

Airplane Tail Hook



A. Sketch Sweep Path.

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

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

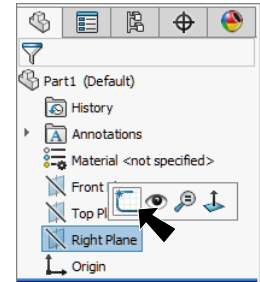


Fig. 1

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



Step 4. Starting at the Origin sketch the 5 lines, **Fig. 2**.

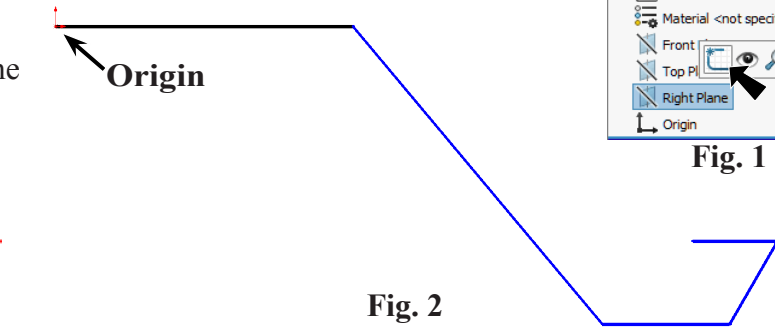


Fig. 2

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



Step 6. Add dimensions, **Fig. 3**.

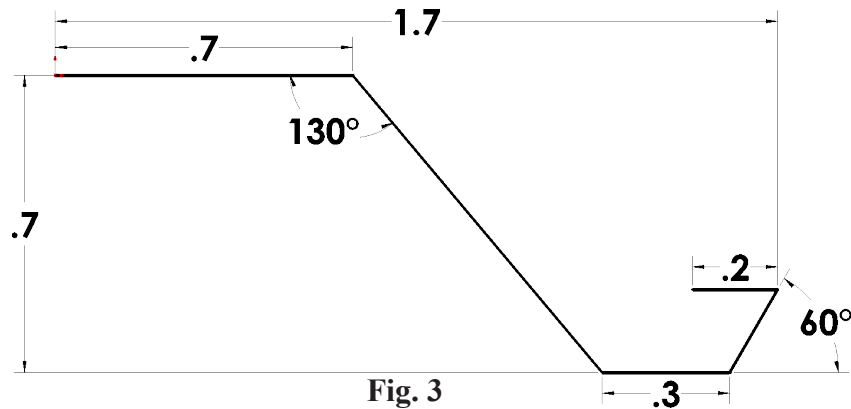


Fig. 3

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



Step 8. In the Sketch Fillet Property Manager set: under Fillet Parameters, **Fig. 4**

Radius .02

click each bend in wire, the **4 corners**, **Fig. 5**

click OK twice.

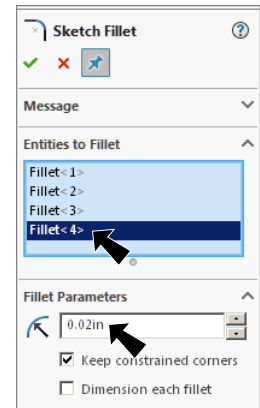


Fig. 4

B. Save as "TAIL HOOK".

Step 1. Click File Menu > Save As.

