

Spira International Boat Building Articles

Home Boat Building - Lofting or Full Sized Plans?

By Jeff Spira

I often get posed the question, “Do your plans come full sized or do you need to loft them?” I have to truthfully answer, neither, which often confuses people because they believe home built wooden boat plans are one or the other. In these days of computer aided design (CAD) drafting, no longer is it necessary to loft boat plans, because the computer actually does this for the boat designer. What this means to the boat builder, is that all they need to do is measure and mark, not loft.

Lofting is a process whereby the boat is actually drawn full sized to determine the exact sizes of the frames and components. Back when boat plans were drawn by hand in smaller scale, it was impossible to draw them accurately enough to ensure the finished boat had “fair” curves, that is to say, curves that smoothly transitioned from one part of the hull to the other. In the old days, a table of offsets or a half hull model was used to lay out several key points on the hull, and a long flexible piece of wood, called a spline was used to create a fair curve. From this full-sized drawing, measurements were taken to determine the exact sizes of the framing elements.

Enter the computer and Computer Aided Drafting (CAD.) This revolution in the boat designer’s world allowed the naval architect to use an infinitely large piece of paper on which to design his boat full-size. Some of the early versions of AutoCAD came with a full scale drawing of the solar system with all of the planets and moons. It was 93 million miles from the earth to the sun! It gave you an appreciation of how huge the solar system actually is. On the other hand, I have offset lines one millionth of an inch and was able to zoom in until the two lines appeared on opposite sides of the computer screen.

What all of this means is that the boat is actually drawn full sized when it is designed, so that it is already lofted. The measurements given for the ribs and other framing elements are exact and if made to the dimensions given, a fair hull results. The boat builder need only measure, mark and cut the frame elements, and he’ll have them correctly built. This makes the case for building a modern design, as opposed to many of the older designs many boat plans companies offer.

So, no, you don't need to loft designs properly designed on CAD, and no there is no reason to need full sized plans or patterns, so long as you select modern plans by designers who use modern technology to design their boats. All plans from Spira International are computer generated for accuracy and pre-lofted in the computer.

Visit my website at <http://www.spirainternational.com> to see the many different designs of boats you can build at home.