

# GONE SAILIN'



## Information

The extra pages included here have been built on the experience gained by repairing Pelican class boats.

The information can be extremely relevant to people who own or are looking at owning a Pelican.

Information is included here of modifications to the Pelican class boat to hopefully benefit the popularity as well as the function of the dinghy.

In function, The Pelican is and foremost a 2 person "training" dinghy. It excels at this and has done so for a lot of years. For the pelican to do so for another long set of years, my personal thoughts is that it needs to be re-vitalized.

The re-vitalization proposed changes are shown in some of the following pages.

## What to look for in a boat - thoughts in retrospect

When we had decided on purchasing our first dinghy for the kids "Pelican" we didn't have any idea of what we were looking for. The only piece of positive advice was that the boat was light. In hindsight, it may have been better to have looked at a few more boats.

Things that I would look at next time;

**Hull material - fiberglass or wood**

Fiberglass boats are typically lighter and typically will require less maintenance. How heavy is it with respect to the boat class? Does it leak? Check inside the buoyancy tanks for any water (preferably after it's been in the water).

**Hull coating**

With fiberglass/gel coat finish, an epoxy filler on any deep scratches or cracks and a rub back should be sufficient. Painted surfaces may require touchups or even a whole new paint job. Check the surface to see what condition it is in.

**Sail**

What condition are they in? How many? Ideally have two sails, one newish which will be the race sail and an older one for training. Sounds good in theory but you typically always use the best sails anyway. New sails will have a crispness to them. When the sail starts to flap on the leech, it's delegated to really old sail status.

**Spinnaker**

Same as sail above, check to see if there any holes in them, a little bit of spinnaker repair tape is ok.

**Mast and boom set**

Check for any cracks. They will typically occur around any fitting connection. For the pelican, I typically like the hard pin connection between the mast and gaff as its more rigid and less prone to failure.

Look at the boat rigged up if possible and take some photos once rigged up.

Does it have a cunningham and boom -vang? Can they be changed while sailing if wind conditions change? How easy are they to get to when sailing?

This is a quick short list to check, not to say that any one or other can't be fixed. I think it's wiser to get an idea of what may need to be fixed or changed so a reasonably informed decision can be made.

# GONE SAILIN'



## Pelican refurbishment

The extra pages included here have been built on the experience gained by repairing a Pelican class boat.

The information can be extremely relevant to people who own or are looking at owning a Pelican.

The information can still be applied to other class boats as the repair decisions and parts are common. The main issue when looking at other class boats, is determining the variance in class and therefore the changes to accommodate them.

## Making History's history

previously Pirahna

During the lead-up to the 2011 Pelican state regatta, one of the instructor's (Luke) at SoPYC recognized the boat number as one he had learnt to sail in, back in 2001.

The sail number "318" was the second oldest at the 2011 Pelican states, and upon asking around, we believe the age of the boat to be approximately 40 years old, circa 1970's.

# GONE SAILIN'

## Hull repair

Finished product to the right, not that it looks like this now.



### What do we have

The first thing to note about the boat was that the hull is fiberglass and had been painted. The keel had a twenty cent piece hole in it, the underside had full length scratches, the boat had a series of extra fittings from over the years and a series of extra holes in all sorts of locations.

With a fiberglass boat (non painted), you typically have the choice of bogging any holes with epoxy and preferably polishing up the gel coat. With a painted fiberglass boat the options get a bit more interesting. If you know the paint type, you could bog up the holes and potentially clean up the areas and then paint over. Some areas could get interesting with extra layers and the end colour will be patchy with a mismatch of old faded sections and new sections.

Unfortunately, the previous two owners of the boat did not paint it and had no idea about the paint type. No options left but to sand it back and start again.

Some photos of the hull before any serious work began are shown below.



### Preparation

I removed all the fittings from the hull and started sanding. I mainly used a large grit (40-80) sandpaper to take the bulk of the paint off, with a smaller grit (120) to then smooth out the larger sanding marks. Be careful not to take off too much paint, or to better describe it, remove the paint but not too much of the gel coat underneath, if it can be helped.

If you remove down to the fiberglass mat underneath you will make the painting process harder. What you won't notice until painting, is that small hollows or pinpricks exist. The paint won't be able to flow evenly and you'll end up with an uneven surface. The paint will need to be removed and the pinpricks bogged up. So, be careful not to remove too much paint/gel coat.

Upon sanding the hull, be careful to note any discrepancies in straightness. We had noticeable large dimples in the bottom of the hull and the front of the Pelican was concaved in sections.

Please note, this is messy work and I still have white paint powder all through my shed!

Due to the hole in the keel, we drilled a hole at the lowest point to allow any water to drain out. We still had water in the keel hollow section after a reasonable time of drying out. A small air blower blew warm air into the cavity as the cavity should be dry before attempting to plug these holes. The fiberglass mat was then rolled up and inserted into the hole to give some strength back to the section.

I also added some fiberglass matt to some sections on the inside of the hull, which either seemed to have some fine cracks or where some extra reinforcement may come in handy. Make sure you check all surfaces of the hull for any cracks before any bogging or paintwork is completed.