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

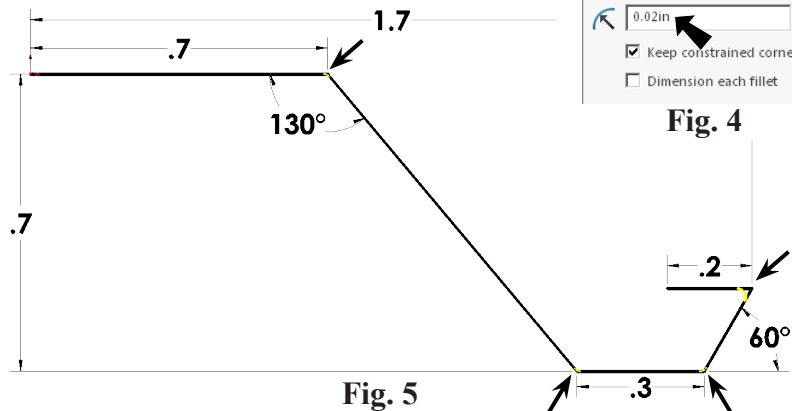








Fig. 5

C. Sweep.

- Step 1. Click **Isometric**  on the Standard Views toolbar. (**Ctrl-7**)
- Step 2. Click **Features**  on the Command Manager toolbar.
- Step 3. Click **Swept Boss/Base**  on the Features toolbar.
- Step 4. In the Swept Boss/Base Property Manager:
 - under Profile and Path, **Fig. 6**
 - select **Circular Profile**
 - Diameter**  **.02**
 - Path**  click any geometry
 - click OK .

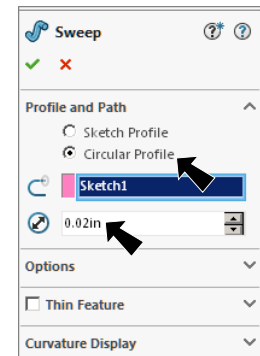


Fig. 6

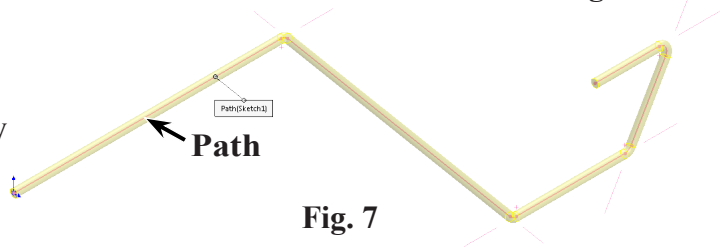



Fig. 7

D. Material Steel 304.

- Step 1. **Right click Material**  in the Feature Manager and click **Edit Material**.
- Step 2. Expand **Steel** in the material tree and select **Steel AISI 304**. Click **Apply** and **Close**.
- Step 3. Save. Use **Ctrl-S**.

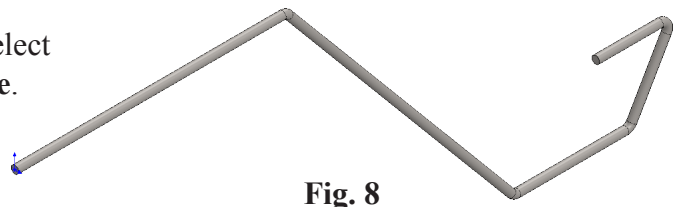
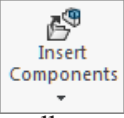


Fig. 8

E. Insert Tail Hook into Assembly.

- Step 1. Open your ASSEMBLY file.
- Step 2. Rotate view to view **bottom of Fuselage**, **Fig. 9**. Hold down middle mouse button (wheel) and drag.
- Step 3. Click **Insert Components**  on the Assembly toolbar.
- Step 4. **Browse** and place **TAIL HOOK** as positioned in **Fig. 9**.

- Step 5. Zoom in around the **Tail Hook and rear of Fuselage**, **Fig. 9**. To zoom, place the cursor over rear of Fuselage at Elevator and spin the wheel on mouse back. While spinning the wheel keep cursor on rear of Fuselage.

