

TOPPER PREPARATION



VAT no. 750 1328 64

20 Long Copse Lane, Emsworth,
Hampshire, PO10 7UL
phone/fax: +44 (0) 1243 379 444
mob: 07967 701 281
email: info@sailing-solutions.co.uk
www.sailing-solutions.co.uk

Toppers are made of polypropylene. This makes maintenance different. Much tougher than GRP, they are excellent as a fun boat and yet they are also raced at a very competitive level. Wherever dinghy sailing is to be seen in this country a Topper is not far away!

With a little effort you can make your Topper more reliable and much nicer to sail. With a lot more effort an £1000 boat could win championship races.

It takes a lot of effort (and money) to prepare a boat to championship winning level and anyway, winning the National Championships is not everyone's immediate aim! Some jobs have a greater effect than others. The following is in some kind of order. The top of this list applies to all sailing, whether you are going out for a 'jolly', intend to compete in an occasional club race or are planning a Championship campaign. Having a boat that is reliable and that works well will increase the pleasure of this great sport and prevent potential incidents. As you get further down the list the effects are subtler and only apply to out and out racers.

To summarise then. Boat preparation should be prioritised to:

- ⌘ make it reliable and maintain its value.
- ⌘ enjoy sailing the boat more because it works better.
- ⌘ win boat races.

1. Prevent failure

⌘ **Tighten screws**

Check all screws regularly. The transom plate is the most important area to check because once loose the captive nuts inside the tank spin and the only repair is expensive or very time consuming. (Class rules prevent a hatch being put in, so we can cut a flap in the back deck, for you, which is later welded. This is neat but you won't need to do it if you keep those screws tight! It is possible to replace the odd screw please contact for details. The screws in the top of the plate case often will not tighten. When refurbishing a boat we remove the hull plate and the inserts can then be held still whilst the screws are tighten. Beware though, these screws are a little long and can puncture the daggerboard bladders. File them off.

Shackles need checking every race and should be kept taped at all times.

⌘ **Replace rivets**

Once loosened, rivets will fall out. Even if they look sound, check around them for corrosion. Ideally replace them if in any doubt, but this time with a smear of zinc chromate paste to prevent further weakening of the tube from corrosion. Use 5mm monel or stainless steel rivets. You will need a big pop rivet gun!

☞ **Mast cup**

The mast sits in a sacrificial cup. It lasts a long time but not indefinitely. Replace if in doubt. Once the mast wears through the cup, the deck mould is next, quickly followed by a trip to the rubbish tip! It's a lot cheaper to replace the cup! The nut you can see just keeps the cup on and doesn't need to be very tight. Below the cup is a second nut which holds the deck and hull together. Needless to say this one does need to be tight!

☞ **Cure leaks**

Personally I have never known the deck/hull seam to go. Favourite places for leaks are:

- A. Bungs - cheap to replace. Best bonded in with 'sikaflex' or silicon.
- B. Mast foot - see above. You need a long reach 13mm socket.
- C. Rudder pintles - see tightening screws.
- D. Bailer - tighten screws and possibly replace the gaskets.
- E. Top of daggerboard case. Negative pressure and 'sikaflex' works.
- F. The painter hole - again negative pressure and Sikaflex works.

☞ **Check split rings**

I tape mine. Self-amalgamating tape is excellent but insulating tape will do. Why risk it? In many cases the rings can be replaced with split pins, which do not fall out.

☞ **Provide backups**

Some sailor's bolt the kicker take off strop through the mast to prevent rivet problems. The problem with this is that this prevents the tubes expanding sideways and creates a hard point. I have seen lots of masts break when the bolt method used. I use rivets (ONLY MONAL OR STAINLESS RIVETS WILL DO!) but check them regularly and use a rope backup which can for instance be a loop that goes around the mast under the mast gate. This attitude is possible elsewhere in the boat. In a well-prepared boat the failure of one component should not stop the fun!

