Chapter 16

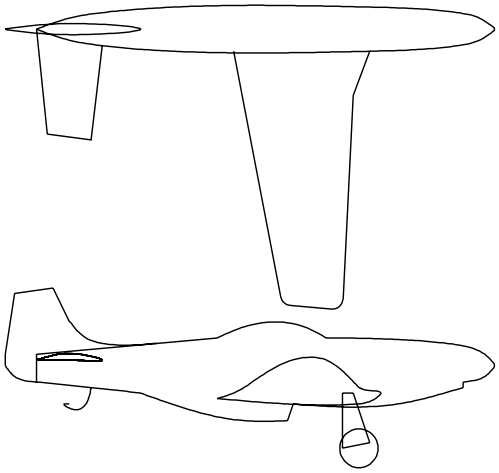
P-51 MUSTANG

A. OPEN B FILE.

Step 1. When you start a new drawing away start with the B file. If you started this drawing with the B file go directly to Steps B. If your did not start with the B file complete these Steps: Click **Open** from the File Menu. Click **No** to save current part. Key in **a:b** for the filename and press ENTER.

B. CREATE RECTANGLE FOR FUSELAGE IN SIDE VIEW.

Step 1. ESC to Main Menu.



Step 2. F1 CREATE.

Step 3. F1 LINE.

Step 4. F7 RECTANGLE.

Step 5. F2 WIDTH/HEIGHT.

Step 6. Key in **9** for width and press ENTER.

Step 7. Key in **1.8** for height and press ENTER.

Step 8. F9 KEY IN.

Step 9. Key in:
Zero (**0**) for coordinate X and press ENTER.
0 for Y and press ENTER.
0 for Z and press ENTER.

Step 10. ESC to Main Menu.

Step 11. Use **ALT-A** to center the rectangle on the screen. Hold down ALT and press A.

Step 12. At this time it is a good idea to save the drawing. Click **Save As** from the File Menu. Key **a:p51** filename and press ENTER. Press ESC for Part Description.

C. DRAW SPLINE FOR FUSELAGE IN SIDE VIEW.

Step 1. Draw the fuselage **yellow**. Change the color to yellow. Click the color swatch in the side Tool Bar. Find and click yellow, number 4.

Step 2. **Set the Snap to .1**. Use **CTRL-G**. Hold down CTRL and press G. Change the **Snap Properties Increment** to **X = .1 and Y = .1** Click OK.

Step 3. ESC to Main Menu.

Step 4. F1 CREATE.

Step 5. F9 SPLINE.

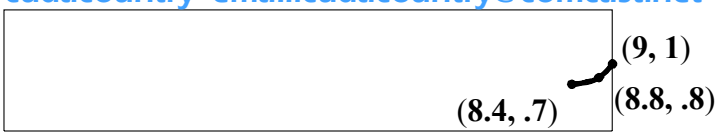


FIG. 1

Step 6. F2 3D CUBI.

Step 7. Move cursor to coordinates (**9, 1**), **Fig. 1** and click for start point. Use the Cursor Tracking Window located at the bottom of the display to view the coordinates.

Step 8. Move cursor to coordinates (**8.8, .8**) and click for the next point.

Step 9. Move cursor to coordinates (**8.4, .7**) and click for the next point.

Step 10. Press ENTER **three times** after all coordinates are located.

FIG. 2

Step 11. Use CTRL-R to clear temporary markers. Hold down CTRL and press R.

Step 12. Move cursor to coordinates (**8.4, .7**), **Fig. 2** and click for start point.

Step 13. Move cursor to coordinates (**8.4, .6**) and click for the next point.

Step 14. Press ENTER **three times** after all coordinates are located.

Step 15. Use CTRL-R to clear temporary markers. Hold down CTRL and press R.

