A Sabre Rigging Guide

By Chris Dance, Espresso 1778
First Written: September, 2009
Updated: January, 2011

With new Sabre fleets starting around the country and a number of new boats being built this winter, a few people have asked me to email some photos of my boat. I hope these photos prove useful. If there are any "gaps", please email me (chris.dance@papercut.com) and I'll add some more photos as required.

My boat is a standard YMS hull. I ordered a blank hull with 2 x venturie and shroud attachment points fitted at the factory.

Unfortunately there can be a wait on YMS hulls... On the flip side, I did have lots of time to think about how to rig it out :-) Here were my design goals:

Simplicity:
Keep it simple. The less there is, the less there is to fail. Use off-the-shelf components where possible. Bespoke items are potentially expensive and hard to replace if they break.

Minimal:
Don't add extra hardware for the sake of it. Many ideas such as the fixed height hawse and the use of rope strops for block attachments rather than shackles have greatly cut down on the number of "bits". Every shackle, screw, cleat or nut is just sitting there waiting to undo itself at the most inconvenient time!

Minimum Cost:
Although not a primary goal, it's more of a side-affect of the principles above. How many times have you walked out of a yacht chandlery spending less than $100? Even the smallest plastic bag full of fixings seems to cost more than my wife's shoe collection. You'll save quite a bit by going for a minimal fitout.

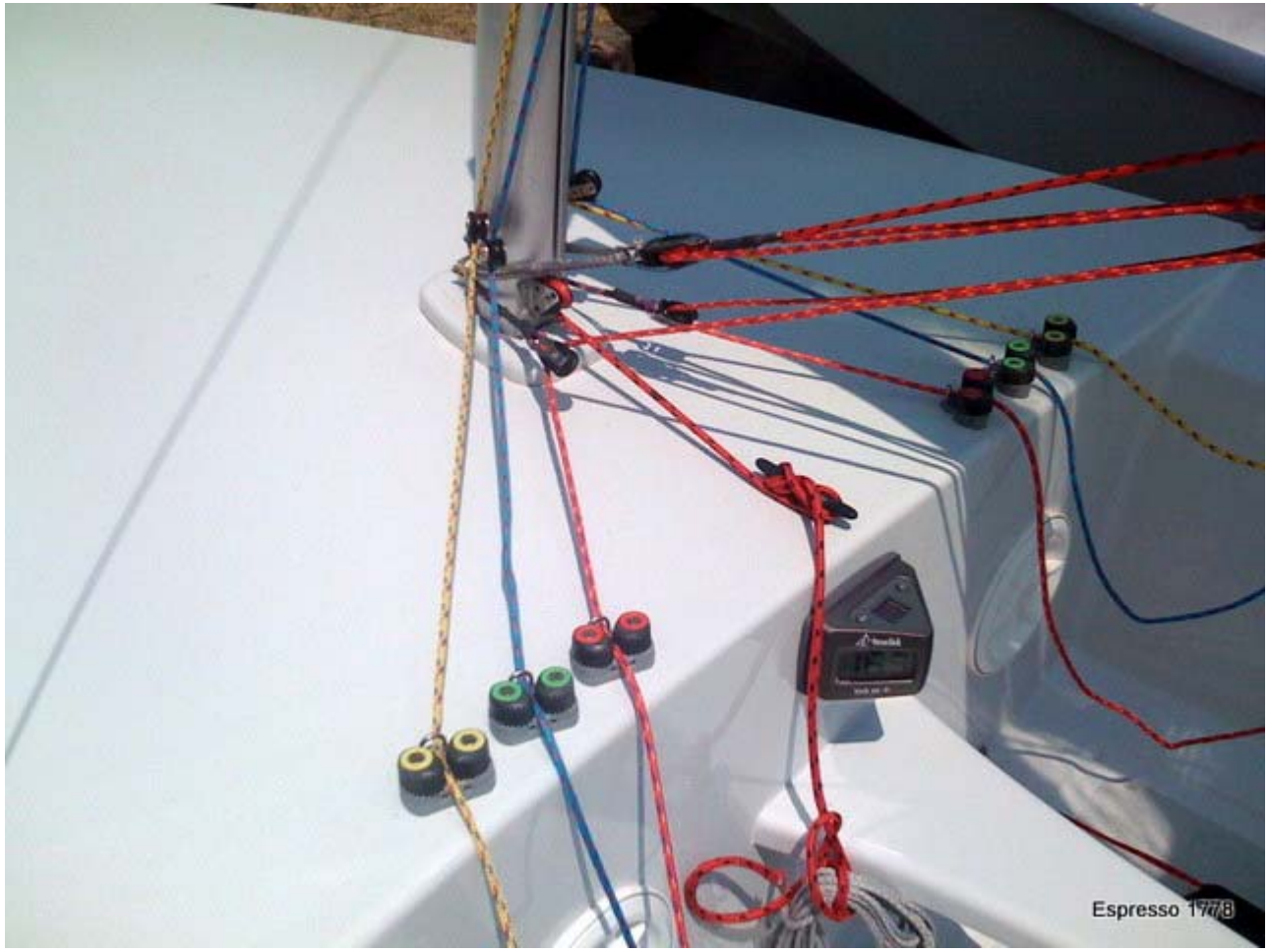
Proven:
Nothing on my boat is a new idea. All I've done is cherry pick what I thought were the best ideas from others.

