

Miscellaneous Boat Tips

These tips have been collected during 20 years of sailing by John Myers

BOAT TIPS: Put boat in gear to reduce propeller spin and reduce drag. after engine is shut off.

Bottom Paint: April 1994 Sail Magazine, April 97 practical sailor, Use foam roller preferred and change when it disintegrates, use 7" not 9" roller. put on thin coats. use small amount of paint on roller at a time, mix paint for 15 min., Pull masking tape immediately after painting before it dries. Sand using #80 paper on soft sponge backing pad. Norton #43165 sponges backing pad with Norton #43420 backup disc. 3M feathering disk adhesive,

Freshen Up Add teaspoon of baking soda to fresh water tank and Icebox.

Practical Sailor Bests: Best wheel pilot - CPT; Anti-fouling bottom paints three way tie with Nautical's Sea Hawk Cukote and Pettit's Trinidad and ACP 50; Best Anchor Bruce sets 97%, Fortress has awesome holding power, CQR is versatile, but West Marine Performance 35 earned best all round, Best rope clutch Lewmar Superlock. Best Canvas Waterproofing 303 by 303 Products, Inc. P.O. Box 966 Palo Cedro, CA 96093: 800/223-4303. It comes in 15.2-Oz aerosol. Second best- Apeal or Aquaseal by ETI, Inc., 9624 Kiefer Boulevard, Sacramento, CA 95827: 800/767-2726. It comes in a 16 oz. hand pump spray bottle. Best wax must be paste not liquid and the best Pastes are Collinite Fleetwax and Trewax Four Seasons.

Varnish - The best **clear varnish** is Smith & Co. CEPS. The best **tinted varnish** is CETOL semi gloss.

1:10

Clorox Bleach and water makes good disinfectant and cleaner for bilge

Add 1 & 1/2 cups of bleach to 1 gallon of water, wear gloves.

For **general purpose cleaning** use 1:20 ratio or 3/4 cup per gallon. After filling water tank, add 8 oz per 5 gallon of water or 64 oz for 40 gallon. Sail Mag says 2 teaspoons per 10 gal or 1 & 1/3 Oz. Per 40 gal!

Plastic Window Cleaner Practical Sailor says best is Novus Plastic Clean & Shine, Polish, Plexus Plastic Cleaner & Polish, Star-Brite Plastic Polish & Scratch Remover was runner up.

Packing of Wheel bearings: Clean all old parts, Press new bearing cups into hubs. Pack bearings with wheel bearing grease and position inner bearing properly in cup. Using a proper tool install new seal in hub. IF no tool use old seal as an adapter tool to drive in new seal. Do not hammer on seal! Replace hub, taking care not to damage seal on sharp edge of spindle. Install new outer bearing washer and nut. Tighten nut with fingers while shaking hub. To seat new parts properly, rotate wheel while tightening nut to approximately 40 ft. Lbs. Loosen nut 1/6 turn then further to line up cotter pin with nearest hole. Install pin & dust cover.

Anchoring Use 100% nylon rode. In rope setup: chain should be one boat length.

Icebox Drain should have loop to trap water and block air flow. Lid should have double seal, 2" min. prefer 4" of insulation on all 6 sides, Wooden grate in bottom to space Ice block off of bottom to slow melt.

Deck & Hull: For Oxidized fiberglass, Use rubbing compound: Course, Medium, then fine, DeWaxer, Pentrol to seal and renew, Paste wax, then Liquid wax for maximum shine. Note

Dewaxer instructions recommend use before using rubbing compound, then again last to wash away residue.

Battery Charge @75 Deg. F: 100%=12.7 volts;90%=12.58; 80%=12.46; 70%=12.36; 60%=12.28; 40%=12.12; 30%=12.04; 20%=11.98; 10%=11.94; 0%=11.9 volts Note: Never discharge below 50% for 7 year life, @30% charge life is reduced to 3 years.

Proper Charging of Lead Acid Batteries: **Bulk Charge:** up to 14.4 volts ~ 75% charged; **Acceptance Phase:** Hold at 14.4V until current drops to 2% of total AH of battery; **Equalization Phase:** Charge at 2% to 4% of AH until voltage stops rising, usually between 15.5 and 16.2. Note: this phase is not done every time; **Float Phase:** Drop voltage to 13.3 and hold.