Step 16. Continue drawing the splines in each **Fig.** Remember, click the points in **each** Fig., then press ENTER **three times.**

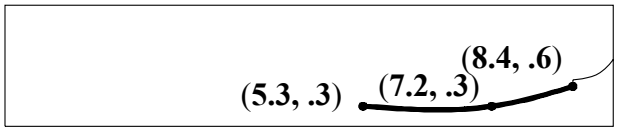


FIG. 3

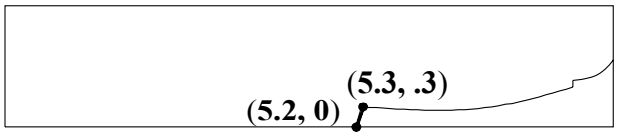


FIG. 4

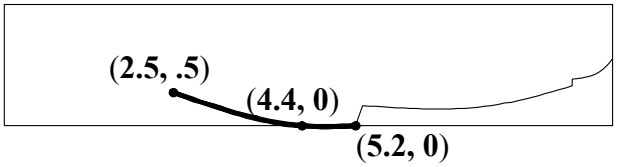


FIG. 5

D. DRAW LINES FOR FUSELAGE IN SIDE VIEW.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F1 LINE

Step 4. F2 STRING.

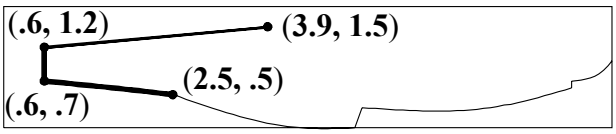


FIG. 6

Step 5. To indicate Start Point, move cursor to coordinates (**2.5, .5**) and click, **Fig. 6**.

Step 6. To indicate End Point, move cursor to coordinates (**.6, .7**) and click, **Fig. 6.**

Step 7. To indicate End Point, move cursor to coordinates (**.6, 1.2**) and click, **Fig. 6**.

Step 8. To indicate End Point, move cursor to coordinates (**3.9, 1.5**) and click, **Fig. 6**.

Step 9. F10 BACKUP to stop the line.

Step 10. Use CTRL-R to clear temporary markers. Hold down CTRL and press R.

Step 11. At this point is a good idea to save the drawing. Use **CTRL-S** to save.

E. FINISH SPLINES FOR FUSELAGE.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F9 SPLINE.

Step 4. F2 3D CUBI.

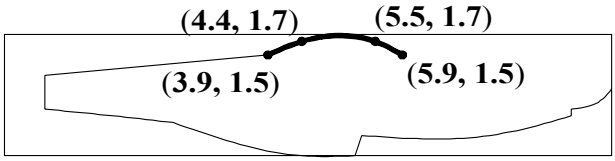


FIG. 7

Step 5. Continue drawing the splines in each **Fig.** Remember, click the points in **each Fig.** then press ENTER **three times**.

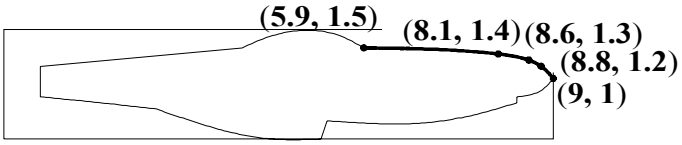


FIG. 8

Step 6. Use CTRL-R to clear temporary markers. Hold down CTRL and press R.

Step 7. Save the drawing. Use **CTRL-S** to save.

F. CREATE RECTANGLE FOR FUSELAGE IN TOP VIEW.

Step 1. Use **Alt-H** to reduce the drawing half size. Hold down ALT and press H.

Step 2. ESC to Main Menu.

Step 3. F1 CREATE.

Step 4. F1 LINE.

Step 5. F7 RECTANGLE.

Step 6. F2 WIDTH/HEIGHT.

Step 7. Key in **9** for width and press ENTER.

Step 8. Key in **1.2** for height and press ENTER.

Step 9. F9 KEY IN.

Step 10. Key in:
Zero (**0**) for coordinate X and press ENTER.
6.5 for Y and press ENTER.
0 for Z and press ENTER, **Fig. 9**.

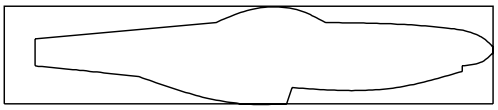


FIG. 9

Step 11. Use **ALT-A** to center the rectangle on the screen. Hold down ALT and press A.

G. DRAW SPLINE FOR FUSELAGE IN TOP VIEW.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F9 SPLINE.

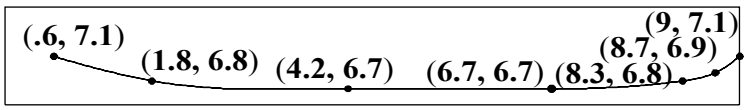


FIG. 10

Step 4. F2 3D CUBI.

Step 5. Draw the spline, **Fig. 10** for the fuselage in the Top View. Remember, click the points, then press ENTER **three times**.

