

Ashlyn & Russell,

Please find below my view on possible changes to the PT Skiff kit (very few) and details re my fitout choices.

### **Overview:**

The PT Skiff will be my last boat. I am now 64, retired, and I need to have some fun before I run out of steam. I had already reached the conclusion about this being my last boat before the dreaded epoxy sensitivity made absolutely sure that this was the case.

My philosophy is that the boat needs to look “simple”, but it needs to be a sophisticated “high-tech” design; light, fast, solid, durable and long lasting. The boat obviously needs to be versatile, and I think the PT Skiff is a perfect fit. When my son-in-law recently saw the boat he said it reminded him of an “old style boat”. That pleased me because one of my earliest memories is when I was about an 8 year-old riding in a 16ft inboard-engine clinker built runabout with my father. I thought this was great, we were running baits at slow speed trolling for “tailor” on Lake Macquarie in New South Wales, Australia. I subsequently spent many of my early years fishing and boating there. After that came my sailing influences.

When my PT Skiff was presented to my motor dealer for initial fitout I had many admiring comments about the boat and views about the capabilities of the boat. One guy asked “are you really going to use this boat?” (He thought it looked too pretty to be used). The same messages occurred when the boat was being outfitted for seat cushions, waterproof carpet and boat cover. More later re some opportunities to showcase the boat.

My fitout decisions will not suit everyone, but they suit me. I want this boat to be as good as I can make it. Some of my choices may seem over-the-top, but I want this boat to fill all of my needs and still look sophisticated, uncomplicated, and efficient. This is my last chance to get it right.

My needs for this boat are:

- Photography Boat
- Chase Boat
- Rescue Boat (if needed)
- Cruising boat for family
- Fishing boat (especially to teach my grandkids to fish (aged nearly 5 and 8))
- Ability to go long-ish distances (I have a plan; don't tell Brenda (my wife))
- In emergency conditions, (been there before), the boat needs to be able to handle shallow but rough water (Gulf St Vincent and Lake Alexandrina in South Australia in particular). For example, the lake is wide (20 nautical miles X 10nm), shallow (infrequently more than 2.5 metres in depth), and subject to occasional breezes above 25 knots. If you get caught out here, you need to have a capable boat, and most importantly know where to run to if gets too rough (there are only 5 places of safety, and you can see none of them from the middle of the lake).
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Below I will address the following:

- Suggested changes to the kit
- Where I stopped building and ramifications
- My fitout choices and rationale under the headings of:
  - Motor selection
  - Paint/varnish choices
  - Motor Control & Steering Wheel
  - Fuel Tank
  - Instrumentation
  - Boat entry from water
  - Mooring Cleats
  - Seat coverings

- Floor Coverings
- Boat Cover
- Motor Cabling
- Navigation Lights
- Bimini
- Wiring
- Aft Drainage
- Motor Blocking
- Hull “panting”
- Building Space
- Trailer

In all of the discussion I will refer to the contact attached to this e-mail. All of the photographs on the contact sheet are available in any resolution you want, plus I will take more photographs of anything you want.

### **Suggested changes to the kit**

There are only four changes I would suggest:

1. The major change is to go with solid aft floor soles. I originally thought that varnished aft floor grates would look wonderful, though after seeing the solid aft floor installed for the first time I said to myself that this really looks like a much better constructed boat. It will also be stronger with the solid floor. That plus no need to “fish” stuff out that had dropped between the grates. Combined with the drainage from the forward soles (it really works), I think it is a better boat. (photos sent previously)
2. Forward cleat reinforcement at bow. By all means reinforce the boat in this area, but it is a very unsafe place to have an anchor cleat if the wind/swell increases to any degree. I have placed a reinforcement block back much closer to the forward bulkhead (frame 1). The centre of the cleat is 235 mm forward the top of frame 1 (@ 1ft 1 ½ inches). If you

