**A. Lofted Surface Profile Sketch 1.**

Step 1. Click File Menu > New, click **Part** and OK.

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

Step 3. Click **Centerline** in the **Line flyout** on the Sketch toolbar.

Step 4. Draw a vertical centerline coincident through the Origin, Fig. 2. Use the icon to confirm centerline is vertical and coincident with Origin.

Step 5. Click **Centerpoint Arc** in the **Arc flyout** on the Sketch toolbar.

Step 6. Draw **centerpoint arc at Origin** out to right from top endpoint of centerline, Fig. 3. To draw arc, click Origin to start arc centerpoint. Click top endpoint of centerline to place first arc endpoint. Then move cursor clockwise and click to place second arc endpoint.

Step 7. Click **Line** (L) on the Sketch toolbar.

Step 8. Draw **two lines**, Fig. 4.

Step 9. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 10. Add dimensions, Fig. 5.
Step 11. Click **Sketch Fillet** on the Sketch toolbar.

Step 12. In the Sketch Fillet Property Manager set:
- under Fillet Parameters, **Fig. 6**
  - **Radius** \(0.12\)
- click corners on vertical line, **Fig. 7**
- click OK twice.

Step 13. Click **Exit Sketch** on the Sketch toolbar.

**B. Save as "FUSELAGE".**

Step 1. Click File Menu > Save As.

Step 2. Key-in **FUSELAGE** for the filename and press ENTER.

**C. Create Planes at 3.2, 5.9 and 9.**

Step 1. Show **Front Plane**. To show Plane, click **Front Plane** in Feature Manager and click **Show** on the Context toolbar, **Fig. 9**.

Step 2. Click **Isometric** on the Standard Views toolbar. (**Ctrl-7**)

Step 3. Zoom out to see the planes as they are created. To zoom out, spin the wheel on mouse forward or use the Z key.

Step 4. Click **Front Plane** in the graphics area and drag **Ctrl drag** Front plane towards rear of fuselage (right) and release, **Fig. 10**.

Step 5. In the Plane Property Manager set:
- under First Reference, **Fig. 11**
  - **Distance** \(3.2\)
  - and press ENTER.

  The new plane should be to the **right**, **Fig. 10**. If in wrong direction, check **Flip offset**.

  Click **Keep Visible** and OK, **Fig. 11**. The Push Pin on allows adding another plane.
Step 6. In the Plane Property Manager set:
under First Reference, Fig. 12
click in First Reference box
click Front Plane in the graphics area, Fig. 13
Distance 5.9
and press ENTER
click OK.

Step 7. Repeat and add plane at 9.
To repeat, in the Plane Property Manager set:
under First Reference, Fig. 14
click in First Reference box
click Front Plane in the graphic area
Distance 9
and press ENTER
click OK and click Cancel.

Step 8. You can confirm the planes distance by
either click Plane in Feature Manager or
in graphics area.
D. Create Profile Sketch2 in Plane 1.

Step 1. Click expand arrow at the top of the Feature Manager to expand the Display Pane, Fig. 16.

Step 2. **Hide all Planes.** To hide, for Plane in the Display Pane under Hide/Show column click Show to turn off show, Fig. 16.

Step 3. **Hide Sketch1.** To hide, for Sketch1 in the Display Pane under Hide/Show column click Show to turn off show, Fig. 16.

Step 4. You can collapse Display Pane at the top of the Feature Manager to collapse the Display Pane or keep Display Pane expanded.

Step 5. Click Plane in the Feature Manager and click Sketch on the Context toolbar, Fig. 17.

Step 6. Click Normal To on the Standard Views toolbar. (Ctrl-8)

Step 7. Click Centerline in the Line flyout on the Sketch toolbar.

Step 8. Draw a vertical centerline coincident through the Origin, Fig. 18. Use the icon to confirm centerline is vertical and coincident with Origin.

Step 9. Click Centerpoint Arc in the Arc flyout on the Sketch toolbar.

Step 10. Draw centerpoint arc on vertical centerline (on at Origin) out to right from bottom endpoint of centerline line, Fig. 19. To draw arc, click centerline to start arc centerpoint. Click bottom endpoint of centerline to place first arc endpoint. Then move cursor counterclockwise and click to place second arc endpoint.
Step 11. Click Line (L) on the Sketch toolbar.

Step 12. Draw vertical line up from right endpoint of arc, Fig. 20.

Step 13. Click Smart Dimension (S) on the Sketch toolbar.

