

Study Plans

for a 7' 2" x 4' 6" Tender

For Rowing, Sail and Short Shaft Outboard Motors

Andrew Walters

Trixie 7

Study Plans for a 7' 2" x 4' 6" Tender

For Rowing, Sail and Short Shaft Outboard Motors

by

Andrew Walters

Copyright © 2013 by Andrew Walters

All Rights Reserved

andrew.walters.design@gmail.com

http://andrewwaltersdesign.com/



Contents

- 5 Introduction
- 7 List of Materials & Specification
- 8 Glue, Resin and Fixings
- 9 Drawings
- 21 Construction Sequence
- 30 Sail Supplement

Introduction

'Trixie' began as an idea for a small and simple to build plywood tender, able to get out to a mooring with two or three on board, that was very light, incorporated wheels to enable transport to the slipway, was designed to provide the maximum space from two sheets of 1/4" plywood, and could be powered by oars, a small outboard or sail.

Simplicity and economy have been my main design criteria. The side panels have parallel long edges, 8' long - this ensures the least amount of wastage and makes for easy marking out and cutting. The bottom panel is 4' wide and of a length to suit the side panels. This produces a hull with a maximum beam of 4'6" and a length of 7'2". With proportions like this, she should be capable of carrying three people and provisions to the mother vessel.

On the bottom are two skegs, each of which incorporate a 4" diameter plastic wheel. The intention here is to facilitate pulling the boat

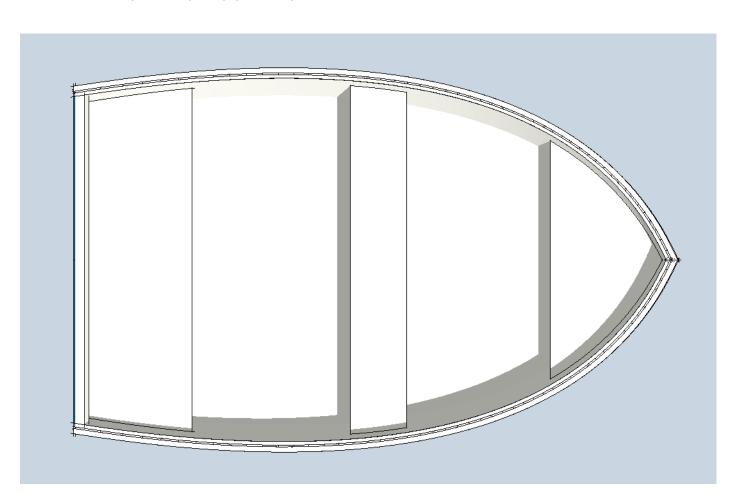
across a car park or road, and down a slipway. I doubt that they'd cope on sandy beaches or muddy tracks! Other options are to omit the wheels, or provide one central skeg (minus the wheel), or omit the skegs altogether.

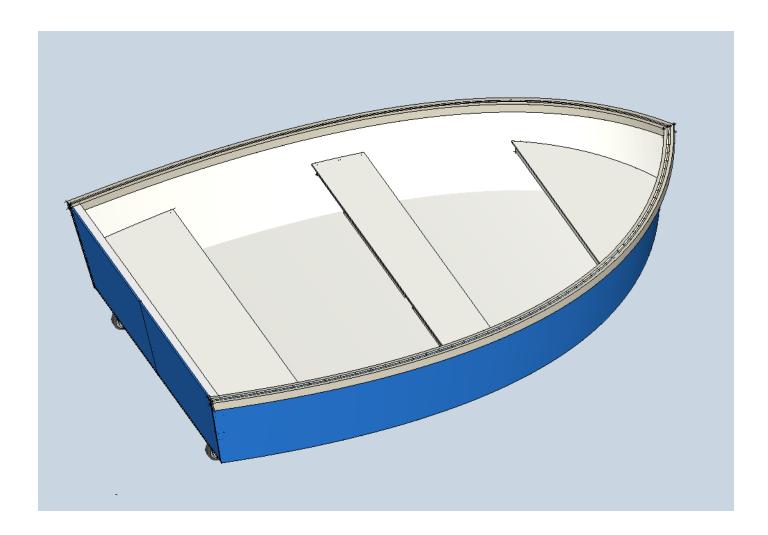
She's not going to win on the speed stakes - but I think that she looks cute!