stand of the forward seat and lean all the way to the bow you are stretching a long way, and you could be thrown overboard if hit by a wave at the wrong moment. Where I will be doing most of my boating it can get very rough very quickly, and some of the wind/water changes can be significantly greater than the “average” forecast from most meteorology bodies. I hadn’t thought about this until after my foredeck flotation was installed. This was after my epoxy issue was discovered, and my boatbuilder agreed that we needed to move the cleat aftwards. All we could do was to install “t-nuts” under a reinforcing block and epoxy reinforce the ¼ inch cleat bolts. If the bolts fail in the future I will drill out wider holes, fill with epoxy, then tap ¼ inch threads into the larger epoxy reinforcing. A repercussion of locating a cleat aftwards is that you now need fairleads for the anchor rope. (see photos 1510, and 1529). I don’t necessarily like having the fairleads here for aesthetic reasons, but I feel they are necessary, especially if you fit a bow mounted navigation light (more about that later).



3. Console joint at sloping face. Rather than butt joint the aft sloping piece of the console to the vertical aft part of the console and fill the gap with epoxy, I chose to bevel the edges for a neater looking fit. This then leaves a small epoxy filled gap in the joint with the solid timber risers. See photos 1499 and 1505. I think most builders of the PT Skiff should be able to cope with this successfully. If the kit was adjusted to make the riser 3/4/5 mm higher on its aft edge where it joins the 6mm ply, there would be no “epoxy fill” in this area. I know this is a minor adjustment.



4. Motor cables. I think these ideally need to be a bit more discrete. I have sent a few previous photos and will give you more after final fitout. There are trade-offs here. I want my boat to be safe, though I also want it to look uncluttered. I drilled a 40mm hole ( a bit more than 1<sup>1/2</sup> inches) in the knee under the side decks between the middle and aft seats. I will stuff all the available space here with the recommended foam. If you have a solid floor I think you also gain more flotation (see also my note below on hull “panting”)

Where I stopped building and ramifications:

After my epoxy sensitivity debacle, I needed to employ someone to fit the upper coamings, skeg, and fibreglass the bottom of the boat. After that came painting. I lost a bit of control here. Whilst my instructions were very specific, I also had to make calls re stopping effort in a need to make savings. This took a year to make happen due to cost issues. The result is that the paint finish of my boat isn't perfect, but it is close. In some areas (like the final fairing of the fillets) the boatbuilder did better than I would have; in other areas (e.g. painting; I would have been more pedantic). I can't complain, because my garage is not an ideal painting area, and I could not find a painter with an adequately sized paint booth to do the job. The result remains a very good boat, and I am pleased to be able to say that I built this boat (at least 98% of it). Where paint touch-ups are needed (there are about 3 or 4 in difficult areas on the inside of the hull) I will get to them gradually over summer, and should complete the job next winter.

## My fitout choices and rationale:

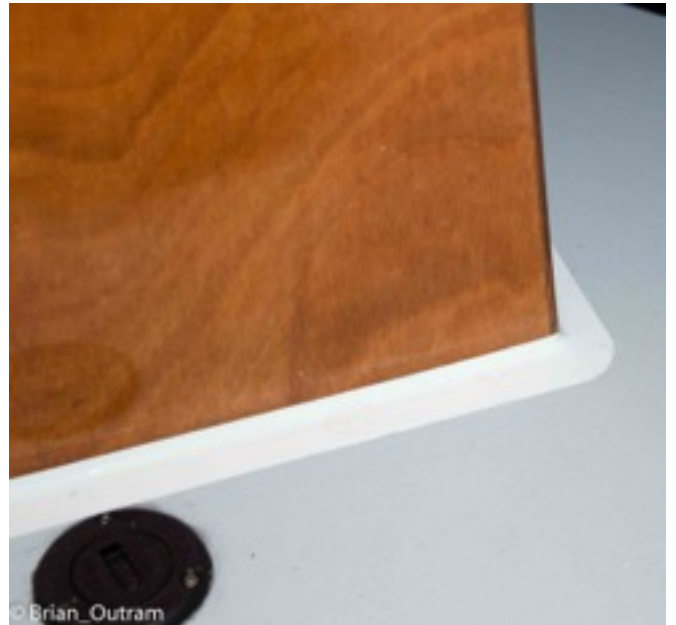
### - Motor selection

I chose the best motor (in my opinion) that I could afford; a Honda 20hp 4-stroke. I chose the 20hp in preference to the 25hp due to lighter weight, better petrol efficiency, better boat balance, lower environmental impact, and longer range.

