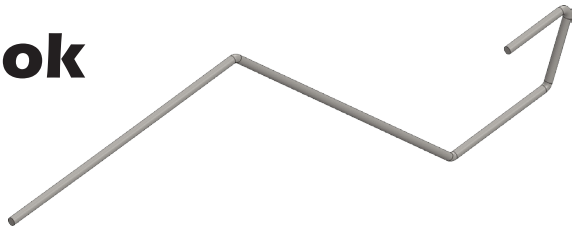
P-51

Tail Hook



A. New Component Part.

Step 1. Open your **P51 ASSEMBLY** file.

Step 2. Click Insert Menu > Component > New Part.

Step 3. Click **Front Plane** in the Feature Manager, **Fig. 1**.

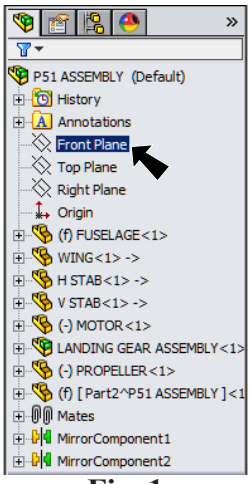
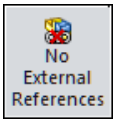


Fig. 1

Step 4. Confirm **No External References** 

on the Sketch toolbar **should not be on** (button should not be depressed).

Step 5. Click **Exit Sketch** 

on the Sketch toolbar.

B. Save as "TAIL HOOK".

Step 1. Click File Menu > Save As.

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

C. Path Sketch.

Step 1. **Expand Tail Hook** part in the Feature Manager, click **Right Plane** and click **Sketch** on the Context toolbar, **Fig. 2**.

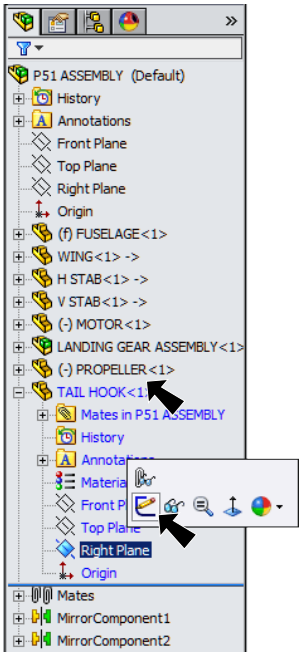


Fig. 2

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

Step 3. Zoom in around the **rear of Fuselage**, **Fig. 3**. To zoom, place the cursor over the rear and spin the wheel on mouse back. While spinning the wheel keep cursor on rear.

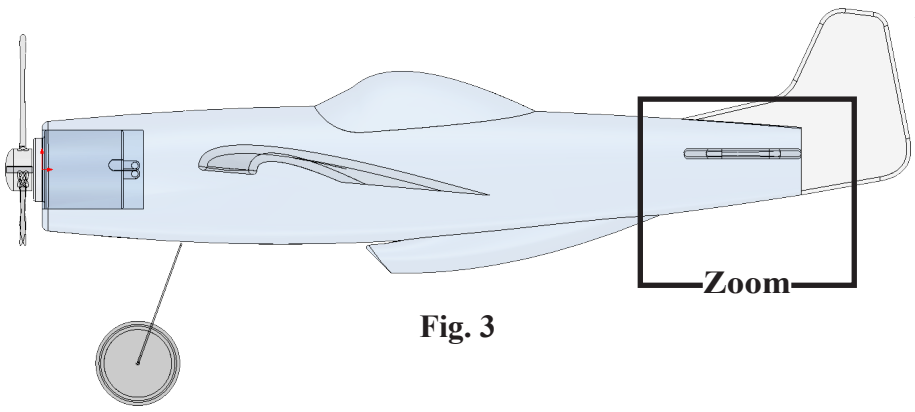


Fig. 3

Step 4. Click **Offset Entities** 

on the Sketch toolbar.

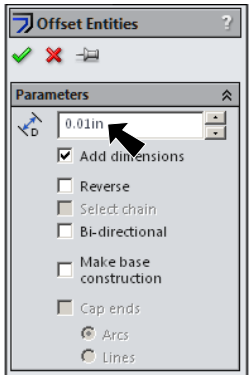


Fig. 4

Step 5. In the Offset Entities Property Manager set:
under Parameters, **Fig. 4**

Distance  **.01**
click the bottom edge of Fuselage behind the air intake, **Fig. 5**
uncheck **Reverse**.
The yellow offset should be **below edge**.
If it is not, check Reverse.
Click OK  .