Anyone with a basic knowledge of woodworking should be able to make this boat.

Whilst this manual sets out the construction sequence in detail, the builder should have a basic knowledge of, and ability in, working with wood and epoxy resins and glass fiber.

Before buying materials, or starting to build this boat please read and familiarize yourself with the drawings and construction manual. Bear in mind that the build sequence and method of construction can be varied to suit your preference.





Recommended Reading

Two excellent books on the subjects of boat building and working with polyester and epoxy resins are:

Jim Michalak: 'Boatbuilding for Beginners (and Beyond)'

and

Harold Payson: 'Build the New Instant Boats'

The West System website also has several downloadable user guides and manuals relating to their epoxy resin systems:

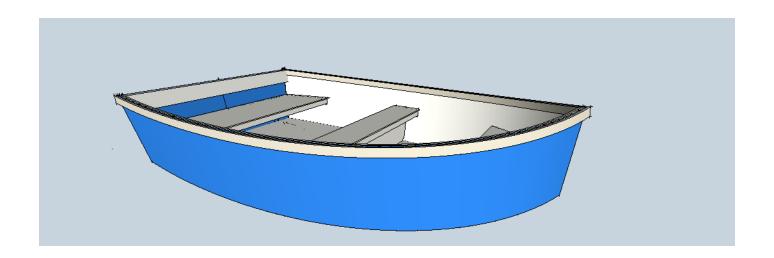
http://www.westsystem.com/ss/

Disclaimer

If built properly this will be a safe boat. I cannot be responsible for the build quality, for your boating experience, or for the conditions of the water where you take the boat. For these reasons (and because of the litigious times in which we live), no liability, (consequential or other) will be assumed for any losses arising from the use of these documents and drawings and no warranty is made, including that of fitness for purpose.

Copyright

The information contained in these documents are the copyright of Andrew Walters. Purchase of these plans and assembly manual give the purchaser the right to build one boat.



List of Materials

Marine Plywood:

1/4" x 4' x 8' 2 sheets

3/4" x 1 1/2" timber for gunwales, inwales and seat supports about 50'

 $1\ 1/2$ " x $1\ 1/2$ " timber for seat supports at side panels about 7'

5" x 1 1/2" timber for the skegs about 4'

3" glass tape about 50'

About 3 yards of glass cloth to cover the hull bottom and overlap

About 1 gallon of epoxy resin

About 2 pounds of resin thickening powder

2 x 4" diameter plastic wheels, plus associated hardware as shown on the drawings

Specification

Length 7' 2"

Beam 4' 6"

Bare Hull Weight

(approx) 70 lbs

Power Requirement:

Oars

or

Small outboard of about 2 hp

or

Small electric outboard

or

Sail

Glue, Resin and Fixings

The preferred method of construction is to use epoxy resin throughout for both the gluing and the glass cloth covering.

Duckworks Boat Builders Supply sell epoxy resins at a price which makes the use of other glues and resins a false economy. (http://www.duckworksbbs.com/supplies/epoxy/index.htm)

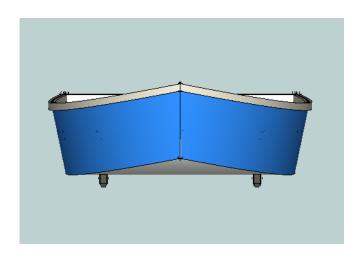
Polyester resin can be used as an alternative for the glass cloth covering. It is not as durable or as waterproof as epoxy resin.

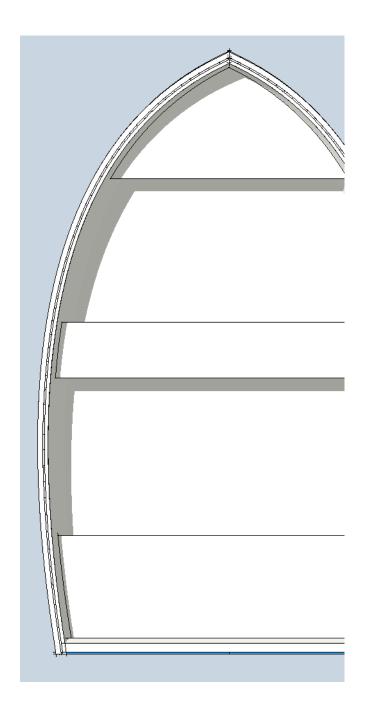
Polyester resin should not be used as a glue.