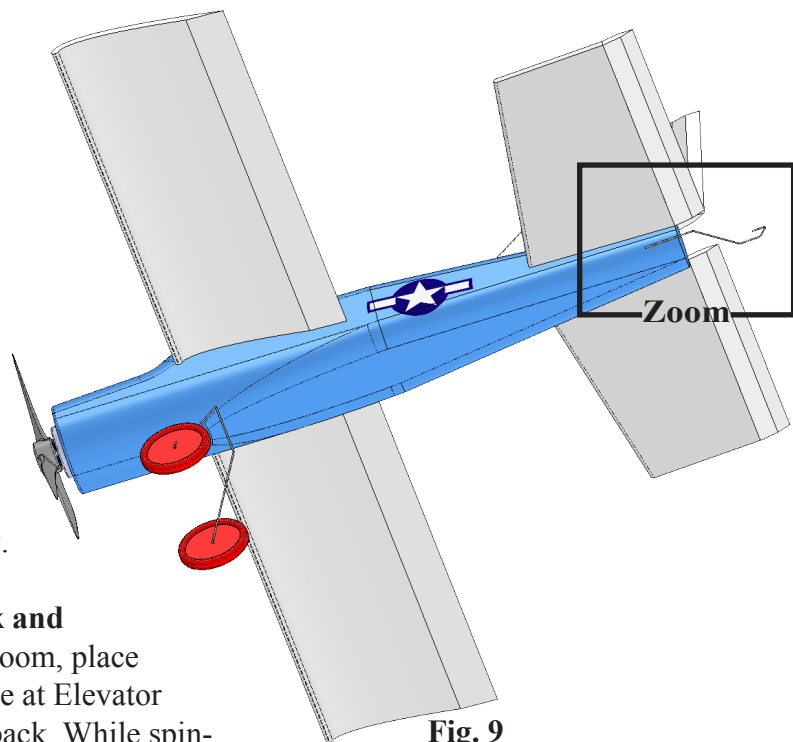




Fig. 9

F. Mate: Tail Hook.


Step 1. Click **Mate**  on the Assembly toolbar.

Step 2. Expand the flyout Feature Manager design tree in the top left corner of the graphics area and click **Right Plane** , **Fig. 10**.

Step 3. Expand **TAIL HOOK** and click **Right Plane** , **Fig. 10** and **Fig. 11**.

Step 4. Click Add/Finish Mate  in Mate pop-up toolbar to add a **Coincident** mate.


Step 5. Click the **top cylindrical horizontal face of Tail Hook** and **bottom face of Fuselage**, **Fig. 12**. **DO NOT CLICK OK.**


Step 6. Click **Right**  on the View toolbar. (**Ctrl-4**)

