Notes from the Owners of s/v Obelix

Garcia Exploration 45

Welcome aboard Obelix.

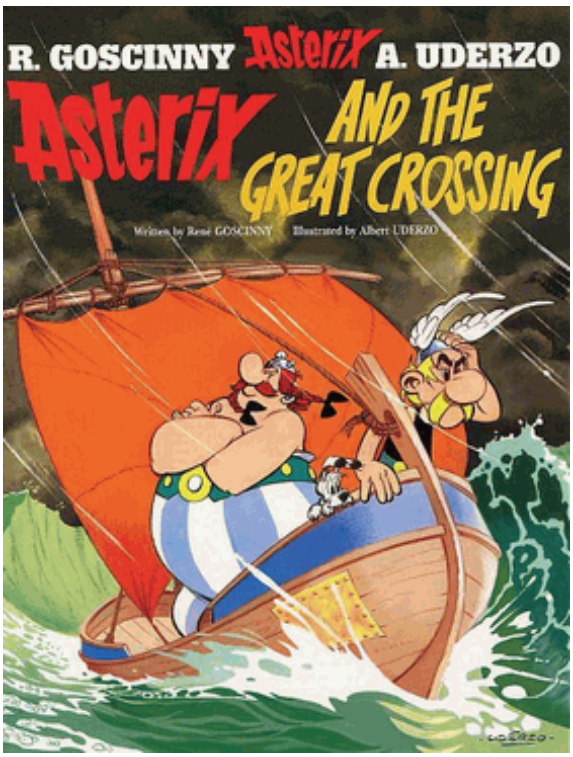
Obelix was commissioned by a family of 5 for the purpose of transiting the Northwest Passage. The owners and the builder drew heavily on the expertise and experience of the legendary Jimmy Cornell in the design and specification of this vessel, that the famous Vendée Globe sailor Pete Goss calls the 4x4 of the sea.

Launched in the spring of 2015, this vessel took her crew safely across the Atlantic Ocean, from her birthplace Cherbourg France, via Wales, Norway, Greenland, Baffin Island, and Labrador. She's been from Seattle to Kodiak Island, Alaska. She's been on display at the Paris Boat Show, the Annapolis Boat Show, and the Seattle Boat Show.

We came across the Garcia Exploration 45 while chartering an Outremer 45 catamaran in France. They not only share the same parent company, but we think you'll find the galley, salon and other below deck

spaces feel much like that of a catamaran, i.e. bright and airy and much closer to the action of the cockpit than a typical monohull.

We were fortunate to find her in Seattle as her original owners decided to turn the page to a new chapter in their lives.



"Obelix" is a French cartoon character, the trusty sidekick of Asterix from the adventure series *The Adventures of Asterix*. We chose Obelix as he is a powerful character with substantial girth, and he is irresistibly sexy, much like our vessel!

If you can think of anything…anything at all…that would make her more enjoyable for you, please let us know through San Juan Sailing. We've tried not to overlook any detail in our effort to make her our ultimate sailboat.

We wish you fair winds and wonderful memories. Thank you for being our guests!

Happy sailing,

Greg and Magdalena Theisen
s/v Obelix
360-303-9985

Technical Characteristics and Specifications

Year commissioned:	2015	Make and model	Garcia Exploration 45
Hull length (Lh)	46.6'	**Vessel Official Number**	**1258650**
Waterline length	41.24'	MMSI	367656310
Beam (Bmax)	14.6'	FRN	4164448
Draft (max) centerboard down	9.5'	FCC Call Sign	WDL7556
Draft (min) centerboard up	3.75'	WA State Dept of Revenue	12706; No:1680
Mast height above WL	65'	staterooms/heads	3/2
Fuel [total] (left) (right)	[185] (92) (92) gals		
Water: [total] (left) (right)	[132] (66) (66) gals	Hot water	10.6 gals
Waste holding	29 gals (1 tank)		
Engine	Volvo Penta d2-75hp turbocharged		
House batteries (AGM)	(6) x 125 Ah = 750 Ah	Refrigerator:	
Mainsail	550 sf	Freezer:	
Solent (headsail)	454 sf		
Staysail	223 sf		
Displacment (max load)	40,366 lbs		
Displacement (light)	32,214 lbs		
Ballast weight	10,010 lbs		
Max rec load	5732 lbs		
Fuel, Water, Fluids	2420 lbs		
Total max load	8153 lbs	Owner Contact:	Greg Theisen 360-303-9985
Stix stability fully loaded	37.5 115º AVS	Maintenance Pro: Epic Yacht Management	Edana Long 360-366-8929

Vessel Information

Washington State Parks Annual Permit Decal – Located on the cabin top, port side

U.S. Customs Re-Entry Decal – Located on the starboard side of the port helm.

Vessel Official Number - 1258650 (same number as shown on the Coast Guard Certificate of Documentation found in Section 5 Documentation of the Charter Guest Reference Manual (white binder). Vessel Official number is on a placard located in the cockpit port locker, on the starboard face. The placard faces outboard.

Coast Guard Boarding Document – Refer to the Charter Guest Reference Manual (white binder), Section 5 Documentation. Explains what to expect if you are boarded by the Coast Guard and where to find the information/equipment they may ask to see as part of their safety inspection.

Nuances

There are a few things about Obelix that are not typical of a charter fleet boat. These are the things that may require special attention or where it may be best to deviate from customary operating procedures. We have listed some here because we believe they will help you plan your charter.

- Centerboard-Obelix does not have a lead filled keel. She has a centerboard and her resin-encased ballast is fixed and centrally positioned in the centerboard skeg and lower compartments. **She draws 9.5'** with the board down and 4' with the board up. The centerboard is raised and lowered from the same line, located in the cockpit starboard side rope clutches. There is a 'downhaul' line on the port side, but that would only be used in an ocean-passage situation where you want to prevent any tendency to lift.

- Obelix has twin rudders located well off centerline. This gives her great control while heeled sailing, but it takes away the useful docking feature of prop-wash, as there's very little prop driven water flow over the rudders. Be aware, plan accordingly, and make sure you turn on the bow-thrusters.

- Fuel Transfer-Fuel is provided to the engine from the tank selected by the linked gate valve handle, accessed in the large locker immediately aft of the companionway, on the starboard side. Management of the quantity in the port and starboard tanks can be through, or a combination of use of this selection handle and the fuel transfer pumps. Checkout the fuel section for more detailed information.

- Water Transfer-water is always consumed from the port side tank. Management of tankage is accomplished through the use of transfer pumps. See the water section for more information.

- Electrical-the domestic AC provided on Obelix is 220 volts/50 hz. The practical result of that is that you can't just plug in a domestic appliance without consideration. Plug converters are provided, that will allow you to plug your device into a 220v circuit. That is typically fine for cell phone chargers, laptops, and most modern electronics that have dual voltage capabilities built in. That situation **does not change** on shore-power (except frequency), even though you are plugging into a 120v 60 hz shore-power pedestal. Obelix has an isolation transformer that takes shore-power input, transforms it, and provides it to the AC panel as 220v.

- Water-tight bulkheads. Obelix has 3 watertight compartments, bow, main cabin, and stern. There are no penetrations in the bow compartment to the interior. The only way to access the bow

compartment is through the deck access hatch. The stern bulkhead has (2) watertight hatches, allowing access from the port and starboard aft berths. These hatches should be closed unless maintenance is being performed. Finally, the space in-between (the cabin of the boat) is kept watertight from the cockpit by its dogged, lockable, and hinged companion way doors.

- Rig-While at 1st glance you might think Obelix is a cutter rig, in fact she has a (7/8) fractional rig and back-swept spreaders, with a Solent jib (low cut, relatively flat sail) and a staysail to be used on its own in stronger winds. They are not meant to be used together, as on a cutter. They can, of course be used together downwind, wing-and-wing, with appropriate use of the whisker pole and jibe-prevention. Unless you are on your way to French Polynesia, we recommend that you use the headsail and the mainsail, recognizing that you have to assist the headsail through the slot when you tack. This is made much easier and smoother by partially furling the headsail, tacking, and then unfurling on the new tack. It's not possible to jibe the headsail without furling it 1st, jibing, and then unfurling on the new tack.

Anchors and Windlass

- Obelix is equipped with (2) anchors. The main anchor mounted on the bow roller is a 55# Lewmar Delta, with 375' of 3/8" chain. The secondary anchor, located in the sail locker, is a 37' Fortress, with 170' of rope rode. The primary chain is marked with colored webbing, every 30' (5 fathoms), as follows:

1 white-30'	1 yellow-120'	1 green-210'	1 red-300'
2 white-60'	2 yellow-150'	2 green-240	
3 white-90'	3yellow-180'	3 green-270'	

- The last 25' or so is nylon 3-strand. If you see that, you've gone too far as the windlass isn't going to engage it to pull it up. When you see red, it's time to stop deploying chain. And, since that's 300' of chain out, you're probably in too deep of water to be anchoring.