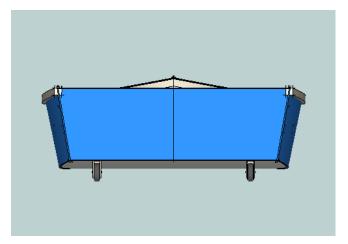
If the boat isn't going to be kept permanently in the water, glue fixing above the waterline, in places such as the gunwales, inwales and seat supports, could be with a waterproof PVA wood glue of a quality equivalent to Titebond II Premium Wood Glue.

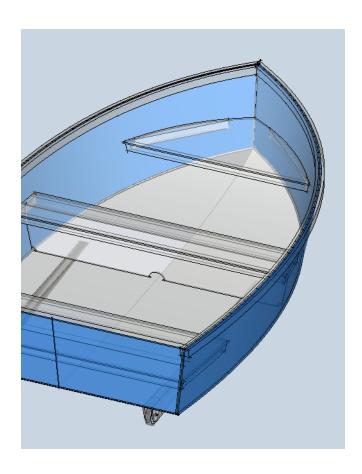
Any screws that you plan to leave in should be stainless steel. I often use screws to hold everything together whilst gluing and taping, then take them out and fill the holes at the finishing stage.

'Raptor' polymer composite nails, used with a nail gun, make for a very fast way of holding glued surfaces in place quickly and accurately. The method is to glue both faces, put in position, shoot a few nails in. They're strong enough to hold things in place whilst the glue sets and, being plastic can be sanded, chiseled or planed over without damaging cutting blades - and don't rust.



