

TRUE NORTH MARINE



Offshore Engine Preparation, Spares & Underway Repairs

Harvest Moon Regatta 2019



Engine Preparation & Preventive Maintenance



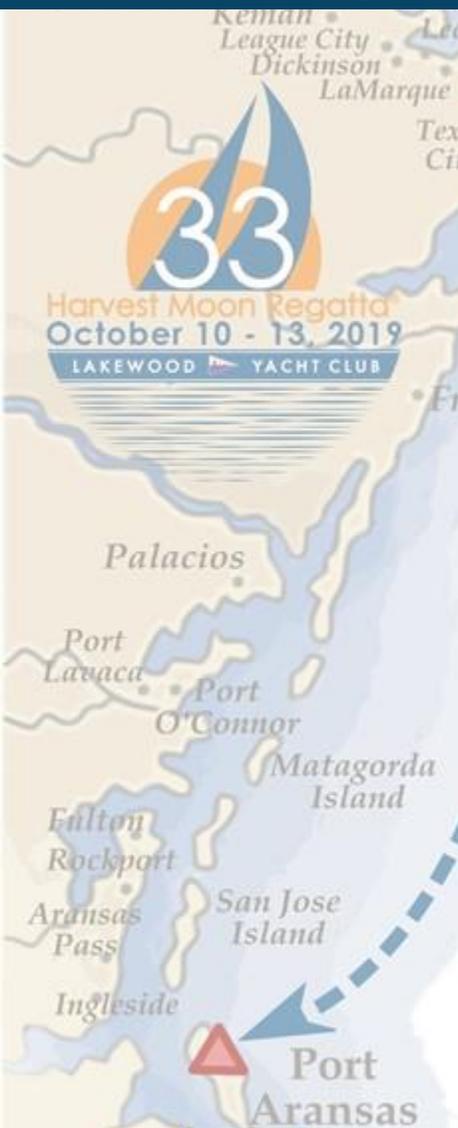
While this is a Sailboat race... Your auxiliary engine is an important piece of offshore safety equipment! It may be needed for regular battery charging while sailing, or in emergency situations to dodge obstacles or get crew members safely back to shore. In any case, your engine's reliable operation is critical to a successful trip to Port A (and back)!

Proper care and maintenance ahead of the race is key. Spend time in advance with your operator's manual, your engine, and/or your favorite contractor to insure you are ready to go!





Engine Preparation & Preventive Maintenance



Inside your Operator's Manual you will find important information on recommended frequencies of some the following items:

- Engine oil & filter change
- Transmission oil (& possibly filter) change
- Antifreeze/Coolant replacement
- Fuel filter replacement
- Sea water pump impeller replacement
- Anode replacements
- Heat exchanger & other cooler services
- Injector/injector pump/turbo services
- Mixing elbow replacement
- Other specific maintenance and inspection points

Good preventive maintenance - combined with periodic inspections – equals reliability over time. Now is the time to understand your maintenance schedule and insure PM work is up to date.





Common Underway Repairs

Fuel Filters & Sea Water Pump Impellers

While other break-downs offshore are possible, these two items account for the majority of engine issues you may typically face.

Diesel fuel filters are prone to clogging. For most vessels, this Regatta may be the first time offshore in an extended period of time. Organic growth and debris in the fuel tank is agitated by offshore conditions and sucked up into the fuel system. This can quickly cause filters to clog.

Sea water pump impellers are rubber products that have to remain flexible to work. They can deteriorate over time (especially during extended run times) and fail, causing a loss of sea water flow and engine overheats.



★ Diesel Fuel Filter Assemblies



★ Diesel Fuel Filters Examples





Diesel Fuel Filter Tips

- Always carry plenty of spares – Mostly primary, but secondary also.
- We recommend using a 2 micron primary fuel filters. While not the most efficient fuel filtering method, it creates a single point of maintenance for emergency filter changes.
- Insure you have the correct tools and equipment on board to perform filter changes. This can make a dramatic difference in time required and will reduce stress and frustration.
- Be educated on how to replace the filters **AND** bleed the fuel system, if necessary. Carrying extra diesel in a small, reliable container can reduce or eliminate the need to bleed the system.
- Leave the dock with fresh filters!!
- Consider upgrading to dual primary filters, vacuum monitoring gauges, and fuel polishing set-ups.
- Make sure your primary fuel filter is in an accessible location. If it is difficult to get to (buried under a bunk or behind other equipment, this can complicate underway replacements.
- Consider the dangerous situation a clogged fuel filter/stalled engine can create (especially in busy intracoastal or ship channel situations) when evaluating the cost of upgrades!



