

Notes from the Owners of Areté



Welcome aboard Areté!

After many years cruising the Salish Sea on other people's boats, we are so happy to have Areté and to be able to share her with you! She sails beautifully, is easy to maneuver, and is wonderfully cozy and comfortable for 1-2 couples, a family, or a small group of cruising friends. We've outfitted her with solar, a lithium house battery and hydronic heat (hot water at anchor!) to maximize livability when away from shore power.

"Areté" came to us with her name, which refers to the ancient Greek concept of excellence, or achieving one's highest potential or purpose. We think the name is fitting. Not only is "Areté" an excellent little island cruiser in her own right, but the time we spend exploring the islands aboard "Areté" is excellent as well!

We hope you have a truly wonderful time aboard "Areté" and that she provides you the same joy and freedom that she does us.

Wishing you breezy days and calm anchorages,

Danelle and David Carnahan

Table of Contents

Specifications.....2

Being Whale Wise.....3

Emergencies4

Anchors and Windlass5

Batteries6

Berths.....7

Cabin Heat7

Dinghy and Outboard8

Docking & Boat Handling.....10

Dodger & Bimini10

Electrical System.....11

Electronics & Instruments12

Engine and Operating Under Power.....16

Fuel Tank.....19

Galley19

Head & Holding Tank.....20

Sailing.....21

Tools & Spares23

Water23

Specifications

Year: 2003	Engine: 29 hp. Volvo
LOA: 37' 11"	Mast height above water: 50' 6"
Beam: 12' 1"	Headroom: 6' (throughout)
Draft: 6' 4"	Berth Mattresses:
Displacement: 11,792 lbs (dry)	- V-Berth 6' 6" L X 7' W at head & 2' W at foot
Fuel: 40 gallons	- Aft Berth: 6' 6" L X 5' 6" W
Water: 79 gallons (2 tanks)	Refrigerator (no freezer):
Hot water: 4 gallons	- Top-load refrigerator: 19" W x 13" D x 18" H,
Holding: 25 gallons	plus 8" W x 13" D x 10" H

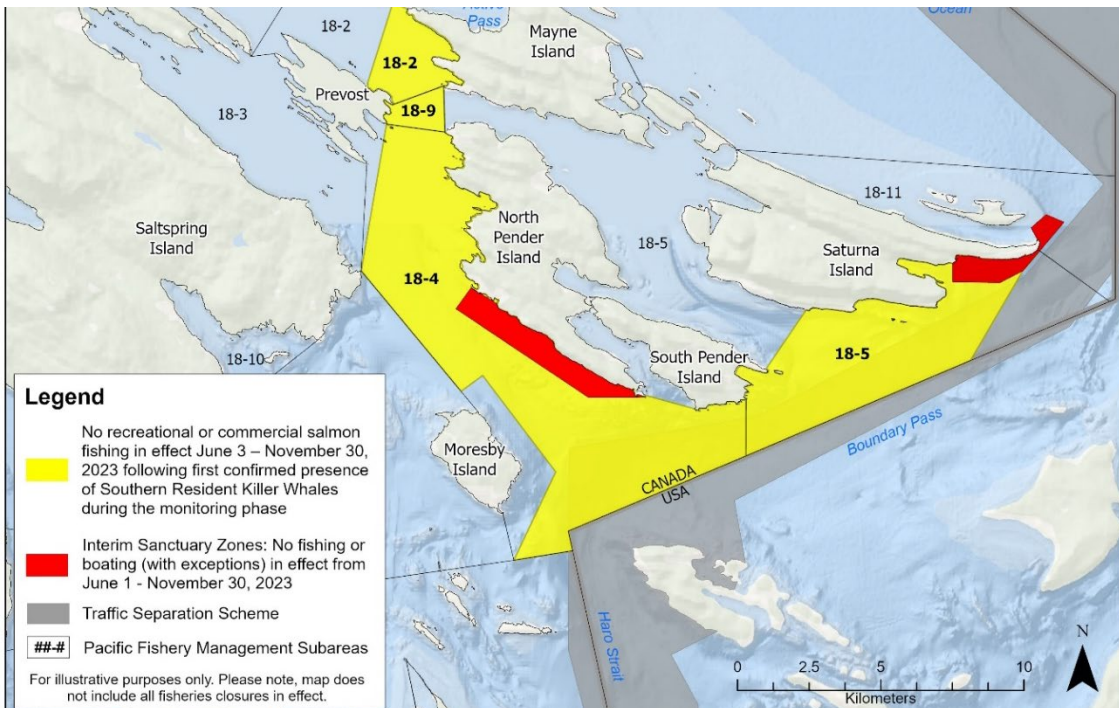
Key to Markings: Throughout these notes we have use the following convention:

- ALL CAPS – used for safety and operational warnings.
- Underlining – indicates the location of things.
- **bold** – indicates important knowledge or data.