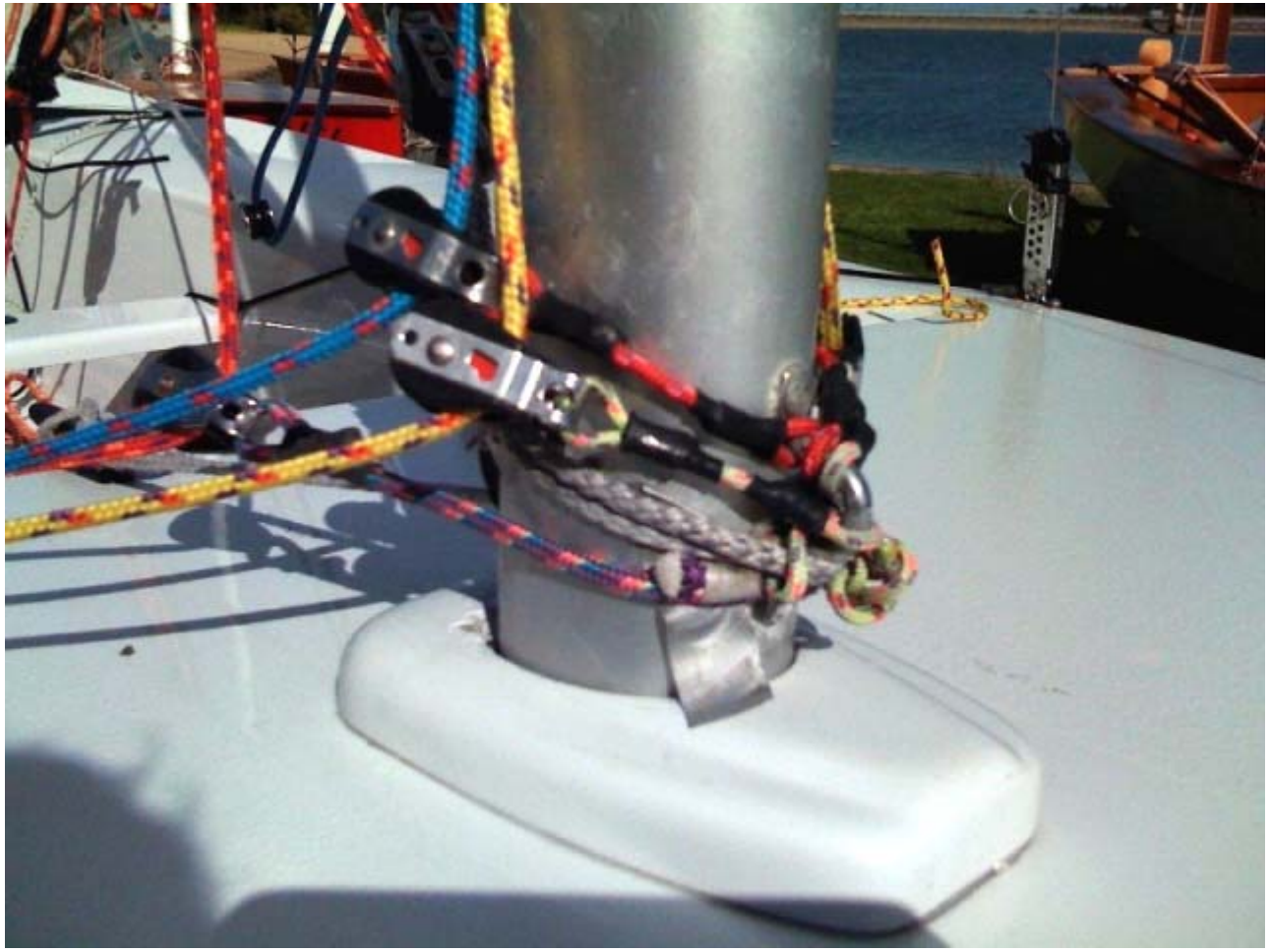

Espresso 1778

- The mainsheet block is attached to the floor via a 2mm (x 6) rope strop.
- Mainsheet block is a standard 40mm BB Block (the ratchet block is on the boom).
- The block is held up by a run of 3mm shock cord running across back of thwart.
- The main block attachment point is a saddle screwed into the wooden reinforcing with long 1.5 inch screws.
- The traveler/hawse is always at a fixed height and permanently tied to the same attachment point. This ensures the load is transferred through to the floor rather than loading up the thwart.
- Padded tow straps can be obtained from your local Sail Maker. Recently I've wanted to source something "off-the-shelf". I've found the Zhik "Club 420" toe straps to be a perfect fit for the Sabre. They cost $75 per strap so you may find your local sailmark option a little more cost effective.