Fuel Filter Upgrades

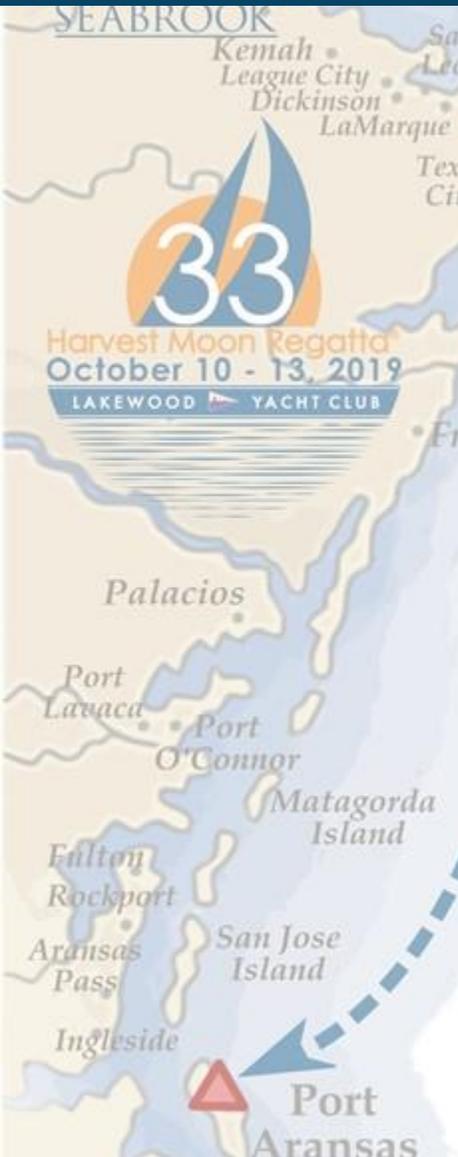


★ Sea Water Pump Impeller Tips

- Change these at least annually – Most manufacturer's recommend a 2 year or 250 hour service interval. However, Clear Lake water conditions can be rather silty. This can accelerate wear on an impeller.
- Carry Spares! And be sure they are correct. Many times there are several pumps a particular engine can be fitted with.
- Again, leave the dock with a fresh impeller - for peace of mind, as well as to insure your spares are correct.
- Know how to access and replace the impeller. Sometimes this is easier said than done. Again, the proper tools make the job quicker, easier, and less stressful. Sometimes specific impeller pullers are nice to have - sometimes they are required.
- It is extremely important that any and all missing fins from an old impeller be retrieved when replacing the impeller. Pieces from old impellers can block downstream sea water passages and cause cooling problems (emergency situations are an exception).
- Don't forget there are other wear items in the pump that affect pump efficiency – cams, wear plates, cover plates, etc.
- Check the shaft and cover plate seals closely for leaks – sea water leaks at these points tend to do significant damage (rust/corrosion) over time.