Being Whale Wise

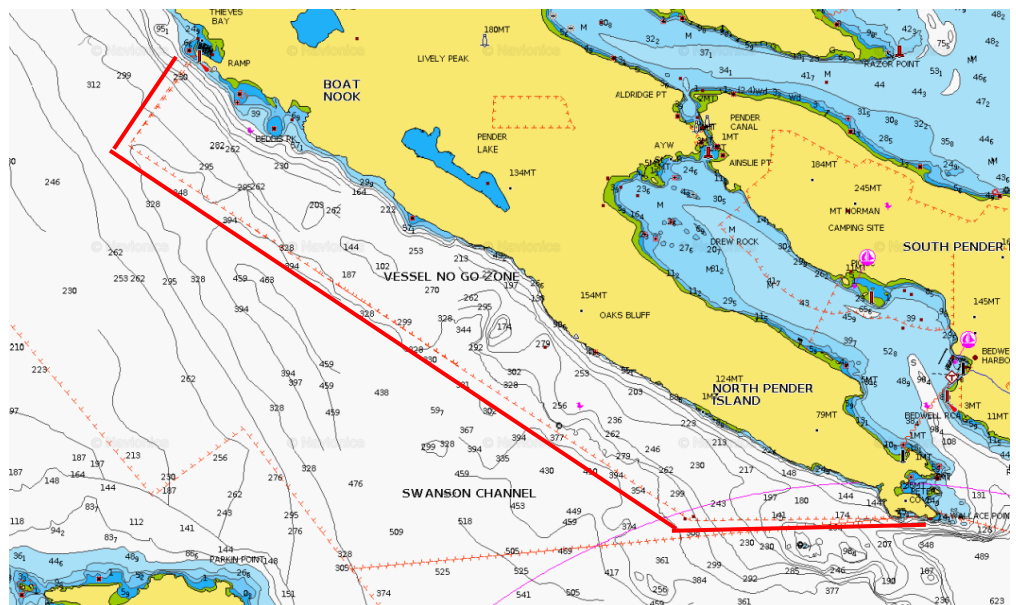
Our local Killer Whales are a wonderful part of the local family. But they are having a difficult time surviving due to declining salmon runs. These whales use echo location to find and catch their food. Therefore, noise pollution from boats and ships make it harder for them to thrive. In an effort to decrease human impact both the Canadian and US governments have implemented rules. We provided you a summary of these rules in the packet you receive when you arrived and there is more information in section 10 of the white reference book onboard “Areté”. In general, stay at least 400 yds. away from the whales. Sometimes they come to you, if this happens shutdown the engine and turn off the instruments (assuming this is safe to do). They can hear the pings of the depth sounder – this is why we have you turn off the instruments.

In Canada they have gone a step further by creating some zones where boats are not allowed. This further improves the environment for the whales. The red areas in the diagram below show these zones.



And here is an example of what they look like on “Areté’s” chart plotter(s). The red lines have been added to help point out the dashed lines, which are what you will see on the plotter.

Note this is just to the west of Bedwell Harbour, so on your way in or out of there be sure to avoid this area.



Emergencies

Fire

There are five fire extinguishers onboard, their locations are:

1. Forward cabin, inside port hanging locker
2. Under Nav station seat
3. Inside the aft locker in the head
4. Aft cabin, inside hanging locker
5. Port cockpit locker

IF YOU HAVE A FIRE AT THE GALLEY STOVE/OVEN OR THE BBQ, REMEMBER TO TURN OFF THE PROPANE.

Hitting a Log, or Running Aground

In case of a log hit or running aground, immediately check for leaks in the bilge and then check for cracks in the fore and aft sections of the bilge where the keel attaches to the hull. Also check all keel bolts. Once you are sure no water is entering the hull contact **San Juan Sailing at 360-671-4300** and proceed as directed.

Leaks

First, get bilge pumps going, both manual and electric. Then determine the source of the water, check the through-hulls first. There is a diagram showing the location of the through hulls in the notebook. Get the crew on deck and into life jackets. There are wood plugs tied to each of the through hulls.

There are **two bilge pumps**. The manual bilge pump is located on the starboard side of the stern walk-through, beneath the helm seat. The handle is located in the nav station. The electric bilge pump has an automatic float switch **but the switch on the electrical panel can be used to power the main pump manually.**

Steering Failure

If the steering system fails there is an emergency tiller in the port cockpit locker. It fits on the rudderpost which is under an access plate on the cockpit floor, beneath the helm seat.

Safety Gear

Flares, horn, etc. are located starboard under seat cushion at NAV table. The radar reflector is permanently mounted on the forward side of the mast. The first aid kit is located in a cabinet in the head.

Spare Parts and Tools

Tools are located under the bench in the forward stateroom. Spare parts are located under the bench in the forward stateroom and under the port settee.

Anchors and Windlass

Primary anchor: 35lb Mantis w/250ft of 5/16" chain marked every 25' with a yellow poly line.

Secondary anchor: 33lb plow with 35' of chain and 150' of rope, located in the starboard cockpit locker.

Typical scope in the San Juan Islands is **4 to 1**. Scope of 7 to 1 is required only in certain conditions (i.e. sustained winds over 25 knots). Most of the anchorages are well-protected and popular, so you will likely have someone anchored nearby. Popular coves are 20'- 40' deep, so expect to pay out 100'-175' of chain when anchoring. Remember that twice-daily tides **can change water depth up to 13 feet** so be aware of where you are in the cycle when choosing an anchorage and deciding how much chain to pay out.

(Water depth on sounder + tide increase expected + 4 feet *) x 4 = Length of Chain

*to account for the distance from sounder to bow roller. For example: 25' of water + 6' of tide increase + 4' = 35' x 4 = 140'

The anchor windlass is powered by the engine start battery so be sure to only use the anchor windlass with the engine running. The windlass is operated with up/down foot controls located in the anchor locker. The windlass breaker is located at the base of the forward cabin berth.

Lowering the anchor:

- If engine not running, start engine.
- Turn on windlass breaker.
- Untie the line holding the anchor in place.
- **Please lower the anchor by hand for the first 5-6 ft. so it does not swing into the bow.**
- Continue lowering the anchor with windlass until desired length of chain is paid out.
- Place the snubber on the chain and secure the other end of the snubber to a forward cleat.
- Let out additional chain so that the snubber carries the strain and there is some slack in the chain between the snubber and the windlass.
- Set the anchor.
- Turn on the anchor light.