- The boom is a standard section from John Dixon.
- The ratchet block is the aft block on boom. I find it's much more effective on the boom as the angle of wrap is larger and the block does not swing through an arc before it engages. I've used a Harken 2608 and removed the SS attachment point so I can pass rope in it's place. Make sure you take the sharp edges off the hole before attaching as this will cut through the attachment rope
- The mainsheet is 7mm and 7m in total length. I tie the end off around the aft tow strap attachment point so it does not knot in the boat.

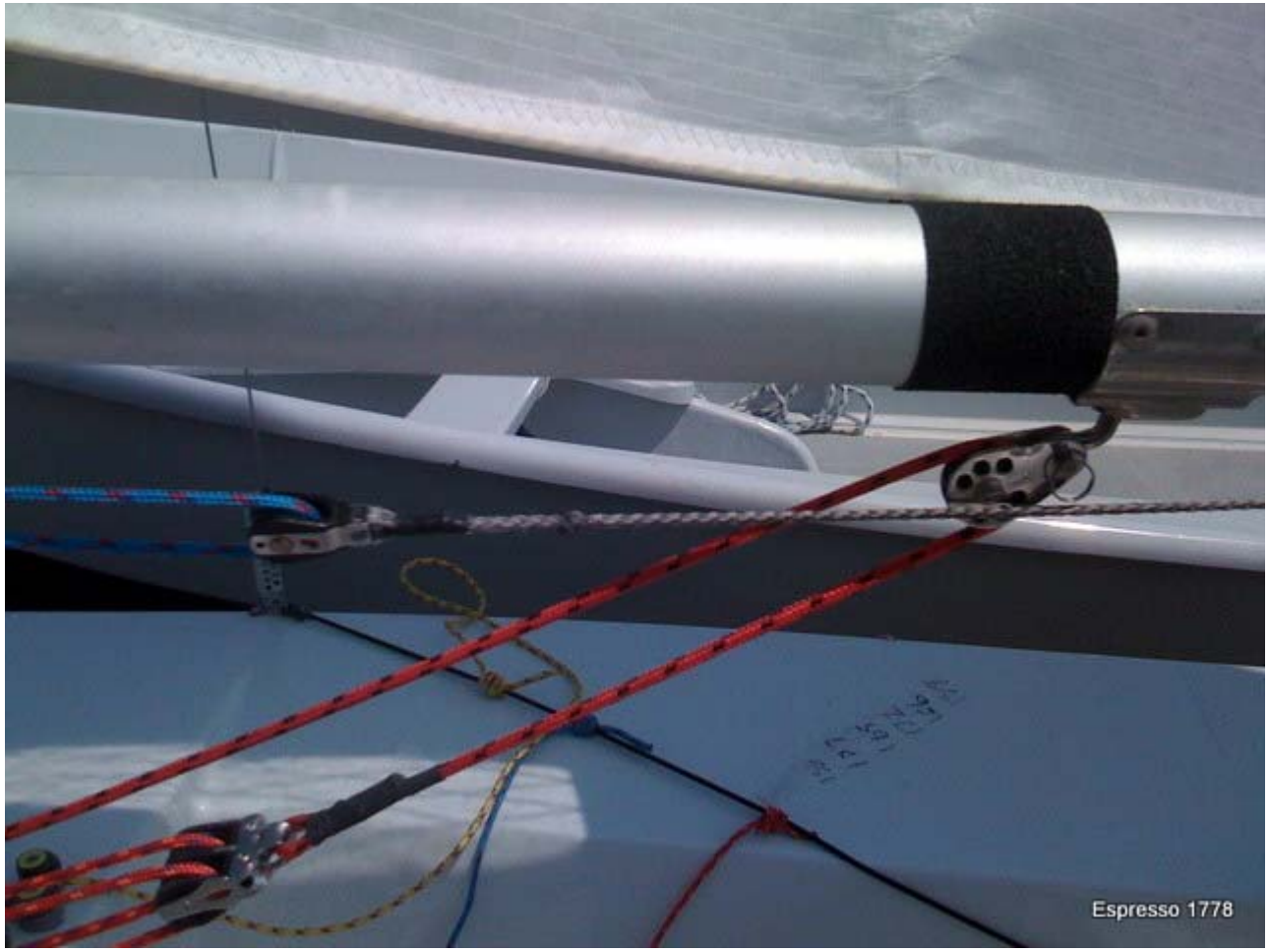
[TODO: Add a clear photo showing the mainsheet hawse]