★ Sea Water Pump Impeller Examples

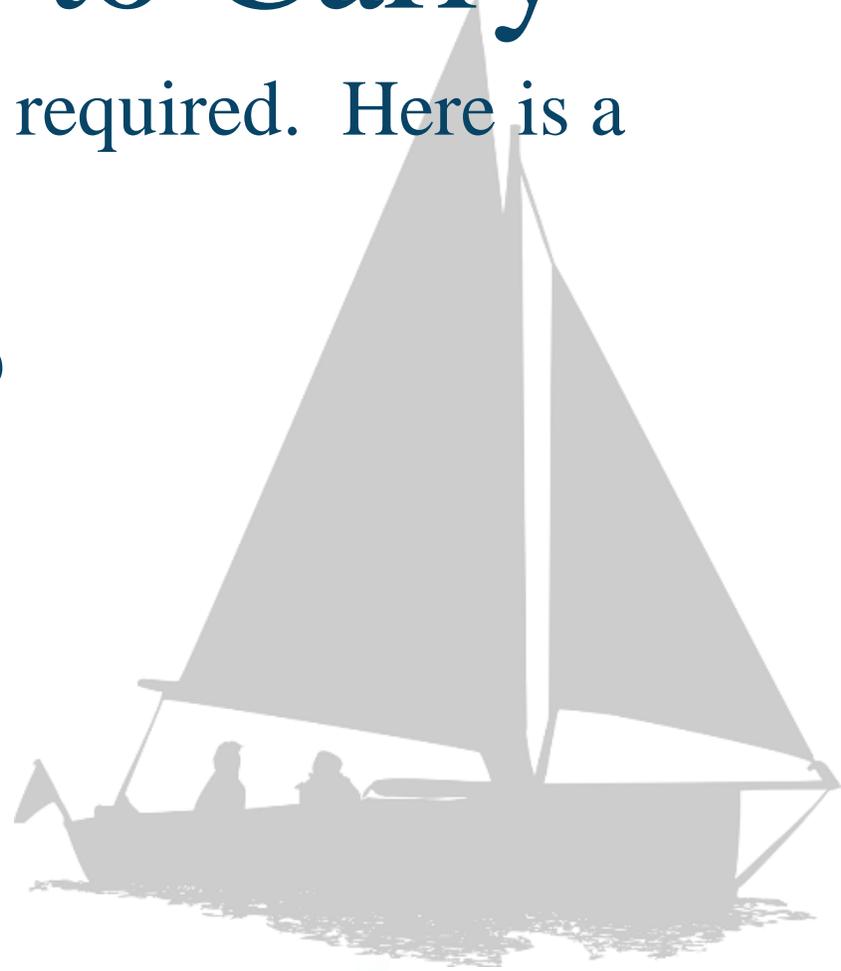




Emergency Spares to Carry

A good inventory of critical spares is required. Here is a generic list for near-coastal cruising:

- Fuel filters (both primary and secondary, as applicable)
- Sea water pump impellers
- Accessory drive belts
- Engine coolant (preferably pre-mixed)
- Engine oil and filters
- Distilled water
- Hose clamps, wire ties, misc. hardware
- Tools to perform regular replacements/maintenance





STORAGE OF SPARES:

Spares should be stored in well identified locations. They have limited value if you have to tear apart the boat in an emergency to locate them.

Make sure fluid containers are rugged enough & stored properly to avoid chafe that could lead to leakage. Many times an oil leak has been traced to a leaking jug of oil...

Any hard parts should be sealed from water/humidity intrusion. Regularly spare alternators and starters have been presented for installation, only to find them horribly corroded inside their packaging, past the point of use.



QUICK HAUL SPECIAL!

A clean hull will make you faster offshore!

Also a great chance to check your keel, rudder, thru-hulls, etc. before the Race!

PRESSURE WASH AND LIGHT SCRAPING INCLUDED!

Up to 35' ONLY \$160 (Valued at \$265)

Up to 45' ONLY \$205 (Valued at \$340)

Up to 55' ONLY \$240 (Valued at \$385)

ANODE REPLACEMENT AVAILABLE AT ADDITIONAL COST

Complimentary Uber service for Customers, Contractors, and Captains delivering or picking up vessels to/from our Yard! (Limited to Clear Lake Area return locations)

Golf cart service also available for transportation to and from our local Clear Lake Shores establishments (Skippers, Joe Lee's, Okies, Jackie's, Aspens, O2, etc.) if you'd like to beat the heat and relax while your boat is being quick-hauled and pressure washed!

ENGINE & DRIVE TRAIN MAINTENANCE INSPECTION SPECIAL ONLY \$100!

Reliable operation of your engine can affect the safety and security of you and your crew in emergency situations offshore. This service includes up to one hour of expert one-on-one consulting time aboard your vessel at your marina to perform a thorough visual inspection of your engine and drive train to help identify needed maintenance or repairs prior to this year's race. Whether you make any necessary repairs yourself, hire True North, or utilize any other qualified service company, our goal is a safe and successful offshore event for everyone! Any preventive maintenance, repairs, upgrades, or any other questions concerning your equipment can be discussed and answered at that time.

(ALL PRICES ABOVE DO NOT INCLUDE SALES TAX)

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