Raising the anchor:

Important Safety Note - This windlass is very high powered and can bend metal if the anchor is brought up hard against the roller. Bring the last feet of anchor chain up manually, using the handle located in the anchor locker.

- Start the engine.
- Turn off the anchor light.



- **Slowly motor toward the anchor** while using the windlass just to take up the slack (never use the windlass to pull the boat). If the anchor is really stuck in the mud you will hear the windlass slow under the load. If you hear this change, immediately stop the windlass and motor the boat forward to free the anchor. **Be aware that the chain piles up in the anchor locker quickly and will need to be knocked down with a boat hook or mop handle every 25' or so.**
- **Once the anchor is out of the water, please bring onto the boat that last few feet of chain by hand.** This windlass is very high powered so snugging the anchor up tightly onto the rollers using the power of the windlass can damage the anchor, the bow roller or the windlass itself. There is a handle in the anchor locker that can be used to manually crank the windlass the last few feet.
- When the anchor is seated on the bow roller, assure the tip of the anchor rests against the underside of the rubber stop.
- Secure the anchor with the provided line.
- Turn off windlass breaker

Stern Ties

There are times when adding a stern tie to shore will be handy, especially in Desolation Sound. Areté has **600' of line on a spool** stored in the starboard cockpit locker.

Batteries

Areté has a 300 amp hour LiFePo house battery (approx 275 ah usable), which is charged by the solar panels, as well as the engine or when on shore power. The house battery is located under the forward berth and the voltmeter is located above the nav station, next to the heater thermostat. Voltmeter



House battery on/off switch (leave on) located under forward berth, just forward of the battery. House battery monitor located above forward end of nav station. Charge battery no later than 13.0v or 20% state of charge.

readings for lithium batteries are different than for standard lead acid batteries (they read higher). If the voltmeter drops below 13.0 then you have discharged the battery too much. Pay most attention to the

state of charge % on the voltmeter and take care to not let it drop below 20%. For reference, if the battery is drawn down to 20% at anchor it will take at least 8 hours of both running the engine and solar power to fully top off the battery. Keep an eye on your power consumption, and if staying multiple nights in a row at anchor, one option to conserve power would be to turn the refrigerator off at night.

The AGM engine battery is located under the aft end of the starboard settee. It's on/off switch is located at the aft base of the starboard settee. We tend to turn the engine battery off when not in use (especially at night or when away from the boat) since it also powers the windlass and bow thruster. The voltmeter for the start battery is located on the DC panel, with the water gauges.

Berths

Areté sleeps up to 6 guests (2 in the forward cabin v-berth, 2 in the aft cabin and up to 2 guests in the salon). If you plan on using the salon for sleeping remember to request extra bedding. Both cabins have Hypervent mesh under the mattresses to help vent moisture and provide more cushion. The seatbacks for the port and starboard salon settees can be raised and secured in place to allow for a wider sleeping space. The port settee is 6'1" long and the starboard settee is 5'10" long.

Cabin Heat

Areté has a diesel-fueled hydronic Webasto TL17 heater. The thermostat is located above the forward end of the nav desk. The "Off/Heat" switch for this can be left in the "heat" position as it only provides power to the thermostat itself. The actual heater on/off is located above the starboard side of the nav



Furnace thermostat (okay to leave set to "heat"). Located above forward end of nav station.



Main on/off switch for furnace. Located above outboard side of nav station.

station (see photo). This is a 3-position switch. The middle position is off. Pushing the top of the switch powers the circulation pump for heating hot water when the engine is running. Pushing the bottom of

the switch turns the heater on. Both staterooms, the head and the salon (next to the heater outlet) have their own individually controlled heat exchangers (with a high/low/off switch) so that heat can be limited to desired zones. If you are at anchor and would like hot water, but not cabin heat, turn on the heater but do not turn on any of the individual heat exchangers. (Note that the temperature on the thermostat above the forward end of the nav station needs to be set higher than the ambient interior temperature for the heater to turn on to heat the water. During the summer, when we use the heater only to heat water, and not the interior of the boat, we typically leave the thermostat set to about 88 degrees.)

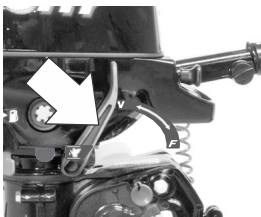
When the furnace is running you may notice a clicking noise that is the electric fuel pump pulling from the main diesel tank. We do not recommend running the furnace all night (although it is doable) as it can be noisy for the crew sleeping in the aft cabin. Instead we tend to run it in the evening and morning. The heat is dry, comfortable, and on those occasional rainy days or cool evenings, makes a huge difference in cruising comfort! We also really appreciate the hot water it provides during mornings at anchor. Hot air blows from heat exchanger vents in both staterooms, the salon, and the head (remember that each heat exchanger has its own on/off control).

Dinghy and Outboard

Areté has a 10' 2" West Marine 310 inflatable aluminum-bottom Hypalon dinghy. Towing works best when the dinghy is brought close to the boat — about 4 or 5 feet off the stern. This guarantees you won't accidentally wrap the painter around the propeller when you back up! Tying the painter off twice (for instance, a cleat-tie close to the dinghy and a stern-rail tie with the bitter end) will help ensure the dinghy does not slip loose.