Espresso 1778



- The main halyard is 5mm rope Spectra that tapes down to a 3mm core.
- Just a simple plastic horn cleat for main halyard.
- Control lines cleat off on the foredeck. My previous boat had them on the side deck. I prefer the foredeck as it's easier to pull on the vang is heavy weather.
- The 8:1 vang (4:1 on 2:1) in is red.
- I prefer cam cleats for Vang, Downhaul and Outhaul because you can "feel" them cleat off with a click. A popular and more cost effective option is to use static clam cleat.
- All deck fittings are bolted and backed with large washes and nylocks.

- All cleats are aligned with the direction of pull rather than the direction of the load. That way you'll pull through the cleat.
- All control lines are 4mm prestretch (5m long). New lines don't cleat that well, so take to them with some sandpaper and run them the washing machine.
- The **only** attachment point on the mast is a single saddle on the leading edge. All control line blocks attach to this saddle with short rope strops. No fancy brackets to eventually fall off, nor extra holes to weaken the mast!
- The downhaul and outhaul blocks are attached with small 100mm long strops made out of 2mm spectra. The vang lead blocks are attached with 200mm long strops made from 4mm spectra.
- The vang block with Becket is attached with a doubled loop of 3mm "core" rope (the gray open weave rope without a casing). I find this rope works well here as it's slippy and wears well.