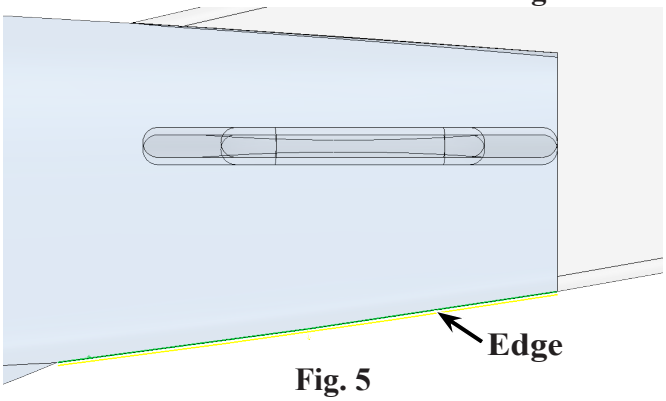


Fig. 5

Step 6. Click the **offset spline** and click **Construction Geometry**  on Context toolbar, **Fig. 6**.

Step 7. Click **Centerline**  **(S)** in the **Line flyout**  on the Sketch toolbar.

Step 8. Draw **vertical centerline down from offset entity**, **Fig. 7**.

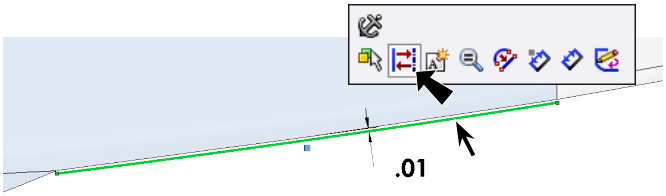
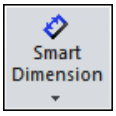


Fig. 6

Step 9. Click **Smart Dimension** 

(S) on the Sketch toolbar.

Step 10. Dimension left endpoint of offset to vertical construction line **.7**, **Fig. 8**.

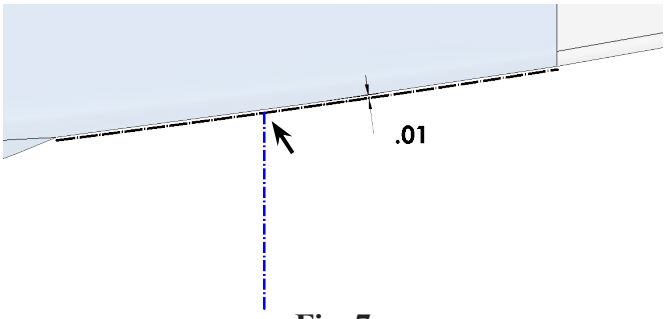


Fig. 7

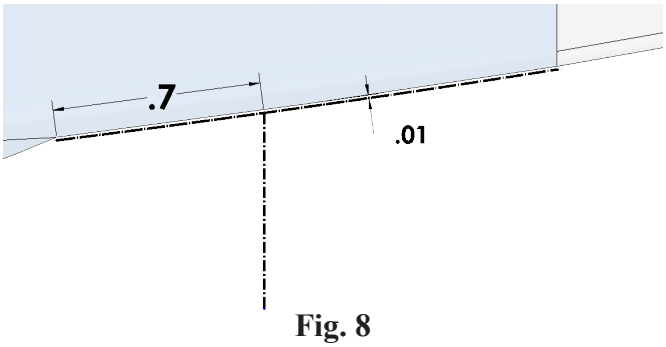


Fig. 8

Step 11. Click **3 Point Arc** (S) in the **Arc flyout** on the Sketch toolbar.

Step 12. Draw an **arc starting from left end-point of offset entity to top endpoint of vertical construction line**. To draw arc, click Point 1 for start point and Point 2 for ending point, then Point 3 for third point, **Fig. 9**.

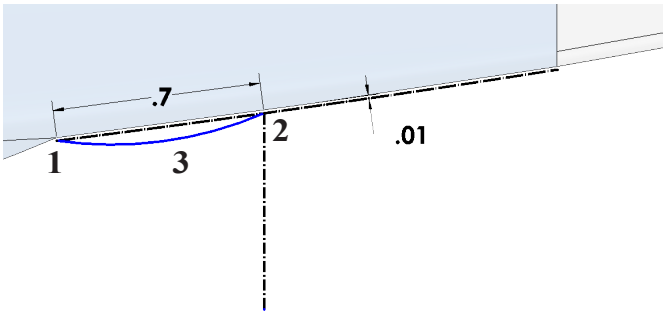


Fig. 9

Step 13. **Right click graphics area and click Select** from menu to unselect Arc tool.

