

Engine oil, fuel and cooling water pre-start procedures:

- 1. Engine OIL:** Check oil level on the engine using dip stick before starting engine for the first time each day (Remove companion way steps, lift top engine compartment cover, release access panel latches, remove panel – dip stick is on left front side of engine behind raw water pump as you look rearward at the engine). If oil level is at or just below mark on dipstick it is OK, if level is $\frac{1}{4}$ inch or more below mark add small amount of oil using small plastic cup pouring oil through oil fill on top of engine. This engine only has capacity for 2 $\frac{1}{2}$ quarts of oil, only add small amounts, wait several minutes and recheck when adding oil. Do not over-fill. If level is very low, check engine for traces of leaks, fill to mark on dip stick and run a dock side engine check and re-check oil level before leaving dock. Notify dock master of low engine oil level.
- 2. Fuel, Water, Oil Leaks:** Check engine compartment for fuel, oil or water leaks by looking at pan under the engine to make sure it is not full of oil, fuel or water. (Note there is a pad in pan to absorb traces of fuel or oil, but pan should not be full of any liquids).
- 3. Raw water Strainer:** Check raw water strainer (plastic clear bowl) with plastic screen basket for seaweed, leaves or other debris. Strainer is secured to bulkhead on the left side of the engine compartment looking rearward. If necessary unscrew top cover over plastic strainer basket. The top cover is about the size of a half-dollar coin and is in the middle of the metal strainer housing. Lift out the basket screen and clean out debris. Do not remove weight on bottom of basket. Replace basket in strainer, fill strainer completely with water, ensure that the basket is in the center of the container correctly in the indent and then carefully re-screw cover over basket. Make sure you do not cross-thread the cover when re-installing it.
- 4. Raw Water Seacock:** Go back up to cockpit and open cockpit locker hatch. Look in the forward inboard area of the bilge, visible from the cockpit locker. You will see a seacock lever that shuts off the raw water from getting to the strainer in the engine compartment. The seacock valve is mounted vertically, When the lever is vertical the seacock is open, when the lever is horizontal the seacock is closed. Pull the top of the lever up to the vertical position (the seacock is now open and seawater can flow to the engine cooling system). In the front of the locker area you will see the engine key and a yellow tag with "OPEN" on one side and "CLOSED" on the other. When you open seacock, take key from screw hook and place in engine panel switch, reverse tag so that it indicated "OPEN". If you cleaned to Raw Water Strainer basket, check the strainer after opening the seacock, to make sure the raw Water Strainer screw cover is secure and not leaking.
- 5. Fuel Level:** The fuel tank is located under the cockpit. The fuel gauge is located on top of the tank and is visible through cockpit locker hatch. Check tank level, if below $\frac{1}{2}$ level you will need to purchase fuel before leaving marina or on your return before docking. The capacity of the fuel tank is 18 gallons of diesel fuel. ***(Morgan Marina does not allow filling of fuel tanks from portable fuel jugs, you will need to purchase fuel from the fuel dock - see fueling procedures).***

Shore power, Battery and breaker Checks:

- 6. 115 VAC Shore Panel:** AC voltage panel is located on side of bulkhead under companionway facing sink. There are two breaker switches (water Heater on top and outlets on bottom), a main breaker switch (up is on, down is off) and two panel lights (Red –Power to boat; yellow – reverse polarity). Switch AC Outlet breaker off (The water heater breaker, covered with tape, should never be turned on). Switch main AC breaker off.
- 7. Shore Power plug:** Unplug shore power on dock from the adapter at the dock outlet. The adapter and cord are secured to dock and outlet box with plastic wire ties. Leave plug in center of coiled power cord.
- 8. Boat Shore power cord:** Unthread black plastic retaining ring around power plug. Unplug shore power plug from boat. Thread stainless steel cover over plug socket using care not to cross-thread the cover. It should thread on easily and not require a lot of effort.
- 9. Coil Power cord:** Coil power cord and leave on dock if you are only going out for the day. For longer trips, where you will be going to another marina dock, remove plastic wire ties and take cord with the boat.
- 10. Battery check:** Using battery test switch on 12 volt DC panel and meter on panel, check voltage on both batter #1 and battery #2. Both batteries should indicate approximately 12 volts. If battery reading is low notify dock master indicating which battery and the reading observed. (Bilge pump is directly hooked to battery #1, a low voltage could indicate pump has been running and there are water leaks – so check for water leaks.) (Batteries are currently charged by the engine and the AC Charger hooked up to the AC outlet circuit breaker).
- 11. Set Battery Switch:** Set rotary battery switch to “ALL”.
- 12. DC Breakers:** Switch 12 volt DC breakers on for departure 1) Instruments, 2) Radio (NAV/COM breaker), 3) GPS (when installed). The bilge pump breaker should be on at all times.
- 13. Light breakers:** Note location of cabin light breakers, running and steaming light breakers in case you require these during your trip.
- 14. Radio:** Turn on VHF radio, listen for traffic on channel 16 and also check weather (channels 1 and 5) before leaving dock. You may also wish to call a boat or marina for a radio check.
- 15. Instruments:** Remove cover from wheel and check reading on depth instrument, it is critical that the depth instrument be functioning. The draft of the O'Day is 4 feet 8 inches; use extreme caution is depth reading is 6 feet or less. Boat speed/log may always read zero if the paddle wheel is not spinning, this instrument is not critical to operation of boat.