### - Paint/varnish choices

My theory is that the boat exterior needs to be white. I then chose to highlight the console, drivers seat, and seat lids to be varnished in order to make a statement that the PT Skiff is a wooden boat. In my view, less varnish is more here. If you have more varnished areas than I chose, that leads to a boat that is not practical (in my opinion) for “solid” use. The boat needs to be able to take some knocks if it is to be used (see later). I then chose grey tones for inside the boat to reduce (a little) light reflections from the inside of the boat. Paints were chosen from the “International Perfection” paint range. I chose to use “non-slip” paint in areas where there would be high “foot activity” on the rear seat, middle seat, front seat, front floor and aft floor. [See photos 1521, 1523, 1527, 1541, 1546, 1560 for details](#). The non-skid corners match the seat-lid corner roundings and gaps fore and aft.







## - Motor Control & Steering Wheel

The steering wheel is an 11 inch sports wheel because I think the smaller than usual wheel suits the boat. There is plenty of leverage with the smaller wheel. [Photo 1550](#) shows the view of the instruments from my standing position at the helm. [1551](#) is shot from my sitting position with my bum aftward. [Photo 1586](#) is when I am sitting in a more forward position. I think I can easily see everything I need to see.





I chose the “Flush Mount” Honda control lever because of its look. It is much neater than the standard control box, but is also expensive. A special wiring loom is required to match this with the neat little ignition switch panel (1499, 1551 and 1585). The ignition switch needed to be mounted on the port side of the console due to the control box being on the starboard side. See photo 1565 when looking through the tacho mounting hole. The rear of the start switch would have clashed with the control box on the starboard side.

I sourced the switch panel from the USA. Overall I think this look suits the boat if you can afford to go down this path. If you do this, be aware that the Honda cutout guide for the flush mount control is wrong (in my opinion). You **must** do a dry fit of the components on a scrap piece of ply. Be aware that the four bolts that bolt the control lever to the control box look square (symmetrical) but they are not. If you get this wrong then your other mounting holes will be in the wrong position. Do not push the outer round cover of the control lever into place until the last moment as it is very difficult to remove. Contact me if you go down this path.



## - Fuel Tank

The 30 litre Hulk tank fits this boat well. It gives me 5 more litres (about 1 gallon more) for longer range. (photo [1574](#)). I will need to fit a tank “restraining cable” in the near future to stop the fuel tank from sliding around during transport and underway. Pictures later.



## - Instrumentation

The boat has only one battery, and the motor charges at 12 amps maximum. I want to know at all times the charge state of the battery; battery amps being discharged if not underway; and fuel levels at all times. The tachometer will only switch on when the motor is running. Hence I have an ammeter, voltmeter, fuel tank level gauge; tachometer; and (for my needs) a chartplotter/fish finder. I chose the Wema range of gauges (Euro style, black face, black bezel; photos later) because I thought that they looked better than the Honda supplied Faria gauges. The Wema gauges were also mid-way in price between the top-of-the-range gauges I could buy in Australia and the Faria gauges.

My Chartplotter/Fishfinder is a Garmin GPS750s. This has a sounder, with the transducer mounted on a block on the starboard transom (photo [1533](#))

I saved about Aus\$1000 by purchasing this at a “boat show” price locally. This unit is very easy to use, though it has recently been superseded if you want the latest-and-greatest unit.





## - Boat entry from water

Given that I will sometimes be photographing sailing boats; sometimes during championship events; sometimes during “passage” races; sometimes “performance” boats like 18ft skiffs; I will occasionally be called on to do a rescue. This has happened before. Therefore a boat-entry ladder is need somewhere. I chose a port transom “drop-down” ladder (photo [1534](#)).