Step 6. Save the drawing. Use **CTRL-S** to save.

H. MIRROR THE FUSELAGE.

Step 1. ESC to Main Menu.

Step 2. F4 X-FORM.

Step 3. F5 MIRROR.

Step 4. F2 COPY.

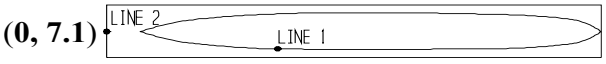


FIG. 11

Step 5. F1 SINGLE.

Step 6. Select the fuselage spline, Line 1, **Fig. 11**, with a click and press ENTER.

Step 7. F1 1 POINT HORIZONTAL.

Step 8. To indicate a position on the plane, click the center of Line 2, at **(0, 7.1)**, **Fig. 11**.

Step 9. Save the drawing. Use **CTRL-S** to save.

I. DRAW LINES FOR WING IN TOP VIEW.

Step 1. Draw the wing **green**. Change the color to green. Click the color swatch in the side Tool Bar. Find and click green, number 1.

Step 2. ESC to Main Menu.

Step 3. F1 CREATE.

Step 4. F1 LINE

Step 5. F2 STRING.

Step 6. Draw the string of lines, **Fig. 12** for the wing in the Top View. Remember F10 BACKUP to stop the line.

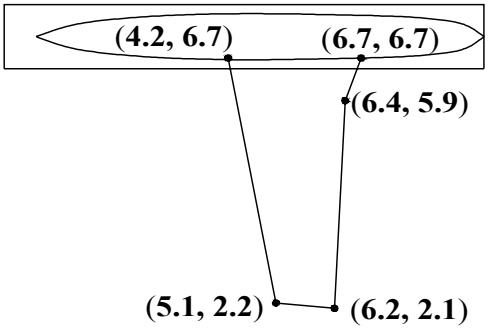


FIG. 12

Step 7. ESC to Main Menu.

J. ROUND WING CORNERS IN TOP VIEW.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F6 FILLET.

Step 4. F1 ARC.

Step 5. F1 TRIM.

Step 6. Key in **.2** for radius and press ENTER.

Step 7. Click Line 1, **Fig 13**, for 1st fillet entity. Click Line 2 for 2nd fillet entity.

Step 8. Click Line 3, **Fig 14**, for 1st fillet entity. Click Line 4 for 2nd fillet entity.

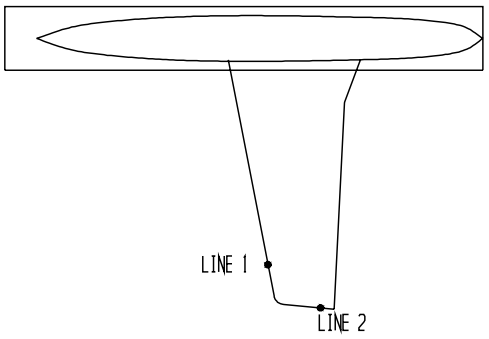


FIG. 13

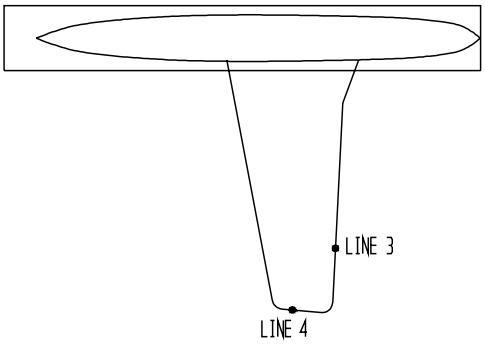


FIG. 14

K. DRAW SPLINE FOR WING IN SIDE VIEW.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F9 SPLINE.

Step 4. F2 3D CUBI.

Step 5. Draw the spline, **Fig. 15** for the wing of the Side View. Remember, click the points and press ENTER **three times**.

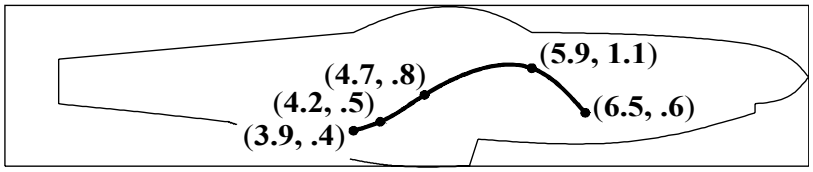


FIG. 15

Step 6. Draw a second spline, **Fig. 16** for the wing of the Side View. Remember, click the points then press ENTER **three times**.

