

# Tenacious Start Up & Operations



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# Tenacious Start Up Check List

1. The companionway lock combination is **4911**.
2. Remove window covers, steering wheel cover, winch covers, two forward hatch covers, and main sail cover. Leave the life raft cover in place and the small bowl cover over the GPS dome on the aft rail. Pull the lock pin in the roller furler.
3. Center traveler, prepare main sheet, jib sheets & furler line for use. Get out winch handles & any blocks.
4. Check all hatches, front to rear, port & starboard, CLOSE all.
5. DC main panel.
  - a. Turn on INSTR. VHF, AUTO, and ENG ROOM BLOWER. Maybe RADAR & AUTO PILOT,
  - b. Turn off (Maybe !): WATER PRESSURE, GAS VALVE, SUMP and BILGE #3.
6. Turn on the GPS it may take 5 minutes to calculate position. This switch also turns on helm 12V outlets.
7. Check house and start battery charge level by toggling the normally off switches near the top of the instrument panel labeled 1, 2, 3, 4. 1 and 2 should read the same (house battery select switch on BOTH). 3 is the start battery voltage. 4 not used. All voltages should be between 12.5 and 14 VDC.
8. Check regulator/reohstat switch. Recommended initial setting "regulator".
9. Turn off AC switch switches and AC main on AC main. Turn off AC breaker switch at dock. Unplug dock cord. Secure cord ashore or aboard. Dock box combination is **4911**. There is a shelf for the power cord in the aft lazarette if the cord is coming aboard.
10. Open the engine thru hull valve under the 1" thick teak step between the navigation station and the main salon. The valve handle is on the starboard side under this step.
11. Check engine Oil, below wet locker. Level should be between the Max and Min (No higher than max or excess will leak into bilge). 5.5 quarts with Filter to Change.
12. Switch on engine start battery under navigation station. Engine start key (red/orange foam key float) is in aft key locker.
13. Engine in neutral, turn key, push black button. Turn on blower. Warm up if necessary, idle 800 to 1000 RPM. Check for water out exhaust, little drain on port side only drips at medium RPM. Check Oil pressure & water temp, record engine hrs in log. Maybe check reverse & forward against dock lines, but not necessary.
14. Check list:
  - a. Engine Alternator on regulator not rheostat for normal operation
  - b. Bilge Pump #3 (small panel) & Sump Pump may be off if seas rough
  - c. Review Safety Check list with Crew
  - d. Tools
  - e. Lunch, Cold Beer & Ice (or wine in an emergency).
  - f. Double check below for loose stuff. Tenacious will heel to 30°+ in SF Bay.
  - g. No standing water in Heads, 4 valves total
    - i. Saltwater Inlet (open or closed).
    - ii. Y valve tied to closed inside bay.
    - iii. Direct thru hull (closed).
    - iv. Holding tank thru hull (closed).
15. Dock Lines & Departure
  - a. Say prayer and confirm sobriety of crew.
  - b. Fenders, Double 1 side or 2 sides?
  - c. Review departure procedure
  - d. Untie SLACK lines 1<sup>st</sup>
  - e. Untie spring lines 2<sup>nd</sup>, maybe.
  - f. SECURE lines clear of propeller
  - g. Double back working lines, NO STOPPER KNOTS
  - h. Begin departure
  - i. Cast off slack lines, Flip or Fish & SECURE
  - j. In windy departures 1 person may need to attend from dock
16. Stow fenders carefully in aft lazarette. Check that Fender crate is not fouling steering. Check that aft spare anchors are secure. Leave lazarette unlocked while sailing in case steering fouls.