I think the boat will need some reinforcing where the bottom of the ladder meets the transom. I will put some reinforcing circles here next winter. In the meantime I have filled the bottom of the black rubber caps with about 5mm of epoxy filler to stop (hopefully) the metal of the ladder cutting through the rubber caps until I do the job properly.

## - Mooring Cleats

You normally need three cleats each side if you are moor the boat wharfside. You won't necessarily use all three at once, though you will need at least two for fenders if you want to stop the nice varnished gunwhale from being scratched. (I know it will happen eventually, but I am prepared to do the repairs).

We discussed the bow cleat above. I didn't think enough about the stern cleats until after the side decks were installed. I could have put in an additional block with “t-nuts” on the underside of the side deck. I have mounted (with bolts) my rear cleats and strengthening block just forward of the front of the rear seat (photo [1601](#)). This is in an easy to reach location especially if someone is sitting on the rear seat.



The middle cleats are important, especially if you have no passengers to assist in coming alongside or departing the wharf. A central cleat will hold the boat in a stable manner against the wharf for a short time in most conditions. This is normally the last mooring line I release when departing the wharf. It is very close for the skipper to release when singlehanded on the boat. (photo 1579).



### - Seat coverings

An upholsterer made the seat cushions from 2" foam. The drivers seat cover is fixed to the seat lid with four "press studs" screwed to the seat lid. (photos 1503 and 1519). There is a zipper on one edge (1519) to enable removal of the foam if required. The whole cushion can be removed by simply lifting the cushion near the studs. I think that this looks neat, clean and simple. Notice also that the seat lid is held in place with two simple "loop and clip" stretch cords for simplicity, though a downside is that I cannot lock the seat lid.



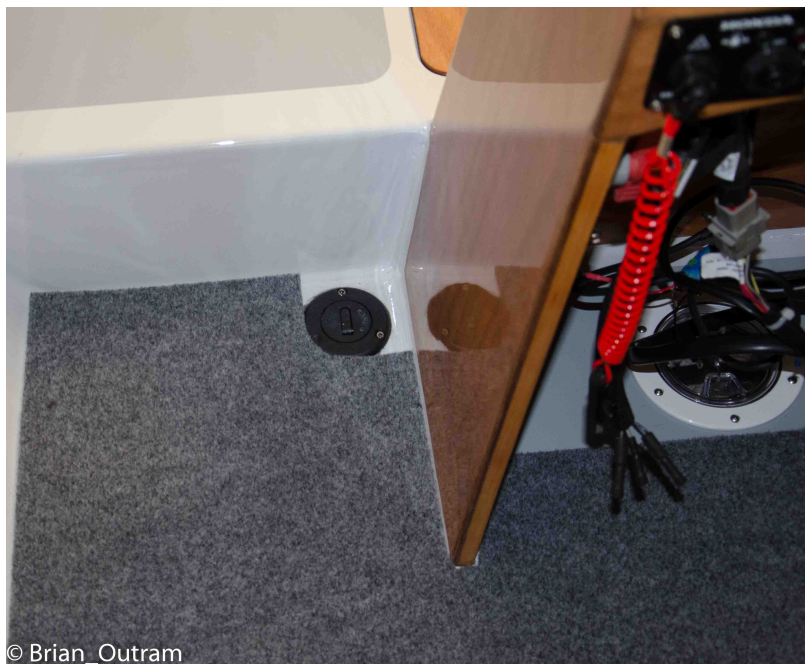
I had 3 more cushions made and these can be placed anywhere in the boat (they do not have "press studs"). Unfortunately they were made slightly too big to store under the seats. The upholsterer has agreed to fix this for me at no cost as he has a market for cushions I return. My new cushions will be the size of my "non slip" areas on the middle seat. (390 x 300 mm) (1' 3 1/2" x 11 3/4")





## - Floor Coverings

The upholsterer also installed waterproof carpet (photos [1552](#), [1563](#) and [1574](#)). This may seem overkill because I had gone to the trouble of the non-skid painted floors, but the non skid painting was easier to do now than later, and the carpet provides protection from a hot floor for barefoot passengers (there will be some). The carpet also provides a level of protection for the floor itself; especially from dropped objects in the boat and cool boxes etc that may get dragged about the boat. It also stops the fuel tank from scratching the rear cockpit floor.