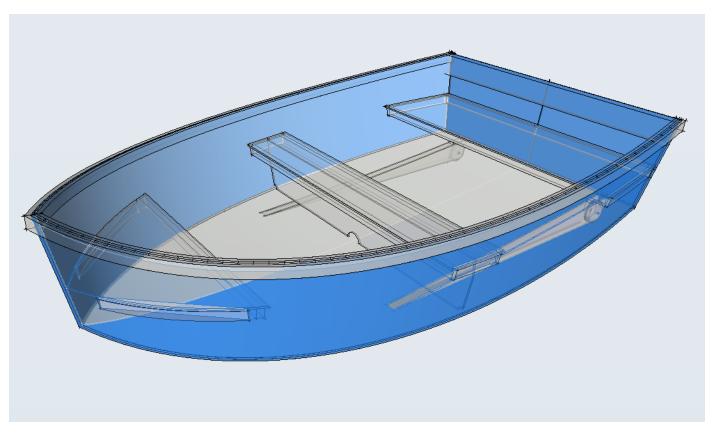


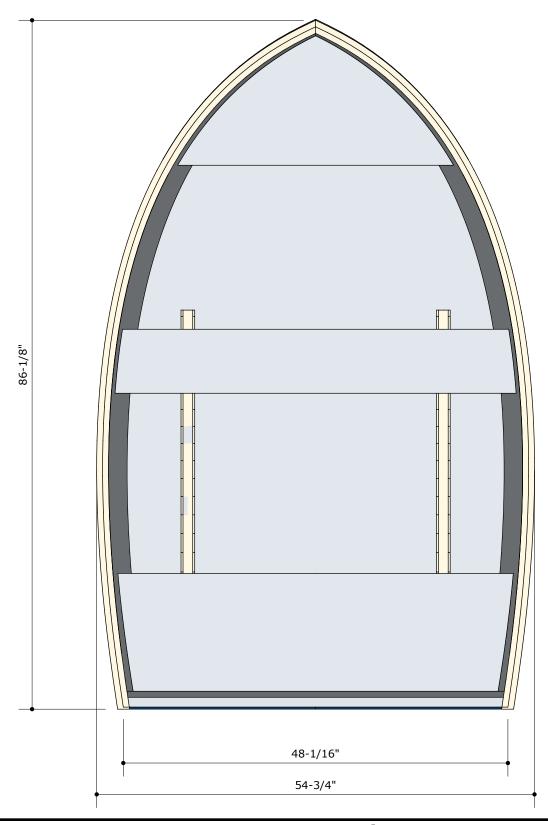


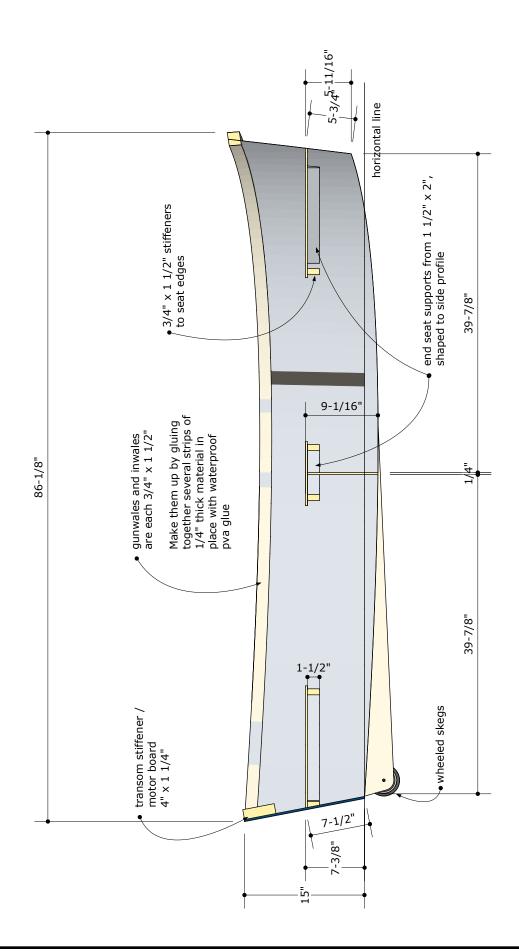


The Drawings

Page No.	Drawing Title
11	Top View
12	Side View
13	Bottom View
14	Plywood Cutting Sheet
15	Bottom Panel
16	Side Panel
17	Seat Panels - Sheet 1
18	Seat Panels - Sheet 2
19	Transom & Mid Frame
20	Skegs





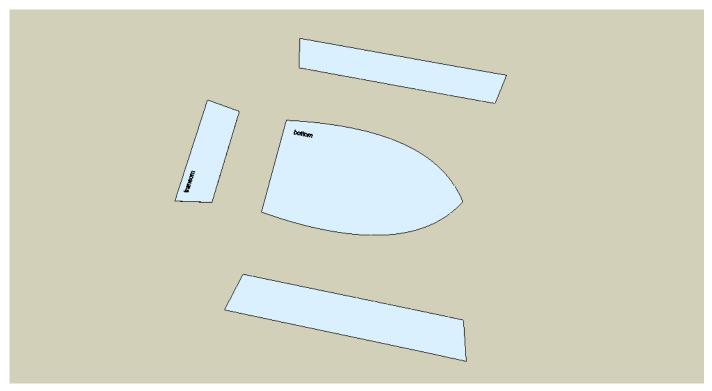




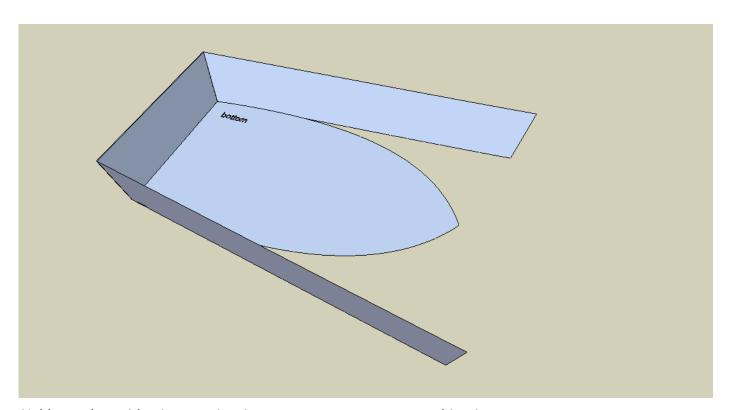
The Construction Sequence

The following pages give a step by step construction guide.