All unused holes, concaved sections, repaired sections and any uneven surfaces were bogged and finely sanded so that all the surfaces was as smooth as possible. I used a two part epoxy as the bog material. Take care to mix only the volume you're going to apply, as this stuff goes off quickly.



### Finishing

A note on paint types.

A variety of paint types are available and dependent on equipment available. The two typical types are a single coat epoxy and a two coat epoxy. The two coat epoxy requires professional equipment as it is hazardous to breathe. The single coat epoxy will typically require an undercoat. Some brands are available, that if you believe the brochures, are brushable and leave a very fine finish.

In the end we opted for someone else to paint the hull with a two part epoxy. The end product was expected to be good and we weren't disappointed.

Choosing a colour is also an important part of the painting process. White is a good colour as any underside scratches are not easily seen. We opted for two colours, white on the inside and top of the front buoyancy tank, and periwinkle (blue) for the hull colour. The periwinkle is an Australian standard colour so any repairs to the paintwork should be able to be matched easily.

The main reason for the colour choice is the ease of being able to see the boat on the water, compared to all the other boats. Although we can see the kids boat on the water easily, the scratches are starting to show!

Instead of the non skid stickers or grit in the paint, we elected to use a non skid rubber paint (Tredgrip from Envelon) on the floor of the hull. Picture of application is shown below. We used this paint as we can repair or add more build up at any time very easily.

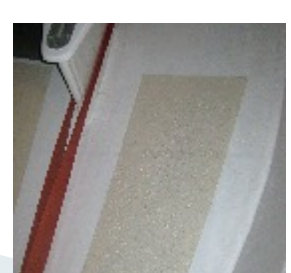
### Finishing -Afternote

I've since repaired another boat to make the Pelican special since Making History's overhaul. In this case I sanded back and painted myself using an Enamel paint.

The finish was excellent. Next time I would recommend Enamel over the epoxy as it can applied by most people and re-coat over the top is an easy matter.

To repair two part epoxy paintwork you need to primer and then you spray Enamel on top of this anyway.

The blue boat typically gets a touch up every winter and then a polish to blend it in. Looks sort of multi coloured now as the blue can never be a perfect match and the undercoat shows in section.



# GONE SAILIN'

## Water break

Finished product to the right



### Material options

One of the things I had noticed when the kids were sailing was the ability for it to draw a lot of water very quickly over the bow if they weren't careful.

Almost all of the other boats had a water break over the bow, so that when water did come over the bow, it was directed to either side of the boat instead of inside it.

Numerous materials were used including, fiberglass, wood, thin aluminum, thin fiberglass section and thin plastic sections.

Fiberglass was out as we had just painted the boat.

Wood was out as I would need to screw from inside the buoyancy tank, and I couldn't reach the other side of the tank through the inspection hatch.

Thin aluminum was not preferable as it could end up quite sharp and is not very strong.

Thin fiberglass screwed down from the top could be ok but I would require a mould to be made first.

Thin plastic could break/snap so would not be preferable.

I had previously worked with thicker plastic sections so this was preferable, lightweight at 6mm thick and easy to cut and form.