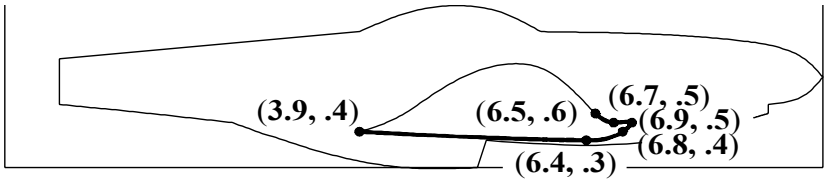


FIG. 16

L. DRAW HORIZONTAL STABILIZER IN TOP VIEW.

Step 1. Use **ALT-W** to zoom in on the back of the fuselage in the Top View. Hold down ALT and press W. Move the cursor to just above and to the left of the back of the fuselage, **Fig. 17**. Click to start 1ST WINDOW CORNER. Move the mouse to right and down the to window the stabilizer area. Click to set 2ND WINDOW CORNER.

Step 2. ESC to Main Menu.

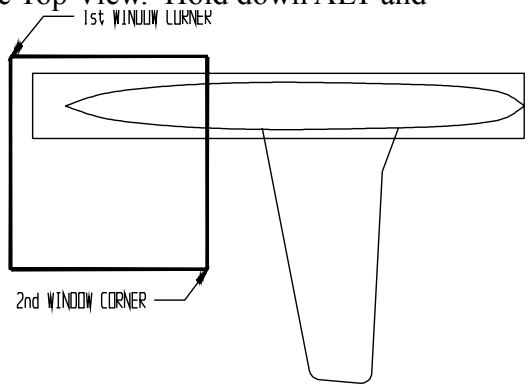


FIG. 17

Step 3. F1 CREATE.

Step 4. F1 LINE

Step 5. F2 STRING.

Step 6. Draw the string of lines, **Fig. 18** for the horizontal stabilizer in the Top View. Remember F10 BACKUP to stop the line.

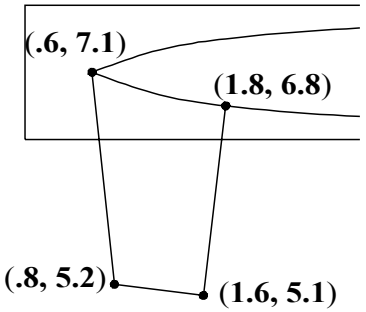


FIG. 18

M. ROUND H STAB CORNERS IN TOP VIEW.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F6 FILLET.

Step 4. F1 ARC.

Step 5. F1 TRIM.

Step 6. Key in **.15** for radius and press ENTER.

Step 7. Click Line 1, **Fig 19**, for 1st fillet entity. Click Line 2 for 2nd fillet entity.

Step 8. Click Line 3, **Fig 20**, for 1st fillet entity. Click Line 4 for 2nd fillet entity.

Step 9. Use **ALT-A** to center the drawing on the screen. Hold down ALT and press A.

Step 10. Save the drawing. Use **CTRL-S** to save.

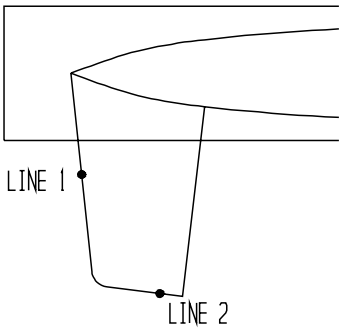


FIG. 19

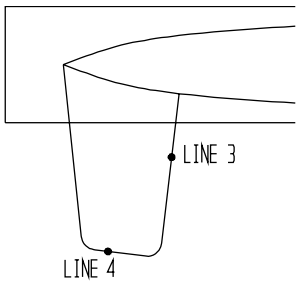


FIG. 20

N. DRAW SPLINES FOR H STAB IN SIDE VIEW.

Step 1. Use **ALT-W** to zoom in on the back of the fuselage in the Side View. Hold down ALT and press W. Move the cursor to just above and to the left of the back of the fuselage, **Fig. 21**. Click to start 1ST WINDOW CORNER. Move the mouse to right and down to window the stabilizer area. Click to set 2ND WINDOW CORNER.

