

Spring Commissioning Your Sail/Power Boat General Notes and Recommendations

Spring Commissioning Checklist for:

Date: _____

- **Priority & Effort Codes used for the Checklist**

	Priority	Approx. Effort (Work-Hours)
1	Critical for Spring Commissioning	Significant (4-8+)
2	Important Pre/Post Launch	Moderate (2-4)
3	Recommended Maintenance	Typical (0.5-2)
4	Good Preventive Maintenance	Modest (< 0.5)

- Checklist items will vary from boat to boat - customization for your boat is recommended.
- Save and organize manufacturer's specifications, maintenance & troubleshooting information and operator's manuals. Many manufacturers have this information available for access through the internet.
- Keep a record or log of your Spring commissioning and maintenance activities, work-hours of effort, parts or resources required, diagrams, costs, sources, date of work, key usage information (e.g. engine hours) and any other relevant comments.
- Keep a detailed photographic record of your Spring commissioning & maintenance items and activities.
- Read your boat insurance policy and launch/mooring provider terms & conditions.
You may need to take additional or different precautions, add riders or request exemptions.
- Follow safe practices for every activity. Always have back-up, if possible.
- Comments to Ed Bottrell at Bottrell@Eastlink.ca
A .pdf and .xls version of this checklist can be obtained from URL:
<http://bottrell.ca/BoatInfo.htm>

Spring Commissioning Your Sail/Power Boat Pre Launch ("on the hard") Checklist and Notes

Done	Priority	Effort	Activity - Task	Comments
[]	1	3	Battery(ies) - Lead Acid Type	Ensure fluid level is topped up, batteries fully charged and top/posts are clean. If a battery quickly loses its charge, it may have a bad cell. Fill only with distilled water (not with water from tap, reverse osmosis or deionized). Equalize if appropriate. Re-install batteries if removed during winter. Wear safety glasses and use safety precautions. Ensure batteries are secure from any movement - acid resistant and fluid tight battery boxes with covers (and vents) are recommended.
[]	1	4	Battery(ies) - Dry Cell, Other	Check and/or replace all dry cell or other types of batteries. Ensure used batteries are disposed of properly, especially Li-ion.
[]	1	3	Bilge(s)	Pump out bilge(s) until dry and clean. Ensure bilge pumps, hoses, float tanks and float switches are working properly, including manual bilge pump.
[]	3	4	Birds' Nests	Birds and some animals love to nest in boats. Ensure all holes (e.g. anchor locker, end of boom, exhausts, etc.) were not used for nests and any plugs removed before Launch.
[]	3	2	Boat Coverings	Remove boat covering and supporting framework. Note any repairs that should be made. Clean and dry before storing for next season. If shrink wrapped, ensure plastic is properly recycled.
[]	3	3	Boom	Clean, wax and reinstall boom ensuring any worn hardware or lines are replaced. Gooseneck should be cleaned and lubricated.
[]	2	1	Bottom & Topsides	Check for cracks, osmosis or other problems and repair accordingly. Prepare and clean bottom according to specs. Paint with anti-fouling paint using proper safety equipment, coveralls, masks, and procedures. Do not paint zincs.
[]	2	1	Clean & Wax Boat	Perform any gelcoat and fiberglass repairs if weather permits. Clean and wax, twice if time permits.
[]	1	4	Cockpit & Scuppers	Ensure cockpit scuppers and deck drains are free and clear of debris, leaves, etc. Check for and repair any leaks. Scupper hoses and other hoses need replacement every 10-15 years.
[]	1	4	Deck Wash Down	Power-up and test seawater and/or freshwater systems for deck wash down or showers. Check for and repair any leaks.
[]	2	3	Dinghy	Clean, inspect and repair dinghy. Rig for use including any required safety gear. Ensure licensing (10HP or greater) and insurance are up to date, and all operators have Pleasure Craft Operator's Cards.
[]	4	3	Electrical Wiring	Inspect electrical wiring for cracks or corrosion. Replace with proper marine wiring (multi-strand copper, tinned). Spray electrical wiring with preserving spray (silicone based). Silicone spray also good for rubber mounts and belts. Avoid using silicone (including silicone sealants) around fiberglass - Silicone penetrates into the fiberglass gelcoat and cannot be removed except by grinding off the underlying gel. It contaminates nearby surfaces which then become difficult if not impossible to paint over.
[]	3	3	Electronics & Radios	Reinstall electronic & radio devices. Test after launch. Ensure connectors are clean and protected. Coax cable deteriorates over time and should be replaced every 10-15 years - best grades are UV & moisture resistant. Use a Standing Wave Ratio (SWR) meter if you suspect a problem. All VHF radio users should have the Restricted Operator's Certificate for Marine usage - ROC(M), ideally with the Digital Selective Calling (DSC) endorsement. DSC radios should be registered (i.e. MMSI #) and properly interfaced to GPS.
[]	3	4	Engine - Air Filter	Check and clean/replace air filter if needed.
[]	2	3	Engine - Air Flow	Remove all blocks to engine air flow and ensure unobstructed air and exhaust flows. Engines require significant air flow for proper performance.
[]	1	2	Engine - Antifreeze	Check antifreeze protection level and fill accordingly. Change antifreeze regularly on freshwater cooled engines because additives wear out. Consider changing to extended life or permanent antifreeze. Be careful not to discharge ethylene glycol-based antifreeze - harmful to the environment.
[]	3	4	Engine - Belt(s)	Check fan and other belts for signs of wear (black dust, cracks etc.). V-Belt should not touch bottom of pulley - power transmitted by sides of belt. If worn, replace before Spring Launch. Ensure belts are tight according to specs - usually less than 0.25 in. movement when squeezed in center of span with 5-10 lb of pressure. Always carry spare belts. Spray with silicone-based lubricant to preserve. Check new belt tension after a few hours of running.