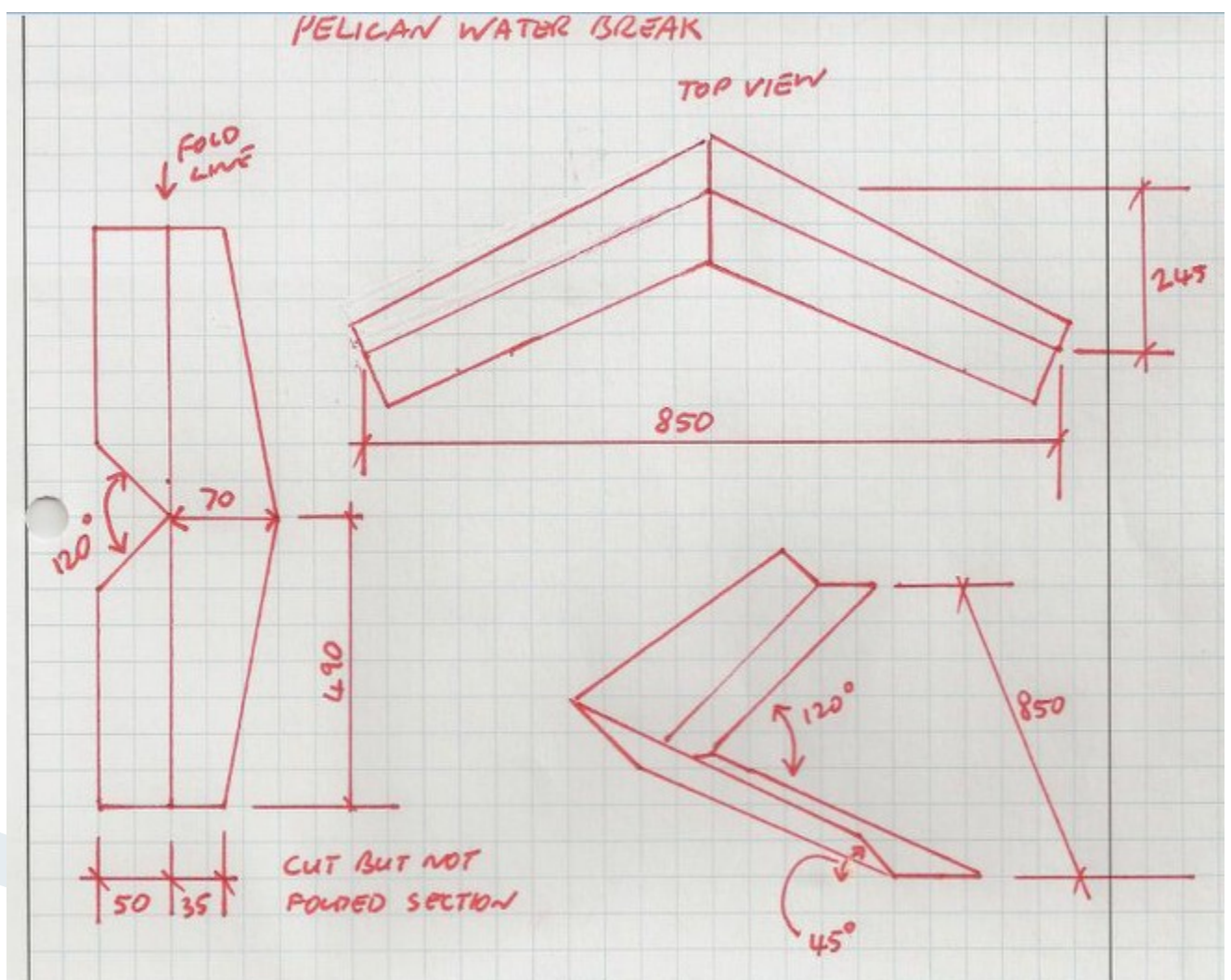
### Preparation

The plastic shape was a compound fold, which was doing my head in trying to work out the unfolded shape, so I could give a sketch to the plastic fabricator. In the end I gave him a simple sketch for him to fold up. The shape was close but not quite right.

After cutting the whole section in half and then creating a stainless clamp, we had a water break. At a total cost of \$50, a reasonable cheap option. The nice thing about the plastic was that when it was folded, the heat caused an inherent curve in the plastic, which was pretty close to the curvature on top of the buoyancy tank where it was going to be mounted.

Screw it down to the top and silastic around the edges and we're done. Although, now I'd more than likely use "Sikaflex" to stick it down without having to use the screws.

This is the original sketch I used, please note it does not have the compound fold, you'll have to work that one out.



# GONE SAILIN'

## Beach dolly

Finished product to the right.



### What do we have

Piranha came with a steel tube beach trolley. It was heavily rusted, extremely heavy and the boat supports would need to be fully repaired/replaced.

Well, if you're going to paint the boat, make sure that you limit the ability for the kids to scratch it. They're going to scratch it anyway but if you can limit the paint touch-ups, all the better.

The only salvageable part was the wheels which unfortunately have steel bearings. If you're going to put the trolley in seawater, don't buy wheels with bearings, they'll rust and seize eventually. Buy the ones with plastic sleeves. I'll put the sleeves in the wheels when the bearings seize, its just a matter of time.

The main thing to get right is the position of the wheels with respect to the boat. You want the position of the wheels almost in the centre of the weight balance of the boat but slightly aft. In other words, you want the kids to take some of the weight of the boat when transporting the trolley into the water, but not all of it. Let the wheels take most of the weight and do most of the work.