- The scope normally used in the islands is 4 to 1, definitely not 7 to 1 (unless conditions call for it, i.e. sustained winds over 25 knots). Most of the anchorages are well protected and popular, so you will likely have someone anchored nearby. After you have paid out the suitable amount of chain, a test pull at IDLE reverse sets the anchor (you do not need more due to the Max-Prop and Obelix's relatively large engine).
- Here is an easy formula for how much chain you need out; add the water depth on sounder, plus any tide increase expected during the night, plus 5' (to account for the distance from sounder to roller on bow) and take that total and multiply by 4 (typical example would be 25' of water + 6' of tide increase + 5' = 36' x 4 = 144').
- Power to the windlass is provided by the breaker labeled (Bow Thruster), DC panel 1.
- Windlass control is via foot-switch (located next to the windlass) and/or wireless remote. In the nav table desk, is the wireless remote control, that allows you to operate windlass from a more advantageous position forward at the bow roller (or where you have the best visibility).
- The windlass gypsy is not designed to hold the boat while anchored, so please use the snubber with devil's claw chain hook to hold the chain while anchored. If expecting heavy winds in anchorage, please use the long snubber line hitched to the chain with the Mantus hook and pay out 20-30' of chain.
- Please avoid dinging the bow with the anchor by using caution and slowly raising/lowering the anchor when it is out of the water.
- Salt water wash down hose in forward locker, controlled by "miscellaneous 2" c/b on panel 1.
- Secondary – Heavy duty but lightweight aluminum Fortress anchor stowed in the bow (sail) locker, with 170' rope rode in separate bag.
- Turn ON the Anchor light (labeled "Mooring Light") overnight. Breaker switch is labeled and located on DC panel 1.
- Windlass clutch release/tighten wrench is located next to the windlass, under the hatch.
- The windlass is protected by a thermal breaker reset at the top of the chain locker in the forward bathroom.

Primary Anchor (stowed)

Long snubber run on 2nd bow roller

Mantus chain hook attached-this should be let out 20-30'

Details

To Deploy Anchor:

1) Double check depth at chosen location. In addition to the depth sounder on the 4x4 gauge, we have a depth sonar which you can display on the chart plotter. **Note with centerboard down, we draw 9.5'.**
2) Check tide tables to determine expected water level rise and drop while anchored.
3) Presumably you've chosen anchorage based on anticipated wind and weather. Weather (ch 4, "Northern Inland Waters" or ch 7) is a good source of marine forecast info.
4) The windlass circuit breaker is on DC panel 1, bottom of companionway. Breaker is labeled "B-Thruster/Windlass"
5) To avoid hitting the hull when initially lowering the anchor, maintain control of the anchor when pushing it off the roller, i.e. push the anchor forward keeping the shank *level* before gradually allowing the shank to rise as you ease it forward slowly into the hanging position (no swing!).
6) Using footswitch or wireless remote, lower the anchor to approximately the number of feet on the depth-sounder so the anchor is on the bottom.
7) A signal to the helmsman prompts reverse at idle speed while deploying rode to the desired scope.
8) Allow the anchor to set and to stop the boat while it continues in reverse, idle speed. We then line up objects on shore to determine if we are holding, staying in reverse at idle for about one minute.
9) DO NOT LEAVE THE LOAD ON THE WINDLASS
    a. Set the snubber. If light winds, we use the light snubber and tie to the most forward bow cleat. Payout chain until snubber takes the full load off the windlass.
    b. If anticipating heavier winds, use the longer snubber, which does not have a spliced loop, as you should be able to pay out more rode when necessary. Pass over the bow roller and cleat this off at desired distance (20' out to start), to a forward bow cleat. Pay out enough additional chain to take the load off the windlass.
    c. Set the anchor by reversing at 800 RPM for 1-2 minutes, DO NOT go above 1000 RPM.
    d. In storm conditions (or storm forecast), you can increase scope if there is adequate room to leeward.
10) If you are contemplating setting a 2nd anchor for heavy weather and it's an option, you probably want to spend the night in a marina!
11) If anchored in a small cove, you may wish to deploy a line ashore. 600' floating polypropylene on a reel resides in the sail locker. Open transom doors; use the mop handle as an axle through the reel; set mop handle on helm seats. Deploy the line with the dinghy while the spool unwinds. If sufficient length, bring the line around a secure shore object and back to the boat to a transom cleat for ease of retrieval.

To retrieve the anchor:

1) The anchor washdown circuit breaker is "miscellaneous 2" c/b on panel 1.
2) The windlass circuit breaker is B Thruster/Windlass on panel 1.
3) Start the engine, given that the windlass draws from the engine start battery.
4) Retrieve the chain and anchor using the wireless remote or depressing the up foot-switch, always ensuring the chain is vertical during retrieval. This avoids "towing the boat" with the windlass or dragging the chain against the hull.

5) Motor slowly toward anchor, to keep the chain vertical, exercising care not to over-run the anchor and drag the chain against the hull.
6) As needed, use the salt-water wash down to clean the chain during retrieval (run hose outboard of your foot so that it doesn't get caught in windlass).
7) As the length of rode remaining approaches the water depth, the sound of the windlass laboring alerts us to immediately stop. Sometimes a brief pause will cause the anchor to break free, given the 90 degree angle of pull. A brief tap on the button, if laboring, helps to break out the anchor with the engine in idle forward, not with the windlass.
8) In some cases, to bring the anchor home without banging on the hull, the anchor may need to be swiveled. Ensure it's hook down as it comes over the roller.
9) After nesting, with a slight *slack in the chain*; we secure the anchor once again with the light snubber on the windlass-mounted cleat. As noted, the chain is only "unsnubbed" when it is moving in or out.
10) Reminder: close the windlass switch covers and the windlass cover and return the wireless remote to the nav station desk.
11) Turn off the "miscellaneous 2" c/b and the "B Thruster/Windlass" c/b on panel 1.

Barbecue

Highlights

- Shut-off valve is located in the starboard propane tank locker.
- BBQ propane hose is not plumbed through the solenoid valve.
- Please close the shut-off valve and clean grill when finished cooking.
- BBQ is stowed in a bag in transom locker.
- BBQ mount is stowed in the port cockpit lazarette

Details

To mount:
- Mount base bracket on stern.
- Mount BBQ onto pedestal
- Connect propane hose from starboard propane locker

To operate:
- Turn on the BBQ propane regulator valve (starboard propane locker)
- Grab a BBQ lighter from the galley and insert the end into the small hole in the BBQ below the grill until ½" from the burner. Light the BBQ lighter.
- Turn the regulator on the right side of the BBQ to the "Light" position.
- Turn off the regulator valve when done cooking.
- As a courtesy to the next charter guest, please clean the BBQ grill with the wire brush.

•When finished, and the BBQ is cool and cleaned, please return BBQ to the bag and the locker and return the mount to the lazarette.
•DO NOT GET UNDERWAY with the BBQ mounted on the transom.

Batteries/Charging/Inverter

Highlights

- Engine start (single Group 24 AGM battery)
- House (6 AGM batteries providing 750 amp hours)
- Windlass and Bow thruster (Exide 50 Ah AGM Battery)
- Battery management is vitally important on a boat, as batteries don't tolerate discharges over 50%. Please keep batteries above 12.2v at all times. 12.8v is fully charged (with all loads turned OFF – including the fridge and when not charging).
- When charging, battery voltage will read above 13V.
- Ensure batteries are charging when connected to shore power – see details below in Battery Charging section.
- When underway (motoring) the engine alternator is automatically charging all batteries.
- At anchor, as long as there is sun, there is some charging continuously. The house battery bank is ample enough to handle normal DC loads including lights, refrigerator, freezer, diesel cabin heater and entertainment systems, for a day for sure and possibly 2 days. Please monitor the Phillipi monitor and take action before batteries drop below 50%.
- Caution is needed when inverting and using 220v power (remember this is a European boat). It is likely that you will never turn on the inverter, as phones can be charged directly through the 12v (cigarette lighter) plugs and/or the portable battery bank/inverter provided.

- Use only low draw (wattage) items like phone chargers or laptop computers, on the inverter. High wattage items like hair dryers and electric heaters will kill the batteries.

Details

Obelix has 8 batteries onboard, one dedicated for engine start, one dedicated to bow thruster and windlass operation, and (6) house batteries. The house batteries are in (2) banks of three, located immediately outboard of the engine access on both port and starboard sides. The start battery is next to the house bank on the port side, and the thruster/windlass battery is beneath the V-berth.

All batteries are charged by the engine alternator, shorepower, and the (2) solar panels on the arch.

Battery Monitoring: The Philippi Systems Monitor (at the nav desk) is the sole means of monitoring charge levels. A fully charged battery is 13.5v and, operationally, a discharged battery is 12 volts. **It is time to recharge when the voltage gets to 12.2 volts.** PLEASE DO NOT ALLOW THE VOLTAGE TO DROP BELOW 12.0. DOING SO DAMAGES THE BATTERIES.

Battery disconnect switches

- The battery disconnect rotary dial switches are located on the forward face of the starboard aft berth.
- The switches should remain in the ON position

CHARGING/INVERTING

Obelix was designed to be a world wide cruiser, with a Victron Centaur 60 amp universal input charger. The charger is currently configured to accept the 120 volt 60 hz power that is typically found in our Pacific NW marinas. We have provided a 50 amp to 30 amp conversion cord, for marinas where at her 45' size, she will be berthed where only 50 amp pedestals are available (Rosario and Roche Harbors, for example). We have installed a SmartPlug 30 amp shore power inlet with a 25' cordset, and have provided an additional 50' shore power cable for the occasional long-distance run to the shore power pedestal.