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The front floor carpet is fixed in place with four “press studs”, (photo [1563](#)), and can be removed if required for cleaning or washing the boat etc.

The rear carpet is only loosely in place for the moment (held in position by the hole for the drivers seat). I will likely fit 4 or 6 “press studs” once I am happy I have finalised all of the outfitting.



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I will cut a 15mm (@ $\frac{1}{2}$  inch) strip from just in front of the drainage hole under the rear seat (front cockpit drainage) to the transom drainage hole to allow for better water flow. Similarly, I will cut another, say 20mm strip (@ $\frac{3}{4}$ ”) where the carpet meets the transom, again to ease any water flow when the boat tilts from side to side. (photo later)



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## - Boat Cover

The upholsterer also made the boat cover. (photos 1466 and 1467). The cover is held in place by a simple pulley system at the transom, along with 3 "sail ties", again at the transom and around the motor. Fitting the cover is very quick and easy. Put it in place, pull tightly on the pulley system and cleat. Then put the sail ties in place. The cover is made to fit under the lip of the gunwhales to hold it in place. There are no ties from the cover down to the trailer.



At the moment the grab rail is completely encased by the cover. I could feel a little wind resistance when towing the boat home from the upholsterer. I need to assess this further. Leaving the cover as-is makes it easy to secure. Opening up the cover at the grab rail leads to holes that will let in rainwater and also makes the cover more difficult to secure. For the moment I will not change the cover.





## - Motor Cabling

Nothing unusual here except the entry point for the cable near the rear seat (photo 1601). Any space I lose for flotation foam is more than made up by the airspace under the solid floor.



## - Navigation Lights

As I am planning to do some long trips, I will need navigation lights for safety if I get caught out after dark. A low profile dual port/starboard LED light has been mounted at the bow (photo 1529).



I was caught out here due to stupidity. I always knew that I would have navigation lights. I figured the port/starboard lights would be placed on the forward end of the deck coamings. The problem was that these lights need to be mounted parallel to the centreline of the boat. That in turn means that mounting blocks need to be made, and I finally came to the conclusion that the individual side lights would make the boat look “bug-eyed”.

Therefore I chose the dual bow light. The problem was that the foredeck and flotation had already been installed. It was a right pain-in-the-bum to get the wires from the bow, down under the foam and back up to under the foredeck aft of frame 1.

In any event the white light is a 2015 project. I have wired the boat to be able to connect the white light later (FFBNW. Fit-for-but-not-with)

## - Bimini

The required anchor/steaming light will be fitted after I make choices about a bimini. If I choose to install a bimini it will be custom engineered from carbon fibre with an appropriately coloured fabric top. The all-round white light will be appropriately mounted on the bimini. The bimini will need to be removeable/stowable for towing and to enable the boat to fit in my garage.

If I don't fit a bimini I will need to mount a removable/drop-able pole light on top of the grab rail.

I did some part time work for Etamax Engineering in 2012 just before the epoxy sensitivity took hold. I know that they can engineer and build an appropriate/innovative bimini for me. It will need to be console mounted only.

