

Chapter 24 BOAT SOLID



A. Name Level.

Step 1. Display Levels Manager. Use **ALT-Z**. Hold down ALT and press Z.

Step 2. Key-in **block** for Name and click OK, **Fig. 1**.

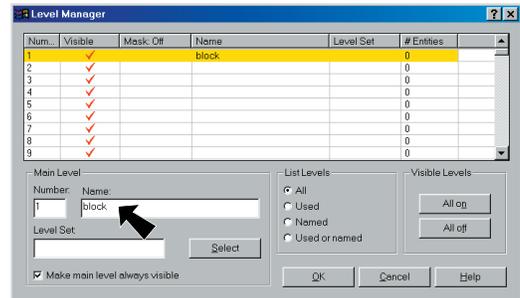


Fig. 1

B. Create Rectangle.

Step 1. MAIN MENU.

Step 2. Create.

Step 3. Rectangle.

Step 4. 1 Point.

Step 5. Key-in **9** for Width and **3** for Height, **Fig. 2**.

Step 6. For the Placement Point, click the bottom left gray rectangle and click OK, **Fig. 2**.

Step 7. Origin.

Step 8. Use **Alt-F1** or  to fit the drawing on screen, **Fig. 3**.

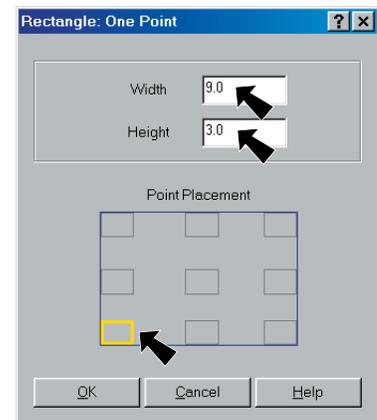


Fig. 2

Step 9. MAIN MENU.

C. Create 3d Block.

Step 1. Change to the Isometric View. Use the green  or **ALT-6 I**. Hold down ALT and press 6. Key-in I.



Fig. 3

Step 2. Use **Alt-F1** or  to fit the drawing on screen.

Step 3. Xform.

Step 4. Translate.

Step 5. All.

Step 6. Entities.

Step 7. Done.

Step 8. Rectangle.

Step 9. Key-in **Z -1.5** and press ENTER.

Step 10. Click Join and OK.

Step 11. Use **Alt-F1** or  to fit the drawing on screen.

Step 12. Click the Clear Screen Colors Tool  in the top tool bar.

Step 13. Save your drawing. Use Files, Save and key-in **boat solid** file name and press ENTER.

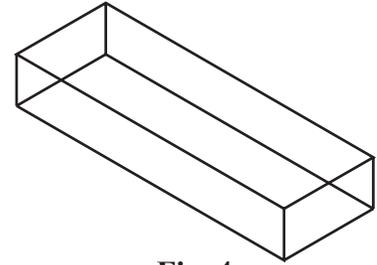


Fig. 4

D. Draw Vertical Midpoint Line In Back.

Step 1. MAIN MENU.

Step 2. Create.

Step 3. Line.

Step 4. Endpoints.

Step 5. Midpoint.

First, click top back line 

Then, change depth and
click bottom back line 

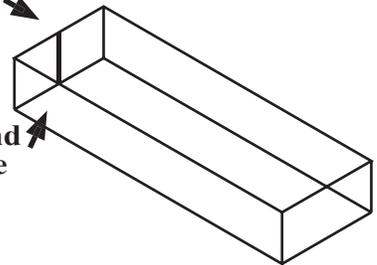


Fig. 5

Step 6. Click the top back line, **Fig. 5**.

Step 7. Change the depth of your drawing. Click the Z Button  from the Secondary Menu (bottom of the menu) and key-in **-1.5** and press ENTER. (**ALT-0**)

Step 8. Midpoint.

Step 9. Click the bottom back line, **Fig. 5**.

E. Add Ribs Levels.

Step 1. Display Levels Manager. Use **ALT-Z**. Hold down ALT and press Z.