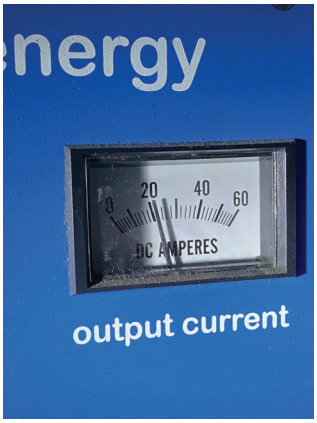
Obelix has a 2000 VA inverter that can provide 4000 watts at peak and approximately 1600 watts continuously. Although the inverter operates at 92% efficiency, with limited battery power available we seldom choose to use the inverter. Also, the output is **ALWAYS 230 volts AC,** so give some consideration before you plug in any appliance. Typically it's not a problem to charge a laptop from the inverter, as they generally have universal power transformers, but check before doing so. **DO NOT PLUG-IN YOUR HAIR DRYER!** We have provided a 220v hair dryer for your use, preferably while you're on shore power.

Charging – Shore Power

- Connect the orange Smart Plug 30Amp shore power cord to the shore power receptacle on the starboard transom. The receptacle lid is designed to snap down into the grooves on the plug body to provide strain relief.

- If necessary, add the yellow shore power cable and/or the 50amp converter to the shore side of the cord, plug in to the shore power pedestal and turn on the shore power switch.
- There is a light in the Smart Plug that shows that shore power is flowing to the receptacle.
- Observe that the Phillipi monitor should be indicating a net input in the 30-60amp range. You can also check the charger output on the analog scale of the charger, located in the starboard aft berth technical area. The charger should be indicating near 60 amps output, tapering off as the batteries reach around 90%. At that point the charger will be in a slower charge profile to respect the batteries charge limitations.
- If you observe a lower than expected charge rate much prior to 90%, you can reset the charger circuit breaker (or power cycle the shore power at the pedestal). The charger will go back to its initial charge profile of max charge into the batteries until it senses the need to 'throttle back'.

Charger (indicating 20A output)



Charging – Engine

- All batteries are automatically being charged when the engine is running.

Inverter

- **Note that the output from the inverter is what you would find if you were traveling in France, i.e. 220v (230v nominally).** If 220v power is needed for low wattage devices when shore power is not available, the Inverter can be turned ON.
- The inverter powers everything on the AC bus, where the breaker is turned on, typically the 220V outlets, but would also turn on the hot water heater if that breaker were switched on. (Not recommended on inverter power)
- Switch the 220 v selector input switch to "1".

220v selector (showing shore power position)

- On the 220v panel, ensure the Inverter circuit breaker is ON

220v panel (indicating everything on except 'not-used')

- On the inverter itself, toggle the switch to ON

Inverter (switch in off position)

Inverter remote

- At the Phoenix Inverter control panel (DC panel 1), flip the INVERTER toggle to ON.

- Please turn the inverter OFF when not in use, as it has some residual draw of power.

Berths, Bedding, Bathrooms

Obelix has four berthing areas:

- Forward Cabin
  - 2 large horizontal non-opening hull portholes on each side and 1 hatch 1 central queen bed with mattress and slatted base
  - Large ventilated storage space under the bed
  - Wood shelves on each side along the hull
  - 2 bedside steps on either side
  - cabinet with shelves and drawers to port
  - dressing cabinet with hanging storage to starboard
    - 2 articulated bedside reading lamps
    - 4 halogen overhead spotlights
  - 1x 220V socket
  - Forward Bathroom
    - Access via forward cabin, one hatch
    - vanity unit, detachable mixer tap (for showering) and storage
    - marine head unit, electric flush
    - mirror
    - halogen overhead spotlight
    - shower unit with 12V evacuation pump

- Forward Passageway berth (located on port side between galley and forward cabin)
  - 2 bunks with drawer

- Port Aft Cabin
  - Located on the aft portside of the boat with 2 large non-opening portholes on the hull and 1 portlight to the cockpit
  - queen bed with mattress and slatted base, ventilated under bed storage with access from the front of the bed
  - dressing cabinet with hanging storage and shelves
  - Wood shelf along the hull
  - Side trap doors for access to the central technical area
  - watertight hatch on the aft bulkhead to access the stern compartment (steering mechanism)
  - 2 articulated bedside reading lamps
  - halogen overhead spotlight

- Starboard aft bathroom and heads
  - 1 opening portlight
  - vanity unit with synthetic resin worktop, mixer faucet and storage
  - shower unit with 12V evacuation pump
  - marine head unit, electric flush
  - black water tank
  - mirror
  - halogen overhead spotlight

- Starboard aft berth and storage (technical locker/utility area)
  - 2 large horizontal portholes in the hull and 1 opening portlight in the cockpit
  - large central storage / technical area
  - watertight hatch on the aft bulkhead to access the stern compartment (steering mechanism)
  - halogen overhead spotlight and 1 removable, rechargeable neon tube torch
  - 1x220V socket
  - 1x12V socket

Bilge Pumps

The boat is equipped with:

- An electrical main bilge pump, beneath the engine, at the bottom of the stairs
- An electrical auxiliary bilge pump in the front cabin
- An electrical auxiliary bilge pump in the watertight aft locker
- An electrical auxiliary bilge pump in the sail locker
- A manual bilge pump located in the cockpit - the pickup for this pump is in the aft watertight compartment.
  - Emergency Hand Bilge Pump – This hand operated pump is located at the port helm station. The bilge pump handle is located in the locker under the port helmsman's seat.
- The electric bilge pumps all have automatic float switches and their switches on panel 1 should be left in the 'automatic' position.
- Note: in emergencies, the shower sump pumps can be turned on if water rises into the heads.

Bow Thruster

- Turn on circuit breaker "B Thruster/Windlass" on DC panel 1.
- Activate the controller at the helm by simultaneously pressing the (2) ON buttons. The panel shows a yellow light between the ON buttons to indicate that it's activated.

- Use minimally, in short 5 second bursts. Continual use will overhead the thruster. It will shut down and not restart until cool, after 10-15 minutes.
- The maximum continuous usage time of the electrical thruster is approximately 3 minutes
- Most of the vessel maneuvering should be done using the engine and rudders (recognizing that prop wash has little effect on this boat). The thruster is meant to be used to get the bow moving in

the desired direction when at very slow speeds, during your final approach into, or departing from the slip, or in emergency situations to keep from hitting another vessel or dock.
- Keep the main engine running while using the thruster, to keep the battery in a good charge condition.
- Dedicated Exide 50Ah thruster battery.

Details

The "B Thruster/Windlass" circuit breaker on DC panel 1 provides power to the bow thruster. There are in-line fuses on the electric bow thruster motor located under the v-berth. The bow thruster has its own battery and battery switch, located in the forward cabin under the berth. Under normal circumstances you don't need to do anything with this system.

Caution: the bow thruster is very powerful, designed to push into a 30 knot sidewind. It will rotate the boat on its keel and can swing the stern sharply into the dock. Please position a crew with fender between stern and dock when departing and arriving until you get a feel for it. Use the thruster judiciously and observe. It might surprise you how much momentum you get out of a burst of the thruster.

Dinghy and Outboard

Highlights

- 12' Walker-Bay dinghy with stability bags.
- Torqeedo Travel 1103 electric outboard with 31.5 amp hour Lithium Ion battery.
- Expected runtime at a leisurely 2 knots is approximately 20 hours. At a speed of 5.5 knots, you can expect a range of at least 5 miles. Take the oars with you, just in case!
- Magnetic kill switch for motor is in the chart desk.
- Oars with oar-locks attached are in the sail locker.
- Preferably, carry the dinghy on the stern davits.
- If desired, tow the dinghy 6' off stern (find a stable position) using the starboard cleat (the side away from the diesel exhaust). Use a proper cleat hitch and for peace of mind tie off the painter's bitter end to base of the stern pulpit. In very rough conditions, towing the dinghy from the low side makes it unlikely the dinghy will flip in the wind and waves.
- Please don't tow with outboard attached to dinghy or leave on the dinghy overnight.
- When finished, remove the battery and put on the charger.
- If leaving the boat unoccupied, stow the outboard below decks or locked in the port cockpit lazarette. Without the battery and tiller arm on, it's very light and easy to handle.
- Dinghy air pump is in the port stern locker and the patch kit is in the "miscellaneous mechanical" spares box.

Details

Towing the Dinghy

Always remove the outboard motor dinghy before towing. Towing sometimes works best when the dinghy is brought close to the boat with 4-5 feet of painter line between the stern and the towing bridle of the dinghy and the stern down. This lifts the bow out of the water and reduces drag. To keep the dinghy away from engine exhaust, cleat the painter at the starboard stern cleat then attach the bitter end to the stern rail using a rolling hitch or similar secure knot.

OPERATING TIP: Leave the self-bailing valve (located in the stern) open when towing to let any accumulated water drain out. Close it when ready to use the dinghy.