## - Wiring & Switches

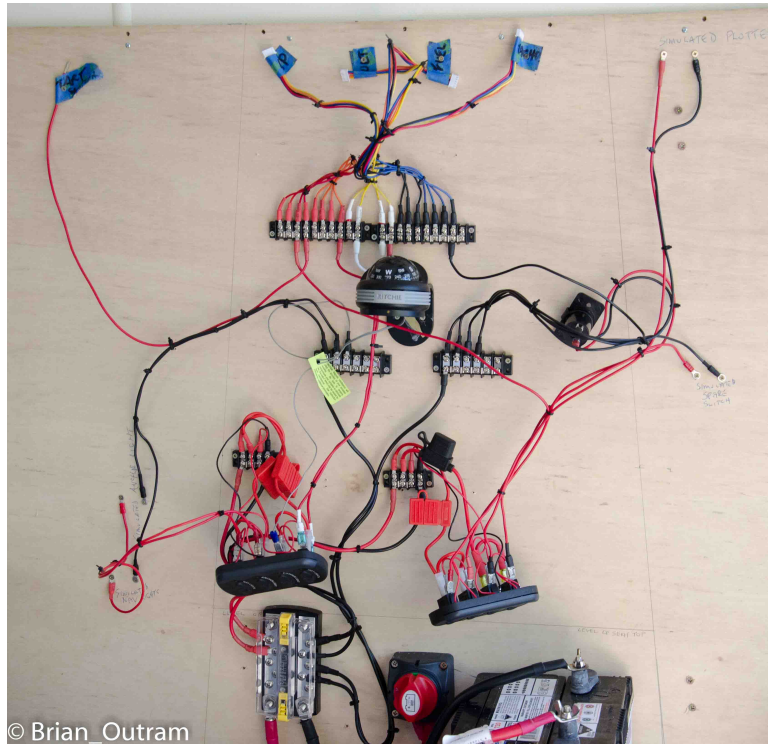
Photos [1570](#), [1571](#) and [1572](#) show my switches (BEP splashproof switches) and my prototype wiring board. It all works. I will have someone more experienced than me perform a final check and tidy up the wiring before the installation. I tried to save money here by doing as much wiring I could by myself

Some of the wiring shown "simulates" wiring already on the boat; for example the start switch,



fuel sender, nav lights. My ammeter sensor is not yet included in the circuit as I am still figuring out the location for the sensor.

I think the BEP switches look tidy, though they are not cheap.



## - Aft Drainage

At least for the moment, I have chosen to install two "Saftee bailers" instead of the "elephant's trunk" method. (photo [1588](#)). This fitting is available in Australia at ships chandlers for Aus \$12.50. They screw into a standard drain plug fitting (photo [1533](#)). The unit is about 6" long and performs the same function as the elephant's trunk.



It is “hands free” and I think it is less conspicuous. I will let you know if it does/doesn’t work.



#### - Motor Blocking

I was advised that the curved transom of the PT Skiff might cause the aluminium mounting block on the motor to twist and crack when the motor was bolted to the transom.

We shaped an offcut of 19mm particle board to the shape of the mounting bracket. We covered one side of the template with plastic and then squeezed epoxy filler between the transom and the particle board template using clamps and screws.

This left a nice flat surface for clamping the motor. The epoxy filled surface is about 4mm thick (@ 5/64”) at its outermost extent. ([photo1537](#)). Note the motor is not fully clamped in this picture.



## **- Hull “panting”**

There are some compartments on the PT Skiff that are fully enclosed. That can lead to issues on a hot day where I live. I have seen a hard poly cockpit drainage tube through an enclosed space crushed by the air pressure when a boat on a fixed mooring was exposed to many hours of direct sunlight on a hot day.

The poly tubing gave way before the hull was pushed to breaking point.

To overcome this I have drilled a single half millimetre hole into every compartment that is sealed. A 1/4” hole was first drilled then filled with epoxy filler. Then the half millimetre hole was drilled into the epoxy with a small hobbyist hand drill.

All of the holes were place “high” on the relevant frame to minimise any water ingress into the “sealed” compartment.

I have also drilled half millimetre holes into the centre the three deckplates in frames 1 and 10. The holes are really hard to see.

I argue that any risk of water getting through into the hull in a swamping situation is minimal; if it does occur the water will take a long time to fill a compartment through the tiny breather hole; the compartments are interconnected by only one route so flooding will be sequential not simultaneous; and in the worst case the flooding cannot be worse than the flooding test done by the USA authorities on Russell’s PT Skiff.