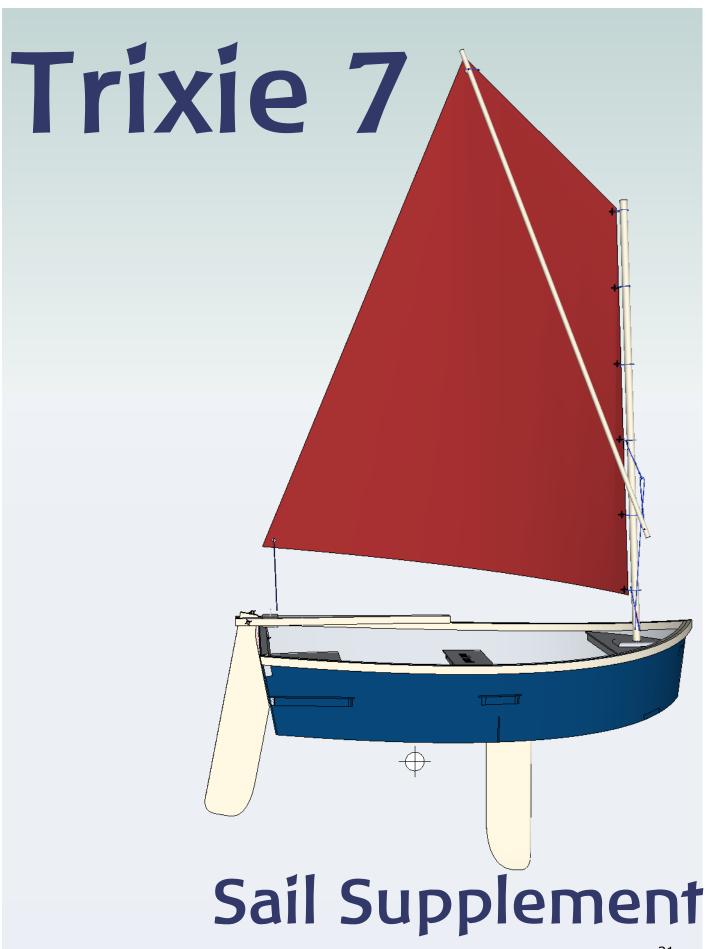
Please note that the drawings do not show a tolerance for fitting components together. Adjustments should be made accordingly when cutting out.



Arrange the transom, side and bottom panels for fixing together.



Hold together with wire, or wire ties, or strong tape - or a combination.



Introduction

The following pages show details of how to convert 'Trixie' into a small sailing dinghy.

Details are shown for a daggerboard or a leeboard, and a 38 sq.ft. sprit sail.

Drawings are also included showing sail arrangements for the Polysail International Standard 59-60 sq.ft. Leg O' Mutton Sail and the 55 sq.ft Standard Sprit Boomed Sprit Sail. (http://polysail.com/Finished.htm)

The arrangement of sail, daggerboard and rudder has been designed by following established principles but at this stage a prototype has not been completed and tested.

There are many variables to be considered when designing a sail boat (a significant one on a boat such as this being the size of the person in the boat!). For this reason, these plans are preliminary - and supplied free of charge to those who have purchased the 'Trixie 7' Drawings and Construction Manual.

Bearing in mind the above, (and because of the litigious times in which we live), no liability, (consequential or other) will be assumed for any losses arising from the use of these documents and drawings and no warranty is made, including that of fitness for purpose.

Copyright

The information contained in these documents are the copyright of Andrew Walters. Purchase of these plans and assembly manual give the purchaser the right to build one boat.









The Drawings

Page No.	Drawing Title
46	Rudder and Tiller
47	Daggerboard and Daggerboard Case Sides
48	Mast Step and Foredeck
49	Leeboard
50	Leeboard Top Guard
51	Leeboard Bottom Guard
52	Sail Plan