Step 2. Key-in **2** in the Number field.

Step 3. Press Tab key to move to the Name Field and key-in **ribs** and click OK, **Fig. 6**.

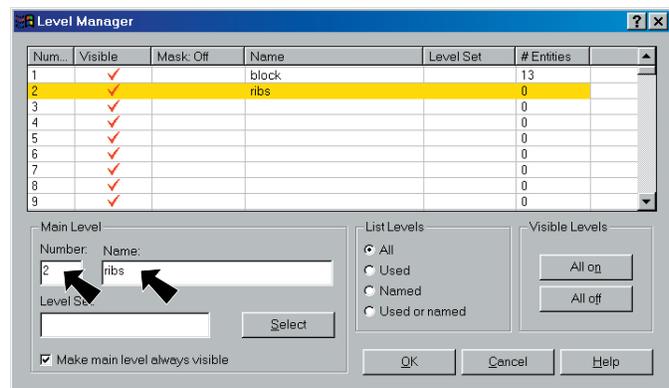


Fig. 6

F. Create A Point.

Step 1. MAIN MENU.

Step 2. Create.

Step 3. Point.

Step 4. Position.

Step 5. Midpoint.

Step 6. Click the bottom front line on the block, **Fig. 7**.

Step 7. Save your drawing. Use **Alt-A** and press ENTER.

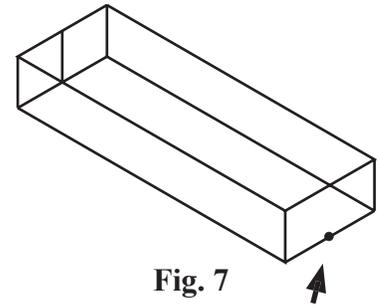


Fig. 7

G. Set Grid And Snap.

Step 1. Change the Grid and Snap to .1. Use **ALT-G**.

Step 2. Set X and Y Spacing to .1 and click OK, **Fig. 8**.

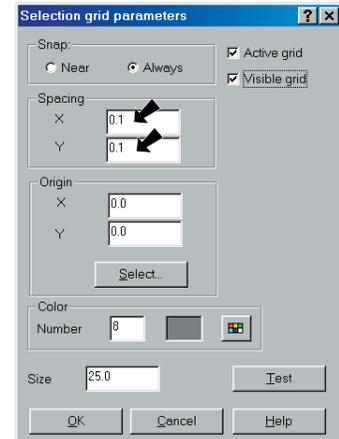


Fig. 8

H. Create Back Rib.

Step 1. Change to the Side View. Use the green  or **ALT-6 S**. Hold down ALT and press 6. Key-in S.

Step 2. Use **Alt-F1** or  to fit the drawing on screen.

Step 3. Change the depth of your drawing. Click the Z Button  from the Secondary Menu and key-in 0 and press ENTER. (**ALT-0**)

Step 4. MAIN MENU.

Step 5. Create.

Step 6. Line.

Step 7. Endpoints.

Step 8. Draw the lines in **Fig. 9**.

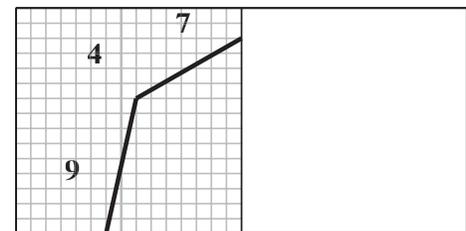
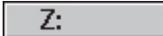


Fig. 9

I. Create Middle Rib.

Step 1. Change the depth of your drawing. Click the Z Button  from the Secondary Menu and key-in 4.9 and press ENTER. (**ALT-0**)

Step 2. Draw the lines in **Fig. 10**.