Step 14. **Ctrl click arc and offset spline** to select both. Release Ctrl key and click **Make Tangent** on the Context toolbar, **Fig. 10**.

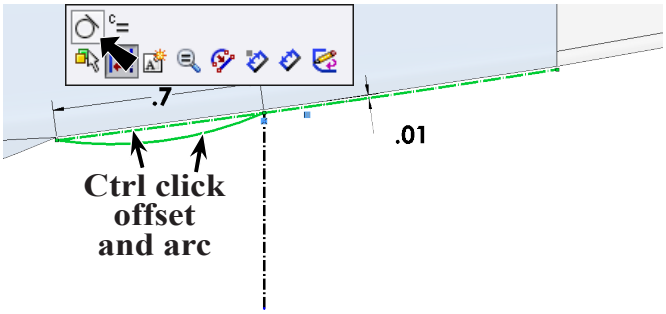


Fig. 10

Step 15. Click **Line** (L) on the Sketch toolbar.

Step 16. Draw **4 lines**, **Fig. 11**. Do not allow any relations, such as horizontal, vertical perpendicular.

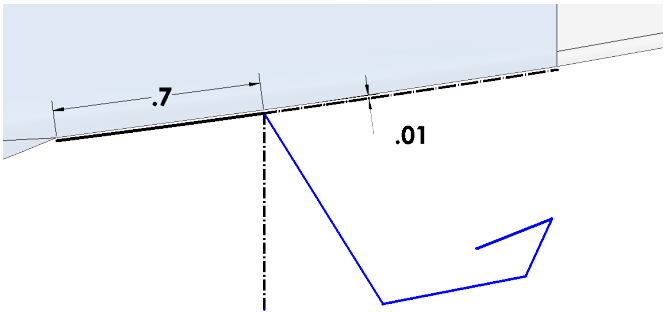


Fig. 11

Step 17. **Right click graphics area and click Select** from menu to unselect Line tool.

Step 18. **Ctrl click the two lines shown in Fig. 12** to select both. Release Ctrl key and click **Make Parallel** on the Context toolbar.

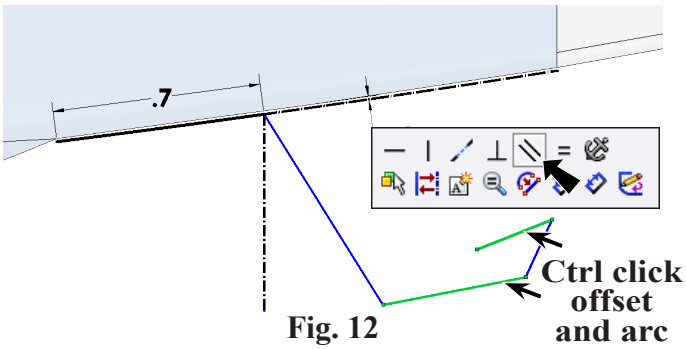


Fig. 12

Step 19. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 20. Add dimensions, **Fig. 13**.

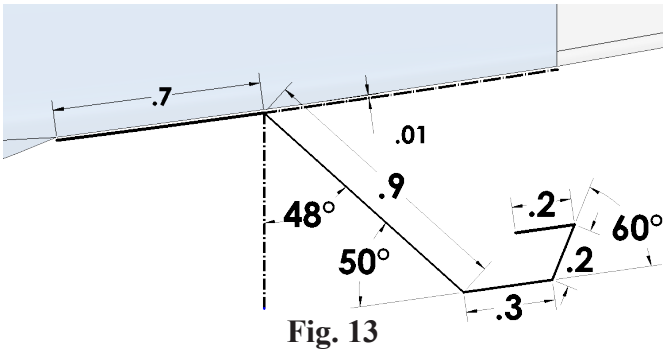


Fig. 13

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

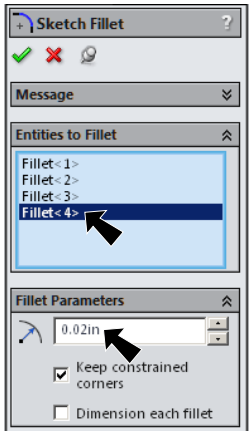


Fig. 14

Step 22. In the Sketch Fillet Property Manager set:
under Fillet Parameters, **Fig. 14**
Radius .02
click the **4 corners**, **Fig. 15**
click OK **twice** .