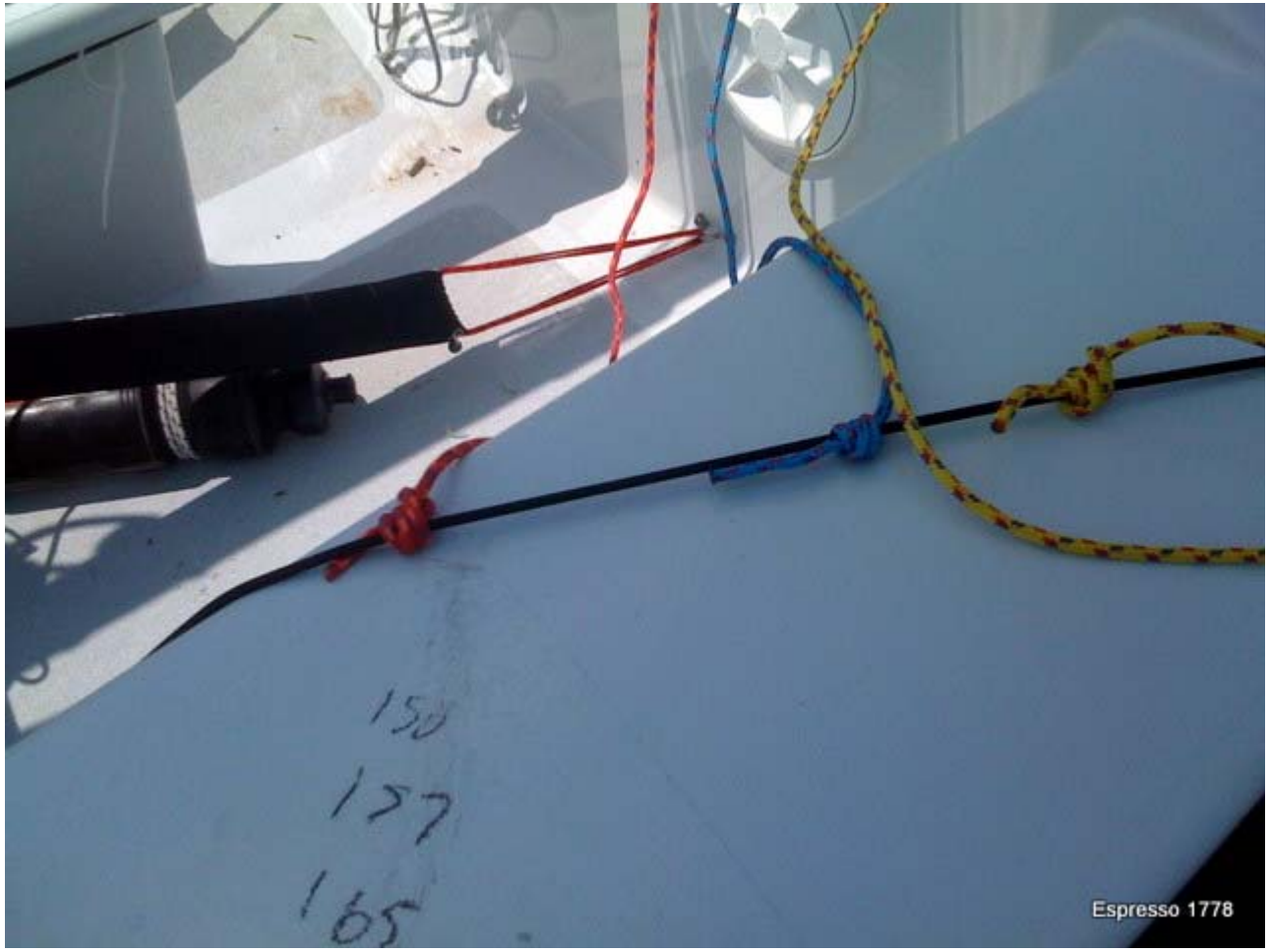
- Vang attaches to the boom with a "Laser style" boom attachment. Another popular option is to use straps/ties. See the *Alternate Ideas* section at the bottom for an example. I opted for the laser attachment as it's quick and easy.
- 4mm Spectra used on the high load vang line (2:1 portion)
- Top Vang block is a high load wire block. Don't use a microblock here as they eventually fail.
- The black tape just forward of the vang attachment is 2 inch non-slip tape. It stops the shrouds from eating away at the boom.
- The blue rope is the outhaul. (Total purchase is 4:1)
- All control line attachments are hand whipped and covered with electrical heat shrink.

- The gooseneck is a Riley fitting with the front attachment holes cut off (the standard fitting is a bit overkill for the Sabre).
- The double-block used for the blue outhaul is attached by running a loop of 2mm Spectra through a large washer at the top of the gooseneck, down the mast track, around the block and then back again through the washer. Very simple and again avoids extra fixings and holes.
- The downhaul is 2:1, however I use 4:1 with my Irwin Sail now. The 4:1 is achived by running the downhaul through a small block bolted into the track just the gooseneck.
  [todo: update photo with 4:1 downhaul]

- The Traveler/Hawse runs through deadeyes located on the aft edge of the thwart, then down to the main block attachment point.
- Toe straps run over the thwart - I have short legs!

- This towel rail works well but can get sticky at times. I lubricate it with sunscreen every few weeks.
- Bolt the towel rail. Rivets will pull out after a season or two.
- The rubber tape on the end of the boom stops my nice new deck from getting scratched! This is just standard door seal tape.

- Use 4mm shock cord to retain the centerboard. It runs through the deadeyes, then around the leading edge of the center case and knots off there.
- The black tube over the top is the outer casing from a electrical lead.
- The centercase is packed with Mylar film and double-sided sailmaker's tape so the centerboard is a snug fit.
- The red 2mm spectra under the center case is spare line. It's amazing what you can fix out on the water with a bit of string!



- The hatch covers are glued in with marine grade Sikaflex. No screws required. Sikaflex is great to work with as you can wipe off any squeeze out with mineral turps.
- Control lines tie off for easy access on shock cord running between the shroud attachment and the thwart.
- I write compass readings (and the confusing course at Albert Park Lake :-) on clear contact on the deck using a Chinagraph pencil (a wax pencil).

- The shock cord used to hold up the mainsheet block, is attached via a small hole through the thwart, backed by a washer.

- It's not clear in this shot, however there is a length of is a 15mm garden polypipe sitting in the top of the mast track. This prevents the sail from being pulled up above the black band. It makes it easy to pre-tension the mail halyard without worrying about violating the rules by accident.
- Don't waste money on a fancy ball baring blocks for halyards. A plain block will work fine.


