  in the Display Manager, **Fig. 10**.

Step 3. **Right click Camera**  and click **Add Camera** from the menu, **Fig. 10**.

Step 4. A Two-View viewport opens, with the **camera in the left viewport** and the **camera view in the right viewport**. In the left viewport zoom out by spinning the wheel on your mouse to view camera and the car assembly, **Fig. 11**.

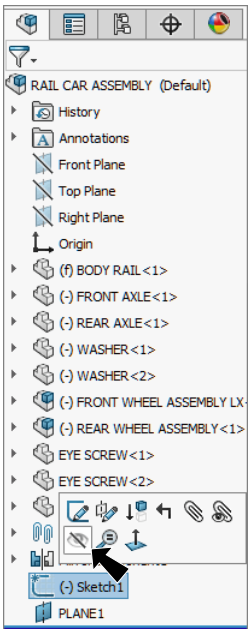


Fig. 9

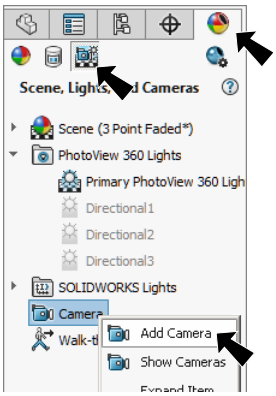


Fig. 10

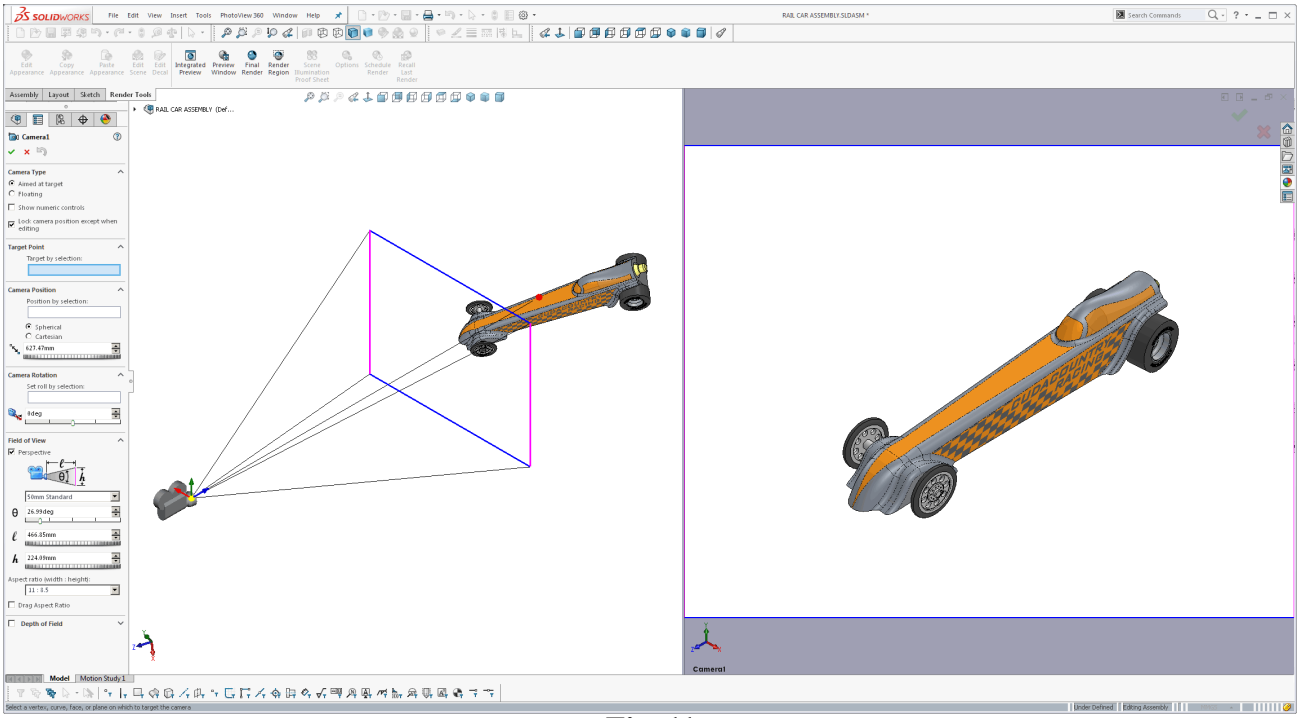


Fig. 11

Step 5. Can you adjust camera so camera view is as shown in **Fig. 12**. In the left viewport adjust camera by dragging the **red arrow** attached to the camera to the right, the **green arrow** down, then blue arrow towards the assembly. Next, we will adjustment with the numeric controls.