Mosquitoes: Pic coils; break off 1.5" and burn in fire proof dish near main hatch, lasts 15 min, kills all. Two types of PIC coils indoors and outdoors. Buy indoor and type sold @ Spanish Ontario HW store works better than outdoor type sold in US sporting goods stores. Fantastic or Windex cleaners, if sprayed on flying insects, kills on contact. This is much less messy than a fly swatter. Bounce laundry freshener seems to repel bugs, use to seal small openings around main hatch.

Diesel Engine: Diesel engines who's oil sump has been over filled can runaway due to oil being sucked up through breather tube. Never overfill! More predominate on Yanmar YSM 12 horizontal than 1GM10 which is vertical.

Diesel Engine Maintenance: Change both primary and engine filters yearly. Change "O" ring on Fuel cap every 2 or 3 years. Racor filter may use 2 to 30 micron. If clogging is a potential use 30, if changed regularly in northern climes may use 2 micron. Diesel quality has deteriorated in the U.S. in recent years. Need to add additives FPPF or Racor brand is good. Watch "Cetone" rating at pump where you buy fuel. Higher #'s are better. Exhaust elbows tend to clog and corrode. Check frequently by removing hose and looking in with flashlight. Engine should be run under load at near full speed and throttle. Do not run for long periods at idle or in neutral. Engine can glaze cylinder walls and build up carbon if not run under enough load to heat up engine. Life expectancy of modern Diesels can be 10,000 to 20,000 Hr. Adjust valves and retorque cylinder head bolts every 500 hrs.

Folding Props: PYI needs 7.5" from start of taper to rudder or obstruction.

CDI salesman says 12x12 prop should load down 1GM10. If not the transmission may be the wrong speed. It could be cheaper to change transmissions than buy a new folding prop. CDI plastic prop is only \$150.

Auto Pilot's: Practical Sailor April 1997 articles says: "To enable a pilot to steer with a spinnaker in trade wind swells, you need the pilot to be able to move the rudder quickly, even under heavy load. On a Santa Cruz 70, the rudder needs to move at 6 - 7 degrees per second (no load). On a 25-footer, you'd need something like 20 degrees per second." -- "Lighter, squirrely boats require faster rudder corrections. So do boats in heavy weather and when sailing on the edge."

Food Storage: Buy canned ham, tuna, Spam, Salami. Butter, ketchup, mustard, honey need no refrigeration, Squeeze bottles best. Potatoes in dark place, apples separate from citrus fruit. www.freedomeals.com, www.brinkmanfarms.com www.soupy.com, www.toxic Tommy.com , www.internet-grocer.com.

DC Lighting: Y Knot interior lamps, #1142, 1.44 Amp. 21 Candlepower. (18.4 Watts), Could change bulb to #1156, 2.1 amp, 32 candle power or #1004, .94 amp and 15 candle power. Change to Halogen adapters and bulbs for a draw of 5 watt or 10 watt. 5 watt halogen has about the same candle power as a #1156 bulb per article from Cruising World on file. #1156 LED lamp draws only .09 amps using 12 LED's. Unclear how bright this light might be. #1157 also available at increased brightness.

18 Watt florescent would have same candle power as 60 Watt bulb. SUMMARY: Halogen has 3X improvement, Florescent has 5X improvement, LED best for indication but not lighting except low level or mood.

The Dinghy or Tender: Fatty Knees, Bauer 8, Inflatable Canoe (rows well), Kayak, or inflatable dinghy. Davits are best because towing is dangerous in bad weather or in congested areas. Davits also allow a place for solar cells. Inflatable dinghy must motor due to poor rowing ability.

Boat Formulas

Displacement-Length ratio = displacement in long tons/ (.01x waterline length)³

Long ton = 2,240 pounds

Speed-Length ratio = 8.26/(D-L ratio) raised to 0.311 power

Nominal hull speed (knots) = S-L ratio X square root of waterline length

Shaft horsepower (SHP) necessary to move boat at nominal hull speed

$SHP = [\text{displacement (Lbs.)} \times (\text{S-L ratio})^3] / (10.665)^3$

Prop area should be = $100 \times \text{shaft Hp} / (\text{speed} \times \text{speed})$

Sail Area Formula: If sail side lengths are luff =a, leach = b, & foot =c then to make calculation two temporary terms R and S must be calculate where $R = \text{sqrt}((s-a)(s-b)(s-c)/s)$ and $S = .5(a+b+c)$ then $J = 2RS/a$; and Area = $R \times S$

Approximate hull speed = $\text{Sqrt (WLL)} \times 1.37$