### Preparation

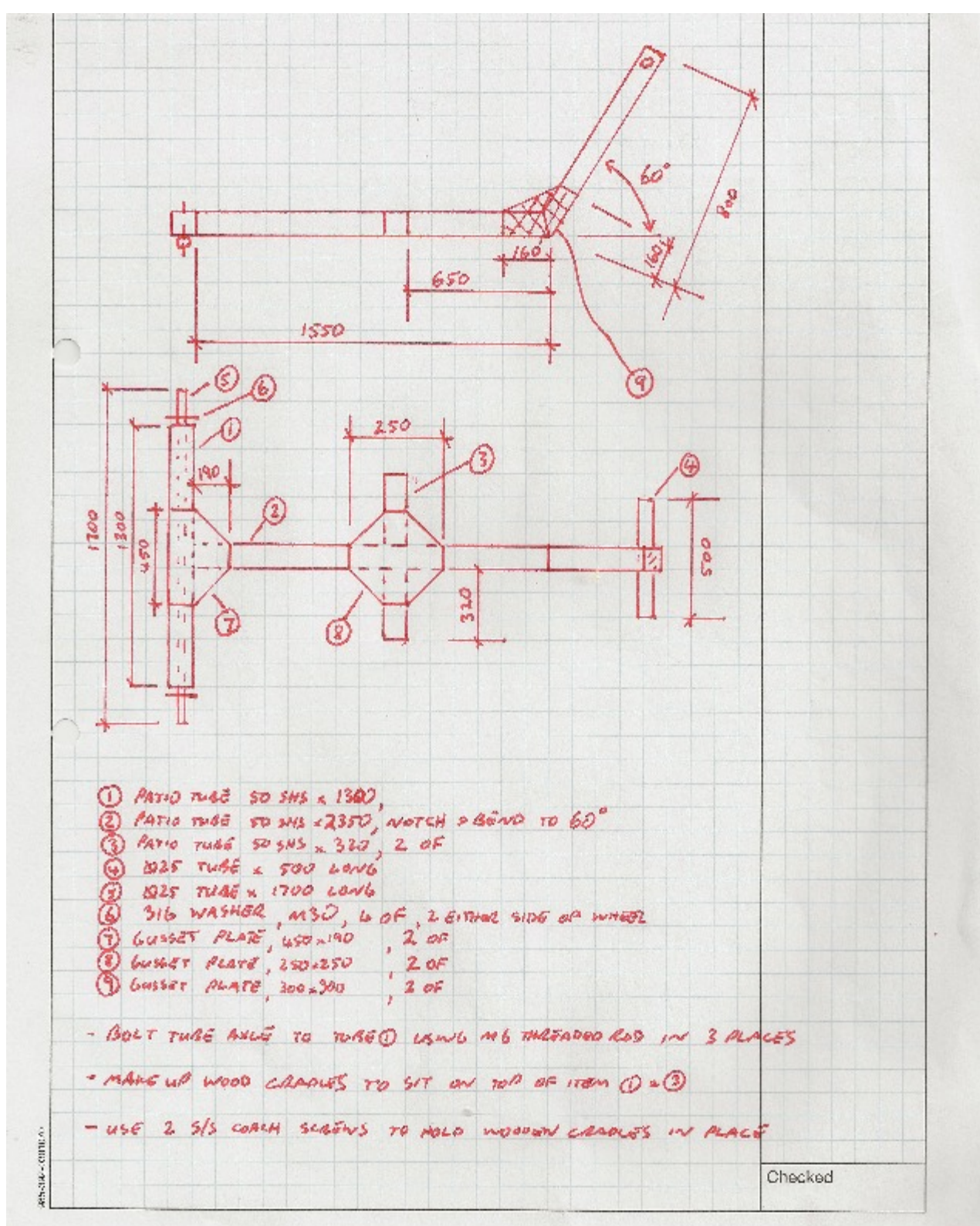
There are lots of different shapes of trolleys: triangular, rectangular, T shape and all sorts. I had previously had a look at a whole heap of trolleys and taken some photos.

I liked the simplicity of the T shape.

I had the same problem as before, I'm not handy with a welder and I don't have the gear. Although, this doesn't necessarily need to be welded, it could be rivetted and made from some aluminum tubing with some gusset plates. Some extra tube for the shaft and a handle and it should be ok.

First, a sketch, then I contacted a local aluminium screen business to see if I could get some 2" aluminum tube. Even better, he had some powder coated tube as extras from a previous job he didn't need. With the tube, rounds and some plate he guillotined for me as gusset plates, a total of \$120.

Riveting the gusset plates first and then bolting the shaft and handle to the square tube gives us the basic frame.



### Finishing

We need to get the profile of the boat at the point that the frame will support it.

I made the aluminium frame up before painting so I could lay the frame on the boat without the risk of scratching it.

If yours is already painted, put a sheet over the hull and then lay the frame on it. Also allow a buffer at the bow so you can get a good idea of where the support lines from the frame will sit under the hull.

Mark the hull in some way as reference points.

Using a thin piece of wood (say 6mm mdf or pine) start trimming until the cut section matches the hull profile at the reference line. Keep looking between the wood and the hull and sand/cut off the contact points.

These will be our templates when we cut the "good" wood.

Lay the templates on the good wood and markup the wood with the correct profile. Trim to this profile.

Before accepting this profile, also lay them on the boat hull along the reference lines to check and remove any high points if necessary.

Bolt the wood to the aluminium frame.

You'll need approximately one square metre of carpet depending on how high the wood support sections have been made. It is best to keep the height to a minimum so the boat can be lifted onto the trolley with the minimum of effort, especially if there isn't much water to help.

I've also added a small pivot wheel to the front of the frame, which helps move the boat on the grass and tarmac at the yacht club but drops out on the sand when required.

### Approximate costs

Tube, round, plate - \$120

Wood, boat support - off cut, free (approx \$50)

Boat carpet - \$50

Carpet glue - \$30

Wheels - free (approx \$80)

Front pivot wheel - \$30 (ex BCF)

Nuts, bolts and rivets - approximate \$20

Labour - don't count this otherwise you'll be disappointed

Total of \$250 - \$380



# GONE SAILIN'

## Fixed pin mast to gaff

Finished product to the right



### Options

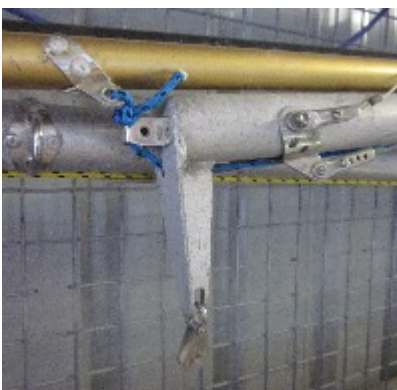
With the Pelican's, the top of the mast is the support point for the stays, and the connection point for the gaff and the spinnaker head.