Step 14. Add dimensions, Fig. 21.

Step 15. Click Sketch Fillet (S) on the Sketch toolbar.

Step 16. In the Sketch Fillet Property Manager set:
under Fillet Parameters, Fig. 22
Radius .16
click corner of line and arc, Fig. 23
click OK twice.

Step 17. Click Style Spline in the Spline flyout on the Sketch toolbar.

Step 18. Draw a 3 control vertex point Spline, Fig. 24. Start at top endpoint of centerline for 1st control vertex point. Draw 2nd control vertex point directly to right. Click top endpoint of line for 3rd control vertex point. Press Escape to end spline.

Step 19. Click top control polygon segment and click Make Horizontal on the Context toolbar, Fig. 25.
Step 20. Click **side control polygon segment** and click **Make Vertical** on the Context toolbar, Fig. 26.

Step 21. Click **Exit Sketch** on the Sketch toolbar.

Step 22. Save. Use Ctrl-S.

**E. Copy Sketch2 into Plane2.**

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

Step 2. Click the **Sketch2** in the Feature Manager and copy, Fig. 28. Use Ctrl-C to copy sketch.

Step 3. Click **Plane2** in the Feature Manager and paste sketch, Fig. 29. Use Ctrl-V to paste sketch, Fig. 30.

Step 4. Click **Zoom to Fit** (F) on the View toolbar.

**F. Edit Sketch3.**

Step 1. **Hide Sketch2.** To hide, for Sketch2 in the Display Pane under Hide/Show column click **Show** to turn off show, Fig. 31.

Step 2. Click the **Sketch3 (pasted sketch)** in the Feature Manager and click **Edit Sketch** on the Context toolbar, Fig. 31.

Step 3. Click **Normal To** on the Standard Views toolbar. (Ctrl-8)
Step 4. **Ctrl click vertical centerline** and **Origin** to select both. Release the Ctrl key and click **Make Coincident** on the Context toolbar, Fig. 32.

Step 5. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 6. Change the **R.16 to R.13** and **.56 to .5** and add other dimensions, Fig. 33.

Step 7. Click **Exit Sketch** on the Sketch toolbar.

**G. Copy Sketch3 into Plane3.**

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

Step 2. Click the **Sketch3** in the Feature Manager and copy, Fig. 34. Use **Ctrl-C** to copy sketch.

Step 3. Click **Plane3** in the Feature Manager and paste sketch, Fig. 35. Use **Ctrl-V** to paste sketch and **Zoom to Fit**, Fig. 36.

**H. Edit Sketch4.**

Step 1. **Hide Sketch3.** To hide, for **Sketch3** in the Display Pane under Hide/Show column click **Show** to turn off show, Fig. 37.

Step 2. Click the **Sketch4** (pasted sketch) in the Feature Manager and click **Edit Sketch** on the Context toolbar, Fig. 37.
Step 3. Click **Normal To** on the Standard Views toolbar. \((\text{Ctrl}-8)\)

Step 4. **Ctrl** click **Origin** and **vertical centerline** to select both. Release the **Ctrl** key and click **Make Coincident** on the Context toolbar, Fig. 38.

Step 5. Click **Smart Dimension** \((S)\) on the Sketch toolbar.

Step 6. Change the \(\text{R.13 to R.08} \) and \(\text{.5 to .18}\) and add other dimensions, Fig. 39.

Step 7. Click **Exit Sketch** on the Sketch toolbar.

Step 8. Save. Use **Ctrl-S**.

**1. Loft Surface.**

Step 1. **Show all Sketches.** To show, for each **Sketch** in the Display Pane under Hide/Show column click **Hide** to turn hide off, Fig. 40.

Step 2. Click **Isometric** on the Standard Views toolbar. \((\text{Ctrl}-7)\)

Step 3. If necessary, turn on **Surfaces** Command Manager. To turn on, **right click Sketch** on the Command Manager toolbar and select **Surfaces**, Fig. 41.

Step 4. Click **Surfaces** on the Command Manager toolbar.
Step 5. Click **Lofted Surface** on the Surfaces toolbar.

Step 6. In the Surface-Loft Property Manager set:
- **Profiles**, Fig. 42
  - click each sketch in order at the same location on sketch to keep the connectors aligned, Fig. 43
- **Options**
  - check **Merge tangent faces** (un-check leaves edges in loft)
  - and click OK.