Starting engine:

1. **Engine controls:** The throttle and gearshift controls are located on the binnacle in front of the wheel on each side of the compass.
2. **Throttle control & engine shut down:** The throttle control is located on starboard side of compass. Check operation of throttle by moving throttle control forward and return to vertical position. Note that the operation of the lever becomes stiff when moved to vertical position, but can be pulled back further with force, but will not stay in that rearward position. This forced rearward position is the engine "SHUT DOWN POSITION". Never pull back on the throttle lever hard while you are using the engine or you will shut it down and lose power. To return engine to idle lightly pull back on lever with a couple of fingers till you feel resistance.
3. **Transmission shift control:** The transmission shift control is located on port side of compass. Check operation of shift lever by moving forward for forward gear, back to vertical for neutral and then backward to reverse position. Become familiar with forward, neutral and reverse positions of the shift lever so you will recognize what gear you are in by looking at lever. Always put throttle in idle or close to idle position before shifting gears. Move shift lever to vertical "NEUTRAL" position before starting engine.
4. **Key:** Engine key is kept in Cockpit locker on the wall directly above the raw seawater valve and should be returned there after returning to slip. When taking out the key, ensure that the raw seawater valve is open and turn the yellow tag to open. Key is inserted into key switch front bottom of engine instrument panel that is located on lower starboard side of the cockpit back by the wheel. Make sure the shift lever is in neutral position. Turn key clockwise (you will not hear any alarms).
5. **Glow plug switch:** This boat has a Universal Diesel engine and requires that the glow plugs be turned on to start the engine. To turn on glow plugs turn ignition key to left for 10-20 seconds before attempting to start the engine.
6. **Start switch:** To start the engine turn the ignition switch to the right. The engine should start after a few seconds. Release the ignition key when the engine starts. If the engine does not start, you probably did not turn on the glow plug long enough. **WHEN CRANKING THE ENGINE, ONLY CRANK FOR 10 SECONDS AND PAUSE FOR 20 SECONDS. REPEAT UNTIL ENGINE STARTS. NEVER CRANK ENGINE LONGER THAN 20 SECONDS WITHOUT A PAUSE TO PERMIT STARTER TO COOL.** If engine fails to start after three tries, contact dock master and request engine inspection and maintenance. When engine starts set the throttle so engine idles smoothly without a lot of vibration.

7. **Exhaust & cooling water:** Look over stern of boat at exhaust pipe in center of transom. Make sure there is some water spitting out of exhaust along with engine exhaust gasses. At first you will only see spurts of water. The engine on this boat re-circulates warm water back through the engine and not out the exhaust until the engine is warm. After several minutes look back again at exhaust and make sure it is still spitting out water. After running the engine for some time you will notice an increase in the flow of water but it will always come out in spurts.
8. **Engine exhaust pipe:** After starting engine open cockpit locker hatch and look just in front of the seacock at the black exhaust hose. Make sure there are no exhaust gasses leaking from any of the hose or hose connections.
9. **Alternator output:** At the 12 Volt DC panel use battery test switch to check alternator output. Readings should be just above 12 volts to indicate charging output of alternator.