Preparing the Outboard

1. The electric outboard motor is stowed in the cockpit port lazarette, with the tiller removed.
2. The locks on the lazarette are opened with the key in the navigation desk.
3. The battery is either on the charger or stowed in its bag in the port lazarette.
4. As the 3 parts are independently quite light, place the motor on the dinghy transom and tighten the screws, mount the tiller and then mount the battery pack.

Starting the Outboard

1.

Fig. 11: On/Off button

2.

Fig. 12: Magnetic kill switch

Starting the motor

1. Switch the motor on by pressing the On/Off button (1) for one second.
2. Place the magnetic kill switch on the tiller.

Operating the Outboard

6.2.2 Forwards/reverse motion

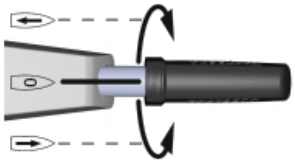


Fig. 13: Tiller

1. Operate the tiller handle as follows:
   - Turn the tiller handle to the right.
     - Forward drive
   - Turn the tiller handle to neutral position.
     - Neutral position
   - Turn the tiller handle to the left.
     - Reverse motion

The operating mode can be reversed. Follow the recalibration instructions for E21 to E23 in the Error Messages section.

6.2.3 Steering

1. Operate the tiller handle as follows:
   - Tilt the tiller to starboard.
     - The boat turns left.
   - Tilt the tiller to port.
     - The boat turns right.
   - Hold the tiller straight.
     - The boat moves straight forwards.

6.2.4 Ending the trip

Switching the motor off

Fig. 14: Magnetic kill switch

1. Move the tiller to the neutral position.
2. Push and hold the On/Off button for three seconds.
3. Remove the magnetic kill switch.

You can switch the motor off in any operating condition. The Travel system switches off automatically when inactive.

Proceed as follows after every use:

- Take the motor out of the water.
- In salt water or brackish water: Rinse the motor in fresh water.

6.3 Tilting the motor

⚠ CAUTION!

Danger of crushing if motor tilts.
Minor or moderately severe physical injuries may result.

- When tilting the motor, ensure that no-one is present in the vicinity of the motor.
- Do not reach into the mechanical parts when tilting the motor.

<u>While Outboard Is Running</u>

1. Keep the orange lanyard kill clip connected to your belt, wrist or PFD while operating.
2. The electric motor is direct drive, i.e. no gear shift clutch, etc. The propeller will spin when when you crank the throttle - just throttle up to go forward (twisting the grip wrist up-right handed)and throttle down to stop. If you want to go in reverse, turn the throttle the other direction (wrist down-right handed).
3. Note that you will only have steerage when the propeller is driving the boat

<u>Arriving at the Beach</u>

1. Before you hit the beach and while still in a few feet of water, stop the motor by pushing the ON/OFF button for 3-seconds, or removing the magnetic kill switch.
2. Tilt the motor out of the water by pulling the tilt lever upward (starboard side) and pulling the motor head forward until it stops – you should here a "click" as the tilt support locks in place.
3. To tilt the outboard back in the water, first pull on the motor head slightly to take the strain off the tilt lock then release the tilt lock and slowly tilt the motor down.
4. Please do not drag the dinghy up the beach over sharp rocks and barnacles.
5. Secure the painter to ensure the dinghy doesn't float away on a rising tide.

When The Outboard Is Not In Use

1. Put the outboard back on the outboard mount on Obelix's stern rail and tighten both bracket screws. Alternately stow the outboard in the port cockpit lazarette.
2. Put the combination lock back on the bracket screws.
3. If necessary, put the battery on the charger or stow in the battery bag in the cockpit lazarette.

Inflating the Dinghy

If the dinghy needs inflation, the foot pump is in the starboard helm seat locker.
The foot pump is held closed with a locking clasp. Release the clasp, insert the appropriate inflation nozzle onto the valve and give a ¼ turn to lock it in place. Inflate the baffle or keel with the foot pump until it is firm. When done, carefully detach the inflation hose. If the valve is still open, press it once to close it.

Dodger and Bimini

Highlights

- The Dodger must stay on the boat, unless arrangements have been made to remove it. It can't be used alone, i.e. without the Bimini and connector in place.
- By arrangement, the dodger can be removed and then the bimini can be used as desired or rolled up and stowed at the stern of the boat.
- Hint: if early morning dew and/or salt crystals from spray is fogging the dodger glass, rinse off with a pan of fresh water from the galley (salt crystals may need a second splash). Please avoid wiping. By the way, if you or your guests use aerosol sunscreen, please apply well away from the dodger. Sunscreen will destroy the glass.

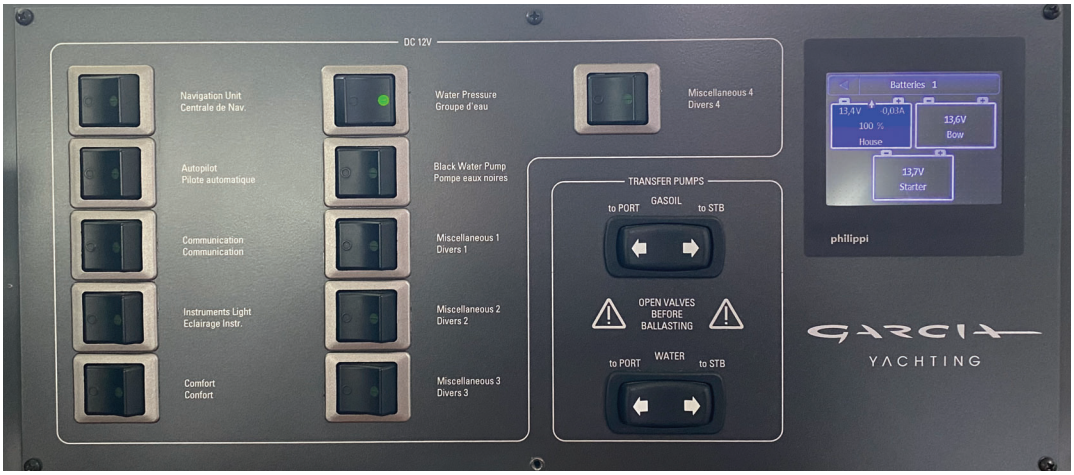
Electrical

Electrical Panels

DC: There are (2) DC electrical panels, **panel 1** (aka the technical panel) is above and forward of the door to the starboard aft berth, aka "technical room".
Panel 2 (aka the nav desk panel) is just outboard of the chart plotter at the nav desk.

panel 1 (the technical panel)

Panel 2 (the nav desk panel)



AC: The electrical panel, shore power and charger switch, inverter and battery charger are located aft and inboard in the starboard aft berth, mounted on the forward side of the water-tight bulkhead.

220 V AC Panel

AC Bus Source Selector Switch

Switches and Controls on the Electrical Panel

- Primary shore power breaker is the left most breaker on the 220V panel.
- The 220v outlets and hot water heater breakers are on the 220v AC panel. The water heater is normally 'off' unless on shore power. The 220v circuits are normally on and are powered by either Shore Power or the Inverter.

The "normal" configuration of switches:

- **220v panel**:
  - **Shore-ON** *this passes shore power to the panel via the isolation transformer. Note that despite being plugged into a 120v 30amp shore power pedestal, the boat only "sees" 220v, as the power provided is transformed prior to the panel.*
  - **Charger-ON** *provides power from the AC panel to the battery charger. This breaker must be "ON" to charge the batteries while on shore power.*
  - **Inverter-OFF** *the ON position provides power to the inverter, not necessarily turning the inverter ON*
  - **Boiler-OFF** *the ON position provides power to the hot water heater*
    - Operation of the engine also generates hot water, which is stored in the hot water tank.
  - **220v plugs-ON** *provides power to the 220v convenience outlets around the boat*
  - **Free-OFF**

- **220v selection-"2" Shore** selects the source of power to provide to the AC panel. It is not possible to both charge the batteries and invert DC battery power to 220v AC. It **must** be set to position "2" to charge the batteries while on shore power and we seldom use the inverter, so the standard procedure is to leave it on "2" unless it is necessary to invert 12v dc.
- **DC panel 1** (above and forward of the door to the starboard aft berth)
  - **Saloon/Kitchen Lights:** This switch turns ON/OFF DC power to the LED lights located in the salon. It must be "ON" before you can turn on any salon lights.
  - **Cabin/Bathroom Lights**: This switch turns ON/OFF DC power to the LED lights located in the sleeping berths. It must be "ON" before you can turn on any lights in the berths.
  - **Navigation, Anchor, Steaming, Deck Light:** When sailing in conditions of reduced visibility, turn on the Navigation Lights (Tricolor lights on mast). When anchored or mooring, turn on the Anchor Light at dusk (located at the top of the mast). When motoring in conditions of reduced visibility, turn on Steaming Light (masthead light, port and starboard pulpit navigation lights, and stern light). Turn on the Deck Light if you must go forward on deck at night.
  - **Shower Pumps:** This switch turns ON/OFF DC power to the shower pumps in the forward and aft heads. They will then operate by float valve or by manual operation of their respective switches.
  - **Refrigerator:** We usually leave the fridge switch "ON" whenever we're on the boat. If the house battery charge level drops to near 12V and you aren't planning to run the engine or connect to shore power, turn the fridge off. Your provisions will stay cold overnight.
  - **Heating:** Turn on to provide power to the Webasto heater. Leave this on for 15 minutes after turning the Webasto heat off, so that the heating system has an opportunity to cool down.
  - **Miscellaneous 1:** unassigned
  - **Miscellaneous 2:** Turn on to provide power to the anchor chain saltwater washdown pump.
  - **B Thruster/Windlass:** provides power to both the Bow Thruster and Anchor Windlass circuits.
  - **Bilge Pumps:** Always leave the bilge pump setting in "Auto." Test the pump daily by switching to manual and listening for the pump to run, then return it to the "Auto" setting.
    - Sail locker: located in the forward watertight compartment
    - Front cabin: located just aft of the v-berth
    - Main: located beneath the engine
    - Aft Compartment: located just port of centerline in the aft watertight compartment