Feel free to argue differently.

The benefit I get is that I know that none of the “sealed” compartments will crack/explode.

## **- Building Space**

My build space was a single car garage measuring 3.22 wide x 7.55 long x 2.44 high (metres). Imperial measurements 10’ 7” wide x 24’ 9” long x 8 ‘ high. My recollection of the PT Watercraft build space recommendations were that the 8’ high is okay; the 25’ long is a bit short; but the width I had is way too short. I think they recommended 16’ width minimum.

They were right.

I knew what I was taking on was challenging, and I would say that was able to build the boat in the small space I had, you need to be a bit nuts to try.

I had no choice, because I wanted to build this boat. In my opinion, after having done it, if you try to build the Pt Skiff in any smaller space than was available to me you will likely fail.



The main problem is that you need to remove/disassemble the bench early in the build process. This leads to building things out-of-sequence with the build manual in order to fully utilise the bench. I can provide details of what I did out-of-sequence if needed, but it introduces problems re storage of completed components; double/triple/quadruple handling of assembled pieces (mostly under the hull/cradle); and significant issues with turning the boat.

If you are determined, you can do it, but it will be painful at times, and you will need extra help when turning the boat after the first two “turns”.

A small build space will also increase your build times.

## - Trailer

I chose a custom built trailer because the commercial ones were too expensive and did not suit the boat. The trailer can tilt (see photo [1597](#)).

The supporting boards (photo [1590](#)) were a pain to build. I built wide boards (200mm wide x 2985 mm long x 27mm thick) (@ 7 7/8" x 9' 9 1/2" x 1 1/8" thick) to provide maximum support for the boat. The boards each consist of three “planks” of 9mm ply laminated and coated with epoxy, and covered with waterproof carpet.

The first step is to build six individual support ply pieces on a bench. Locations of any butt joints needed (I used offcuts from the sheet of 9mm ply I purchased for my solid flooring) were staggered. I needed extra pieces to have enough ply to do the job.





I then sat the three templates used for the hull building cradle into their correct positions on the trailer, then adjusted my trailer supporting arms to their correct heights and angles and bolted the two lengths of ply to the trailer. The next step was to laminate the second piece of ply, temporarily bolted whilst the epoxy hardened. Remove the bolts and do the same again for the third sheet of ply.

The result is nicely shaped (compound twisted) supports though it was a lot of work. There must be a simpler way to do this.

A canvas stone guard will be fitted to the trailer in January 2015 (photo later)

### **- Magnetic compass**

There is a legislative requirement in my state (South Australia), that all boats that venture outside a 2 nautical mile limit offshore or from the shores of Lake Alexandrina must carry a magnetic compass for emergency purposes.

My solution has been to mount an inexpensive Ritchie bracket mount compass on a hidden bracket in the centre console, under the steering wheel mounting. This emergency magnetic compass can be rotated into a position that can be seen from the driving position if required. (photo later). The compass can be lit at night (see "instruments in my earlier e-mail tonight)

The mounting bracket is already installed, though you cannot see it in any of the photos I have given you.

This compass will likely be subject to electrical interference, so I will need to measure its performance under the following conditions:

- All instruments "on/off"
- Tacho off"
- Plotter "on/off"
- All power failed
- Etcetera
- All combinations above

Adjusting the compass to do all of the above will not be easy, especially as the battery is so close to the wiring/instruments here. (Another project for 2015)

Plan B is:

- A pre-owned Garmin GPS 72 as first backup. The Garmin GPS 72 can be charged from the DC Outlet (just visible in photo [1551](#)). If everything above fails, (i.e. no power to anything), refer to the GPS 72 (heading; waypoints; etc).



Plan D:

- Use the hand held VHF radio

Plan E:

- If that fails (e.g. GPS 72 battery is flat), activate the EPIRB.

If Plan E fails I will be in deep doo-doo.