Leaving the slip & Cheesequake Creek:

1. Check wind and current and plan method of departure
2. Check railroad bridge closing estimates and plan arrival at route 35 bridge before the on-the-hour opening. Leave at least 15 minutes before the hour to insure you will reach bridge before opening.
3. Assign departure responsibilities to the crew.
4. Assign one person as spotter in bow to look for other boat traffic and handle bow lines. Bow person should remain at the ready with the anchor should an engine failure or other emergency arise in Cheesequake creek especially in the bridge area.
5. Assign fender and line handlers on port and starboard sides to fend off boats in adjacent slips and hang spring lines on pilings.
6. On departure and entry keep a watchful eye on the depth gauge especially in the creek. There are shallow areas across from Lockwood entrance and behind Railroad Bridge. Slow down and use extreme CAUTION if depth reading is 6 feet or less. The O'Day 28 draws 4 ft 8 inches.
7. Tune VHF radio to Channel 13 and listen for Bridge attendant instructions. Call Bridge attendant if necessary to ensure the bridge will be opened.
8. Once past the bridge, go straight out past the first channel marker lights, as there are rock jetties on both sides of the channel. Stay in the channel, as the area immediately outside the bridge is shallow. (See the attached depth chart that indicates the shallowness of the creek and its entrance.)
9. Check to see if the engine is continuing to spit water out of the exhaust. Very little water will be spit out of the exhaust until the engine is warmed up. Keep checking while under way.

Getting Ready to Sail:

1. When ready to sail, put mainsail up first and then unfurl the jib.
2. Turn off engine by pulling back on the throttle beyond the idle position and hold it there until the engine stops. This will cut off the fuel to the engine and stop it. After engine has stopped turn off key switch and move transmission lever to reverse position to keep the propeller from rotating. Never turn the key switch off while the engine is running as it will damage the alternator.
3. **Battery Switch:** With engine off switch battery switch to match day of month (even day use #2 battery; odd day use #1 battery).
4. The main sheet traveler is adjustable manually by releasing the traveler lines from the cam cleats (one at each end of track) then position the car where desired and pull the lines through the cam cleats to lock in place.
5. Jib sheet blocks are adjusted by manually lifting the knurled knob on the block and slide to a different position, then release the knob and ensure that it seats in a hole in the track. The jib sheet blocks should be adjusted according to how much jib is unfurled. There are labels next to the jib sheet track that correspond to various amounts of jib exposed. For example, FULL, 75%, 50%, 25%. Look for similar markings on the jib. Do not attempt to adjust the block position while there is a load on the sheet. Best practice is to adjust the block for the lazy sheet then adjust the block for the other sheet after the boat is tacked. Alternatively, temporarily release the working sheet to release the load, adjust the block, then haul in on the sheet to trim sail shape as needed.

Reducing Sail Area:

1. To furl the jib the furling line must be secured to the cleat on the track or behind the winch. When the jib is furled part way, the jib sheet blocks must be moved to corresponding locations as marked next to the jib sheet track.
2. To reef the main sail there are two reefing lines set up that run out of the bottom of the boom at the gooseneck. They have jam cleat mechanisms at the gooseneck, however you should never rely totally on these jam cleats. When reefing the main secure a separate line through the reefing clew around the boom to ensure that the reefing line does not accidentally release and tear out the reefing points.

Preparing to re-start engine or return:

1. Turn battery switch to "ALL".
2. Move transmission gear shift lever to neutral, throttle lever to idle (both in vertical position).
3. Turn ignition switch to left to turn on glow plugs for 10-20 seconds
4. Turn ignition switch to right to start and release after engine starts
5. Check to see if the engine is spitting water out of the exhaust. Very little water will be spit out of the exhaust until the engine is warmed up. Keep checking while under way.