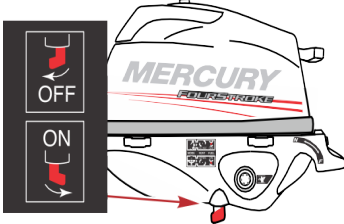
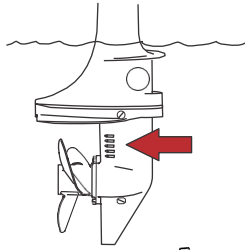
We very much appreciate you take special care when beaching the dinghy. Beaches in the San Juan's are seldom gentle, sandy beaches; they are usually rocky and covered by barnacles equipped with extra sharp rubber cutters. So any extra care will be appreciated. Also consider securing the painter under a rock or to a log, as a rising tide can leave you high, dry and dinghyless!

The 3.5 HP Mercury outboard has a four-stroke engine, so **do not add oil to the gasoline mixture – it uses straight unleaded gasoline**. San Juan Sailing will be sure you have a full gas can, which is normally in the dinghy. Also please **do not cruise with the outboards on the dinghy** as a large wake or gust of wind can overturn the dinghy.



Starting the Outboard

- Shift the gear lever to the neutral (N) position.
- Assure the cooling water intake (near the prop) is submerged.
- Open the air vent on the fuel cap.
- Move the fuel shut off valve to the open (ON) position.



- Attach the lanyard to the stop switch. The engine will not start unless the lanyard is in place.
- If the engine is cold, set the throttle grip to the "START" position. If the engine is warm, set the throttle grip to the "RE-START" position.
- If the engine is cold, completely pull out the choke. Push in the choke halfway as the engine is warming up. Push in completely after the engine is warmed up.
- Pull the starter rope slowly until you feel the starter engage, then pull rapidly to crank the engine. Allow the rope to return slowly. Repeat until the engine starts.
- Check for a steady stream of water flowing out of the water pump indicator hole.

Shifting Gears

The outboard has two gear shift positions to provide operation: Forward (F), and Neutral (N). Reduce throttle speed to idle before shifting between the two, and always shift the gear lever in a quick motion. To reverse, reduce the throttle speed to idle and turn the outboard 180°. The tiller handle can be swung back for ease of operation.

Shutting Off the Outboard

- Reduce throttle to idle and push the red stop button. Or just pull the lanyard until the clip pops off.
- Push the fuel valve lever forward to close and close the air vent on top of the fuel cap.
- To avoid prop damage, shut the outboard off and raise it out of the water before you reach the shore. Pull the outboard forward and out of the water until it clicks and stays in place.
- To put the outboard down, release the stainless steel lever on the starboard side of the shaft.
- When done using the dinghy for the day, put the outboard back on the outboard mount on the stern rail and tighten both braces.

Troubleshooting the Outboard

If the outboard engine won't start, review steps 1-6 above to make sure you've done all 6 steps. There is a spare spark plug and spark plug wrench in with the manuals in case you need them. If the outboard is running and you're heading toward shore, and the engine suddenly quits, it's usually that someone has forgotten to vent the fuel cap. If the engine is running fine but the propeller isn't moving, the shear pin is probably broken – just take the cotter pin out to remove the propeller and replace the broken shear pin (a spare pin is located forward of the shaft under the handle grip).

Docking & Boat Handling

Areté is light on her feet (turns in a short radius) and, like most sailboats, carries momentum well. We find it is helpful for the person handling the lines to take a line from the mid-ship cleat, this allows them to pull the boat to the dock without ‘losing’ the stern. The other important issue is prop-walk – **Areté will walk to starboard in reverse.**

Areté also has a bow thruster that can be used when docking. **ONLY** use the bow thruster when the engine is running as it uses the same battery as the engine does. The bow thruster breaker (labeled Lewmar) is located under the forward berth and is always left in the “on” position. Turn the bow thruster on by pushing the green button. It will stay on until you either hit the green button again or turn off the engine. Just press the left or right side of the grey rocker switch to activate the bow thruster.



Dodger & Bimini

As with all dodgers, please be gentle. If the glass becomes spotted with salt please get a pot of fresh water from the galley sink and “flood” the salt crystals off the plastic. Our dodger has some very handy rails on the sides that make staying upright and onboard easier. We have onboard a “waterblade” squeegee that is great for wiping away the morning dew from the windows. Fresh water from the fresh-water hose can be used to spray down the dodger/bimini. Please avoid using salt water to clean them.

There is a connector piece of canvas that can be zipped in between the dodger and bimini when it is raining or when you are at dock or anchor. It is not well suited for use when sailing because the boom has to be lifted to keep from abrading it. We normally roll it and store it in a dedicated canvas holder in the aft stateroom.

You will also notice two flexible solar panels are mounted on the bimini. Please don't place items on them and please avoid using them or their cables as handholds.

Electrical System

AC Panel:



Turn on all 6 AC breakers when at shore power. UP IS ON (counterintuitively, you see the red part of the switch when it is turned on and the green part when it is turned off.)

DC Panel:



Solar Panels

The two 110W solar panels mounted on the bimini supplement the electrical supply and are helpful to offset navigation and refrigeration needs while sailing and while anchored/moored (extended periods without running the engine). The system is self-controlling and should not require any attention. Care should be taken to avoid using the cables as handholds.

Electronics & Instruments

Manuals for the chart plotter, radar, and other instruments are in the cupboard below the nav station. The chart plotter manual is also available on-screen, or you can download a copy for yourself online before your cruise.