- **DC panel 2** ***(at navigation station)***

- **Navigation Unit**: Turn this switch "ON" to activate the B&G electronics, instrumentation, and multi-function display in the cockpit. This switch also provides power for the radar, depth sounder and knotmeter.
- Autopilot:
- Communication: VHF radio, AIS transponder
- Instruments Light: TAC lamp
- Comfort: 12v TAC sockets (cigarette lighter plugs), propane solenoid.
- Water Pressure: If you don't hear the pump start when you turn it ON at the panel, it means that the system is at working pressure – you should hear the pump start again after you use some fresh water. Note that the marine toilets use raw water and do not impact the fresh water supply. Showers and sinks in the heads use the fresh water supply, as does the swim platform shower. When underway and if no one is below decks, we turn the water pump OFF.
- Black Water Pump: Pumps holding tank contents overboard. To be used only in a legal discharge area.
- Miscellaneous 1: provides power to the Fusion HiFi music system
- Miscellaneous 2: provides power to the oscillating fans
- Miscellaneous 3: unassigned
- Miscellaneous 4: Garcia says VMC…haven't yet figured this one out
- Transfer Pumps:
  - Gasoil: to transfer diesel fuel from one tank to another. Make sure you open the 'block valves" prior to pressing this switch, or you will rupture a hose!
  - Water: to transfer fresh water from one tank to another. Make sure you open the 'block valves" prior to pressing this switch, or you will rupture a hose!
- Philippi Monitor: Use the touchscreen to cycle through this multi-function controller to display the fuel gauge (port and starboard), water gauges (port and starboard) and battery levels (House, Start and Bow Thruster) in the LED display panel.

Electronics/Instruments

CHART PLOTTER:

Highlights

- Please see the separate B&G Quick Start Guide at the end of the owner notes.

A.I.S. (Automatic Identification System):

Highlights

- Obelix transmits her position and data via an AIS signal as well as receives AIS signals from other vessels equipped with AIS transmitters (Commercial vessels are required to have AIS, recreational

vessels are optional). Obelix is only transmitting her position when the Communications circuit breaker (DC panel 2 @ nav desk).

Details

AIS vessels appear on the chart plotter screen as triangles. The triangle points in the direction that the vessel is moving and if you touch the screen over the triangle the system will give you additional information (such as name, size, speed, bearing, etc.) about the vessel. The system also transmits this same type of information about *Obelix* to other vessels with AIS.

The AIS is an added safety feature which allows large commercial vessels to easily see you and your direction/speed. They may try to contact you via VHF channel 16 to verify your course intent. In addition AIS allows San Juan Sailing/Yachting to provide faster assistance in case of unplanned maintenance issues as well as alert San Juan Sailing/Yachting of *Obelix's* return approach. Vessels with AIS can be viewed in real-time through mobile device apps and websites like www.marinetraffic.com that will reveal vessel name, course, speed, track, and other information.

AUTOPILOT:

Highlights

- To engage the autopilot, press "AUTO" one time
- To disengage the autopilot, press "STBY"

VHF RADIOS:

Highlights

- B&G VHF base unit and wireless handheld.
- Turn on base unit first then handheld.
- Handheld VHF charges automatically using inductive charging when snapped into holder located at the companionway, starboard side.

Emergency/Safety Equipment

You are not likely to need these, but must know their location.

Bilge Pump (Manual) and Handle. The manual bilge pump is located on the port side of the port helm base. The handle is stowed in the compartment aft of the port helm base.

Carbon Monoxide and Smoke Detectors. There are (4) CO and smoke detectors, one of each in each sleeping room and one each in salon. The CO detectors are 'interconnected', i.e. when one detects CO to alarm, all will alarm. Similarly when one smoke detector alarms, all with alarm.

Fire Extinguishers (5)

- hanging locker starboard side, just aft of companionway
- galley, next to cooktop mounted on bulkhead aft
- underside of nav desk
- in forward cabin (v-berth), aft and port
- underside of the companionway ladder, is a halon fire extinguisher (for use in the CLOSED engine compartment, through the fire access hole)

First Aid Kit. Beneath aft most salon bench cushion.

Flare (Electronic). Galley, aft bulkhead, hanging next to fire extinguisher.

Flares (Pyrotechnic - 4) and Folded Plastic Distress Flag. In cockpit, locker aft of starboard helm.

Flashlights. Each sleeping room and at nav station.

Horn, handheld. Cockpit, forward, starboard open locker.

Lifesling, starboard stern pulpit. Please review the cartoons on the face of the case for procedures. The lanyard is secured to the boat so that tossing the floating harness allows it to tow behind the boat like a ski tow rope. Circling the person overboard will draw the recovery line near them.

Personal Flotation Devices (10). Located in cockpit port-side lazarette, there are (10 total) USCG approved personal flotation devices (PFDs): (4) inflatable offshore-style, (4) inflatable coastal cruising style, and (2) non-inflatable style. NSO: for inflatables, please check for "green" visible at bottom of clear canister before each cruise. That verifies the auto-inflate function when immersed. We wear these at all times when working the deck and often in the cockpit.

Tapered Plug, Universal Foam Orange StaPlug. Beneath aft most salon bench cushion

Tools. Below deck, galley, port side, furthest aft deck hatch, on top of port side battery bank case. The green Makita toolbag is our "90%" toolbag, containing most of the tools you need for the casual fix.

Spares. Beneath the port aft berth, accessed from beneath mattress.

Windlass Clutch Release/Tighten Wrench. Beneath the windlass hatch, next to the windlass, just forward of the cabintop, forward of the mast.

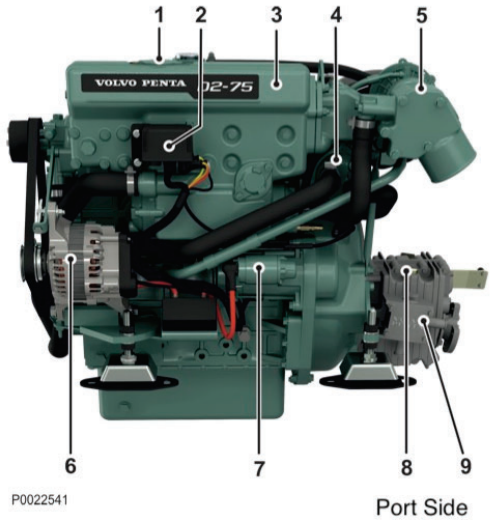
VHF Radios. Channel 16. VHF base unit at nav station and handheld stored in charger on bulkhead to starboard of companionway, inside salon.

Engine

Highlights

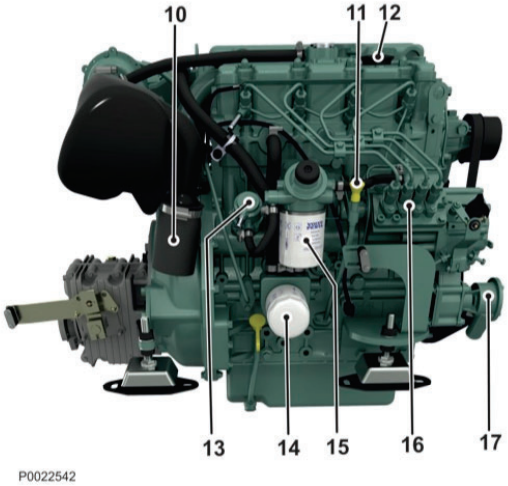
- 75hp turbocharged, Volvo Penta, connected to a 21" feathering J-Prop, via shaft drive.
- Maximum RPM is 3000. Cruising RPM is 2100. Idle is around 900 RPM. It's healthy for the engine to put a good load on it each day. Try to remember to run it up gradually, to 2600 rpm for a minute each day, although best to not do this just prior to shutdown.

Details



Port Side

1 Coolant filling
2 Relay box
3 Heat exchanger
4 Charge air cooler
5 Turbocharger
6 Alternator
7 Starter motor
8 Oil dipstick, reverse gear
9 Oil cooler, reverse gear



Starboard Side

10 Air filter/air intake
11 Oil dipstick, engine
12 Oil filler, engine
13 Fuel pump
14 Oil filter
15 Fuel filter
16 Injection pump
17 Raw water pump

Inspecting the Engine

Engine access is provided by lifting the insulated sole panel at the bottom of the companionway ladder. If full access to the engine is desired, lift the companionway ladder off its mount. Side access is provided via removable panels in the house battery compartments.