6. Furl jib until sheets wrap twice around the sail and secure furling line to cleat behind winch. Lower main sail and secure with sail ties. Move main halyard to stanchion base on starboard side.
7. Check wind and current and plan for entry into Cheesequake creek.
8. Assign bow person to stand by with anchor in emergency.
9. Tune into Channel 13 and listen for Bridge attendant instructions. Call Bridge attendant if necessary to ensure the bridge will be opened.
10. On entry and departure keep a watchful eye on the depth gauge especially in the creek and the area outside of the creek and past the Cheesequake lights 1 and 2 at the end of the jetties. (See attached depth chart.)
11. Check fuel level before returning to slip. If the fuel level is below 1/2 full, go to the Marina Fueling dock and add fuel before docking. Tank capacity is 18 gallons. USE DIESEL FUEL ONLY. Fueling from jugs at the slip is prohibited. Alert the Dock master if the tank level is low and you are unable to fuel up.
12. Assign return responsibilities to Crew. At present, on return ensure there is someone at the ready on the anchor should an emergency arise in Cheesequake Creek especially in the bridge area. Decide on a technique that will be used to dock the O'Day 28. Assign responsibilities to crew and ensure they know what is expected of them.
13. When close to the slip reevaluate the chosen docking technique. If it is changed, alert the crew and reassign responsibilities.
14. The docking conditions include **traffic** (power boats tend to move quickly in the creek and have little regard for sailboats under power); **wind** (bow is swung by the wind); **current** (boat will drift with the current – remember this is a fixed keel boat) with a lot under the water line); boats in **adjacent slips** (both powerboats next to our slip have bows with anchors that stick out beyond the pilings)
15. If conditions are too rough to dock, tie up at the Fueling dock and wait an hour or so as things will change in that time. The current runs strongest for the hour before and after mid-tide.

After docking:

1. Secure bow, spring and stern lines so that boat is secure in middle of slip and does not hit floating dock. Ensure the stern lines are crossed. E.G. The line tied to the starboard side of the dock is cleated to the Port stern cleat. Ensure that the stern lines are behind the stern ladder.
2. Turn off engine by pulling back on the throttle beyond the idle position and hold it there until the engine stops. This will cut off the fuel to the engine and stop it. After engine has stopped turn off engine key switch. **WARNING: DO NOT TURN KEY SWITCH OFF WHILE ENGINE IS RUNNING – YOU WILL DAMAGE CHARGING CIRCUIT.**
3. Turn off radio and turn off instrument and other breaker panel switches. Move battery switch to OFF position.
4. Open cockpit locker hatch. Check for water in engine bay.
5. Check level of Holding Tank and Note level in log.

Connecting shore power:

1. **Cord and boat plug:** Run shore power cord over port rail and tie to lifeline stanchion. Unthread the cover from forward boat socket (rear socket is for phone line), line up plug with socket, insert and then twist plug to lock in position. Screw black retainer ring to plug outlet.
2. **Shore plug:** Plug power cord into adapter at the shore power outlet.
3. **Plug power light:** Check boat end of power cord, a light indicates that there is power to the boat.
4. **AC Breaker panel:** Flip AC Power main breaker switch on (UP). Check light for power on and reverse polarity warning (do not leave power hooked up if reverse polarity light is on).
5. **Outlet breaker:** Turn on outlet breaker to use automatic battery charger.
6. **Power Cord routing:** Check power cord routing to make sure it is not chaffing on the boat or dock and that it will not end up dangling in the water.

Leaving the boat:

1. **Walk around boat before leaving. Check dock lines and fenders. Check for loose rigging. Make sure furling line is secure.**
2. **Go below to secure forward hatch, make sure screw dogs are tight so that gasket seals hatch.**
3. **Check bilge for water, run pump if necessary to pump overboard.**
4. **Check 12-volt panel and battery switch (all off).**
5. **Pack-up any garbage and take ashore with you.**
6. **Get locks from navigation station drawer.**
7. **Install companionway boards and lock.**
8. **Hang key in cockpit locker and lock the locker.**

NOTES:

1. Do not let engine run at a speed where it vibrates strongly; adjust throttle to reduce or eliminate vibration. If there is vibration at high rpm, reduce rpm, if there is vibration at idle increase throttle just slightly until vibration is reduced.
2. It is especially important that the exhaust is checked periodically for spitting water to avoid engine and muffler overheating. If no water comes out of the exhaust check the engine temperature gauge. Stop engine if it is overheating (over 140° F.) The muffler is plastic and melts at 157° F.
3. The bilge pump switch should be set to the 'Auto' position so that pump runs as needed. There is a float switch that turns the pump on when the water level in the bilge gets too high. Check that the bilge pump float switch is operating. If not do not leave the breaker switch on as the pump will run continuously and burn out.
4. When at the dock do not leave the boat if an emergency condition exists. Call the Maintenance Coordinator and the Reservations Coordinator. An email or text without a corresponding reply does not constitute notification. You are there; you are the first line of defense.