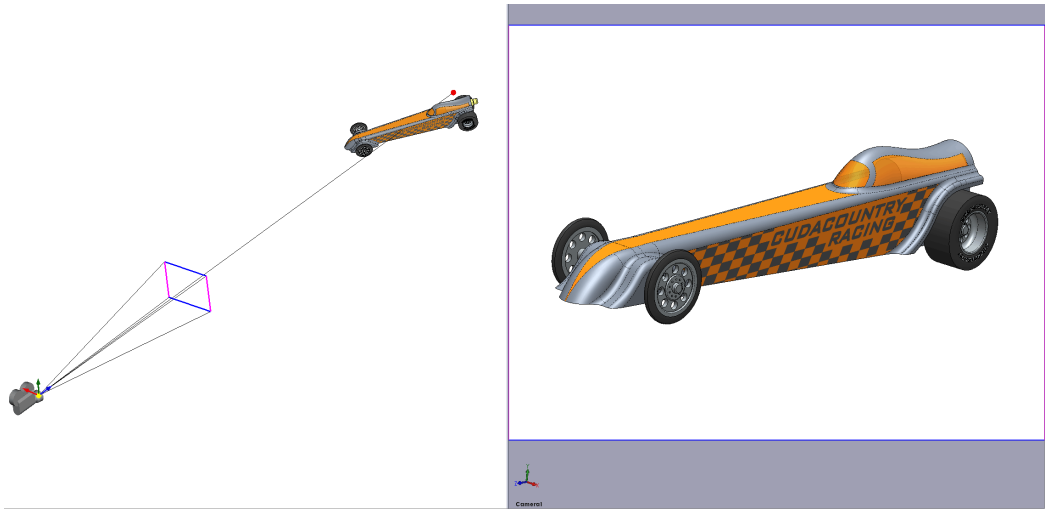


Fig. 12

Step 6. In the Camera Property Manager set:

under Camera Type, **Fig. 13**

check **Show numeric controls**

under Camera Target Point

Target X **-92**

Target Y **-19**

Target Z **-275**

under Camera Position

Distance from Target **1300**

Longitude about target **42**

Latitude about target **14**

under Camera Rotation

Roll **-5.5**

under Field of View

check **Perspective**

select **135mm Telephoto**

click OK .

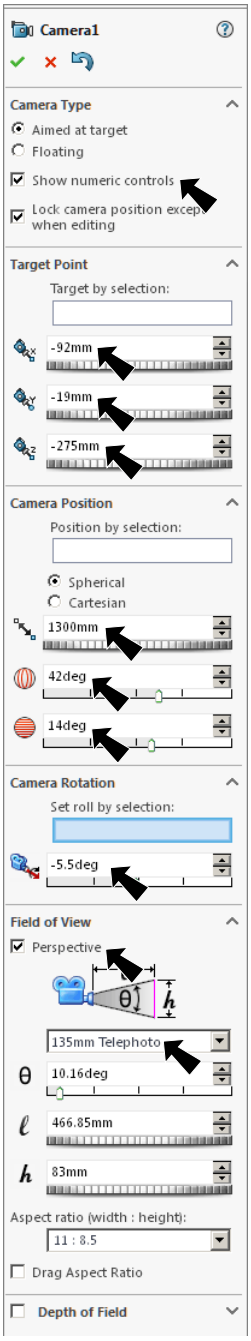


Fig. 13

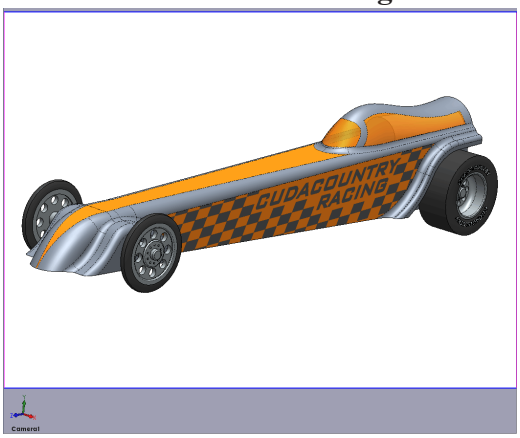


Fig. 14

D. Edit Scene.

Step 1. Press **Space Bar** on keyboard to display the **Orientation dialog box**. Click **Camera1** view and **Pin/Unpin**  to pin dialog box, **Fig. 15**.