**J. Cockpit Trim Surface.**

Step 1. **Hide all Loft Sketches.** To hide, expand Surface-Loft1 in the Feature Manager. For each **Sketch** that is not hidden in the Display Pane under Hide/Show column click **Show** to turn off show, Fig. 45.

Step 2. Click **Right Plane** in the Feature Manager and click **Sketch** on the Context toolbar, Fig. 45.

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

Step 4. Click **Style Spline** in the Spline flyout on the Sketch toolbar.

Step 5. Draw a **3 control vertex point Spline**, Fig. 46. Start at edge loft surface for 1st control vertex point. Then, draw 2nd control vertex point below and left. Continue and draw the control vertex point out to left. Press Escape to end spline.
Step 6. Click **Tangent Arc** in the **Arc flyout** on the Sketch toolbar.

Step 7. Draw an arc between left endpoint of spline and edge of loft surface, **Fig. 47**. Keep centerpoint of arc away from edge of loft to avoid creating relation.

Step 8. Click **Smart Dimension (S)** on the Sketch toolbar.

Step 9. Add dimensions, **Fig. 48**.

Step 10. Click **Surfaces** on the Command Manager toolbar.

Step 11. Click **Trim Surface** on the Surfaces toolbar.

Step 12. In the Trim Surface Property Manager set:
- under Selections, **Fig. 49**
- Trim Tool: **Sketch5** is selected
- select **Remove selections** in Pieces to keep box
- click **cockpit section**, **Fig. 50**
- click OK

**Fig. 47**

**Fig. 48**

**Fig. 49**

**Fig. 50**

**Fig. 51**
K. Cockpit Surface Extrude.

Step 1. Click Right Plane in the Feature Manager and click Sketch on the Context toolbar, Fig. 52.

Step 2. Click Normal To on the Standard Views toolbar. (Ctrl-8)

Step 3. Click Line (L) on the Sketch toolbar.

Step 4. Draw line at angle out from front of cockpit trimmed surface vertex and use autotransitioning to transition from line to tangent arc, Fig. 53. To transition, move cursor away from endpoint of line. Move the cursor back to endpoint and away again transition to Tangent Arc tool. Draw Tangent Arc up from line, Fig. 53.

Step 5. Click Style Spline in the Spline fly-out on the Sketch toolbar.

Fig. 52

Step 6. Draw a 3 control vertex point Spline, Fig. 54. Start at rear of cockpit trimmed surface vertex for 1st control vertex point. Then, draw 2nd control vertex point above and to left. Continue and draw the 3rd control vertex point to right endpoint of arc. Press Escape to end spline.

Fig. 53

Step 7. Ctrl click arc and spline to select both. Release Ctrl key and click Make Tangent on the Context toolbar, Fig. 55.

Fig. 54

Fig. 55
Step 8. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 9. Add dimensions, **Fig. 56.** The arc radius is .4 and arc distance between line and spline .09.

Step 10. Click **Surfaces** on the Command Manager toolbar.

Step 11. Click **Extruded Surface** on the Surfaces toolbar.

Step 12. In the Surface-Extrude Property Manager: under Direction 1, **Fig. 57**
- Reverse Direction
- Distance .3
- click OK .

**Fig. 56**

**Fig. 57**

**Fig. 58**
L. Cockpit Boundary Surface.

Step 1. Click **Boundary Surface** on the Surfaces toolbar.

Step 2. In the Boundary-Surface Property Manager:
- under Direction 1, Fig. 59
  - right click the graphics area and select **Selection Manager** from menu, Fig. 60
  - click pushpin and Selection Manager remains available, then click **Select Group**, Fig. 61

  - click the two connecting edges along the trimmed surface, Fig. 62 and click OK in Selection Manager, Fig. 61

  - click the three connecting edges along the extruded surface, Fig. 63 and click OK in Selection Manager

  - Tangent type **Tangent to face**
  - **Reverse Tangent Direction**

    Fig. 59

    Fig. 62

    Fig. 60

    Fig. 61

Step 3. **Hide Surface-Extrude1**. To hide, click Surface-Extrude1 and **Hide** on the Context toolbar, Fig. 65.
**M. Create Plane4 at 3.8.**

Step 1. Click **Front Plane** in the Feature Manager to display plane in graphics area, **Fig. 66**.

Step 2. **Ctrl drag Front Plane** in the graphics area towards rear of fuselage (right) and release, **Fig. 67**.

