the 507 footy class yacht

by Andrew Cook

proudly made in Australia

www.GoSpectre.com
for 507 one design
185mm
thank you for choosing the 507 Footy design to build, sail and enjoy!

from initial hull lines developed by Angus Richardson in the UK, the 507 hull was reworked and gained an innovative deck design to create a light, strong, functional monocoque.

the rig reflects the trends of aerodynamic efficiency and gives a well natured boat as a result, the 507!

as a design the 507, so named for its inception on the 5th month of the year 2007 has been a fun project and even more fun to sail!

having created the design package, made tooling and even vacuum formed the boats myself, I am proud to say she is my best boat design so far, have a look at others at www.gospectre.com!

so whether you are racing or having fun mucking about you can register your boat with your countrys footy class association and of course send me photos of your boat sailing!

if you need any building help or have any thoughts please email me on andrew@gospectre.com!!

go sailing!

Andrew Cook
parts

- deck
- hull
- keel
- keel bulb
- sails
- keel box
- rudder
- rudder tube (white)
- aerial tube (clear)
- mast t piece
- carbon fibre
  - main mast lower Ø6mm
  - main mast upper Ø5mm
- sail booms Ø5mm
- sheet booms Ø6mm
- rudder stock Ø3mm
- steering linkage and sail guide
- titanium wire
- sail guide tube
- sail clip tube Ø8mm

tools

- craft knife
- sand paper 60 grit
- CA Glue
- 5 minute epoxy
- pliers
- drill bits
  - 5/64 inch (1.98mm)
  - 3/16 inch (4.7mm)
  - 6mm
the deck holes

Ø3/16inch (4.7mm)

Ø6mm

Ø5/64inch (1.98mm)

keel bolt hole

cut-out areas (use craft knife)

optional switch cut out for supplied waterproof switch cover (fits most standard radio controls).
the keel box

trim vertically with craft knife

sand on flat surface to tidy cut area

check parts before glueing with CA adhesive
cockpit holes

A soldering iron is recommended to make drain holes in cockpit area, drill may also be used with care as material is thin and can tear easily.

Servo cut out area. Cut to standard servo size or micro servo size. Keep offcut for reinforcement.
the underdeck

use material cut out from servo hole as reinforcement

sail sheet guide fitted and glued.

note:- cut sail sheet guide at 45 degrees on the end so as to aid feeding it into holes

aerial tube holder glued to deck (5-8mm). (do not glue aerial tube into it as this allows aerial to be removed to transport the 507, also this is the hull drain hole.)
the keelbox

Drill 3 x 3/16 inch holes in hull at front and back of keel for slot and for rudder tube.

Position keel box forward against foredeck opening and glue in place. (be sure to align with keel bolt hole and ensure mast fits through deck).

Glue rudder tube to hull.
when correct hull to deck fit is achieved , turn boat upside down and CA glue can be used to hold them together.
if you are not confident to use CA glue this way the other suggested method is to use 5 minute epoxy glue applied to the upturned deck around the inner edge before fitting the hull to it.
once this has cured glue keel box to hull.
aerial tube fits to hull, once aerial is in tube then fit cap onto top.
fit on/off switch boot to switch and fit to deck
sit servos in cut out and screw in, see servo fitting page
for orientation.

shape of finished steering linkage

100mm

secure servo arms to the servo arms supplied
with servo motors use self tapping screws.
rubber band connects under servo screws and loops over top of rudder tube to hold batteries in place.

to feed the sail control line through the hull tube guide the best method is to coat 3cm of the string in super glue, allow it to dry to make it stiff before threading it into tube.
rudder and sail sheets

sail arm is connected and rudder steering arm is also fitted to servo. titanium wire connects rudder arm to rudder head fitting.

magnetic mainsheet sail clip

rudder head fits to rudder stock as a push fit
the rudder

- Cut out rudder sides.
- Glue rudder sides with Ca glue and clamp.
- Fit rudder stock (sand a flat on opposite sides at base so it will not turn in rudder. Also fill top of tube with epoxy to stop it splitting when rudder head is fitted). Ca glue in and epoxy.
- When final fitting rudder to boat to sail, pack the tube with vaseline or grease to minimise the chance of water ingress.
if you are not wanting to have a removable keel you can glue the keel into the boat, no bolt!
otherwise drill a hole in the keel blade and make a slot to suit the bolt. cut the bolt as the off cut is used for the mast clamp at the bow of the boat.

trial fit keel into bulb, mask up and epoxy glue it in.

file bulb and sand smooth with steel wool
sail clips and mast clamp

cut plastic tube to 10mm lengths x10

cut the lengths vertically

slide over a phillips head screwdriver to open up to size

pierce a hole to tie through.
for one use half of the keel bolt to make mast clamp.

mast clamp to fit to bow.
mast and booms

- do not glue mast in, do glue fitting to boom
- 5mm main boom
- gooseneck
- bend sail guides
- 6mm x 55mm sheet boom
- glue to t-piece
- 6mm sheet boom
- figure 8 knot

Once mast is assembled, epoxy ends of carbon tubes to avoid any splitting or crushing when sail clips are fitted to them.

tie clips to sails
tie mainsail to mast with a reef knot

5mm top mast

tie mainsail to mast with a reef knot

6mm bottom mast

note, sand top mast to fit bottom mast do not force as it will split.
can glue mast together or a band of tape on top mast to stop mast sliding into bottom mast.

tie a clove hitch to connect jib boom to sheet boom

dock patches fitted
sail tuning.
With a large mainsail the 507 requires more jib than may sometimes seem optimal.
With the mainsail at 10 degrees the jib may be at 5-7 degrees as a starting point for tuning.
Boom vang loose enough so as to allow boom to move freely.
This set up allows the jib to goose-wing down wind readily.
Fill in your own settings sheet below in various winds, write down the angles sails are on and details!

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<th>wind</th>
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Main sail numbers!

the easiest way to apply numbers to your sails is place this template behind the sails, use a piece of tape on the sail as a base line and trace onto the sail with a permanent marker!!