☞ **Carry spares**

Be prepared. Many a race has been lost and many a boat comes to grief for the sake of a lost shackle. There's not much room in a Topper but you do need a shackle, long clevis pin and length of thin rope as a bare minimum. We now supply a bag, which allows the carrying of spares. Small spares can also go in lifejackets if you have a pocket. A waterproof container like a 'Keg' is great to put in a support boat to keep spare water, food, spares and clothes (see our price list)

2. Improve control, make comfortable and give feedback

☞ **Mainsheet system**

A good mainsheet system (rope and blocks) allows you to control the angle of the sail even in extreme conditions (light or strong) and provides a lot of feedback. 8mm rope is probably too thick. 6mm is a bit thin. I've sourced some 7mm, which is an excellent compromise. When you replace yours, make it long enough to reach your hand with the boom at right angles to the boat.

If you can only justify ball bearing blocks in one part of the boat make it the mainsheet system. Most racers use a ratchet block. Ronstan's Smart Ratchet is adjustable, small and spins forever but flush it out regularly.

☞ **Toe straps**

The outer ones are excellent grab handles so keep them as short as possible! Adjust the centre strap to give a comfortable position but remember the class allow a maximum distance from the cockpit floor of 230mm. Outer ones must be no closer together than 250mm. Elastic should be used to raise the straps. I prefer to elastic both ends, the front though the plastic clip on the plate case (stainless clips are not yet allowed) and at the back by filing a hole behind the traveller clam cleat. Treat yourself to a padded centre strap - the kiwi version is best. Ours are reversible and have loops for the elastic. Some sailors are using rope to hold up the front of the toestrap - this will break the 'p' clip.

☞ **Tiller extension**

This is a real problem area in Toppers. The maximum length allowed is 712mm, including the inner end fitting. Short people cannot get forward and long people cannot hike! Is this an early equalisation system or just plain torture? To add to the woes the standard plastic one bends all over the place - nightmare! Minimise the problem by buying one that is the exact length and with a thin end stop. The best ones twist as well. (beware - some versions 'grow' too long when the twist joint becomes loose!) We have developed two versions; both are aluminium, the perfect length and have end stops. One swivels around it's own axis the other is 'fixed' in the usual way. They are proving very popular. Carbon extensions are also available from us but at a price!

☞ **Improve controls (kicker, halyard, downhaul, outhaul and horse)**

The rules allow 2:1 'purchase' on the horse and the main halyard, 3:1 on the kicker and downhaul and 4:1 on the outhaul with the added stipulation that the halyard must allow the sail to come down 610mm and that the outhaul must allow the sail to be reefed by rolling the sail twice around the mast. You will be amazed how much better the boat is with these extra purchases. Recently an adaptation of the outhaul has been developed which allows the pull to come from forward. The traveller must be tight and the sail must stay at the masthead and 2:1s in these situations are essential. We sell various levels of race kits, all made up with instructions, all using appropriate equipment at good prices. **Please see the attached sheets.**

☞ **Steering gear**

There cannot be a more sloppy system on any boat! Replace all nuts with 'nylocs' and tighten as much as possible. You should only just be able to lift the blade and the extension should be only just loose enough to turn. Replace the bottom bush in the rudder casting but, unless very worn, forget the top one. Even when new the top pintle will be loose. The solution here is to tape the top pintle until it is a snug fit in the top bush (packaging tape lasts a couple of events).

The horse will be lower and the block will travel across more easily if you file the excess metal off the stock where it protrudes from the top of the tiller when the blade is down. Use a forged (round in cross section) shackle on the bottom block. It will run better.

3. Make the boat more user friendly

I'm not sure this shouldn't come first! You are the most important component in the boat! If you are dehydrated or under fuelled or don't know which way to go what hope is there!

☞ Water bottle holder

Many sailors strap a bike water bottle holder to the front of the mast, which is fine, but it adds windage and is a pain when you want to put the mast into the spar bag later. We have designed a compass bracket, clipping above and below the mast gate that includes a water-bottle holder. An alternative is to attach the bottle to a length of elastic attached to the boat: pull to drink, release to stow! You should drink a litre of fluid per hour of competition! Water will go straight through. JJB sports do a Hypertonic drink that is really good. Use half the number of scoops they recommend - it tastes better and will then have the right percentage of complex carbohydrates in it.