Upon closer inspection of our mast top which had a previous repair, it was found to be in ordinary shape. It looks like some time in the past, the top of the mast had hit something and the repair included a lot of metal filler.

I'd also been looking at a few of the different gaff to mast connections and I liked the option of the pin support instead of using the gaff line. The gaff movement seemed less hindered and the mast and gaff were always positioned together exactly the same all the time.

Since the mast was going to need some repair at some point and I'd prefer to do this now than when it's really broke, the top of the mast was coming off.

Some of the different gaff and mast head connections I looked at are shown in the photos below.



### Measuring and material finding

I marked the location of the stay rope connection points on the mast so when it became time to reconnect them, I wouldn't have to worry about modifying the stays.

Before you cut the mast, please make sure you understand the mast length allowances within your designated yacht class. If you get this wrong and the measurer is not happy, there's no racing until you've fixed it.

I'd sketched up a rough idea of the pin arrangement while also trying to keep the weight down to a minimum. I had a few photos of different arrangements at the PBYC to work with which made it handy. I then sent this sketch to a number of small stainless shops hoping to get a reply from someone without too much expense. Not one replied, I imagine too small a job.

The other option was to try and make it myself. I can't weld well and given that this was stainless which would require a TIG welder, I needed someone who could do the welding for me. But I could shape all the pieces as they would be of small thickness. I have a friend who has a small fitting shop, Peel Machining, so he did the welding for me for a small fee. He also put me in touch with a small stainless and aluminum fabricator Stainless alloy manufacturing. I walked in there and asked if it was possible to buy some offcuts and walked out with exactly what I was after and some for \$20. I later learned that these guys made up the Pelican beach trolleys for the PBYC, also at a very decent rate.

### Shaping and fitting

I spent about an hour or two shaping up the parts and then offloaded them to weld up. He had some problems welding the really fine stuff but the end product was great. I would suggest sticking to a minimum thickness plate of 1.2-2mm to limit the possibility of burning the plate when welding.

OK, now we have two pieces. One for the mast head and the other for the gaff to position it correctly.

Before cutting the top of the mast, I needed to make up the joiner between the new end cap and old mast. I had some oregon in the shed so I trimmed this up using a drop saw and a circular sanding disk. The round sections do not need to be exact but the finer the tolerance between the wood and either metal items will allow a better bond for the glue. I had also asked around about what type of glue and the simplest answer seemed to be "Araldite".

Ready to fit the mast head section.

This is the critical part. You need to make sure that firstly, the new head is parallel to the mast, secondly, the spinnaker bracket is pointing forward according to the other mast fittings and thirdly, the mast is the correct height according to the boat regulations.

Apply glue to wood and new mast end and wait for it to set. Trial fit this to the old mast and mark location of final location when glued. Apply glue and fit it all together. Use a straight edge to get as parallel as possible and either prop or clamp in this position and let dry.

Fitting gaff section

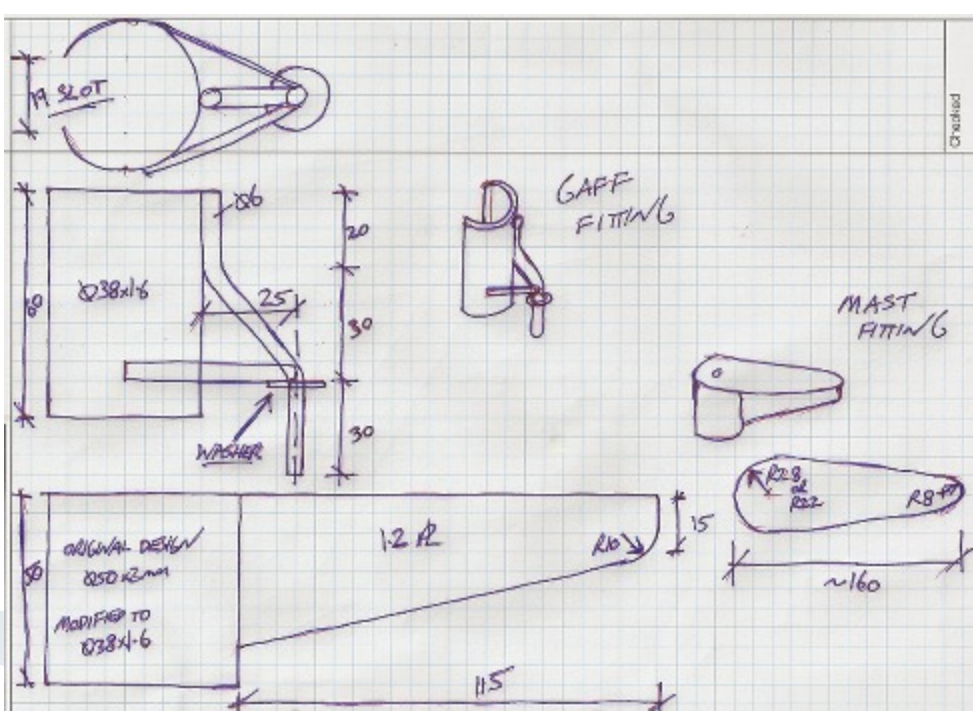
This is all about getting the mast and gaff aligned together in the right location. Measure out the lengths according to the boat regulations and then rivet the new section to the gaff in the correct location.