# Tenacious Operations

1. Toilets:
  - a. 4 valves (actually 6)
    - i. Saltwater Inlet – closed or open
    - ii. Y valve tied to closed inside bay.
    - iii. Direct thru hull - closed
    - iv. Holding tank thru hull – closed
    - v. Ok 2 more valves. Vent valve (hidden) – always open.
    - vi. Deck pump out valve (elsewhere) – usually closed, open for pump out only.
  - b. Have a seat if sailing (**EVEN the guys**).
  - c. Nothing goes into marine head (toilet) that does not attempt to pass through your body.
  - d. All TP, trash and feminine products go into trash receptacle (in cupboard).
  - e. To flush
    - i. Open thru hole for water (before sitting)
    - ii. For BM put water into bowl before using.
    - iii. Step on foot pedal while gently and slowly pumping handle. 2 to 4 full cycles might be enough water to rinse.
    - iv. Release pedal, pump until empty.
    - v. Notes:
      1. Pull vigorous to help suck in “stuff”.
      2. Push gently to avoid spraying “stuff” everywhere.
      3. Not too fast is better (less air trapped)
  - f. In port, leave a little clean fresh (or salt) water in bowl.
  - g. Close Saltwater Inlet (optional) while Sailing
  - h. Close All valves when finished.
    - i. Y valve must be set to holding tank when not offshore.
    - ii. Holding tank and Direct thru hole valve must be closed when not offshore.

# Tenacious Return

1. Return, Dock and Secure
  - a. Sails down and secure.
  - b. Say prayer and confirm sobriety of crew.
  - c. Fenders, Double 1 side or 2 sides?
  - d. Spring line to stop, Bow & Stern to secure to side.
  - e. All lines secured and clear of propeller.
  - f. All hands ready, passengers below or clear. Review docking procedure with crew (all) well before approach.
  - g. Spotter forward, spotter must communicate loudly !
2. Engine on until 3 lines secure.
  - a. Engine, rotate key off
  - b. Engine, start battery off
  - c. Close engine thru hull
3. Review lines and fenders.
  - a. Stow fenders if required.
4. Reconnect dock cord
  - a. Connect both ends, twist to lock.
  - b. Switch on breaker at box
  - c. Switch on AC breaker on AC Panel
  - d. Check AC display lights
    - i. Little Red power light on
    - ii. Polarity, Green On (Dim), (*check or service this?*)
  - e. Battery charger on. Charger set on 1 for long term
5. Shut down unnecessary instruments and equipment
6. Secure Furler with Pin
7. Distribute grog to worthy crew, keelhaul balance.

# Leaving Tenacious

1. All Hatches Secure
2. Canvas in Place
3. Through Hulls Closed
  - a. Engine
  - b. Refrigerator
  - c. 4 each Head
  - d. Wash down
  - e. Genset
4. Panel
  - a. AC Shore on
    - i. Battery Charger on
  - b. DC on
    - i. Main Panel Bilge 1
    - ii. Main Panel Bilge 2
    - iii. Small Panel Bilge 3
    - iv. Cabin Lights STBD
    - v. Fans
    - vi. Sump (Grey Water Tank)
    - vii. 12 VDC outlets under Sump
5. Check engine compartment forward
  - a. Leaks?
  - b. Clean up normal water under engine?
6. Black water tanks, Pump out?
7. Horse Shoes, MOB & Flag secure?
8. Pickup: Trash, Food, Dishes, Sinks, Toilets, Towels
9. Lock
  - a. Companion way
  - b. Dock Box
  - c. Pig Tail
10. Once again, distribute grog to worthy crew, keelhaul balance.

## **Safety Instructions, & New Crew Guidelines for Sailing Aboard Tenacious**

1. Please listen to Captain or Helmsman and follow instructions quickly and carefully, argue politely **LATER**.
2. Do not place arms or legs between Boat & Dock (or any big object).
3. Do not jump over lifelines
  - a. Use the gates, or attempt to step over lifeline at the shrouds.
  - b. Step or carefully jump to dock from outside lifeline, not over it.
4. Know location of **YOUR** PFD and how to use it.
5. PFD required when;
  - a. Standing watch at night.
  - b. Seas, parents or vessel operations warrant its use.
6. Marine Head – Toilet
  - a. Nothing goes into marine head (toilet) that does not attempt to pass through your body.
  - b. All TP, trash and feminine products go into trash receptacle.
  - c. Please ask for instructions on using head if you are not completely familiar with it's operation.
  - d. Gentlemen, please sit down, regardless ....
7. Do not throw any trash over the side.
8. Please consume alcohol in moderation if vessel is in operation and you will be required to perform crew operations.
9. No recreational controlled substances. George Bush's Henchmen will sell our home to the highest bidder given the opportunity, regardless of the US Constitution.
10. No firearms.
11. Bare feet, or secure shoes (Teva, boat shoes) recommended. No flip flops.
12. Review MOB basics.
  - a. Horseshoe
  - b. Pole
  - c. Keep contact
13. Review Dock Line Operation if necessary before departure or landing.
  - a. Bow Line
  - b. Stern Line
  - c. Spring Line