Step 23. Click **Exit Sketch** on the Sketch toolbar.

Step 24. Save. Use **Ctrl-S**.

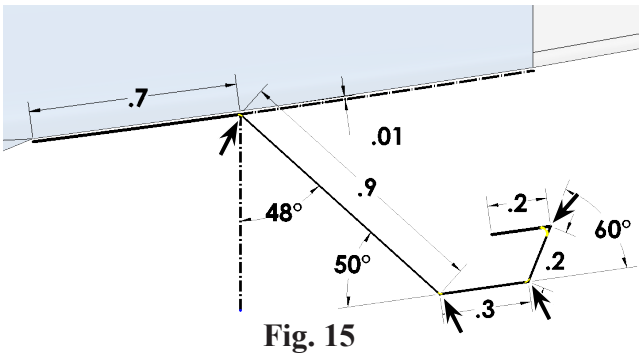


Fig. 15

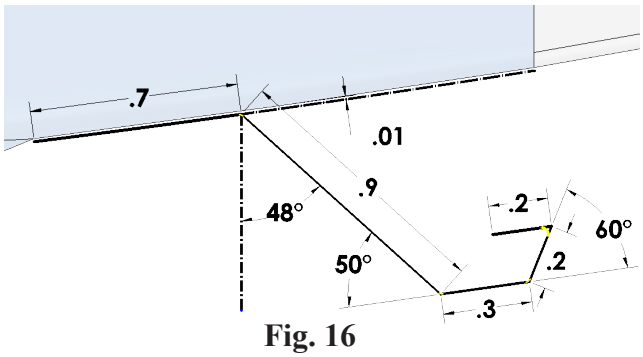


Fig. 16

D. Profile 3D Sketch.

Step 1. Rotate view to view **slightly**, **Fig. 17**. To rotate, hold down middle mouse button (wheel) and drag.

Step 2. Click **3D Sketch** 3D Sketch in the **Sketch flyout** Sketch on the Sketch toolbar.

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

Step 4. The sketch plane should be **XY** XY. If necessary, use the Tab key to change.

Step 5. Draw a **circle top endpoint of line**, **Fig. 17**.

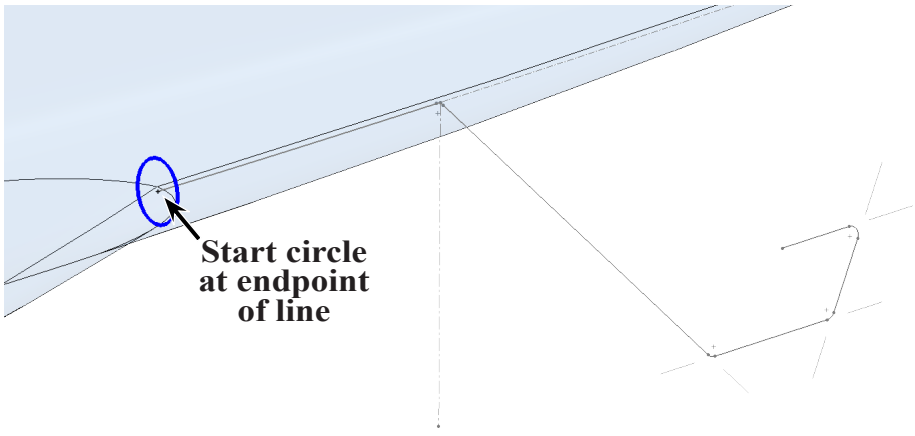


Fig. 17

Step 6. Click **Smart Dimension** (**S**) on the Sketch toolbar.

Step 7. Dimension **circle .02** diameter, **Fig. 18**.