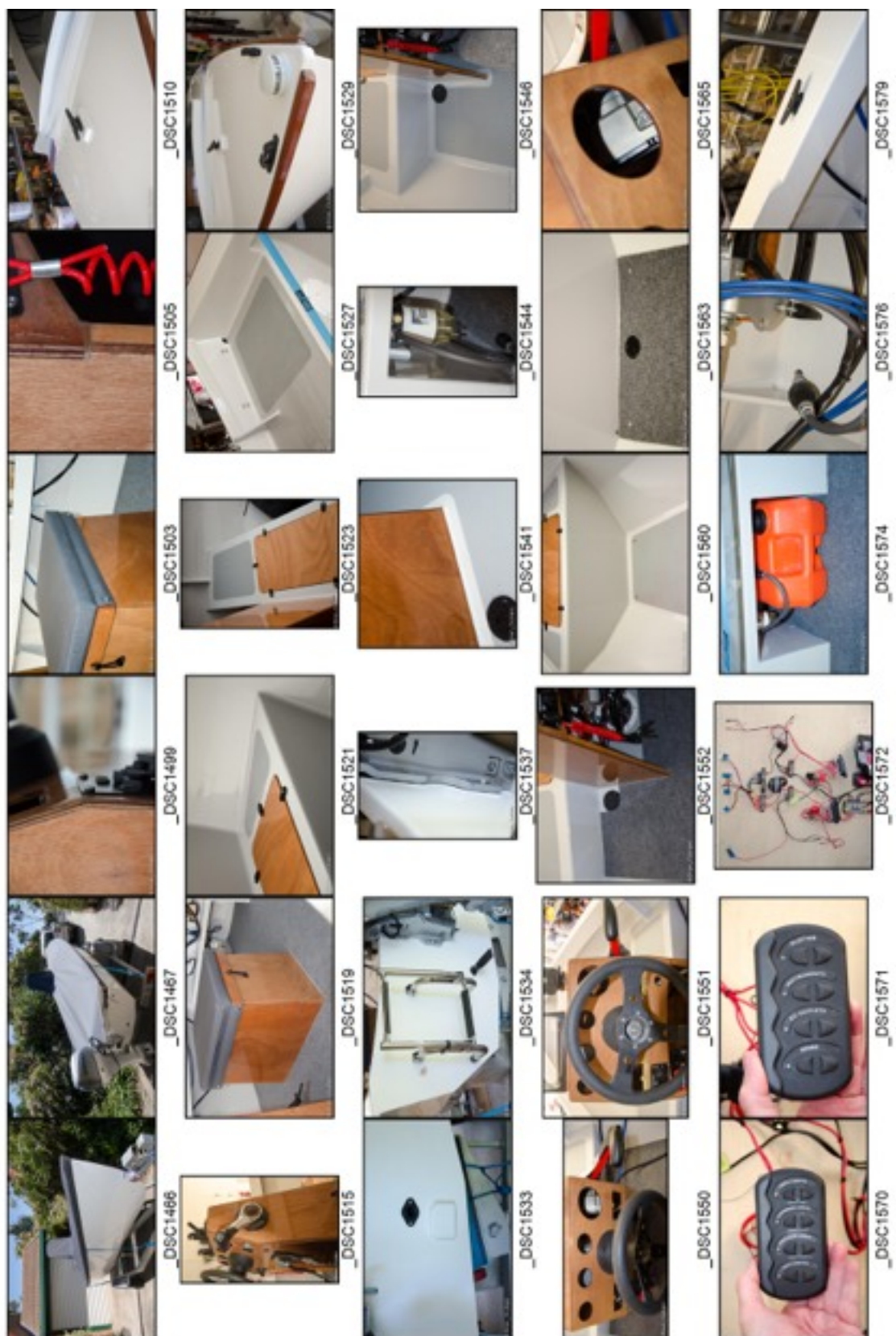
The beauty about the above solution is that the average viewer can see almost none of it when looking at the boat.

More photos next pages...









Regards, Brian