Chart Plotter & Radar

We recommend your PRIMARY navigation tool should be the Maptech waterproof chart book or paper charts (with the most active “killer rocks” marked in red). **The best way to stay off the rocks is by knowing where you are at all times.** And the primary role of the chart plotter is to verify you are where you think you are. It can also be used to zoom in to get more detail that the paper charts provide.

CHART PLOTTER:

All breakers are located on the electrical panel, above the nav station. You will also find the voltmeter (used for the start battery only) and water tank gauges here.



Highlights

- Areté is equipped with a Raymarine E-127 Hybrid Touch chart plotter. Power it by turning on the “sailing instruments” breaker on the DC panel.
- Please refrain from changing settings beyond the typical functions like chart orientation, radar overlay, AIS overlay and range.
- Commonly used chart plotter selections are detailed below. For a more complete orientation of how to operate and get the most value from a Raymarine chart plotter, we recommend downloading the user manual for the Raymarine E-127 Hybrid Touch. The manual is also loaded into memory of the plotters if you wish to review something while onboard.

Commonly Used Chart Plotter Functions:

Finding the Navigational Chart: The navigational chart should automatically appear when you power up the chart plotter. If it does not, hit the home button and then the chart icon.

Zooming in and out: Hit the “+” button to zoom in and the “-” button to zoom out. You can also use the “+” and “-” icons on the touch screen or a pinching motion on the touch screen (though the pinching motion doesn’t work as seamlessly as it does on a phone or tablet).

Returning the screen to the vessel’s current location: If you pan the screen away from your current vessel position and would like to return the screen back to your boat, either click the boat icon on the upper left side of the touch screen or press the “menu” button and then choose “find ship” (see photo of chart plotter screen on previous page).

Clearing Pre-existing Waypoints, Routes and Tracks: Press the “menu” button, then choose “my data”, and then select waypoints, routes or tracks. In the case of waypoints, choose “all waypoints”, then “erase wpts”. Waypoints, routes and tracks can all be deleted individually by selecting the item and then choosing the erase option.

Chart Orientation: Depending on your preference, we recommend either Heading Up or North Up (default). To adjust the orientation press the “menu” button, then choose “presentation”, then “view & motion”, and then “chart orientation”. Select between head up, north up (default), or course up.

Display Brightness: Tap the power button and you’ll see the shortcuts screen pop up. On this screen you can use the slider to adjust the screen brightness. On the shortcut screen you’ll also see options to power the radar and set it to transmit/standby, and to engage/disengage the autopilot.

Course over Ground (COG) Vector/Line: The COG vector (bluish green “infinity” line) will appear on this chart plotter regardless of whether the boat is moving or secured to the dock. If you do not see it, press the “menu” button, choose “presentation”, then “vectors”, and then toggle “COG vector” from “off” to “on”.

Displaying and using a Split Screen: Press the “home” button and choose the split screen option. This will open two plotter screens side by side and is useful if you would like to have one screen zoomed in and use the other as an overview.

Radar Overlay: To turn on the radar overlay, press the “menu” button, then choose “presentation” and then choose “overlays”, then toggle “radar” from “off” to “on”.

AIS Overlay: To turn on the AIS overlay, press the “menu” button, then choose “presentation” and then choose “overlays”, then toggle “AIS” from “off” to “on”.

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

- Areté 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). She has a separate AIS unit installed and wired to the batteries for full-time transmitting. The chart plotter is tied to the VHF radio or AIS Unit and shows the positions of vessels with AIS as triangles.
- To turn on the AIS overlay, press the “menu” button, then choose “presentation” and then choose “overlays”, then toggle “AIS” from “off” to “on”.
- AIS information supplements marine radar, which continues to be the primary method of collision avoidance for water transport.
- AIS requires each vessel to have a 9 digit MMSI (Maritime Mobile Service Identity) number to transmit position and data. Areté’s MMSI number is 338470129.

AIS vessels appear on the chart plotter screen as triangles (must have AIS overlay turned ON – see above Quick Notes for how-to). 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 Areté 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 *Vessel name*’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

- Turn on the “autopilot” breaker on the DC panel above the nav station.
- Assure that the wheel brake is not engaged.
- To engage the autopilot, press “AUTO” one time
- To disengage the autopilot, press “STBY”
- The gyrocompass for the autopilot is located in the salon, beneath the nav desk. Make sure that no magnetic (ferrous metal) items are stored nearby.



VHF Radio

Areté’s VHF radio is located at the Nav Station, with an additional remote handset at the helm. **We recommend that you monitor Channel 16 during your cruise.** It is reserved for emergencies and boat-to-boat initial contact. After contact, move to a working channel (68, 69, 72, 74 or 78). We listen to weather channels 1, 2, 3, 4 or 8 (whichever gives the best reception) before we sail in the morning and prior to anchoring for the evening. Listen for

the reports identified as “Northern Inland Waters” for the San Juan Islands. **San Juan Sailing monitors channel 80** during office hours and can generally receive transmissions sent from the vicinity of Bellingham Bay.