Step 3. In the Plane Property Manager set:
under First Reference, **Fig. 68**

```
Distance 3.8

and press ENTER.
```

The new plane should be to the rear, **Fig. 67**, if in wrong direction, check Flip offset.

Click **OK**.

**N. Air Intake Surface Loft2 Profile Sketch7 in Plane4.**

Step 1. **Hide Plane4**. To hide, for **Plane4** in the Display Pane under Hide/Show column click **Show** to turn off show, **Fig. 69**.

Step 2. Click **Plane4** in the Feature Manager and click **Sketch** on the Context toolbar, **Fig. 69**.

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

Step 4. Click **Centerline** in the Line flyout on the Sketch toolbar.

Step 5. Draw a **vertical centerline down from Origin**, **Fig. 70**.
Step 6. Click **Centerpoint Arc** in the Arc flyout on the Sketch toolbar.

Step 7. Draw centerpoint arc at centerline and out to right from bottom endpoint of centerline, Fig. 71.

Step 8. Click **Line** (L) on the Sketch toolbar.

Step 9. Draw two lines from right endpoint of arc up and over to centerline, Fig. 72.

Step 10. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 11. Add dimensions, Fig. 73. Dimension the .4 between the centerline and line, not the endpoints.

Step 12. Click **Sketch Fillet** on the Sketch toolbar.

Step 13. In the Sketch Fillet Property Manager set:
   under Fillet Parameters, Fig. 74
   **Radius** .1
   click both endpoints of vertical line, Fig. 75
   click OK twice.

Step 14. Click **Exit Sketch** on the Sketch toolbar.

Step 15. Save. Use Ctrl-S.
O. Air Intake Profile Sketch8 in Top Plane.

Step 1. Click Top Plane in the Feature Manager and click Sketch on the Context toolbar, Fig. 77.

Step 2. Click Normal To on the Standard Views toolbar. (Ctrl-8)

Step 3. Click 3 Point Arc (S) in the Arc flyout on the Sketch toolbar.

Step 4. Draw an arc starting from edge of surface. To draw arc, click Point 1 for start point on edge of loft surface and Point 2 for ending point, then Point 3 for third point, Fig. 78. Keep centerpoint of arc away from edge of loft to avoid creating relation.

Step 5. Click Smart Dimension (S) on the Sketch toolbar.

Step 6. Dimension arc, Fig. 79. Try dimensioning in this order, .5, R.63 and 5.8 last.

Step 7. Click Tangent Arc in the Arc flyout on the Sketch toolbar.

Step 8. Draw arc from endpoint of arc, Fig. 80. Keep top endpoint of arc away from fuselage as you don’t want any relations.
Step 9. Draw 2nd arc from endpoint of arc from endpoint of arc to edge of loft surface, Fig. 81.

Step 10. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 11. Dimension arcs, Fig. 82. If you have issues, try this order, .35, 2.66, R.32 and R10.2 last.

Step 12. Click **Exit Sketch** on the Sketch toolbar.

Step 13. Save. Use **Ctrl-S**.

**P. Air Intake Guide Curve Sketch9 in Right Plane.**

Step 1. **Hide both Surface bodies** (fuselage and cockpit). To hide, expand Surface Bodies folder in the Feature Manager. In the Display Pane under Hide/Show column for **Surface-Trim1** and **Boundary-Surface1** click **Show** to turn off show, Fig. 83.

Step 2. Click **Right Plane** in the Feature Manager and click **Sketch** on the Context toolbar, Fig. 83.

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

Step 4. Click **Style Spline** in the Spline flyout on the Sketch toolbar.

Step 5. Draw a 3 control vertex point Spline from top of Sketch7 (profile sketch) and left side of Sketch8 (profile sketch), Fig. 84. Press Escape to end spline.
Step 6. Click **bottom control polygon segment** and click **Make Horizontal** on the Context toolbar, Fig. 85.

Step 7. Click **Smart Dimension** on the Sketch toolbar.

Step 8. Dimension control vertex point .94, Fig. 86.

Step 9. **Right click graphics area and click Select** from menu to unselect Smart dimension.

Step 10. Rotate view slightly to see both profile sketches, hold down middle mouse button (wheel) and drag, Fig. 87.

Step 11. **Ctrl click left endpoint of Spline and top line in Sketch7 (profile sketch) to select both**, Fig. 87. **Release Ctrl key and click Make Pierce** on the Context toolbar.

Step 12. **Ctrl click right endpoint of Spline and first arc in Sketch8 (profile sketch) to select both**, Fig. 88. **Release Ctrl key and click Make Pierce** on the Context toolbar.