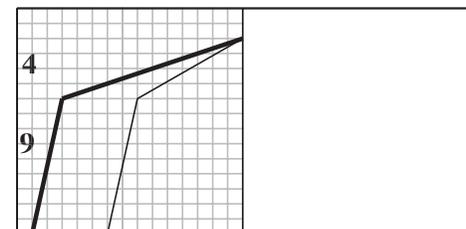


Fig. 10

J. Mirror Surfaces.

- Step 1. MAIN MENU.
- Step 2. Xform.
- Step 3. Mirror.
- Step 4. Click the 4 rib lines, **Fig. 11**.
- Step 5. Done.
- Step 6. Line.
- Step 7. Click the **mid vertical** line, **Fig. 11**.
- Step 8. Click Copy and OK.
- Step 9. Click the Clear Screen Colors Tool .

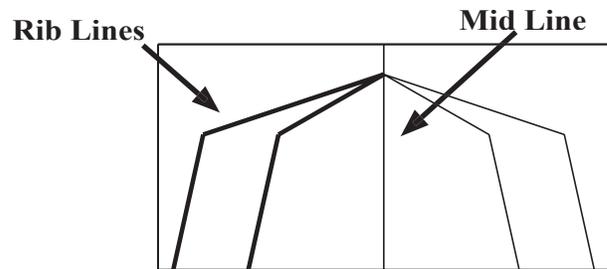


Fig. 11

K. Turn Off Block Level.

- Step 1. Display Levels Manager. Use **ALT-Z**.
- Step 2. Click to uncheck **block** level and click OK, **Fig. 12**.

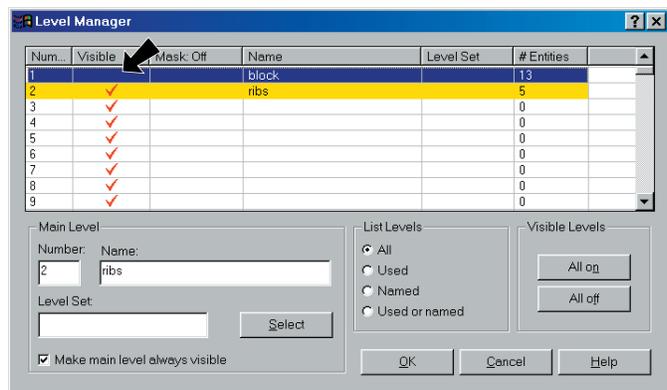


Fig. 12

L. Draw Hull Splines.

- Step 1. Change to the Isometric View. Use the green  or **ALT-6 I**. Hold down ALT and press 6. Key-in I.
- Step 2. Change the depth of your drawing. Click the Z Button  from the Secondary Menu (bottom of the menu) and key-in **-1.5** and press ENTER. (**ALT-0**)
- Step 3. MAIN MENU.
- Step 4. Create.
- Step 5. Spline.
- Step 6. Manual.
- Step 7. Click the ends of the ribs and the point in **Fig. 13**. Start with the back rib, then middle rib and finish with point. Press ESC to end the spline. Repeat for the other side.

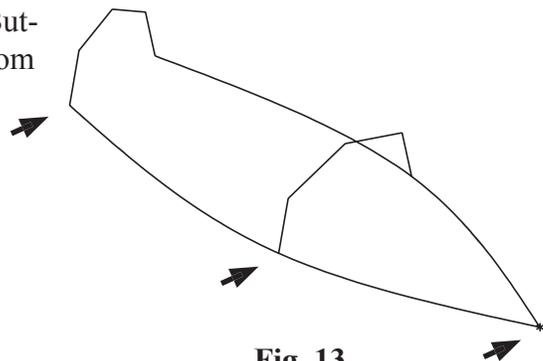


Fig. 13

M. Add Surfaces Level.

- Step 1. Display Levels Manager. Use **ALT-Z**.
- Step 2. Key-in **3** in the Number field.
- Step 3. Press Tab key to move to the Name Field and key-in **surfaces** and click OK, **Fig. 14**.