Both the shrouds were attached in exactly the same location as previously. The forestay was attached slightly lower on the top of the mast.

This meant that the forestay needed to be shortened to correct the mast rake angle.

One important thing to note, measure the location of the mast rake angle before doing this work. If you need to modify locations of the fittings, at least you know what needs to be modified to get it back to the same location. I didn't think of this beforehand and we've been playing with rake angles this season to get it right.

Another thing to note with this mast/gaff pin arrangement, is a gaff removal system to drop the sail, in the case of high winds. This is very important. A simple saddle on the gaff and a small pulley added to one of the shrouds fixes this problem.



# GONE SAILIN'

## New mast, gaff and boom

Finished product to the right



### Existing rig

The existing rig was old and had quite a few repairs given the age of the boat. And as most people are aware of with these repairs, the number of rivets rattling around whenever you rigged it. Again I would thank Steve from Uno as it wasn't hard to put a simple rig together at marginal cost.

The materials are readily available and if you buy one length of 50mm tube, it is sufficient for the mast and boom. One length of 32mm tube is sufficient for 2 gaffs.

Some small sections of plastic so you can plug either end of the gaff and one end of the mast and make up a foot for the other.

Using all the connections from existing mast and you're done.

### Basic steps

Procure the aluminium tube

G James typically have the tube readily available

Mast and boom is 50mm with 2mm thickness, gaff is 32mm with 1.6mm thickness  
Normal grade for mast, boom & gaff is 6060 T5 which has a yield of 110MPa

We bought the same wall thickness material but grade was 6063 T6, yield of 170MPa. Same weight, slightly stronger. 2 lengths for approx \$100 cut and delivered from Brisbane.

The tube can be left bare, painted or anodised. We elected to anodise as simple and protects both inside and outside of tube. The aluminum tube can be anodised in a number of colours available. We elected to go for the black and then we would use white duct tape for all the measuring marks. Looks good also.

Mast,

- first make up the foot to suit the bottom of the boat location.
- Locate foot in mast and then measure the location of the boom based on 380mm from top of front buoyancy tank. First white mast measurement is now located.
- Measure from first mark to second mark, this now locates the gaff connection.
- Just need to locate spinnaker pole hoop and shrouds but you can use the original mast as a template. Remember to adjust shrouds to get the mast rake back to where it should be once all this is complete.
- Only item left is to locate the spinnaker pulley. From "Uno", easiest option was to plug end with plastic and then drill a hole to accept a xx piece of tube which can then attach the pulley to. Photo as per below.

Gaff,

Use the old gaff as a template as apart from the sail guide and the end plugs, the only item to locate is the gaff to mast connection. Measurement marks can be matched against template and new mast.

Boom,

Typically transfer all connections onto new boom using the original as a template.

In the end, it cost \$200 for tube, anodising and plastic for end plug of mast and gaffs plus the foot on the mast.

# GONE SAILIN'

## Fitting upgrade

Finished product to the right.



### What the boat didn't have

Upon finishing the hull and mast repairs and the kids beginning the new season, I was instructed by the skipper of the boat that it needed more work. It needed a cunningham as it didn't have one and the spinnaker line needs to be changed and while you're at it, the boom-vang might as well be re-rigged. It was ok before we bought the boat!

Well, he was right. No cunningham existed so he couldn't trim the luff of the sail. The spinnaker was a single line so he had to pull the full three meters of spinnaker line compared to some boats having either a single or double pulley system. The vang was ok but since I was looking at the others, I might as well see what's best for this also.

### Changes

I looked at the local boats which gave me some ideas but I wanted to have a broader view this time. At the next larger training session at EFYC I managed to check quite a few different boats, and a large thank you to Steve of "UNO" for a lot of good advice.

We opted to use "UNO" as a basis of what to do.

A couple of triple pulleys for the vang will give a large change for small application

A single pulley for the cunningham will give a relatively small change for small application.

A single pulley for the spinnaker line will halve the distance of line needed to be pulled to raise the spinnaker.

After ordering a whole heap of pulleys, the fitment can be seen in the photos below.

One excellent piece of advice from Steve was to colour code the lines, so when you keep yelling, "Pull on vang" and they give you a vacant look, you can yell "the red one" if need be.

I've used 6mm rope here, but after the kids sailing this for half a season, I would use a smaller rope size, say 3-4mm. Sometimes the rope kinks and jams in the pulley whereas with a smaller rope it just should pull through.





# GONE SAILIN'



## Pelican special - NSW version

As most people are aware, the largest issue with the Pelican is the requirement of having to be bailed when it goes over.

After finding out that NSW (Belmont 16s) have taken the existing hull shape and modified it to introduce a number of changes, it was only natural to look at modifying an existing Peli to introduce a false floor.

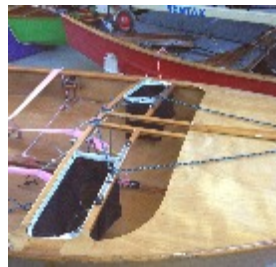
We're not looking at changing everything over but of main interest is the false floor addition and possibly the Mylar sails to add a bit of "bling" to attract the kids.