Step 13. Click **Exit Sketch** on the Sketch toolbar.
Q. Air Intake Guide Curve Sketch 10 in Right Plane.

Step 1. Click **Right Plane** in the Feature Manager and click **Sketch** on the Context toolbar, Fig. 90.

Step 2. Click **Style Spline** in the **Spline flyout** on the Sketch toolbar.

Step 3. Draw a 3 control vertex point Spline from bottom of Sketch 7 (profile sketch) and right end of Sketch 8 (profile sketch), Fig. 91. Press Escape to end spline.

Step 4. Click **Smart Dimension** on the Sketch toolbar.

Step 5. Dimension control vertex point .2 and 2, Fig. 92.
Step 6. **Right click graphics area and click Select** from menu to unselect Smart dimension.

Step 7. **Ctrl click left endpoint of Spline and arc in Sketch7 (profile sketch)** to select both, Fig. 93. Release Ctrl key and click **Make Pierce** on the Context toolbar.

Step 8. **Ctrl click right endpoint of Spline and arc in Sketch8 (profile sketch)** to select both, Fig. 94. Release Ctrl key and click **Make Pierce** on the Context toolbar.

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

Step 10. Save. Use **Ctrl-S**.
**R. Air Intake Surface Loft2.**

Step 1. Click **Surfaces** on the Command Manager toolbar.

Step 2. Click **Lofted Surface** on the Surfaces toolbar.

Step 3. In the Surface-Loft Property Manager set:
- if necessary, cancel Selection Manager under Profiles, **Fig. 96**
- click line in **Sketch7, Fig. 97**
- click arc in **Sketch8**
- expand Start/End constraints
  - Start constraint **Normal To Profile**
  - Start Tangent Length **1.5**
- under Guide Curves
  - click in **Guide Curves box**
  - select **Sketches 9 and 10**
  - Guide curves influence type **Global**
- click OK.

Step 4. Save. Use **Ctrl-S**.
S. Surface Trim2 Mutual.

Step 1. **Show both Surface bodies** (fuselage and cockpit). To show, expand Surface Bodies folder in the Feature Manager. In the Display Pane under Hide/Show column for Surface-Trim1 and Boundary-Surface1 click Hide to turn off hide, Fig. 99. Keep Surface-Extrude1 hidden.

Step 2. Click **Trim Surface** on the Surfaces toolbar.

Step 3. In the Trim Surface Property Manager:
- under Trim Type, Fig. 100 select **Mutual**
- under Selections in the Trimming Surfaces box, click the **Fuselage and air intake surfaces**, Fig. 101 select **Keep selections**
  - click in Pieces to Keep box
  - click **both sections of the Fuselage and the air intake**, Fig. 102

  click OK.

Fig. 99

Fig. 100

Fig. 101

Fig. 102

Fig. 103
**T. Surface Trim3 Air Intake Nose.**

Step 1. Click **Right Plane** in the Feature Manager and click **Sketch** on the Context toolbar, *Fig. 104*.

Step 2. Click **Normal To** on the Standard Views toolbar. *(Ctrl-8)*

Step 3. Click **Line** *(L)* on the Sketch toolbar.

Step 4. Draw **line** at angle below the air intake, *Fig. 105*.

Step 5. Click **Smart Dimension** *(S)* on the Sketch toolbar.

Step 6. Add dimension, *Fig. 106*. 

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Step 7. Click **Surfaces** on the Command Manager toolbar.

Step 8. Click **Trim Surface** on the Surfaces toolbar.

Step 9. In the Trim Surface Property Manager set:
   - under Trim Type, Fig. 107 select **Standard**
   - under Selections Trim Tool:
     - click **Sketch11**, Fig. 108
     - select **Remove selections**
     - click in Pieces to Remove box
     - click **front section of air intake**
   - click OK.

Step 10. Save. Use **Ctrl-S**.
U. Mirror.

Step 1. Rotate view slightly to view front, hold down middle mouse button (wheel) and drag to rotate view, Fig. 112.

Step 2. Click Right Plane in the Feature Manager to select plane, Fig. 110.

Step 3. Click Features on the Command Manager toolbar.

Step 4. Click Mirror on the Features toolbar.

Step 5. In the Mirror Property Manager set: expand Bodies to Mirror, Fig. 111 click the two surfaces, Fig. 112 click OK.

V. Planar Surfaces.

Step 1. Click Surfaces on the Command Manager toolbar.