☞ Food container

Take food with you. Bananas are excellent as are power bars, Mars Bars are popular. Anything is better than nothing. Salted, soggy sandwiches are not good! We have designed a bag to fit the space behind the mast that still allows the mast to be taken out. You should eat complex carbohydrates in the hour following exercise when the body is best able to absorb the nutrition.

☞ Course display

The course can be written on the front bulkhead. A chinagraph pencil and a rubber are all you need. Clear plastic ring binder inserts and gaffer tape are a bonus for complicated sailing instructions. Only Hayling Island Sailing Club have a laminating service and they charged £1 the last time I used it.

3. Decrease hull and foil drag

This is important but still the bottom of my list of priorities.

☞ Hull shape - choosing and storing

STORE TOPPERS UPSIDE DOWN. Left on their hulls Toppers will take on permanent distortions. No amount of pumping up and the judicious use of heat will remove all of them. Choose a trolley that is kind to the decks with the boat upside-down. We have worked with Bramber to make an excellent and well-priced galvanized trolley. It supports the boat in parts that do not distort and is light enough to use on the roof of a car.

Hull plates often sit proud of the hull. The answer here is to remove the plate and file down the screw inserts below. I have used a countersink bit but if you decide to, be careful - not too far! You can then scrape away the hull where the plate sits until the plate is flush with the surface. You can use waterproof clear tape to cover the gaps around the edges.

☞ Hull and Foil finish

New hulls are shiny and can be kept clean more easily (we have found flash liquid to be best and don't forget to clean the foils!). If your hull is scratched, don't despair - most

Toppers have the same problem! Some people prefer a scraper (a craft knife blade perhaps) but more recently we have used wet and dry paper. It takes longer but doesn't leave grooves in the hull. Use 240 grade (dry) first and then 400 (dry) and then 1000 grade (wet) for the quickest effect. Quick is a relative term! Get lots of friends to help and feed them well!

Given a limited amount of time, though, concentrate on the foils, which cavitate more easily and are under more water pressure. The treatment is the same as the hull. If your foils are 'chalky' scrape them first, but wear a mask. Sloppy daggerboards can be made tight with parcel tape or by 'blowing up' the bladders. Fill them with boiling water to make them expand, drain and allow to cool. New bladders are available from us but we can also repair most for a small fee. Many dagger boards have vertical scratches down them possibly partly caused by the 'flashes' not having been removed properly from the plate case top. This is a small but important job.

Transom drag / trolley design

Toppers are shallow boats. If trolley handles are too low the only way to pull the boat comfortably is to drag the transom. This is bad news! The back edge of the transom has a big effect on drag. Some metal trolleys have high handle positions that solve this problem.

We have worked with Bramber to come up with what we believe to be the best metal trolley. A high handle position solves the ergonomics problem of 'Topper Back!' and transom drag. The boat is supported under the mast step and the back of the daggerboard plate (the only spots where the hull will not distort) and the trolley is designed to allow the boat to be stored upside down which stops the deck fading. Add to that the facts that it is reasonably light and that it fits a Laser combi base and you have the perfect answer.

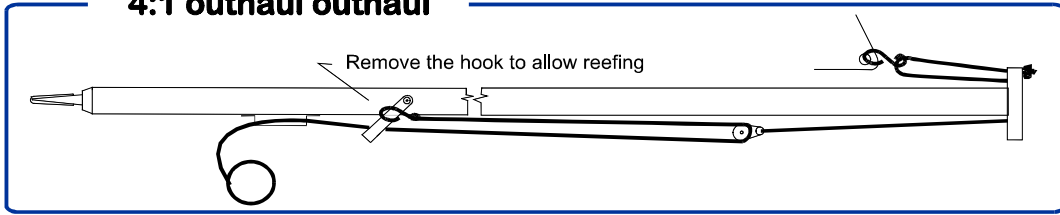
If you are unfortunate enough to have an original plastic trolley a temporary solution is to attach the trolley to the bow and push the transom. Weird but it works!