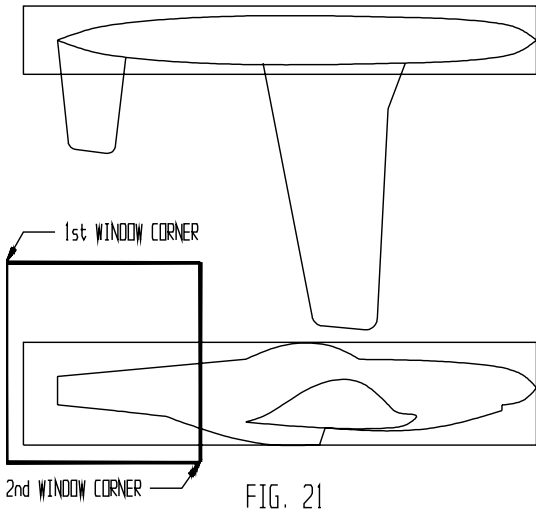


FIG. 21

Step 2. ESC to Main Menu.

Step 3. F1 CREATE.

Step 4. F9 SPLINE.

Step 5. F2 3D CUBI.

Step 6. Draw the spline, **Fig. 22** for the horizontal stabilizer in the Side View. Start the spline at point **(.6, 1.1)** and end at the same point. Remember, click the points and press ENTER **three times**.

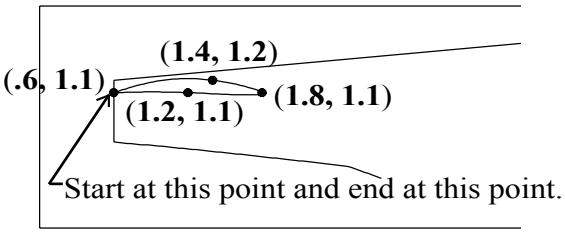


FIG. 22

O. DRAW SPLINES FOR VERTICAL STAB IN SIDE VIEW.

Step 1. Draw the vertical stabilizer **yellow**. Change the color to yellow. Click the color swatch in the side Tool Bar. Find and click yellow, number 4.

Step 2. ESC to Main Menu.

Step 3. F1 CREATE.

Step 4. F9 SPLINE.

Step 5. F2 3D CUBI.

Step 6. Draw the spline, **Fig. 23** for the vertical stabilizer in the Side View. Remember, click the points and press ENTER **three times**.

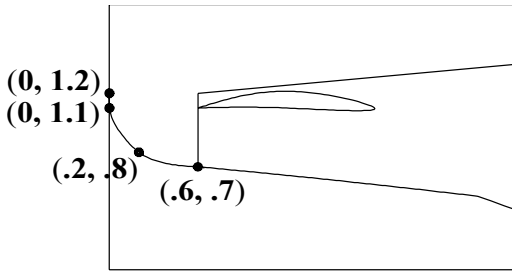


FIG. 23

Step 7. Draw a second spline, **Fig. 24** for the vertical stabilizer in the Side View. Remember, click the points and press ENTER **three times** .

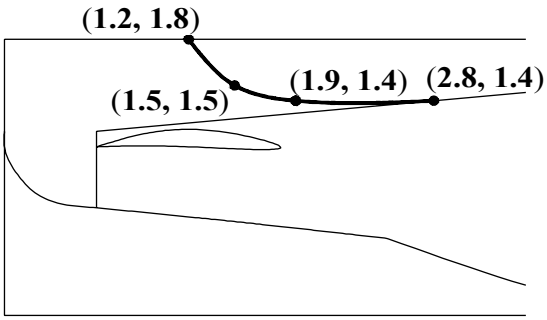


FIG. 24

P. DRAW LINES FOR VERTICAL STAB IN SIDE VIEW.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F1 LINE

Step 4. F2 STRING.

Step 5. Draw the string of lines, **Fig. 25** for the vertical stabilizer in the Side View. Remember F10 BACKUP to stop the line.

Step 6. Save the drawing. Use **CTRL-S**.