# Water Maker

## Routine Start Up

1. Check oil level in high pressure pump.
2. Check Filters – strainer, coarse, fine.
3. Verify that system is primed, if not see manual
4. Open Sea water valves (engine thru hull & yellow valve #6).
5. Open pressure control valve on panel, all the way counter clockwise – gently.  
*(If shut down properly previously it is in this position)*
6. Get out test hose (through finger hole, attach to filtered sink water outlet).
7. Set valve #7 to test/taste (on panel). *(If shut down properly previously it is in this position)*
8. Set valve #5 to sea water position (up/right angle). *(If shut down properly previously it is in this position)*
9. Start power source (Genset).
10. Switch on water maker – on AC panel.

OK everything is ready, the next step is go.

11. Turn on breaker (on watermaker panel) *(Step 10 assumes low pressure safety shut is still nonfunctional – if functional see manual for instructions)*.
  - a. It is not necessary to hold down red button, green light will not light up.
  - b. Quickly check for waterflow on Port side near midship. Listen to water flow. If there are air leaks STOP. Look for water leaks.
12. Slowly close pressure control valve. 125 PSI increments.
  - a. Watch for air bubbles in test line, try to be patient 😊
  - b. Listen for pump changing speeds (air in intake).
  - c. Increase pressure to ~800. In colder climates reduce pressure (see manual).
  - d. Select tank to direct product to.
  - e. Allow some flushing time, maybe 5 – 15 minutes.
  - f. Taste product, switch taste/tank valve (valve #7) to tank when ready.
13. Monitor
  - a. Sample periodically (taste half hourly?).
  - b. Listen for pump changing speeds.
  - c. Check pressure.

# Water Maker Shut Down

## General Note:

1. Remember to fill the 5 gallon jug before you shut down the system.
2. Don't use up all your nice RO water and have nothing to clean the system with. If necessary you may need purified store water to clean system if RO water unavailable.
3. The system will store better with filters removed, but it is more difficult and it is more difficult to restart when you next use it. It is recommended that the filters stay in place for a while, but in the future, when you use the system weekly learn to switch them in and out each cycle.

## Routine Shut Down – 2 weeks Max. But maybe you should pickle it, it is almost as easy.

1. Switch product water valve (#7) to test.
2. Open pressure control valve (counter clockwise, gently).
3. Turn off watermaker.
4. Close yellow valve #6.
5. Flush with fresh water. Use 2 people for this
  - a. Do not use chlorinated water (10 day old is ok).
  - b. Put hose into 5 gallon container.
  - c. Open valve #8.
  - d. Turn on watermaker, make sure water is flowing.
  - e. Turn control valve so that pressure is about 125#.
  - f. Open control valve before you use all/most of container. Do not suck air.
  - g. Turn off watermaker then close valve #8.
6. Alternative Flush – if 5 gallon container unavailable.
  - a. Do not use chlorinated water (10 day old is ok).
  - b. Select tank to provide flush.
  - c. Switch valve #5 to sweet water flush position (in line) and turn on watermaker. Make sure water is flowing. Run for 2 minutes.
  - d. Turn control valve so that pressure is about 125#.
  - e. Open control valve before 2 minutes is up. It may require two 1 minute cycles for house water pressure to keep up with watermaker.
  - f. Turn off watermaker then close valve #5.

## Long Term Shut Down – Pickle

1. If the watermaker is shut down for more than 2 weeks Pickle it.
2. If the watermaker might freeze, see manual (add propylene-glycol).
3. System is stable for 1 year following Pickle.
4. Mix 5 gallons of solution
  - a. 1½ TBSP of Sodium Metabisulfite per gallon.
  - b. 7½ TBSP for 5 gallons. Mix small solution on stove in boiling water to dissolve more easily.
  - c. For freezing 20% propylene-glycol.
  - d. Do not use chlorinated water (10 day old is ok).
5. Now follow instructions above for Routine Shut Down
  - a. Perform all steps, only use pickle solution rather than RO water.