Listed below are instructions on how to use some common features:

- **Turning On and Off the radio:** Twist the volume knob clockwise, away from the off position to turn the radio on. To turn it off, twist the volume knob counterclockwise back to the off position.
- **Silencing a DSC Alarm:** When another boat (or the Coast Guard) press the DSC button on a radio it sounds an alarm on all boats in the area. To silence this alarm, press any key on the radio.
- **Changing from High to Low transmit power:** Press the H/L button in the bottom row and then select 1W (low power) or 25W (hi power).
- **To quickly get to channel 16:** Tap the blue 16/9 button. Holding it in for a second will take you to channel 9.
- **Accessing the weather channels (WX):** Pressing the CH/WX button (bottom center) will toggle between weather channels and normal channels.
- **Adjusting Volume and Squelch:** There are dedicated knobs for both volume and squelch.
- **Changing between International & U.S. channel:** Press and hold both the CH/WX and H/L buttons at the same time to select between U (USA), I (INTERNATIONAL), or C (CANADA). The radios should be left in USA mode. These instructions are provided in case the radio is accidentally switched to another mode.
- **How to set up and use Dual Watch:** Dualwatch monitors Ch 16 while you are receiving another channel. Choose the channel (other than 16) that you would like to monitor and then press and hold the CH/WX button to activate dual watch.

Radar

Activate the radar by pressing the “home” button on the chart plotter and then selecting the “radar” icon. Switch the radar from standby to transmit. Then, to activate chart plotter overlay, press the “home” button again, and choose “chart”. Press the “menu” button, then choose “presentation”, then “overlays”, and then toggle “radar” from “off” to “on”.

You should have little need of the radar except for the highly unlikely event that you are suddenly enveloped by fog, which is rare in this area. The fog that we’ve encountered in the islands usually forms in the wee hours of the morning and burns off by mid-day. So, if it’s a little soupy after breakfast, we put on an extra pot of coffee until it lifts. **Please remember that SJS contracts do not permit night or restricted visibility sailing.** However, it’s not a bad idea to occasionally practice comparing radar screen to reality to familiarize yourself with how it works in the case fog rolls in while you are underway.

Note: The radar reflector is permanently affixed to the leading edge of the mast.

Depth Sounder

Depth is displayed on the chart plotter, as well as on the tridata instrument at the nav station. The depth showing on the sounder is being measured from the transducer (about 12” under true water level) so the water under the boat is slightly deeper than the reading. The depth sounder transducer is located under

the floor in the forward stateroom. We strongly recommend leaving a minimum of 10-12 feet of water under the boat at all times. We **do NOT recommend using the alarm.** Experience in the islands tells us that it goes off at the wrong time – usually the middle of the night as a seal or fish passes underneath.

In general, depth sounders **will not give accurate readings beyond 400’.** In deeper water, the sensitivity on the unit increases as the transducer tries to get some reading back. Consequently, when you are in deep water, false readings caused by currents, changes in water temperature, fish, etc. are common. These false readings often report very shallow water so knowing you are in deep water will help prevent panic attacks.

Knot Meter

Speed is displayed on the chart plotter, as well as on the tridata instrument at the nav station. If the digital knot meter shows a reading of “0.00” while underway, the impeller is most likely clogged. Sometimes it will clear itself; wakes from big powerboats are good for this. You can also try clearing it by traveling in reverse. The knotmeter thru-hull is located under the floor in the forward stateroom. You can remove the impeller to clear it but only if you are experienced in such things. If needed, the SOG (speed over ground) reading on the chart plotter will work as a standby knot meter.A

Power Outlets

Personal electronic devices can be charged/operated while underway via the two USB outlets on the lower instrument panel. The AC outlets found throughout Areté’s interior require shore power to operate.

Stereo (AM/FM/Bluetooth)

The stereo is located at the nav station. It receives AM and FM signals, or you can connect your own device to it by Bluetooth or via the nearby USB port. The Bluetooth signature to look for is the small model number on the front of the stereo. Speakers are located in the salon and cockpit. Please be aware of other boats when you are in harbor and adjust the fader as needed (forward = salon speakers, rear = cockpit speakers, the middle setting = both) so that the cockpit speakers are turned off when not in use.

TV/DVD

The 12v TV/DVD is mounted on the forward salon bulkhead. Because it is 12v you do not need to be at shorepower to use the TV/DVD. A few of our favorite DVD’s can be found in the forward port salon cabinet (along with some of our favorite games). The TV is powered by the “TV” breaker on the DC electrical panel. To insert or eject DVDs the source on the TV needs to be set to “DVD”.

Wind

Wind speed and direction are displayed on the Raymarine instrument above the chart plotter. Pressing the “True/App” button switches between True and Apparent wind readings.

Engine and Operating Under Power

Areté has a **29 HP Volvo engine** with a sail drive. We’ve found it to be very reliable. **Cruising should be done at engine RPMs of 2400 to 2800.** Depending on conditions, in that RPM range you’ll typically cruise about 6 knots at 0.75 gph.

Inspecting the Engine

Engine access is provided by lifting the companionway stairs, which operate on hydraulic lifts – there are no latches, just lift it up, push it down. Side access is provided via a hatch in the aft cabin.

Please visually inspect the engine compartment daily, if there is no oil or liquid under the engine you are good to go. All boats in San Juan’s fleet have the engines checked by a mechanic on every turnaround, so there really is NO NEED TO CHECK THE OIL LEVEL unless you are out for more than one week. If you are out for more than one week and do need to check the oil then remove the dipstick, re-insert it, and then remove it again before reading (this will give you a more accurate reading). If you need to add oil, there is spare oil stored in port cockpit locker. Do not overfill. If needed add no more than a cup at a time, through the filler cap on top of the engine, and re-check the oil level.

Raw Water Strainer

The raw water strainer is located above the water line in Areté’s engine compartment. If you need to clear eelgrass from the strainer simply unscrew the top cover and remove the eelgrass. Be mindful to make sure the ring gasket is returned lid to prevent the system from drawing air and overheating.