## NSW Pelican

The NSW version of the Pelican has kept the existing hull shape but introduced a number of differences;

- False floor, self draining cockpit.
- Full mast, no gaff.
- Introduction of a jib, mast is moved back to accommodate jib plus addition of bow sprit

Some photos are shown below of these modifications.



# GONE SAILIN'

## Hull rebuild and adding of false floor

Finished product to the right, with black Mylar sail



### What do we have

The first thing to note about this boat was that the hull is wood, it was in ordinary shape and had been painted. As with most club boats, they were donated and I thought this one was in reasonable shape.

Before I put the floor in I needed to determine where the floor goes as it needs to be above the waterline and at least level with the boat hull or slightly slanted to the stern so that any water would out the holes in the back.

I put the boat in the pool, nice and level as no waves and had 2 kids sit in it to then draw the water line on the outside of the hull. Unfortunately it leaked like a sieve but the water line was marked.

The only benefit was that this boat was light. I found 9 kilos of lead bolted under the thwart and it weighed in at 58 kgs before the lead was taken out (48.5 kgs minus lead). In weighs in at 60 kgs now but this could be trimmed substantially down to class weight easily with a glass boat modification.



### Preparation

I removed the back tank and the thwart and then inserted the sub frame to support the floor using both the guide dimensions from the NSW pelicans and their class rules as well as checking against the water lines that we had transposed from the pool.

Most of the time spent on this modification was to waterproof the boat. The main support on the keel line was cracked so fibre glassing this on inside plus on the bottom of the hull finally did the trick.

Once the sub frame was in, the centre case was cut down to the thickness of the floor above the frame. The floor was then notched to fit. A bit messy with a wooden boat as notched for all the support timber. I've used normal 6mm ply so extra weight than needed but readily available for this purpose.



### Finishing

The floor is fibre glassed in along all connection points.

A little bit of trimming added over the top of the centre case, sanded and then 2 coats of prime and 2 coats of enamel top coat.



### Testing

Hull is now clean and watertight. Add in all the fittings from previous and we're done.

One thing to note. To keep the mast and gaff at the same height as the class rules, I needed to remove 160mm from below the mast. The shrouds and all of the rig are now the correct length so all is ok.

We eventually put the boat in the water and a youtube clip is shown below of 2 ex peli skippers taking it for a run. The video shows them capsizing and then the recovery. Recovery is very quick as the full cockpit is self draining both when sailing and right sizing the dinghy. The two cutouts at the stern of the boat is always above the water line and as such the water drains out - always.

As an aside, the Mylar sails had just arrived the same weekend to put the Peli in the water so both the video and final photo show the black Mylar sail. The association owns this as well as a white Mylar sail with the help from Evolution sails. They will be circulated for club comments this year.

The Mylar will cost the same as the standard sails and longevity is about the same but they do not lose shape like the dacron as the flapping or creasing does not affect them in this way. The Mylar is more affected by the sun and then tends to shrink over the longer term.

In all, the material is nil cost difference and is expected to last the same time.



# GONE SAILIN'

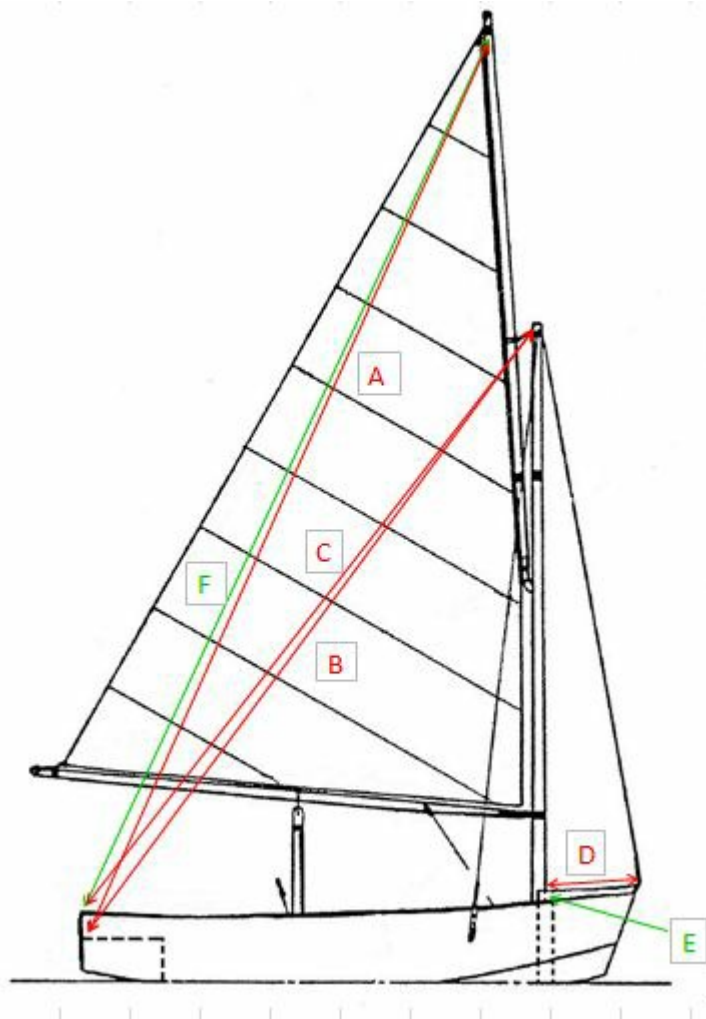
## Pelican Mast rake

My first thought when I was re-setting the mast rake was that these dimensions should be listed at least as a guideline on the original Pelican drawings. Not the case as I found out.