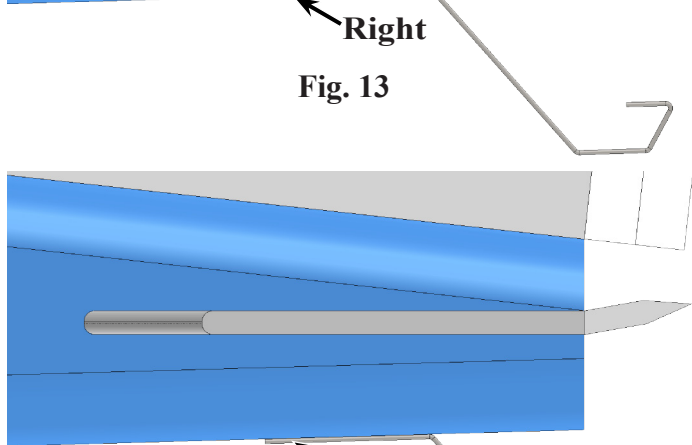
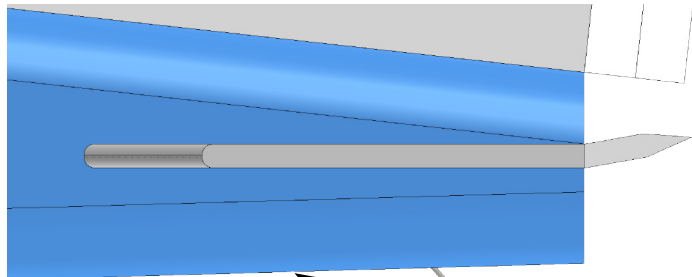
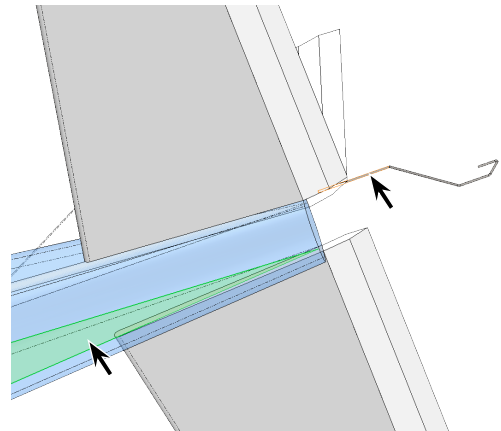
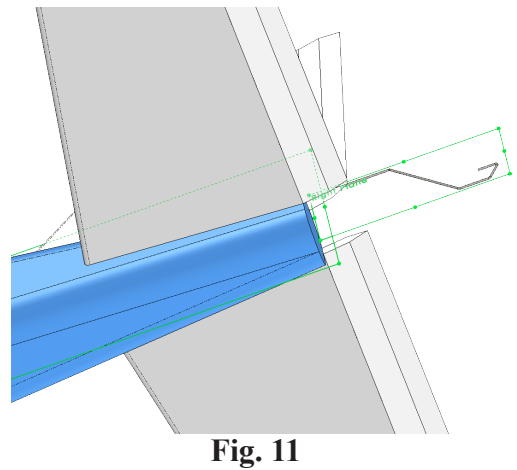
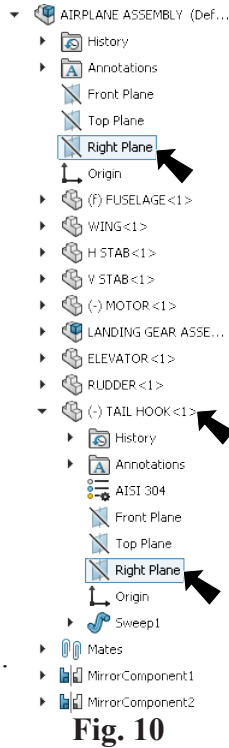
Step 7. Zoom in around the **Tail Hook and rear of Fuselage**, **Fig. 13**.

Step 8. Slide the Wire Hook onto the Fuselage, **Fig. 13**.


Step 9. The Tail Hook should be **inside bottom of Fuselage**, **Fig. 13** If in opposite direction, click **Flip Mate**

Alignment  in the Mate pop-up, **Fig. 15**. If Tail Hook is outside Fuselage, Flow Sim will not detect fluid volume and rebuild error will occur.

Step 10. Click Add/Finish Mate  to add the **Tangent** mate.



Step 11. Click **bottom Vertex of Fuselage** and **cylindrical face of rear section of Tail Hook**, Fig. 16.

Step 12. Click Add/Finish Mate  to add **Coincident** mate.

Step 13. Click OK  in the Property Manager.

Step 14. Save. Use **Ctrl-S**.