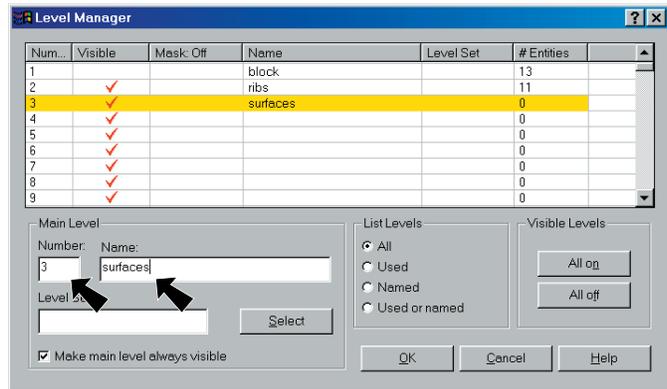


Fig. 14

N. Create Flat Boundary Surfaces.

- Step 1. MAIN MENU.
- Step 2. Create.
- Step 3. Surface.
- Step 4. Trim/extend.
- Step 5. Flat Boundary.
- Step 6. Manual.
- Step 7. Click the 4 back rib lines of the boat, **Fig. 15**.
- Step 8. End here.
- Step 9. Do it.
- Step 10. Click Yes, to automatically close it Warning.
- Step 11. Turn on the shading. Use **Alt-S**, **Fig. 16**.
- Step 12. Manual.
- Step 13. Click both splines, **Fig. 16**.
- Step 14. End here.
- Step 15. Do it.
- Step 16. Yes, **Fig. 17**.

Click the 4
Back Lines

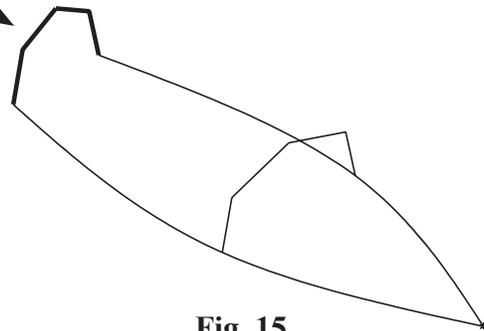


Fig. 15

Splines

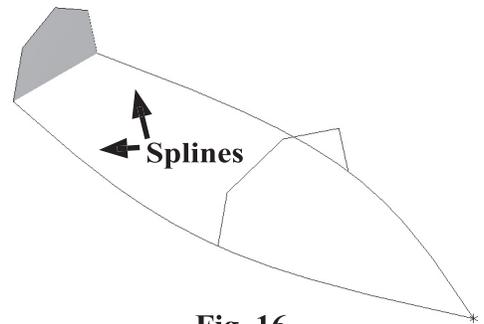


Fig. 16

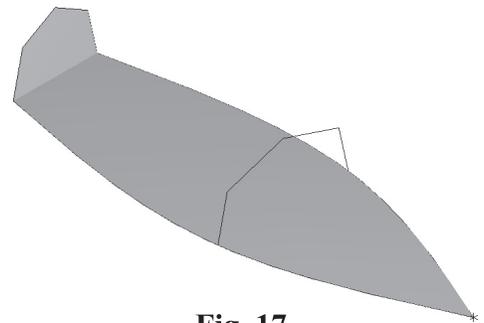


Fig. 17

O. Create Loft Surfaces.

Step 1. MAIN MENU.

Step 2. Create.

Step 3. Surface.

Step 4. Loft.

Step 5. Single.

Step 6. Options.

Step 7. Set: Check **Entity Mask**, **Fig. 18**.
Uncheck **Splines** and click OK.

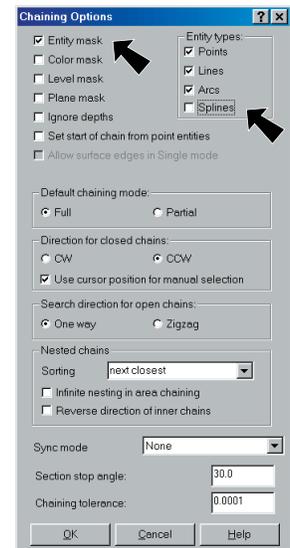


Fig. 18

Step 8 Click Rib Lines 1 and 2 and the Point, **Fig. 19**. If the arrows on the line are not in the same direction - click Reverse.