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[]	3	2	Engine - Exhaust System	If possible, inspect and clean/repair exhaust system components such as risers, vented loops, raw water injection elbow, heat exchanger, etc. before launch. Ensure open and unobstructed exhaust. Repair any cracks immediately. Consider CO detectors in sleeping quarters at head height.
[]	3	3	Engine - Inspect, Clean & Protect	Clean and carefully re-paint engine parts that are rusting. Spray rust-check or WD-40 where appropriate. Spray starter, alternator with WD-40.
[]	4	3	Engine - Lubrication	Grease or lubricate all grease points and moving parts with manufacturer's recommended lubricant.
[]	1	3	Engine - Oil Cooler	Ensure any transmission or engine oil coolers are secure and drain plugs tight.
[]	2	4	Engine - Primary Fuel Filter	Change engine fuel filter every two years or more often if experiencing dirty fuel. Use Zip-loc bag around filter to remove/reinstall. Use indelible marker (e.g. freezer pen) to put change dates on all filters.
[]	1	3	Engine - Running when out of the water	NEVER insert hose under pressure into engine seawater intake or back into exhaust system. Water can be forced past pump and into cylinders (especially when engine is stopped) causing a hydraulic lock - very serious and potentially disastrous for the engine. Instead, utilize an engine inlet hose extension into a bucket that is refilled by a garden hose.
[]	1	3	Engine - Seawater Pump Impeller	Remove rubber impeller from seawater pump. Check for signs of wear, cracking or 'taking a set'. If so, replace with new impeller. Grease with white Teflon waterproof grease or petroleum jelly and replace. Ensure cover seal is in place and screws are tight. Always carry spare impellers and cover seals, and replace every year or two. Two layers of newspaper will work temporarily as a cover seal.
[]	4	3	Engine - Shift & Throttle Cables & Linkages	Check, repair and lubricate linkages and fittings. Use white Teflon waterproof grease - some require dry graphite lubricant.
[]	1	2	Engine - Start-up	Close engine intake seacock and disconnect hose. Add length to intake hose to suck-up water from a pail or utilize strainer opening to pour in water. Consider permanent hose ("Y" valve or dual valves) for winterizing, Spring commissioning and (with caution) emergency bilge pump. Run engine at least 5 minutes or more, if possible. Check (look, touch, smell and listen) during and after start-up for any problems.
[]	3	3	Engine - Zincs	If not done in the Fall, check engine zincs and replace if less than 60% material left. Check again in Spring if boat stored in-the-water. Never use Teflon tape when installing a zinc or zinc plug because it may partially or completely isolate the zinc electrically. "Never Seize" or equivalent recommended for most bolts, nuts and metal-to-metal contacts.
[]	3	3	Fenders & Buoys	Clean, inspect and repair or replace any damage. Pump up to appropriate pressure, if needed. Return fenders and buoys (e.g. anchor buoy) to boat and rig for use.
[]	3	3	Fire Extinguishers	Remove and have an expert inspect fire extinguishers every two years or so. ABC - Dry chemical often cakes but dial shows OK-green - always shake-up before using. Recharge or replace if necessary and reinstall. Consider doubling the number of required fire extinguishers, or more, including one accessible from helm. Consider BC- CO2 extinguishers for electrical and galley use.
[]	1	4	Flares & Flammables	Check expiry dates and replenish at boat show or Spring sales. Only reinstall flares (and other flammable materials) after launch, if possible, for safety reasons as well as staying compliant with insurance requirements.
[]	1	3	Freshwater System	Reconnect and check all hose connections. Freshwater hoses need to be replaced periodically - at least every 10-15 years. Clean or replace any in-line filters. Drain hot water tank if filled with any non-toxic antifreeze. Reconnect hoses but do not energize the heater until all traces of non-toxic antifreeze have been removed - it will smell for weeks or be ruined if accidentally turned on before purging the antifreeze. Fill freshwater tanks and run pumps until all air is out of the system. Shock-kill any bacteria in tanks with 1 quart of bleach per 50-USG, but DO NOT DRINK . 1 TBSP of bleach for every 5-USG of water OK for human consumption.