Starting the engine

- Make sure engine battery is on.
- Turn on the power button on the engine start panel (below the wheel). When power is on you’ll see a fuel gauge reading.
- Make sure the gearshift is in neutral (slightly forward of vertical, marked with blue tape), then push in the black button at bottom of handle (which disengages the shifter) and push forward until you feel it engage the throttle a bit.
- Hold the “glow” toggle up for 20 seconds.
- Push the start button.
- After the engine starts, check for water flowing out the exhaust.
- There is no need to warm up the engine as getting off the dock (or anchor) and leaving the harbor will do this. If you have been sailing and are switching to engine power, starting the engine before you furl the sails will be plenty of warmup.
- When you are ready to go, return throttle lever to the “home” neutral position. This will re-engage the gearing so that you will engage forward when you move the handle forward, and reverse if you move the handle aft.



Engine Shutdown

- First make sure the gearshift is in neutral.
- Then pull the “fuel kill” handle located on the starboard side of the binnacle.

- After the engine has fully stopped push the “fuel kill” handle back in.
- Turn off the power button on the engine start panel. (If you cannot remember if you turned off the power button you can check the fuel gauge. It reads empty when the power button is off.)

Steering Wheel

Areté has a steering wheel that folds to make it easier to move around the cockpit at dock or anchor. You’ll want to make sure to unfold it and secure it in the “round” position before getting underway. To fold the steering wheel loosen (all the way) the grey plastic locks located on two of the spokes. This will allow two portions of the wheel to fold on hinges. Secure the folded portions together with the bungee. Reverse this process to return the wheel to round.

Troubleshooting Engine Problems

Volvo engines are 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, 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 it. 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.

Fuel Tank

Diesel tank capacity is 40 gallons. The tank is located under the floor of the starboard cockpit locker. The fuel gauge is located on the engine start panel. **Fuel gauges on boats are notoriously inaccurate.** We recommend filling the tank when it reads ½ way full rather than testing the lower range of the gauge.

Filling the tank: The fuel fill is located on the starboard stern. The tank vents through the same fitting as the fill. **When filling the tank listen closely and stop as soon as you hear fuel coming up the fill pipe** to prevent overflow through the pipe. We always hold a fuel absorb below the fuel fill just to be safe.

Galley

Refrigeration

Areté is equipped with a top-loading refrigerator. There is no freezer section but be aware that the forward wall of the refrigerator can get quite cold. We typically avoid storing ice in the refrigerator because the refrigerator does not have a drain (there is a small blue cooler in the port cockpit locker for ice). The refrigerator does a nice job of keeping our provisions cold and we find there are no issues with allowing it to run 24 hours/day. There is a temperature dial located in the forward inboard corner of the fridge. We've marked the setting that we find works best.

Cooking

Areté is equipped with a two-burner gimbaled propane range. Propane is heavier than air and requires caution. For your safety, please follow these procedures.

To light the cooktop burners:

- Make sure all stove controls are in the **“off” position**
- Turn on the gas valve. The gas valve is located behind the stove and to your left. When the handle is in line it is open. When perpendicular it is closed.
- Push burner control knob in as far as it will go and counterclockwise to the 'light' position.
- Light the burner with a butane lighter or match.
- Continue holding the knob in for approx. 20 seconds after ignition to warm up the thermocouple.
- Release burner knob and adjust flame to your needs.
- When you are finished, turn off burners and gas valve.

To light the oven and broiler burners:

- Make sure all controls knobs are in the “off” position
- Turn on the gas valve.
- Push in the oven control knob as far as possible and turn the control knob counterclockwise for oven temperature or clockwise to the broiler position.
- Use a butane lighter to light the oven burner (below) or broiler (above).
- Continue holding the knob in for approx. 20 seconds after ignition to warm up the thermocouple and allow the gas valve to stay open.
- Release burner knob and further adjust temperature to your needs.
- Close the oven door carefully to ensure the oven burner will not be extinguished.
- Broil with the door open and do not broil for longer than 20 minutes. There is a notch in the door locking mechanism to lock the door in a slightly propped open position.
- When you are finished, turn off oven controls and gas valve.

Please note that the propane that supplies the galley is located the left side of the helm seat. The storage compartment is vented and isolated from the rest of the boat so that any leaks will be vented away from the boat. San Juan Sailing’s staff check the propane level on every turn around. One tank normally lasts 3 weeks or more.

Outdoor Propane Grill

The stainless-steel propane grill sits on the starboard stern rail and has its own dedicated propane tank. If the hose is not connected to the BBQ, it is a simple connection. Please remember to turn off the valve to the grill and the propane tank after use. Also, as a courtesy to the next guest, please use the wire brush wired onto the grill to clean it after use.

Head & Holding Tank

Please do not put anything in the toilet that has not been eaten. Experienced sailors deposit toilet paper in a wastebasket, not down the toilet because paper tends to clog the system.

Toilet

The toilet is a traditional Jabsco manual marine toilet, flushed using seawater. The seawater intake through-hull is located under the head sink. Remember the “rules” regarding safe handling of items to be flushed described above.

Holding Tank

The 25 gallon holding tank is located in the starboard cockpit locker.

There is no level indicator, though you can estimate the level by knocking on the side of the tank. All effluent from the toilet goes to the holding tank (there is no y-valve). The holding tank can be emptied via the deck fitting at a holding tank pump-out dock, or via a mobile pump out cart. Where legal it can also be emptied into the sea through the gravity drain.



Gravity Drain

Where legal, the holding tank can be emptied into the sea by opening the through-hull for the gravity drain. This drain is opened with the red seacock handle in the outboard cubby of the aft cabinet in the head. It binds a bit on the cable covers above it so just gently nudge those aside to pass by.