I've talked to a number of different people with regards to setting the "best" mast rake angle and the answers vary. The one constant is to measure and compare against the leading boats to get at least a starting point.

Which lengths should you measure and compare then? Ideally we want to compare the mast rake angle, but to do this accurately, we would need a very flat water surface such as a pool and a plumb-bob. To then compare this and modify other boats, the same procedure would need to be applied.

A little too hard in most cases.



In all discussions, it is agreed that a "a flat boat, is a fast boat". On this basis, the boat needs to be level but how do we measure a level boat out of the water? What is level?

All the boats will have a slightly different balance based on boat mass, boat shape (slight variations) and crew mass. We'll assume that all these are constant to give a starting point of where your mast should be. From this starting point, you'll then need to compare against other pelicans in your fleet to optimise the rake angle, but these guidelines should be close.

Boat #	Information source	Marked dimensions as per diagram in mm						
		A	B	C	D	E	F	
	GBYC average				3585	520		
	GBYC Top boat				3620			
	GBYC Second boat				3600			
	GBYC Third boat				3620			
653	Up the Creek	4860	3720	3600		520	48	
318	Making History	4890	3765	3625		495	18	
	Luke from SoPYC						40	4620
318	Making History	4800	3680	3530			30	4640
	Ron Jensen at SoPYC		3700					

- A Rear edge of back seat to bottom of mark on gaff
- B Rear edge of back seat to rear edge of mast
- C Rear edge of transom to rear edge of mast
- D Bow to front of mast
- E Mast gap
- F Rear edge of transom to bottom of mark on gaff

### What it means

Original source data was from Kevin Rose at GBYC, subsequent measurements of the two main boats at PBYC, then some interim information from training sessions at SoPYC by Ron Jensen and some historic numbers from Luke at SoPYC. The last data of "Making History" was some modifications we made as the boat was found to not point as high as the other boats during a regatta. Since these modifications, this issue seems to be resolved.

I believe the main two measurements should be dimensions "E" and "F". "E" is a true measurement of the tip of the gaff which is supporting the sail. The transom will be different in a few boats based on the fabrication but overall it should give a better measure. For rope support gaffs, someone will need to pull the gaff tip aft to take any slack out of the system.

The mast gap or measurement "F" is a very quick indication of where the mast sits and is the secondary measure.

# GONE SAILIN'

## Pelican - Tuning the sails

One of the hardest things for our kids to understand is; how do you change the sail shape depending on the wind conditions to get the most out of it.? After all these modifications, it would be nice to say "go away and use it", but the first question should be how.

I bought my son a book called "Mainsail trimming" by Felix Marks and the most important page in the book relevant to their sailing is listed in Appendix B and duplicated here. Some of the terminology is different but the meaning stays the same.

I would recommend laminating this and attach it to the inside of the boat if possible, as this is the basis of which rope and where it should be. With reference to the why, I'm no expert but the details are explained in this book and quite a few others but it comes down to trying to get the best sail shape for the different wind conditions.

Wind speed	0-5 knots Very Light	5-8 knots Light	8-16 knots Medium	16-25 knots Strong	25 knots + Heavy
<b>Backstay</b>	Half on	Off	Off → On	On	On
<b>Outhaul</b>	Half on	eased	Eased → On	On	On
<b>Traveler</b>	Up	Up	Upper middle → Lower middle	Down	Middle (Reefed)
<b>Mainsheet</b>	Eased	Mostly eased	Mostly eased → firm	Firm → Tight	Tight (Reefed)
<b>Boom</b>	Just above center line	At center line	At center line	Just below center line	Below center line

From a Pelican sailer

In particular, this guide was produced by Luke Morrison from SoPYC, especially in regards to setting sails and trim for the Pelican.

	Wind speed (knots)			
	0 to 5	5 to 12	12 to 18	18 to 25
<b>Mainsheet</b>	Eased	On	Tight	Easing with the gusts
<b>Vang</b>	None	Little	Medium	Tight
<b>Cunningham</b>	Off	On - wrinkles out	Medium to Tight	Very Tight
<b>Outhaul</b>	5cm gap between boom and sail	5 - 10cm Depth	Near black band	On Tight
<b>Tack strap</b>	Off 3 - 5cm	On 3cm Gap	On 2 - 3cm Gap	On 1 - 2cm Gap
<b>Chocks</b>	Neutral - Fill The Gap			
<b>Performance</b>	Powered		Starting to Depower	Depowered
<b>Body Position</b>	Forward - On the seat		Gunhale - slightly back	Crew has one leg over seat
<b>Rake</b>	4620 mm (As used by 493 in 05/06 season)			