Spring Commissioning Your Sail/Power Boat Pre Launch ("on the hard") Checklist and Notes

Done	Priority	Effort	Activity - Task	Comments
[]	1	3	Fuel Filter & Water Separator	If not done in the Fall, change primary (e.g. Racor) Fuel Filter (2-10 micron) ensuring that tank shut off valve (recommended) is closed or use flat vise grips with rag to stop fuel flow. Use Zip-loc bag around filter to remove/reinstall. Retain, inspect element for signs of contaminants. Drain any water present in bowl. Open valve and check for leaks. Ensure air has been bled out of system using engine manufacturer's recommended procedure. Always carry several spare filter elements.
[]	2	2	Gas Engines - Spark Plugs	Gas: Remove spark plugs, clean, check and adjust gaps. Install plugs with proper torque using a torque wrench. Check wiring for cracks and wear. Spray wiring with silicone based spray.
[]	3	3	Ground Tackle	Reinstall anchor & rode. Inspect and repair or replace any damage or areas of rust. Consider switching chain or nylon rode end-for-end to even out wear. Always carry enough rode to anchor safely (e.g. 7:1 scope or 350' in 50' deep water).
[]	2	3	Hoses & Clamps	Hoses need replacing every 10-15 years. Check for softening, cracking or bulging - especially on hot side of cooling system, fuel hoses and at clamps. Always use new 100% SS clamps (old clamps are stressed). Double clamp wherever possible. Always use proper marine certified hoses (not copper tubing) and clamps.
[]	2	3	Hydraulics	Inspect hydraulic hoses, mechanisms and oil. Repair or replace as needed. Immediately change any contaminated oil and eliminate the source of contamination.
[]	4	3	Keel Bolts	Inspect and repair any damage to keel bolts. Loosen and re-torque periodically; however, be careful of damaging the SS bolts and nuts by over tightening.
[]	2	4	Lights & Bulbs	Check and replace any burned out lights and bulbs. Consider LED lights where appropriate for longer-life and less power consumption.
[]	3	3	Lines & Rope	Inspect and repair or replace any damaged lines and rope. Wash rope, if possible.
[]	1	2	Mast-up Installation	Replace any halyards removed for Winter. Inspect, clean and repair or replace accessible gear. Do not adjust turnbuckles until after launch. Ensure keel stepped mast boots are properly installed and do not leak - test with garden hose.
[]	1	3	Mildew	Kill mildew ASAP with diluted bleach or other appropriate treatments.
[]	2	3	Miscellaneous Items	Wait until after launch, if possible, to return miscellaneous items to the boat. Inspect, clean and repair or replace items.
[]	1	3	Outboard Motor	Follow Mfgr. Instructions. If not done in the Fall, change lower unit gear oil, grease prop shaft and other fittings and change zinc if needed. Remove spark plugs and replace or clean & re-gap. Reinstall plugs to proper torque using a torque wrench. Inspect prop for dings, pitting and distortion - repair or replace. Clean and wax outside of O/B. Inspect and repair/replace gas tank, quick disconnects, hose and pressure bulb. Dispose of unused gasoline properly - do not use gas older than a few months. Ensure adequate supply of oil, spare parts (e.g. shear pin) and tools.
[]	1	3	PFDs, Lifejackets	Check for proper quantity, sizes and specifications of PFDs. Consider upgrading to SOLAS or Standard Lifejackets. Consider 'suspender' type auto-inflatable vests with built-in safety harness. Consider modern GPS EPIRB for boat.
[]	2	4	Prop & Shaft	Check prop shaft and prop for any damage. Clean thoroughly. Ensure any cooling channels are clear. Inspect cutless bearing for wear (e.g. very little play is acceptable) and replace if necessary.
[]	2	4	Prop Shaft Anodes - Zincs	Inspect and replace prop shaft anodes or other anodes associated with bonding system as needed. Replace zincs if more than 40% deteriorated. Never paint or otherwise coat a zinc because it may partially or completely isolate the zinc electrically.
[]	1	4	Propane Tank	If possible, store propane tanks outside and do not refill until just before reinstallation after launch. For older tank connectors, inspect "O" ring for signs of cracking, and always carry a spare. Test connections for leaks using soapy water (not flame). Test any propane sniffers using a butane gas lighter without a flame.
[]	1	4	Rudder & Post	Inspect rudder and rudder post including packing for any damage or signs of leaking. Replace packing every 5-10 years, depending on use.