We recommend performing the following inspections each morning before getting underway:

- Lift the insulated sole-panel to provide visual access of the engine compartment. Look around and below the engine for any signs of oil or other fluid leaks. Check the engine oil. The engine doesn't have a history of burning oil, it gets checked at every turn of charters, and serviced at proper intervals. We do appreciate your awareness of any leaks though and keeping us informed.
- Check coolant level. Same notes as with engine oil.
- **Visually** Inspect the raw water strainer for debris. In case of an engine overheat alarm, check for eelgrass clogging the strainer. Unscrew the top of the strainer, clean out any debris, then replace it.
- *Check alternator belt tightness* by deflecting the belt inward with your fingers; it should not depress more than a half-inch or so.

Starting the Engine

This is a keyless start system. The main battery engine switch, located in the aft starboard cabin, must be in the "ON" position to start the engine. When docked in a marina, or leaving the boat for an extended period, switch the engine battery switch to "OFF" and lock the companionway hatch.

1. Place the throttle/gearshift in neutral (approximately vertical).

   OPERATING TIP: In colder weather or when you want to run the engine at a higher idle speed (e.g., to charge batteries), depress the **red** button at the base of the throttle and push the throttle slightly forward. This disengages the transmission and allows the engine to run at a higher idle RPM. We recommend targeting 1000-1200 RPM for warm-up and battery charging.

2. Tap the upper left "ON/OFF" button once to activate the control panel. Do not hold the button or it will turn the ignition off. The fault handling lights will all illuminate briefly.
3. Press top right "START" button, which will start the engine. Release as soon as the engine starts. Pre-heating, if necessary, is automatic and lasts for 20 seconds.
4. Listen/look for water discharging from the aft port end of the hull. If water is not in the exhaust immediately shut the engine down and contact SJS.
5. It's typically not necessary to warm up the engine. Getting out of the harbor will accomplish this. Use good sense to not go from cold to cruising rpm right out of an anchorage!

Running the Engine

Instruments and Controls

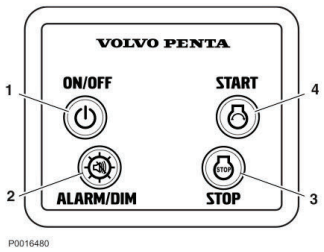
This chapter describes the instruments, panels and controls Volvo Penta sells for your engine.
If you would like to complement your instrumentation, or if your boat is equipped with instruments not described here, we ask that you contact your Volvo Penta dealer.

Ignition Lock

The system lacks a start lock. Therefore, the helm station should be lockable, or alternatively a lockable main switch should be fitted, to prevent unauthorized engine start.

Start/Stop Panel

Control Panel



On/Off button (1)
Depress the button to start or stop the system.
The panel cannot be switched off when the engine is running.

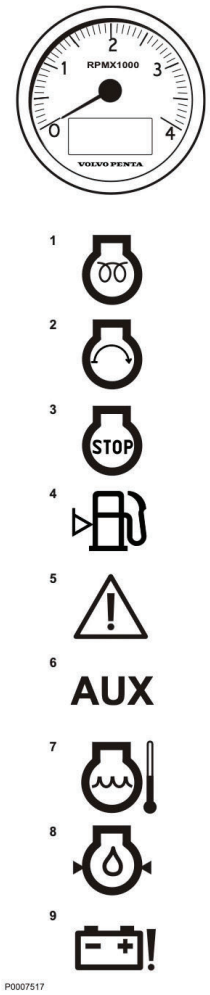
Start button (4)
When the button is depressed the pre-heat function is activated and the start motor engaged.

Multi-function button (2)

- Confirm the alarm. If an alarm occurs, a flashing warning symbol will be displayed in the tachometer window and an audible alarm will sound.
  The alarm is confirmed by depressing the multi-function button. The audible alarm is silenced and the warning symbol is lit continuously until the fault is remedied.
- Backlighting. To switch tachometer window backlighting on or off, depress the button for 1 - 5 seconds.
  The backlighting can be adjusted in five steps by depressing the button for less than 1 second.
- Adjust the tachometer window contrast by holding down the button for more than 5 seconds.

Stop button (3)
The engine stops running when the button is depressed.

- Engage forward or reverse gear by moving the transmission directly from Neutral to Idle-Forward or Idle-Reverse (the transmission will click into each setting), pause momentarily, then move the throttle forward/backward smoothly to your desired RPM setting. Engaging the transmission in jerky incremental steps can slip the clutch, causing damage over time.
- To keep the transmission "healthy" when shifting from forward to reverse and vice-versa, pause ~2 seconds in the 12 o'clock neutral position (say "one and two and") before shifting gears.
- An economical cruising speed of 7 knots is achieved at 2100 rpm and you can anticipate a fuel burn of approximately 1.3 gallons per hour. Please <u>do not</u> exceed 2600 rpm-it's hard on the engine and fuel consumption goes way up with very little increase in speed. We recommend keeping the engine speed under 2300 rpm (about 75%) for most operating conditions.
- To avoid sucking in air or sludge when the fuel level approaches ¼ of a tank, refuel (or transfer if necessary) when the fuel drops below ½ full in the port tank.
- If any fault is detected, an alarm will sound and a symbol will flash in the tachometer window.
  - Note the symbol
  - Reduce engine to idle revolutions
  - Cancel the alarm by depressing the alarm/dim button



Gauges

Tachometer

The tachometer shows engine speed; multiply the value shown on the dial by 1,000 to get the number of engine revolutions per minute.
Operating information is displayed in the tachometer window.

Operating information symbols

1 **Pre-heating**
The pre-heat symbol is displayed when the glow function is active.

2 **Starting**
The start symbol is displayed when the start motor is engaged.

3 **Stopping**
The stop symbol is shown when the stop button is depressed.

4 **Fuel level**
If a fuel level sensor is installed (accessory) the fuel level symbol is displayed when there is around 20% of fuel remaining in the tank.
The engine must run for at least one minute before the function is activated.

5 **System fault**
The system fault symbol lights up in the case of short circuits or cable breaks.

6 **Auxiliary alarm**
Auxiliary alarm for accessory sensors.

7 **Coolant temperature**
The coolant temperature symbol lights up if the engine coolant temperature is too high.

8 **Oil pressure**
If the oil pressure lamp lights up during operations, the engine oil pressure is too low.

9 **Charging**
The charging lamp lights up if the alternator stops charging.

- Take action as appropriate, which should always begin by ensuring you are in a safe situation to troubleshoot.

Troubleshooting Engine Problems

The Volvo Penta d2-75 engine is incredibly durable and you shouldn't have any problems on your voyage. Nevertheless, there are a few things to watch out for.

Engine Overheating

If the engine overheat buzzer sounds while the engine is running, immediately bring the throttle back to idle if you can do so without putting yourself in danger. If this happens, it's usually no more serious than eelgrass plugging up the raw water strainer. The solution to this problem is prevention – keep an eye out for eelgrass mats, especially along those "soapy" looking tide and eddy lines in the water, and don't run over them. When eelgrass gets sucked into the engine cooling water intake, it collects in the raw water strainer.

To clear eelgrass from the raw water strainer, stop the engine, twist off the clear screw-top and extract the eelgrass. Replace the lid and tighten by turning it clockwise until the lid is seated firmly on the rubber gasket. Don't over tighten as the lid can crack. Make sure the lid's threads are not crossed as this can give the appearance of a tightened lid but the gasket won't seal. Then restart the engine.

If after restarting the engine it overheats again, check the seal between the strainer, the rubber gasket, and the lid. If the strainer is drawing air, it won't draw water. If needed, open and then retighten the lid on the strainer and check to make sure the rubber gasket is in place in the lid (and not lying in the bilge.)

If the above steps fail to solve the problem, call San Juan Sailing for assistance.

Loss of Oil Pressure or Coolant

If the engine loses oil pressure, the warning buzzer will sound and the oil icon warning light on the tachometer will light up, so check which light is showing red. If it's the oil light, shut down the engine, check the oil level, and contact San Juan Sailing.

The alarm buzzer is more likely to indicate engine overheating, and the temperature icon light will light up. Before you shut down the engine, check for water gurgling out the exhaust. If you have a "wet exhaust," check the coolant level in the overflow reservoir bottle. If none is seen, add enough to reach the top-level line on the bottle. After the engine cools down, remove the cap on the engine block and add coolant. And check the bilge for a light green liquid (coolant). If coolant is found in the bilge, call San Juan Sailing immediately.

If the coolant reservoir bottle is full, check to see if the engine threw a belt. Without a belt on the raw water pump, the coolant won't circulate and cool the engine. Replacement belts are in the engine spares kit. One other possibility is that the impeller in the raw water pump has failed. While they are replaced each spring with a new one, it's still possible that a hard object may be drawn in and break off an impeller blade. A replacement impeller is found with the engine spares. Call San Juan Sailing if you suspect you have an impeller problem.

OPERATING TIP: Bottom line – you're on vacation! If the engine is giving you problems, call SJS for assistance. They have repair teams in the Islands to assist you.