Step 2. Click Planar Surface on the Surfaces toolbar.

Step 3. In the Planar Surface Property Manager set: under Bounding Entities, Fig. 113 click the two edges at nose of fuselage, Fig. 114 click Keep Visible and OK.

click two the edges at front of air intake, Fig. 116 click OK - don’t cancel.
Step 4. Rotate view to view **rear**, hold down middle mouse button (wheel) and drag to rotate view, **Fig. 118**

Step 5. Still in the Planar Surface Property Manager set:  
under Bounding Entities, **Fig. 117**  
click **two the edges at rear of fuselage**, **Fig. 118**  
click OK ✓ and Cancel ❌.

Step 6. Save. Use Ctrl-S.

**W. Knit.**

Step 1. Click **Knit Surface** on the Surfaces toolbar.  

Step 2. In the Knit Surface Property Manager:  
under Selections, **Fig. 119**  
Expand the flyout Feature Manager design tree in the top left corner of the graphics area, then expand Surface Bodies folder and click **all the Surfaces** except the hidden Surface-Extrude1, **Fig. 120 and Fig. 121**.  
check **Try to form solid**  
check **Merge entities**  
click OK ✓.  
Note: After Knit there is one Solid body in the Solid Bodies folder.
X. Motor Hole.

Step 1. Click **Previous View** on the Standard Views toolbar (**Ctrl-Shift-Z**) to return to previous view, *Fig. 123*.

Step 2. Click **Front Plane** in the Feature Manager and click **Sketch** on the Context toolbar, *Fig. 122*.

Step 3. Click **Circle** (S) on the Sketch toolbar.

Step 4. Draw circle for the hole starting at the **Origin**, *Fig. 123*.

Step 5. Click **Smart Dimension** on the Sketch toolbar.

Step 6. Dimension diameter .93, *Fig. 123*.

Step 7. Click **Features** on the Command Manager toolbar.

Step 8. Click **Extruded Boss/Base** on the Features toolbar.

Step 9. In the Property Manager set:
- under Direction 1, *Fig. 124*
  - **Depth** 1.2
  - click **OK**.

Step 10. Save. Use **Ctrl-S**.
**Y. Fillets.**

Step 1. Click **Fillet** on the Features toolbar.

Step 2. In the Fillet Property Manager:
- select **FilletXpert**, Fig. 127
- **Radius** 0.08
- click **Apply**.

*Fig. 127*

Step 3. Set **Radius** 0.03, Fig. 129
- click **Apply**.

*Fig. 129*

Step 4. Save. Use **Ctrl-S**.

*Fig. 130*

*Fig. 131*
Z. Create Sketch13 Wing Mate.

Step 1. Click **Top Plane** in the Feature Manager and click **Sketch** on the Context toolbar, Fig. 132.

Step 2. Click **Normal To** on the Standard Views toolbar. (Ctrl-8)

Step 3. Click **Line** (L) on the Sketch toolbar.

Step 4. Draw horizontal line across above **Origin**, Fig. 133.

Step 5. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 6. Dimension line length .5 and 1.85 from **Origin**, Fig. 134.

Step 7. Click **Exit Sketch** on the Sketch toolbar.

AA. Create Sketch14 Landing Gear Mate.

Step 1. Click **Right Plane** in the Feature Manager and click **Sketch** on the Context toolbar, Fig. 135.

Step 2. Click **Normal To** on the Standard Views toolbar. (Ctrl-8)

Step 3. Click **Circle** (S) on the Sketch toolbar.

Step 4. Draw a **circle** below the fuselage, Fig. 136.
Step 5. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 6. Dimension circle, **Fig. 137**.

Step 7. Click **Exit Sketch** on the Sketch toolbar.

Step 8. Save. Use Ctrl-S.

**BB. Material PS HI (Polystyrene).**

Step 1. Right click **Material** in the Feature Manager and click **Edit Material**, **Fig. 138**.

Step 2. Expand **Plastics** (click the +) in the material tree and select **PS HI**. Click **Apply** and **Close**, **Fig. 139**.

![Material selection in SOLIDWORKS](image)
**CC. Appearance Color.**

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

Step 2. Click PhotoView 360 Menu > Edit Appearance.

Step 3. In the Appearances Property Manager under Color, [Fig. 141](#)

   - set **RGB values**
     - R 103
     - G 174
     - B 255
   - click OK

Step 4. Save. Use Ctrl-S.