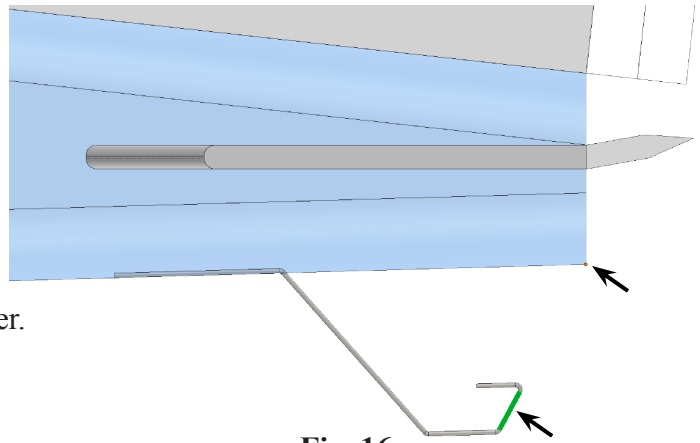


Fig. 16

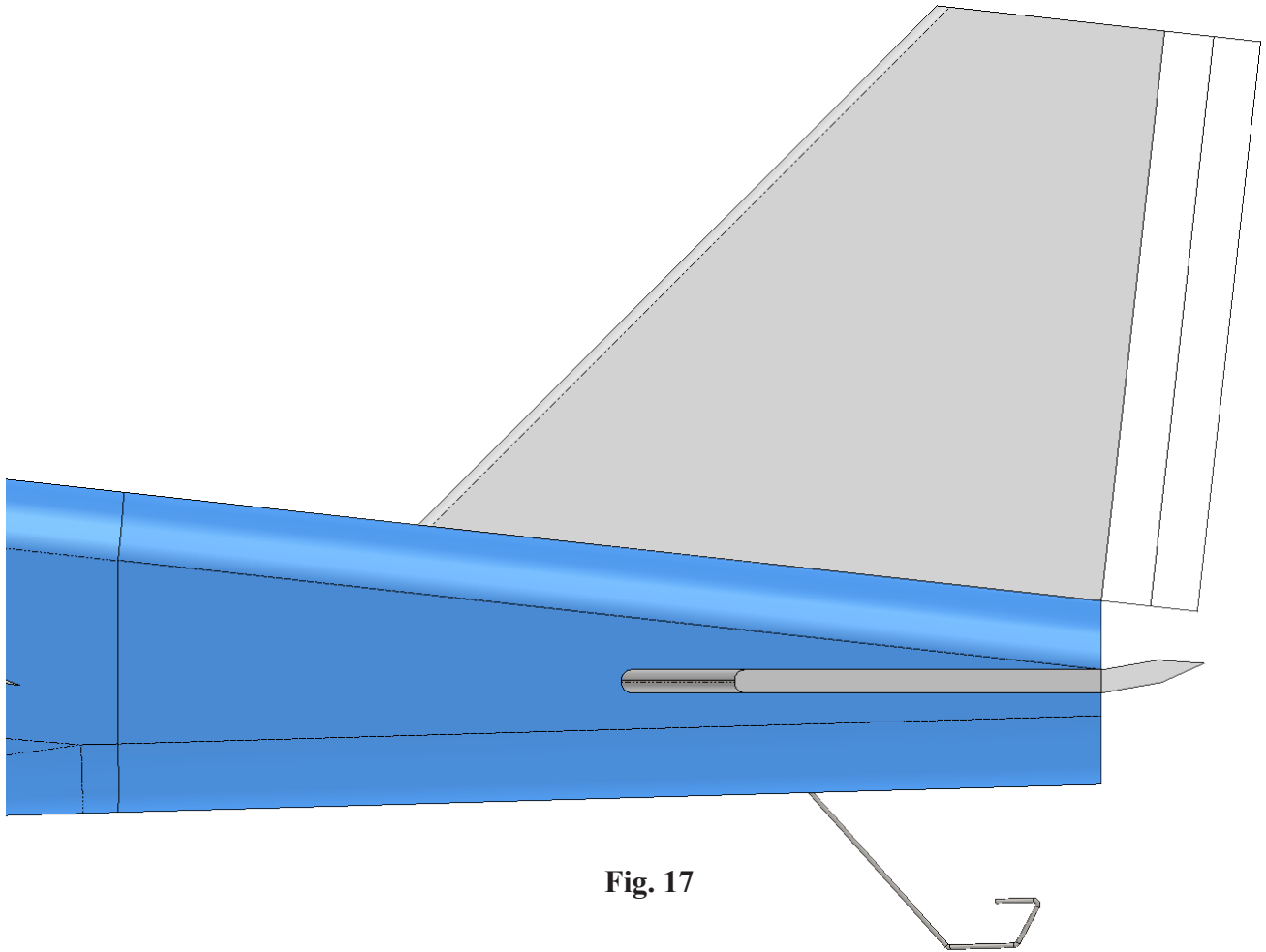


Fig. 17