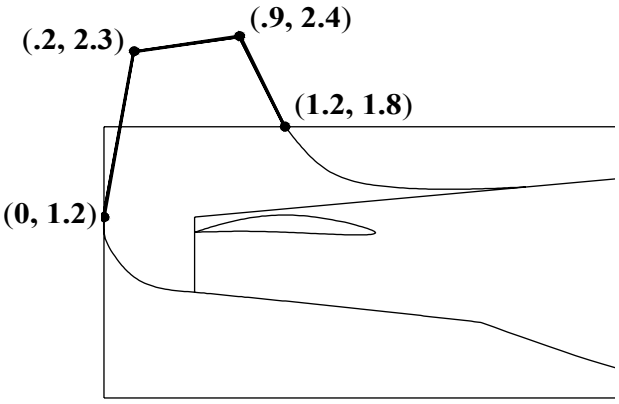


FIG. 25

Q. DRAW SPLINE FOR V STAB IN TOP VIEW.

Step 1. Use **ALT-A** to center the drawing.

Step 2. Use **ALT-W** to zoom in on the back of the fuselage in the Top View. Hold down ALT and press W. Move the cursor to just above and to the left of the back of the fuselage, **Fig. 26**. Click to start 1ST WINDOW CORNER. Move the mouse to right and down to window the stabilizer area. Click to set 2ND WINDOW CORNER.

Step 3. Draw the vertical stabilizer **green**. Change the color to green. Click the color swatch in the side Tool Bar. Find and click green, number 1.

Step 4. ESC to Main Menu.

Step 5. F1 CREATE.

Step 6. F9 SPLINE.

Step 7. F2 3D CUBI.

Step 8. Draw the spline, **Fig. 27** for the vertical stabilizer in the Top View. Start the spline at point **(0, 7.1)** and end at the same point. Remember, click the points and press ENTER **three times**.

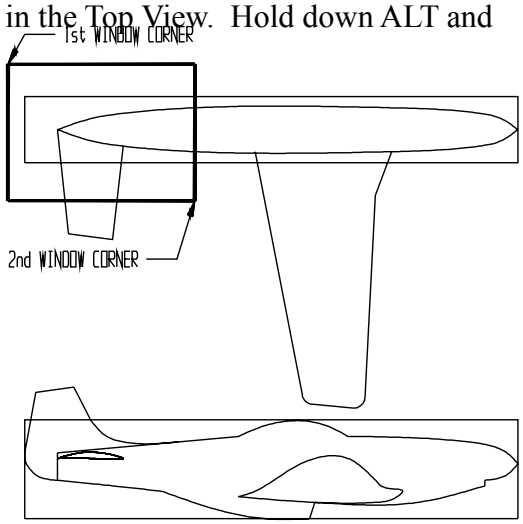


FIG. 26

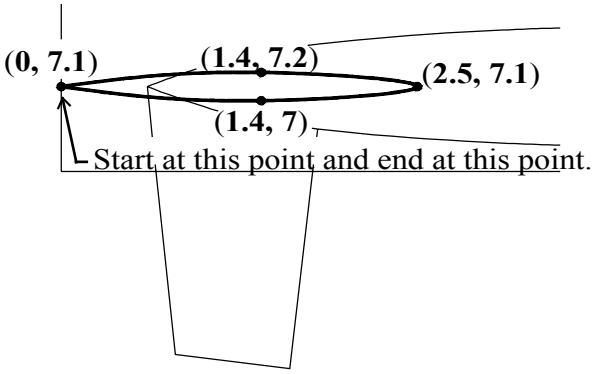


FIG. 27

R. DRAW LINES FOR LANDING GEAR IN SIDE VIEW.

Step 1. Use **ALT-A** to center the drawing on the screen. Hold down ALT and press A.

Step 2. Draw the landing gear **gray**. Change the color to gray. Click the color swatch in the side Tool Bar. Find and click gray, number 14.

Step 3. ESC to Main Menu.

Step 4. F1 CREATE.

Step 5. F1 LINE

Step 6. F2 STRING.

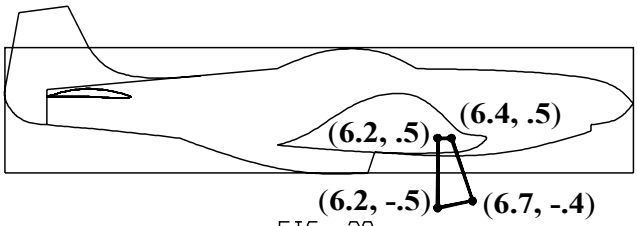


FIG. 28

Step 7. Draw the string of lines, **Fig. 28** for the landing gear in the Side View. Remember F10 BACKUP to stop the line.

S. WHEELS.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F3 CIRCLE.

Step 4. F2 CENTER/DIAMETER.