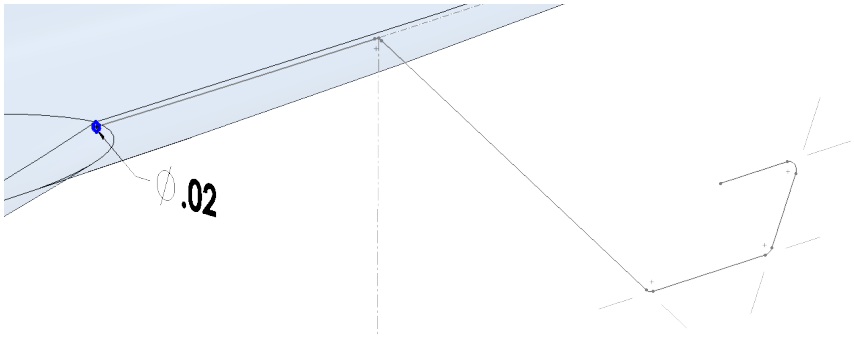


Fig. 18

Step 8. Exit the **3D Sketch.** To Exit, click **Exit 3D Sketch** in top right corner of graphics area.

E. Sweep.

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

Step 2. Click **Swept Boss/Base** on the Features toolbar.

Step 3. In the Swept Boss/Base Property Manager:
under Profile and Path, **Fig. 19**

Profile click **circle**, **Fig. 20**

Path click any geometry in **Sketch2**

click OK .

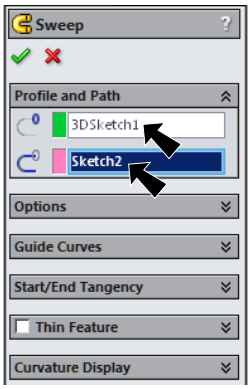


Fig. 19

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

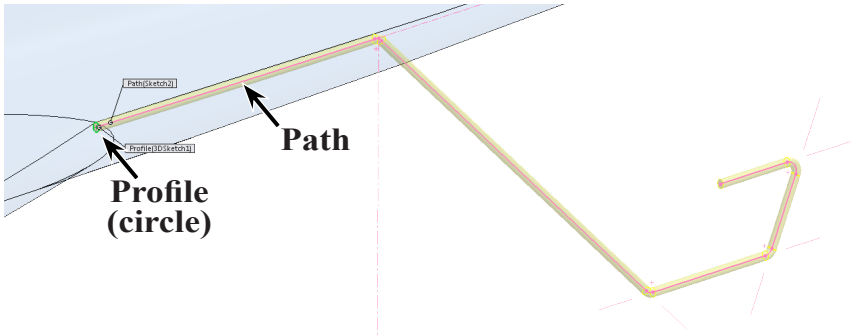


Fig. 20

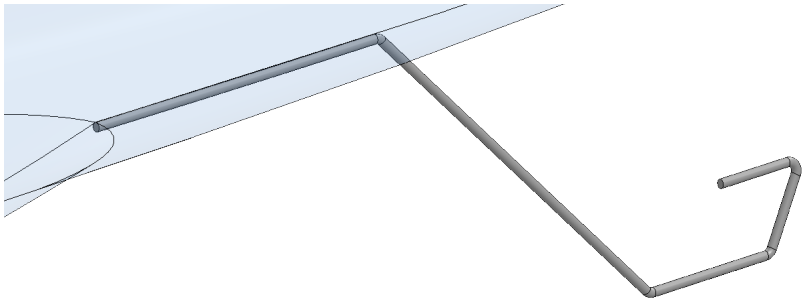


Fig. 21

F. Material Steel 304.

Step 1. **Right click Material** in the Feature Manager and click **Edit Material**, **Fig. 22**.

Step 2. Expand **Steel** in the material tree and select **Steel AISI 304**. Click **Apply** and **Close**.

Step 3. Save. Use **Ctrl-S**.

Step 4. Click **Edit Component** on the Features toolbar to return to editing the assembly.

Step 5. Save. Use **Ctrl-S**.

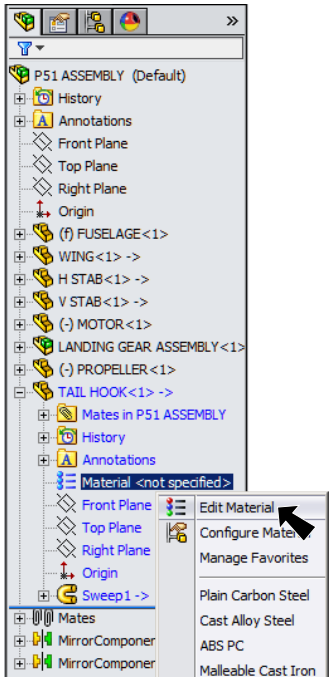


Fig. 22