Espresso 1778

- The pink rope are my "granny ropes". They are attached to the shrouds, then to a hole through the gunwales 400mm back. They granny ropes hang down about 200mm making an easy loop to grab to help right the boat.

- Simple shockcord retainer to hold the main halyard in place. (thanks to Gary McLennan for the idea/contribution)

- The lead corrector weight is glued (Sikaflex) and screwed to the transom stempost.
- The white rope is the rudder retaining line.
- The rubber bungs are attached with a small line running through a hole through the middle of the bung.
- The aft end of the tow straps are attached to the center floor batten just out of shot.

- The retaining shockcord on the tiller box needs to be tight.
- There is a small bit of tube on the aft edge so the trailing edge of the rudder doesn't wear through the shock cord.
- Tiller extension length: just over 1,000mm

- The "granny ropes" are taped to the side of the hull so they are always handy when required. (Oh... and I had to put this image in as it makes me look fast, athletic and sexy :-)

Mast & Boom Sections

- The boom is a standard high tensile section from John Dixon
- The mast is from Keeley in Moorabbin, Victoria. To my knowledge there are three different masts batches all made from different alloy grades. I've carefully weighted and measured bends on all masts. Variation on a 5kg bend test is more than 20% so it's a factor to consider. Being light, I've gone for the most flexible.
    - Keeley section: Most flexible and lightest

- Binks SA: Medium bend and medium weight
- John Dixon: Stiffest and heaviest

Mast Step Position and Rake

- Mast step measured from transom to front edge of hole: 2670mm
- Mast Rake: 5700mm (measured from transom to top block - NOT the black band). Consider this a starting point only as boats all have different mast positions.
- Rig tension: Light. Just enough to take out the slack so the mast does not shake around. The leeward sidestay (or forestay downwind) will be slack in anything over 5tks. Don't worry about this.
- I carry my mast further forward in light winds (5kt and under) by simply pulling on more rig tension.

Notes: My thoughts on loose rake is that it allows the mast to move forward downwind but stays back upwind. I'd like to go even looser but are worried out the mast jumping out of the step!

Centerboard Rake (upwind)

- Light to fully powered: Full down with no rake.
- Consistently overpowered: Full rake back.

Sails

- In the 2010/2011 Nationals I used the full Irwin cut. This is the same sail Alex Newman used to win the 2008/9 Nationals with some minor luff round modifications.
- In the 2009/10 Nationals I used the medium depth Irwin cut. The idea was that this sail would be better in the windier and flat water in Hobart.

Crew Weight

Personally I don't think this is a big factor. Time has shown that the Sabre tollerages a large weight difference at the top end of the fleet. Sailors from 60kb to 85kg have one heats at recent nationals.

- 2010 - 65kg
- 2011 - 68kg

Foils

- YMS foils are fantastic but unfortunately very brittle and chip easily. I now only use my YMS foils for titles and use a set of Phil Johnson foils for club racing.
- Make sure you have a good set of foil bags. I've found Sabre foils fit nicely in a Laser foil bag. This gives you plenty of choice. I'm using the Rooster Laser bag which you can source online for under $100.
- Another option is to use some old carpet folded up in half, and stitched together with twine.

Other Tips

- Mount all hull fittings on a bed of Sikaflex to ensure the tanks are sealed well. Make sure the Sikaflex is pushed through the mounting holds and squeezes out on the inside. Any squeeze out on the top side can be easily cleaned up with a rag and turps.
- When screwing into timber reinforced areas, dip the screws/bolts into varnish to ensure it's sealed. You can pick up small pot of cheap varnish for this task at any hardware store.
- Don't skimp on the trolley. Make sure it's a good fit for your new hull.
- Use nylocks rather than standard nuts. They only cost a few cents more and will never come loose during a long road trip.
- Consider replace items before they break/fail:
    - High tension Vang lines: every 6 months
    - Hawse Rope: every 6 months
    - Till extension joint: every 12 months
    - Other control lines: every 12 months to 2 years
    - Boom: every 2 years
    - Side stays: every 2 years

Alternate Ideas

Boom Vang Rope Strop

Here is an alternate boom vang attachment method. Clean, simple and probably more cost effective than the stainless key fitting I've used above.

Be careful to position the attachment in a location where the sidestays will not rub/cut through the strop.

(Thanks to Lance for the contribution)

More info about the Sabre: Check out www.sabre.org.au