

Radio Control Sailing In Saltwater

To be honest this article was born out of frustration with a small group of people telling me that you can't sail RC long term in saltwater.....

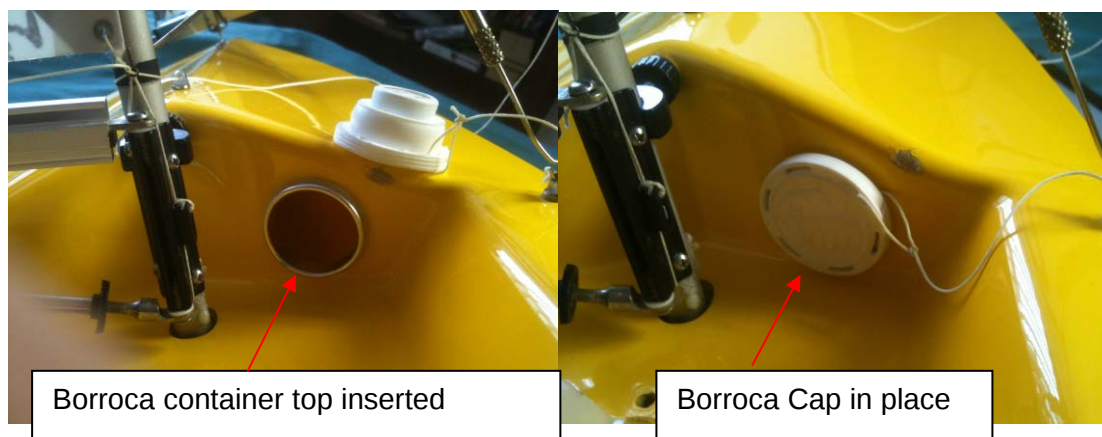
Yes it can be inconvenient. Yes it can be higher maintenance.....

But there are many small inexpensive things you can do to minimise your frustration and expense generated from sailing regularly in salt or brackish waters. I don't profess to be an expert; but I can say that the following listed points have all become BIBLE COMANDMENTS for me. They allow me to improve reliability and maximise my enjoyment of RC sailing on open salt waterways.

During my time sailing RC I've had to learn the hard lessons like most. I've also had gracious people kindly show me their innovations. This list is a combination of both these sources. If you are prepared to print this article out into a hard copy; I believe it will make an excellent checklist for BULLET PROOFING your boat.

Hull

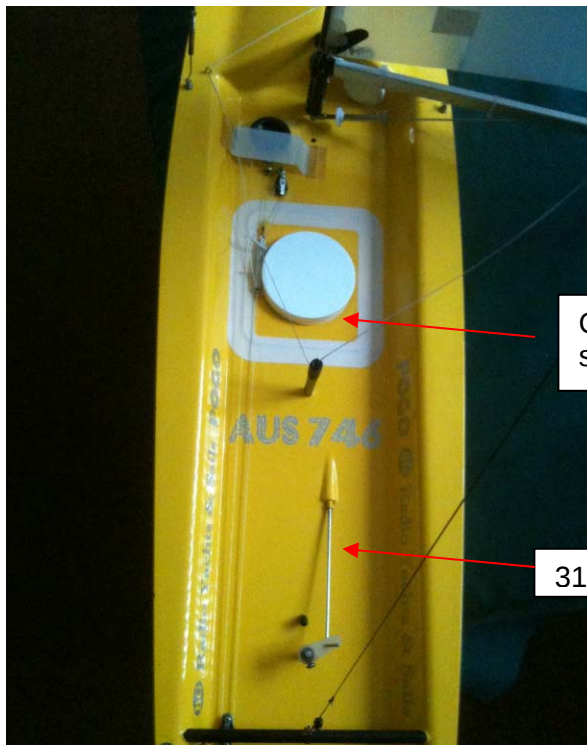
- First and foremost seal your hull up watertight. One of the hardest places to find a leak is the top of the fin casing (eh Peter). I use gas leak bubble spray (available in a can). Soapy water also works. Apply a balloon or bicycle pump to provide light pressure inside the hull and test for leaks.
- ALWAYS use a sealed pot for your battery/receiver. Nothing else.
- Disconnect your on off switch from your system and plug your battery directly into winch/receiver. Contrary to popular belief the switch housing inside your boat is not waterproof.
- Flush your hull out with fresh water after each sailing day. Leave the hatch off to dry out the hull as soon as possible. Minimises "black wire" in the copper cables. Remember to remove battery and receiver packs before flushing.
- I take an empty container from "Borroca" lozenges and cut the top 6mm off. Epoxy this into a stiff part of the deck away from the pot and sheets. Tie the lid to a fixture so it doesn't get lost. Front bulkhead on an IOM next to the mast is ideal. Now you can flush your hull with out removing / replacing sticky back each time you sail. Leave the cap out while storing to dry out the hull.