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Done	Priority	Effort	Activity - Task	Comments
[]	1	3	Safety & Emergency Preparedness	Test and repair all alarm systems. Check for all required and properly functioning safety equipment. Review and update safety & emergency precautions. Depending on you cruising/racing activities, consider: Briefing crew and guests on emergency use of VHF radio to call for help; Developing a Station Bill/Muster List showing stations, duties for each person aboard for fire, Man Overboard, Abandon Ship-Rescue, and other emergencies; Posting illustrated diagram(s) showing locations of safety equipment, TTH fittings, etc.; Emergency drills for crew; Inflatable life raft with annual inspection; Abandon ship bag; and, Hydrostatic-release 406MHz EPIRB with GPS.
[]	3	3	Sails	If possible, clean all sails before bending on. Have a sail maker inspect and repair any damage to sailcloth and stitches. Most stitches do not have UV protection, even in UV protected sailcloth.
[]	2	3	Seacocks & Valves	Open and close all seacocks to ensure they work properly. Lubricate seacocks regularly. Check for good bonding system connection, if present. Use new 100% SS hose clamps and double clamp wherever possible. Always use proper marine seacocks and valves with backing materials.
[]	4	3	Spare Parts & Tools	Inventory your spare parts, tools and miscellaneous hardware. Re-stock during boat show or Spring sales.
[]	1	2	Stern Drive(s)	If not done in the Fall, thoroughly inspect the stern drive and remove any plant life or barnacles from the lower unit. Drain the gear case and check for excessive moisture in the oil. This could indicate leaking seals that should be repaired. Clean the lower unit with soap and water. If your stern drive has a rubber boot, check it for cracks or pinholes - in fresh water, muskrats will often chew through the boot. Grease all fittings and check fluid levels in hydraulic steering or lift pumps. Check with your owner's manual for additional recommendations by the manufacturer.
[]	2	3	Stuffing Box	Check prop shaft and packing gland (stuffing box) for signs of wear or inappropriate leaking. Packing gland material should be replaced every few years. If boat stored in the water during winter, tighten packing gland to stop any leaks; remember, to adjust in the Spring. Proper adjustment should allow about one drip per minute and, after running at speed for a while, the gland should be warm, not hot, to the touch.
[]	3	4	Transducers	Remove transducers, clean, lubricate seals and reinstall, if appropriate. Do not reinstall 'paddlewheel' speed transducers until after launch, if possible.
[]	2	2	Winches & Hardware	If practical, remove winches, clean, grease and reinstall. Keep parts of each winch separate. Always carry spare parts for winches. Inspect and repair or replace damaged hardware. Remove, clean, lubricate and reinstall any switches for electrical winches or windlasses.
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Spring Commissioning Your Sail/Power Boat Post Launch Checklist and Notes