## Hot Wire Start

1. If engine will not start with start button.
2. Locate hot wire. In galley, open small panel to engine compartment.
3. Hot wire should be marked and have the end covered.

CAUTION – DO NOT PLACE HANDS OR CLOTHES NEAR BELTS

4. Instruct helmsman to turn ignition on (alarm sounds).
5. Touch hot wire to large bolt on starter solenoid as shown.
6. When engine starts cover end of wire and secure.



# Tenacious Equipment Check List, learn every piece of equipment listed ☹

## Ground Tackle

Anchor #1 \_\_\_\_\_  
 Secure #1 \_\_\_\_\_  
 Anchor #2 \_\_\_\_\_  
 Anchor #3 \_\_\_\_\_  
 Anchor #4 \_\_\_\_\_  
 Chain Secure \_\_\_\_\_

## Deck

Canvas Covers \_\_\_\_\_  
 Life Raft \_\_\_\_\_  
 Shore Cord \_\_\_\_\_  
 Pig Tail \_\_\_\_\_  
 Pad Lock \_\_\_\_\_  
 Docklines, 6 \_\_\_\_\_

## Cockpit/Lazarette

Fenders, 4+2 \_\_\_\_\_  
 Horseshoes, 2 \_\_\_\_\_  
 LifeSling \_\_\_\_\_  
 MOB Pole \_\_\_\_\_  
 US Flag \_\_\_\_\_  
 Beer \_\_\_\_\_  
 BBQ \_\_\_\_\_  
 Bilge Handle \_\_\_\_\_  
 Emerg Tiller \_\_\_\_\_  
 Depth Gauge \_\_\_\_\_  
 Knot Meter \_\_\_\_\_  
 Wind Knot Meter \_\_\_\_\_  
 Wind Indicator 1 \_\_\_\_\_  
 Wind Indicator 2 \_\_\_\_\_  
 Repeater \_\_\_\_\_  
 Handheld GPS \_\_\_\_\_  
 Handheld VHF \_\_\_\_\_  
 Cushions \_\_\_\_\_

## Safety

2 Type V PFD \_\_\_\_\_  
 3 Type V PFD \_\_\_\_\_  
 1 Child V PFD \_\_\_\_\_  
 4 Type II PFD \_\_\_\_\_  
 4 Type III PFD \_\_\_\_\_  
 2 Safety Harn \_\_\_\_\_  
 3 Fire Exting \_\_\_\_\_  
 4 Foulies \_\_\_\_\_  
 Air Horn \_\_\_\_\_  
 Flares \_\_\_\_\_  
 Bell \_\_\_\_\_  
 1<sup>st</sup> Aid Kits \_\_\_\_\_  
 2 Flashlights \_\_\_\_\_  
 Ditch Bag \_\_\_\_\_  
 Handheld VHF \_\_\_\_\_

## Sails

Main \_\_\_\_\_  
 Sail Cover \_\_\_\_\_  
 Genoa \_\_\_\_\_  
 Secure \_\_\_\_\_  
 Staysail \_\_\_\_\_  
 Spinnaker \_\_\_\_\_  
 Cruising Spin \_\_\_\_\_  
 Staysail Spin \_\_\_\_\_  
 Spinnaker Pole \_\_\_\_\_  
 Whisker Pole \_\_\_\_\_

Staysail Pole \_\_\_\_\_  
Nav Station \_\_\_\_\_  
 Operations Man \_\_\_\_\_  
 Documentation \_\_\_\_\_  
 Insurance \_\_\_\_\_  
 Checklists, 27 \_\_\_\_\_  
 Flux Gate Comp \_\_\_\_\_  
 Binoculars \_\_\_\_\_  
 Walkie Talkie, 5 \_\_\_\_\_  
 Parallel Rule \_\_\_\_\_  
 Divider \_\_\_\_\_  
 Charts \_\_\_\_\_  
 Yellow Q Flag \_\_\_\_\_  
 Mexico Flag \_\_\_\_\_  
 Dive Flag \_\_\_\_\_  
 Chart 1 ? \_\_\_\_\_  
 Required books \_\_\_\_\_