Showers

Areté has a “wet head”. To shower just make sure that both the water pressure and shower sump switches are on at the electrical panel, then extend the sink faucet on its attached hose. Activate the shower drain as needed by pushing the black button on the side of the sink base. After showering we find it helpful to use the squeegee located in the aft locker in the head to sweep any water remaining on the head floor into the shower drain.

Experienced cruisers know the sailor's shower: get wet, turn it off, soap up, rinse off to save water. If showering in the morning after a night at anchor you can either run the hydronic heater or the engine to heat the hot water. It will also heat at shore power if you have the “water heater” breaker flipped on at the AC panel. **CAUTION: THE WATER CAN HEAT TO SCALDING TEMPERATURES!**

The **swim platform shower** is useful for washing off shoes after returning from the beach and less useful for bathing. The control and warm/cold sprayer are located on the transom, to starboard of the walkthrough, above the swim step. Be sure to turn it all the way off after use so it does not accidentally drain the freshwater tanks while sailing.

Sailing

Areté is a delight to sail. Her sloop rig makes for easy sail handling and gives a variety of options for various weather conditions. Her all-around perfect breeze is 10 to 15 knots. Full sails can easily be carried in winds to 20 knots. As the wind picks up it is best to furl the mainsail first. Note that Volvo recommends the engine gear shift be left in neutral while sailing, allowing the prop to spin freely.

Both the main and the genoa are furling sails. Below we list a few tips on handling these sails.

Mainsail

Unlike a standard main, it is best to have wind in a furling main when deploying, similar to deploying a furling jib. The wind adds even pressure all the way up the mast and helps the sail deploy. Note, because of this, it matters not which sail is deployed first. We typically deploy the main either close hauled or close reaching. **Unless the winds are over 15 knots, pointing the boat directly into the wind to deploy the main is neither necessary nor advisable.**

Here are the basic steps to unfurl the main:

- Make sure that the lever on the furling drum (located on the mast, below the boom) is set to “free”.
- Open the Vang and Mainsheet clutches – this allows the boom some movement. Then pull a few feet of mainsheet thru the clutch and close the mainsheet clutch. This will keep the sail from running free as the wind gets into it.
- Areté has a continuous furling line. You will need to open both the clutch marked "inhaul" and the blank one to the left of that to allow the line to run free.
- Pull the outhaul line by hand until you run out of muscle and then put on the winch if needed. Once the sail is out close the inhaul clutches and then tighten the outhaul to achieve desired draft. You will need to put the outhaul on the winch to set your draft.
- Set vang and mainsheet as desired.



When furling in the main keeping a little tension on the outhaul (keeping a little air in the sail also helps) will help ensure a tight wrap on the main furler. **The last foot-and-a-half of the mainsail (the part covered with the blue sun cover) is supposed to be left outside the mast.** If you do accidentally furl part of the sun cover you may have to go on deck and pull outhaul by hand to get sail started next time you unfurl the sail.

When reefing the mainsail or furling in higher wind situations, you will want to switch the lever on the furling drum (located on the mast, just below the boom) to the “ratchet” position. This locks the furling mechanism so that the wind cannot override it and pull the sail out. In the “ratchet” position the sail can only be furled, so when you are ready to unfurl the sail you’ll need to switch the lever back to the “free” position.

Headsail

The jib is on a roller furling. It has good sail shape at the full out position. During periods of heavier winds, furl the headsail as desired. Boat heel will be greatly reduced when sailing under reefed main and partially furled headsail in winds over 20 knots. **Please note that slight tension on the roller furling line when deploying the headsail, and on the sheets when furling, prevents problems from either a rat's nest on the drum or "candy striping" of the furled sail.**

Backstay

While Areté does have an adjustable backstay, we ask that you not adjust it as an improperly adjusted backstay will lead to reduced sailing performance and could leave the mast improperly supported.

Tools & Spares

Tools are located under the bench seat in the forward stateroom. Spare parts are located under the bench seat in the forward stateroom and under the port settee.

Water

The fresh water capacity is 79 gallons total in 2 tanks.



The water tanks are located under the V-berth and under the aft stateroom berth. The valves to switch between tanks are located under forward end of the aft berth. The freshwater pump breaker is located on the electrical panel. Please switch this off when motoring or sailing. You could burn out the water pump if the tank runs dry (and you would not hear the pump running over the sounds of motoring or sailing).

Water tank levels can be monitored via the gauge at the electrical panel. This gauge is the same one that you use to check the start battery level, but you'll use the lower rocker switch to check the water tank levels. The deck plates for filling the tanks are located

inside the anchor locker (v-berth tank) and on the aft port corner of the deck (aft tank). The deck key lives in the nav station desk.

Water Heater

Water is heated by the hydronic heater when away from the dock (refer to Cabin Heat section to review heater operation). If the engine is running push the heater switch up to activate the circulation pump and heat the water. If at anchor you can heat that water by pushing the heater switch down to turn on the heater and heat the water. (You won't heat the boat itself unless you turn on the individual zone controls.) Note that the temperature on the thermostat above the forward end of the nav station needs to be set higher than the ambient interior temperature for the heater to turn on to heat the water. During the summer, when we use the heater only to heat water (and not the boat) we typically leave the thermostat set to about 88 degrees.

The hot water tank holds 4 gallons, so use it wisely. The tank is located under the aft berth. It can also be heated electrically when shore power is available. The switch is located on the 120V panel.