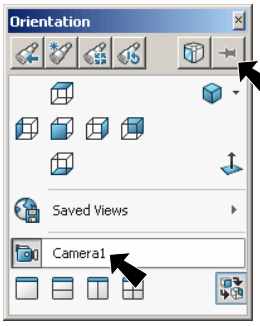


Fig. 15

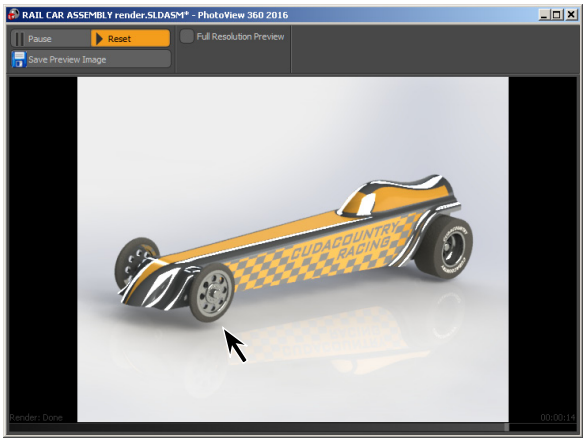
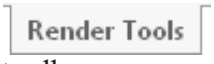


Fig. 16

Step 2. Click **Render Tools**  on the Command Manager toolbar.

Step 3. Click **Preview Window**  on the Render Tools toolbar.

Step 4. Note the Wheels are not aligned to "floor", **Fig. 16**.

Step 5. Click **Edit Scene**  on the Render Tools toolbar.

Step 6. In the Edit Scene Property Manager set:

under Background, **Fig. 17**
Background Type
Color
check **Keep background**
under Align floor with:
select **Selected Plane**

Expand the flyout Feature Manager design tree in the top left corner of the graphics area and click **Plane1**  **Fig. 18**.

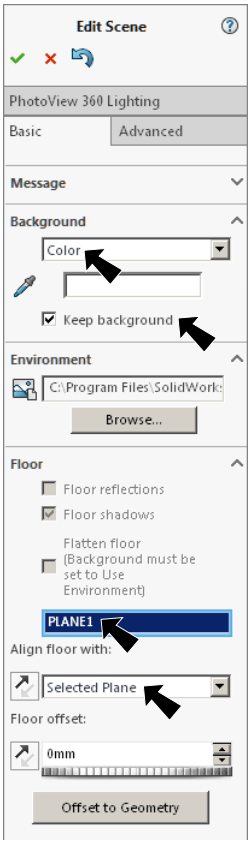


Fig. 17

Fig. 18

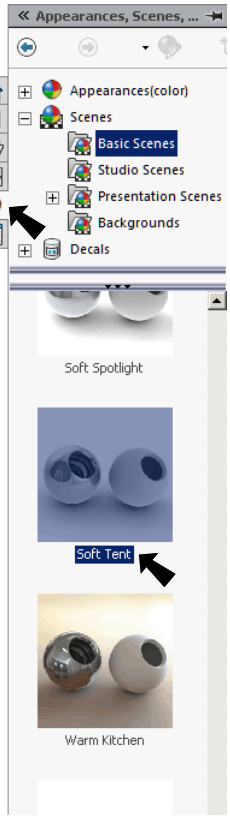


Fig. 19

Step 7. Click the **Appearance tab**  in the Task Pane and in the Scenes Task pane lower pane select **Soft Tent**, **Fig. 19**.

Step 8. Back over in the Edit Scene Property Manager click OK  .

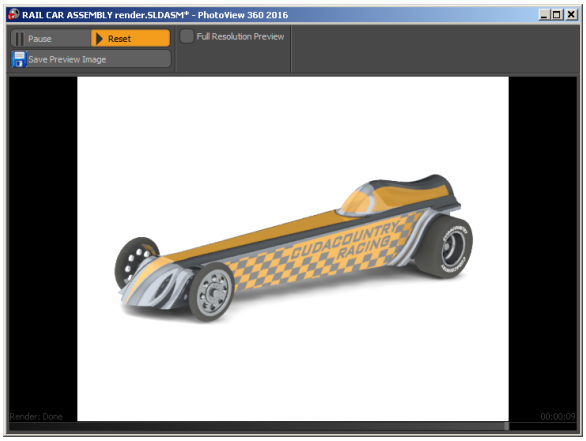
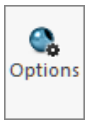


Fig. 20

E. Options.

Step 1. Click **Options** 

on the Render Tools toolbar.