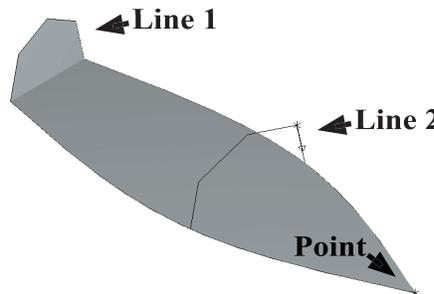


Fig. 19

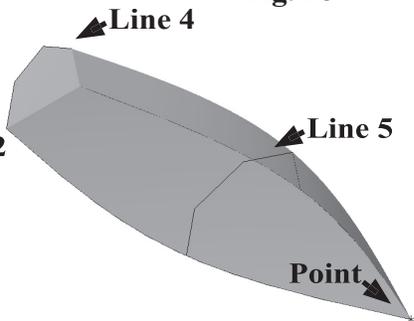


Fig. 20

Step 9. Done.

Step 10. Do it.

Step 11. Repeat at the next set of ribs. That is, click Lines 4 and 5 and Point, **Fig. 20**. If the arrows on the line are not in the same direction - click Reverse.

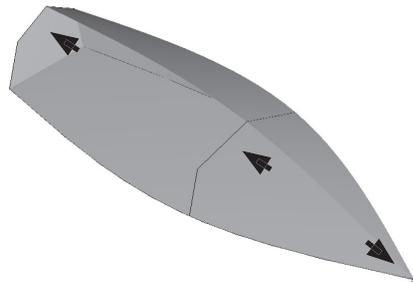


Fig. 21

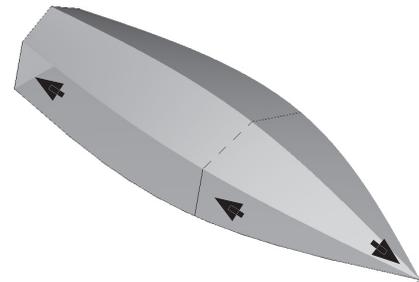


Fig. 22

Step 12. Done and Do it.

Step 13. Repeat at the other set of ribs, **Fig. 21** and **Fig. 22**.

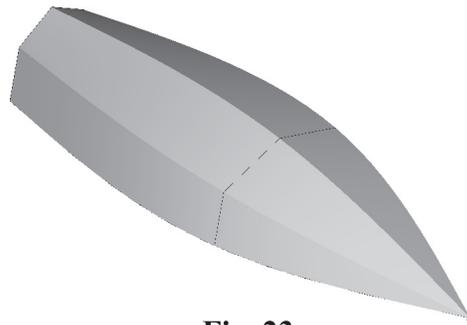


Fig. 23

P. Add Solids Level.

Step 1. Display Levels Manager. Use **ALT-Z**.

Step 2. Key-in **4** in the Number field.

Step 3. Press Tab key to move to the Name Field and key-in **solids** and click OK, **Fig. 24**.

Step 4. Click to uncheck **ribs** level and click OK.

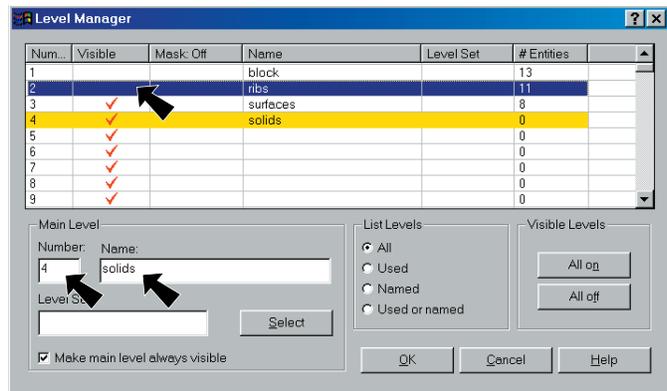


Fig. 24

Q. Surfaces Into Solid.

Step 1. MAIN MENU.