It may seem that the boat is full of problems. It isn't really, and most of the problems are preventable. In truth Toppers are pretty well indestructible. Most things that 'go' are replaceable and welding the hulls and decks is no problem for an expert. We are the official Topper repairers for the Southcoast as well as being a Premier Dealer. Toppers are made of a similar material to fenders. Bumpers Boats are a real possibility!

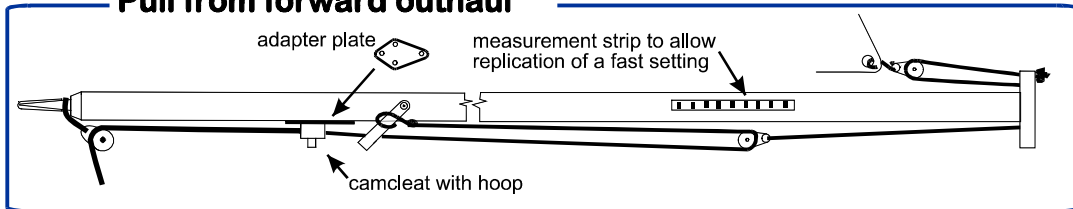
I hope this is helpful. I am always happy to give further advice by email or over the phone. Enjoy your sailing!

David Cockerill.

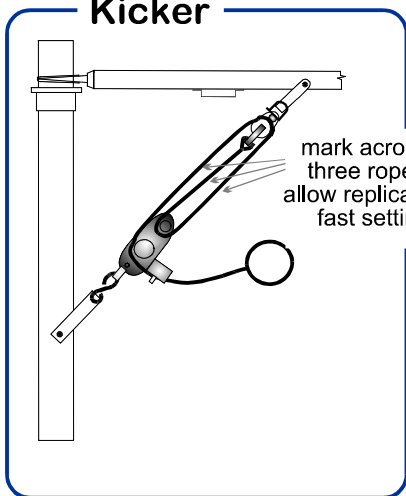
4:1 outhaul outhaul



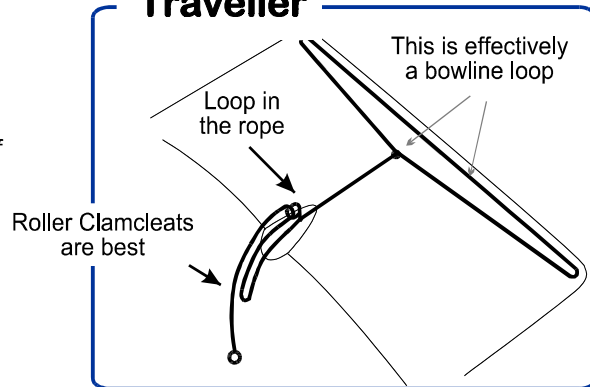
Pull from forward outhaul



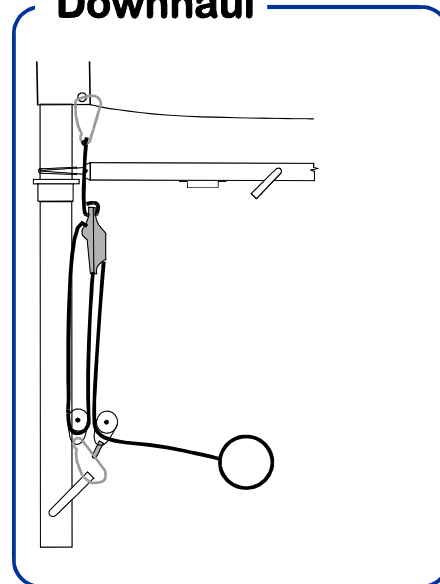
Kicker



Traveller



Downhaul



Halyard