Shutting Down the Engine

1. Allow the engine to idle for a few minutes in neutral to cool down.
2. Press the lower right "STOP" button, which will stop the engine.
3. Note engine hours for your log and press the "ON/OFF" button to cut the power to the panel.
4. If the panel is not shutoff within 10 seconds, an alarm will sound. You can silence the alarm by turning the panel off, or by pressing the "ALARM/DIM" button.
5. If the engine cannot be stopped in a normal procedure, it is possible to kill the engine via the auxiliary stop mounted on the side of the engine.
    a. **SAFETY REMINDER** Never stop the engine by turning off the battery switch. Doing so will seriously damage the diodes on the alternator and the batteries will no longer charge

Boat Handling with the Engine

Obelix has (2) medium sized rudders and a deep centerboard (did I mention that we draw 9.5'?). She has a very responsive helm while she has way, but without a centerline rudder, you do not have the benefit of prop wash for slow speed maneuvering. Tight quarters maneuvering is absolutely still possible, using prop walk, rudder, thrusters, and planning maneuvers considering wind and current.

San Juan Sailing offers free handling instruction before you leave for your charter if you'd like to practice or just get up to date on your boat handling skills. Spending 30-60 minutes practicing getting in and out of the Bellingham marina can be a great experience.

Forward

Perhaps your most challenging tight quarters maneuver will be a dock departure, port side to dock, with a blow-on wind. Springing off for a forward departure or backing away, if that's a possibility, may be your best options. Without prop wash available, short bursts of throttle (to engage prop walk) will move the stern to starboard and some bow thruster to get the bow moving away from the dock are good strategies as well. Remember that you have a big solar arch and wind turbine high, aft, and on your port side.

Reverse

Prop walk is minimal to port in reverse. Driving in reverse is a pleasure and we typically dock stern to the dock if that's available. Ensure you keep a good grip on the helm while moving in reverse, as water pressure on the aft edge of the rudder can push the rudder over to one side, which is hard on the steering mechanism (and your arms).

SAFETY REMINDER: It's difficult for people holding lines on the dock to stop the momentum of a heavy cruising sailboat. It's also a bad idea to use dock lines on a cleat to stop movement; this can result in a sudden swing of the boat and damage to cleats, boat, and/or dock. And please, no crew should jump to the dock. If you can't step off calmly, back-up and try again.

When coming into our docks in strong winds, or if you'd just like a little assistance on arrival, hail "San Juan Sailing" on **VHF Channel 80**. They'll be glad to offer some coaching and/or catch your lines. In fact, most marinas in the Islands will help you if you hail them and ask for assistance. Asking for docking assistance is a sign of smart seamanship.

SAFETY REMINDER –Whenever you are departing or arriving at the dock have a crew member designated as the "**roving fender**" team mate. If you are going to accidently "touch" a boat or other object, lower the fender to the point of contact.

Entertainment Systems

*Obelix i*s equipped with a FUSION marine entertainment system for audio. Speakers for the FUSION system are in the main cabin and in the cockpit.
Highlights of the entertainment system include:

- **FUSION audio system**: AM/FM radio, wired and wireless (Bluetooth) connections for audio players (e.g., iPod), and VHF monitoring. Speakers are in the main cabin and in the cockpit. The audio system can be controlled from the FUSION unit in the main cabin and from the B&G Zeus^2 navigation system located between the helms.

FUSION Audio System

The FUSION unit is located next to the VHF radio near the Nav station. The system includes AM/FM radio, VHF audio (to monitor radio transmissions using the cabin and cockpit speakers) and wired (USB) and wireless (Bluetooth) connections for audio sources such as iPods.

OPERATING TIP: If using Bluetooth to connect an audio source, the FUSION unit will appear as **MS-RA770** in the list of available BT connections shown on your device.

Fuel

Highlights

- The diesel fuel tanks hold a total of 185 gallons, evenly split between (2) tanks of 92 gallons.
- The fuel gauge is located at the nav panel Phillipi monitor.
- Fuel deck fills are on port and starboard sides, for their respective tanks. We use the windlass handle for all the deck fills, as it's the shortest "winch" handle on the boat.
- In nominal conditions, the engine consumes about 1.3 gal/hr at 2100 rpm cruise.

- Fuel can be cutoff from each tank separately with the red valves in the fuel line located on top of their respective fuel tanks, accessed under floorboards beneath the navigation station or by placing the gang selector handle in the center position. This is accessed on the starboard side of the companionway, inboard and aft in the hanging locker, beneath the shelf.

Details

Fueling:

Please fill very carefully because fuel spills are expensive, to you, and to the environment. It's nice to have someone read out the Philippi gauge as the quantity rises. It's nice to have an idea how much you're fueling and watch the gauge at the fuel dock, and it's essential to not fill too fast and listen for the pitch to rise in the fuel standpipe. My experience says the Phillipi monitor shows about 8 gals (32 liters) low. In other words, if you think you need to add 40 gallons, based on the monitor, add 30 and be real careful beyond that.

In the cockpit locker, we have rubber fueling gloves. Please keep an absorbent pad in hand to catch any fuel dribbles from the pump handle. It's also a good idea to hold the absorbent pad over the fuel vent while nearing 'full', in case you miss that critical moment when the tank is telling you that it's full.

Heads and Holding Tank

Highlights

- There is one holding tank of 29 gallon capacity-a crew of 8 may need to pump daily! Watch levels on the Philippi monitor.
- Only what has been eaten goes in the toilet.
- Both fore and aft toilets are Jabsco electric macerating seawater flush.
- The toilet discharge Y-valves are both zip tied to the holding tank position. When you flush the toilets, waste goes directly into the holding tanks.

Details

Please do not put anything in the toilet that has not been eaten. Experienced sailors deposit toilet paper in a wastebasket in Ziploc baggies, not down the toilet because paper tends to clog the hoses.
San Juan Sailing staff will discuss holding tanks and pump outs on your arrival.

Our one plea is this: please don't over fill the holding tank as leaking sewage is most unpleasant!

Please note that in U.S. waters it is illegal to discharge holding tanks overboard. While in Canadian waters outside of bays and harbors overboard discharge is allowed.

Normal use of electric marine head

- Before use, using left hand switch, run some seawater into the bowl.
- During use, using the right hand switch, pump as necessary to keep the contents of the bowl low enough for comfort.
- After use, use the right hand switch to pump until the bowl is empty.

- When the bowl is empty, pump half bowl of water in, using left hand switch.
- Using right hand switch, run macerator for at least 3 secs, to allow waste to run clear to holding tank.

Emptying the Holding Tanks

1. Pump out at a Shore Facility. Correctly identify the deck cap and remove it using the windlass handle
   - No special procedure required for deck fill pumpout. When finished pumping waste, please run some fresh water into the tanks and pump again until empty.
2. Where legal, you can discharge overboard.
   - For overboard discharge, turn on the "black water pump" circuit breaker on DC nav panel 1. Watch the levels go down on the Philippi monitor and turn pump off when empty. Do not run the pump dry.

Heaters (Cabin)

Highlights

- Webasto hydronic heating, thermostat on fan controls in (3) zones.
- Heater circuit breaker (panel 1) must be on.
- DO NOT SHUT OFF BREAKER until 15 min after turning off burner.
- Depending on crew desires, may not choose to to run all night, due to the noise of the fans.
- Some combination of hatches partially open and some heater run time will definitely keep the condensation down, compared to a 'buttoned-up-tight' boat.

Details

The Webasto hydronic heating system draws from the port side diesel tank. In our waters, we use the heater on cool evenings or to take the chill off in the morning.

There are (3) thermostats controlling the zones. The one located below the DC technical panel 1 controls the zone that is the salon and galley. The zone comprised of the starboard and port aft berthing areas, is controlled by the thermostat located in the port berth. The zone that is the v-berth and forward head, is controlled by the thermostat at the foot of the v-berth on the port side bulkhead.

As Obelix was built for high latitude sailing, it's hull and floors are insulated and holds the heat better than most boats.

We normally leave the salon zone on at night, which minimizes the fan noise in the berthing areas and keeps the condensation down.

Zoned Heating Thermostat

Lighting

Highlights

- Flip on the SALOON LIGHTS and CABIN LIGHTS breaker on the DC technical panel 1.
- Salon light switches are overhead, bottom of companionway, mounted on the ceiling.
- Under cabinet lights in galley are on the underside of the upper cabinets, forward (roughly the refrigerator location). One of the switches is ON/OFF and the other switches from red to white light.
- Stateroom light switches are overhead, just inside the entrances. Stateroom reading light switches are on the individual light fixtures.

Propane

Highlights

- Solenoid switch is just to the left of the cooktop. The 'comfort c/b' on DC nav desk panel 2 must be on to operate the solenoid.
- There's a propane shutoff valve beneath the oven. Please switch off valve when galley propane not in use.
- For safety, turn off the solenoid switch after stove use.

Details

We have (2) 20lb propane tanks. The galley propane system is supplied by the tank in the port stern propane locker. The BBQ propane supply is in the starboard stern locker. The San Juan Sailing staff weighs these tanks weekly to assure that you don't run out. If one tank empties, the other is available as a spare for your convenience.

Troubleshooting: If the stove won't start check:

- Propane tank valve is full open
- Solenoid switch is on
- Igniter pushbutton switch depressed until stove lights
- Stove knob is pushed in, and held in until the thermocouple heats.