- Always wash your deck BEFORE opening your pot. At our club we keep the hose on with a trigger fitting so boats can be washed when put back on their stands between racing.
- Use “Salt-Away” (or similar; available from “BCF”) at the end of the day. You can get a small garden spray or pump bottle for this and we leave it in the club for convenience. Drastically reduces corrosion on the rigs. Keeps bearings free from oxidation.



- Minimise “sticky back” usage. I try to remove it all together by using a removable pot with rudder servo mounted below. When you have to use “sticky back” apply a backing panel of book covering or similar. Cut this inside panel the same size as the opening so that it doesn't foul the contact surface on the deck.



One access point only...Removable sealed pot.

316 s/steel fixtures

BG minimised “sticky back” deck layout

- Change your rudder linkage assembly to all stainless and nylon fixtures.

Sealed Pot

- Make sure your pot is seriously sealed to the deck. If your pot is mounted into a deck moulding, remove the assembly and use electrical tape wrapped around the joint between pot and moulding (additional to the bond agent). Any water down the outside of your pot is basically a kin to leaving the lid off.
- I use a rubber band wrapped around the bottom of the pot to trap the rudder servo, winch servo and winch power leads against the side of the pot. Pull all the slack into the pot (or shorten cables) so that no part of the cabling lies on the bottom of the hull. Shorter cables help with "black wire" voltage loss, which is almost impossible to eliminate.
- Cut the cable entry hole in the pot as close as possible to the underside of your boats deck. This keeps the cables out of the splash zone inside the hull, high enough that any water has to travel up hill and keeps the cables high inside your pot.
- Use "Stick back" on the inside of the pot, or electrical tape on the outside to cover the entry hole where the electrical cables enter the pot. Make a small incision with a scalpel just big enough to allow the plug entry. This keeps splash water and damp humidity entering your pot to a minimum.
- On the inside bottom of your pot; place a circle cut to the diameter of the pot using absorbent cotton or kitchen cloth. Just one layer thick.

Servo's

- From “Jay Car” purchase a can of USA “Starbrite” liquid electrical tape. It comes with an applicator brush in the can and you paint it on basically. Build up a few coats over the whole servo including the first 50mm of cable; but tape off the toothed spline for the arm. Hang them up by the cable to dry with a peg. Well worth the effort even on waterproof declared servo's.

Liquid Electrical Tape Black 4 oz.

Product Number: #84104B

Pack: Cs of 12 - 4 oz

Description: Liquid Tape Wire Coating

Options: Available in several colors and sizes

Features:

- Forms a protective, waterproof, UV resistant, dielectric coating
- Prevents corrosion on wires and terminals
- Patented, UL® tested, fast drying formula

Remarks: This product has thousand of uses around the home, boat, RV as well as industrial uses. Anytime you expose electric wires to harsh environments you need this product. Liquid Electrical Tape provides a totally sealed joint which is flexible and fire resistant. UV and water and most chemicals will not affect a joint sealed with Liquid Electrical Tape. Dries to touch in about 10 minutes and fully cures in 24 hours.

MSDS Info: N/A

What's New Info: UL Testing Data available on Request

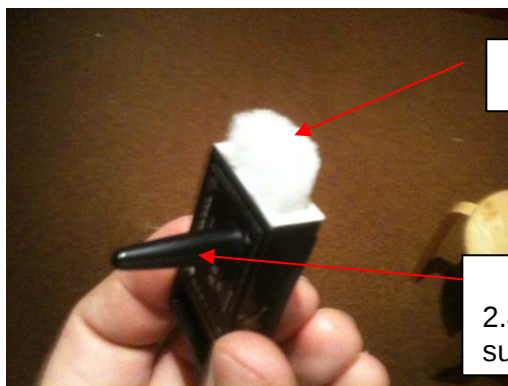
★ **Where To Buy:** [Click here to locate a dealer near you who carries this product](#)



- Change your mounting screws and servo arm screw to Stainless Steel. These are available through Jeff at “Mirage Radio Yachts” or myself.
- I've seen guy's construct their servo mounts as a box; sealed to the bottom of the hull. This helps keep bilge water away from the servo bottom. Bring the cable up the side of the servo and out the top.

Receiver

- Always remove the receiver along with your battery from the pot at the end of the day. Check for moisture.
- Use double sided tape to add 10mm of soft rubber to the opposite end of your receiver from the connector pin array. Insert the receiver with the rubber to the bottom of the pot; connectors to the top. This keeps the receiver above any water that may enter the pot if for any reason the pot lid fails to seal.



Receiver end showing added 10mm soft rubber.

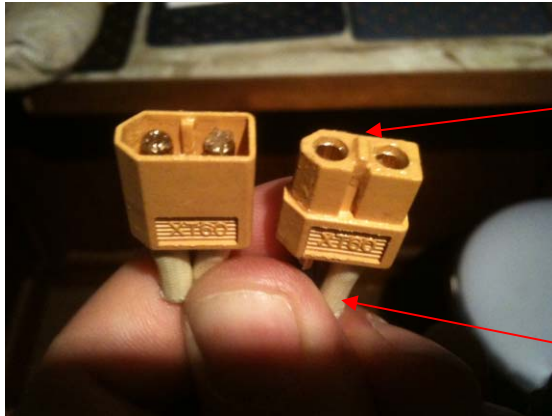
2.4ghz Receiver is from "Xtremelink" and is supplied with a sealed internal arial.