Done	Priority	Effort	Activity - Task	Comments
[]	3	3	Cradle	Inspect and repair cradle if necessary. Maintain with rust prevention paint and rust-check lubrication as appropriate. Remove and store cradle, parts and ladder appropriately.
[]	1	4	Engine - Antifreeze	After running up to temperature, let the engine cool, check antifreeze protection level and fill accordingly. Bleed any air out of system, if possible. Change antifreeze regularly on freshwater cooled engines because additives wear out. Consider changing to extended life or permanent antifreeze. Be careful not to discharge ethylene glycol-based antifreeze - harmful to the environment.
[]	4	3	Engine - Misc.	Periodically checking the engine, transmission & propulsion system while underway is recommended. Use ear protection and take safety precautions whenever possible. Touch, listen, smell & look for the unusual and unexpected. Engine mounts can fail in just a few years - check for movement during Fwd/Rev and full load acceleration. When underway, the stuffing box (packing gland) should be warm but not hot to the touch.
[]	2	3	Engine & Transmission - Oil & Filter	If not done in the Fall, change oil & filter (with warm engine). Fill new filter with oil before installing. Used oil contains harmful acids & contaminants. If any sign of water in oil (miliness or like pancake batter) immediately seek expert help. User Mfgr. recommended oil & parts. Be careful not to overfill. Run long enough to ensure no leaks. Consider analysis of used oil as a predictor of potential problems. Consider permanent valves and fittings to empty oil with a portable or fixed pump. Leave oil absorber pads under engine and around any known leaks. Fix any oil or fuel leaks immediately.
[]	2	4	Fuel & Tank(s)	Fill fuel tank(s) allowing room for expansion when warm. Water (from condensation or leaks) in diesel fuel causes microorganisms to grow, die and drop to the bottom as sludge that can plug filters. Adding biocide and fuel conditioner may help but can trigger a problem if there are a lot of living microorganisms in the tank. Consider tank inspection & cleaning every 10-15 years, or more often if fuel turnover is less than 2-tankfulls per year. Water is heavier than diesel and therefore sinks to the bottom of the tank(s).
[]	3	4	Head	Lubricate head pump (e.g. piston rod and cylinder seals) with recommended lubricant such as white Teflon grease. Ideally, use Murphy's Oil Soap for lubrication. In a pinch, use olive or other vegetable oil, but avoid prolonged usage because it will coat and/or gum up hoses and holding tank. Ensure head works properly with no leaks.
[]	1	2	Holding Tank	Consider shocking holding tank with appropriate chemicals if needed. Older hoses tend to absorb smells and should be replaced with proper hoses.
[]	1	2	Lights, VHF Antenna, Windex	Test and repair all lights. Consider upgrading to LED lights - about 10% power consumption. Inspect and clean VHF radio connectors and coax. VHF coax should be replaced with proper cable every 10-years or so. Perform radio check with CCG Radio and troubleshoot any problems. If practical, consider installing easily damaged items such as the Windex, antenna, etc. after mast is stepped.
[]	2	1	Mast-down Installation & Standing Rigging	If possible, thoroughly clean and wax mast and boom before stepping. Periodically remove and inspect shrouds, turnbuckles, halyards, furling gear, antennae and related equipment. 'Fishhooks' in wire rigging, rust or micro cracks are all signs of potential problems - standing rigging should be replaced every 15-20 years. Repair or replace worn items before launch. Lubricate mainsail luff slide slot. Follow proper procedure for sequence and amount of tensioning for shrouds and stays. Ensure all lines, halyards, blocks etc. are working properly.
[]	1	4	Rudder & Post	Inspect and adjust rudder and rudder post including packing for any damage or leaks.
[]	2	4	Transducers	If possible, reinstall speed transducer paddle wheels after launch. They have a tendency to get broken by slings during the launch process.
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