Caution: propane is heavier than air. If leak is detected, extinguish all flames and open all hatches.

Refrigeration and Freezer

Highlights

- A good place to start with digi-thermostat setting is 4-bars on the scale on the front of the fridge. Similarly with freezer.
- The relevant Circuit breaker is labeled "Fridge" on DC technical panel 1. We typically leave them ON unless we're closely managing the house batteries and they are approaching 50% or 12.2v.
- Check to be sure there is sufficient battery power to operate the refrigeration equipment all night. Usually there is.

Sails and Rigging

Highlights

- Fully-battened main (548 sq ft) with 3 reefs rigged, Furling Solent (about 110%)Headsail (454 sq ft), and furling staysail (223 sq ft).
- all lines led aft, except mainsail halyard, which we prefer to raise from the mast pulpit.
- single line reefing from cockpit, (except main halyard, which we've rigged from the mast pulpit)

Details

Mainsail: [Conventional Main with Stack Pack]

We have a "stack pack" zipped boom cover and lazy jack system. *No need to adjust the lazy jacks*…just unzip and hoist!

We've just installed a continuous line zipper for the stack pack bag. Regardless of whether you use the continuous line to unzip the bag, the following is still a good plan. Try both methods - they're not mutually exclusive. If the continuous line works OK for you, you can skip the steps of moving the boom outboard and putting vang on to bring the boom within reach.

We recommend that you prepare the mainsail for sailing, while still at anchor or dockside.

- Provide some slack in the mainsheet
- Move the mainsheet traveller to the downwind side of the track
- Position the boom end over the side deck where you might reach it
- Tension the vang to bring the boom end within reach
- Snug up the mainsheet so the boom isn't allowed to move further outboard
- Unzip the stack pack bag zipper, from forward at the mast, aft to boom end
- Now that the sail is exposed, you are ready to hoist when you desire. You can release the vang tension, move the traveller back to centerline, and re-tension the mainsheet to hold the boom on centerline.

To hoist: From the mast pulpit, starboard side, you can raise the mainsail about 80% of the way by hand - the remainder to tighten the luff is by winch on the starboard side.

Process Hints:

- Unzip the stack pack bag while at anchor or at dock (see paragraph above)
- Provide some slack in the mainsheet
- Remove any tension from the vang
- Open reefing line rope clutches
- May haul easier with a little tension on the topping lift (mast-port side)
- If the sail has been reefed before, you may find some resistance from reefing lines as you haul. If this is the case, you might need to pull some reef lines forward at the mast to get enough slack, so the battens don't hang up at the clew reef points
- With the bag unzipped and the boat heading *directly* into the wind (any wind in the sail makes hoisting and lowering difficult and typically the battens will hang up on the lazy jacks!), crew at the mast pulls down on the main halyard. I like to pull to about 80% of the way by hand, then take 3 wraps on the winch drum and crank it the rest of the way. while a second takes up slack through the closed sheet stopper in the cockpit.

a) Tension with the cockpit halyard winch. Watch for the black circle to emerge from the aft end of the sheet stopper.

Reefing: [conventional main]

a) Three large reefs are pre-rigged.
b) Ease the mainsheet and release vang tension.
c) Lift the boom (boom lift at mast) to accommodate the shortened leach.
d) Release the mainsail halyard to the single black mark on the halyard for reef #1 or the (2) black marks reef #2.
e) Tension the single line reef and raise halyard as necessary to tension luff.
f) Release boom lift as the now-shortened sail is holding the boom up.
g) Sheet in the main and tension vang as necessary.

Headsail:

The headsail fairleads are adjustable underway by manually positioning them along the track. There are no control lines on the fairleads. You **must** furl the headsail before jibing and unfurl on the new course. It will not pass through the slot on a downwind point of sail. We find it helpful to partially furl the headsail on a tack and unfurl it on the new heading.

Showers and Sumps

Highlights

- Forward head shower
- Aft head shower
- Transom shower
- "Shower pump" circuit breaker DC technical panel 1 and override switches in showers

Details

Float switches in both heads activate their respective pumps. A manual override switch in each head turns on its pump, regardless of float switch position.

Both showers on Obelix are incorporated into the head. The sink faucet extends to become the shower head. Depress the top of the shower head for spray. Push button override to operate sump pump.

The transom shower features both hot and cold water. To operate, pull the T handle toward you. That brings water to the shower head. Turn the T handle left or right to adjust temperature. Depress the spring loaded top of the shower head for spray.

Note: shower sumps can become emergency bilge pumps if water rises to that level.

Spares and Tools

- Common spares: Location: outboard of port side battery bank.
- 95% toolkit: beneath the most aft salon bench cushion, in a green Makita tool bag.
- Heavy Duty spares: Location: under port aft stateroom mattress
- The "other" complete toolkits and fasteners boxes are in the locker just starboard and aft of the companionway ladder.

Storage

General

There is a lot of stowage space aboard Obelix. It is largely self-evident. What is not immediately visible, but excellent provisions storage space, is beneath your feet as you are standing at the galley sink. Lift up the insulated sole panel and have a look. There is also stowage beneath most of the settee cushions and behind the settee backs.

Please stow your things securely. Objects that take flight under sail, can be unsafe and cause irreparable damage.

Details

- Fenders-Either tied to the stern pulpit, or stored in the sail locker forward. Hint: when lowering them into the locker, droop the fender line over the top rung of the ladder; making for easy retrieval. A fifth red/orange fender is ideal for the "rover", when backed into a slip, and for protecting the hull when springing off a dock.
- Dock Lines: In the port cockpit locker, on the mast pulpit, or in the sail locker.
- Cooking utensils: In the forward galley under-counter cabinet.

Stove and Oven

Highlights

- 3 burners, depress knob, turn left, use hand sparker or battery powered igniter
- Solenoid valve switch is located just to left of cooktop
- Shutoff valve beneath oven
- stove off, then solenoid off, valve off

Details

The 3 burner GN Espace Levante 2 propane stove must have the propane solenoid switch on to operate (above and to the left of the cooktop, on 'comfort' c/b).

We suggest that whenever you turn off the stove burner, you shut off the propane solenoid, which, for safety, shuts off the propane flow in the cockpit. Also turn valve off beneath oven.

To light a stove burner, *depress* the knob, turn ¼ turn to the left and light with the provided sparker or the built in igniter. Note you don't need a flame…just the spark. Hold for a few seconds to heat the safety "thermocouple", then release. Turn the knob to the *left,* counterclockwise, to go from "high" to "simmer".

Lighting the oven is the same as lighting a stovetop burner.

Water

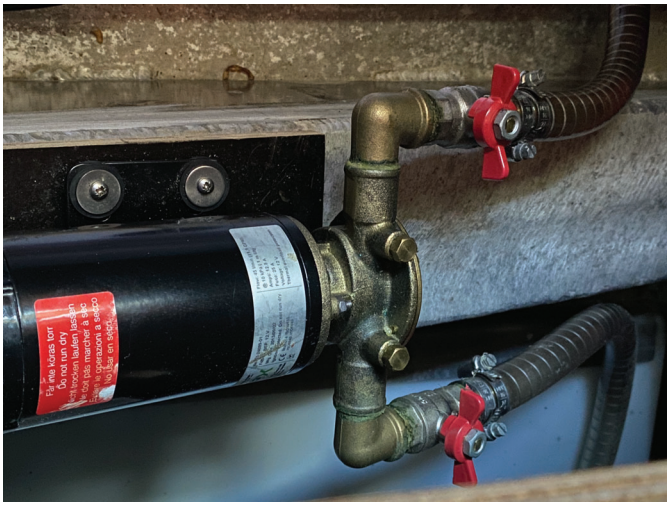
Highlights

- Two 66 gallon water tanks
- Freshwater draw is from the port tank
- Deck fills are forward, both port and starboard**.** We use the windlass handle for all the deck fills, as it's the shortest "winch" handle on the boat.
- Hose and in-line filter provided for topping off tanks in port

Details

Obelix is equipped with (2) 66 gallon water tanks, one to port and the other to starboard. They are accessed from the floor hatch located just forward of the salon table pedestal. They are just aft of the fuel tanks and just forward of the waste holding tank.

Filling is done on each tank separately from the deck fills. The fresh water pump always draws from the port tank, so balancing is either by transfer pump or external fill.



Transfer

Beneath the salon deck just forward of the salon table, beneath the floor, are the block valves (red handles) that permit water transfer between port and starboard tanks. In the photo, they are shown in the closed position. The photo is taken from beneath the deck hatch just forward and inboard of the salon table, near the nav station.

CAUTION
• √€Ensure that the block valves on the pump are open before initiating transfer. • √€When you fill one tank from the other, make sure you turn off the transfer pump when the tank is full. • √€The transfer pump must never run dry. For safety, turn off the circuit breaker of the transfer pump when the pump is not used.

Hot water

Hot water is produced by two methods:

- Engine: It takes about an hour under solid load to heat the large 10.6 gallon hot water tank. (Running the engine at idle won't heat the water.)
- Shorepower: If hooked up, turn on the "hot water" circuit breaker on the 220v panel in the starboard aft cabin technical area.

Have a great time, be safe, and let us know how we can improve the chartering experience.