- Seal off the connector pin array cavity with "sticky back" and scalpel slice only over the pins required for a servo plug. If the receiver has a hard cover I coat the casing in "Star Bright" liquid electrical tape three coats and then hang up to dry.
- Use an old tooth brush to coat "Inox grease" or "Vaseline" over the connector pin array at the end of the receiver.
- Use "Inox grease" or "Vaseline" liberally over all servo plugs and battery connectors. "Inox" is the better product as it doesn't melt. I dip them in it.
- Open vang and rig screws and coat the threads as above.



Batteries

- Change all your battery charge/discharge plugs to fully sealed XT 60 type. These are available from “Hobby King”. These connectors are designed for truggies that go through water and fully seal. They will stop your batteries shorting out. Still use “Inox grease” or “Vaseline.”



XT 60 sealed connector (Hobby King).

Use heat shrink tubing.

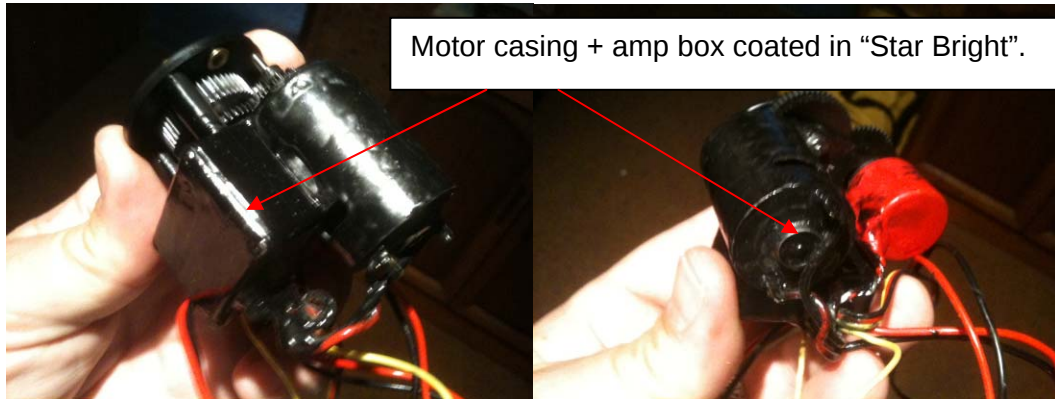
- I remove the balance cables + any additional connector plugs on all my LiPO batteries and stagger the cut distance between each polarity. Seal the exposed ends of these cables by dipping them in “super glue” several times. This may horrify some people; but I’m more interested in NOT setting fire to my boat than I am worried about battery performance.
- Take the sealed redundant cables mentioned above and tape them securely to the side of the battery pack and wrap the whole battery in electrical tape; allowing the charge/discharge plug to remain exposed. I add 10mm of soft rubber to the non connector end of the battery pack back before wrapping. This lifts the battery up off the bottom of the pot in case the pot lid doesn’t seal for some reason.



Battery pack fully wrapped in electrical tape.

RMG Winch

- I coat the outside housing of the motor and the amplifier box with “Star Bright” liquid electrical tape. Use a small brush. Two coats. Be careful NOT TO BLOCK the open vents on the side of the housing. Remove carefully with scalpel tip if this occurs. I’ve found this prevents serious corrosion crust on the outside. It also slows Rob down when he’s servicing....Which helps to keep him out of the pub.



- Send your winch away regularly for service. Obviously if you can afford it buy a spare so you can keep sailing..... and Rob has \$ to get back to the pub.
- “Vaseline” or “Inox” all plugs. **“Inox” is the better product as it doesn’t melt.**
- Open your self tensioning winch drum annually and carefully clean all surfaces with water and soft cloth only to remove salt build up. Use no lube.
- Softly rotate your self tensioning winch drum in reverse before each day out and allow it to return to pitch. Your looking for no resistance, and a smooth return to the full home position.
- Use a rubber gasket to seal between the winch mounting face and the underside of a deck. Max approx 1mm thick.

Transmitter

- Use your wet weather transmitter glove at all times to stop salt splash . Your hands will love the lack of sunburn.
- Add a small cotton hand towel with a clip to your transmitter. Dry your hands after launching. Also use it to dry around the deck pot before opening.
- From “Jay Car” purchase a yellow can of “Servisol” or “Inox” and spray switches and charge jack regularly.



- Change your transmitter external screws to Stainless Steel. Most are 4 gauge. I can do this as a service if required.

There's a lot of information here. Obviously you may not be able to use all of it; but the more you adopt the far less problems you will have sailing in saltwater.

Regards.
Garry Bromley
0424828574
NSW AUSTRALIA.