Step 5. Key in **.7 for diameter** and press ENTER.

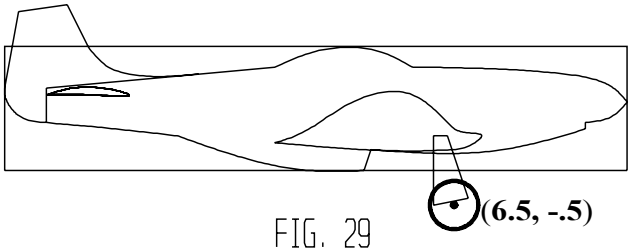


FIG. 29

Step 6. Move the cursor to **(6.5, -.5)**, **Fig. 29** for the center of the circle and click.

T. DRAW SPLINE FOR TAIL HOOK WIRE.

Step 1. ESC to Main Menu.

Step 2. F1 CREATE.

Step 3. F9 SPLINE.

Step 4. F2 3D CUBI.

Step 5. Draw the spline, **Fig. 30** for the tail hook wire in the Side View. Remember, click the points and press ENTER **three times**.

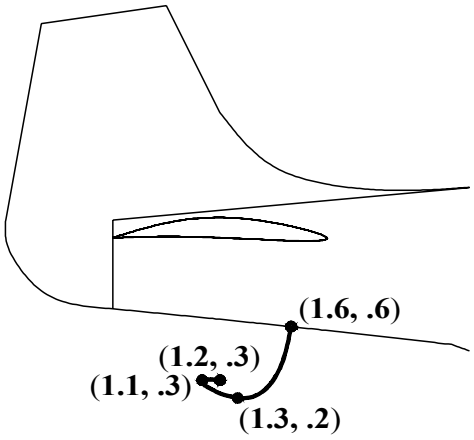


FIG. 30

U. DELETE RECTANGLE LINES.

Step 1. ESC to Main Menu.

Step 2. Delete Lines 1 through 8 that make up the rectangles, **Fig. 31**. Use **CTRL-Q** to delete the line. Hold down CTRL and press Q. Move the cursor over each line and select with a click. After the lines have been selected press ENTER.

Step 3. Save the drawing. Use **CTRL-S** to save.

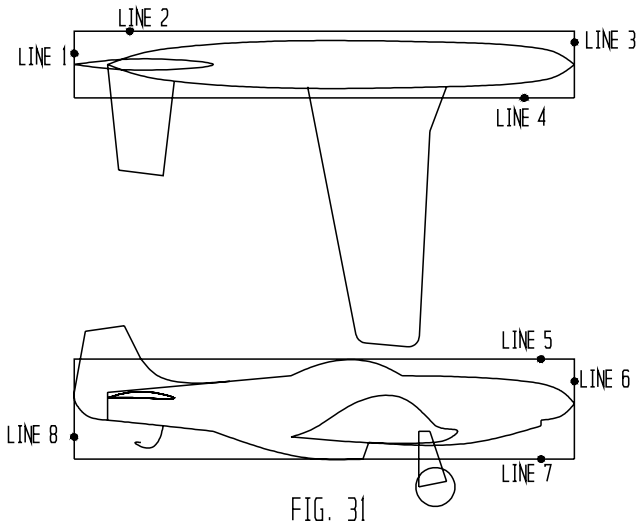


FIG. 31

W. ADD YOUR NAME AND THE PERIOD TO DRAWING.

Step 1. Use: **Detail, Note, Key-In** commands to add text.

Step 2. Save the drawing. Use **CTRL-S** to save.

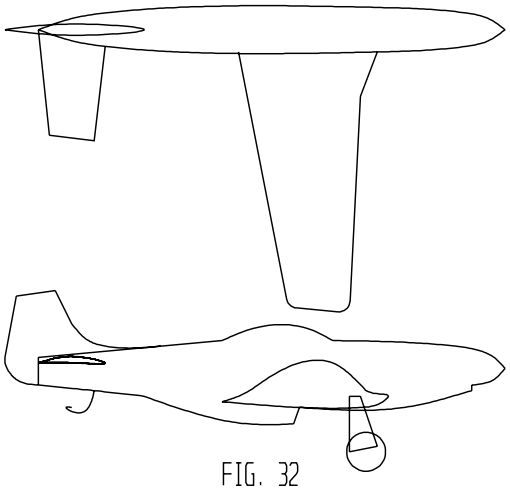


FIG. 32