Step 2. In the Options Property Manager set:
under Output Image Setting, **Fig. 21**
Output Image size **Use SOLIDWORKS View**
Image Format **JPEG**

under Render Quality
Preview render quality **Good**
Finial render quality **Better**
click OK ✔ .

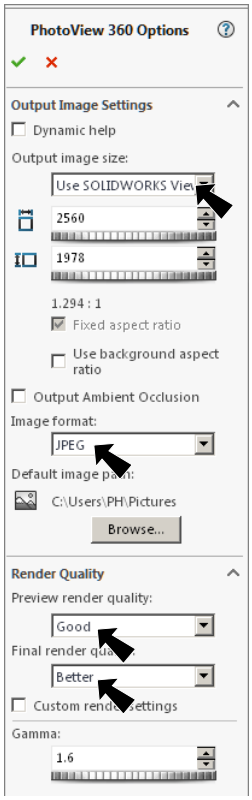
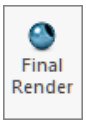


Fig. 21

F. Final Render.

Step 1. Click **Final Render** 

on the Render Tools toolbar.

Step 2. The rendering might take several minutes depending on your computer. After rendering is completed, click **Same Image** and **Close Window**, **Fig. 22**.

Step 3. Save. Use Ctrl-S.

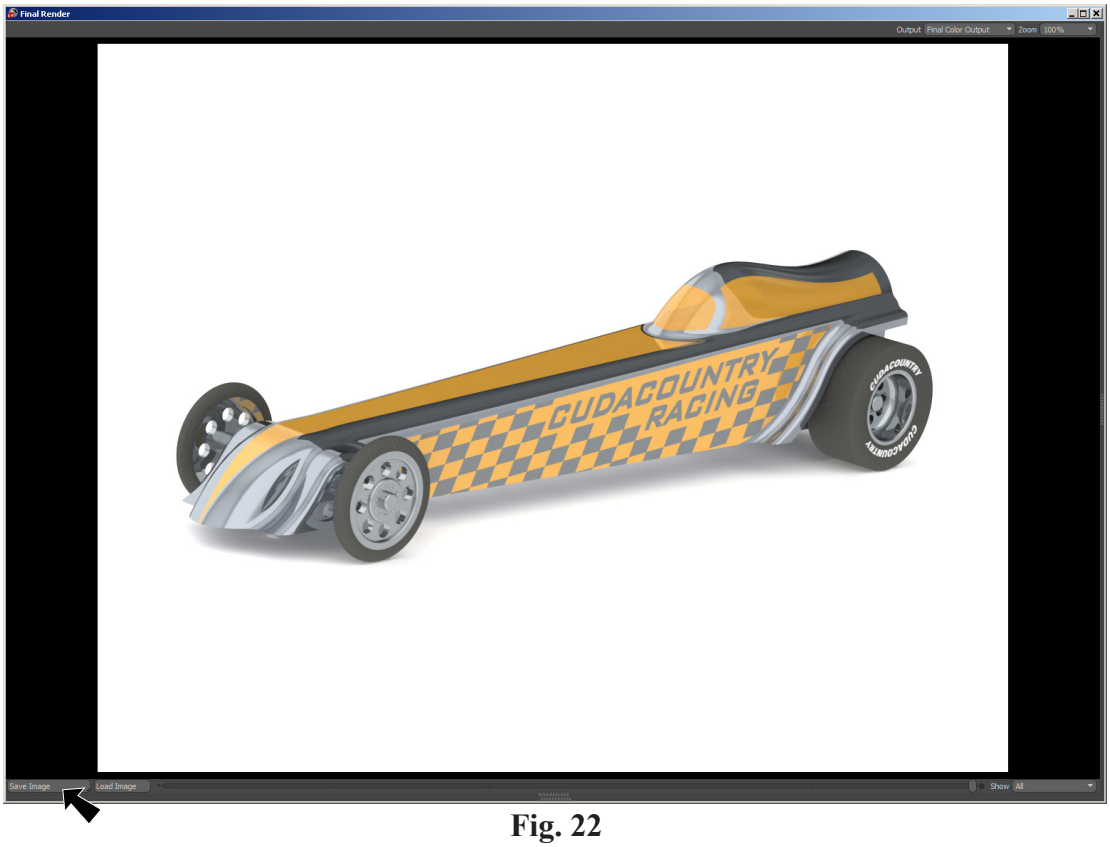


Fig. 22