Step 2. Solids.

Step 3. Next Menu.

Step 4. From surfaces.

Step 5. Check Keep and click OK, **Fig. 25**.

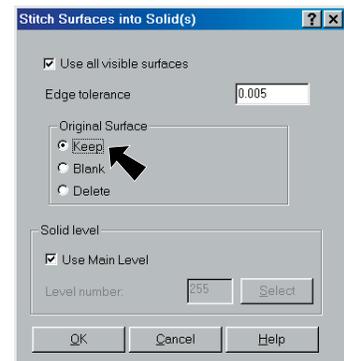


Fig. 25

R. Turn Off Surfaces Level.

Step 1. Display Levels Manager. Use **ALT-Z**.

Step 2. Click to uncheck **surfaces** level and click OK, **Fig. 26**.

S. Shell Solid.

Step 1. Use Dynamic View  to flip the hull over to view the top, **Fig. 27**.
Use  to fit the drawing on screen.

Step 2. MAIN MENU.

Step 3. Solids.

Step 4. Shell.

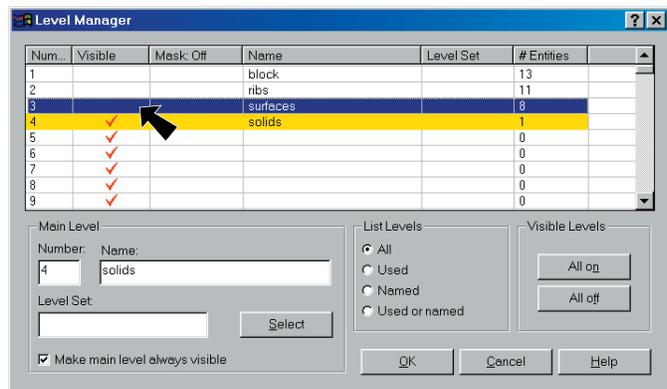


Fig. 26

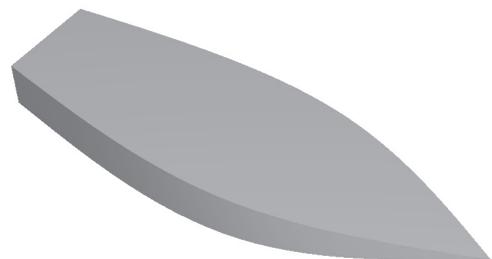


Fig. 27

Step 5. Click Faces to **Y** and others **N**, **Fig. 28**.

Step 6. Click the top face of the hull, **Fig. 29**.

Step 7. Done.

Step 8. Set: Inward **.05** and click OK, **Fig. 30**.

Step 9. Save your drawing. Use **Alt-A**.

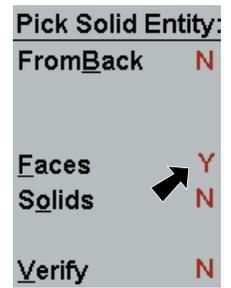


Fig. 28

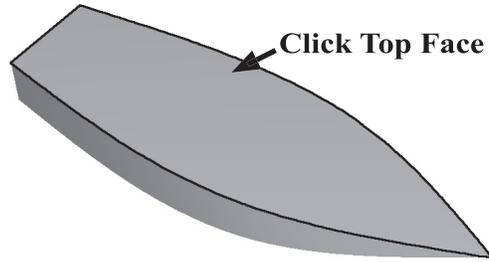


Fig. 29

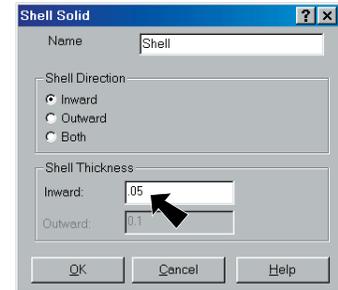


Fig. 30