## Key Locker

Engine Key \_\_\_\_\_  
 Dock Key, 3 \_\_\_\_\_

## Tool Kits

Winch Handles \_\_\_\_\_  
 Blocks \_\_\_\_\_  
 Tool Box 1 \_\_\_\_\_  
 Tool Box 2 \_\_\_\_\_

## Spare Parts

Impeller \_\_\_\_\_  
 Gaskets \_\_\_\_\_  
 Fuel Filter \_\_\_\_\_  
 Oil Filter \_\_\_\_\_  
 Engine Belt \_\_\_\_\_  
 Engine Oil \_\_\_\_\_  
 Trani Fluid \_\_\_\_\_

## Dock Box

Hose & Nozzle \_\_\_\_\_  
 Deck Brush \_\_\_\_\_  
 Handle (locker) \_\_\_\_\_  
 Bucket \_\_\_\_\_  
 Padlock \_\_\_\_\_

## Dingy

*Hidden & TBD*

## Galley

*Hidden & TBD*

## Linen

TBD

## Operations

Log Book \_\_\_\_\_  
 Engine Hours \_\_\_\_\_

## *Lights/Power/Instruments*

Auto Inverter \_\_\_\_\_  
 Backup Shore N/R \_\_\_\_\_  
 Interior AC \_\_\_\_\_  
 Interior DC \_\_\_\_\_  
 Navigation \_\_\_\_\_  
 Anchor \_\_\_\_\_  
 Stereo \_\_\_\_\_  
 Bat Switch \_\_\_\_\_  
 VHF \_\_\_\_\_

GPS \_\_\_\_\_  
 Radar \_\_\_\_\_  
 Auto Helm \_\_\_\_\_  
 Weather Fax N/R \_\_\_\_\_  
 Plotter N/R \_\_\_\_\_  
 SSB 1 N/R \_\_\_\_\_  
 SSB 2 N/R \_\_\_\_\_

## *Fresh Water*

Tank Level \_\_\_\_\_  
 Tank Valves \_\_\_\_\_  
 Salt Water \_\_\_\_\_  
 Thru Hull \_\_\_\_\_

## *Grey Water*

Tank \_\_\_\_\_  
 Sump \_\_\_\_\_

## *Refrigeration*

DC Panel \_\_\_\_\_  
 Thru Hull \_\_\_\_\_  
 Strainer \_\_\_\_\_

## *Bilge Pumps*

Pump 1 \_\_\_\_\_  
 Pump 2 \_\_\_\_\_  
 Pump 3 \_\_\_\_\_  
 Sump \_\_\_\_\_  
 Hand Pump 1 \_\_\_\_\_  
 Hand Pump 2 \_\_\_\_\_  
 Hand Pump 3 \_\_\_\_\_  
 Pump Handles \_\_\_\_\_  
 Vacuum \_\_\_\_\_  
 Hand Pump \_\_\_\_\_

## *Engine*

Oil \_\_\_\_\_  
 Fresh Water \_\_\_\_\_  
 Strainer \_\_\_\_\_  
 Coolant \_\_\_\_\_  
 Oil \_\_\_\_\_  
 Trani Fluid \_\_\_\_\_

## *Gen Set*

Fresh Water \_\_\_\_\_  
 Strainer \_\_\_\_\_  
 Coolant \_\_\_\_\_  
 Oil \_\_\_\_\_  
 Spare Parts \_\_\_\_\_

## *Stove*

LP Tanks \_\_\_\_\_  
 Gas Solenoid \_\_\_\_\_

## *Ground Tackle*

Anchor \_\_\_\_\_  
 Windlass \_\_\_\_\_  
 Stow Chain \_\_\_\_\_

## *Water Maker*

TBD - OMG \_\_\_\_\_  
*More AC/DC Panel*

Alarm \_\_\_\_\_

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